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August 5, 2010

California Energy Commission
Attn: Docket Office, 08-AFC-13
1516 Ninth Street
Sacramento, CA 95814

Re: Calico Solar; Docket No. 08-AFC-13

Dear Docket Clerk:

Please process the enclosed CURE EXHIBIT 439, 2008 and 2009 Annual Reports for the Fort Irwin Translocation Project, conform the copy of the enclosed letter, and return the copy in the envelope provided.

Thank you.

Sincerely,

/s/

Carol N. Horton
Assistant to Loulena A. Miles

LAM:cnh

Fort Irwin Annual Report

Contents

B.O. # 1-8-95-F-16R

As per the Biological Opinion for the Army's Current Mission at the National Training Center, Fort Irwin, California, we are providing a table of all desert tortoise encounters by Fort Irwin personnel during calendar year 2008 (Table 1) including the number and types of tortoise takes. For calendar year 2008, there were 13 desert tortoise encounters, including carcass sightings, within the original boundary of Fort Irwin (Table 1). This figure includes six (6) sightings where the animal was not in harm's way and no actions were taken to relocate the animal, five (5) carcasses incidentally observed during various survey efforts and two (2) relocations by authorized biologists where the tortoise was moved greater than 100 meters from its original location. All tortoises listed as "relocated" were in good general health and none voided as a result of handling or relocation.

Table 1. Desert tortoise encounters by DPW staff on the NTC & Fort Irwin in 2008.
UTM coordinates reported in Zone 11, NAD 83

Date	Easting	Northing	Type	Relocated to
4/6/2008	532589	3906008	Relocated	532547 3906128
4/26/2008	553104	3908358	Sighting	
4/28/2008	523036	3901102	Carcass	
4/28/2008	527034	3895764	Carcass	
6/12/2008	504163	3895462	Sighting	
"summer" 2008	Not recorded		Carcass	
9/30/2008	523525	3889950	Relocated	523560 3889861
9/30/2008	90 gridline		Sighting	
9/30/2008	90 gridline		Sighting	
10/9/2008	522015	3890198	Carcass	
10/15/2008	Not recorded		Sighting	
11/17/2008	Not recorded		Sighting	
11/26/2008	Not recorded		Carcass	

Summary of 2008 Survey and Monitoring Efforts

- On March 3, 2008 the Sitting Bull Restoration Area was surveyed for desert tortoise and other sensitive species. The entire Sitting Bull Restoration Area polygon was surveyed by walking north-south transects in 30 meter intervals. There were no desert tortoise burrows or sign throughout the Sitting Bull Area. The Restoration Area was mostly devoid of vegetation, and consequently there was a lack of wildlife activity. There was no sign of desert tortoise or of sensitive species (Mojave fringe toed lizard, burrowing owl). Therefore, the Sitting Bull Restoration Area was deemed clear for ground disturbing activity.

- On March 9th, 2008 Fort Irwin biologists performed a survey for desert tortoises (*Gopherus agassizii*) at ITAM's proposed road improvement site, Yermo. The survey was conducted according to United States Fish and Wildlife Service (USFWS) protocols for the desert tortoise. There was no desert tortoise sign observed during the survey. The areas surveyed varied from slightly impacted to highly impacted. There is a small potential that tortoises may wander into the areas during the project. No other sensitive plant or animal species were observed.

- On June 20th 2008 three Fort Irwin biologists surveyed a section of land adjacent to Fort Irwin Road prior to the construction of a truck bypass route. The proposed road was 14 feet wide and approximately 2.5 miles long. The survey followed United States Fish and Wildlife Service protocol. No tortoises were seen. Multiple burrows were noted but none housed tortoises. Monitoring has continued on this project since June and no tortoises have been sighted.

- On October 15th through the 17th 2008, Fort Irwin biologists surveyed the proposed site for installation of three wind energy turbines. Surveys were conducted to analyze all plant and animal species on the site. Surveys were particularly focused on desert tortoise *(Gopherus agassizii)* and Lane Mountain milkvetch *(Astragalus jaegerianus)* that could potentially be found at the site. The survey followed United States Fish and Wildlife Service protocols. The survey area was approximately 20 hectares, covering the project location and a buffer zone around the proposed area of activity. After careful evaluation it was determined the area did not contain any sensitive species and that no biological constraints would prevent the addition of wind turbines and access roads at this site.

- On November 3rd and 4th 2008 Fort Irwin biologists conducted a preliminary survey at the intersection of Live Fire Ranges 16 and 19 where a new Military Operations in Urban Terrain (MOUT) site has been proposed. The estimated area of impact covers almost 1900 acres. Since the area was previously highly disturbed the survey focused on the undisturbed areas most likely to contain desert tortoises. Five areas of 100x100 meters were surveyed. No desert tortoises were seen however some possible burrows were sighted. A more intensive survey will occur prior to construction when more information about the project becomes available.

- On December 4th and 5th 2008 three Fort Irwin biologists surveyed the proposed Route B, a one mile long road connecting the main Fort Irwin reservation with the western expansion area. United States Fish and Wildlife Service survey protocols were used and no desert tortoise burrows or sign were sited. As part of the Route B project, an adjacent existing road will be widened. A three mile stretch of land associated with this aspect of the project was surveyed. Three possible desert tortoise burrows (unoccupied) were identified. Fort Irwin biologists will continue to monitor this project through completion of construction activities.

- On 16 December 2008 two Fort Irwin biologists accompanied Operations Group personnel through the western expansion area to determine a biologically feasible route for a Stryker unit road march from Fort Irwin to Southern California Logistics Airport (SCLA). This activity will occur on February 18 and 19, 2009 during Rotation 09-04. No desert tortoises were encountered or are expected to be affected by this activity. All participating personnel will be briefed regarding the desert tortoise and Fort Irwin biologists will precede the road march to insure no desert tortoises are harmed.

This biological opinion requires any disturbance to desert tortoise critical habitat south of the 90 Grid Line be reported. In association with the ongoing desert tortoise translocation project being executed in lands south of the 90 Grid Line (the southern expansion area or SEA), a number of activities occurred during 2008. Desert tortoises south of the 90 Grid Line, previously transmittered, were translocated to one of 11 translocation plots south of Fort Irwin. Prior to being translocated, all tortoises were subjected to a health assessment including drawing blood to test for exposure to disease. All tortoises exhibiting severe clinical signs of disease or testing ELISA suspect or positive were left in the SEA. Additionally, disease pens were constructed on suitable desert tortoise habitat south of the 90 Grid Line. The intent of these pens is to house those tortoises exhibiting severe clinical signs of disease or testing ELISA positive or suspect. Subject to completion of translocating all tortoises from the SEA (lands south of the 90 Grid Line) it is Fort Irwin's plan to begin training activities on these lands.

Recommendations – This biological opinion covers lands encompassed by the original Fort Irwin boundary. A separate biological opinion covers lands acquired through the Fort Irwin land expansion project. Following completion of the Fort Irwin translocation project recommend this biological opinion be revised to incorporate all Fort Irwin lands under one biological opinion.

B.O. # 1-8-03-F-48
Desert Tortoise Permit TE-102235-3

The Fort Irwin Biological Opinion for the Proposed Addition to Maneuver Training Lands at Fort Irwin, California requires the Army to report the details on each desert tortoise that is found dead or injured within the new training areas at Fort Irwin or at translocation sites and report any conservation actions taken for the desert tortoise and the Lane Mountain milkvetch. The expansion areas are not currently available for military training (pending completion of all environmental documentation) and are being managed in a manner consistent with Bureau of Land Management desert wildlife management area protocols. The following desert tortoise translocation project activities took place this year:

- Total injuries and mortalities of all uniquely-identified tortoises involved in the Fort Irwin Translocation Project are presented in Table 2. Two hundred (200) mortalities and six (6) injured tortoises were recorded during 2008.

Table 2. Mortalities and injuries of uniquely-identified desert tortoises at Fort Irwin in 2008.

Tortoise ID #	Date of Observation	Easting	Northing	Status	Cause of Death or Injury
37	9/21/2008	527378	3887993	dead	other
40	9/11/2008	527412	3887947	dead	unknown
46	5/4/2008	529588	3889880	dead	unknown
55	3/5/2008	537922	3880072	dead	canid
890	8/11/2008	526203	3888812	dead	necropsy
2005	10/2/2008	521937	3871953	dead	unknown
2009	3/28/2008			dead	canid
2037	1/13/2008	533496	3887222	dead	unknown
2047	5/16/2008			dead	canid
2524	5/6/2008	528176	3887615	dead	canid
2528	5/8/2008	518269	3880163	dead	canid
2549	7/8/2008	521700	3871001	dead	unknown
2562	3/25/2008			dead	canid
2574	7/14/2008			dead	canid
3001	4/8/2008	522181	3866117	dead	unknown
3002	1/14/2008	522419	3865647	dead	canid
3004	1/14/2008	519596	3866959	dead	natural
3006	5/5/2008	508690	3886521	dead	canid
3009	6/3/2008	518512	3881296	dead	canid
3011	4/3/2008	518451	3882108	dead	natural
3018	10/2/2008	554219	3884078	dead	canid
3024	7/15/2008	519451	3870144	dead	canid
3028	6/30/2008	523288	3864844	dead	canid
3029	1/14/2008	522785	3866440	dead	canid
3032	9/3/2008	512048	3882102	dead	canid

3036	4/3/2008	509792	3880830	dead	canid
3038	3/26/2008	513428	3877544	dead	unknown
3047	1/15/2008	513414	3879184	dead	unknown
3063	1/16/2008	532746	3886473	dead	unknown
3067	1/15/2008	512938	3877984	dead	unknown
3068	2/13/2008	512542	3877760	dead	canid
3070	6/30/2008	537416	3879271	dead	canid
3077	7/27/2008	520594	3873389	dead	canid
3082	5/23/2008	509624	3880096	dead	canid
3094	2/12/2008	512270	3883139	dead	unknown
3095	4/3/2008	509509	3880646	dead	canid
3098	5/5/2008	508533	3879771	dead	canid
3101	3/28/2008	509009	3881081	dead	unknown
3102	7/23/2008	518762	3871794	dead	canid
3103	4/2/2008	511522	3883201	dead	canid
3104	8/14/2008	510650	3883779	dead	canid
3107	2/12/2008	513352	3877027	dead	unknown
3110	1/15/2008	512696	3877290	dead	canid
3113	1/14/2008	528851	3881464	dead	unknown
3126	8/5/2008	512844	3880166	dead	canid
3128	4/3/2008	508112	3880193	dead	canid
3129	4/29/2008	512955	3878094	dead	canid
3134	2/13/2008	513449	3877348	dead	canid
3142	7/16/2008	520550	3871179	dead	canid
3146	9/3/2008	520013	3877302	dead	canid
3159	3/26/2008	513232	3876995	dead	unknown
3161	5/25/2008	513301	3877180	dead	canid
3168	9/3/2008	518907	3876668	dead	other
3170	11/5/2008	546007	3879590	dead	canid
3175	7/2/2008	517889	3876737	dead	canid
3201	4/2/2008	510789	3883895	dead	canid
3217	9/3/2008	514242	3885157	dead	canid
3222	9/2/2008	518513	3882047	dead	unknown
3225	3/3/2008	509919	3878181	dead	canid
3229	2/11/2008	543895	3882361	dead	canid
3242	4/1/2008	511142	3881352	dead	unknown
3282	9/18/2008	549587	3885382	dead	unknown
3286	9/17/2008	548111	3886568	dead	canid
3298	9/22/2008	536001	3879972	dead	canid
3302	7/26/2008	520119	3872105	dead	canid
3307	2/13/2008	520010	3871304	dead	unknown

3313	1/19/2008	548329	3885664	dead	canid
3366	10/14/2008	518105	3881186	dead	canid
3381	7/14/2008	525589	3886599	dead	necropsy
3408	7/28/2008	525173	3886747	dead	necropsy
3413	4/10/2008	548906	3885306	dead	unknown
3442	10/13/2008	521637	3869424	dead	unknown
3453	10/20/2008	521741	3888349	dead	other
3454	5/5/2008	522932	3887941	dead	necropsy
3460	9/19/2008	521003	3871293	dead	canid
3468	5/12/2008	524237	3889048	dead	necropsy
3469	8/20/2008	524469	3887921	dead	necropsy
3470	10/8/2008	554595	3889216	dead	unknown
3475	8/27/2008	520277	3868485	dead	unknown
3477	6/17/2008	524500	3888696	dead	necropsy
3478	4/23/2008	526805	3887876	dead	unknown
3479	6/30/2008	524266	3889131	dead	necropsy
3481	7/5/2008			dead	unknown
3507	7/26/2008	521119	3871988	dead	canid
3528	10/23/2008	526404	3887357	dead	canid
3581	3/31/2008	549449	3882881	dead	canid
3582	3/31/2008	549962	3883161	dead	canid
3595	1/19/2008			dead	canid
3604	9/8/2008	522921	3888389	dead	necropsy
3605	5/2/2008	522278	3887950	dead	canid
3606	11/2/2008	519329	3869363	dead	unknown
3607	10/19/2008	520467	3869155	dead	canid
3618	7/15/2008	520226	3868981	dead	canid
3628	8/29/2008	522880	3871947	dead	unknown
3700	11/2/2008	520448	3870996	dead	canid
3703	8/9/2008	519850	3870898	dead	canid
3706	3/19/2008	519969	3871651	dead	canid
3708	10/19/2008	523921	3872366	dead	unknown
3709	6/24/2008	521397	3868690	dead	unknown
3711	10/8/2008	521668	3868849	dead	canid
3712	8/20/2008	521804	3868987	dead	unknown
3720	10/15/2008	550214	3885886	dead	canid
4007	7/23/2008	519797	3873062	dead	canid
4011	12/10/2008	518266	3877929	dead	canid
4014	5/25/2008	541130	3889822	dead	canid
4018	5/12/2008	537152	3880227	dead	canid
4025	4/9/2008	528688	3889774	dead	canid

4029	7/2/2008	521239	3871592	dead	canid
4031	10/10/2008	520427	3873600	dead	canid
4032	6/5/2008	531597	3887466	dead	canid
4037	7/16/2008	528706	3888799	dead	canid
4040	6/19/2008	537017	3881004	dead	canid
4043	3/28/2008	533664	3889734	dead	canid
4058	4/15/2008	515016	3875970	dead	canid
4059	6/5/2008	519746	3876746	dead	canid
4093	6/13/2008	508136	3879034	dead	canid
4097	5/27/2008	510621	3880906	dead	canid
4130	5/28/2008	530677	3889921	dead	canid
4137	3/31/2008	509234	3880096	dead	canid
4142	9/27/2008	506923	3882259	dead	canid
4159	7/14/2008	550362	3892571	dead	canid
4161	7/15/2008	530203	3888082	dead	canid
4165	6/3/2008	518676	3876143	dead	canid
4180	4/15/2008	510494	3880734	dead	canid
4182	12/10/2008	519583	3875618	dead	canid
4186	5/20/2008	535934	3879411	dead	natural
4209	5/20/2008	509190	3880315	dead	unknown
4212	10/30/2008	536267	3880303	dead	unknown
4215	4/7/2008	508975	3880147	dead	canid
4218	4/12/2008	547939	3890801	dead	vehicle_impact
4226	9/20/2008	520888	3871956	dead	canid
4230	8/16/2008	528465	3890205	dead	canid
4233	5/22/2008	518533	3874750	dead	canid
4237	7/17/2008	508840	3879840	dead	other
4248	11/13/2008	518396	3876448	dead	canid
4250	8/1/2008	548550	3891375	dead	canid
4254	6/23/2008	519995	3876007	dead	canid
4262	5/21/2008	537099	3878074	dead	unknown
4263	8/6/2008	548637	3890703	dead	canid
4266	4/9/2008	548801	3890613	dead	canid
4267	3/29/2008	508339	3879945	dead	unknown
4270	4/11/2008	548787	3890498	dead	canid
4272	5/24/2008	517634	3883004	dead	natural
4274	10/14/2008	509396	3880330	dead	canid
4280	4/1/2008	513404	3885642	dead	canid
4282	7/26/2008	519973	3872084	dead	canid
4283	5/10/2008	535828	3880366	dead	canid
4292	3/27/2008	549014	3890852	dead	unknown

4295	9/19/2008	509619	3879934	dead	canid
4296	4/8/2008	548495	3892319	dead	canid
4304	9/17/2008	519889	3872567	dead	canid
4320	9/11/2008	519391	3877070	dead	canid
4343	11/2/2008	527279	3887605	dead	unknown
4359	6/23/2008	517982	3874434	dead	canid
4360	3/28/2008	528514	3888549	dead	unknown
4388	3/26/2008			dead	canid
4390	2/14/2008			dead	canid
4391	9/21/2008	525104	3889606	dead	canid
4393	2/14/2008	524584	3889905	dead	canid
4399	9/11/2008	517983	3875444	dead	canid
4408	9/27/2008	528120	3888000	dead	canid
4409	9/20/2008	520736	3872096	dead	canid
4413	7/14/2008	520104	3892095	dead	canid
4417	4/28/2008	530673	3889522	dead	necropsy
4443	8/6/2008	509244	3881143	dead	canid
4448	7/5/2008	518481	3876590	dead	canid
4451	4/9/2008	520789	3890523	dead	canid
4458	8/24/2008	520412	3873272	dead	canid
4469	6/6/2008			dead	unknown
4481	5/20/2008	529410	3886487	dead	canid
4484	5/28/2008	548299	3887637	dead	canid
4487	6/2/2008	520306	3873020	dead	canid
4488	11/8/2008	548577	3885422	dead	canid
4489	5/2/2008	508611	3887827	dead	canid
4490	7/20/2008	542422	3889318	dead	raven
4491	5/15/2008	548399	3891260	dead	canid
4498	5/28/2008	550825	3892493	dead	canid
4528	4/30/2008	519532	3871333	dead	raven
4529	4/24/2008			dead	necropsy
4547	5/13/2008	547958	3887037	dead	raven
4586	8/2/2008	519495	3890762	dead	canid
4590	4/16/2008	547764	3890701	dead	necropsy
4593	5/10/2008	519388	3871613	dead	canid
4595	4/21/2008	549347	3890977	dead	canid
4598	7/25/2008	520787	3873341	dead	canid
4614	7/26/2008	521625	3871118	dead	canid
4650	9/17/2008	520301	3871499	dead	raven
4654	7/1/2008	517087	3892875	dead	unknown
4669	6/26/2008	526378	3889882	dead	unknown

4675	6/2/2008	524368	3889592	dead	canid
4684	4/24/2008	520440	3869962	dead	canid
4685	3/30/2008			dead	unknown
4716	9/21/2008	548017	3890871	dead	canid
4720	8/2/2008	520975	3890589	dead	canid
4721	3/25/2008	520811	3890811	dead	canid
4739	5/16/2008	542237	3877227	dead	raven
4756	5/16/2008	542617	3876834	dead	raven
5018	10/22/2008	513007	3897930	dead	unknown
5057	5/21/2008	514446	3898955	dead	unknown
5126	10/28/2008	508606	3898958	dead	canid
3141	11/17/2008	519367	3876075	injured	canid
2540	12/16/08	535854	3880651	injured	unknown
2557	12/08/08	508348	3880980	injured	unknown
4118	12/10/08	519040	3876002	injured	unknown
4291	12/10/08	514822	3878884	injured	unknown
4517	12/11/08	538655	3881274	injured	unknown

- Research – Reports outlining the 2008 activities, results, issues and recommendations for each research project associated with the Fort Irwin desert tortoise translocation effort are attached as appendices (A through E).

- Predator control – Predator control measures were implemented during summer 2008 in an attempt to reduce tortoise predation experienced by translocation research projects. See USDA APHIS (Animal and Plant Health Inspection Service) report, Appendix F.

- Fencing – Western Expansion Area (WEA) continued in 2008 in accordance with the fencing plan. Following discussion with Naval Air Weapons Station (NAWS) China Lake, Fort Irwin agreed to install tortoise fencing along the NAWS China Lake WEA boundary. Following a significant rain event numerous sections of the southern expansion are desert tortoise fence were repaired. A new tortoise fence design was developed to address overland flow issues during rain events. This design will undergo limited testing in 2009.

- On May 21st and 23rd 2008 four pens built to house diseased tortoises were surveyed and cleared. Any residents housed in these pens were removed to ensure they would not be subject to disease. These pens were cleared using United States Fish and Wildlife Service survey protocol. Three individuals were found. All were moved outside of their respective pens into a shady area nearby. Each was given water and a visual health assessment prior to release.

- On July 15th 2008 two biologists from DPW Environmental completed a tortoise survey in the western expansion area prior to the building of a tortoise boundary fence. The survey area was approximately 4.5 miles long and 20 meters wide. One burrow and one carcass were discovered during this survey. The burrow was marked to ensure it would not be affected by construction. This project was monitored continually and two tortoises were moved out of harm's way during construction.

- In the spring of 2008 18 of the 73 juvenile tortoises (including 4 new tortoises from the WEA) overwintering in Bldg 602 on Fort Irwin were returned to the FISS by Fort Irwin biologists. The remaining 33 surviving tortoises from Bldg 602 were translocated by ITS researchers. With the addition of the 18 juvenile tortoises from Bldg 602 there are a total of 33 juvenile tortoises in the FISS.

- All three FISS structures were searched visually October 6, 2008 for any active individuals above ground. No juveniles were observed but scat littered the edges of pens 2, 3, and 4. This scat was still shiny dating it to this year (USFWS 1992). On October 14th 2008 pen 4 was intensively surveyed. There were no tortoises out walking around in this enclosure. Additionally, all burrows large enough to house a neonate tortoise were examined and no tortoises were found. In the summer of 2008 this pen was searched by a Fort Irwin biologist and no tortoises were observed.

- Pen 1 was surveyed on the 21st of October. No individuals were seen out walking around or in burrows. Pens 2 and 3 were examined October 28, 2008 and no individuals were seen. Pens 2 and 3 were irrigated during the summer months and Fort Irwin biologists reported seeing one or two individuals roaming the pens on multiple occasions. The identity of these individuals was not noted at that time. No burrow was prodded in order to avoid waking hibernating individuals. In spring of 2009 another survey will be conducted in order to confirm the fates of all juveniles at the FISS.

Summary of FISS Surveys:

Date	Survey Area	Juveniles	Scat	Burrows
10/6/08	Walked Pen 1, 2, 3, and 4	No	Yes (pens 1,2,3)	Yes
10/14/08	Pen 4, intensive burrow search	No	No	Yes
10/21/08	Pen 1, intensive burrow search	No	Yes	Yes
10/28/08	Pens 2 and 3, intensive burrow search	No	Yes	Yes

- On December 23rd, 24th, 29th, 30th, and 31st Fort Irwin biologists conducted a desert tortoise construction clearance survey in the western expansion area prior to work beginning on re-routing the existing Copper City Road. No tortoises were found. There were 13 desert tortoise carcasses encountered. Carcass locations were recorded and added to the Fort Irwin tortoise database.

- Lane Mountain Milkvetch - Conservation efforts for the Lane Mountain milkvetch consisted primarily of continued monitoring of populations at several sites. A complete annual report is attached (Appendix G).

B.O. # 1-8-00-F-78

The Biological Opinion for the Proposed Off-Road Vehicle Area, U.S. Army National Training Center, Fort Irwin, California requires an annual report documenting ORV area usage and violations. Established in 2003, the ORV area encompasses approximately 70 acres. The ORV area is completely enclosed by triple strand smooth wire and tortoise proof fencing. During calendar year 2008, the Fort Irwin Recreation Center reported a total of 84 users of the OHV area which is less than in previous years. No desert tortoise encounters were reported within the boundaries of the OHV area. No violations of the NTC and Fort Irwin Regulation 350-3 were reported or observed.

B.O. # 1-8-05-F-43

The Biological Opinion for Translocation of Desert Tortoises from the Southern Expansion Area requires Fort Irwin submit a report to the USFWS within 60 days of completion of activities outlined in the biological opinion. Construction of the I-15 tortoise exclusion fence and holding pens for diseased animals is complete. A final report detailing the effects of this action on desert tortoises is in preparation. Upon provision of this report to USFWS by the Army all provisions set forth by this biological opinion will have been fully satisfied.

B.O. # 1-8-03-F-47

This project is still in progress with a tentative completion date of late February, 2009. Ground disturbance activities for this project were completed in 2007 and early 2008 with no tortoises, burrows or carcasses observed. A full report will be submitted, as required, within 90 days of project completion.

Literature Cited

Annual United States Fish and Wildlife Service report on the status of the desert tortoise at Fort Irwin. 2007. Signed by Lance Toyofuku.

USFWS. 1992. *Field Survey Protocol for any Federal and Non-federal Action That May Occur Within the Range of the Desert Tortoise.*

2009Annual Reports for Fort Irwin Biological Opinions and Desert Tortoise Permit for the Fort Irwin Translocation Project

Contents

6. Research Summary (QinetiQ): Comparing Translocation Methods and Effectiveness for Desert Tortoises at Fort Irwin.

7. An Annual Report for the Fort Irwin Desert Tortoise Translocation Project: 2009 Progress (USGS Henderson, NV)

8. Annual Report: Yearly Monitoring of Lane Mountain Milkvetch (*Astragalus jaegerianus*) on Fort Irwin, CA for 2009

Annual Reports for Fort Irwin Biological Opinions and Desert Tortoise Permit for the Fort Irwin Translocation Project

Biological Opinion # 1-8-95-F-16R

Re-initiation of Forma Consultation on the Army's Current Mission at the National Training Center, Fort Irwin, California

ABSTRACT
Each Federal agency shall insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation, to be critical, unless such agency has been granted an exemption. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available. Pursuant to submission of a biological assessment identifying the potential effects of military training activities on threatened, endangered and sensitive species, within the original boundaries of Fort Irwin and the National Training Center, the US Fish and Wildlife Service rendered a biological opinion. The Service stated in its opinion that the effects of military training activities described were not likely to jeopardize the continued existence of the desert tortoise or adversely modify critical habitat. The opinion further requires Fort Irwin submit an annual report summarizing:

1. the number of desert tortoises moved by authorized biologists
2. the number of desert tortoises killed or injured providing the specific information for each tortoise described in term and condition 12 of the opinion
3. any new ITAM program data
4. recommendations for modifying the terms and conditions to enhance desert tortoise protection
5. acreage disturbed, if any, below the UTM 90 line

INTRODUCTION
The National Training Center (NTC) at Fort Irwin is a Combat Training Center for the Army, which trains 10 armored brigades each year in exercises called rotations. Rotations last for 28-35 days and involve approximately 9,000 soldiers and Department of the Army civilians. The training at Fort Irwin is designed to provide soldiers the experience needed to excel at their missions. Today's Army can drive faster, operate in wider ranges, and shoot farther necessitating the use of every available acre on the installation for training.

RESULTS
Per the Biological Opinion for the Army's Current Mission at the National Training Center, Fort Irwin, California, Table 1 provides a listing of all desert tortoise encounters within the original

Fort Irwin boundary reported to Fort Irwin personnel during calendar year 2009. There were a total of thirty (30) desert tortoise encounters, not including carcass sightings, within the original boundary of Fort Irwin. Fourteen (14) sightings involved observations where the animal was not in harm's way and no actions were taken to relocate the animal; one (1) encounter involved re-directing traffic around a tortoise crossing a road; six (6) incidents occurred where the tortoise was moved approximately 100- 150m out of harm's way; one (1) incident involved the mortality of a desert tortoise caused by vehicle impact; and eight (8) incidents involved relocations by authorized biologists where the tortoise was moved greater than 150 meters from its original location. All tortoises listed as "relocated" were in good general health and none voided as a result of handling or relocation. Handling and relocation procedures were conducted as directed by the Desert Tortoise Council (1994).

Table 1. Desert tortoise encounters by DPW staff on the NTC & Fort Irwin in 2009.
UTM coordinates reported in Zone 11, NAD 83

Date	Easting	Northing	Age/Sex	Activity / Status/ Comments
13 March	512411	3887149	Adult/ male	Observation – no action taken.
4 April	521995	3904380	Adult / unknown	Mortality – tortoise hit by car on Goldstone Road.
22 April	527136	3902134	Adult/ male	Recovered from cantonment. Relocated to 520905E, 3902780N
24 April	506512	3893115	Adult/ female	Moved 100 meters off roadway.
27 April	523500	3896500	Adult/ unknown	Moved 100 meters off roadway.
28 April	519031	3989950	Adult/ female	Observation – no action taken.
28 April	551050	3908500	Adult/ male	Moved 100 meters off dirt road.
02 May	512712	3915365	Adult/ male	Moved tortoise from military training maneuver to: 511689E, 3915472N.
07 May	558100	3904500	Adult/ unknown	Observation – no action taken.
08 May	528318	3891446	Adult/ unknown	Observation – no action taken.
08 May	511594	3890276	Adult/ male	Courtship observation – no action taken.
08 May	511594	3890276	Adult / female	Courtship observation – no action taken.
08 May	540300	3912300	Adult/ unknown	Observation – no action taken.
12 May	530500	3905500	Adult/ unknown	Removed from construction area – relocated to: 530300E, 3905300N
12 May	527037	3892732	Juvenile	Observation – no action taken.
12 May	526850	3891680	Juvenile	Observation – no action taken.
13 May	523500	3896500	Adult/ male	Moved 150 meters off roadway.
13 May	523200	3896400	Adult / unknown	Moved tortoise approx. 100 meters off Ft Irwin road.

21 May	511146	3890282	Adult/ male	Observation – no action taken.
31 May	529971	3915333	Adult / female	Animal was in a burrow in the roadbank of a busy MSR. Relocated to safe area near existing burrow at UTM: 519552E, 3899706N and released – boarded up roadway burrow after checking for eggs.
31 May	529971	3915333	Adult / male	Observation – no action taken: male was near female listed above.
29 May	525362	3892902	Juvenile	Recovered tortoise from military training maneuver and relocated near milkvetch cons. area at: 521754E, 3995375N.
01 June	514072	3894343	Adult/ unknown	Observed in burrow – no action taken.
01 June	511087	3893558	Adult / unknown	Moved 100 meters off dirt roadway.
02 June	529973	3915332	Adult / male	Recovered from military training maneuver. Relocated to: 519552E, 3899706N
04 June	551677	3929743	Adult/ male	Recovered from military training maneuver. Relocated to: 550288E, 3929334N
23 June	530928	3905448	Adult/ unknown	Observed in burrow – no action taken.
15 July	566855	3909688	Adult / unknown	Observed in burrow during routine survey – no action taken.
2 October	521213	3904314	Adult / male	Recovered from military training maneuver and relocated to 519633E, 3899549N.
19 October	522245	3903084	Adult /female	Observation – no action taken.

Listed below is a consecutive summary of all 2009 construction-related tortoise survey and monitoring efforts conducted within the original boundaries of Fort Irwin.

<u>Summary of 2009 Survey and Monitoring Efforts within the original boundaries of Fort Irwin</u>

- On March 17 and 18, 2009, an area was surveyed for a proposed road berm and the construction of several buildings on live fire range #16. A follow up survey was completed on September 24, 2009. No desert tortoises, species of special concern, or their sign were encountered during the survey. This area is heavily utilized for training and live fire and the habitat represents minimal suitability for desert tortoises.

- On May 12, 2009, an ITAM (Integrated Training Area Management) employee and a biologist surveyed three sites for proposed vegetation restoration projects within heavily used training areas of Ft. Irwin. No desert tortoises, sensitive species, or their sign were observed. Re-vegetation efforts should have a positive impact on wildlife use of these highly degraded areas.

- On May 20, 2009, biologists surveyed an area for a utility trench for the fiber optic network (FON) project. The area of the proposed trench was moderately disturbed and contained sparse vegetation. No desert tortoises, sensitive species, or their sign was observed in the planned utility pathway or while monitoring during trench digging and backfilling activities.

- On June 12, 2009, biologists surveyed an area near Medina Wasl, a training city within the Ft. Irwin training range. A 10 ft. x 10 ft. well is to be constructed, with a 50 ft. x 50 ft. impact area. This area, plus an additional 20 ft. buffer, was surveyed. The area has been highly disturbed due to military training activity. No desert tortoises, sensitive species, or their sign were observed during the survey. Tortoise monitors were deployed to conduct spot-checks during construction activity.

- On June 12, 2009, monitors surveyed final construction of the fiber optic network (FON) spur in the western expansion area. A 4,200 feet long trench 1.5 feet wide was dug and backfilled for a fiber optic cable. A monitor was on site daily during construction activity to check the trench and walk the area in front of groundbreaking activity. No desert tortoises, sensitive species, or their sign were observed in this route of construction.

- On June 9 and 10, 2009 biologists surveyed an area of a proposed main supply route (MSR) within the eastern expansion area of Ft. Irwin. The construction project consisted of additions to pre-existing roads. No tortoises or sensitive species were seen. Several burrows were found and GPS points were taken. Burrows did not appear active or in recent use by tortoises. Monitors were deployed during groundbreaking activity as needed.

- On June 16, 18, 22, 34, and July 1, 2009, biologists surveyed three firing ranges (17, 18, 18a) being updated for battle simulation training. This update included the construction of several new support structures such as latrines, towers, and a mess hall. One possible tortoise burrow was observed and marked with flagging and the location recorded with a handheld GPS unit. Another surveyed range contained a live tortoise in a burrow (details of observation in Table 1). No other observations of desert tortoises, sensitive species, or their sign were made. Construction on this project has been delayed and is not re-scheduled to resume until approximately June, 2010. When construction plans resume, clearance surveys will be repeated. If the previously-identified tortoise is observed a decision will be made whether to monitor or relocate this animal prior to ground disturbance.

- On June 24 and 25, 2009 biologists surveyed four sites that were proposed practice dig training sites. All four sites involved less than one square acre, combined. No desert tortoises or their sign were observed. No monitors were deployed during ground-breaking as this activity constituted a military training operation. All military personnel are briefed on use of areas containing sensitive species, endangered species and other wildlife and actions to take if a tortoise is encountered.

- On July 15, 2009, biologists surveyed three proposed borrow pit sites and one existing pit in the eastern expansion area (EEA). These pits were identified to serve as potential sources of fill to facilitate construction of a main supply route (MSR). One desert tortoise and one active burrow were noted within one of the proposed sites. To avoid disturbance of this tortoise, an alternate area was identified and surveyed on July 16. No other desert tortoises, sensitive species, or their sign were observed.

- On July 24, 2009, a biologist surveyed the perimeter of the Ammo Supply Point (ASP) for installation of solar perimeter lighting. The ASP is a fenced-in series of supply buildings surrounded by relatively undisturbed habitat. No desert tortoises, sensitive species, or their sign were sighted in the proposed construction area.

- On August 7, 2009, biologists surveyed land on either side of Fort Irwin Road immediately adjacent to the front security gate. Road upgrades are planned that will disturb both vegetated shoulders of the existing roadway. No tortoises, sensitive species, or their sign were observed. Biologists continued spot checking the project until its completion.

- On August 20 and 21, 2009, biologists surveyed Range 17 for scheduled improvements including road upgrades and target installations. One tortoise carcass, a juvenile consisting of mostly shell fragments, was seen in the vicinity of the proposed construction. No live desert tortoises, sensitive species, or other tortoise sign were sighted during the survey. Two tortoise sightings were previously documented within 1 km of the proposed upgrades. Therefore, monitors will be present as needed during ground-breaking activities associated with construction.

- On August 24, 2009, biologists surveyed a plot adjacent to forward operating base (FOB) Ackbar on Ft. Irwin. An existing berm is scheduled to be extended into the survey area. This survey area is highly disturbed and denuded due to heavy military training. No desert tortoises, sensitive species, or their sign were observed.

- September 10, 2009 through January 6, 2010 DPW biologists performed pre-construction surveys; daily monitoring; and/or spot checking as appropriate on four tortoise fencing projects in the Western Expansion Area and front security gate / tank gap area of Ft Irwin Road. The total length of fencing installed was approximately 25 km. Total area of ground disturbance associated with these projects was approximately 43 hectares. Tortoise sign encountered during the course of these projects included several unoccupied but good-condition tortoise burrows and one older (>1 yr) carcass. The burrows and carcass were encountered within approx. 20 meters of the project boundary. No live tortoises or other sign were encountered during the course of the four projects.

- From September 10, 2009 through January 6, 2010 biologists conducted a pre-construction clearance survey and construction monitoring during all phases of groundbreaking associated with a 200m x 200m tortoise disease enclosure in the WEA. A 30m x 900 m access road and an 80m x 50m equipment staging area were also cleared for the project. Several potential burrows and two live tortoises were encountered during the preconstruction clearance survey. One of the tortoises, a hatchling, was transferred to USGS (United States Geological Survey) tortoise research personnel. The other tortoise, an adult male, was a previously-identified, transmittered animal (ID# 5256). This tortoise was relocated by an authorized biologist to an area approximately 300 meters north of the project area near an existing burrow. This animal and several other transmittered tortoises in the vicinity were distance-monitored via radio telemetry to ensure that they remained clear of the project area (these animals were not approached – DPW biologists simply ensured monitored animals did not move into project activity) .

- On September 17, 2009 a report was compiled detailing the survey of a truck bypass road parallel to Fort Irwin Road. This bypass route is a 2 lane road approximately 3.5 miles long leading to the front security gate of Ft. Irwin. No desert tortoises, sensitive species, or their sign were encountered in a preconstruction survey of the area. Monitors walked the linear project daily and conducted checks beneath parked equipment during groundbreaking activities. Subsequent spot checks were conducted to monitor ongoing construction. No tortoises or sign were observed during these surveys.

- On October 27, 29, and November 2, 2009 biologists conducted a clearance survey of an existing road berm along the northern boundary of the western expansion area (WEA). This area is proposed as the site of a boundary fence approximately 19 km in length. Two potential and one confirmed burrow containing scat were observed during the survey. The burrows were deteriorated and were not occupied. The scat observed was not recent. No live desert tortoises were encountered, however; one carcass was documented just outside of the project area. Biologists were deployed daily to monitor the ongoing construction.

- On November 20, 2009, biologists surveyed an open lot within garrison before construction of a proposed barracks complex. This site is a small, degraded lot within the developed compound of Ft. Irwin and composed approximately 2 acres. No desert tortoises, sensitive species, or their sign were encountered during the survey. When construction begins, monitors will be deployed as necessary to monitor groundbreaking activity.

- On December 8, 2009, biologists surveyed the proposed route of a road upgrade at Medina Wasl village training site. The survey area is a linear 500 m x 1 km highly degraded area. No desert tortoises, sensitive species, or their sign were encountered during the survey. Monitors will be deployed to the construction zone as needed when groundbreaking activities ensue.

- On December 10, 2009, biologists surveyed an open lot within the Ft Irwin garrison. This lot will house a facility for hand-to-hand combat training. The surveyed area encompassed approximately 1 acre of degraded, heavily impacted habitat. No desert tortoises, sensitive species, or their sign were encountered during the survey. Monitors will be on site during construction phases expected to commence in 2010.

- On December 15, 2009, biologists surveyed a proposed fence route adjacent and parallel to Fort Irwin Road. This project will fill in an existing gap in tortoise fencing and is intended to prevent desert tortoises from entering the adjacent road. No desert tortoises, sensitive species, or their sign were encountered during the survey. Monitors were deployed during groundbreaking activity and conducted spot-checks until the project was completed.

- On December 18, 2009, biologists surveyed two small areas adjacent to FOB (forward operating base) Denver proposed for minor construction projects. The surveyed area is a heavily impacted training area containing highly degraded habitat. No desert tortoises, sensitive species, or their sign were encountered during the survey. Monitors will be on site as needed during construction phases.

No disturbance of lands occurred below the UTM 90 line as a result of training activities during this reporting period.

Biological Opinion # 1-8-00-F-78

Proposed Off-Road Vehicle Area, U.S. Army National Training Center, Fort Irwin, San Bernardino County, California

ABSTRACT
Each Federal agency shall insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation, to be critical, unless such agency has been granted an exemption. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available. Pursuant to a review of the current status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed Outdoor Recreation Vehicle (ORV) Area and the cumulative effects, the US Fish and Wildlife Service rendered a biological opinion. The Service stated in its opinion that the ORV Area, as proposed, is not likely to jeopardize the continued existence of the desert tortoise. The opinion further requires Fort Irwin submit an annual report summarizing compliance with NTC and Fort Irwin Regulation 350-3 detailing the amount of use occurring at the ORV Area, the types and occurrences of violations, such as breeches of the perimeter fence, and corrective measures taken to prevent further violations

INTRODUCTION
Fort Irwin established an ORV Area for military personnel and their dependents to use in their leisure time. There was no authorized area for this type of activity on Fort Irwin. As a result, some soldiers and/or their dependents used various areas of the installation for ORV activity. The Army does not condone this activity as it presents a safety hazard due to the lack of procedures to follow should an ORV rider not return at a designated time. The requirements for authorization of an ORV area are to have it located close to the base cantonment area, that it provide access to an emergency phone and that it have controlled access. The availability of a

single, officially sanctioned location for ORV use will ensure that other areas of the installation are not further damaged by this type of activity, thereby protecting the desert tortoise and other sensitive species. The established ORV Area is the only authorized area on post upon which this activity is allowed. Established in 2003, the ORV area encompasses approximately 70 acres. It is completely enclosed by triple strand smooth wire and tortoise proof fencing.

RESULTS

The Fort Irwin Recreation Center reported a total of eighty-two (82) users of the OHV area representing 36 calendar days of use during calendar year 2009. No desert tortoise encounters were reported within the boundaries of the OHV area. Following a mid-December rain event, the OHV perimeter tortoise fence was inspected by an authorized DPW biologist. Three areas of fence damage were documented during this inspection. One area of the fence line was undermined/washed out as a result of heavy surface water flow with damage in the other two areas consisting of sections of fence being broken away as a result of heavy sediment flow. These three locations were immediately repaired and a moderate-intensity survey for desert tortoise conducted to clear the area of tortoises that may have gained access to the ORV area through the fence breaks. No violations of the NTC and Fort Irwin Regulation 350-3 were reported or observed.

Biological Opinion # 1-8-03-F-48 and USFWS Permit # TE102235-4

Proposed Addition of Maneuver Training Lands at Fort Irwin, California

ABSTRACT

Each Federal agency shall insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation, to be critical, unless such agency has been granted an exemption. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available. Pursuant to submission of a biological assessment identifying the potential effects of military training activities on threatened, endangered and sensitive species, within the expansion areas, the US Fish and Wildlife Service rendered a biological opinion. The Service stated in its opinion that the effects of the addition of training lands at Fort Irwin is not likely to jeopardize the continued existence of the desert tortoise and Lane Mountain milk-vetch or to destroy or adversely modify critical habitat of the desert tortoise. The opinion further requires Fort Irwin submit an annual report summarizing:

1. details on each desert tortoise that is found dead or injured within the new training areas at Fort Irwin or at translocation sites
2. the location of each mortality, circumstances of the incident and any actions undertaken to prevent similar instances from occurring in the future
3. describe activities that the Army implemented or funded as part of its conservation program for the desert tortoise and Lane Mountain milk-vetch (activities related to translocation, the amount of road rehabilitation funded, land acquired, roads fenced, etc.) within habitat of the desert tortoise and Lane Mountain milk-vetch

4. describe actions taken during the year to prepare the new training lands for military exercise if the activities occurred in habitat of the desert tortoise and Lane Mountain milk-vetch
5. provide an evaluation of the protective measures implemented

INTRODUCTION

The National Training Center (NTC) and Fort Irwin Military Reservation in San Bernardino County, California, is used to train United States Army brigade-sized units in a realistic battlefield environment. Because of changes in training requirements caused by new equipment, technology and Army fighting doctrine, the facility was expanded by a congressional land withdrawal action in 2001 by approximately 110,000 acres (44,517 ha). Further refinements due to land surveys and GIS analysis of the boundary indicate the total land withdrawal area to be approximately 118,674 acres (48,027 ha). On January 11, 2002, President Bush signed the Fort Irwin Military Lands Withdrawal Act of 2001 into law withdrawing the requested lands for military training purposes. Since that time Fort Irwin has developed and implemented a desert tortoise translocation plan, set aside lands for desert tortoise and Lane Mountain milk-vetch conservation and implemented a number of long term studies addressing multiple aspects of desert tortoise and Lane Mountain milk-vetch demography. The eastern expansion area (EEA) was opened to training in 2008. The western and southern expansion areas (WEA and SEA, respectively) are not currently available for military training (pending completion of all mitigation requirements) and are being managed in a manner consistent with Bureau of Land Management desert wildlife management area protocols.

RESULTS

Summary information of desert tortoise mortalities for tortoises covered under this biological opinion and US Fish and Wildlife Permit # TE102235-4 is attached as Table 3. One-hundred-twenty-six (126) mortalities and fifty-two (52) injured tortoises were documented during 2009.

On May 26, 2009, following a significant wind event, DPW biologists visited the Fort Irwin Study Sit juvenile tortoise holding pens to conduct spring surveys for emerging juvenile tortoises and discovered the carcasses of twelve (12) tortoises depredated by one or more ravens that gained access to pens 2 and 3 (Table 2). Three holes in the fencing were discovered and immediately repaired with scrap wire. On May 27 and 28, 2009 biologists returned to the FISS pens with materials to repair all holes and tears in the fencing that could be located. At that time, an additional juvenile carcass, overlooked during the previous visit, was discovered in pen #3.

Beginning on June 16, 2009, a biologist visited the FISS pens bi-weekly to check for tortoises and assess need for continued repairs to the worn fences in pens 2 and 3. Shallow water pans were also filled during each visit in pens 1, 2 and 3. Pen 4 was broken down and relocated to a new site in the Western Expansion Area. Based on their worn condition, Pens 2 and 3 were thoroughly searched and all tortoises found moved to Pen 1. Pens 2 and 3 will no longer be used to house tortoises and will ultimately be torn down and materials disposed of.

Currently, of the fifty six (56) juvenile tortoises put in the FISS pens, there have been twenty three (23) confirmed mortalities with eighteen (18) confirmed by tortoise ID number and 5 confirmed with tortoise ID number unknown. Six (6) tortoises in the FISS pens are confirmed alive. Thirty two (32) tortoises in the FISS pens have a status of unknown but are presumed alive (Table 2).

Table 2. Last known status* and mortalities of tortoises in the FISS as of December 31, 2009

Tortoise ID#	Most Recent Entry Date	Previous Entry Date	FISS Plot #	Status
4017		26-Mar-07		Dead/unknown
4175		10-Apr-07		Status / location unknown
4187		15-Apr-08		Status / location unknown
4189		15-Apr-07		Status / location unknown
4345		22-Apr-07		Dead/unknown
4348		22-Apr-07		Dead/unknown
4350		22-Apr-07		Dead/unknown
4351		28-Apr-07		Dead/unknown
4355		20-Apr-07		Dead/unknown
4356		20-Apr-07		Dead/unknown
4357		2-May-07		Status / location unknown
4401		14-Apr-07		Dead/unknown
4412		15-Apr-08		Status / location unknown
4414		2-May-07		Status / location unknown
4439		12-May-07		Status / location unknown
4501	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4502		1-May-08	3	Unknown
4503		28-Sep-07		Status / location unknown
4509		30-May-07		Status / location unknown
4522	27-Mar-09	11-May-07	1	Foraging – good condition.
4523		11-May-07		Status / location unknown
4551		27-May-07		Status / location unknown
4562		27-May-07		Status / location unknown
4563	16-Jun-09	24-May-07	1	Foraging – good condition
4612		16-Apr-08		Status / location unknown
4618		18-Oct-07		Status / location unknown
4620		12-Oct-08		Status / location unknown
4631		18-Oct-07		Status / location unknown
4636	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4647		29-Sep-07		Status / location unknown
4648		29-Sep-07		Status / location unknown
4660		1-May-08	3	Unknown
4661	16-Jun-09	29-Sep-07		Foraging and drinking – good condition
4696		1-May-08	3	Unknown
4697		8-Oct-07		Dead/unknown; died at lab
4708		21-Dec-07		necropsy
4709		8-Oct-07		Split jaw; taken to vet; died
4718	Nov-09	7-Oct-07	1	Relocated to pen #1 from Pen #3
4725		1-May-08	3	Unknown
4733		12-Apr-08		Status / location unknown

4740	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4742		1-May-08	3	Unknown
4743	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4744		1-May-08	3	Unknown
4745	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4750		1-May-08	3	Unknown
4751		1-May-08	3	Unknown
4752	26-May-09	1-May-08	3	Mortality due to attack from raven inside enclosure.
4755		18-Oct-07		Status / location unknown
4757		16-Oct-07		Status / location unknown
5005	26-May-09	22-May-08	2	Mortality due to attack from raven inside enclosure.
5029		22-May-08	2	Unknown
5129	Nov-09	22-May-08	1	Relocated to pen #1 from Pen #2
5131	Nov-09	22-May-08	2	Relocated to pen #1 from pen #2
5480		14-Oct-09		Status / location unknown
5500		22-Oct-09		Status / location unknown

*Five (5) juvenile carcasses recovered during the raven predation incident were unmarked and/or scutes were missing. Therefore, up to five of the animals marked as status "Unknown" may by dead.

Western Expansion Area (WEA) fencing projects continued in 2009 in accordance with the approved Fencing Plan and July, 2006 Addendum (Calibre 2005). As of the end of December 2009, all fencing projects identified in the Plan have been completed.

In October, 2009, construction began on the 40,000 m^2 desert tortoise disease enclosure in the Western Expansion Area (Western Expansion Disease Enclosure, WEDE). The 225 m^2 round portable FISS enclosure (previously identified as FISS #4) was also relocated from the SEA to the WEA. Both of these facilities are undergoing final preparations for the expected receipt of adult tortoises (to the WEDE) and juveniles (FISS) in spring 2010.

Fort Irwin continues to resource the Bureau of Land Management (BLM), Barstow Field Office, to implement road closure activities in the West Mojave Land Management Planning Area. Additionally, Fort Irwin provides funding to resource two BLM law enforcement rangers to increase patrolling efforts to eliminate unauthorized activities in the southern expansion translocation area and western expansion translocation area protecting desert tortoise and Lane Mountain milk-vetch habitat.

Fort Irwin continued Lane Mountain milk-vetch survey efforts both in conservation areas on Fort Irwin and in the Coolgardie Mesa area on BLM lands. A report summarizing these activities is attached.

Reports outlining 2009 research activities, results, issues and recommendations for each research project associated with the Fort Irwin desert tortoise translocation effort are attached as appendices. 2009 reports include:

1. The Health Status of Translocated Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area and Surrounding Release Plots, San Bernardino County, California: Year 2
2. The Health Status of Desert Tortoises (*Gopherus agassizii*) in the Western Expansion Area, San Bernardino County, California: 2008 and 2009
3. An Evaluation of Desert Tortoises (*Gopherus agassizii*) and Their Habitats at 47 Sample Plots in the Western Expansion Translocation Area, Fort Irwin Translocation Project, San Bernardino County, California
4. Health Status of Desert Tortoises (*Gopherus agassizii*) Remaining within Ft. Irwin's Southern Expansion Area in 2009: Recommendations for Disposition
5. An Annual Report for the Fort Irwin Desert Tortoise Translocation Project, Evaluation of Physiological Stress on Translocated Desert Tortoise
6. Desert Tortoise Homing Behavior Research Activities in Support of the Fort Irwin National Training Center Expansion Project
7. Comparing Translocation Methods and Effectiveness for Desert Tortoises at Fort Irwin, a Comprehensive Study: 2009 Report

Table 3.

tort_id	sex	mcl	freq	trans_end	date	easting	northing	area	team	treatment	location	status	ause of Dea	ma ELISA	mt_ELISA	PCR	Culture	Test as of Date	Clinical Signs	CS as of Date	Comments	
1	M	266	165.690	7-Oct-12	16-Dec-09	528146	3887351	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	25-Sep-06				
2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
3	M	262	164.701	1-May-11	16-Dec-09	527505	3888177	SEA	ITS_Research	Translocated	SD			neg	neg	n/a	neg	3-Oct-06				
4	M	276	166.024	7-Oct-12	17-Dec-09	527259	3887133	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	9-Oct-06				
5	M	266	168.335	12-Oct-10	16-Dec-09	528378	3886456	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
6	M	280	162.663	20-Apr-10	17-Dec-09	526720	3887772	SEA	ITS_Research	Resident	SD			neg	neg	n/a	n/a	3-Oct-06				
8	F	210			25-Apr-07	527236	3887237	SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	n/a	25-Sep-06			canid	
9	F	206			12-Nov-07			SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	n/a	25-Sep-06			canid	
11	M	273	167.142	28-Apr-10	7-Dec-09	524280	3870673	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	24-May-08				
13	M	240	163.942	20-Apr-10	17-Dec-09	527376	3887481	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	27-Sep-06				
14	M	264	165.763	6-Oct-12	17-Dec-09	527033	3886961	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	25-Sep-06				
15	M	264	165.465	5-Oct-12	16-Dec-09	527615	3887707	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	26-Sep-06				
16	F	222	168.873	13-Oct-10	16-Dec-09	527445	3887859	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	27-Sep-06				
18	F	257	163.253	17-Oct-10	4-Jan-09	527803	3887464	SEA	ITS_Research	Resident	SD	missing		neg	neg	n/a	neg	26-Sep-06				
19	M	248	167.381	28-Apr-10	16-Dec-09	527713	3887755	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-May-07				
20	F	240	167.393	10-Apr-10	17-Dec-09	526964	3887594	SEA	ITS_Research	Translocated	SD			neg	neg	n/a	neg	28-Sep-06				
21	F	193			6-Jun-09	527877	3888075	SEA	ITS_Research	Resident	SD	missing		neg	neg	n/a	neg	3-Oct-06				
22	M	266	165.464	7-Mar-10	4-Dec-09	521192	3869003	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	23-May-08				
25	M	277			4-Jan-09	527731	3888070	SEA	ITS_Research	Translocated	SD	dead		neg	neg	n/a	neg	29-Sep-06				
26	M	226	163.102	10-Apr-11	17-Dec-09	526930	3888137	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	28-Sep-06				
28	F	233	168.913	13-Oct-10	17-Dec-09	526949	3888085	SEA	ITS_Research	Translocated	SD			neg	neg	n/a	neg	29-Sep-06				
29	F	234			29-Mar-09	527827	3887551	SEA	ITS_Research	Translocated	SD	dead		neg	neg	n/a	neg	18-May-07				
30	M	272	167.862	30-Mar-12	16-Dec-09	527445	3887857	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	26-Sep-06				
31	F	235	165.830	2-Mar-09	2-Mar-07	527632	3887761	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	27-Sep-06				
32	M	198	168.272	21-Oct-10	17-Dec-09	526960	3883115	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	27-Sep-06			MISSING 2-14-08	
33	F	238	164.751	28-Mar-11	16-Dec-09	528299	3887742	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	22-Oct-07				
34	M	270			4-Jan-09	528709	3887685	SEA	ITS_Research	Resident	SD	dead		neg	neg	n/a	neg	24-Sep-06				
35	M	274	167.461	13-Oct-11	6-Dec-09	526839	3888689	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	28-Apr-08				
36	F	251	165.023	14-Oct-10	16-Dec-09	528649	3887550	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	3-Oct-06			MISSING 2-14-08	
37	M	254			21-Sep-08	527378	3887993	SEA	ITS_Research	Resident	SD	dead		neg	neg	n/a	neg	3-Oct-06			DEAD 9-21-08	
39	M	284	168.722	9-Nov-11	17-Dec-09	526797	3887619	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	27-Sep-06				
40	F	244			11-Sep-08	527412	3887947	SEA	ITS_Research	Translocated	SD	dead		neg	neg	n/a	neg	3-Oct-06			DEAD 5-26-08	
42	M	278	167.360	28-Apr-10	16-Dec-09	528543	3887701	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	19-May-07				
43	F	240	163.492	4-Jul-10	16-Dec-09	528534	3887705	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	20-May-07				
44	M	240			27-Dec-08	526490	3888176	SEA	ITS_Research	Resident	SD	dead		neg	neg	n/a	neg	8-Oct-06				
45	F	252	168.112	12-Oct-10	4-Jan-09	528328	3887226	SEA	ITS_Research	Resident	SD	missing		neg	neg	n/a	neg	3-Oct-06				
46	F	217			4-May-08	529588	388988	SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	3-Oct-06			unknown	
47	M	265	165.957	5-Oct-12	16-Dec-09	526484	3888385	SEA	ITS_Research	Translocated	SD			neg	neg		neg	18-May-07			MISSING 5-26-08	
55	M	274	12-Jun-00		Mar 5 2008	537922	3880072	SEA	USGS_Stress	Resident	8	dead	canid	neg	neg	n/a	neg	3-Oct-07			Tortoise on back at edge of wash. Some flesh present. Unsure if killed by predation. Pictures taken.	
728	Imm	115			Jul 28 2006	521272	3868998	SEA	USGS_Stress	Native	Minneola	dead										
793	F	237	15-Jun-00		Jun 5 2008	509702	3888182	SEA	USGS_Stress	Control	1.5			neg	neg	no data	no data	1-Oct-08				
890	M	285	11-Jun-00		Aug 11 2008	526203	3888812	SEA	USGS_Health	Monthly	SEA	necropsy	necropsy	neg	pos	n/a	neg	2-Jun-08	exudate from both	2-Jun-08	necropsy	
2001	M	265	166.322	17-Oct-11	1-Dec-09	543193	3882234	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	10-Oct-06				
2002	F	215	167.812	18-Oct-10	1-Dec-09	545111	3882353	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	10-Oct-06				
2003	M	252	164.342	4-Oct-08	26-Jan-09			SEA	USGS Health	translocated	5	missing		neg	neg	n/a	neg	26-Sep-08				
2004	F	228			2-Nov-09	521100	3874369	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	10-Oct-06				
2005	M	245			2-Oct-08	521937	3871953	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	10-Oct-06				
2006	M	234			11-Feb-09	532411	3888850	SEA	ITS	Monthly	SEA	missing		neg	neg	n/a	neg	10-Oct-06			Found xmitter no tortoise	canid marks on xmitter
2007	M	279	164.400	14-Aug-11	8-Dec-09	514497	3878005	SEA	USGS Health	translocated	5			neg	neg	neg	neg	24-Oct-09	Ma suspect spring 08		Re-sample in Sept/Oct 2008	
2008	M	271	165.627	7-Oct-12	5-Dec-09	542148	3877358	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	10-Oct-06				
2009	F	232	12-Jun-00		Mar 28 2008			SEA	USGS_Health	Translocated	8	dead	canid	neg	neg	n/a	neg	10-Oct-06			canid	
2010	M	250			23-Oct-08	521815	3870570	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	16-Oct-06				
2011	M	252			26-Sep-07			SEA	ITS	Monthly	SEA	dead	unk	neg	neg		neg	31-May-07			unknown	
2012	M	272			10-Nov-08	520487	3873409	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	10-Oct-06				
2013	M	271	167.102	5-Oct-12	1-Dec-09	546362	3883377	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	15-Oct-06				
2014	M	248	163.624	8-Oct-12	5-Dec-09	543227	3876847	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	15-Oct-06				
2015	F	224			15-Oct-07			SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	neg	15-Oct-06			canid	
2018	M	182			9-Apr-08	549597	3886615	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	7-Jun-07			Released without transmitter	
2019	M	265	166.770	8-Oct-11	4-Dec-09	512993	3886420	SEA	USGS Health	translocated	1.5			neg	neg	n/a	neg	20-Oct-09	between nares mixed	30-Apr-08		
2020	M	253			5-Jan-09	542994	3877128	SEA	ITS_Research	Translocated	13	dead		neg	neg	n/a	neg	10-Oct-06				
2021	F	198	168.853	18-Oct-10	10-Dec-09	539838	3876343	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	10-Oct-06				
2022	F	207			31-Oct-09	520351	3873262	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	15-Oct-06				
2023	M	267	165.149	9-Oct-09	22-Apr-09	23-Sep-94	3882348	SEA	USGS Health	translocated	3	dead		neg	sus			20-Sep-08			Located carcass	
2024	M	256			10-Sep-09	543613	3877410	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	15-Oct-06			Released without transmitter	
2025	M	266	165.315	5-Oct-12	11-Dec-09	536380	3885138	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	13-Oct-06				
2026	F	240	166.481	22-Oct-10	4-Dec-09	511480	3886146	SEA	USGS Health	translocated	1.5			neg	neg	neg	neg	23-Oct-09				
2027	M	266			9-Apr-08	549297	3886755	SEA	ITS	Translocated	10	xmtr removed		neg	neg		neg	6-Jun-07			Released without transmitter	
2028	F	222	166.009	6-Apr-11	5-Dec-09	541806	3877303	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	20-Oct-06				
2029	M	297			5-Aug-08	541435	3876471	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	16-Oct-06			Released without transmitter	
2030	F	247	163.032	12-Apr-11	5-Dec-09	542553	3877243	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	16-Oct-06				
2031	M	216			7-Jan-09	537161	3880639	SEA	ITS_Research	Translocated	13	dead		neg	neg	n/a	neg	16-Oct-06				
2032	F	232			7-Jan-09	543888	3877418	SEA	ITS_Research	Translocated	13	dead		neg	neg	n/a	neg	16-Oct-06				
2033	M	246	12-Jun-00		Mar 26 2008	533440	3887383	SEA	USGS_Health	Translocated	3			neg	neg	n/a	neg	18-Oct-06	removed for surgeries;			
2034	M	234	12-Jun-00		Jun 18 2008	516571	3876049	SEA	USGS_Stress	Translocated	5	dead	other	neg	neg	n/a	neg	3-Oct-07				
2035	F	226	12-Jun-00		Jul 10 2008	519469	3876152	SEA	USGS_Stress	Translocated	5	dead		neg	neg	n/a	neg	3-Oct-07			Injured by coyotes,but released back in desert	
2036	F	220			9-Jul-08	530879	3886845	SEA	ITS	Monthly	SEA	xmtr removed		neg	neg	n/a	neg	13-Oct-06			xmtr removed	
2037	M	288			13-Jan-08	533496	3887222	SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	5-Nov-07				
2038	F	214	166.505	22-Oct-10	22-Sep-09	511381	3887015	SEA	USGS Health	translocated	1.5	dead		neg	neg	n/a	neg	27-Apr-09			Located carcass	
2039	F	216	166.618	20-Oct-10	8-Dec-09	537230	3879756	SEA	USGS Health	translocated	8			neg	neg	neg	neg	1-May-09	discolored face	3-May-08		
2040	M	268	164.268	18-Aug-11	8-Dec-09	537094	3881032	SEA	USGS Health	translocated	8			pos	neg	neg	neg	17-Oct-09			95B:5L, 0.7 5B:95L	
2041	F	226	12-Jun-00		Oct 15 2006	534355	3887901	SEA	USGS_Stress	Translocated	1.5	dead		neg	neg	n/a	neg	3-Oct-07				
2042	F	229	12-Jun-00		Jun 18 2008	512847	3886406	SEA	USGS_Stress	Translocated	1.5			neg	neg	n/a	neg	3-Oct-07				
2043	M	241	165.514	7-Oct-12	10-Dec-09	540521	3877645	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	16-Oct-06				
2044	M	237	13-Jun-00	8-Oct-11	Feb 14 2008	515880	3885503	SEA	USGS_Health	Translocated	1.5			neg	neg	neg	neg	20-Oct-09			95B:5L, 0.7 5B:95L	
2045	M	267	164.101	7-Oct-12	16-Dec-09	528736	3886732	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	19-Oct-06				
2046	M	270	164.364	5-Oct-12	16-Dec-09	528953	3887422	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	19-Oct-06	y face, eye edema.	5-Apr-08		
2047	M	270	14-Jun-00		May 16 2008			SEA	USGS_Health	Monthly	SEA	dead	canid	neg	neg		neg	23-Apr-08			canid	
2048	F	231	167.291	30-Sep-10	16-Dec-09	528748	3887700	SEA	ITS_Research	Translocated	SD			neg	neg		neg	19-May-07				
2049	F	260	168.472	5-Apr-11	11-Dec-09	537207	3879037	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	19-Oct-06				
2050	M	291			4-Jan-09	528647	3887840	SEA	ITS_Research	Translocated	SD	dead		neg	neg	n/a	neg	19-Oct-06				
2051	F	223			4-Jan-09	529137	3887678	SEA	ITS_Research	Translocated	SD	missing		neg	neg	n/a	neg	20-Oct-06				
2052	M	283			19-Sep-07	528666	3887962	SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	20-Oct-06			unknown	
2053	F	227	167.751	31-Mar-11	4-Dec-09	549061	3884687	SEA	ITS_Research	Translocated	10			neg	neg		neg	17-May-07				
2054	unk	177			4-Jan-09	528313	3887408	SEA	ITS_Research	Resident	SD	missing		neg	neg		neg	5-Jun-07				
2242	M	268	167.352	20-Apr-10	16-Dec-09	526521	3888675	SEA	ITS_Research	Translocated	SD			neg	neg		neg	1-Jun-07				
2244	M	288	166.662	unknown	9-Dec-09	523030	3888496	SEA	USGS Health	translocated	SEA			neg	neg	neg	neg	7-Oct-09			B70:L30	
2418	M	264	13-Jun-00		Jun 18 2008	512674	3885415	SEA	USGS_Stress	Translocated	1.5			neg	pos			5-May-08				
2519	M	271	165.449	17-Oct-12	14-Nov-09	531409	3888277	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	29-Apr-08				
2520	M	186			27-Mar-09	544280	3882621	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	15-Oct-06			Released without transmitter	
2521	M	263			6-Apr-08	543487	3876614	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	13-Oct-06			Released without transmitter	
2522	M	274			6-Apr-08	543508	3876408	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	13-Oct-06			Released without transmitter	
2523	F	224	167.612	12-Oct-10	2-Dec-09	546994	3886462	SEA	ITS_Research	Translocated	10			neg	neg		neg	27-May-07				
2524	F	239			6-May-08	528176	3887615	SEA	ITS_Research	Resident	SD	dead		neg	neg		neg	20-May-07			DEAD 5-6-08	
2525	M	242	167.043	18-Oct-10	2-Dec-09	544651	3887981	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	6-Jun-07				
2526	M	266			15-Sep-09	543146	3878213	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	6-Jun-07			Released without transmitter	
2527	M	276			3-Jul-08	532213	3886726	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	6-Jun-07			xmtr removed	
2528	M	268	13-Jun-00		May 7 2008			SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	13-Oct-06			canid	
2529	M	244			3-Jul-08	532530	3886875	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	17-Oct-06			xmtr removed	
2530	F	202			3-Jul-08	532854	3886903	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	17-Oct-06			xmtr removed	
2531	M	223			4-Apr-08	532324	3886810	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	27-Sep-07			Released without transmitter	
2532	F	218	166.504	19-Oct-10	8-Dec-09	537009	3880239	SEA	USGS Health	translocated	8			neg	neg	neg		17-Oct-09	mild nare erosion.	3-May-08	B50:L50	
2533	M	260	166.126	12-Oct-09	13-Aug-09	511978	3886839	SEA	USGS Health	translocated	1.5	dead		neg	pos	neg	neg	27-Apr-09			Located carcass	
2534	M	268	166.869	13-Aug-11	4-Dec-09	510392	3880636	SEA	USGS Health	translocated	3			neg	neg	neg	neg	25-Oct-09	nare, dried mucus in L	12-May-08		
2535	F	235	166.167	12-Oct-08	7-Jan-09			SEA	USGS Health	translocated	3	missing		neg	neg	n/a	neg	12-May-08				
2536	F	220	166.381	16-Oct-10	8-Dec-09	516961	3877135	SEA	USGS Health	translocated	5			neg	neg	neg		21-Oct-09				
2537	M	273			4-Apr-08	533487	3886900	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	14-Oct-06			Released without transmitter	
2538	M	236	168.672	14-Apr-11	2-Dec-09	555068	3891034	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	17-Oct-06				
2539	M	242			26-Mar-08	533088	3887629	SEA	ITS	Monthly	SEA	missing		neg	neg		neg	26-May-07			transmitter found no tortoise	
2540	M	245	166.980	18-Oct-10	8-Dec-09	537264	3881822	SEA	USGS Health	translocated	8			neg	neg	neg	neg	20-Oct-09	5/01/2008			
2541	M	251			4-Apr-08	533891	3886713	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	14-Oct-06			Released without transmitter	
2542	unk	192	163.532	5-Oct-11	17-Dec-09	541618	3890053	SEA	ITS_Research	Translocated	10	tracked by SD		neg	neg	n/a	neg	30-Sep-07				
2543	M	282	167.116	17-Oct-12	14-Nov-09	533368	3888301	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	2-Jun-08				
2544	M	251	164.902	7-Oct-12	2-Dec-09	547997	3887133	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	20-Oct-06				
2545	F	245	167.972	1-Apr-11	10-Dec-09	538373	3875209	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	15-Oct-06				
2546	M	256			2-Apr-08	541952	3881696	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	3-Jun-07			Released without transmitter	
2547	F	233	167.634	12-Oct-10	9-Dec-09	520930	3874232	SEA	ITS_Research	Translocated	6			neg	neg		neg	2-Jun-07				
2548	M	183			2-Apr-08	541840	3881863	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	16-Oct-06			Released without transmitter	
2549	F	202			8-Jul-08	521700	3871001	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	17-Oct-06				
2550	F	211	166.422	17-Oct-10	23-Sep-09	517921	3877531	SEA	USGS Health	translocated	5	dead		neg	neg	neg	neg	29-Apr-09			50B:50L	Located carcass
2551	Juv	156			16-Apr-08	520266	3871471	SEA	ITS	Translocated	6	xmtr removed		neg	neg	n/a	neg	17-Oct-07			Released without transmitter	
2552	F	224	164.313	3-Apr-10	27-Nov-08	522784	3871459	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	18-Oct-06				
2553	F	225			14-Feb-08	530254	3888229	SEA	ITS	Monthly	SEA	missing		neg	neg	n/a	neg	16-Oct-06			transmitter found no tortoise	
2554	M	268			3-Jan-09	549105	3884436	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	17-Oct-06				
2555	M	250			10-Dec-08	530157	3888228	SEA	ITS	Monthly	SEA	dead		neg	neg		neg	22-Oct-07				
2556	M	259			4-Apr-08	530146	3887118	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	17-Oct-06			Released without transmitter	
2557	F	206	166.648	21-Oct-10	4-May-09	13-Nov-90	3879723	SEA	USGS Health	translocated	3	dead		neg	sus			21-Sep-08	in both eyes 25%	12-May-08	Located carcass	
2558	M	232			2-Apr-08	541813	3881765	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	19-Oct-06			Released without transmitter	
2559	F	259	166.992	15-Oct-10	2-Dec-09	548101	3887876	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	19-Oct-06				
2560	M	281			2-Apr-08	541957	3881796	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	19-Oct-06			Released without transmitter	
2561	F	220			18-Oct-06	529593	3888105	SEA	ITS	Monthly	SEA	necropsy		neg	neg	n/a	neg	19-Oct-06			necropsy	
2562	F	235			25-Mar-08			SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	neg	19-Oct-06			canid	
2563	F	229			6-Jul-08	529867	3887219	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	19-Oct-06				
2564	M	250			6-Jul-08	529728	3887115	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	19-Oct-06				
2565	M	270	165.371	21-Jul-11	2-Dec-09	546655	3886750	SEA	ITS_Research	Translocated	10			neg	neg		neg	19-May-07				
2566	M	274	164.468	18-Oct-08	9-Jan-09			SEA	USGS Health	translocated	5	missing		neg	neg		neg	8-May-08	both eyes moderately bulging and nare erosion.	8-May-08		

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
2567	unk	174			6-Jul-08	529618	3887393	SEA	ITS	Native	STA	xmtr removed		neg	neg		neg	21-May-07				
2568	M	286			4-Jul-08	529866	3887262	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	19-Oct-06				
2569	M	261			23-Oct-08	529506	3887445	SEA	ITS	Monthly	SEA	dead		neg	neg		neg	19-May-07				
2570	M	275	168.121	8-Aug-10				SEA	ITS	Monthly	SEA										found 2570 on mannix north of but near cattle guard,Returning to relocation site; returned to SEA again, retransmittered	
					6-Dec-09	529784	3887872							neg	neg		neg	18-May-07				
2571	M	243			3-Jan-09	542372	3877416	SEA	ITS_Research	Translocated	13	dead		neg	neg		neg	21-May-07				
2572	M	213	168.294	18-Oct-10	3-Dec-09	548634	3885632	SEA	ITS_Research	Translocated	10			neg	neg		neg	17-May-07				
2573	Juv	119			16-Apr-08	520060	3871797	SEA	ITS	Translocated	6	xmtr removed		neg	neg	n/a	neg	19-Oct-07			Released without transmitter	
2574	F	243	12-Jun-00		Jul 14 2008			SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	neg	11-May-08	nare erosion.	11-May-08	canid	
2624	F	232			Jun 4 2009			SEA			36			neg	neg	neg		4-Jun-09				
2625	M	287	163.882	28-Sep-10	17-Dec-09	524678	3886809	SEA	ITS_Research	Control	SD			neg	pos			22-Oct-08				
2801	M	246			2-Apr-08	541812	3881950	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	15-Oct-06			Released without transmitter	
2802	M	254			2-Apr-08	542218	3882229	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	5-Nov-07			Released without transmitter	
2806	F	216	14-Jun-00		Feb 16 2008	535074	3887583	SEA	USGS_Health	Translocated	8	missing		neg	neg	n/a	neg	16-Oct-06				
2807	M	255			4-Apr-08	532708	3886844	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	17-Oct-06			Released without transmitter	
3001	F	232	13-Jun-00		Apr 8 2008	522181	3866117	SEA	USGS_Stress	Control	Minneola	dead	unknown	neg	sus	n/a	neg	2-Oct-07			\"Tortoise found dead. Flesh was still present, but was extremely dried out. Shell was hollow. Transmitter removed by B. Jacobs. No obvious signs of predation on carapace.\"	
3002	F	217	12-Jun-00		Jan 14 2008	522419	3865647	SEA	USGS_Stress	Control	Minneola	dead	canid	neg	neg	n/a	neg	2-Oct-07			Was found upside down with fore and hind limbs missing to elbows. 15 Jan 08: B. Jacobs took pictures. Tortoise intact except for limbs. No visible damage to exterior.	
3003	M	236	14-Jun-00		Jun 3 2008	522566	3864931	SEA	USGS_Stress	Control	Minneola	dead		neg	neg	n/a	neg	31-May-05				
3004	F	230	14-Jun-00		Jan 14 2008	519596	3866959	SEA	USGS_Stress	Control	Minneola	dead	natural	neg	neg	n/a	neg	2-Oct-07			found upside down	
3005	M	279	14-Jun-00		Jun 2 2008	510027	3887297	SEA	USGS_Stress	Control	1.5			neg	neg	n/a	neg	26-Sep-06				
3006	F	207	14-Jun-00		May 5 2008	508690	3886521	SEA	USGS_Stress	Resident	1.5	dead	canid	neg	neg	n/a	neg	2-Oct-07			Found dead. carapace was cleaned out. signs of predation.	
3007	F	241	10-Jun-00		Jun 2 2008	511344	3885254	SEA	USGS_Stress	Control	1.5	dead		neg	neg	n/a	neg	1-Oct-05				
3008	F	229	14-Jun-00		Feb 13 2008	513493	3879432	SEA	USGS_Stress	Control	North of 4	lost		neg	neg	n/a	neg	2-Oct-07			only found the transmitter, probably dead	
3009	M	211	10-Jun-00		Jun 3 2008	518512	3881296	SEA	USGS_Stress	Control	Motherlode	dead	canid	neg	neg	n/a	neg	1-Oct-05			Mortality due to depredation; transmitter damaged and has teeth marks; found dead with canid teeth marks on shell and head removed	
3010	F	246	164.433	2-Apr-11	10-Dec-09	540116	3877092	SEA	ITS_Research	Control	13			neg	neg	n/a	neg	25-Sep-05				
3011	F	216	14-Jun-00		Apr 3 2008	518451	3882108	SEA	USGS_Stress	Control	Motherlode	dead	natural	neg	neg	n/a	neg	2-Oct-07			Tortoise was found dead. Tortoise apparently flipped itself on back and died in this position. There was fresh saliva on face and small pool under head. Time of death was fairly recent. Eyes were missing but rest of carcass	
3012	M	290	14-Jun-00		Jun 4 2008	545163	3883469	SEA	USGS_Stress	Control	Powerline			neg	neg	n/a	neg	4-Oct-07				
3013	F	214	12-Jun-00		Jun 4 2008	532797	3886438	SEA	USGS_Stress	Control	STA	dead		neg	neg	n/a	neg	3-Oct-07				
3014	F	233			1-Oct-06	546782	3877365	SEA	ITS	Control	Field Road	necropsy		neg	neg	n/a	neg	23-Sep-06			Nephropathy, myodegeneration, arteriosclerosis, vascular mineralization	
3015	M	288	15-Jun-00		Jun 4 2008	548851	3888586	SEA	USGS_Stress	Control	Afton Rd/Powerline			neg	neg	n/a	neg	4-Oct-07				
3016	M	263			14-Apr-09	542751	3880741	SEA	ITS	Native	Powerline	xmtr removed		neg	neg	n/a	neg	25-Sep-05			Old Stress animal, passed to ITS. Xmtr removed animal not used in any projects	
3017	F	222	14-Jun-00		Aug 11 2006	554082	3880069	SEA	USGS_Stress	Control	Afton Road	dead	canid	neg	neg	n/a	neg	27-Sep-05			Found 1.8km from last known location & 250m from Afton Canyon Road in BLM Afton Canyon.One unbroken egg & shell fragments inside empty shell.Front right & left marginals, Nuchal & gular-chipped to the bone, possible	
3018	F	240	14-Jun-00		Jun 4 2008	553443	3882205	SEA	USGS_Stress	Control	Afton Rd	dead	canid	neg	neg	n/a	neg	4-Oct-07				
3019	F	194	14-Jun-00		Mar 5 2008	549580	3885355	SEA	USGS_Stress	Resident	10	xmtr removed		neg	neg	n/a	neg	4-Oct-07				
3020	M	295	14-Jun-00		Mar 5 2008	539846	3876335	SEA	USGS_Stress	Control	Field Road	xmtr removed		neg	neg	n/a	neg	3-Oct-07				
3021	M	251	15-Jun-00		Jun 2 2008	512031	3884705	SEA	USGS_Stress	Control	2			neg	neg	n/a	neg	1-Oct-05				
3022	F	235	13-Jun-00		Jun 3 2008	527459	3876764	SEA	USGS_Stress	Control	Monastery			neg	neg	n/a	neg	4-Oct-07				
3023	M	253			26-Jun-08	533941	3884908	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	24-Sep-05			Old stress animal, passed to ITS	
3024	M	203			Jul 15 2008	519451	3870144	SEA	USGS_Stress	Resident	6	dead	canid	neg	neg	n/a	neg	2-Oct-07			Transferred to ITS in January 2008, however USGS-Henderson found tortoise dead.	
3025	M	235	14-Jun-00		Jun 4 2008	522842	3866119	SEA	USGS_Stress	Control	Minneola	dead		neg	pos?	n/a	neg	7-May-08				
3026	F	216	13-Jun-00		Jul 9 2007	523238	3867101	SEA	USGS_Stress	Control	Minneola	dead	natural	neg	neg	n/a	neg	27-Sep-05				
3027	M	256	14-Jun-00		Jun 4 2008	522569	3866831	SEA	USGS_Stress	Control	Minneola	dead		neg	neg	n/a	neg	23-Sep-06				
3028	F	200	12-Jun-00		Jun 30 2008	523288	3864844	SEA	USGS_Stress	Control	Minneola	dead	canid	neg	neg	n/a	neg	2-Nov-07			found with head and limbs missing	
3029	F	229	13-Jun-00		Jan 14 2008	522785	3866440	SEA	USGS_Stress	Control	Minneola	dead	canid	neg	neg	n/a	neg	2-Oct-07			Dead and scattered all over area of approximately 15 m. Shell and plastron shattered. Transmitter found damaged. 15 Jan 08: B. Jacobs took pictures.	
3030	F	253	163.590	1-Apr-11	1-Dec-09	542704	3881428	SEA	ITS_Research	Control	10			neg	neg	n/a	neg	25-Sep-05				
3031	M	270			26-Jun-08	546850	3877334	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	23-Sep-06				
3032	F	201			Sep 3 2008	512048	3882102	SEA	USGS_Stress	Control	3	dead	canid	neg	neg	n/a	neg	25-Sep-06				
3033	M	217	13-Jun-00		Jun 4 2008	546226	3877061	SEA	USGS_Stress	Control	Fiberoptic Road			neg	neg	n/a	neg	4-Oct-07				
3034	M	263	13-Jun-00		Mar 6 2008	520910	3869012	SEA	USGS_Stress	Control	Minneola			neg	neg	n/a	neg	2-Oct-07				
3035	M	264	13-Jun-00		Jun 2 2008	513245	3889743	SEA	USGS_Stress	Control	1			neg	neg	n/a	neg	2-Oct-07				
3036	F	218	12-Jun-00		Apr 3 2008	509792	3880830	SEA	USGS_Stress	Resident	3	dead	canid	neg	neg	n/a	neg	2-Oct-07			Tortoise was found dead. tortoise appears to have been dead a long time. transmitter was found a few feet from carcass. there were teeth marks on transmitter suggesting possible predation. rear legs appear to have been	
3037	M	234	165.362	unknown	18-Mar-09	3-Oct-06	3877435	SEA	USGS Health	translocated	4	dead		neg	neg	n/a	neg	25-Sep-08			Located carcass	
3038	F	218			26-Mar-08	513428	3877544	SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	1-Oct-05				
3039	F	214			Sep 19 2006	513364	3876722	SEA	USGS_Stress	Native	STA											
3040	unk	169	167.471	8-Oct-11	5-Dec-09	541208	3877101	SEA	ITS_Research	Translocated	13			neg	neg		neg	17-May-07				
3042	F	242			27-Jun-08	545809	3879529	SEA	ITS	Native	STA	remove transmitter		neg	neg	n/a	neg	9-Oct-06			Old Stress animal, passed to ITS	
3046	F	230			Aug 8 2007	522804	3865446	SEA	USGS_Stress	Control	Minneola	necropsy	necropsy	neg	neg	n/a	neg	1-Jun-05			Hind limb paralysis, fecal impaction, hepatic atrophy	
3047	M	223	14-Jun-00		Jan 15 2008	513414	3879184	SEA	USGS_Stress	Control	north of 4	dead	unknown	neg	neg	n/a	neg	2-Oct-07			"Tortoise upside down. Carapace cracked open, but few pieces in area. Little flesh present. Pictures Taken."	
3048	M	270	166.009	5-Feb-08	30-Nov-08	548795	3886640	SEA	ITS	Native	STA			neg	neg	n/a	neg	23-Sep-06			Old Stress animal, passed to ITS	
3049	M	228	14-Jun-00		Jun 2 2008	511141	3881779	SEA	USGS_Stress	Control	3	dead		neg	neg	n/a	neg	6-May-08				
3050	M	268	12-Jun-00		Jun 3 2008	518675	3876644	SEA	USGS_Stress	Resident	5			neg	neg	n/a	neg	28-Sep-05				
3051	M	274	10-Jun-00		Jun 4 2008	520145	3876762	SEA	USGS_Stress	Resident	5	dead		neg	neg	n/a	neg	28-Sep-05				
3052	M	249	14-Jun-00		Mar 5 2008	529204	3881849	SEA	USGS_Stress	Resident	7			neg	neg	n/a	neg	3-Oct-07				
3057	M	270	163.171	25-Apr-11	3-Dec-09	548061	3885547	SEA	ITS_Research	Resident	10											
3058	F	216	12-Jun-00		Jun 4 2008	548363	3887088	SEA	USGS_Stress	Control	Afton Rd/Powerline	dead		pos	neg	n/a	neg	7-May-08				
3059	M	277	12-Jun-00		Jun 2 2008	505639	3878841	SEA	USGS_Stress	Control	West of 3	dead		neg	neg	n/a	neg	2-Oct-07				
3060	M	196	14-Jun-00		Nov 6 2007	506278	3878466	SEA	USGS_Stress	Control	west of 3	dead	canid	neg	neg			2-Oct-07				
3061	F	198	14-Jun-00		Mar 28 2008	511847	3880987	SEA	USGS_Stress	Control	east of 3	lost		neg	neg	n/a	neg	25-Sep-06				
3062	M	265			10-May-09	545263	3879206	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	PENDING	27-Sep-05			Old Stress animal, passed to ITS	
3063	M	256	14-Jun-00		Jan 16 2008	532746	3886473	SEA	USGS_Stress	Control	STA	dead	unknown	neg	neg	n/a	neg	3-Oct-07				
3064	M	245			2-May-09	532527	3887048	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	24-Sep-05			Released without transmitter	
3065	Juv	96			Jun 23 2005	513396	3879120	SEA	USGS_Stress	Native	STA											
3066	M	200	13-Jun-00		Jun 4 2008	553082	3881325	SEA	USGS_Stress	Control	Afton Rd			neg	neg	n/a	neg	27-Sep-05				
3067	M	190	14-Jun-00		Jan 15 2008	512938	3877984	SEA	USGS_Stress	Control	north of 4	dead	unknown	neg	neg	n/a	neg	2-Oct-07			Carapace broken apart. No flesh left. Dent in transmitter. 1.5km from last known loc.	
3068	M	285			13-Feb-08	512542	3877760	SEA	ITS	Native	4	dead		pos	neg	n/a	neg	6-Nov-07				
3069	F	227	163.431	1-Apr-11	1-Dec-09	546287	3885215	SEA	ITS_Research	Control	10			neg	neg	n/a	neg	6-Nov-07				
3070	M	269	10-Jun-00		Jun 30 2008	537416	3879271	SEA	USGS_Stress	Resident	8	dead	canid	neg	neg	n/a	neg	21-Sep-06			found with intact shell but missing head	
3071	F	227	14-Jun-00		Jun 4 2008	536534	3878647	SEA	USGS_Stress	Resident	8	dead		neg	neg	n/a	neg	3-Oct-07				
3072	M	286			Aug 23 2005	513414	3877010	SEA	USGS_Stress	Native	STA											
3073	M	224			Sep 7 2005	522249	3865954	SEA	USGS_Stress	Native	STA											
3074	unk				Sep 12 2005	529005	3881993	SEA	USGS_Stress	Native	7											
3075	M	279			22-Aug-09	544292	3882623	SEA	ITS	Native	Powerline	xmtr removed		neg	neg	n/a	neg	22-Sep-06			Old Stress animal, passed to ITS	
3076	unk				Sep 13 2005	529124	3882207	SEA	USGS_Stress	Native	7											
3077	F	232			27-Jul-08	520594	3873389	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	19-May-08			DEAD 7-27-08	
3078	M	234	166.341		4-Oct-06	510657	3883747	SEA	ITS	Resident	2			neg	neg	n/a	neg	3-Jun-05				
3079	M	268	14-Jun-00		Jun 3 2008	511468	3884081	SEA	USGS_Stress	Control	2	dead		neg	sus			6-May-08				
3080	F	222	16-Jun-00		Feb 12 2008	512105	3884896	SEA	USGS_Stress	Control	1.5	lost		neg	neg	n/a	neg	30-Sep-05				
3081	M	206	14-Jun-00		Jun 2 2008	511962	3883658	SEA	USGS_Stress	Control	2			neg	neg	n/a	neg	2-Oct-07				
3082	F	223	14-Jun-00		May 23 2008	509624	3880096	SEA	USGS_Health	Resident	3	dead	canid	neg	neg	n/a	neg	29-Sep-05			canid; not a USGS-Health torotises, USGS-Health found this tortoise dead	
3083	M	258	14-Jun-00		Jun 3 2008	509177	3879946	SEA	USGS_Stress	Resident	3	dead		neg	Pos to neg	n/a	neg	6-May-08				
3084	F	190			Sep 7 2005	522738	3865037	SEA	USGS_Health	Native	Minneola			neg	neg	n/a	neg	31-May-05				
3085	M	266			Sep 27 2005	522869	3865201	SEA	USGS_Health	Native	Minneola			neg	neg	n/a	neg	27-Sep-05				
3086	F	230			May 31 2005	521938	3866016	SEA	USGS_Health	Native	Minneola			neg	neg	n/a	neg	31-May-05				
3087	M	261			Sep 27 2005	522926	3867137	SEA	USGS_Health	Native	Minneola			neg	neg		PENDING	27-Sep-05				
3088	F	205			Jun 1 2005	522005	3866021	SEA	USGS_Health	Native	Minneola			neg	neg	n/a	neg	1-Jun-05				
3089	F	224	13-Jun-00		Jun 2 2008	511908	3889462	SEA	USGS_Stress	Control	1			sus to neg	neg	n/a	neg	5-May-08				
3090	M	283	164.942	21-Apr-10	16-Dec-09	515500	3876224	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	2-Jun-05				
3091	F	240	12-Jun-00		Jun 2 2008	513247	3889438	SEA	USGS_Stress	Control	1			neg	neg	n/a	neg	2-Oct-07				
3092	M	271	12-Jun-00		Feb 1 2006	513227	3890291	SEA	USGS_Stress	Native	STA	lost		neg	neg	n/a	neg	2-Jun-05			Transmitter fell off animal in June 2005	
3093	M	278	15-Jun-00		Jun 2 2008	512125	3889196	SEA	USGS_Stress	Control	1			pos to neg	neg	n/a	neg	5-May-08				
3094	M	256	12-Jun-00		Feb 12 2008	512270	3883139	SEA	USGS_Stress	Control	2	dead	unknown	neg	neg	n/a	neg	2-Oct-07				
3095	F	230	12-Jun-00		Apr 3 2008	509509	3880646	SEA	USGS_Stress	Resident	3	dead	canid	neg	neg	n/a	neg	2-Oct-07			Tortoise was found dead. there is evidence of predation.	
3096	M	244	166.676		27-Oct-06	512380	3883589	SEA	ITS	Resident	2			neg	neg	n/a	neg	3-Jun-05				
3097	M	221	14-Jun-00		Oct 2 2007	509197	3880074	SEA	USGS_Stress	Resident	3	dead	canid	neg	neg	n/a	neg	24-Sep-06			Stress animal.Transmitter found at 059197, 3880074.Carcass found ~30 m away at 0509215,3880073 along with several scute pieces. Pictures taken.Appeared carcass had been chewed upon by a predator (possibly	
3098	F	214	14-Jun-00		May 5 2008	508533	3879771	SEA	USGS_Stress	Resident	3	dead	canid	neg	neg	n/a	neg	2-Oct-07			Tortoise found dead. On back, limbs gone. Flesh remains.	
3099	F	256	13-Jun-00		Jun 2 2008	513226	3890290	SEA	USGS_Stress	Control	1			neg	neg	n/a	neg	26-Apr-08				
3100	M	253			26-Apr-07	513212	3890568	SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	19-Sep-06			Transmitter chewed off tort. The scute the transmitter was on was damaged apparently when it came off. We have no previous info on this animal as we assumed responsibility for it 16apr2007 from USGS.	
3101	F	216			Mar 28 2008	509009	3881081	SEA	USGS_Stress	Resident	3	dead	unknown	neg	neg	n/a	neg	5-Nov-07				
3102	F	235			23-Jul-08	518762	3871794	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	23-May-08	nares, some occular	23-May-08	DEAD 7-23-08	
3103	M	228	15-Jun-00		Apr 2 2008	511522	3883201	SEA	USGS_Stress	Control	2	dead	canid	sus	neg	n/a	neg	2-Oct-07			Tortoise was found dead. Appears to have been dead for a long time. Evidence of predation (antenna was chewed on).	
3104	F	220			Aug 14 2008	510650	3883779	SEA	USGS_Stress	Control	2	dead	canid	sus	neg	n/a	neg	2-Oct-07			Animal was not involved in 2008 stress research. Unable able to locate tortoise until this date since taking over this animal from ITS.	
3105	F	227			May 31 2005	522497	3866546	SEA	USGS_Health	Native	Minneola			neg	neg	n/a	neg	31-May-05				
3106	F	189			Jun 6 2005	513947	3877256	SEA	USGS_Health	Native	4			neg	neg	n/a	neg	6-Jun-05				
3107	F	234	12-Jun-00		Feb 12 2008	513352	3877027	SEA	USGS_Stress	Resident	4	dead	unknown	neg	neg	n/a	neg	2-Oct-07			Was found deceased 3 meters from a burrow. Upright with some flesh remaining. No evidence of predation.	
3108	M	287	14-Jun-00		Jun 3 2008	510022	3880312	SEA	USGS_Stress	Resident	3			neg	sus to neg	n/a	neg	6-May-08				
3109	M	250	12-Jun-00		Jun 13 2008	508808	3880004	SEA	USGS_Stress	Resident	3			neg	sus	n/a	neg	6-May-08				
3110	F	210	13-Jun-00		Jan 15 2008	512696	3877290	SEA	USGS_Stress	Resident	4	dead	canid	neg	neg	n/a	neg	2-Oct-07			Deceased. Plastron and side scutes intact, top of shell ripped away and found scattered (w/ transmitter) approx. 3 m to the side.	
3111	M	252	164.263	2-Apr-12	18-Dec-09	512127	3890855	WEA	ITS	Monthly	WEA			sus	neg	neg	neg	22-Oct-09			Old Stress animal, passed to ITS	
3112	M	240			26-Jun-08	529062	3881266	SEA	ITS	Native	7	xmtr removed		neg	neg	n/a	neg	2-Oct-06			Old Stress animal, passed to ITS	
3113	M	217	14-Jun-00		Jan 14 2008	528851	3881464	SEA	USGS_Stress	Resident	7	dead	unknown	neg	neg	n/a	neg	3-Oct-07			Found transmitter under Latr. Approx. 300 m from last known location. Multiple bite marks. No sign of tortoise in area. Burrow at last location looked partially collapsed.	
3114	F	259			16-Jan-09	529147	3882550	SEA	ITS	Resident	7	xmtr removed		neg	neg			1-Jun-08			Old Stress animal, passed to ITS	
3115	F	175			Jun 22 2005	512356	3883260	SEA	USGS_Stress	Native	STA											
3116	M	261	166.450	8-Feb-08	14-Jul-08	526302	3883421	SEA	ITS	Native	Mannix			neg	neg	n/a	neg	1-Jun-08			Old Stress animal, passed to ITS	
3117	M	269	13-Jun-00		Jun 4 2008	549711	3887648	SEA	USGS_Stress	Control	Afton Rd/Powerline			neg	neg	n/a	neg	4-Oct-07				
3118	Imm	126			Jul 12 2005	511586	3885019	SEA	USGS_Stress	Native	STA											
3119	M	250			Aug 1 2005	523179	3865371	SEA	USGS_Stress	Native	STA											
3120	M	257			26-Jun-08	529579	3881456	SEA	ITS	Native	7	xmtr removed		neg	neg	n/a	neg	23-Sep-05			Old Stress animal, passed to ITS	
3121	M	243			Jul 19 2005	523195	3865223	SEA	USGS_Stress	Native	STA											
3122	Imm	155			Jul 21 2005	530716	3878508	SEA	USGS_Stress	Native	STA											
3124	M	272	165.401	unknown	16-Jun-09			SEA	USGS Health	translocated	7	missing		neg	neg	neg	neg	30-Apr-09				
3124	M	270		30-Apr-10	17-Oct-06	527701	3883822	SEA	ITS	Control	Mannix	xmtr removed		neg	neg	n/a	neg	2-Oct-07				
3125	M	261	14-Jun-00		Jun 2 2008	512745	3879299	SEA	USGS_Stress	Control	North of 4	dead		neg	neg	n/a	neg	2-Oct-07				
3126	F	201			Aug 5 2008	512844	3880166	SEA	USGS_Stress	Control	North of 4	dead	canid	neg	neg	n/a	neg	2-Oct-07				
3127	M	275	164.322	21-Oct-12	10-Dec-09	540112	3877148	SEA	ITS_Research	Control	13			neg	neg	n/a	neg	25-Sep-05				
3128	M	265	15-Jun-00		Apr 3 2008	508112	3880193		USGS_Stress	Resident	3	dead	canid	neg	neg	n/a	neg	2-Oct-07			Found dead in wash. Shell intact. Gnaw marks on transmitter.	
3129	F	229	12-Jun-00		Apr 29 2008	512955	3878094		USGS_Health	Resident	4	dead	canid	neg	neg	n/a	neg	5-Nov-07			canid	
3130	M	216			Jun 5 2005	512856	3877230		USGS Stress	Native	4			neg	neg	n/a	neg	5-Jun-05				
3132	F	222	164.136	unknown	14-May-09	20-Jul-04	3876626	SEA	USGS Health	translocated	4	dead		neg	neg	n/a	neg	21-Sep-06			Old Stress animal, passed to ITS	Located carcass
3134	M	228			13-Feb-08	513449	3877348	SEA	ITS	Native	4	dead		neg	neg	n/a	neg	29-Sep-05			teethmarks on shell	
3136	M	257			Jun 5 2005	512748	3879298		USGS_Health	Native	Calico			neg	neg	n/a	neg	5-Jun-05				
3137	M	246	167.048	7-Feb-08	22-Dec-07	513094	3876975	SEA	ITS	Native	4	xmtr needs popped		neg	neg	n/a	neg	5-Jun-05			Old Stress animal, passed to ITS	
3138	F	223	12-Jun-00		Jun 5 2006	513339	3876977		USGS_Health	Resident	4			neg	neg	n/a	neg	6-Jun-05				
3139	M	273	163.333	30-Apr-11	3-Dec-09	548404	3886447	SEA	ITS_Research	Resident	10											
3140	M	262	12-Jun-00		Jun 3 2008	519698	3876509		USGS_Stress	Resident	5	Injured		neg	neg	n/a	neg	7-Jun-05			Injured by coyotes and released back in desert in October 2006	
3141	M	231	13-Jun-00		Jun 3 2008	519658	3876194		USGS_Stress	Resident	5	Injured	canid	neg	neg	n/a	neg	2-Oct-07			Injured by coyotes and released back in desert in October 2006	
3142	M	207			Jul 16 2008	520550	3871179		USGS_Stress	Resident	6	dead	canid	neg	neg	n/a	neg	2-Oct-07				

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06			
3146	M	234			Sep 3 2008	520013	3877302		USGS_Stress	Resident	5	dead	canid	neg	neg	n/a	neg	20-Sep-06			Posterior portion of plastron had been ripped away, no flesh was remaining.
3147	F	220	165.792	2-Aug-10	2-Dec-09	549100	3889233	SEA	ITS_Research	control	10			neg	neg	n/a	neg	21-Sep-06			
3148	M	269			5-Jul-08	549469	3888195	SEA	ITS	Native	Afton powerline	xmtr removed		neg	neg	n/a	neg	21-Sep-06			Old Stess animal, passed to ITS
3149	M	240			31-Mar-08	548160	3886857	SEA	ITS	Native	Afton powerline	missing		neg	neg	n/a	neg	21-Sep-06			Old Stress animal, passed to ITS. Found chewed up transmitter.
3151	M	255	12-Jun-00		Jun 3 2008	517948	3875970		USGS_Stress	Resident	5	dead		neg	neg	n/a	neg	2-Oct-07			
3152	F	231			Jun 5 2007	513084	3883414		USGS_Stress	Native	2										
3154	M	214			Jun 8 2006	550096	3883757		USGS_Stress	Native	10										
3157	F	212			May 18 2006	522910	3865673		USGS_Stress	Native	Minneola										
3159	F	224			26-Mar-08	513232	3876995	SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	6-Jun-05			
3160	F	207	13-Jun-00		Mar 4 2008	520553	3871795		USGS_Stress	Resident	6	xmtr removed		neg	neg	n/a	neg	2-Oct-07			
3161	M	245			25-May-08	513301	3877180	SEA	ITS	Native	4	dead		neg	neg	n/a	neg	29-Sep-05			Both femurs broken, gnaw marks on transmitter.
3162	M	266			May 10 2007	510884	3883600		USGS_Stress	Native	2										
3163	M	240	11-Jun-00		Jun 3 2008	518108	3876955		USGS_Stress	Resident	5	dead		neg	neg	n/a	neg	7-Jun-05			
3164	F	221			Jun 1 2006	510104	3886621		USGS_Stress	Native	1.5										
3165	M	244			1-Oct-09	520842	3871160	SEA	ITS_Research	Resident	6	dead		neg	neg	n/a	neg	8-Jun-05			
3166	F	187			Jun 7 2005	519014	3876772		USGS_Health	Native	5			neg	neg	n/a	neg	7-Jun-05			
3167	M	267			Apr 5 2007	545925	3878297		USGS_Stress	Native	STA										
3168	F	229			Sep 3 2008	518907	3876668		USGS_Stress	Resident	5	dead	other	neg	neg	n/a	neg	2-Oct-07			Plastron had been ripped away from carapace. Observed large carnivore teeth marks on edges of carapace and plastron.
3169	F	218			Jun 12 2006	511658	3889966		USGS_Stress	Native	1										
3170	F	228	13-Jun-00		Jun 4 2008	545990	3879458		USGS_Stress	Control	Field Road	dead	canid	neg	neg	n/a	neg	3-Oct-07			
3171	M	250	12-Jun-00		Jun 2 2008	511670	3887896		USGS_Stress	Control	1.5			neg	neg	n/a	neg	20-Sep-06			
3172	F	187			Aug 5 2005	513568	3876847		USGS_Health	Native	4			neg	neg	n/a	neg	6-Jun-05			
3173	M	230			Sep 28 2005	514017	3877909		USGS_Health	Native	Calico			neg	sus	n/a	neg				
3174	F	195	165.758	10-Mar-07	31-Oct-06	519712	3876419	SEA	ITS	Resident	5			neg	neg	n/a	neg	7-Jun-05			Old Stress animal, passed to ITS.
3175	F	220	14-Jun-00		Jul 2 2008	517889	3876737		USGS_Stress	Resident	5	dead	canid	neg	neg	n/a	neg	28-Sep-05			found with a cleaned out shell; red ants in cavitiy of shell; only hind limbs remain
3176	F	216			Sep 20 2005	513387	3879331		USGS_Stress	Native	STA										
3177	M	247	12-Jun-00		Jun 3 2008	518150	3876412		USGS_Stress	Resident	5		canid	neg	neg	n/a	neg	21-Sep-06			
3178	M	229	11-Jun-00		Jun 3 2008	518089	3876577		USGS_Stress	Resident	5			neg	neg	n/a	neg	7-Jun-05			
3180	F	244	164.003	30-Mar-11	16-Dec-09	527960	3887659	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-07			
3182	Juv	54			Jun 2 2006	511730	3884937		USGS_Stress	Native	1.5										
3183	M	236			Apr 3 2007	519348	3866795		USGS_Stress	Native	Minneola										
3184	M	244	165.155	8-Oct-11	8-Dec-09	520633	3872088	SEA	USGS Health	translocated	6			neg	neg	n/a	neg	24-Oct-09	nares.	16-May-08	
3185	M	211	13-Jun-00		Mar 5 2008	517753	3871530		USGS_Stress	Resident	6			neg	neg	n/a	neg	2-Oct-07			
3186	M	245	164.283	29-Apr-12	6-Dec-09	527943	3886924	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	23-Sep-07			
3188	M	236	165.789	26-Mar-10	15-Sep-09	528297	3887401	SEA	ITS_Research	Resident	SD	missing		neg	neg	n/a	neg	23-Sep-07			
3189	F	236	167.935	13-Oct-10	16-Dec-09	527612	3887021	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	23-Sep-07			
3190	M	208			May 18 2006	519451	3871532		USGS_Stress	Native	3										
3191	M	263			Jun 8 2006	542488	3881325		USGS_Stress	Native	Powerline										
3198	M	270			May 10 2007	510885	3883603		USGS_Stress	Native	2										
3199	M	281			May 10 2007	510533	3883481		USGS_Stress	Native	2										
3200	F	210			May 10 2007	510614	3883444		USGS_Stress	Native	2										
3201	F	221	12-Jun-00		Apr 2 2008	510789	3883895		USGS_Stress	Control	2	dead	canid	neg	neg	n/a	neg	2-Oct-07			Tort found deceased. Transmitter collected. Pictures taken. Looks like it was eaten very recently. Wet blood on ground near by.
3202	F	211	163.092	21-Apr-09	23-Oct-09	512816	3890243	WEA	ITS	Monthly	WEA	missing		neg	neg	neg	neg	22-Oct-09			
3203	M	253	14-Jun-00		Aug 7 2007	537607	3879390		USGS_Stress	Resident	8			neg	neg	n/a	neg	21-Sep-06			
3204	M	286	14-Jun-00		Jun 4 2008	531894	3878552		USGS_Stress	Resident	BTW 7 & 8			neg	neg	n/a	neg	3-Oct-07			
3205	M	245			Oct 19 2009						8			neg	neg			19-Oct-09			
3207	F	254			Oct 25 2009						3			neg	neg			25-Oct-09			
3208	M	271			26-Aug-09	542705	3881358	SEA	ITS	Resident	Powerline	xmtr removed		neg	neg	n/a	neg	15-May-08		15-May-08	
3211	M	266			Aug 15 2005	512293	3890815		USGS_Stress	Native	STA										
3213	M	273	12-Jun-00		Jun 5 2008	532138	3878711		USGS_Stress	Control	BTW 7 & 8			neg	neg	n/a	neg	8-Oct-06			
3217	M	247			Aug 6 2008	514243	3885157		USGS_Stress	Control	1.5	dead	canid	pos to neg	neg	n/a	neg	5-May-08			
3218	M	258	12-Jun-00		Jun 2 2008	512868	3887016		USGS_Stress	Resident	1.5			neg	neg	n/a	neg	2-Oct-07			
3219	M	257	14-Jun-00		Oct 4 2007	553809	3882806		USGS_Stress	Control	Afton rd; Powerline	dead	canid	neg	neg	n/a	neg	25-Sep-05			
3220	F	237	12-Jun-00		Jun 3 2008	532217	3878638		USGS_Stress	Control	BTW 7 & 8			neg	neg	n/a	neg	3-Oct-07			
3222	M	242			Sep 2 2008	518513	3882047		USGS_Stress	Control	Motherlode	dead	unknown	neg	neg	n/a	neg	2-Oct-07			
3223	M	252			10-Jan-09	520449	3872776	SEA	ITS_Research	Resident	6	dead		neg	neg	n/a	neg	28-Sep-05			
3224	M	276	164.623	12-Oct-11	8-Dec-09	520866	3872780	SEA	ITS_Research	Resident	6			neg	neg	n/a	neg	20-Sep-06			
3225	F	197	13-Jun-00		Mar 3 2008	509919	3878181		USGS_Stress	Resident	3	dead	canid	neg	pos	n/a	neg	5-Nov-07			tortoise was found dead 2.5 km from last location [across 3 hills and ft. irwin road]. only transmitter, blood and a couple of scutes were located.
3226	M	247			9-Jul-08	543019	3880750	SEA	ITS	Native	Powerline	xmtr removed		neg	neg	n/a	neg	30-Sep-05			Old Stress animal, passed to ITS. Transmitter removed.
3227	M	292			18-Jul-08	545866	3879830	SEA	ITS	Native	STA	xmtr removed		neg	neg	n/a	neg	25-Sep-05			Old Stress animal, passed to ITS. Transmitter removed.
3228	M	265	15-Jun-00		Jun 4 2008	553866	3882163		USGS_Stress	Control	Afton Rd			neg	neg	n/a	neg	27-Sep-05			
3229	F	233	12-Jun-00		Feb 11 2008	543895	3882361		USGS_Stress	Control	powerline	dead	canid	pos	sus	n/a	neg	4-Nov-07			Deceased. Broken, scatterd scutes. Broken egg found nearby.
3230	M	210	13-Jun-00		Jun 2 2008	512427	3885864		USGS_Stress	Resident	1.5	dead		neg	neg	n/a	neg	2-Oct-07			
3231	Imm	144			Aug 18 2005	519685	3866841		USGS_Stress	Native	STA										
3232	Imm	120			Aug 19 2005	516525	3869140		USGS_Stress	Native	STA										
3233	Imm	156			Aug 19 2005	516571	3869334		USGS_Stress	Native	STA										
3234	M	252	12-Jun-00		Jun 2 2008	513836	3887413		USGS_Stress	Control	1.5			neg	neg	n/a	neg	19-Sep-06			
3235	M	263			29-Sep-09	549214	3885391	SEA	ITS	Native	10	xmtr removed		neg	neg	n/a	neg	26-Sep-05			Apparently alive and being tracked
3236	F	211	14-Jun-00		Jun 2 2008	512632	3886966		USGS_Stress	Resident	1.5			neg	neg	n/a	neg	2-Oct-07			
3237	M	256	12-Jun-00		Apr 3 2008	517992	3882339		USGS_Stress	Control	Motherloade	dead		neg	neg	n/a	neg	29-Sep-05			Injured by coyotes and released back in desert in October 2008
3238	M	264			Sep 7 2005	523034	3866124		USGS_Stress	Native	STA										
3239	F	217			Aug 25 2006	522583	3866894		USGS_Stress	Native	Trans minneola										
3240	F	219			Sep 7 2005	522709	3865964		USGS_Stress	Native	STA										
3241	F	257	14-Jun-00		Jun 4 2008	537688	3879424		USGS_Stress	Resident	8			neg	neg	n/a	neg	3-Oct-07			
3242	F	231	10-Jun-00		Mar 31 2008	511142	3881352		USGS_Stress	Control	east of 3	dead	Unknown	neg	neg	n/a	neg	25-Sep-06			
3243	M	210			Sep 7 2005	522594	3866068		USGS_Stress	Native	STA										
3244	M	276			17-Nov-07	529156	3883868	SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	2-Oct-06			Tortoise remaining forelimb looks emaciated. Is it because it's dried out or?...
3245	F	225			Sep 9 2005	520112	3876895		USGS_Stress	Native	5										
3255	M	228			Sep 22 2006	540916	3877079		USGS_Stress	Native	Field Road										
3258	M	280			Oct 12 2006	522180	3866066		USGS_Stress	Native	Minneola										
3259	M	262			Sep 18 2006	542687	3881383		USGS_Stress	Native	Powerline										
3260	M	231			Sep 15 2006	519282	3866754		USGS_Stress	Native	6										
3261	F	237			Oct 2 2006	510121	3886837		USGS_Stress	Native	b/t 1+2										
3264	M	239			Sep 22 2006	546688	3876740		USGS_Stress	Native	Fiber Optic										
3265	M	282			Sep 7 2006	513204	3889410		USGS_Stress	Native	1										
3266	M	253			Sep 7 2007	537338	3879138		USGS_Stress	Native	8										
3267	F	222			May 8 2007	554097	3883889		USGS_Stress	Native	Afton Road										
3269	F				Jul 9 2007	519287	3866721		USGS_Stress	Native	Minneola										
3270	M	257	163.691	29-Sep-11	18-Dec-09	511135	3890791	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09			
3271	M	253			Aug 10 2006	512394	3879497		USGS_Stress	Native	N of 4										
3272	M	260			Aug 8 2006	511815	3889501		USGS_Stress	Native	1										
3275	Imm	155			Sep 20 2005	509715	3881048		USGS_Stress	Native	STA										
3276	M	277			May 3 2007	508765	3879831		USGS_Stress	Native	3										
3277	M	244			Sep 13 2006	517913	3871517		USGS_Stress	Native	6										
3279	M	286			Sep 11 2006	508574	3879830		USGS_Stress	Native	3										
3280	F	213			Aug 24 2006	513506	3877642		USGS_Stress	Native	4										
3281	F	241	12-Jun-00		Mar 5 2008	548966	3885431		USGS_Stress	Resident	10	xmtr removed		neg	neg	n/a	neg	4-Oct-07			
3282	M	259			18-Sep-08	549587	3885382	SEA	ITS_Research	Resident	10	dead		neg	neg	n/a	neg	22-Sep-06			DEAD 9-18-08
3283	M	265	14-Jun-00		Jun 2 2008	510917	3884997		USGS_Stress	Control	1.5			neg	sus	no data	no data	1-Oct-08			
3285	M	275	13-Jun-00		Mar 5 2008	549408	3885408		USGS_Stress	Resident	10	xmtr removed		neg	neg	n/a	neg	4-Oct-07			
3286	M	262			17-Sep-08	548111	3886568	SEA	ITS_Research	Resident	10	dead		neg	neg	n/a	neg	22-Sep-06			DEAD 9-17-08
3287	F	223	15-Jun-00		Mar 4 2008	549348	3885223		USGS_Stress	Resident	10	xmtr removed		neg	neg	n/a	neg	4-Oct-07			
3288	F	259	12-Jun-00		Mar 4 2008	549609	3884703		USGS_Stress	Resident	10	xmtr removed		neg	neg	n/a	neg	4-Oct-07			
3289	Imm	131			Sep 7 2006	512619	3886936		USGS_Stress	Native	b/t 1 + 2										
3290	F	227			Aug 16 2006	510137	3886201		USGS_Stress	Native	N of 2										
3291	F	201	163.489	3-Apr-11	10-Dec-09	545832	3878245	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	26-Sep-07			
3292	M	244	165.883	6-Apr-10	11-Dec-09	540159	3883287	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	17-Oct-06			
3293	Imm	150			Jul 20 2006	511587	3881355		USGS_Stress	Native	b/t 2+3										
3294	Imm	144			Jul 20 2006	510006	3881079		USGS_Stress	Native	3										
3296	F	201			Sep 8 2006	512424	3885868		USGS_Stress	Native	b/t 1+2										
3297	F	193			Aug 22 2006	518105	3876564		USGS_Stress	Native	5										
3298	F	237	13-Jun-00		Oct 8 2006	537582	3888066		USGS_Stress	Translocated	8	dead	canid	neg	neg	n/a	neg	3-Oct-07			
3299	M	222	166.523	28-Mar-08	28-Mar-08	513878	3894236	WEA	ITS	Monthly	WEA	missing									
3300	M	221	14-Jun-00		Jun 2 2008	513465	3889584		USGS_Stress	Control	1			neg	neg	n/a	neg	2-Oct-07			
3301	M	252	165.927	5-Oct-12	8-Dec-09	520528	3871893	SEA	ITS_Research	Resident	6			neg	neg			23-May-08			
3302	F	212			26-Jul-08	520119	3872105	SEA	ITS_Research	Resident	6	dead		neg	neg			22-May-08			DEAD 7-26-08
3303	F	222	167.023	22-Sep-10	8-Dec-09	520153	3872091	SEA	ITS_Research	Resident	6			neg	neg			20-May-08	around nares, mld.	20-May-08	
3304	F	233	167.419	22-Sep-10	12-Feb-08	519961	3869483	SEA	ITS_Research	Control	6	missing		no data	no data	no data	no data	no data	tortoise		
3306	F	236	168.991	23-Apr-11	8-Dec-09	519911	3872451	SEA	ITS_Research	Resident	6			neg	neg			20-May-08			
3307	M	233			13-Feb-08	520010	3871304	SEA	ITS	Resident	6	dead									
3308	M	253	12-Jun-00		Oct 7 2008	553141	3888417		ITS	Native	11	monthly		neg	neg			8-Oct-08			
3309	M	237	15-Jun-00		Oct 8 2008	554198	3886902		ITS	Native	11	monthly		neg	neg			20/8/2008			
3311	F	230	167.592	29-Sep-09	29-May-07	520992	3890430	SEA	ITS	Monthly	SEA										
3312	F	236	162.052	10-Apr-10	3-Dec-09	549639	3885756	SEA	ITS_Research	Resident	10			neg	neg			29-May-08	scales missing around	29-May-08	
3313	F	239			19-Jan-08	548329	3885664	SEA	ITS_Research	Resident	10	dead									DEAD 1-19-08
3314	M	262	165.011	6-Oct-11	3-Dec-09	548573	3886491	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3318	M	242	167.501	29-Sep-10	29-May-07	520992	3890430	SEA	ITS	Monthly	SEA										
3319	F	229	162.521	23-Sep-10	3-Dec-09	549098	3886188	SEA	ITS_Research	Resident	10			neg	neg			27-May-08	mucus in both eyes.	27-May-08	
3320	M	272	162.702	23-Sep-10	3-Dec-09	548933	3885902	SEA	ITS_Research	Resident	10			neg	neg			25-May-08			
3321	M	269	163.722	24-Apr-10	16-Dec-09	528389	3887608	SEA	ITS_Research	Resident	SD			neg	neg		neg	20-May-07			
3322	M	222			22-Apr-09	554158	3889179	SEA	ITS	Native	12.5	xmtr removed		neg	neg			9-Oct-08			
3323	M	214			22-Apr-09	553846	3890729	SEA	ITS	Native	12.5	xmtr removed		neg	neg			9-Oct-08			
3324	M	271			21-Apr-09	554215	3888358	SEA	ITS	Native	11	xmtr removed		neg	neg			9-Oct-08			
3325	F	272	166.611	10-Oct-10	5-Dec-09	541100	3876371	SEA	ITS_Research	Resident	13										
3326	F	233	168.073	14-Oct-10	9-Dec-09	522761	3874442	SEA	ITS_Research	Control	6										
3327	M	255	166.423	13-Oct-11	5-Dec-09	541818	3876186	SEA	ITS_Research	Resident	13										
3366	F	296	11-Jun-00		Jun 4 2008	518556	3881304		USGS_Stress	Control	Motherload	dead	canid								
3381	M	264	12-Jun-00		Jul 14 2008	525589	3886599		USGS_Health	Resident	Short Distance	necropsy	necropsy	neg	pos	n/a	neg	2-Jun-08			
3382	F	223	168.815	25-Sep-09	4-Oct-08	525210	3886870	SEA	ITS_Research	Control	SD			neg	sus			11-Jun-08			
3392	M	277	162.301	9-Oct-10	10-Dec-09	538898	3876600	SEA	ITS_Research	Control	13			neg	neg			30-May-08			
3398	F	229	165.442	26-Sep-10	16-Jan-09	529986	3883104	SEA	ITS	Resident	7			neg	neg			3-Jun-08			
3399	F	245			6-Jan-09	539883	3876746	SEA	ITS_Research	Control	13	dead		neg	neg			30-May-08			Female per Woodman tx 6/18/08
3400	F	245	167.701	26-Sep-10	10-Dec-09	538351	3877260	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3401	F	239	11-Jun-00		Jun 4 2008	536697	3879411		USGS_Stress	Resident	8			neg	sus			8-May-08			
3402	M	244	10-Jun-00		Jun 4 2008	536776	3878973		USGS_Stress	Resident	8			neg	neg			2-Oct-08			
3403	M	260	162.602	10-Apr-11	17-Dec-09	525442	3886800	SEA	ITS_Research	Control	SD			neg	neg	n/a	neg	15-May-08			
3404	F	205	165.190	6-Oct-11	17-Dec-09	525287	3886335	SEA	ITS_Research	Control	SD			neg	neg	n/a	neg	14-May-08			

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06			
3405	M	267	167.258	unknown	9-Dec-09	524711	3887227	SEA	USGS Health	translocated	SEA			neg	neg	n/a	neg	7-Oct-09	around nares.	14-May-08	
3406	M	268	163.743	29-Sep-10	17-Dec-09	525030	3887005	SEA	ITS_Research	Control	SD			neg	neg	n/a	neg	14-May-08			
3407	M	253	162.242	29-Sep-10	17-Dec-09	524612	3886528	SEA	ITS_Research	Control	SD			neg	neg			14-May-08			
3408	M	297	11-Jun-00		Jul 28 2008	525173	3886747		USGS_Health	Resident	Short Distance	necropsy	necropsy	sus	pos	n/a	neg	2-Jun-08			
3409	F	228	167.824	29-Sep-10	17-Dec-09	525981	3886662	SEA	ITS_Research	Control	SD			neg	sus	n/a	neg	2-Jun-08	on face, dried	2-Jun-08	
3410	M	256	162.682	30-Sep-10	17-Dec-09	526444	3887130	SEA	ITS_Research	Control	SD			neg	neg	n/a	neg	14-May-08			
3411	M	254	168.984	4-Oct-10	3-Dec-09	549534	3885812	SEA	ITS_Research	Resident	10			neg	neg			27-May-08			
3412	M	255	168.782	4-Oct-10	3-Dec-09	548933	3885902	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3413	F	218			10-Apr-08	548906	3885306	SEA	ITS_Research	Resident	10	dead									
3414	M	282	167.985	6-Oct-10	4-Dec-09	550008	3883388	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3415	M	252	168.102	6-Oct-10	4-Dec-09	549271	3883501	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3419	M	265			21-Apr-09	554737	3887451	SEA	ITS	Native	11	xmtr removed		neg	neg			14-Oct-08			
3420	M	238			17-Jan-09	553743	3886622	SEA	ITS	Native	11	xmtr removed		neg	neg			14-Oct-08			
3421	M	228			28-Sep-08	39715	557642	SEA	ITS	Native	12	xmtr removed									
3424	M	281			18-Nov-08	549407	3886234	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	7-Oct-06			Released without transmitter
3426	F	219			21-Apr-09	553724	3887845	SEA	ITS	Resident	11	xmtr removed		sus	neg			9-Oct-08			
3427	F	233	11-Jun-00		Oct 8 2008	554008	3889116		ITS	Resident	11	monthly		neg	neg			8-Oct-08			
3428	M	234			21-Apr-09	553502	3886580	SEA	ITS	Resident	11	xmtr removed		pos	neg			14-Oct-08			
3429	F	235			24-Sep-08	557805	3886022	SEA	ITS	Native	12	xmtr removed						14-Oct-08			
3430	M	252			22-Apr-09	554252	3889446	SEA	ITS	Native	12.5	xmtr removed		neg	neg			8-Oct-08			
3431	M	244			21-Apr-09	553339	3889237	SEA	ITS	Native	12.5	xmtr removed		neg	neg			8-Oct-08			
3432	M	247			22-Apr-09	554073	3890300	SEA	ITS	Native	12.5	xmtr removed		neg	neg			8-Oct-08			
3433					Feb 12 2008	513484	3879414		USGS_Stress	Native	North of 4			neg	neg	n/a	neg	20-Sep-06			
3437	M	269			21-Apr-09	553663	3888567	SEA	ITS	Native	11	xmtr removed		neg	neg			9-Oct-08			
3438	F	237	10-Jun-00		Oct 8 2008	554213	3888356		ITS	Native	11	monthly		neg	neg			9-Oct-08			
3439	M	225			21-Apr-09	553557	38888495	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			
3440	F	180			17-May-08	517044	3874047	SEA	ITS_Research	Resident	6	missing									Transmitter found with canid tooth marks on May 21, 2008
3441	M	262	167.720	6-Oct-10	4-Dec-09	521482	3869726	SEA	ITS_Research	Control	6			neg	neg			22-May-08	nares, severe edema	22-May-08	
3442	F	213			13-Oct-08	521637	3869424	SEA	ITS_Research	Control	6	dead		neg	neg			22-May-08			
3443	F	195	162.911	6-Oct-09	11-Jul-08	521606	3869430	SEA	ITS_Research	Control	6	missing		neg	neg			22-May-08			
3444	M	277	165.642	6-Oct-10	4-Dec-09	521700	3869448	SEA	ITS_Research	Control	6			neg	neg			23-May-08			
3445	M	192	11-Jun-00		Jun 4 2008	536203	3879535		USGS_Stress	Resident	8			neg	neg			5-Oct-09			
3446	F	237	165.333	28-Jun-11	3-Dec-09	548654	3885362	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3447	F	215	16-Jun-00		Jun 4 2008	536432	3879051		USGS_Stress	Resident	8			neg	neg			5-Oct-09	URTD; active case of		
3448	M	274	162.624	5-Oct-12	10-Dec-09	538328	3877329	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3449	M	284	165.043	6-Oct-12	10-Dec-09	538931	3877362	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3450	M	269	164.750	5-Oct-12	10-Dec-09	538561	3877790	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3451	F	253	10-Jun-00		Jun 4 2008	536950	3880203		USGS_Stress	Resident	8	dead		neg	neg			2-Oct-08			
3452	F	225			14-Apr-08	522668	3887445	SEA	ITS	Control	SD	missing									transmitter found, no tortoise
3453	F	203			20-Oct-08	521741	3888349	SEA	ITS_Research	Control	SD	dead		neg	pos			15-May-08			
3454	M	270			May 5 2008	522932	3887941		USGS_Health	Control	Short Distance	necropsy	necropsy	neg	pos	n/a	neg	2-May-08			necropsy
3455	F	226			22-Apr-09	554124	3890259	SEA	ITS	Native	12.5	xmtr removed		neg	neg			7-Oct-07			
3456	M	263			22-Apr-09	554124	3890259	SEA	ITS	Native	12.5	xmtr removed		neg	neg			7-Oct-08			
3457	M	245			21-Apr-09	554149	3889679	SEA	ITS	Native	12.5	xmtr removed		neg	neg			8-Oct-08			
3458	M	268	165.101	6-Oct-12	10-Dec-09	538669	3877248	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3459	F	225	167.411	6-Oct-11	10-Dec-09	538668	3877250	SEA	ITS_Research	Control	13			sus	neg			29-May-08			
3460	F	221			19-Sep-08	521003	3871293	SEA	ITS_Research	Resident	6	dead		neg	neg			21-May-08			DEAD 9-19-08
3461	F	226	162.742	14-Oct-10	8-Dec-09	520457	3871289	SEA	ITS_Research	Resident	6			neg	neg			21-May-08			
3462	M	251	163.321	15-Oct-10	8-Dec-09	520787	3871239	SEA	ITS_Research	Resident	6			neg	neg			21-May-08	both eyes, mild	21-May-08	
3463	F	206	163.092	5-Oct-11	4-Dec-09	519112	3868362	SEA	ITS_Research	Control	6			neg	neg			26-Oct-08		23-May-08	
3464	F	225	164.951	1-May-11	4-Dec-09	519461	3868169	SEA	ITS_Research	Control	6			neg	neg			23-May-08			
3465	F	211	164.931	6-Oct-11	17-Dec-09	524526	3886811	SEA	ITS_Research	Control	SD			neg	neg			14-May-08			
3466	M	282	162.122	10-Oct-10	10-Dec-09	539889	3876151	SEA	ITS_Research	Control	13			neg	neg			30-May-08			
3467	M	242	168.941	6-Oct-10	13-Feb-08	524451	3888312	SEA	ITS_Research	Control	SD	missing		neg	neg	n/a	neg	7-Nov-07			MISSING 2-13-08
3468	M	269			May 12 2008	524237	3889048		USGS_Health	Control	Short Distance	necropsy	necropsy	pos	pos	n/a	neg	25-Apr-08			necropsy
3469	F	190			Jun 18 2008	524468	3887918		USGS Health	Control	Short Distance	necropsy	necropsy	pos	pos			11-Jun-08	dried exudate.	14-May-08	necropsy
3470	F	253			17-Jan-09	554575	3888840	SEA	ITS	Native	12.5	dead		neg	neg			9-Oct-08			Resident plot 12.5
3471	F	212			22-Apr-09	554884	3890786	SEA	ITS	Native	12.5	xmtr removed		neg	neg			9-Oct-08			
3472	F	194			12-Oct-08	519917	3868180	SEA	ITS_Research	Control	6	missing		neg	neg			24-May-08			found xmtr, no tortoise
3473	M	216	163.450	5-Oct-11	4-Dec-09	515206	3867779	SEA	ITS_Research	Control	6			neg	neg			24-May-08			
3475	F	237			27-Aug-08	520277	3868485	SEA	ITS_Research	Control	6	dead		neg	neg			24-May-08			
3476	M	248			4-Sep-09	521446	3869909	SEA	ITS_Research	Control	6	dead		neg	neg			24-May-08			
3477	F	220			Jun 17 2008	524500	3888696		USGS_Health	Control	Short Distance	necropsy	necropsy	neg	pos	n/a	neg	2-Jun-08			necropsy
3478	M	253			Apr 23 2008	526805	3887876		USGS Health	Native	Short Distance	dead	Unknown								Animal was part of blood study but was never transmittered. Probable urine stains on plastron. Recent chewing on plastron and marginals. Collected in SDTS.
3479	F	212	16-Jun-00		Jun 30 2008	524266	3889131		USGS_Health	Control	Short Distance	necropsy	necropsy	neg	pos	n/a	neg	2-Jun-08			
3480	M	226			8-Jan-09	521456	3869120	SEA	ITS_Research	Control	6	missing		neg	neg			22-May-08			
3481	M	215			5-Jul-08			SEA	ITS_Research	Control	6	dead		neg	neg			24-May-08	discharge in R eye,	24-May-08	DEAD 7-5-08
3485	M	246	167.942	21-Apr-11	5-Dec-09	542191	3877106	SEA	ITS_Research	Resident	13			neg	neg			30-May-08	occluded, mild dried	30-May-08	
3487	F	220			9-Jan-09	520551	3871469	SEA	ITS_Research	Resident	6	dead		neg	neg			23-May-08			
3488	F	213			12-Jan-09	522045	3868500	SEA	ITS_Research	Control	6	missing		neg	neg			22-May-08	both eyes and few	22-May-08	
3489	M	268	168.584	24-Mar-11	10-Dec-09	538455	3876603	SEA	ITS_Research	Control	13			neg	neg			23-Oct-08			was previously 3717
3490	M	258	168.903	17-Oct-10	1-Dec-09	545227	3883121	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3493	F	225	165.249	7-Oct-11	1-Dec-09	545207	3882444	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3494	F	212	168.831	7-Oct-11	1-Dec-09	544869	3882907	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3496	F	247	162.409	10-Apr-10	5-Dec-09	542199	3875143	SEA	ITS_Research	Resident	13			neg	neg			31-May-08			
3497	M	274	166.622	11-Apr-11	5-Dec-09	541501	3877811	SEA	ITS_Research	Resident	13			neg	neg			31-May-08			
3498	F	194	162.341	31-Mar-11	3-Dec-09	549345	3885941	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3500	F	240	167.568	19-Apr-10	3-Dec-09	548303	3886608	SEA	ITS_Research	Resident	10			neg	neg			28-May-08	occlusion of both	28-May-08	
3502	F	253	167.822	22-Apr-11	10-Dec-09	540032	3878039	SEA	ITS_Research	Control	13			neg	neg			29-May-08			
3506	M	192			11-Jan-09	520786	3872413	SEA	ITS_Research	Resident	6	dead		neg	neg			19-May-08	around nares and mild	19-May-08	
3507	F	219			26-Jul-08	521119	3871988	SEA	ITS_Research	Resident	6	dead		neg	neg			20-May-08			DEAD 7-30-08
3508	F	218			8-Jan-09	521196	3872634	SEA	ITS_Research	Resident	6	dead		neg	neg			19-May-08			
3509	F	236	168.424	3-May-11	4-Dec-09	521551	3868916	SEA	ITS_Research	Control	6			neg	neg			23-May-08			
3510	F	245	163.232	30-Apr-10	3-Dec-09	547325	3886333	SEA	ITS_Research	Control	10			neg	neg			27-May-08			
3512	F	240	164.392	20-Apr-10	2-Dec-09	547332	3889142	SEA	ITS_Research	Resident	10			neg	neg			2-Jun-08			
3513	F	231			7-Oct-08	523858	3871663	SEA	ITS_Research	Control	6	dead									
3514	M	230			21-Apr-09	553558	3887440	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			Resident Plot 11
3515	F	234			29-Sep-09	549041	3886671	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			Resident Plot 11
3516	F	229			8-Sep-09	546347	3883326	SEA	ITS	Native	12.5	xmtr removed		neg	neg			7-Oct-08			Resident Plot 12.5
3517	F	231			7-Oct-08	523858	3871663	SEA	ITS_Research	Control	6	dead									3513 &3517 same tortoise renumbered during fall of 2008
3525	F	227	15-Jun-00		Oct 8 2008	554227	3889155		ITS	Native	12.5	monthly		neg	neg			8-Oct-08			Resident Plot 12.5
3526	F	241	167.493	6-May-10	16-Dec-09	526281	3888304	SEA	ITS_Research	Resident	SD			neg	sus			2-Jun-08	discharge in both eyes,	2-Jun-08	
3527	F	232			19-Oct-09	526651	3887301	SEA	ITS_Research	Resident	SD	dead		neg	neg			14-May-08			
3528	F	227			23-Oct-08	526404	3887357	SEA	ITS_Research	Resident	SD	dead		neg	neg			14-May-08	nares.	14-May-08	
3529	M	201	15-Jun-00		Oct 10 2008	554358	3889111		ITS	Native	12.5	monthly		neg	neg			14-Oct-08			Resident Plot 12.5
3531	F	194	164.671		12-Jun-00	4-Mar-85	3878048		USGS_Stress	Control	West of 3	dead									
3533	F	309	168.542	26-Apr-11	1-Dec-09	545410	3882666	SEA	ITS_Research	Control	10			neg	neg			25-May-08			
3536	M	271			17-Jan-09	554491	3889089	SEA	ITS	Native	12.5	xmtr removed		neg	neg			7-Oct-08			Resident Plot 12.5
3538	M	244	163.753	8-May-10	16-Dec-09	523846	3888268	SEA	ITS_Research	Control	SD			neg	neg			15-May-08			
3539	F	251	162.233	8-May-10	16-Dec-09	525202	3888684	SEA	ITS_Research	Control	SD			neg	pos			11-Jun-08	bulging, damp around R	14-May-08	
3540	F	260			21-Apr-09	553632	3888924	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			
3542	M	254	164.203	6-May-11	16-Dec-09	523877	3887390	SEA	ITS_Research	Control	SD			neg	neg			14-May-08	discharge in both eyes,	14-May-08	
3543	M	258	166.359	17-Apr-12	11-Dec-09	540293	3878657	SEA	ITS_Research	Control	13										
3544	M	255			22-Apr-09	5554224	3889417	SEA	ITS	Native	12.5	xmtr removed		neg	neg			9-Oct-08			
3545	M	222	165.231	23-Apr-11	4-Dec-09	520939	3869765	SEA	ITS_Research	Control	6										
3546	F	251	167.134	13-May-10	1-Dec-09	546179	3883566	SEA	ITS_Research	Control	10			neg	neg			25-Oct-08			
3549	F	230			22-Apr-09	553499	3890417	SEA	ITS	Native	12.5	xmtr removed		neg	neg			7-Oct-08			
3554	M	244	167.523	16-Apr-12	3-Dec-09	548615	3886617	SEA	ITS_Research	Resident	10										
3555	M	266	162.183	20-Apr-12	4-Dec-09	550580	3885110	SEA	ITS_Research	Resident	10										
3556	M	214	163.207	1-May-11	8-Dec-09	520365	3871628	SEA	ITS_Research	Resident	6										
3558	F	196	162.892	29-Jul-10	10-Dec-09	544347	3878101	SEA	ITS_Research	Control	13			neg	neg			24-Oct-08			
3559	M	208	164.712	1-Aug-10	4-Dec-09	520053	3867702	SEA	ITS_Research	Control	6			neg	neg			26-Oct-08			
3560	F	234	162.351	22-May-11	17-Dec-09	524045	3886379	SEA	ITS_Research	Control	SD										
3561	F	230	168.052	26-Jun-10	11-Dec-09	542599	3880500	SEA	ITS_Research	Control	13			neg	neg			24-Oct-08			
3562	F	208			19-Jan-09	551125	3888533	SEA	ITS	Native	12.5	dead		neg	sus			8-Oct-08			
3563	F	208	15-Jun-00		Sep 27 2008	553960	3890394		ITS	Native	12.5	monthly		neg	neg			8-Oct-08			
3564	F	228			25-Oct-09	522348	3869028	SEA	ITS_Research	Control	6	dead									
3565	F	213			20-Jan-09	555109	3890060	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			Resident plot 11
3566	F	231	163.173	23-May-10	10-Dec-09	538695	3876880	SEA	ITS_Research	Control	13			neg	neg			23-Oct-08			processed 24 May 2008
3567	F	239	165.452	3-Jun-10	10-Dec-09	538507	3877601	SEA	ITS_Research	Control	13			neg	neg			23-Oct-08			
3568	F	238	167.272	30-Sep-10	10-Dec-09	540640	3877863	SEA	ITS_Research	Control	13										
3569	M	252			10-Jan-09	520171	3872979	SEA	ITS_Research	Resident	6	dead		neg	neg			26-Oct-08			
3572	M	197			4-Jan-09	541830	3877013	SEA	ITS_Research	Resident	13	dead		neg	neg			30-May-08			
3573	M	185			15-Sep-09	542629	3877125	SEA	ITS_Research	Resident	13	dead									
3574	M	254	168.252	24-Apr-11	3-Dec-09	547969	3886282	SEA	ITS_Research	Resident	10										
3575	M	265	163.009	27-Apr-11	3-Dec-09	548493	3885213	SEA	ITS_Research	Resident	10										
3576	M	246	165.963	11-Apr-12	4-Dec-09	521686	3869876	SEA	ITS_Research	Control	6										
3577	F	238	163.412	11-Apr-11	8-Dec-09	520628	3872082	SEA	ITS_Research	Resident	6										
3580	M	257	162.543	7-Oct-10	10-Dec-09	538729	3877349	SEA	ITS_Research	Control	13			neg	neg			29-May-08	and mild dried	29-May-08	
3581	M	249			31-Mar-08	549449	3882881	SEA	ITS	Native	STA	dead	canid								canid
3582	F	229			31-Mar-08	549962	3883161	SEA	ITS	Native	STA	dead	canid								canid
3583	M	258	162.902	16-Oct-10	1-Dec-09	545606	3883424	SEA	ITS_Research	Control	10			neg	neg			24-Oct-08			
3584	M	253	163.202	16-Oct-10	1-Dec-09	545650	3884363	SEA	ITS_Research	Control	10			neg	neg			26-May-08			
3590	M	268	168.520	17-Apr-11	1-Dec-09	546317	3885089	SEA	ITS_Research	Control	10			neg	neg			26-May-08			
3591	M	296	162.662	8-Oct-10	4-Dec-09	550303	3883886	SEA	ITS_Research	Control	10			neg	neg			25-May-08	around nares.	25-May-08	
3592	F	246	167.311	17-Apr-10	4-Dec-09	549368	3884530	SEA	ITS_Research	Resident	10			neg	neg			28-May-08	around nares and mild	28-May-08	
3593	M	270	167.563	17-Apr-11	1-Dec-09	545401	3882620	SEA	ITS_Research	Control	10										
3594	F	210	162.533	10-Apr-10	4-Dec-09	548457	3884613	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3595	F	213			19-Jan-08			SEA	ITS	Native	10	dead	canid								canid
3600	F	223	167.448	6-Oct-11	10-Dec-09	539830	3876694	SEA	ITS_Research	Control	13			neg	neg			1-Jun-08	both eyes and few	1-Jun-08	
3601	M	269	163.802	13-Oct-10	5-Dec-09	542145	3877278	SEA	ITS_Research	Resident	13			neg	neg			30-May-08	discharge in both eyes	30-May-08	
3602	F	222	167.652	6-Oct-11	4-Dec-09	549245	3885599	SEA	ITS_Research	Resident	10			neg	neg			28-May-08			
3603	M	266	165.088	7-Oct-12	1-Dec-09	545160	3885009	SEA	ITS_Research	Control	10			neg	neg			15-May-08	possible dried exudate	15-May-08	
3604	M	265	16-Jun-00		Sep 8 2008	522921	3888389		USGS_Health	Control	Short Distance	necropsy		neg	pos	n/a	neg	2-May-08	around both eyes, mild	25-Apr-08	
3605	F	215			2-May-08	522278	3887950	SEA	ITS_Research	Control	SD	dead		neg	neg	n/a	neg	7-Nov-07			DEAD 5-2-08
3606	M	257			2-Nov-08	519329	3869363	SEA	ITS_Research	Control	6	dead		neg	neg			24-May-08			
3607	F	212			19-Oct-08	520467	3869155	SEA	ITS_Research	Control	6	dead		neg	neg			23-May-08	eyes and wet R nare,	23-May-08	

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
3608	F	229	163.312	18-May-11	16-Dec-09	522043	3885961	SEA	ITS_Research	Control	SD			neg	neg			13-May-08	dried discharge in L	13-May-08		
3609	M	272	166.238	13-Aug-11	4-Dec-09	519475	3867575	SEA	ITS_Research	Control	6											
3610	M	255			5-Oct-09	518744	3869120	SEA	ITS_Research	Control	6	dead		neg	neg			25-Oct-08			MISSING	
3611	F	226			30-Sep-09	521425	3869835	SEA	ITS_Research	Control	6	dead										
3612	M	258	163.583	13-Oct-10	5-Dec-09	541774	3877308	SEA	ITS_Research	Resident	13			neg	neg			30-May-08	wet/dried mucus in both	30-May-08		
3613	M	275	163.461	13-Oct-10	5-Dec-09	541843	3876468	SEA	ITS_Research	Resident	13			neg	neg			30-May-08	discharge in both eyes	30-May-08		
3614	M	239			4-Jan-09	545821	3883235	SEA	ITS_Research	Control	10	dead		neg	neg			25-May-08				
3615	F	230	168.816	16-Oct-10	1-Dec-09	546146	3883449	SEA	ITS_Research	Control	10			neg	neg			27-May-08				
3616	M	270	165.221	13-Oct-10	16-Dec-09	522377	3887636	SEA	ITS_Research	Control	SD			neg	neg	n/a	neg	13-May-08				
3618	M	204			15-Jul-08	520226	3868981	SEA	ITS_Research	Control	6	dead		neg	neg			23-May-08			DEAD 7-24-08	
3619	F	224	162.382	17-Oct-10	11-Oct-08	521208	3868963	SEA	ITS_Research	Control	6	missing		neg	neg			22-May-08	and dried discharge in	22-May-08		
3620	M	289	162.962	15-Oct-10	5-Dec-09	543285	3876959	SEA	ITS_Research	Resident	13			neg	neg			30-May-08				
3622	F	225	166.770	8-Apr-10	1-Dec-09	545829	3883395	SEA	ITS_Research	Control	10			neg	neg			27-May-08				
3623	M	286	162.863	16-Oct-10	1-Dec-09	545621	3884495	SEA	ITS_Research	Control	10			neg	neg			24-May-08	scales missing around	24-May-08		
3626	M	273	163.442	18-Oct-10	10-Dec-09	540405	3877522	SEA	ITS_Research	Control	13			neg	neg			31-May-08				
3627	M	272	162.802	18-Oct-10	10-Dec-09	540183	3877385	SEA	ITS_Research	Control	13			neg	neg			31-May-08	eyes.	31-May-08		
3628	F				29-Aug-08	522880	3871947	SEA	ITS_Research	Control	6	dead									DEAD 9-20-08	
3632	F	226	163.251	6-Oct-11	5-Dec-09	542218	3876900	SEA	ITS_Research	Resident	13			neg	neg			31-May-08	eyes, mild dried	31-May-08		
3633	M	281	162.783	14-Oct-10	5-Dec-09	543125	3876903	SEA	ITS_Research	Resident	13			neg	neg			30-May-08				
3634	M	241	167.952	7-Oct-11	1-Dec-09	547064	3885058	SEA	ITS_Research	Control	10			neg	neg			26-May-08	mild nare erosion.	26-May-08		
3638	M	181	167.114	19-Oct-09	31-Mar-08	543204	3876741	SEA	ITS_Research	Resident	13	missing										
3639	M	220	168.820	15-Sep-11	10-Dec-09	540124	3876732	SEA	ITS_Research	Resident	13			neg	neg			1-Jun-08	around nares missing.	1-Jun-08		
3666	F	183			21-Apr-09	555110	3888537	SEA	ITS	Native	11	xmtr removed		neg	neg			8-Oct-08			Resident plot 11	
3669	M	263	12-Jun-00		Oct 8 2008	554484	3890508		ITS	Native	12.5	monthly		neg	neg			7-Oct-08			Resident plot 12.5	
3700	M	260			2-Nov-08	520448	3870996	SEA	ITS_Research	Resident	6	dead		neg	neg			21-May-08				
3701	M	248	163.492	18-Oct-11	8-Dec-09	520052	3870926	SEA	ITS_Research	Resident	6			neg	neg			23-May-08				
3702	M	257	163.052	17-Mar-10	12-Jul-08	519370	3870754	SEA	ITS_Research	Resident	6	missing		neg	neg			23-May-08				
3703	F	221			9-Aug-08	519850	3870898	SEA	ITS_Research	Resident	6	dead		neg	neg			22-May-08			DEAD 8-6-08	
3704	F	227			11-Jan-09	521138	3871066	SEA	ITS_Research	Resident	6	dead		neg	neg			20-May-08				
3705	M	270	162.002	18-Mar-11	4-Dec-09	522465	3868846	SEA	ITS_Research	Control	6			neg	neg			24-May-08				
3706	F	208			19-Mar-08	519969	3871651	SEA	ITS_Research	Resident	6	dead									DEAD Unknown Date	
3707	F	215			9-Sep-09	521216	3868499	SEA	ITS_Research	Control	6	dead		neg	neg			22-May-08			Tort was xmtr as a M but is a F.	
3708	M	219			19-Oct-08	523921	3872366	SEA	ITS_Research	Control	6	dead		neg	neg			19-May-08				
3709	F	213			24-Jun-08	521397	3868691	SEA	ITS_Research	Control	6	dead		neg	neg			22-May-08	mild nare erosion.	22-May-08		
3710	M	224			12-Jan-09	521531	3868579	SEA	ITS_Research	Control	6	dead		neg	neg			22-May-08	eyes and L eye mildly	22-May-08		
3711	M	262			8-Oct-08	521668	3868849	SEA	ITS_Research	Control	6	dead		neg	neg			24-May-08	clear exudate.	24-May-08		
3712	M	264			20-Aug-08	521804	3868987	SEA	ITS_Research	Control	6	dead		neg	neg			22-May-08	and around nares.	22-May-08		
3713	M	203	167.731	6-Oct-11	5-Dec-09	542415	3877064	SEA	ITS_Research	Resident	13			neg	neg			31-May-08				
3714	F	234	167.772	8-Oct-11	5-Dec-09	542019	3877199	SEA	ITS_Research	Resident	13			neg	neg			1-Jun-08				
3715	F	249	167.852	6-Oct-11	10-Dec-09	539589	3876778	SEA	ITS_Research	Control	13			neg	neg			31-May-08	moderate dried	31-May-08		
3716	F	223	167.892	8-Oct-11	5-Dec-09	542897	3875919	SEA	ITS_Research	Resident	13			neg	neg			31-May-08				
3717	F	239	165.051	5-Oct-11	3-Dec-09	549290	3886152	SEA	ITS_Research	Resident	10			neg	neg			26-May-08	mild nare erosion.	26-May-08		
3718	M	280	162.483	26-Mar-11	3-Dec-09	548316	3886251	SEA	ITS_Research	Resident	10			neg	neg			28-May-08	mild nare erosion.	28-May-08		
3719	M	206	164.911	6-Oct-11	3-Dec-09	547763	3886484	SEA	ITS_Research	Resident	10			neg	neg			26-May-08				
3720	M	270			15-Oct-08	550214	3885886	SEA	ITS_Research	Resident	10	dead		neg	neg			27-May-08				
3721	F	229	167.434	6-Oct-11	4-Dec-09	550235	3885864	SEA	ITS_Research	Resident	10			neg	neg			26-May-08	discharge in both eyes,	26-May-08		
3722	F	226	167.632	6-Oct-11	3-Dec-09	548607	3885862	SEA	ITS_Research	Resident	10			neg	neg			28-May-08				
3723	F	211	167.450	30-Mar-11	2-Dec-09	549537	3888188	SEA	ITS_Research	Resident	10			neg	neg			28-May-08				
3724	F	233	167.673	6-Oct-11	3-Dec-09	549852	3885888	SEA	ITS_Research	Resident	10			neg	neg			28-May-08	dried discharge in R	28-May-08		
3725	F	227	168.851	5-Oct-11	3-Dec-09	548947	3886066	SEA	ITS_Research	Resident	10			neg	neg			28-May-08	both eyes and few	28-May-08		
3726	M	259	168.381	28-Mar-11	2-Dec-09	546668	3885996	SEA	ITS_Research	Control	10			neg	neg			27-May-08	eye, few scales	27-May-08		
3727	M	252	168.359	28-Mar-11	1-Dec-09	546865	3885025	SEA	ITS_Research	Control	10			neg	neg			27-May-08				
3728	M	279	168.422	29-Mar-11	1-Dec-09	546715	3884141	SEA	ITS_Research	Control	10			neg	neg			24-May-08				
3729	M	266	168.321	29-Mar-11	1-Dec-09	546821	3884301	SEA	ITS_Research	Control	10			neg	neg			26-May-08				
3730	M	301	168.341	30-Mar-11	1-Dec-09	544603	3883802	SEA	ITS_Research	Control	10			neg	neg			25-Oct-08				
3731	M	262	16-Jun-00		Oct 22 2008	541961	3889648		ITS	Monthly	SEA	missing										
3740	M	241	163.822	4-Apr-11	16-Dec-09	522279	3885795	SEA	ITS_Research	Control	SD			neg	neg			18-May-08	both eyes, possible	18-May-08		
3741	M	251	163.703	4-Apr-11	16-Dec-09	521970	3886287	SEA	ITS_Research	Control	SD			neg	neg			13-May-08	dried discharge in R	13-May-08		
3742	M	259	168.262	4-Apr-11	16-Dec-09	521958	3886258	SEA	ITS_Research	Control	SD			neg	neg			18-May-08	5% conjunctiva in both	18-May-08		
3905	M	275			Sep 27 2008	536842	3879912		USGS_Health	Resident	8			neg	neg			27-Sep-08				
3906	unk	169			Sep 27 2008	535823	3883347		USGS_Health	Resident	8			neg	sus			27-Sep-08				
3923	M	220			Sep 27 2008	536785	3881090		USGS_Health	Resident	8			neg	sus			27-Sep-08				
3924	M	275			Sep 28 2008	535229	3879072		USGS_Health	Resident	8			neg	neg			28-Sep-08				
3925	M	253			Sep 28 2008	535231	3879070		USGS_Health	Resident	8			neg	neg			28-Sep-08				
4001	M	262	166.415	6-Oct-12	4-Dec-09	549395	3885509	SEA	ITS_Research	Translocated	10			neg	neg		neg	8-Jun-07				
4002	F	237	168.533	17-Oct-10	10-Dec-09	543193	3878243	SEA	ITS_Research	Translocated	13			neg	neg		neg	31-May-08	5% conjunctiva in both	31-May-08		
4003	M	241	168.301	8-Apr-11	14-Nov-09	538682	3888933	SEA	ITS	Monthly	SEA			neg	neg			3-Jun-08	eye, 15% in L and few	3-Jun-08		
4004	M	263	164.848	18-Nov-11	8-Dec-09	537048	3880453	SEA	USGS Health	translocated	8			neg	neg	neg		17-Oct-09				
4005	M	262	164.761	12-Mar-11	4-Dec-09	513059	3886345	SEA	USGS Health	translocated	1.5			neg	neg	neg		20-Oct-09	eye and mild nare	30-Apr-08		
4006	M	235			1-Apr-08	529447	3881037	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	15-May-07			Released without transmitter	
4007	F	211			23-Jul-08	519797	3873062	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	16-May-07			dead 7-23-08	
4008	unk	156	164.603	1-Apr-10	1-Dec-09	544998	3884660	SEA	ITS_Research	Translocated	10			neg	neg		neg	23-May-07				
4009	F	223	164.012	12-Mar-11	4-Dec-09	510764	3886020	SEA	USGS Health	translocated	1.5			neg	neg	neg	neg	23-Oct-09	occluded, dirt	1-May-08		
4010	M	274	165.696	20-Oct-11	4-Dec-09	512581	3887226	SEA	USGS Health	translocated	1.5			neg	neg	neg		20-Oct-09	occluded and mild dried	30-Apr-08	50B:50L	cohabiting burrow with 4146M
4011	F	214	15-Jun-00		Feb 16 2008	538579	3888624		USGS_Health	Translocated	5		canid	neg	sus			25-Sep-08				
4012	unk	136			26-May-08	538989	3888351	SEA	ITS	Monthly	SEA	xmtr lost		neg	neg		neg	16-May-07			transmitter found, no tortoise	
4013	M	280			1-Apr-08	529430	3881602	SEA	ITS	Translocated	7	xmtr removed		neg	neg			23-May-07			Released without transmitter	
4014	F	213	15-Jun-00		May 25 2008	541130	3889822		USGS_Health	Translocated	1.5	dead	canid	sus	neg		neg	30-Apr-08	nares mildly eroded.	30-Apr-08	canid	
4015	F	244	165.193	6-Apr-10	5-Dec-09	541689	3877568	SEA	ITS_Research	Translocated	13			neg	neg		neg	16-May-07				
4016	F	212	15-Jun-00		Apr 3 2008	508251	3880226		USGS_Stress	Translocated	3	dead		neg	neg	n/a	neg	3-Oct-07			Injured by coyotes and released back in desert in October 2008	
4017	unk	49			26-Mar-07	534612	3889021	SEA	ITS	FISS	FISS	dead										
4018	F	239	14-Jun-00		Apr 28 2008	543364	3889078		USGS_Health	Translocated	8	dead	canid	sus	neg		neg	9-May-08			canid	
4019	M	259	166.702	11-Mar-11	16-Apr-09			SEA	USGS Health	translocated	8	missing		neg	neg			27-Sep-08	both eyes and 5-10%	4-May-08		
4020	M	284			1-Apr-08	528859	3881706	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	20-May-07			Released without transmitter	
4021	M	269			1-Oct-09	520389	3874676	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	21-Oct-07			collected 10-4-09	
4022	unk	134	165.852	6-Sep-10	5-Dec-09	542847	3877074	SEA	ITS_Research	Translocated	13			neg	neg		neg	5-Jun-07				
4023	F	245	163.463	12-Apr-10	2-Dec-09	548205	3887864	SEA	ITS_Research	Translocated	10			neg	neg		neg	29-May-08	around nares.	29-May-08		
4024	M	255	165.561	11-Apr-10	22-Sep-09	510753	3886548	SEA	USGS Health	translocated	1.5	dead		neg	sus	neg		27-Apr-09			Located carcass	
4025	F	231	10-Jun-00		Apr 9 2008	528688	3889774		USGS_Health	Translocated	3	dead	canid	neg	neg		neg	22-May-07			canid	
4026	F	225	162.841	12-Mar-11	4-Dec-09	512403	3887526	SEA	USGS Health	translocated	1.5			neg	neg	neg		20-Oct-09				
4027	M	255			6-Apr-08	542725	3876909	SEA	ITS	Translocated	13	xmtr removed		neg	neg		neg	19-May-07			Released without transmitter	
4028	M	269	162.243	15-Apr-10	11-Dec-09	538024	3886354	SEA	ITS_Research	Translocated	10	tracked by sit e 13		neg	neg		neg	20-May-07				
4029	unk	110			2-Jul-08	521239	3871592	SEA	ITS_Research	Translocated	6	dead		neg	neg			21-May-08	around nares.	21-May-08	dead 7-2-08	
4030	unk	122			4-Apr-08	519431	3890299	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	7-Nov-07			Released without transmitter	
4031	M	193			10-Oct-08	520427	3873600	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	4-Jun-07				
4032	F	223	11-Jun-00		Jun 5 2008	531597	3887466		USGS_Health	Translocated	1.5	dead	canid	neg	neg		neg	2-May-08	discharge in both eyes.	2-May-08	canid	
4033	F	226	163.285	29-Apr-10	4-Dec-09	511384	3885587	SEA	USGS Health	translocated	1.5			neg	neg	neg	neg	23-Oct-09				
4034	M	255	167.062	1-May-10	9-Dec-09	523037	3875902	SEA	ITS_Research	Translocated	6			neg	neg		neg	27-May-07				
4035	unk	167	168.236	15-Oct-10	17-Dec-09	528897	3883571	SEA	ITS_Research	Translocated	13	tracked by SD		neg	neg		neg	18-May-07				
4036	M	233			4-Apr-08	532183	3886900	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	26-May-07			Released without transmitter	
4037	F	238	10-Jun-00		Jul 16 2008	528706	3888799		USGS_Health	Translocated	5	dead	canid	neg	neg		neg	7-May-08	both eyes and L nare	7-May-08	canid	
4038	M	267	167.983	28-Mar-12	16-Dec-09	527926	3888062	SEA	ITS_Research	Translocated	SD			neg	neg		neg	24-May-07				
4039	M	237	168.622	10-Apr-11	16-Dec-09	528268	3887845	SEA	ITS_Research	Translocated	SD			neg	neg		neg	21-May-07				
4040	F	236	11-Jun-00		Jun 15 2008	537313	3880324		USGS_Health	Translocated	8	dead	canid	neg	neg		neg	5-May-08	eyes, nares mildly	5-May-08	canid	
4041	M	281			2-Apr-08	541980	3882002	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	18-May-07			Released without transmitter	
4042	unk	146	165.770	13-Sep-09	4-Dec-09	524788	3867676	SEA	ITS_Research	Translocated	6	missing		neg	neg		neg	22-May-07				
4043	F	220	15-Jun-00		Mar 28 2008	533664	3889734		USGS_Stress	Monthly	SEA	dead	Canid	neg	neg	n/a	neg	3-Oct-07			Tortoise was found dead. Looks as if it died recently. Eyes were gone, everything else intact accept rear right leg. Possible predation or deformation. Picture taken by J. Willand. Transmitter removed by B. Reynolds.	
4044	M	252			9-Apr-08	549165	3885246	SEA	ITS	Translocated	10	xmtr removed		neg	neg		neg	22-May-07			Released without transmitter	
4045	M	243			23-Jun-09	543473	3881879	SEA	ITS	Translocated	13	xmtr removed		neg	neg			25-Oct-07			Released without transmitter	
4046	F	211	164.812	11-Mar-11	8-Dec-09	536805	3885098	SEA	USGS Health	translocated	8			neg	neg	neg	neg	20-Oct-09	between nares.	4-May-08	95B:5L	
4047	M	210	164.083	8-Apr-11	1-Dec-09	543146	3883044	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	8-Oct-06				
4048	M	203			6-Apr-08	543684	3876606	SEA	ITS	Translocated	13	xmtr removed		neg	neg		neg	7-Jun-07			Released without transmitter	
4049	M	262	165.824	3-Apr-11	9-Dec-09	520149	3872964	SEA	ITS_Research	Translocated	6			neg	neg		neg	20-May-07				
4050	M	242			6-Jan-09	540975	3876594	SEA	ITS_Research	Translocated	13	dead		neg	neg		neg	17-May-07				
4051	M	276	164.158	18-Nov-11	8-Dec-09	518822	3877412	SEA	USGS Health	translocated	5			neg	neg	neg	neg	22-Oct-09			95B:5L	
4052	F	222	164.681	11-Mar-11	8-Dec-09	536620	3880245	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09	nares, discoloration	3-May-08		
4053	F	181	167.909	18-Oct-10	4-Dec-09	549480	3884700	SEA	ITS_Research	Translocated	10			neg	neg		neg	4-Jun-07				
4054	M	267			1-Apr-08	529165	3881501	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	18-May-07			Released without transmitter	
4055	M	178	163.332	26-May-11	3-Dec-09	549361	3886036	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	26-Sep-07				
4056	F	228	164.989	11-Mar-11	8-Dec-09	537158	3879932	SEA	USGS Health	translocated	8			neg	neg	neg		17-Oct-09	nares, dried discharge	4-May-08	60B:40L	
4057	M	287			1-Apr-08	529322	3881217	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	22-May-07			Released without transmitter	
4058	M	267	12-Jun-00		Apr 14 2008	540768	3887821		USGS_Health	Translocated	5	dead	canid	neg	neg		neg	17-May-07			canid	
4059	F	217	13-Jun-00		Jun 1 2008	541250	3887233		USGS_Health	Translocated	5	dead	canid	neg	neg		neg	7-May-08			canid	
4060	M	275	164.663	27-Mar-10	22-Oct-09	509501	3887256	SEA	USGS Health	translocated	1.5	dead		neg	neg	neg	neg	27-Apr-09	eye, mild dried	30-Apr-08		
4061	M	248	165.908	17-Nov-11	4-Dec-09	509036	3880150	SEA	USGS Health	translocated	3			neg	neg	neg	neg	25-Oct-09	discolored, dirty	12-May-08	95B:5L	
4062	M	250			1-Apr-08	529249	3881506	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	25-Oct-07			Released without transmitter	
4063	M	223			1-Apr-08	529337	3881510	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	18-May-07			Released without transmitter	
4064	M	191	167.048	12-Mar-11	4-Dec-09	511005	3883296	SEA	USGS Health	translocated	1.5			neg	neg	neg		25-Oct-09	occluded with dirt and	1-May-08		
4065	M	251	162.363	7-Oct-12	5-Dec-09	545412	3877224	SEA	ITS_Research	Translocated	13			neg	neg		neg	5-Jun-07				
4066	M	188	163.570	17-Oct-10	15-Nov-09	540984	3887654	SEA	ITS	Monthly	SEA			neg	neg		neg	4-Jun-07				
4067	M	260	163.288	1-Oct-11	22-Sep-08	522096	3887581	SEA	ITS_Research	Translocated	13	missing		neg	neg		neg	16-May-07			missing, last tracked by SD	
4068	M	245			4-Dec-08	520045	3873772	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	25-May-07				
4069	M	272	164.935	1-Apr-10	8-Dec-09	536992	3879957	SEA	USGS Health	translocated	8			neg	neg	neg	neg	17-Oct-09	completely occluded	4-May-08	2B:98L	
4070	unk	167	167.694	18-Oct-10	4-Dec-09	548365	3884348	SEA	ITS_Research	Translocated	10			neg	neg		neg	22-May-07				
4071	unk	147	163.473	2-Apr-11	14-Nov-09	536422	3889015	SEA	ITS	Monthly	SEA			neg	neg		neg	29-Apr-08	both eyes and nares	29-Apr-08		
4072	M	271	13-Jun-00		Jun 18 2008	517054	3878327		USGS_Stress	Translocated	5	dead		neg	neg	n/a	neg	5-Nov-07				
4073	M	262	164.261	2-Apr-10	14-Aug-09	513519	3876393	SEA	USGS Health	translocated	5	dead		neg	neg	neg		30-Apr-09			Located carcass	
4074	M	260			1-Apr-08	529065	3882030	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	21-May-07			Released without transmitter	
4075	M	288			1-Apr-08	528617	3881361	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	24-May-07			Released without transmitter	
4076	M	259	165.610	6-Jun-08	22-Oct-08	536196	3889200	SEA	ITS	Monthly	SEA			neg	neg		neg	23-Apr-08			Old Stress animal, passed to ITS	
4077	M	281	162.980	7-Oct-12	2-Dec-09	549473	3888200	SEA	ITS_Research	Translocated	10			neg	neg		neg	4-Jun-07				
4078	M	298	164.830	11-Sep-11	5-Dec-09	543256	3877161	SEA	ITS_Research	Translocated	13			neg	neg		neg	22-May-07				
4079	Juv	47			Nov 3 2005	537216	3887961		USGS_Stress	Native	SEA											
4080	M	257	167.922	27-Jun-11	5-Dec-09	541475	3877396	SEA	ITS_Research	Translocated	13			not sampled	not sampled	n/a	neg	25-Oct-07	ELISA data? On re-			
4081	M	180	167.241	1-Apr-10	3-Dec-09	547451	3885793	SEA	ITS_Research	Translocated	10			neg	neg		neg	8-Jun-07				
4082	M	235			1-Apr-08	529424	3881502	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	22-May-07			Released without transmitter	
4083	M	246	13-Jun-00		Feb 16 2008	544049	3888981		USGS_Health	Translocated	3		canid	neg	neg			20-Sep-08				

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
4084	M	188			1-Apr-08	529376	3881131	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	18-May-07			Released without transmitter	
4085	F	223	164.904	31-Mar-09	15-Apr-09	30-Jul-67	3880047	SEA	USGS Health	translocated	8	dead		neg	sus			28-Sep-08	and face and nares	4-May-08	Located carcass	
4086	F	228	168.593	1-Apr-11	3-Dec-09	547451	3885794	SEA	ITS_Research	Translocated	10			neg	neg		neg	20-May-07				
4087	unk	174			4-Apr-08	548242	3889772	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	7-Jun-07			Released without transmitter	
4088	F	233	163.191	12-Aug-11	7-Dec-09	535095	3886950	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	8-Oct-06			Old Stress animal, passed to ITS	
4089	F	244	165.784	3-Apr-11	9-Dec-09	522761	3876654	SEA	ITS_Research	Translocated	6			neg	neg		neg	19-May-07				
4090	M	292	167.593	8-Oct-12	5-Dec-09	541424	3877676	SEA	ITS_Research	Translocated	13			neg	neg		neg	23-May-07				
4091	F	228	12-Jun-00		Jun 18 2008	541303	3883223		USGS_Stress	Translocated	8			neg	neg	n/a	neg	3-Oct-07				
4092	M	198			31-Mar-08			SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	25-May-07			Released without transmitter	
4093	M	266	11-Jun-00		Jun 12 2008	546489	3889626		USGS_Health	Translocated	3	dead	canid	neg	neg		neg	12-May-08	completely/moderately	12-May-08	canid	
4094	unk	158			5-Jan-09	550008	3889641	SEA	ITS_Research	Translocated	10	dead		neg	neg		neg	7-Jun-07				
4095	M	276	166.064	4-Apr-10	4-Dec-09	512069	3887319	SEA	USGS Health	translocated	1.5			neg	neg	neg	neg	21-Oct-09				
4096	M	235			2-Apr-08	541922	3881591	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	2-Jun-07			Released without transmitter	
4097	M	253	13-Jun-00		May 27 2008	510621	3880906		USGS_Stress	Translocated	3	dead	canid	neg	neg	n/a	neg	3-Oct-07			antenna found at easting: 0510612 northing: 3880900; head and limbs chewed off	
4098	M	279			12-May-09	548615	3885944	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	4-Oct-06			Released without transmitter	
4099	M	289			9-Dec-08	525554	3888806	SEA	ITS	Monthly	SEA	dead		neg	neg		neg	17-May-08				
4100	M	277	168.483	14-Oct-11	14-Nov-09	537203	3888078	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	24-Apr-08			Old Stress animal, passed to ITS	
4101	M	265			21-Nov-09	521120	3874181	SEA	ITS_Research	Translocated	6	missing		neg	neg		neg	8-Jun-07			Transmitter found no tortoise	
4102	unk	176			12-Apr-08	541930	3881896	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	1-Oct-07			Released without transmitter	
4103	F	193	165.832	3-Apr-11	5-Dec-09	543221	3877247	SEA	ITS_Research	Translocated	13			neg	neg		neg	5-Jun-07				
4104	F	196	164.773	1-Apr-11	4-Dec-09	547795	3884179	SEA	ITS_Research	Translocated	10			neg	neg		neg	8-Jun-07				
4105	unk	176	166.761	15-Oct-10	15-Nov-09	545194	3888343	SEA	ITS	Monthly	SEA			neg	neg		neg	6-Jun-07				
4106	M	265	165.189	2-Apr-10	16-Apr-09	18-Apr-73	3879481	SEA	USGS Health	translocated	8	dead		neg	sus			29-Sep-08	eye, 5% conjunctiva in	3-May-08	Located carcass	
4107	F	201	12-Jun-00		Jun 18 2008	535589	3877759		USGS_Stress	Translocated	8	dead		neg	neg	n/a	neg	4-Nov-07				
4108	M	266	166.906	2-Apr-10	14-Apr-09	20-Jun-14	3878672	SEA	USGS Health	translocated	5	dead		neg	neg			25-Sep-08			Located carcass	
4109	M	192	164.043	14-Apr-11	8-Dec-09	519015	3869452	SEA	USGS Health	translocated	5	dead		neg	neg	neg		22-Oct-09	around nares, mild	6-May-08		
4110	M	256			4-Apr-08	542546	3886756	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	18-May-07			Released without transmitter	
4111	M	248			1-Apr-08	528641	3881457	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	20-May-07			Released without transmitter	
4112	Juv	86	165.811	31-Mar-10	5-Dec-09	542516	3876271	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	19-Oct-07				
4113	M	258			4-Apr-08	546792	3889058	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	22-May-07			Released without transmitter	
4114	M	277	162.342	4-Apr-10	8-Dec-09	537674	3879419	SEA	USGS Health	translocated	8			neg	neg	neg		18-Oct-09	discharge in L eye,	3-May-08	40B:60L, 30B:70L	
4115	M	258			26-May-09	549439	3886034	SEA	ITS	Translocated	10	xmtr removed		neg	neg		neg	23-May-07			Released without transmitter	
4116	M	278			21-Mar-09	527803	3887747	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	19-May-07			Released without transmitter	
4117	M	267			26-Aug-09	526926	3883081	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	19-May-07			Released without transmitter	
4118	F	247	167.450	14-Apr-11	18-Nov-09	519394	3876148	SEA	USGS Health	translocated	5			neg	neg	neg		21-Oct-09	prior to 8/20/2008		BLOOD REVISIT; 50B:50L; samples labeled as 06-Jun-09	
4119	F	228	14-Jun-00		Jun 18 2008	536686	3878682		USGS_Stress	Translocated	8			neg	neg	n/a	neg	3-Oct-07				
4120	F	227	164.722	7-Jun-10	3-Dec-09	547809	3885667	SEA	ITS_Research	Translocated	10			neg	neg		neg	21-May-07				
4121	M	247	12-Jun-00		Jun 18 2008	513073	3886114		USGS_Stress	Translocated	1.5			neg	neg	n/a	neg	3-Oct-07				
4122	unk	124	166.183	7-Sep-10	5-Dec-09	543509	3876894	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	1-Oct-07				
4123	F	235	162.759	6-Apr-10	4-Dec-09	512414	3887619	SEA	USGS Health	translocated	1.5			neg	neg	neg	neg	20-Oct-09				
4124	M	255			1-Apr-08	528593	3881696	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	7-Oct-06			Released without transmitter	
4125	M	253	14-Jun-00		Jun 18 2008	513786	3884496		USGS_Stress	Translocated	1.5			neg	neg	n/a	neg	4-Nov-07				
4126	unk	142	166.390	6-Sep-10	7-Dec-09	528377	3869227	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	1-Oct-07				
4127	unk	173	164.971	5-Oct-11	11-Dec-09	540059	3882647	SEA	ITS_Research	Translocated	13			neg	neg		neg	5-Jun-07				
4128	F	265	162.161	7-Apr-10	3-Dec-09	549664	3885904	SEA	ITS_Research	Translocated	10			neg	neg		neg	19-May-07				
4129	M	284	162.183	6-Apr-10	23-Sep-09	518193	3876971	SEA	USGS Health	translocated	5	dead		neg	neg	neg		30-Apr-09			Located carcass	
4130	F	187	10-Jun-00		May 28 2008	530677	3889921		USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	24-May-08			canid	
4131	M	266			9-Apr-08	549512	3886252	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	15-Oct-07			Released without transmitter	
4132	M	285	166.496	26-Sep-10	14-May-09			SEA	USGS Health	translocated	5	missing		neg	sus			24-Sep-08	both eyes, nare	9-May-08		
4133	M	242			2-Apr-08	541897	3881917	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	15-Oct-07			Released without transmitter	
4134	M	234	168.002	30-Mar-12	16-Dec-09	527650	3887916	SEA	ITS_Research	Translocated	SD			neg	neg	n/a	neg	9-Oct-07				
4135	M	278			1-Apr-08	528732	3881363	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	7-Jun-07			Released without transmitter	
4136	F	201	167.610	21-Apr-11	20-Oct-09	512430	3886517	SEA	USGS Health	translocated	1.5	dead		neg	neg	neg	neg	27-Apr-09			Located carcass	
4137	F	217	15-Jun-00		Mar 31 2008	509234	3880096		USGS_Stress	Translocated	3	dead	canid	neg	neg	n/a	neg	3-Oct-07			Tortoise found dead on back with both front legs and head removed. Predation evident. Transmitter removed by M. Kang.	
4138	M	272			5-Apr-09	542553	3876211	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	26-Sep-07			Released without transmitter	
4139	M	275	162.221	6-Apr-10	8-Dec-09	513034	3889589	SEA	USGS Health	translocated	1.5			neg	neg	neg		22-Oct-09	both eyes and crusting	1-May-08	B95:L5	
4140	M	280			4-Apr-08	542137	3886740	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	4-Jun-07			Released without transmitter	
4141	M	283	163.862	9-Apr-11	4-Dec-09	549314	3885083	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	8-Oct-06			Apparently not dead	
4142	F	183	13-Jun-00		Sep 27 2008	506923	3882259		USGS_Stress	Translocated	3	dead	Unknown	neg	neg	n/a	neg	3-Oct-07			Prosessor did not collect carcass.	
4143	M	221	166.737	19-May-10	9-Dec-09	526117	3887307	SEA	USGS Health	translocated	8			neg	neg	neg		7-Oct-09	eye, crusting on whole	5-May-08		
4144	M	272	164.725	unknown	21-May-09			SEA	USGS Health	translocated	SEA	missing		neg	sus to neg		neg	23-Apr-08			Re-sample in Sept/Oct 2008	
4145	F	239	167.244	24-May-10	15-Nov-09	547813	3890599	SEA	ITS	monthly	SEA			neg	neg			23-Oct-08				
4146	M	276	163.000	6-Apr-10	4-Dec-09	512581	3887226	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	discharge in R eye and	30-Apr-08	B95:L5	cohabiting burrow with 4010M
4147	F	237	163.439	2-Apr-11	15-Nov-09	550710	3892297	SEA	ITS	monthly	SEA			neg	neg	neg		23-May-09	tortoise			
4148	M	258	166.803	27-Apr-12	5-Dec-09	543412	3877417	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	6-Oct-07				
4149	Juv	41			Oct 24 2005	535046	3888150		USGS_Stress	Native	SEA											
4150	F	229	162.330	17-Jun-11	4-Dec-09	512817	3887591	SEA	USGS Health	translocated	1.5			neg	neg	neg		26-Oct-09	both nares.	2-May-08	B10:L90	
4151	M	277	164.470	19-Oct-11	8-Dec-09	537017	3879815	SEA	USGS Health	translocated	8			neg	neg	neg		17-Oct-09				
4152	F	217	15-Jun-00		Mar 6 2008	535688	3888428		USGS_Stress	Monthly	SEA	missing		neg	neg	n/a	neg	3-Oct-07				
4153	F	225	15-Jun-00		May 3 2007	528956	3888062		USGS_Health	Translocated	3	missing		neg	neg	n/a	neg	24-Sep-07				
4154	M	242	166.982	6-May-10	5-Dec-09	542595	3877171	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	28-Sep-07				
4155	M	292			4-Aug-09	549370	3886031	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	5-Oct-06			Released without transmitter	
4156	M	284			1-Apr-08	529261	3881599	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	3-Oct-06			Released without transmitter	
4157	unk	136	166.033	5-Sep-10	3-Dec-09	549430	3885951	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	29-Sep-07				
4158	M	266	166.503	11-May-10	22-Apr-09	26-Jul-91	3881236	SEA	USGS Health	translocated	3	dead		neg	neg			21-Sep-08	eyes, both eyes mildly	12-May-08	Located carcass	
4159	F	231	14-Jun-00		Jul 14 2008	550362	3892571		USGS_Health	Translocated	3	dead	canid	neg	neg		neg	12-May-08	between nares	12-May-08	canid	
4160	M	180	162.051	15-May-11	4-Dec-09	509659	3884889	SEA	USGS Health	translocated	3			neg	neg	neg		27-Apr-09				
4161	F	259	10-Jun-00		Jul 15 2008	530203	3888082		USGS_Health	Translocated	5	dead	canid	neg	neg			27-Sep-07			canid	
4162	F	227	167.510	12-Mar-11	22-Sep-09	511067	3886293	SEA	USGS Health	translocated	1.5	dead		neg	neg	neg		27-Apr-09			Located carcass	
4163	M	258	12-Jun-00		Jun 18 2008	519323	3875910		USGS_Stress	Translocated	5	dead		neg	neg	n/a	neg	3-Oct-07				
4164	M	284	167.075	8-Apr-10	14-Aug-09			SEA	USGS Health	translocated	5	missing		neg	neg	neg		29-Apr-09				
4165	F	202	12-Jun-00		Jun 3 2008	518676	3876143		USGS_Stress	Translocated	5	dead	canid	neg	neg	n/a	neg	3-Oct-07			6/6/2008 report; only found transmitter with canid marks; no carcass found	
4166	F	229	163.130	12-Mar-11	4-Dec-09	513118	3886279	SEA	USGS Health	translocated	1.5			sus	neg	neg		20-Oct-09				
4167	F	226	167.810	4-Oct-10	9-Dec-09	517631	3873025	SEA	ITS_Research	Translocated	6			neg	neg			26-May-07				
4168	F	226	168.772	1-Apr-11	5-Dec-09	543325	3877092	SEA	ITS_Research	Translocated	13			neg	neg		neg	31-May-07				
4169	M	262	12-Jun-00		Jun 18 2008	506680	3880141		USGS_Stress	Translocated	3			neg	neg	n/a	neg	3-Oct-07				
4170	M	237			1-Apr-08	529024	3881447	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	24-May-07			Released without transmitter	
4171	M	263			4-Apr-08	550968	3891901	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	29-May-07			Released without transmitter	
4172	F	246	166.189	9-Apr-10	7-Jan-09			SEA	USGS Health	translocated	1.5	missing		neg	neg	n/a	neg	13-May-08	discharge in R eye and	13-May-08	Missing; signal overlapping with FW-4125	
4173	M	199			1-Apr-08	529062	3881333	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	27-May-07			Released without transmitter	
4174	F	210	168.262	9-Apr-11	5-Dec-09	542611	3877242	SEA	ITS_Research	Translocated	13			neg	neg		neg	27-May-07				
4175	unk	66			10-Apr-07			SEA	ITS	FISS	FISS											
4176	M	266	163.762	11-Apr-10	16-Dec-09	528789	3887180	SEA	ITS_Research	Translocated	SD			neg	neg		neg	23-May-07				
4177	M	265	13-Jun-00		Jun 18 2008	515614	3885198		USGS_Stress	Translocated	1.5	dead		neg	neg	n/a	neg	3-Oct-07				
4178	unk	134	166.282	14-Oct-09	4-Jan-09	527687	3887488	SEA	ITS_Research	Translocated	SD	missing		neg	neg		neg	23-May-07				
4179	F	240	164.450	10-Apr-09	24-Feb-09	10-Apr-92	3877647	SEA	USGS Health	translocated	3	dead		neg	sus			20-Sep-08			Located carcass	
4180	M	197	15-Jun-00		Apr 12 2008	510495	3880734		USGS_Health	Translocated	3	dead	canid	neg	neg		neg	20-May-07			Predator: coyote	
4181	M	235	167.683	14-Oct-11	7-Dec-09	533487	3887084	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	7-Oct-06			Old Stress animal, passed to ITS	
4182	F	245	15-Jun-00		Apr 8 2007	547568	3890233		USGS_Health	Translocated	5		canid	neg	neg			24-Sep-08	both eyes, few scales	10-May-08		
4183	M	287	163.483	10-Apr-10	4-Dec-09	514279	3886884	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	around nares and 10%	1-May-08		
4184	M	267			1-Apr-08	529168	3881605	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	6-Oct-06			Released without transmitter	
4185	F	227	14-Jun-00		Jun 18 2008	519539	3876574		USGS_Stress	Translocated	5	dead		neg	neg	n/a	neg	3-Oct-07				
4186	M	271	14-Jun-00		May 20 2008	535934	3879411		USGS_Stress	Translocated	8	dead	natural	neg	neg	n/a	neg	3-Oct-07			Tort had been found in very shallow burrows previously--possibly not cool enough	
4187	unk	92			15-Apr-08			SEA	ITS	FISS	FISS					n/a	neg	21-Apr-08	poor condition;			
4188	F	250	167.809	10-Apr-09	9-Jan-09			SEA	USGS Health	translocated	5	missing		neg	neg			24-Sep-08	nares with dirt.	7-May-08		
4189	unk	62			15-Apr-07			SEA	ITS	FISS	FISS											
4190	unk	127	165.212	28-Apr-10	15-Nov-09	548306	3892526	SEA	ITS	Monthly	SEA			neg	neg		neg	28-May-07				
4191	M	283	164.163	21-Apr-12	15-Nov-09	540638	3890129	SEA	ITS	Monthly	SEA			neg	neg	neg		22-May-09				
4195	M	245			1-Apr-08	528944	3882030	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	7-Oct-06			Released without transmitter	
4199	M	273	165.882	2-May-10	9-Dec-09	541073	3883756	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09				
4200	M	276			1-Apr-08	528766	3881589	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	17-May-07			Released without transmitter	
4201	unk	157	166.700	16-Oct-10	6-Dec-09	526010	3888976	SEA	ITS	Monthly	SEA			neg	neg		neg	16-May-08	nare erosion	16-May-08		
4202	F	243	163.372	6-Apr-10	5-Dec-09	541874	3877509	SEA	ITS_Research	Translocated	13			neg	neg		neg	31-May-08	eye, mild wet discharge	31-May-08		
4203	M	267	163.083	15-Apr-10	6-Dec-09	526111	3889799	SEA	ITS	Monthly	SEA			neg	neg		neg	28-Apr-08				
4204	M	259	165.343	2-Apr-11	9-Dec-09	518260	3873498	SEA	ITS_Research	Translocated	6			neg	neg		neg	22-May-08				
4205	M	230			2-Apr-08	542225	3882004	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	20-May-07			Released without transmitter	
4206	F	213	163.450	31-Mar-11	3-Dec-09	548908	3886526	SEA	ITS_Research	Translocated	10			neg	neg			24-Oct-07				
4207	F	219	13-Jun-00		Apr 21 2007	548850	3891833							neg	neg		neg	15-May-08	both eyes, mild	15-May-08		
4208	Juv	102	165.911	9-Sep-08	14-Jul-08	548537	3886966	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	25-May-08				
4209	M	258	13-Jun-00		May 20 2008	509190	3880315		USGS_Stress	Translocated	3	dead	unknown	neg	neg	n/a	neg	3-Oct-07			Radio transmitter removed by M. Kang. Pictures taken.	
4210	M	236			5-Jan-09	527044	3888284	SEA	ITS_Research	Translocated	SD	dead		neg	neg		neg	16-May-08				
4211	M	296	162.412	11-Jun-11	6-Dec-09	520023	3890119	SEA	ITS	Monthly	SEA			neg	neg		neg	5-Jun-07				
4212	F	220	13-Jun-00		Jun 18 2008	535948	3879563	SEA	USGS_Stress	Translocated	8	dead	unknown	neg	neg	n/a	neg	3-Oct-07				
4213	F	232	166.790	10-Apr-09	10-Nov-08	543286	3878805	SEA	ITS_Research	Translocated	13	missing		neg	neg		neg	6-Jun-07				
4214	M	257	162.043	18-Apr-10	25-Aug-09	525525	3888963	SEA	ITS	Monthly	SEA			neg	neg		neg	27-Apr-08				
4215	F	221	12-Jun-00		Apr 7 2008	508975	3880147	SEA	USGS_Stress	Translocated	3	dead	canid	neg	neg	n/a	neg	3-Oct-07			Tortoise found dead. Death most likely due to predation. Transmitter removed by M. Kang. Shell was in pieces.	
4216	F	211	168.157	2-Apr-11	5-Dec-09	542424	3876275	SEA	ITS_Research	Translocated	13			neg	neg		neg	26-May-07				
4217	M	286	164.384	unknown	9-Dec-09	547649	3890915	SEA	USGS Health	translocated	SEA			neg	neg	neg	neg	6-Oct-09	both eyes and	23-Apr-08		
4218	F	245	12-Jun-00		Apr 12 2008	547939	3890801	SEA	USGS_Health	Translocated	3	dead	ehicle_impa	neg	neg		neg	27-May-07			vehicle_impact	
4219	M	252	164.522	9-Apr-10	4-Dec-09	510688	3880673	SEA	USGS Health	translocated	3			neg	neg	neg		26-Oct-09	both eyes and mild	11-May-08		
4220	M	256			1-Apr-08	528675	3881643	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	25-May-07			Released without transmitter	
4221	M	256			1-Apr-08	528815	3882022	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	26-May-07			Released without transmitter	
4222	M	274	168.242	3-Apr-11	8-Dec-09	519411	3872264	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	6-Oct-06				
4223	F	232	164.852	3-Apr-10	8-Dec-09	518476	3872529	SEA	ITS_Research	Translocated	6			neg	neg		neg	25-Oct-07				
4224	M	263			1-Apr-08	529364	3881606	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	7-Oct-06			Released without transmitter	
4225	M	271	164.404	9-Apr-10	7-Dec-09	524857	3873607	SEA	ITS_Research	Translocated	6			neg	neg		neg	29-May-07				
4226	F	198			20-Sep-08	520888	3871956	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	25-May-07			DEAD 9-20-08	
4227	F	216	166.613	unknown	6-Oct-09	548182	3889891	SEA	USGS Health	translocated	SEA	dead		neg	neg	neg	neg	23-May-09	discharge in both eyes,	15-May-08	10B:90L	Located carcass
4228	unk	148			13-Jul-08	527739	3889515	SEA	ITS	Monthly	SEA	missing		neg	neg		neg	22-Apr-08	nares and discoloration	22-Apr-08	found transmitter, no tortoise	
4229	M	253	164.923	6-Apr-11	9-Dec-09	536007	3879897	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	3-Oct-06				
4230	unk	121			16-Aug-08	528465	3890205	SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	neg	22-Apr-08			DEAD canid	
4231	M	255	168.237	2-May-11	15-Nov-09	548007	3890598	SEA	ITS	Translocated	Fence			neg	neg		neg	26-May-07			Found south of the fence transmitter popped! (found back on SEA 4/30/08 and retransmittered!	
4232	M	243	166.189	unknown	6-Oct-09			SEA	USGS Health	translocated	SEA	missing		neg	neg		neg	2-Jun-08	eye and moderate	2-Jun-08		
4233	M	203			22-May-08	518533	3874750	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	6-Jun-07			DEAD 5-22-08	
4234	M	260	162.140	10-Apr-10	4-Dec-09			SEA	USGS Health	translocated	3	missing		neg	neg	neg		29-Apr-09	R eye and mild	11-May-08		
4235	F	210	165.533	11-Mar-11	8-Dec-09	536701	3881107	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09	eye, severely swollen	19-Sep-09	B95:L5;B70:L30	
4236	unk	164			6-Jan-09	549649	3887323	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	4-Oct-07				

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
4237	M	260			Jul 17 2008	508840	3879840	SEA	USGS_Stress	Translocated	3	dead	other	neg	neg	n/a	neg	3-Oct-07			Tortoise found upside down with signs of heat stress.	
4238	F	237	165.497	6-Apr-10	4-Dec-09	513405	3886859	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	eyes, mild dried/wet	2-May-08	B70:L30	
4239	M	274	164.283	8-Apr-10	22-Apr-09	4-Nov-93	3884304	SEA	USGS Health	translocated	3	dead		neg	neg			21-Sep-08			Located carcass	
4240	F	228	165.349	10-Apr-09	14-Apr-09	11-Apr-19	3878528	SEA	USGS Health	translocated	5			neg	neg			5-Sep-08	mild nare erosion.	9-May-08	Radio found, no carcass	
4241	M	250			1-Apr-08	528746	3881448	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	24-May-07			Released without transmitter	
4242	M	253	162.741	10-Apr-10	8-Dec-09	537684	3879417	SEA	USGS Health	translocated	8			neg	neg	neg		2-May-09	L eye, few scales	4-May-08	2B:98L	
4243	M	260			1-Apr-08	528647	3881787	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	24-May-07			Released without transmitter	
4244	F	239	162.831	1-Apr-11	8-Dec-09	521099	3873097	SEA	ITS_Research	Translocated	6			neg	neg		neg	17-May-07				
4245	M	280	164.682	25-Apr-10	1-Dec-09	543785	3881884	SEA	ITS_Research	Translocated	10			neg	neg		neg	28-May-07				
4246	M	266	13-Jun-00		Jun 18 2008	517953	3877334	SEA	USGS_Stress	Translocated	5			neg	sus			7-May-08				
4247	F	240	163.260	13-Apr-10	1-Dec-09	543514	3881735	SEA	ITS_Research	Translocated	10			neg	neg		neg	31-Oct-07				
4248	M	265	16-Jun-00		Apr 13 2007	537903	3887437	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg			24-Sep-08	discharge in L eye, two	7-May-08		
4249	M	252	168.282	2-Apr-11	9-Dec-09	520896	3875539	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	4-Oct-07			Processed May 10, released May 11, missing May 16	
4250	F	224	16-Jun-00		Aug 1 2008	548550	3891375	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg		neg	6-May-08			canid	
4251	M	291	13-Jun-00		Jun 18 2008	518064	3875918	SEA	USGS_Stress	Translocated	5			neg	neg	n/a	neg	3-Oct-07				
4252	M	204	163.922	9-Apr-11	3-Dec-09	548906	3886460	SEA	ITS_Research	Translocated	10			neg	neg		neg	25-May-07				
4253	M	276			4-Apr-08	535639	3886745	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	5-Oct-06			Released without transmitter	
4254	F	228	13-Jun-00		Jun 23 2008	519995	3876007	SEA	USGS_Stress	Translocated	5	dead	canid	neg	neg	n/a	neg	3-Oct-07			found with head and limbs missing	
4255	unk	141			27-Jun-08	548536	3890008	SEA	ITS	Native	STA	xmtr removed		neg	neg		neg	2-Jun-07				
4256	M	260	168.963	14-Oct-11	14-Nov-09	536876	3888656	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	2-Jun-08	10% conjunctiva in R	2-Jun-08	Old Stress animal, passed to ITS	
4257	F	245	164.310	12-Mar-11	4-Dec-09	512248	3888744	SEA	USGS Health	translocated	1.5			pos	neg	neg		22-Oct-09	near nares, nare area	1-May-08		
4258	F	231			14-Apr-07			SEA	ITS	Monthly	SEA	dead	unk								unknown	
4259	M	253	162.502	14-Apr-10	15-Nov-09	548395	3890405	SEA	ITS	Native	STA			neg	neg		neg	3-Jun-07				
4260	M	260	165.183	3-Apr-11	9-Dec-09	523061	3873471	SEA	ITS_Research	Translocated	6			neg	neg		neg	29-May-07				
4261	M	274			10-Dec-08	534750	3886708	SEA	ITS	Native	South of 1	xtmr removed		neg	neg	n/a	neg	5-Oct-06			Old Stress animal, passed to ITS	
4262	M	272	14-Jun-00		May 21 2008	537099	3878074	SEA	USGS_Stress	Translocated	8	dead	unknown	neg	neg	n/a	neg	3-Oct-07				
4263	F	236	14-Jun-00		Aug 6 2008	548637	3890703	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	neg	11-May-08			canid	
4264	M	240	13-Jun-00		Jun 18 2008	539382	3879437	SEA	USGS_Stress	Translocated	8			neg	neg	n/a	neg	3-Oct-07				
4265	F	225	163.073	14-Apr-10	2-Dec-09	547697	3889546	SEA	ITS_Research	Translocated	10			neg	neg		neg	3-Jun-07				
4266	F	203			9-Apr-08	548801	3890613	SEA	ITS	Monthly	SEA	dead	canid	neg	neg		neg	28-May-07			canid	
4267	M	252	13-Jun-00		Mar 29 2008	508339	3879945	SEA	USGS_Stress	Translocated	3	dead	unknown	neg	neg	n/a	neg	3-Oct-07			Tortoise found dead. No signs of predation. Transmitter removed by M. Kang.	
4268	M	258	162.782	15-Apr-10	15-Nov-09	548284	3890549	SEA	ITS	Native	STA			neg	neg		neg	1-Jun-07				
4269	M	286	162.569	12-Mar-11	4-Dec-09	511732	3888022	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	and mild wet discharge	30-Apr-08		
4270	F	216	13-Jun-00		Apr 11 2008	548787	3890498	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg		neg	4-Jun-07			canid	
4271	M	261	166.354	14-Apr-09	11-Mar-09			SEA	USGS Health	translocated	8	missing		neg	neg			28-Sep-08				
4272	M	183	11-Jun-00		May 21 2008	536075	3887844	SEA	USGS_Health	Translocated	5	dead	natural	neg	neg		neg	6-May-08	nare erosion.	6-May-08	natural	
4273	F	207	167.271	11-Mar-11	9-Dec-09	535818	3879870	SEA	USGS Health	translocated	8			neg	neg	neg	neg	18-Oct-09			cohabiting burrow with 4286F	
4274	F	243	11-Jun-00		Apr 8 2007	530328	3890020	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg			20-Sep-08				
4275	M	238			9-Apr-08	549705	3886373	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	25-Sep-07			Released without transmitter	
4276	F	243	13-Jun-00		Jun 18 2008	508890	3879853	SEA	USGS_Stress	Translocated	3	dead		neg	pos?			6-May-08				
4277	M	249	13-Jun-00		May 8 2008	507519	3880010	SEA	USGS_Stress	Translocated	3	missing		neg	neg			4-Nov-07				
4278	M	257	164.982	15-Oct-11	3-Dec-09	547633	3886179	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	3-Oct-06				
4279	M	246			1-Apr-08	529264	3881303	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	3-Oct-06			Released without transmitter	
4280	F	231	13-Jun-00		Apr 1 2008	513404	3885642	SEA	USGS_Stress	Translocated	1.5	dead	canid	neg	neg	n/a	neg	4-Nov-07			Tort found deceased on back caused by predation	
4281	M	271	162.082	7-Apr-10	4-Dec-09	505961	3889090	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	eye and mild	1-May-08		
4282	F	223			26-Jul-08	519973	3872084	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	5-Jun-07			DEAD 7-30-08	
4283	F	246	11-Jun-00		May 8 2008	529756	3889282	SEA	USGS_Health	Translocated	8	dead	canid	neg	neg		neg	4-May-08			canid	
4285	M	287			20-Nov-08	520581	3873169	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	1-Jun-07				
4286	F	206	166.433	11-Mar-11	9-Dec-09	535818	3879870	SEA	USGS Health	translocated	8			neg	neg	neg	neg	18-Oct-09			cohabiting burrow with 4273F	
4287	M	243			2-Apr-08	541917	3882085	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	1-Jun-07			Released without transmitter	
4288	F	229	162.872	14-Apr-09	18-Mar-09	30-Sep-13	3877818	SEA	USGS Health	translocated	5	dead		neg	neg			26-Sep-08	L eye, nares	10-May-08	Located carcass	
4289	M	264	163.644	14-Apr-10	6-Dec-09	524540	3889145	SEA	ITS	Native	STA			neg	neg	neg	neg	7-Oct-09	L eye, discoloration of	3-Jun-08	B95:L5	
4290	M	273			27-Jun-08	549167	3890087	SEA	ITS	Native	STA	xmtr removed		neg	neg		neg	31-May-07				
4291	M	262	162.002	14-Apr-10	21-Oct-09	516792	3877352	SEA	USGS Health	translocated	5	dead		neg	neg			30-Apr-09	eye, 15% conjunctiva	10-May-08	Located carcass	
4292	F	235			27-Mar-08	549014	3890852	SEA	ITS	Monthly	SEA	dead	unk	neg	neg		neg	28-May-07			unknown	
4293	M	247			7-Apr-08	548951	3890644	SEA	ITS	Translocated	Fence	remove transmitter		neg	neg	n/a	neg	4-Oct-07			Animsl previously hard released - returned inside SEA boundaries due to gap in tortoise fence - no weight taken	
4294	M	265			1-Apr-08	528843	3881362	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	meg	20-Oct-07			Released without transmitter	
4295	F	214	16-Jun-00		Sep 23 2007	548158	3892009	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	neg	11-May-08	around nares, mild	11-May-08		
4296	F	213	15-Jun-00		Apr 8 2008	548495	3892319	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	meg	20-Oct-07			canid	
4297	M	261			1-Apr-08	528923	3882150	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	25-May-07			Released without transmitter	
4298	unk	160	165.202	10-Oct-08	3-Sep-08	549991	3883341	SEA	ITS_Research	Translocated	10	missing		neg	neg		neg	1-Jun-07				
4299	F	211	166.567	8-Oct-11	17-Nov-09			SEA	USGS Health	translocated	1.5	missing		neg	neg			20-Oct-09			B95:L5	
4300	M	265	168.169	12-Mar-11	4-Dec-09	510107	3886094	SEA	USGS Health	translocated	1.5			sus	neg	neg		23-Oct-09			B95:L5	
4301	M	242			9-Apr-08	548951	3885164	SEA	ITS	Translocated	10	xmtr removed		neg	neg		neg	6-Jun-07			Released without transmitter	
4302	M	252	163.071	29-Sep-11	16-Dec-09	528329	3887576	SEA	ITS_Research	Translocated	SD			neg	neg		neg	23-May-07				
4303	M	246	165.003	1-Apr-12	5-Dec-09	541406	3876522	SEA	ITS_Research	Translocated	13			neg	neg		neg	6-Jun-07				
4304	F	213			17-Sep-08	519889	3872567	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	31-May-07				
4305	M	245			4-Jan-09	528101	3887841	SEA	ITS_Research	Translocated	SD	dead		neg	neg		neg	23-May-07				
4306	F	233			4-Jan-09	528631	3887798	SEA	ITS_Research	Translocated	SD	dead		neg	neg		neg	21-May-07				
4307	M	253			4-Apr-08	536487	3886432	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	21-Oct-07			Released without transmitter	
4312	M	253			2-Apr-08	542098	3882245	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	24-May-07			Released without transmitter	
4313	F	215	164.793	28-Mar-11	16-Dec-09	528588	3887819	SEA	ITS_Research	Translocated	SD			neg	neg		neg	24-May-07				
4314	F	245	167.871	9-Nov-10	16-Dec-09	528189	3887764	SEA	ITS_Research	Translocated	SD			neg	neg		neg	23-May-07				
4320	F	229	11-Jun-00		May 7 2007	534164	3887899	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	7-May-08				
4341	M	251	164.762	7-May-10	1-Dec-09	543841	3881911	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	27-Sep-07				
4342	F	267			4-Dec-08	520097	3873061	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	7-Jun-07				
4343	F	212			2-Nov-08	527279	3887605	SEA	ITS_Research	Translocated	SD	dead		neg	neg		neg	16-May-08				
4344	unk	64	165.241	26-Jul-08	13-Jun-08	520564	3871589	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	22-Apr-08			Processed May 10, released May 11	
4345	unk	104			22-Apr-07			SEA	ITS	FISS	FISS	dead		neg	neg	n/a	neg	19-Oct-07				
4346	unk	159	165.382	7-Oct-10	5-Dec-09	543264	3877010	SEA	ITS_Research	Translocated	13			neg	neg		neg	26-May-07				
4347	M	260	N/A	N/A	24-Feb-09	14-Jun-80	3882601	SEA	USGS Health	translocated	3			neg	pos/sus/			21-Sep-08			Radio found, no carcass	
4348	unk	60			22-Apr-07			SEA	ITS	FISS	FISS	dead				n/a	neg	17-Oct-07	VET			
4349	unk	121	166.493	13-Sep-09	9-Dec-08	526532	3889544	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	27-Apr-08				
4350	unk	69			22-Apr-07			SEA	ITS	FISS	FISS	dead										
4351	unk	49			28-Apr-07			SEA	ITS	FISS	FISS	dead		neg	neg	n/a	neg	16-Oct-07				
4352	F	204	162.533	15-Jul-09	10-Dec-08	534888	3886841	SEA	ITS	Native	South of 1	xmtr needs popped		neg	neg	n/a	neg	8-Oct-06			Old Stress animal, passed to ITS	
4353	unk	116	164.192	12-Sep-08	15-Feb-08	525440	3889366	SEA	ITS	Monthly	SEA			neg	neg		neg	25-May-07				
4354	M	248	165.110	6-Jun-11	2-Dec-09	550563	3889818	SEA	ITS_Research	Translocated	10			neg	neg		neg	5-Jun-07				
4355	unk	59			20-Apr-07			SEA	ITS	FISS	FISS	dead										
4356	unk	75			20-Apr-07			SEA	ITS	FISS	FISS	dead		neg	neg	n/a	neg	18-Oct-07				
4357	unk	89			2-May-07			SEA	ITS	FISS	FISS											
4358	M	290			9-Apr-08	521080	3869721	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	21-Oct-07				
4359	F	201	15-Jun-00		Jun 23 2008	517982	3874434	SEA	USGS_Stress	Translocated	5	dead	canid	neg	neg	n/a	neg	3-Oct-07			found with head and limbs missing	
4360	unk	114			28-Mar-08	528514	3888549	SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	9-Oct-07			unknown	
4361	M	211	167.332	15-Apr-09	15-Apr-09	20-Apr-68	3879155	SEA	USGS Health	translocated	8	dead		neg	sus			29-Sep-08			Located carcass	
4362	F	223	165.183	15-Apr-10	8-Dec-09	513283	3889685	SEA	USGS Health	translocated	1.5			neg	neg	neg		22-Oct-09			B95:L5	
4363	F	218	165.966	15-Apr-11	9-Dec-09	535130	3879330	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09			B95:L5	
4364	unk	99			8-May-08			SEA	ITS	Translocated	8			neg	neg	n/a	neg	18-Oct-07				
4365	M	191	14-Jun-00		Jun 18 2008	514904	3884563	SEA	USGS_Stress	Translocated	1.5	dead		neg	neg	n/a	neg	3-Oct-07				
4366	M	259	165.702	17-Apr-10	4-Dec-09	548980	3885163	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	3-Oct-07				
4367	unk	163	168.892	17-May-10	1-Dec-09	547356	3884744	SEA	ITS_Research	Translocated	13			neg	neg		neg	6-Jun-07				
4368	M	187	11-Jun-00		Jan 17 2005	549359	3891612	SEA	USGS_Health	Translocated	8	lost		neg	neg		neg	6-Jun-07				
4369	M	258			1-Apr-08	528932	3881457	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	3-Oct-07			Released without transmitter	
4370	unk	149			20-Jun-08	521060	3869695	SEA	ITS	Translocated	6	dead		neg	neg		neg	8-Jun-07			Transmitter found on ground	
4371	M	341	163.301	26-Apr-10	30-Mar-08	520394	3891771	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	4-Oct-07			MCL probably an error, should be 241 based on PL	
4372	M	261			20-Nov-08	520222	3873085	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	26-May-07				
4373	M		163.300	17-Apr-10	9-Dec-09	535118	3881470	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09	area and crusting	5-May-08		
4374	M	270	162.802	20-Apr-10	6-Dec-09	525954	3889520	SEA	ITS	Monthly	SEA			neg	neg		neg	27-Apr-08				
4375	F	208	163.421	5-Apr-11	4-Dec-09	521622	3869030	SEA	ITS_Research	Translocated	6			neg	neg		neg	23-May-08				
4376	F	234			9-Dec-08	526258	3889235	SEA	ITS	Monthly	SEA	missing		neg	neg			28-Apr-08			lost xmitter, no tortoise	
4377	F	224	168.192	1-Apr-11	5-Dec-09	543236	3877065	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	31-May-08	R nare, L nare	31-May-08		
4378	unk	173	165.863	1-Apr-10	8-Dec-09	520677	3870844	SEA	ITS_Research	Translocated	6			neg	neg		neg	22-May-08				
4379	M	265			2-Apr-08	542009	3882145	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	15-Oct-07			Released without transmitter	
4380	M	280	163.402	9-Apr-11	1-Dec-09	547720	3884902	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	29-Sep-07				
4381	F	222			10-Dec-08	528165	3889524	SEA	ITS	Monthly	SEA	dead		neg	neg		neg	16-May-08	both eyes, few scales	16-May-08		
4382	F	241	163.412	16-Apr-09	22-Sep-07	528043	3890152	SEA	ITS	Monthly	SEA			neg	neg		neg	19-May-07				
4383	M	265			5-Dec-08	520383	3873008	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	19-May-08				
4384	M	264	162.962	16-Apr-10	8-Oct-09	519119	3875385	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	23-May-08				
4385	unk	166	166.872	11-Oct-09	13-Jul-08	525025	3889761	SEA	ITS	Monthly	SEA			neg	neg		neg	27-Apr-08	moderate/completely	27-Apr-08		
4386	F	223			Nov 13 2007	524905	3889613	SEA	USGS_Health	Monthly	SEA	dead	Canid	neg	pos		neg	28-May-07			canid	
4387	M	268	162.681	17-Apr-10	6-Dec-09	525622	3888962	SEA	ITS	Monthly	SEA			neg	neg		neg	27-Apr-08	both eyes, 5%	27-Apr-08		
4388	unk	150			26-Mar-08			SEA	ITS	Monthly	SEA	dead	canid	neg	neg		neg	27-May-07			canid	
4389	M	191	N/A	N/A	8-Jan-09			SEA	USGS Health	translocated	1.5			neg	neg		neg	1-May-08	L eye, L nare mildly	1-May-08	Radio found, no carcass	
4390	F	226			14-Feb-08			SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	neg	30-Oct-07			canid	
4391	M	226			30-Oct-08	524513	3889721	SEA	ITS	Monthly	SEA	dead		neg	neg			27-Apr-08	around nares, nare	27-Apr-08		
4392	F	210	163.483	2-Apr-11	4-Dec-09	549720	3886916	SEA	ITS_Research	Translocated	10			neg	neg		neg	28-May-08				
4393	F	221			Feb 14 2008	523968	3889967	SEA	USGS_Health	Monthly	SEA	dead	Canid	neg	neg		neg	28-May-07			canid	
4394	M	215			14-Feb-08	524319	3889842	SEA	ITS	Monthly	SEA	lost tx		neg	neg		neg	29-May-07				
4395	F	236			29-Aug-09	527580	3894970	SEA	ITS	Monthly	SEA	xmtr removed		neg	neg		neg	28-May-07				
4396	M	261	163.584	18-Apr-10	6-Dec-09	526350	3888510	SEA	ITS	Monthly	SEA			neg	neg			28-Apr-08				
4397	M	233			29-Oct-08	528085	3894308	SEA	ITS	Monthly	SEA	missing		neg	neg		neg	28-May-07				
4398	M	276	163.162	18-Apr-10	9-Dec-09	535156	3876828	SEA	ITS_Research	Translocated	6			sus	pos	neg		27-Oct-09			B20:L80	tracked by site 13
4399	M	254	11-Jun-00		Oct 9 2007	523916	3889990	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	9-May-08	around nares and nare	9-May-08		
4400	F	226	168.872	25-Apr-11	3-Dec-09	549442	3886251	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	29-May-08				
4401	unk	70			14-Apr-07			SEA	ITS	FISS	FISS	dead		neg	neg	n/a	neg	18-Oct-07				
4402	M	266			9-Dec-08	527344	3888901	SEA	ITS	Monthly	SEA	dead		neg	neg		neg	22-Apr-08				
4403	M	278	162.153	3-May-11	8-Dec-09	521125	3871524	SEA	ITS_Research	Translocated	6			neg	neg		neg	22-May-08				
4404	F	201	168.360	16-Oct-11	6-Dec-09	526636	3888254	SEA	ITS	Monthly	SEA			neg	neg		neg	22-Apr-08				
4405	M	288			10-Dec-08	527582	3889738	SEA	ITS	Monthly	SEA	missing		neg	neg	n/a	neg	22-Apr-08			lost xmtr, no tortoise	
4406	M	216			10-Oct-07	527911	3889031	SEA	ITS	Monthly	SEA	missing		neg	neg		neg	20-May-07			lost tx	
4407	M	186	167.531	5-Oct-11	11-Dec-09	540293	3879378	SEA	ITS_Research	Translocated	13			neg	neg		neg	4-Jun-07				
4408	unk	146			27-Sep-08	528120	3888000	SEA	ITS	Native	STA	dead		neg	neg		neg	17-May-08				
4409	F	232			20-Sep-08	520736	3872096	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	6-Jun-07			DEAD 9-20-08	
4410	M	245	165.301	20-Apr-10	9-Dec-09	535224	3881461	SEA	USGS Health	translocated	8			pos	neg	neg		20-Oct-09	erosion, possible dried	3-Jun-08	Re-sample in Sept/Oct; consider for salvage	
4411	F	214			16-Nov-07			SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	13-Oct-07			unknown	
4412	unk	80			15-Apr-08			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	5-Jun-08				
4413	F	240	12-Jun-00		Jul 14 2008	520104	3892095	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	neg	12-May-08	around nares.	12-May-08	canid	

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06				
4414	unk	52			2-May-07			SEA	ITS	FISS	FISS											
4415	M	195	168.291	1-Apr-11	11-Dec-09	540684	3881540	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	6-Oct-07				
4416	unk	130	166.664	8-Sep-10	5-Dec-09	543825	3876521	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	24-Sep-07				
4417	M	241	15-Jun-00		Apr 28 2008	530673	3889522	SEA	USGS_Health	Translocated	1.5	to necropsy, snak	necropsy	neg	neg	n/a	neg	25-Sep-07			necropsy	
4418	F	212	168.592	1-May-11	8-Dec-09	537522	3880343	SEA	USGS Health	translocated	8			neg	neg	neg		27-Oct-09	eyes, nare area dirty	5-May-08		
4419	M	176			7-Oct-07			SEA	ITS	Monthly	SEA	dead		neg	neg	n/a	neg	23-Sep-07			depredated	
4420	M	240	166.542	10-May-10	9-Dec-09	520572	3874455	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	29-Sep-07				
4421	unk	166			3-Jan-09	549153	3884822	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	9-Oct-07			found xmtr, no tortoise	
4422	M	258			4-Apr-08	523074	3889961	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	9-Oct-07			Released without transmitter	
4423	F	207	165.828	17-Mar-11	4-Dec-09	510974	3883510	SEA	USGS Health	translocated	3			neg	neg	neg		25-Oct-09			B10:L90	
4424	M	215	162.614	19-Apr-09	21-Sep-08	524897	3891171	SEA	ITS	Monthly	SEA	xmtr needs popped		neg	neg		neg	27-Apr-08	around R nare, 5%	27-Apr-08		
4425	M	237			28-Apr-08	526938	3889922	SEA	ITS	Monthly	SEA			neg	neg		neg	21-May-07			Found transmitter with chew marks 4/28, no tortoise	
4426	F	233	163.331	3-Apr-11	9-Dec-09	533998	3879128	SEA	ITS_Research	Translocated	13			neg	neg		neg	29-May-08				
4427	M	266	162.632	30-Mar-11	6-Dec-09	526440	3889295	SEA	ITS	Monthly	SEA			neg	neg		neg	28-Apr-08				
4428	F	244	163.560	1-Apr-11	2-Dec-09	546868	3886152	SEA	ITS_Research	Translocated	10			neg	neg		neg	26-May-08	conjunctiva in L eye.	26-May-08	Apparently not dead	
4429	F	190	167.971	3-Apr-10	9-Dec-09	522410	3874456	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	19-May-08				
4430	F	246	162.372	20-Apr-09	8-Nov-08	520608	3890533	SEA	ITS	Monthly	SEA			neg	neg			26-Apr-08				
4431	M	244			16-Nov-07			SEA	ITS	Monthly	SEA	dead	unk	neg	neg		neg	3-Jun-07			unknown	
4432	M	262			2-Apr-08	542250	3882129	SEA	ITS	Translocated	9	xmtr removed		neg	neg		neg	5-Jun-07			Released without transmitter	
4433	M	194			4-Apr-08	519877	3890046	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	5-Jun-07			Released without transmitter	
4434	M	202	163.110	14-Apr-11	3-Dec-09	558736	3894250	SEA	ITS_Research	Translocated	10			neg	neg		neg	5-Jun-07				
4435	F	211			26-Oct-09	520103	3873288	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	7-Jun-07				
4436	F	231	162.370	2-Apr-11	2-Dec-09	550847	3889371	SEA	ITS_Research	Translocated	10			neg	neg		neg	7-Jun-07			Scanned last known locations and nearby. still no signal 8-21-08	
4437	M	174	162.972	7-May-09	7-May-07	529146	3888740	SEA	ITS	Monthly	SEA	missing										
4438	unk	174	162.862	4-May-11	14-Nov-09	536038	3888455	SEA	ITS	Monthly	SEA			neg	neg	neg	neg	6-Oct-09				
4439	unk	106			12-May-07			SEA	ITS	FISS	FISS											
4440	M	247			Feb 16 2008	535736	3887078	SEA	USGS_Health	Monthly	SEA	missing		neg	neg		neg	8-Jun-07				
4441	M	246	164.162	21-Apr-10	18-Aug-09	538331	3880571	SEA	USGS Health	translocated	8	dead		neg	neg	neg		1-May-09	discolored.	3-May-08	Located carcass	
4442	M	273	164.742	22-Apr-10	8-Dec-09	516808	3878182	SEA	USGS Health	translocated	5	dead		neg	neg	neg		21-Oct-09			Located carcass	
4443	F	220	12-Jun-00		Aug 6 2008	509244	3881143	SEA	USGS_Health	Translocated	1.5	dead	canid	neg	neg		neg	11-May-08			canid	
4447	Juv	92	165.759	31-Mar-10	5-Dec-09	543044	3876555	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	17-Oct-07				
4448	unk	154			5-Jul-08	518481	3876590	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	7-Jun-07			DEAD 7-5-08	
4451	F	211			Apr 9 2008	520789	3890523	SEA	USGS_Health	Monthly	SEA	dead	canid	neg	neg		neg	3-Jun-07			canid	
4455	M	262			9-Sep-08	542089	3876569	SEA	ITS	Translocated	13	xmtr removed		neg	neg		neg	7-Jun-07			Released without transmitter	
4456	F	240			9-Sep-09	516993	3875032	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	7-Jun-07				
4458	F	231			24-Aug-08	520412	3873272	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	15-Oct-07				
4460	M	269			6-Apr-08	543260	3876733	SEA	ITS	Translocated	13	xmtr removed		neg	neg		neg	5-Jun-07			Released without transmitter	
4467	Juv	196	166.418	5-Oct-09	11-Nov-09	536537	3880398	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	29-Apr-08			Old Stress animal, passed to ITS	
4469	??				6-Jun-08			SEA	ITS	Monthly	SEA	dead										
4481	unk	112			20-May-08	529410	3886487	SEA	ITS_Research	Translocated	SD	dead		neg	neg	n/a	neg	24-Sep-07			DEAD 5-20-08	
4482	unk	126	166.519	8-Sep-10	5-Dec-09	543345	3876637	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	25-Sep-07				
4483	M	242	164.713	unknown	22-May-09			SEA	USGS Health	translocated	SEA	missing		neg	sus	n/a	neg	2-Jun-08	eyes, nares completely	2-Jun-08	Re-sample in Sept/Oct 2008	
4484	Juv	108			28-May-08	548299	3887637	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	26-May-08			DEAD 5-28-08	
4485	M	232	166.182	14-May-10	16-Apr-09			SEA	USGS Health	translocated	8	missing		neg	neg			27-Sep-08	around nares 10-20%	4-May-08		
4486	M	258			31-Mar-08			SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	neg	3-Oct-07			Released without transmitter	
4487	F	238			2-Jun-08	520306	3873021	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	2-Jun-07			DEAD 6-2-08	
4488	F	247	168.633	27-Jun-11	3-Dec-09	548268	3885074	SEA	ITS_Research	Translocated	10			neg	neg		neg	5-Jun-07				
4489	F	257	12-Jun-00		May 1 2008	540990	3888208	SEA	USGS_Health	Translocated	1.5	dead	canid	neg	neg		neg	1-Jun-07			canid	
4490	F	254	15-Jun-00		Jul 20 2008	542422	3889318	SEA	USGS_Health	Translocated	3	dead	raven	neg	neg		neg	12-May-08			raven	
4491	Imm	152	13-Jun-00		May 15 2008	548399	3891260	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg		neg	12-May-08			canid	
4492	F	205	165.430	16-Apr-10	7-Jan-09	543827	3881967	SEA	ITS_Research	Translocated	10	missing		neg	neg		neg	4-Jun-07				
4493	M	252			1-Apr-08	528947	3881651	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	2-Jun-07			Released without transmitter	
4494	M	260	167.115	17-May-10	8-Dec-09	536761	3879074	SEA	USGS Health	translocated	8			neg	neg	neg		18-Oct-09				
4495	F	187	163.533	3-Apr-11	11-Dec-09	540201	3878560	SEA	ITS_Research	Translocated	13			neg	neg		neg	3-Jun-07				
4496	unk	134	165.923	7-Sep-10	10-Dec-09	544092	3878835	SEA	ITS_Research	Translocated	13			neg	neg		neg	7-Jun-07				
4497	F	233			14-Nov-09	548847	3886467	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	26-May-08				
4498	F	225			May 28 2008	550825	3892493	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	7-May-08			canid	
4499	F	220	167.083	26-May-10	4-Dec-09	510917	3883328	SEA	USGS Health	translocated	3			neg	neg	neg		25-Oct-09	eye, mild dried	13-May-08	B50:L50; B5:L95	
4500	Juv	102	164.082	21-Apr-10	5-Dec-09	542886	3876760	SEA	ITS_Research	Translocated	13	dead		neg	neg			30-Sep-07			A DOUBLE-MARKED TORTOISE	
4500	unk	103						SEA	ITS_Research	Translocated	13			neg	neg			2-May-08				
4501	unk	46			26-May-09			SEA	ITS	FISS	FISS	dead						24-Apr-08	Too small to bleed.			
4502	unk	45			27-Sep-07			SEA	ITS	FISS	FISS							23-Apr-08	Too small to bleed.			
4503	unk	45			28-Sep-07			SEA	ITS	FISS	FISS								Not evaluated			
4504	M	275			8-Jan-09	516037	3883741	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	22-Oct-07				
4505	M	263			1-Apr-08	529169	3881370	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	21-Oct-07			Released without transmitter	
4506	F	211	163.569	15-May-11	4-Dec-09	508244	3880991	SEA	USGS Health	translocated	3			neg	neg	neg		28-Apr-09			10B:90L	
4507	M	273	162.122	20-Sep-10	8-Dec-09	512769	3889925	SEA	USGS Health	translocated	1.5			neg	neg	neg		22-Oct-09			B95:L5	
4508	M	247			10-Jan-09	520646	3871220	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	21-May-08				
4509	unk	85			30-May-07			SEA	ITS	FISS	FISS											
4512	Juv	114			18-Apr-08	542611	3876901	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	16-Oct-07			Released without transmitter	
4514	Juv	74	164.633	29-Mar-10	3-Dec-09	548736	3885439	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	27-May-08				
4515	M	257	168.921	13-Oct-10	3-Dec-09	548303	3886612	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	6-Nov-07				
4516	M	247	165.603	29-Apr-11	9-Dec-08	525237	3889842	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	27-Apr-08				
4517	M	275	163.022	19-Sep-10	9-Dec-09	543071	3884462	SEA	USGS Health	translocated	8			neg	neg			19-Oct-09	eyes, nares	4-May-08		
4518	M	272			2-Apr-08	541837	3881666	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	12-Oct-07			Released without transmitter	
4519	M	208	167.791	15-Oct-11	14-Nov-09	536090	3889823	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	29-Apr-08				
4520	F	203			8-Jan-09	541116	3878562	SEA	ITS_Research	Translocated	13	dead		neg	neg		neg	6-Jun-07				
4521	M	264	164.624	10-May-10	14-Nov-09	535676	3888433	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	29-Apr-08				
4522	unk	94			11-May-07			SEA	ITS	FISS	FISS											
4523	unk	105			11-May-07			SEA	ITS	FISS	FISS			neg	neg			23-Apr-08				
4524	unk	147	165.744	5-Sep-10	2-Dec-09	553620	3889547	SEA	ITS_Research	Translocated	10			neg	neg		neg	2-Jun-07				
4525	M	261	165.729	unknown	9-Dec-09	548361	3890236	SEA	USGS Health	translocated	SEA			neg	neg	neg	neg	6-Oct-09	both eyes, nare area	24-Apr-08	Proposed for salvage; cause of exudate unknown	
4526	unk	119	164.242	13-Sep-09	5-Dec-08	521512	3870986	SEA	ITS_Research	Translocated	6	missing		neg	neg		neg	20-May-08				
4527	unk	158	162.453	11-Oct-09	29-Mar-08	525697	3889348	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	30-Oct-07				
4528	Juv	97			30-Apr-08	519532	3871333	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	16-Oct-07			DEAD 4-30-08	
4529	unk	62			24-Apr-08			SEA	ITS	FISS	E. pen, FISS	necropsy				n/a	neg	21-Apr-08	Too small to bleed.		necropsy	
4530	Juv	66			3-Jan-09	548901	3885709	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	25-May-08				
4531	unk	118	165.940	30-Apr-10	3-Dec-09	548196	3886474	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	19-Oct-07			MISSING	
4532	unk	148	165.139	6-Oct-10	5-Dec-09	543054	3876624	SEA	ITS_Research	Translocated	13			neg	neg		neg	4-Jun-07				
4533	M	240			23-Apr-09	528481	3879918	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	1-Oct-07			Released without transmitter	
4534	M	187	163.510	9-Apr-11	5-Dec-09	543430	3876831	SEA	ITS_Research	Translocated	13			neg	neg			4-Jun-07				
4535	F	242	166.631	14-May-09	16-Apr-09			SEA	USGS Health	translocated	8	missing		neg	neg			29-Sep-08	around nares.	5-May-08		
4537	Juv	60	167.709	1-Oct-08	4-Sep-08	548645	3884982	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	27-May-08				
4538	F	242	165.072	29-Apr-11	11-Dec-09	540205	3879767	SEA	ITS_Research	Translocated	13			neg	neg		neg	6-Jun-07				
4539	M	262			31-Mar-08	545771	3890050	SEA	ITS	Monthly	SEA			neg	neg		neg	6-Jun-07			remove xmtr & translocate	
4540	F	244	167.333	2-May-11	9-Dec-09	535572	3879951	SEA	USGS Health	translocated	8			neg	neg	neg		19-Oct-09				
4541	M	278			6-Oct-09	549674	3885410	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	1-Oct-07			Released without transmitter	
4542	M	157			4-Apr-08	545366	3888067	SEA	ITS	Translocated	Fence	xmtr removed		neg	neg		neg	6-Jun-07			Released without transmitter	
4543	unk	56	166.510	26-Jul-08	30-May-08	549515	3885827	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	22-Apr-08			MISSING Processed May 10, released May 11	
4544	M	280	166.901	20-May-10	4-Dec-09	510741	3883131	SEA	USGS Health	translocated	3			neg	neg	neg		26-Oct-09				
4545	M	178	166.584	2-Apr-10	5-Dec-09	546810	3876588	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	1-Oct-07				
4546	Juv	79	164.587	29-Mar-10	8-Dec-09	520150	3871783	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	21-May-08				
4547	Juv	62			13-May-08	547958	3887037	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	16-Oct-07			DEAD 5-13-08	
4548	F	227	167.231	9-Jul-11	23-Sep-09	521791	3871144	SEA	USGS Health	translocated	5	dead		neg	neg			25-Sep-08			Located carcass	
4549	unk	141	166.591	11-Sep-08	9-Sep-08	543237	3876338	SEA	ITS_Research	Translocated	SD	missing		neg	neg	n/a	neg	11-Oct-07				
4550	Juv	66			6-Dec-08	520227	3871739	SEA	ITS_Research	Translocated	6			neg	sus	n/a	neg	23-May-08				
4551	unk	59			27-May-07			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	17-Oct-07				
4552	F	227	166.442	27-May-10	5-Dec-09	542706	3877204	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	2-Oct-07				
4553	M	204			1-Apr-08	528952	3881499	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	3-Oct-07			Released without transmitter	
4554	F	211	168.452	27-May-09	4-May-09	12-May-97	3885933	SEA	USGS Health	translocated	1.5	dead		neg	neg			22-Sep-08	and 5% conjunctiva in	1-May-08	Located carcass	
4555	unk	150			5-Jan-09	547371	3885818	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	5-Oct-07				
4556	F	280	167.337	28-May-10	21-Oct-09	517642	3876937	SEA	USGS Health	translocated	5	dead		neg	neg	neg		29-Apr-09	and 5-10% conjunctiva	9-May-08	Located carcass	
4557	M	280	167.323	30-May-10	3-Dec-09	548518	3886528	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	6-Oct-07				
4558	Juv	74			14-May-08	548872	3885146	SEA	ITS	Translocated	10	missing		neg	neg	n/a	neg	16-Oct-07			Transmitter fell off May 14	
4559	M	240			20-May-09	550968	3886921	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	21-Oct-07			Searched last known location and nearby 10:00-11:30 and found no signal	
4560	unk	160	N/A	N/A	23-May-09			SEA	USGS Health	translocated	SEA			neg	neg	n/a	neg	11-Oct-07			transmitter found, no tortoise, evidence of canid	Tortoise transferred from other research group; radio only found May 2008
4561	unk	145	167.883	7-Sep-10	1-Dec-09	545989	3885077	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	21-Oct-07				
4562	unk	102			27-May-07			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	16-Oct-07				
4563	unk	95			24-May-07			SEA	ITS	FISS	FISS											
4564	F	219	168.729	1-May-11	8-Dec-09	537674	3879419	SEA	USGS Health	translocated	8			neg	neg	neg		20-Oct-09			cohabiting rock shelter with 4114M	
4570	Juv	96	164.021	19-Apr-10	8-Dec-09	519953	3871824	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	21-May-08				
4571	F	227	167.910	20-Jun-09	12-Oct-07	523548	3889938	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	9-Oct-07				
4572	unk	164	167.372	18-Aug-10	4-Dec-09	522391	3870191	SEA	ITS_Research	Translocated	6			neg	neg			22-May-08				
4573	F	253	168.121	2-Apr-11	5-Dec-09	543252	3877191	SEA	ITS_Research	Translocated	13			neg	neg		neg	7-Jun-07				
4574	F	228	163.048	7-Oct-11	10-Dec-09	545125	3880078	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	13-Oct-07				
4575	unk	120	165.959	27-May-10	5-Dec-09	542937	3876516	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	17-Oct-07				
4576	unk	125			5-Dec-08	526430	3871961	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	6-Jun-07				
4577	M	250			1-Apr-08	528946	3881366	SEA	ITS	Translocated	7	xmtr removed		neg	neg		neg	7-Jun-07			Released without transmitter	
4578	Juv	75	166.669	12-Sep-08	5-Sep-08	520072	3871539	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	22-May-08				
4579	F	219	167.732	17-Oct-10	1-Dec-09	544314	3882685	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	4-Oct-07				
4580	Juv	86	164.687	29-Mar-10	8-Dec-09	519928	3872029	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	16-May-08				
4581	M	230	168.401	6-Apr-11	5-Dec-09	542511	3877175	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	9-Oct-07				
4582	F	209	162.672	18-Aug-11	8-Dec-09	536757	3879155	SEA	USGS Health	translocated	8											
4582	Juv	104			24-May-08	548430	388536	SEA	ITS_Research	Translocated	10	dead		neg	neg	neg	neg	18-Oct-09	around nares.	4-May-08	DOUBLE-MARKED, see below	
4586	M	231	15-Jun-00		Aug 2 2008	519495	3890762	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	7-May-08			canid	
4587	M	260			16-Nov-07			SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	15-Oct-07			unknown	
4588	unk	131	165.442	1-Aug-10	4-Dec-09	549438	3886865	SEA	ITS_Research	Translocated	10			neg	neg		neg	7-Jun-07				
4589	F	202			5-Dec-08	525951	3872666	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	2-Jun-07				
4590	M	226	12-Jun-00		Apr 16 2008	547764	3890701	SEA	USGS_Health	Translocated	3	necropsy	necropsy	neg	neg	n/a	neg	2-Oct-07			necropsy	
4591	M	280			27-Apr-09	545958	3885037	SEA	ITS	Translocated	13	xmtr removed		neg	neg	n/a	neg	3-Oct-07			Released without transmitter	
4592	M	246	165.418	25-May-10	8-Dec-09	515977	3876962	SEA	USGS Health	translocated	5			neg	neg	neg		24-Oct-09			B15:L85	
4593	unk	139			10-May-08	519388	3871613	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	5-Oct-07			DEAD 5-10-08	
4594	F	213			3-Jan-09	541977	3877514	SEA	ITS_Research	Translocated	13	dead		neg	neg		neg	3-Jun-07				
4595	M	245	14-Jun-00		Apr 21 2008	549347	3890977	SEA	USGS_Health	Translocated	3	dead	canid	neg	neg	n/a	neg	3-Oct-07			canid	
4596	M	284	167.003	13-May-10	8-Dec-09	517800	3878704	SEA	USGS Health	translocated	5			neg	neg	neg		22-Oct-09				
4597	M	248			25-Apr-09	524976	3885785	SEA	ITS	Translocated	7	dead		neg	neg		neg	3-Jun-07			Released without transmitter	
4598	F	230			25-Jul-08	520787	3873341	SEA	ITS_Research	Translocated	6	dead		neg	neg		neg	5-Jun-07			DEAD 7-25-08	

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06			
4599	unk	118	164.732	12-Sep-08	1-Jul-08	550509	3889311	SEA	ITS_Research	Translocated	10	missing		neg	neg		neg	5-Jun-07			Scanned last known location and nearby. still no signal 8-21-08
4600	F	214			16-Feb-08	529718	3890078	SEA	ITS	Monthly	SEA	missing		neg	neg	n/a	neg	6-Oct-07			found transmitter, no tortoise
4601	M	259	162.924	21-Sep-10	11-Dec-09	541236	3881810	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	20-Oct-07			
4602	F	240	163.060	25-Sep-10	4-Dec-09	551271	3886416	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	20-Oct-07			
4603	F	214	163.523	25-Sep-10	4-Dec-09	549317	3884309	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	20-Oct-07			
4604	F	224	163.502	25-Sep-10	15-Nov-09	549507	3891609	SEA	ITS	Monthly	SEA			neg	neg			24-Apr-08	discharge in both eyes,	24-Apr-08	
4605	M	257			31-Mar-08			SEA	ITS	Translocated	Fence	xmtr removed		neg	neg	n/a	meg	20-Oct-07			Released without transmitter
4606	unk	131	165.752	14-Sep-09	8-Dec-09	520684	3871360	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	4-Oct-07			
4607	Juv	79	165.981	6-Apr-09	4-Jan-09	542657	3876840	SEA	ITS_Research	Translocated	13	missing		neg	neg	n/a	neg	17-Oct-07			
4608	Juv	107			24-Apr-08	549821	3885485	SEA	ITS	Translocated	10	missing		neg	neg	n/a	neg	16-Oct-07			26Apr08 transmitter recovered!
4609	M	255	167.280	18-May-10	21-Apr-09			SEA	USGS Health	translocated	3	missing		neg	neg			23-Sep-08	and 10% conjunctiva in	13-May-08	
4610	F	222	168.372	2-Apr-11	10-Dec-09	538003	3876753	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	5-Oct-07			
4611	F	197	167.033	1-May-11	8-Dec-09	537500	3879273	SEA	USGS Health	translocated	8			sus	neg	neg		18-Oct-09			
4612	unk	58			16-Apr-08			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	5-Jun-08			Brought to trailer in April 2008 to translocate, runny nose, returned to DPW
4613	Juv	112			16-Apr-08	520136	3871801	SEA	ITS	Translocated	6	xmtr removed		neg	neg	n/a	neg	20-Oct-07			Released without transmitter
4613	M	261			1-Apr-08	528817	3882136	SEA	ITS	Translocated	7	xmtr removed		neg	neg	n/a	neg	20-Oct-07			Released without transmitter
4614	unk	132			26-Jul-08	521625	3871118	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	20-May-08			DEAD 7-30-08
4615	M	247			6-Dec-08	521156	3871376	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	22-May-08			
4616	F	221	167.553	unknown	29-Jul-09			SEA	USGS Health	translocated	SEA	missing		neg	neg	neg	neg	21-May-09	discharge and 10%	16-May-08	
4617	unk	150	166.100	17-Oct-10	7-Dec-09	527547	3889484	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	28-Apr-08	of both nares and	28-Apr-08	
4618	unk	112			18-Oct-07			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	18-Oct-07			
4619	unk	54	166.191	26-Jul-08	13-May-08	549635	3885892	SEA	ITS_Research	Translocated	10	missing		neg	neg	n/a	neg	23-Apr-08			Processed May 10, released May 11, missing May 16
4620	unk	91			12-Oct-08	521504	3874775	SEA	ITS	FISS	FISS			neg	neg	n/a	neg	19-Oct-07			Formerly labeled as "A"
4623	M	256	165.723	2-Apr-11	9-Dec-09	519976	3873315	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	21-May-08	around nares.	21-May-08	
4624	unk	122			25-May-08	527918	3889793	SEA	ITS	Monthly	SEA	missing		neg	neg	n/a	neg	22-Apr-08			
4625	F	225	168.800	15-Sep-11	6-Dec-09	520373	3890889	SEA	ITS	Monthly	SEA			neg	neg	neg		24-May-09	eyes, eyes mildly	3-Jun-08	2B:98L
4626	F	243	162.562	10-Oct-10	6-Dec-09	520162	3891080	SEA	ITS	Monthly	SEA			neg	neg			26-Apr-08			
4627	Juv	60			16-Apr-08			SEA	ITS	Translocated	6	missing		neg	neg	n/a	neg	18-Oct-07			dropped transmitter 30Apr08 update
4628	F	262	162.922	3-Oct-10	1-Dec-09	546157	3880931	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	2-Oct-07			
4629	M	263	163.042	4-Oct-10	4-Dec-09	508929	3878569	SEA	USGS Health	translocated	3			neg	neg	neg		25-Oct-09	nare erosion.	12-May-08	
4630	Juv	66			9-Nov-08	520342	3871617	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	21-May-08			found xmtr, no tortoise
4631	unk	63			18-Oct-07			SEA	ITS	FISS	FISS							5-Dec-07	very poor condition		Formerly labeled as "N"
4634	unk	120			21-Jul-09	549327	3884890	SEA	ITS_Research	Translocated	10	dead		neg	neg	n/a	neg	21-Oct-07			
4636	unk	42			26-May-09			SEA	ITS	FISS	FISS	dead				n/a	neg	23-Apr-08	Too small to bleed.		
4638	Juv	68	164.471	29-Mar-10	8-Dec-09	520060	3871595	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	22-Apr-08			Processed May 10, released May 11
4639	Juv	87	164.731	29-Mar-10	8-Dec-09	520178	3871503	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	21-May-08			
4640	M	263	166.482	27-Sep-10	4-May-09	15-Jun-88	3883025	SEA	USGS Health	translocated	3	dead		neg	neg			21-Sep-08			Located carcass
4641	M	276			9-Apr-08	549491	3886587	SEA	ITS	Translocated	10	xmtr removed		neg	neg	n/a	neg	22-Oct-07			Released without transmitter
4642	M	266	166.603	29-Sep-10	6-Dec-09	520492	3891314	SEA	ITS	Monthly	SEA			neg	neg	neg	neg	19-May-09			
4643	M	264	167.501	5-Oct-12	11-Dec-09	537295	3880301	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	22-Oct-07			
4644	F	232	163.733	28-Sep-09	23-Apr-09	13-Dec-13	3874480	SEA	USGS Health	translocated	5	dead		neg	sus			25-Sep-08			Located carcass
4645	M	245			21-Sep-09	518373	3875018	SEA	ITS_Research	Translocated	13	dead		neg	neg	n/a	neg	22-Oct-07			
4646	Juv	108	164.040	21-Apr-10	5-Dec-09	542525	3876480	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	18-Oct-07			
4647	unk	45			29-Sep-07			SEA	ITS	FISS	FISS					n/a	neg	16-Oct-07	Too small to bleed		
4648	unk	52			29-Sep-07			SEA	ITS	FISS	FISS										
4649	unk	105	164.547	7-Apr-09	5-Nov-08	543355	3876336	SEA	ITS_Research	Translocated	13	missing		neg	neg	n/a	neg	23-Apr-08			Processed May 10, released May 11, was 4549 on previous forms really is 4649
4650	unk	61			17-Sep-08	520301	3871499	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	22-Apr-08			Processed May 10, released May 11
4651	unk	131	166.482	5-Sep-10	4-Dec-09	521090	3869841	SEA	ITS_Research	Translocated	6			neg	neg	n/a	neg	22-May-08			
4652	M	276	168.122	13-Oct-10	15-Nov-09	548319	3890211	SEA	ITS	Monthly	SEA			neg	neg			24-Apr-08	eye, nare area	24-Apr-08	
4653	M	265	163.022	30-Mar-11	6-Dec-09	525761	3889431	SEA	ITS	Monthly	SEA			neg	neg			16-May-08			
4654	F	233			1-Jul-08	517087	3892875	SEA	ITS	Monthly	SEA	dead		neg	neg			17-May-08	missing around nares.	5-May-08	
4658	Juv	66			21-Apr-08	549453	3885877	SEA	ITS	Translocated	10	missing		neg	neg	n/a	neg	17-Oct-07			transmittered recovered 22Apr08 scute attached no tortoise
4659	unk	134	166.754	29-Aug-08	19-Feb-08	520361	3891233	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	22-Oct-07			
4660	unk	45			29-Sep-07			SEA	ITS	FISS	FISS					n/a	neg	24-Apr-08	Too small to bleed		
4661	unk	81			29-Sep-07			SEA	ITS	FISS	FISS										
4662	F	231	167.052	5-Oct-09	24-Sep-09	550010	3891593	SEA	ITS	Monthly	SEA	missing		neg	neg			23-Apr-08			missing 15-oct-09
4664	F	239	162.023	27-Sep-10	2-Dec-09	545991	3886089	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	22-Oct-07			
4665	Juv	95	166.912	30-Jun-08	16-Apr-08	520336	3871481	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	16-Oct-07			
4666	F	234			16-Jul-08	519631	3873829	SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	20-May-08	around nares, 5%	20-May-08	Transmitter found on ground outside burrow. Evidence that canine chewed on transmitter. Tortoise found safe in burrow.
4667	M	263			24-Oct-08	521551	3868351	SEA	ITS	Translocated	6	missing		neg	neg	n/a	neg	11-Oct-07			
4668	F	202			8-Jan-09	543352	3880615	SEA	ITS_Research	Translocated	13	missing		neg	neg	n/a	neg	30-May-08			
4669	unk	101			26-Jun-08	526378	3889882	SEA	ITS	Monthly	SEA	dead	unk	neg	neg	n/a	neg	25-Apr-08			unknown
4670	F	209	165.973	25-Mar-10	26-Mar-08	522885	3890433	SEA	ITS	Monthly	SEA	missing									
4672	F	247	167.550	7-Oct-11	5-Dec-09	543366	3877441	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	31-May-08			
4673	M	261	162.842	8-Oct-10	6-Dec-09	524261	3889929	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	26-Apr-08			
4674	F	205	167.751	16-Oct-11	6-Dec-09	524018	3889975	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	26-Apr-08			
4675	unk	125			2-Jun-08	524368	3889592	SEA	ITS	Monthly	SEA	dead	canid	neg	neg	n/a	neg	27-Apr-08			canid
4676	M	260	165.421	2-Apr-11	6-Dec-09	526188	3889617	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	27-Apr-08			
4677	M	241	162.363	29-Sep-10	7-Dec-09	527009	3890271	SEA	ITS	Monthly	SEA			neg	neg	n/a	neg	28-Apr-08			
4678	F	238	164.871	6-Oct-11	3-Dec-09	547528	3886280	SEA	ITS_Research	Translocated	10			neg	neg	n/a	neg	27-May-08			
4679	F	217	167.712	16-Oct-11	6-Dec-09	525541	3888968	SEA	ITS	Monthly	SEA			neg	neg	neg		20-May-09			
4680	M	191			Oct 14 2007	535932	3887369	SEA	USGS_Health	Monthly	SEA	lost		neg	neg	n/a	neg	6-Nov-07			
4684	F	223			24-Apr-08	520440	3869962	SEA	ITS_Research	Translocated	6	dead		neg	neg	n/a	neg	24-May-08			DEAD 7-24-08
4685	M	261			30-Mar-08			SEA	ITS	Monthly	SEA	dead	unk								unknown
4686	F	207	163.591	15-Oct-11	15-Nov-09	550346	3892534	SEA	ITS	Monthly	SEA			neg	neg	neg		22-May-09	and dirty looking, 5%	29-Apr-08	
4687	M	272	168.162	18-Nov-10	16-Feb-08	529463	3890083	SEA	ITS	Monthly	SEA										
4692	F	220	162.952	8-Oct-11	4-Dec-09	514018	3887242	SEA	USGS Health	translocated	1.5			neg	neg	neg		21-Oct-09	both eyes, few scales	2-May-08	
4696	unk	43			8-Oct-07			SEA	ITS	FISS	FISS					n/a	neg	23-Apr-08	Too small to bleed		
4697	unk	45			8-Oct-07			SEA	ITS	FISS	FISS	dead							lab		
4698	Juv	62	164.569	31-Mar-10	5-Dec-09	542678	3876525	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	30-May-08			
4699	M	262	168.283	30-Mar-11	15-Nov-09	541987	3889657	SEA	ITS	Monthly	SEA			neg	neg	neg		23-May-09	both eyes, few scales	2-Jun-08	90B:10L
4704	M	266	167.901	unknown	9-Dec-09	526449	3890104	SEA	USGS Health	translocated	SEA			neg	neg	neg	neg	7-Oct-09			RE-SAMPLE Sept/Oct 2008
4708	unk	45			21-Dec-07			SEA	ITS	FISS	FISS	necropsy				n/a	neg	18-Oct-07			necropsy
4709	unk	100			8-Oct-07			SEA	ITS	FISS	FISS	dead		neg	neg	n/a	neg	19-Oct-07			Split jaw, taken to vet, died
4716	unk	167			21-Sep-08	548017	3890871	SEA	ITS	Monthly	SEA	dead		neg	neg			2-Jun-08			
4718	unk	109			7-Oct-07			SEA	ITS	FISS	FISS										
4719	M	236			27-May-09	543169	3876748	SEA	ITS	Translocated	9	xmtr removed		neg	neg	n/a	neg	15-Oct-07			Released without transmitter
4720	F	231	15-Jun-00		Aug 2 2008	520975	3890589	SEA	USGS_Health	Translocated	5	dead	canid	neg	neg	n/a	neg	3-Jun-08	both eyes, few scales	3-Jun-08	canid
4721	M	249	16-Jun-00		Mar 25 2008	520811	3890811	SEA	USGS_Health	Monthly	SEA	dead	Canid	neg	neg	n/a	neg	15-Oct-07			canid
4724	M	262			2-Nov-09	516859	3896479	SEA	ITS	Monthly	SEA	dead		neg	neg			22-Oct-08			Tortoise was translocated to site 6 but returned to original collection site.
4725	unk	48			9-Apr-08			SEA	ITS	FISS	FISS								Too small to bleed		
4730	Juv	91	164.451	7-Apr-09	4-Jan-09	543087	3876644	SEA	ITS_Research	Translocated	13	missing		neg	neg	n/a	neg	17-Oct-07			
4731	Juv	51			31-May-08			SEA	ITS_Research	Translocated	6	missing		neg	neg	n/a	neg	21-May-08			Xmtr fell off, transmitter found here
4732	unk	59	166.354	26-Jul-08	30-May-08	549308	3885858	SEA	ITS_Research	Translocated	10	missing		neg	neg			22-Apr-08			MISSING Processed May 10, released May 11
4733	unk	130			12-Apr-08			SEA	ITS	FISS	FISS			neg	neg			23-Apr-08			
4734	F	243	165.033	31-Jul-10	6-Dec-09	529698	3887558	SEA	ITS	Monthly	SEA			neg	neg	neg		20-May-09	tortoise		
4736	M	186			9-Dec-08	526686	3888916	SEA	ITS	Monthly	SEA	missing		neg	neg			28-Apr-08	discharge in both eyes,	28-Apr-08	
4739	unk	69			16-May-08	542237	3877227	SEA	ITS_Research	Translocated	13	dead		neg	neg			22-Apr-08			DEAD 5-16-08
4740	unk	49			26-May-09			SEA	ITS	FISS	FISS	dead						23-Apr-08	Too small to bleed		
4741	Juv	68	165.776	31-Mar-10	5-Dec-09	542387	3876824	SEA	ITS_Research	Translocated	13			neg	neg			24-Apr-08			Processed May 10, released May 11
4742	unk	44			22-Apr-08			SEA	ITS	FISS	FISS							23-Apr-08	Too small to bleed		
4743	unk	52			26-May-09			SEA	ITS	FISS	FISS	dead				n/a	neg	23-Apr-08	Too small to bleed		Formerly labeled as "J"
4744	unk	51			18-Oct-07			SEA	ITS	FISS	FISS					n/a	neg	23-Apr-08	Too small to bleed		Formerly labeled as "U"
4745	unk	44			26-May-09			SEA	ITS	FISS	FISS	dead				n/a	neg	23-Apr-08	Too small to bleed		Formerly labeled as "E"
4748	M	246	162.202	6-Apr-11	14-Nov-09	539895	3888355	SEA	ITS	Monthly	SEA			neg	neg	neg		22-May-09			
4749	F	227	163.062	12-Aug-11	6-Dec-09	525165	3890307	SEA	ITS	Monthly	SEA			neg	neg			17-May-08			
4750	unk	47			7-Apr-08			SEA	ITS	FISS	FISS							24-Apr-08	Too small to bleed		
4751	unk	56			7-Apr-08			SEA	ITS	FISS	FISS							22-Apr-08	Too small to bleed		
4752	unk	55			26-May-09			SEA	ITS	FISS	FISS	dead						23-Apr-08	Too small to bleed		
4754	Juv	110	164.374	12-May-10	5-Dec-09	542124	3876722	SEA	ITS_Research	Translocated	13			neg	neg	n/a	neg	18-Oct-07			
4755	Juv	52			18-Oct-07			SEA	ITS	FISS	FISS					n/a	neg	19-Oct-07			Formerly labeled as "L"
4756	Juv	71			16-May-08	542617	3876834	SEA	ITS_Research	Translocated	13	dead		neg	neg	n/a	neg	17-Oct-07			DEAD 5-16-08
4757	unk	89			16-Oct-07			SEA	ITS	FISS	FISS			neg	neg	n/a	neg	16-Oct-07			
4758	F	238	163.002	29-Apr-11	30-Apr-09	526274	3888528	SEA	ITS	Native	STA										
4759	M	271	168.841	19-Aug-11	6-Dec-09	525580	3888545	SEA	ITS	Native	STA										
5000	M	271	168.399	16-Apr-11	17-Dec-09	515163	3897664	WEA	ITS	Monthly	WEA										
5001	F	225	162.722	28-Jul-11	17-Dec-09	515732	3897778	WEA	ITS	Monthly	WEA										
5002	F	221	164.321	16-Apr-10	17-Dec-09	515743	3897190	WEA	ITS	Monthly	WEA										
5003	M	259	168.221	16-Apr-11	19-Dec-09	515310	3896696	WEA	ITS	Monthly	WEA										
5004	M	226	165.533	16-Apr-10	17-Dec-09	515618	3898035	WEA	ITS	Monthly	WEA										
5005	Unk	50			26-May-09	513156	3898052	WEA	ITS	FISS	FISS	dead									
5006	F	252	167.541	31-Mar-11	19-Dec-09	515274	3895543	WEA	ITS	Monthly	WEA										
5007	M	268	167.471	18-May-11	19-Dec-09	515929	3895407	WEA	ITS	Monthly	WEA										
5008	F	237			19-Dec-09	515958	3895740	WEA	ITS	Monthly	WEA	dead	unk								
5009	F	219	165.349	21-Apr-10	19-Dec-09	515679	3895559	WEA	ITS	Monthly	WEA										
5010	M	260	165.283	22-Apr-11	19-Dec-09	514255	3895088	WEA	ITS	Monthly	WEA										
5011	F	232	167.512	22-Apr-10	19-Dec-09	514019	3894824	WEA	ITS	Monthly	WEA										
5012	M	211	166.410	22-Apr-10	17-Dec-09	516547	3896841	WEA	ITS	Monthly	WEA										
5013	M	264	167.322	23-Apr-11	17-Dec-09	516275	3897275	WEA	ITS	Monthly	WEA			neg	neg			29-Oct-09			B80:L20
5014	F	227	164.093	23-Apr-10	17-Dec-09	516346	3897401	WEA	ITS	Monthly	WEA										
5015	F	243			30-Nov-09	516178	3897322	WEA	ITS	Monthly	WEA	dead	Canid								Canid gnaw marks
5016	M	260	167.083	23-Apr-11	17-Dec-09	516185	3897262	WEA	ITS	Monthly	WEA										
5017	M	276	167.439	24-Apr-11	21-Nov-09	512089	3899220	WEA	ITS	Monthly	WEA										
5018	F	240	167.852	24-Apr-10	21-Dec-09	513207	3898141	WEA	ITS	Monthly	WEA										
5019	M	276	165.063	24-Apr-11	21-Dec-09	513262	3899013	WEA	ITS	Monthly	WEA										
5020	F	239	167.991	24-Apr-10	22-Dec-09	513966	3899035	WEA	ITS	Monthly	WEA										
5021	M	236	167.412	25-Apr-10	19-Dec-09	515929	3895408	WEA	ITS	Monthly	WEA										
5022	M	266	163.933	25-Apr-10	19-Dec-09	514013	3895401	WEA	ITS	Monthly	WEA										
5023	F	242	167.792	25-Apr-10	19-Dec-09	514015	3895401	WEA	ITS	Monthly	WEA										
5024	F	232	165.870	27-Apr-10	18-Dec-09	512783	3894903	WEA	ITS	Monthly	WEA										
5025	M	225	165.968	27-Apr-10	18-Dec-09	512937	3895344	WEA	ITS	Monthly	WEA										
5026	M	277	164.342	27-Apr-11	18-Dec-09	512450	3895658	WEA	ITS	Monthly	WEA										
5027	M	278	165.643	28-Apr-11	21-Dec-09	510265	3898276	WEA	ITS	Monthly	WEA										
5028	F	199	165.509	28-Apr-10	21-Dec-09	510894	3897995	WEA	ITS	Monthly	WEA										
5029	Unk	66			29-Apr-08	510651	3898740	WEA	ITS	FISS	FISS										
5030	F	210	166.050	29-Apr-10	20-Dec-09	513925	3900638	WEA	ITS	Monthly	WEA										
5031	M	278	162.942	17-Sep-11	20-Dec-09	515411	3899817	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09			

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06		
5032	M	252	162.552	17-Sep-11	7-Nov-09	513881	3900906	WEA	ITS	Monthly	WEA	missing		neg	neg			22-Sep-09		
5033	M	261	162.521	17-Sep-11	20-Dec-09	515565	3898895	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09	Found Tortoise	
5034	M	274	168.723	19-Sep-11	17-Dec-09	515199	3898268	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09	B5:L95; B50:L50	
5035	F	225	168.702	20-Sep-11	21-Dec-09	510612	3897978	WEA	ITS	Monthly	WEA			neg	neg			22-Sep-09		
5036	F	211			5-Oct-08	500689	3898793	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5037	F	253			11-Oct-08	504962	3899720	WEA	ITS	Process	WEA								Renumbered and notched to 5379. part of 2008 pop survey; tagged not transmittered	
5038	M	260			11-Oct-08	504985	3899232	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5040	M	258	168.650	22-Sep-11	2-Jan-10	504242	3901064	WEA	ITS	Monthly	WEA									
5041	F	236	168.670	24-Sep-11	20-Dec-09	513770	3899778	WEA	ITS	Monthly	WEA			neg	neg			29-Sep-09	B10:L90; B5:L95	
5042	Unk	108	163.059	28-Aug-10	17-Dec-09	514913	3899193	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09	B90:L10	B50:L50
5043	Unk	102	164.262	27-Aug-10	17-Dec-09	514909	3898983	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09	B60:L40	
5044	M	250	162.972	29-Sep-11	19-Dec-09	513808	3894194	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09	B5:L95	
5045	M	266	163.909	29-Sep-11	20-Dec-09	515677	3900640	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5046	M	251	168.922	30-Sep-11	20-Dec-09	515801	3899952	WEA	ITS	Monthly	WEA			neg	neg			15-Oct-09		
5047	M	243	165.470	4-Oct-11	22-Dec-09	511714	3896080	WEA	ITS	Monthly	WEA			neg	neg			12-Oct-09		
5048	F	225			13-Oct-08	504407	3898839	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5049	F	237			14-Oct-08	504344	3898713	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5050	M	234			14-Oct-08	504231	3898662	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5051	Unk	177	164.171	5-Oct-11	21-Dec-09	511104	3896820	WEA	ITS	Monthly	WEA			neg	neg			12-Oct-09		
5052	F	251	165.093	19-Apr-10	20-Dec-09	514956	3899243	WEA	ITS	Monthly	WEA									
5053	M	272	165.371	20-Apr-10	17-Dec-09	514774	3898761	WEA	ITS	Monthly	WEA									
5054	F	235	162.460	17-Sep-11	17-Dec-09	515126	3898879	WEA	ITS	Monthly	WEA									
5055	F	246	166.693	20-Apr-10	17-Dec-09	514846	3898495	WEA	ITS	Monthly	WEA									
5056	Unk	155	163.401	30-Sep-10	17-Dec-09	514860	3898472	WEA	ITS	Monthly	WEA									
5057	Unk	150			20-Jul-08	514612	3899246	WEA	ITS	Monthly	WEA	dead							Shell crushed - cause unknown	
5058	F	257	165.111	23-Apr-10	20-Dec-09	516344	3900078	WEA	ITS	Monthly	WEA									
5059	M	276	166.081	26-Apr-11	20-Dec-09	514023	3899362	WEA	ITS	Monthly	WEA									
5060	Unk	151			21-Jan-09	516213	3900727	WEA	ITS	Monthly	WEA	dead							Canid gnaw marks	
5061	M	288	166.861	27-Apr-11	20-Dec-09	513943	3901204	WEA	ITS	Monthly	WEA									
5062	F	238	168.952	7-Oct-11	20-Dec-09	513790	3900694	WEA	ITS	Monthly	WEA									
5063	M	270	166.184	27-Apr-11	20-Dec-09	514037	3899815	WEA	ITS	Monthly	WEA									
5064	M	288	167.403	21-Apr-11	20-Dec-09	514752	3899250	WEA	ITS	Monthly	WEA									
5065	M	270			15-Sep-09	514414	3898653	WEA	ITS	Monthly	WEA	dead	unk						Unknown cause of death	
5066	M	242	167.282	23-Apr-11	21-Dec-09	513057	3898732	WEA	ITS	Monthly	WEA									
5067	F	242	166.384	23-Apr-10	21-Dec-09	513351	3898629	WEA	ITS	Monthly	WEA									
5068	Unk	117	164.912	23-Mar-09	22-Apr-09	513322	3898664	WEA	ITS	Monthly	WEA	missing								
5069	M	267	162.031	1-May-10	17-Dec-09	518223	3898267	WEA	ITS	Monthly	WEA									
5070	F	208	163.193	26-Apr-10	20-Dec-09	514388	3901136	WEA	ITS	Monthly	WEA									
5071	M	233			29-Sep-08	508563	3892191	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5072	F	199	163.612	27-Apr-10	20-Dec-09	513658	3900210	WEA	ITS	Monthly	WEA									
5073	F	230	168.970	9-Oct-11	18-Dec-09	511899	3893675	WEA	ITS	Monthly	WEA			neg	neg			9-Oct-09	B10:L90	
5074	M	197	166.440	31-Mar-11	1-Jul-09	513579	3900308	WEA	ITS	Monthly	WEA	missing								
5075	M	266	163.823	10-Oct-11	19-Dec-09	515455	3895278	WEA	ITS	Monthly	WEA			sus	neg			15-Oct-09		
5076	M	276	168.712	12-Oct-11	19-Dec-09	515572	3894508	WEA	ITS	Monthly	WEA			neg	neg			25-Oct-09		
5077	F	265	165.830	16-Oct-11	18-Dec-09	513081	3895492	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09		
5078	F	235	164.505	17-Oct-11	19-Dec-09	514133	3894278	WEA	ITS	Monthly	WEA									
5079	M		162.221	11-May-10	12-May-08	513920	3897690	WEA	ITS	Monthly	WEA	missing								
5080	F	225	162.281	19-Oct-11	17-Dec-09	514041	3897500	WEA	ITS	Monthly	WEA									
5081	Unk	9999	164.823	11-Apr-09	12-May-08	514044	3898018	WEA	ITS	Monthly	WEA	missing								
5082	M	280			8-Oct-08	505062	3899171	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5083	F	226			9-Oct-08	505625	3899554	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5086	M		163.522	12-May-09	13-May-08	513422	3897590	WEA	ITS	Monthly	WEA	missing								
5087	F	243	162.131	19-Oct-11	21-Dec-09	513703	3897448	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5088	M	287	162.171	19-Oct-11	21-Dec-09	513365	3897495	WEA	ITS	Monthly	WEA									
5089	F	237	162.080	15-May-10	19-Dec-09	515833	3894643	WEA	ITS	Monthly	WEA									
5090	Unk	188	162.111	15-May-10	21-Jul-08	516130	3894437	WEA	ITS	Monthly	WEA	missing								
5091	F	238	162.161	15-May-10	19-Dec-09	515871	3894287	WEA	ITS	Monthly	WEA	Found Tortoise								
5092	Unk	152	166.522	20-Oct-10	19-Dec-09	515700	3893877	WEA	ITS	Monthly	WEA									
5093	F	9999	162.022	29-Sep-11	19-Dec-09	514216	3895156	WEA	ITS	Monthly	WEA									
5094	M	287	164.901	20-Oct-11	19-Dec-09	514109	3894266	WEA	ITS	Monthly	WEA			neg	neg			25-Oct-09	B80:L20	B40:L60; B5:L95
5095	M	274	166.291	22-Oct-11	19-Dec-09	515658	3894119	WEA	ITS	Monthly	WEA									
5096	Unk	166	166.282	23-Oct-10	3-Jan-10	503472	3899052	WEA	ITS	Monthly	WEA									
5098	F	225	166.482	31-Mar-11	19-Dec-09	515321	3894159	WEA	ITS	Monthly	WEA									
5099	F	239	168.222	2-Oct-11	19-Dec-09	514404	3894209	WEA	ITS	Monthly	WEA			sus	neg			6-Oct-09	B40:L60	
5100	M	246	162.290	18-May-10	19-Dec-09	514678	3894548	WEA	ITS	Monthly	WEA									
5101	Unk	184	162.001	19-May-10	18-Dec-09	512347	3894055	WEA	ITS	Monthly	WEA									
5102	Unk	161	166.281	20-Oct-10	30-Nov-09	512600	3898323	WEA	ITS	Monthly	WEA									
5103	M	9999	162.151	29-Sep-11	19-Dec-09	514115	3894639	WEA	ITS	Monthly	WEA									
5124	F	215	164.352	23-Jul-10	21-Dec-09	509916	3898362	WEA	ITS	Monthly	WEA									
5125	Unk	164	166.462	1-Apr-11	21-Dec-09	510094	3898968	WEA	ITS	Monthly	WEA									
5126	F	226			13-Nov-08	508607	3898959	WEA	ITS	Monthly	WEA	dead							Canid gnaw marks	
5127	F	219	162.051	1-May-10	3-Jan-10	509601	3898756	WEA	ITS	Monthly	WEA	Found Tortoise								
5128	M	260	162.191	2-May-10	3-Jan-10	508946	3898315	WEA	ITS	Monthly	WEA									
5129	Unk	60			27-Apr-08			WEA	ITS	FISS	FISS									
5130	F	229	166.383	20-Sep-11	2-Jan-10	503635	3901415	WEA	ITS	Monthly	WEA			neg	sus			23-Sep-09		
5131	Unk	83			27-Apr-08			WEA	ITS	FISS	FISS									
5132	M	285	162.182	4-May-10	21-Dec-09	509509	3897037	WEA	ITS	Monthly	WEA			neg	neg			23-Sep-09		
5133	F	252	162.071	4-May-10	21-Dec-09	509837	3897226	WEA	ITS	Monthly	WEA			neg	neg			23-Sep-09	B10:L90	
5134	F	254	162.201	2-May-10	21-Dec-09	509582	3896849	WEA	ITS	Monthly	WEA									
5135	M	194	162.142	3-May-10	22-Dec-09	511459	3897873	WEA	ITS	Monthly	WEA									
5136	M	242	162.122	3-May-10	22-Dec-09	511511	3895986	WEA	ITS	Monthly	WEA	missing								
5137	F	247	162.241	3-May-10	20-Sep-08	511284	3896646	WEA	ITS	Monthly	WEA	missing								
5138	Unk	127	164.062	25-Sep-10	21-Nov-09	512378	3898287	WEA	ITS	Monthly	WEA									
5139	F	234	162.042	2-May-10	3-Jan-10	508729	3897742	WEA	ITS	Monthly	WEA									
5140	M	246	166.262	25-Sep-11	20-Dec-09	514254	3900914	WEA	ITS	Monthly	WEA			neg	neg			29-Sep-09		
5141	F	270	164.133	6-Oct-11	18-Dec-09	511479	3893424	WEA	ITS	Monthly	WEA			neg	neg			7-Oct-09	B5:L95; B20:L80	
5142	M	259	168.602	29-Sep-11	20-Dec-09	516351	3902790	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09		
5143	F	225			2-Oct-08	511529	3902990	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5144	M	254	166.348	3-Oct-11	18-Dec-09	511539	3894243	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09	B30:L70	
5145	M	233	166.148	4-Oct-11	18-Dec-09	512206	3894305	WEA	ITS	Monthly	WEA			neg	sus			7-Oct-09		
5146	F	212			4-Oct-08	509172	3900525	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5147	M	268			5-Oct-08	509450	3900909	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5148	F	229			5-Oct-08	509688	3900575	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5149	M	263	166.620	5-Oct-11	18-Dec-09	511224	3893444	WEA	ITS	Monthly	WEA			neg	neg			7-Oct-09		
5150	F	217	166.030	5-Oct-11	18-Dec-09	511556	3893188	WEA	ITS	Monthly	WEA			neg	neg			7-Oct-09	B90:L10	
5152	M	285	166.546	5-Oct-11	18-Dec-09	511517	3893545	WEA	ITS	Monthly	WEA			neg	neg			11-Oct-09		
5153	M	261			7-Oct-08	507596	3899097	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5154	F	231			7-Oct-08	507535	3899093	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5155	M	262	165.857	24-Sep-11	2-Jan-10	507374	3899647	WEA	ITS	Monthly	WEA			neg	neg			26-Sep-09		
5156	M	259			7-Oct-08	507950	3899037	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5157	M	242	166.221	27-Sep-11	21-Dec-09	508700	3900372	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09	B90:L10	
5158	F	224	164.220	6-Oct-11	22-Dec-09	509581	3892682	WEA	ITS	Monthly	WEA			neg	neg			9-Oct-09	B70:L30	
5159	Unk	156	164.040	8-Sep-10	30-Dec-09	509143	3893716	WEA	ITS	Monthly	WEA			neg	neg			9-Oct-09		
5160	M	281	162.211	4-May-10	21-Dec-09	510650	3897247	WEA	ITS	Monthly	WEA									
5161	Unk	131	163.982	9-Sep-10	30-Dec-09	509573	3894315	WEA	ITS	Monthly	WEA			neg	neg			20-Oct-09	B90:L10	B30:L70
5162	M	280	164.102	10-Oct-11	30-Dec-09	509553	3894081	WEA	ITS	Monthly	WEA			neg	neg			20-Oct-09		
5163	F	248	164.291	10-Oct-11	30-Dec-09	509324	3894153	WEA	ITS	Monthly	WEA			neg	neg			20-Oct-09	B60:L40	B20:L80
5164	M	225	166.322	27-Sep-11	21-Dec-09	508605	3900798	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09		
5165	F	228			2-Oct-08	511452	3902638	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5166	M	269			2-Oct-08	511581	3902659	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5167	F	215			3-Oct-08	511956	3902753	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5168	F	224			3-Oct-08	506750	3900604	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5169	F	226			4-Oct-08	508869	3900652	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5170	M	254	163.870	10-Oct-11	30-Dec-09	508945	3893852	WEA	ITS	Monthly	WEA			neg	neg			20-Oct-09		
5171	F	230	163.161	10-Oct-10	30-Dec-09	509220	3894080	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5172	F	230	166.773	13-Oct-11	14-Oct-09	494170	3896696	WEA	ITS	Monthly	WEA	missing		neg	neg			19-Oct-09	B10:L90	
5173	Unk	122	164.442	16-Sep-10	4-Jan-10	493226	3895656	WEA	ITS	Monthly	WEA			neg	neg			19-Oct-09		
5174	Unk	87	164.401	14-Sep-10	4-Jan-10	494206	3896529	WEA	ITS	Monthly	WEA			neg	neg			19-Oct-09	B10:L90	
5175	Unk	82	164.142	16-Oct-09	4-Jan-10	493025	3896181	WEA	ITS	Monthly	WEA			neg	neg			19-Oct-09	B30:L70	
5176	Unk	96	165.661	16-Sep-10	4-Jan-10	493336	3895482	WEA	ITS	Monthly	WEA			neg	neg			19-Oct-09		
5177	M	301	165.331	19-Oct-11	21-Dec-09	510103	3901035	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09	B5:L95	
5178	F	229	166.598	19-Oct-11	21-Dec-09	510433	3900845	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09		
5179	F	222	165.770	19-Oct-11	21-Dec-09	510711	3900534	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09		
5180	Unk	136	164.701	20-Sep-10	21-Dec-09	510529	3900428	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09	B50:L50	B20:L80
5181	F	250	166.634	20-Oct-11	21-Dec-09	510644	3900525	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09		
5182	M	263	163.848	20-Oct-11	21-Dec-09	510500	3899968	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09		
5183	F	236	167.582	20-Oct-11	21-Dec-09	510500	3899969	WEA	ITS	Monthly	WEA			neg	neg			21-Oct-09		
5200	M	269	168.131	27-Sep-11	4-Jan-10	509209	3903179	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09		
5201	M	238	168.750	20-Sep-11	21-Dec-09	513235	3898043	WEA	ITS	Monthly	WEA			neg	neg			22-Sep-09		
5202	Unk	137			16-Oct-08	512469	3901333	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5203	F	234			17-Oct-08	512124	3901200	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5204	M	286	168.023	29-Sep-11	19-Dec-09	515777	3893080	WEA	ITS	Monthly	WEA			neg	neg			10-Oct-09		
5205	M	258	166.052	30-Sep-11	19-Dec-09	515894	3893422	WEA	ITS	Monthly	WEA			neg	neg			10-Oct-09		
5206	F	202	166.092	3-Oct-11	19-Dec-09	514283	3893566	WEA	ITS	Monthly	WEA			neg	neg			6-Oct-09		
5207	M	269	162.732	3-Oct-11	19-Dec-09	513839	3893601	WEA	ITS	Monthly	WEA			neg	neg			6-Oct-09		
5208	M	230	162.742	6-Oct-11	18-Dec-09	512498	3893645	WEA	ITS	Monthly	WEA			neg	neg			11-Oct-09		
5209	M	252	168.991	7-Oct-11	30-Dec-09	511779	3892116	WEA	ITS	Monthly	WEA			neg	neg			9-Oct-09	B30:L70	Tortoi
5210	F	239	162.771	7-Oct-11	18-Dec-09	512026	3893478	WEA	ITS	Monthly	WEA			neg	neg			9-Oct-09	B90:L10	B70:L30
5211	M	235	163.300	7-Sep-10	18-Dec-09	512270	3892995	WEA	ITS	Monthly	WEA			neg	neg			11-Oct-09	B70:L30	B10:L90
5212	Unk	140	165.302	13-Sep-10	2-Jan-10	502340	3903037	WEA	ITS	Monthly	WEA			sus	neg			14-Oct-09		
5213	M	223	167.201	19-Oct-11	21-Dec-09	513659	3897554	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5214	F	242			15-Oct-08	512369	3901457	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5215	F	206	165.671	20-Oct-11	17-Dec-09	514455	3897279	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5222	M	264			17-Oct-08	512065	3901556	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmittered	
5234	Unk	198	164.260	21-Oct-11	21-Dec-09	510862	3900883	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09	B30:L70	
5235	F	222	165.605	21-Oct-11	21-Dec-09	511087	3900815	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09		
5249	Unk	100	164.382	2-Sep-10	17-Dec-09	514915	3899156	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09	B20:L80	

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD			neg	neg	n/a	neg	24-Sep-06		
5250	Unk	229	162.712	2-Oct-11	17-Dec-09	514877	3899126	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5251	Unk	156	168.083	20-Sep-11	21-Dec-09	509432	3899638	WEA	ITS	Monthly	WEA			neg	neg			22-Sep-09		
5252	F	238	168.179	21-Sep-11	21-Dec-09	508777	3899625	WEA	ITS	Monthly	WEA			sus	neg			23-Sep-09	B60:L40	
5253	F	235	168.632	22-Sep-11	21-Dec-09	508425	3899773	WEA	ITS	Monthly	WEA			neg	neg			25-Sep-09	B50:L50; B10:L90	
5254	F	234	168.251	22-Sep-11	21-Dec-09	508840	3899507	WEA	ITS	Monthly	WEA			neg	neg			25-Sep-09		
5255	F	242	168.140	24-Sep-11	4-Jan-10	507999	3901545	WEA	ITS	Monthly	WEA			neg	neg			25-Sep-09		
5256	M	205	168.042	25-Sep-11	21-Dec-09	508323	3900076	WEA	ITS	Monthly	WEA			neg	neg			26-Sep-09	B90:L10	B50:L50
5257	M	240	168.112	22-Sep-11	21-Dec-09	508423	3899806	WEA	ITS	Monthly	WEA			neg	neg			25-Sep-09	B10:L90	
5258	F	246	166.301	26-Sep-11	21-Dec-09	508535	3900593	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09		
5259	M	187	166.281	26-Sep-11	21-Dec-09	508405	3900295	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09		
5260	M	184	164.002	27-Sep-10	21-Dec-09	509085	3900883	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09	B95:L5	
5261	F	232	163.612	1-Oct-11	4-Jan-10	507682	3904551	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5262	M	247	166.252	27-Sep-11	21-Dec-09	509291	3899811	WEA	ITS	Monthly	WEA			neg	neg			30-Sep-09		
5263	F	236	163.812	1-Oct-11	4-Jan-10	508037	3904346	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5264	Unk	130	163.359	1-Sep-10	4-Jan-10	507764	3904695	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5265	M	200	163.788	3-Oct-11	21-Nov-09	509169	3904422	WEA	ITS	Monthly	WEA			neg	neg			4-Oct-09		
5266	Unk	189	162.652	4-Oct-11	4-Jan-10	508623	3905474	WEA	ITS	Monthly	WEA			neg	neg			13-Oct-09	B90:L10	B80:L20
5267	Unk	135	163.542	4-Sep-10	4-Jan-10	508973	3904878	WEA	ITS	Monthly	WEA			neg	neg			13-Oct-09		
5268	F	214	163.320	18-Sep-10	3-Jan-10	508625	3897635	WEA	ITS	Monthly	WEA									
5269	F	213	163.271	18-Sep-10	22-Dec-09	507557	3895259	WEA	ITS	Monthly	WEA									
5270	M	223	163.299	18-Sep-10	22-Dec-09	507384	3895477	WEA	ITS	Monthly	WEA									
5271	M	187	162.442	6-Oct-11	4-Jan-10	508432	3905674	WEA	ITS	Monthly	WEA			neg	neg			13-Oct-09		
5272	Unk	170	164.180	6-Oct-10	4-Jan-10	508323	3905673	WEA	ITS	Monthly	WEA			sus	neg			13-Oct-09	B90:L10	
5273	M	253	163.652	8-Oct-11	4-Jan-10	507317	3905332	WEA	ITS	Monthly	WEA			neg	neg			14-Oct-09		
5274	F	217	164.341	8-Oct-11	4-Jan-10	507007	3905944	WEA	ITS	Monthly	WEA			neg	neg			14-Oct-09		
5275	Unk	114	163.719	9-Sep-10	4-Jan-10	507030	3905299	WEA	ITS	Monthly	WEA			neg	neg			14-Oct-09	B20:L80	
5276	Unk	116	165.061	11-Sep-10	12-Oct-09	504447	3896527	WEA	ITS	Monthly	WEA	missing								
5277	F	206	166.670	13-Oct-11	4-Jan-10	504179	3895992	WEA	ITS	Monthly	WEA									
5278	Unk	174	163.801	15-Oct-11	4-Jan-10	503539	3895679	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09		
5279	M	236	166.207	15-Oct-11	4-Jan-10	503342	3895926	WEA	ITS	Monthly	WEA			pos	neg			16-Oct-09		
5280	Unk	123	164.922	5-Sep-10	4-Jan-10	508748	3905461	WEA	ITS	Monthly	WEA			sus	neg			13-Oct-09	B90:L10	B30:L70
5281	Unk	142	163.101	13-Oct-10	4-Jan-10	504091	3895656	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09		
5282	M	270	165.180	13-Oct-11	4-Jan-10	503718	3895446	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09		
5283	Unk	127	164.460	15-Sep-10	4-Jan-10	503019	3896236	WEA	ITS	Monthly	WEA			neg	neg			17-Oct-09	B50:L50	
5284	F	184	165.083	16-Oct-11	4-Jan-10	503335	3896173	WEA	ITS	Monthly	WEA			neg	neg			17-Oct-09	B50:L50	
5285	M	190	164.660	16-Oct-11	3-Jan-10	503352	3896829	WEA	ITS	Monthly	WEA			neg	neg			17-Oct-09		
5286	F	155	165.320	18-Sep-10	3-Jan-10	503560	3896736	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09	B80:L20	B20:L80
5287	M	254	168.660	20-Oct-11	17-Dec-09	516221	3897892	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5301	F	235	166.111	19-Sep-11	18-Dec-09	511689	3890603	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09		
5302	F	220	165.811	20-Sep-11	18-Dec-09	511349	3890848	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09		
5303	F	203	163.461	22-Sep-10	18-Dec-09	510170	3890795	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09	B40:L60	
5304	F	197	165.911	22-Sep-11	18-Dec-09	510222	3890366	WEA	ITS	Monthly	WEA			neg	neg			29-Sep-09		
5305	F	203	165.849	24-Sep-11	18-Dec-09	511332	3891858	WEA	ITS	Monthly	WEA			neg	neg			26-Sep-09	B30:L70	
5306	F	242	165.769	26-Sep-11	3-Jan-10	503165	3898846	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09	B3:L97	
5307	M	232	165.950	26-Sep-11	3-Jan-10	503035	3898552	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09		
5308	M	257	165.650	26-Sep-11	3-Jan-10	503660	3899032	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09		
5309	M	224	165.551	26-Sep-11	3-Jan-10	502992	3897652	WEA	ITS	Monthly	WEA			neg	neg			29-Sep-09		
5310	F	243	166.055	26-Sep-11	3-Jan-10	503082	3898812	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09	B40:L60	
5311	M	243	165.433	26-Sep-11	3-Jan-10	503133	3898279	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09		
5312	M	191	162.891	18-Sep-10	18-Dec-09	512165	3893756	WEA	ITS	Monthly	WEA									
5313	F	240	167.783	18-Sep-10	18-Dec-09	511931	3893961	WEA	ITS	Monthly	WEA									
5314	Unk	174			6-Oct-08	507571	3903810	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5315	F	227			9-Oct-08	506958	3901108	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5316	F	224			11-Oct-08	509356	3906458	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5317	F	214	165.512	27-Sep-11	3-Jan-10	502945	3898275	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09		
5318	M	257	167.740	27-Sep-11	2-Jan-10	502438	3899514	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09		
5319	F	229			2-Oct-08	504871	3897681	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5320	M	188			1-Oct-08	504159	3897506	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5321	M	233			2-Oct-08	505002	3897259	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5322	Unk	177			4-Oct-08	507526	3906041	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5323	F	212			4-Oct-08	506914	3906261	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5324	Unk	158			30-Sep-08	505631	3896775	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5325	Unk	174			1-Oct-08	504010	3897347	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5326	M	212			15-Oct-08	508365	3907133	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5327	F	241	168.740	28-Sep-11	3-Jan-10	502144	3898183	WEA	ITS	Monthly	WEA			neg	neg			5-Oct-09		
5328	M	233			11-Oct-08	509365	3906458	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5329	M	192	167.911	30-Sep-11	3-Jan-10	503233	3897385	WEA	ITS	Monthly	WEA			neg	neg			5-Oct-09		
5330	M	286			2-Oct-08	504868	3897679	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5331	M	266			3-Oct-08	504200	3902006	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5332	M	198			9-Oct-08	508231	3907952	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5333	F	222			10-Oct-08	508552	3907534	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5334	M	253			4-Oct-08	507147	3906744	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5335	M	226			5-Oct-08	507765	3906601	WEA	ITS	Process	WEA								part of 2008 pop survey; tagged not transmitted	
5336	Unk	173	163.833	30-Sep-11	3-Jan-10	502662	3897300	WEA	ITS	Monthly	WEA			neg	neg			5-Oct-09		
5337	M	220	163.931	30-Sep-11	3-Jan-10	502542	3897962	WEA	ITS	Monthly	WEA			neg	neg			5-Oct-09		
5338	M	265	163.631	1-Oct-11	3-Jan-10	502082	3897116	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09	B90:L10	
5339	M	270	167.853	2-Oct-11	3-Jan-10	501640	3897851	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09		
5340	M	274	162.643	2-Oct-11	4-Jan-10	497069	3895407	WEA	ITS	Monthly	WEA									
5341	F	243	162.541	3-Oct-11	4-Jan-10	497695	3895813	WEA	ITS	Monthly	WEA			neg	neg			17-Oct-09		
5342	F	219			4-Jan-10	497581	3895605	WEA	ITS	Monthly	WEA	dead	unk	neg	neg			18-Oct-09	B5:L95	
5343	F	240	162.608	7-Oct-11	4-Jan-10	497973	3896921	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09	B90:L10	
5344	M	214	168.792	15-Oct-11	4-Jan-10	510019	3903188	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09	B50:L50	
5345	F	253	164.111	16-Oct-11	4-Jan-10	509416	3903479	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09		
5346	M	242	163.500	18-Sep-10	18-Dec-09	512721	3894866	WEA	ITS	Monthly	WEA									
5347	M	193	162.481	16-Oct-11	4-Jan-10	509498	3903496	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09	B90:L10	
5348	M	216	162.511	17-Oct-11	4-Jan-10	509281	3903397	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09	B5:L95	
5370	M	282	162.681	9-Oct-11	4-Jan-10	498419	3896693	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09		
5371	M	248	168.282	18-Sep-11	18-Dec-09	511456	3894740	WEA	ITS	Monthly	WEA			neg	neg			24-Sep-09		
5372	M	257	165.611	22-Sep-11	22-Dec-09	507904	3895802	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09	B90:L10;	B70:L30; B30:L70
5373	M	231	165.752	23-Sep-11	30-Dec-09	508445	3894153	WEA	ITS	Monthly	WEA			neg	neg			27-Sep-09	B70:L30	
5374	Unk	102	166.261	27-Aug-10	3-Jan-10	503006	3899684	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09	B90:L10	
5375	Unk	98	166.539	27-Aug-10	3-Jan-10	503088	3899428	WEA	ITS	Monthly	WEA			neg	neg			28-Sep-09	B90:L10	
5376	F	226	163.712	27-Sep-11	3-Jan-10	503480	3899555	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09	B50:L50	
5377	Unk	130	163.420	27-Aug-10	3-Jan-10	503190	3899370	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09		
5378	F	237	166.472	27-Sep-10	3-Jan-10	503663	3899034	WEA	ITS	Monthly	WEA			neg	neg			29-Sep-09		
5379	F	257	167.710	29-Sep-11	3-Jan-10	504715	3899445	WEA	ITS	Monthly	WEA			neg	neg			3-Oct-09	Originally numbered and notched 5037.	
5380	M	184	162.933	29-Sep-11	3-Jan-10	504655	3899650	WEA	ITS	Monthly	WEA									
5381	M	209	167.883	30-Sep-11	3-Jan-10	504929	3899774	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09	B90:L10	B50:L50
5382	M	266	162.902	1-Oct-11	3-Jan-10	503387	3899850	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09		
5383	M	214	166.452	2-Oct-11	2-Jan-10	502667	3899823	WEA	ITS	Monthly	WEA			neg	neg			6-Oct-09	B90:L10; B40:L60	
5384	F	229	167.811	2-Oct-11	3-Jan-10	502934	3899647	WEA	ITS	Monthly	WEA			neg	neg			8-Oct-09	B50:L50	
5385	M	237	162.601	2-Oct-11	2-Jan-10	502304	3899198	WEA	ITS	Monthly	WEA			neg	neg			3-Oct-09		
5386	Unk	124	163.441	2-Sep-10	2-Jan-10	502466	3899712	WEA	ITS	Monthly	WEA			neg	neg			8-Oct-09	B30:L70	
5387	M	269	162.531	5-Oct-11	3-Jan-10	502981	3900121	WEA	ITS	Monthly	WEA			neg	neg			6-Oct-09	B90:L10	B50:L50
5388	F	232	162.502	5-Oct-11	2-Jan-10	502325	3900414	WEA	ITS	Monthly	WEA			neg	neg			6-Oct-09	B5:L95; B50:L50	
5389	F	244	164.022	6-Oct-11	3-Jan-10	502649	3899266	WEA	ITS	Monthly	WEA									
5390	M	233	168.931	6-Oct-11	2-Jan-10	502422	3898578	WEA	ITS	Monthly	WEA			neg	neg			17-Oct-09	B50:L50	
5391	M	232	162.421	6-Oct-11	2-Jan-10	501419	3899074	WEA	ITS	Monthly	WEA			neg	neg			8-Oct-09		
5392	F	202	162.360	6-Oct-11	2-Jan-10	501350	3899097	WEA	ITS	Monthly	WEA			neg	neg			8-Oct-09		
5393	M	270	164.252	11-Oct-11	3-Jan-10	497217	3896568	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09		
5394	F	242	164.392	11-Oct-11	4-Jan-10	496889	3896373	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09		
5395	Unk	166	163.082	12-Sep-10	4-Jan-10	496710	3896792	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09	B30:L70	B10:L90
5396	M	282	164.362	13-Oct-11	4-Jan-10	496097	3896418	WEA	ITS	Monthly	WEA			neg	neg			19-Oct-09		
5397	Unk	186	164.212	16-Oct-11	4-Jan-10	496473	3896929	WEA	ITS	Monthly	WEA			neg	neg			18-Oct-09	B90:L10	B40:L60
5398	Unk	177	167.730	18-Oct-11	22-Nov-09	512787	3899276	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09	B80:L20	B30:L70; B5:L95
5399	M	264	162.621	20-Oct-11	22-Nov-09	512489	3900533	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09		
5400	F	214	162.960	1-Oct-11	3-Jan-10	503222	3900039	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09		
5401	Unk	185	165.658	14-Oct-11	4-Jan-10	495523	3896975	WEA	ITS	Monthly	WEA									
5402	M	220	163.671	20-Oct-11	21-Dec-09	512375	3900961	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09	B60:L40	B40:L60
5403	M	262	166.493	20-Oct-11	21-Dec-09	512445	3900972	WEA	ITS	Monthly	WEA			sus	neg			21-Oct-09		
5420	F	195	164.363	1-Oct-10	3-Jan-10	502994	3900052	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09		
5471	M	293	168.272	26-Sep-11	4-Jan-10	507949	3899307	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09		
5472	F	209	166.292	26-Sep-11	4-Jan-10	508274	3898827	WEA	ITS	Monthly	WEA			neg	neg			1-Oct-09	B10:L90; B50:L50	
5473	F	234	165.931	28-Sep-11	19-Dec-09	513965	3894280	WEA	ITS	Monthly	WEA			neg	neg			2-Oct-09		
5474	F	252	164.122	17-Oct-11	20-Dec-09	515631	3900513	WEA	ITS	Monthly	WEA			neg	neg			23-Oct-09	B95:L5	B90:L10; B10:L90
5475	M	261	164.123	5-Oct-11	3-Jan-10	502795	3899088	WEA	ITS	Monthly	WEA			neg	neg			16-Oct-09		
5477	M	275	167.820	11-Oct-11	19-Dec-09	515600	3894492	WEA	ITS	Monthly	WEA			sus	neg			15-Oct-09		
5478	M	272	162.252	19-Oct-11	18-Dec-09	513996	3896786	WEA	ITS	Monthly	WEA									
5479	M	182	167.720	12-Oct-11	18-Dec-09	511531	3891133	WEA	ITS	Monthly	WEA			neg	neg			22-Oct-09		
5480	Unk	43			14-Oct-09	508079	3899821	WEA	ITS	FISS	FISS									
5500	Unk	41			22-Oct-09	509832	3897222	WEA	ITS	FISS	FISS									
5576	F	245	162.232	24-Oct-11	18-Dec-09	514176	3896652	WEA	ITS	Monthly	WEA									
5578	Unk	143	164.562	24-Sep-10	17-Dec-09	514517	3897278	WEA	ITS	Monthly	WEA									
5579	F	230	165.189	18-Oct-11	19-Dec-09	514581	3894376	WEA	ITS	Monthly	WEA			neg	neg			25-Oct-09		
5601	F	230	163.941	29-Sep-10	19-Dec-09	515777	3893079	WEA	ITS	Monthly	WEA									
5701	F	225	168.620	20-Oct-11	22-Nov-09	512515	3900185	WEA	ITS	Monthly	WEA			neg	neg			24-Oct-09		
5832	M	258	166.410	21-Sep-11	2-Jan-10	504018	3902360	WEA	ITS	Monthly	WEA									
5833	F	240	166.232	22-Sep-11	2-Jan-10	503419	3902952	WEA	ITS	Monthly	WEA									
6163	M	251			21-Sep-09			WETA			18			neg	neg			21-Sep-09		
7071	F	236			7-May-09			WETA			63			neg	neg	neg		7-May-09		
7072	M	244			7-May-09			WETA			63			neg	neg	neg		7-May-09		
7073	F	210			8-May-09			WETA			63			neg	neg	neg		8-May-09		
7074	M	235			9-May-09			WETA			62			neg	neg	neg		9-May-09		
7075	M	274			7-May-09			WETA			63			neg	neg	neg		7-May-09		
7076	F	242			14-May-09			WETA			42			neg	neg	neg		14-May-09		
7077	M	270			15-May-09			WETA			42			neg	neg	neg		15-May-09	10B:90L	
7078	F	230			18-May-09			WETA			37			neg	neg	neg		18-May-09		

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD	neg	neg	n/a	neg	24-Sep-06		
7079	M	189			20-May-09			WETA			44	neg	neg	neg		20-May-09		
7080	F	207			20-May-09			WETA			44	neg	neg	neg		20-May-09		
7081	M	288			17-Sep-09			WETA			24	neg	neg			17-Sep-09		
7082	M	286			17-Sep-09			WETA			24	neg	neg			17-Sep-09	B40:L60	
7083	F	227			17-Sep-09			WETA			24	neg	neg			17-Sep-09		
7084	F	240			17-Sep-09			WETA			24	neg	neg			17-Sep-09		
7085	M	253			17-Sep-09			WETA			24	neg	neg			17-Sep-09	B95:L05; B15:L85	
7086	F	200			18-Sep-09			WETA			24	neg	neg			18-Sep-09		
7087	M	254			19-Sep-09			WETA			24	neg	neg			19-Sep-09		
7088	M	297			22-Sep-09			WETA			18	neg	neg			22-Sep-09		
7089	M	221			18-Sep-09			WETA			24	neg	neg			18-Sep-09	B90:L10;	B50:L50
7090	F	220			29-Sep-09			WETA			22	neg	neg			29-Sep-09		
7091	M	209			6-May-09			WETA			63	sus	neg	neg		6-May-09		
7092	M	197			8-May-09			WETA			62	neg	neg	neg		8-May-09	90B:10L; 30B:70L	
7093	F	187			8-May-09			WETA			62	neg	neg	neg		8-May-09	40B:60L	
7094	F	226			9-May-09			WETA			62	neg	neg	neg		9-May-09		
7095	M	251			10-May-09			WETA			62	neg	neg	neg		10-May-09		
7096	M	280			18-May-09			WETA			37	neg	neg	neg		18-May-09		
7097	M	233			20-May-09			WETA			44	neg		neg		20-May-09	90B:10L	sample leaked-no M.t. results
7098	M	316			23-May-09			WETA			45	neg	neg	neg		23-May-09	50B:50L	
7099	M	255			24-May-09			WETA			46	neg	neg	neg		24-May-09	40B:60L	
7100	F	232			25-May-09			WETA			46	neg	neg	neg		25-May-09	5B:95L	
7101	M	199			18-Sep-09			WETA			24	neg	neg			18-Sep-09		
7102	M	251			1-Jun-09			WETA			38	neg	neg	neg		1-Jun-09	80B:20L; 10B:90L	
7103	M	237			1-Jun-09			WETA			38	neg	neg	neg		1-Jun-09		
7104	M	233			2-Jun-09			WETA			36	neg	neg	neg		2-Jun-09		
7105	M	261			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7106	F	241			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7107	M	218			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7108	M	236			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7109	F	225			8-Jun-09			WETA			25	neg	neg	neg		8-Jun-09	90B:10L; 0.45, 80B:20L	
7110	M	221			9-Jun-09			WETA			25	neg	neg	neg		9-Jun-09	90B:10L	
7111	M	279			21-May-09			WETA			45	neg	neg	neg		21-May-09		
7112	M	199			25-May-09			WETA			46	neg	neg	neg		25-May-09		
7113	F	216			25-May-09			WETA			46	neg	neg	neg		25-May-09		
7114	M	242			26-May-09			WETA			47	neg	neg	neg		26-May-09	40B:60L	
7115	M	292			28-May-09			WETA			40	neg	neg	neg		28-May-09		
7116	M	247			29-May-09			WETA			40	neg	neg	neg		29-May-09		
7117	F	208			29-May-09			WETA			40	neg	neg	neg		29-May-09		
7118	M	259			29-May-09			WETA			40	neg	neg	neg		29-May-09		
7119	F	234			30-May-09			WETA			39	neg	neg	neg		30-May-09	90B:10L; also 40B:60L, 10B:90L	
7120	M	246			30-May-09			WETA			39	neg	neg	neg		30-May-09		
7121	F	263			23-May-09			WETA			45	neg	neg	neg		23-May-09	30B:70L	
7122	M	214			24-May-09			WETA			46	neg	neg	neg		24-May-09		
7123	M	247			25-May-09			WETA			46	neg	neg	neg		25-May-09		
7124	F	210			28-May-09			WETA			40	pos	neg	neg		28-May-09		
7125	F	230			28-May-09			WETA			40	neg	neg	neg		28-May-09		
7126	M	265			29-May-09			WETA			39	pos	neg	neg		29-May-09		
7127	F	253			30-May-09			WETA			39	neg	neg	neg		30-May-09		
7128	F	205			30-May-09			WETA			39	neg	neg	neg		30-May-09	20B:80L	
7129	F	260			30-May-09			WETA			39	neg	neg	neg		30-May-09		
7130	M	256			6-Jun-09			WETA			33	neg	neg	neg		6-Jun-09		
7131	F	219			18-Sep-09			WETA			24	neg	neg			18-Sep-09		
7132	M	207			18-Sep-09			WETA			24	neg	neg			18-Sep-09		
7133	M	193			19-Sep-09			WETA			24	neg	neg			19-Sep-09		
7134	M	227			19-Sep-09			WETA			24	neg	neg			19-Sep-09		
7135	F	192			20-Sep-09			WETA			16	neg	neg			20-Sep-09	B10:L90	
7136	M	290			19-Sep-09			WETA			16	neg	neg			19-Sep-09		
7137	M	280			20-Sep-09			WETA			18	neg	neg			20-Sep-09		
7138	F	248			20-Sep-09			WETA			18	neg	neg			20-Sep-09		
7139	F	239			21-Sep-09			WETA			18	neg	neg			21-Sep-09	B20:L80	
7140	M	265			21-Sep-09			WETA			18	neg	neg			21-Sep-09		
7141	M	270			30-May-09			WETA			39	neg	neg	neg		30-May-09		
7142	M	222			30-May-09			WETA			39	neg	neg	neg		30-May-09		
7143	F	253			31-May-09			WETA			39	sus	neg	neg		31-May-09		
7144	F	218			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7145	M	282			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09		
7146	M	238			3-Jun-09			WETA			36	neg	neg	neg		3-Jun-09	70B:30L	
7147	F	210			4-Jun-09			WETA			36	neg	neg	neg		4-Jun-09	5B:95L	
7148	M	272			4-Jun-09			WETA			36	neg	neg	neg		4-Jun-09		
7149	F	225			4-Jun-09			WETA			36	neg	neg	neg		4-Jun-09		
7150	M	197			4-Jun-09			WETA			36	neg	neg	neg		4-Jun-09	30B:70L	
7151	M	206			7-Jun-09			WETA			33	neg	neg	neg		7-Jun-09		
7152	F	226			9-Jun-09			WETA			25	neg	neg	neg		9-Jun-09		
7153	M	266			19-Sep-09			WETA			16	neg	neg			19-Sep-09		
7153	M	256			10-Jun-09			WETA			25	neg	neg	neg		10-Jun-09		
7154	M	273			20-Sep-09			WETA			16	neg	neg			20-Sep-09		
7155	F	240			21-Sep-09			WETA			18	neg	neg			21-Sep-09		
7156	M	224			22-Sep-09			WETA			18	neg	neg			22-Sep-09		
7157	M	278			28-Sep-09			WETA			27	neg	neg			28-Sep-09		
7158	F	232			3-Oct-09			WETA			32	neg	neg			3-Oct-09		
7159	F	250			3-Oct-09			WETA			32	neg	neg			3-Oct-09		
7160	M	267			4-Oct-09			WETA			32	neg	neg			4-Oct-09		
7161	F	220			10-Jun-09			WETA			25	neg	neg	neg		10-Jun-09		
7162	F	237			20-Sep-09			WETA			16	neg	neg			20-Sep-09	B90:L10	
7162	M	217			23-Sep-09			WETA			34	neg	neg			23-Sep-09		
7163	M	297			25-Sep-09			WETA			27	neg	neg			25-Sep-09		
7164	M	275			1-Oct-09			WETA			23	neg	neg			1-Oct-09	B90:L10	B95:L5
7165	F	233			25-Sep-09			WETA			27	neg	neg			25-Sep-09		
7166	M	265			8-Oct-09			WETA			20	neg	neg			8-Oct-09		
7167	F	209			8-Oct-09			WETA			20	neg	neg			8-Oct-09	B20:L80	
7168	F	232			8-Oct-09			WETA			20	neg	neg			8-Oct-09	B15:L85	B10:L90
7169	F	238			10-Oct-09			WETA			12	neg	neg			10-Oct-09		
7170	M	272			8-Oct-09			WETA			20	neg	neg			8-Oct-09	B40:L60	
7171	M	299			8-Oct-09			WETA			20	neg	neg			8-Oct-09		
7172	M	291			8-Oct-09			WETA			20	neg	neg			8-Oct-09		
7173	F	245			8-Oct-09			WETA			20	neg	neg			8-Oct-09	B20:L80	
7174	M	282			9-Oct-09			WETA			12	neg	neg			9-Oct-09		
7175	F	216			9-Oct-09			WETA			12	neg	neg			9-Oct-09	B5:L95	B1:L99
7176	F	220			29-Sep-09			WETA			22	neg	neg			29-Sep-09		
7177	F	236			4-Oct-09			WETA			26	neg	neg			4-Oct-09	B02:L98	
7178	M	226			5-Oct-09			WETA			20	neg	neg			5-Oct-09		
7179	F	214			5-Oct-09			WETA			20	neg	neg			5-Oct-09		
7180	F	222			5-Oct-09			WETA			20	neg	neg			5-Oct-09	B:90:L10; B5:L95	
7181	M	265			7-Oct-09			WETA			20	neg	neg			7-Oct-09	B40:L60	
7182	M	285			6-Oct-09			WETA			20	neg	neg			6-Oct-09	B50:L50	
7183	M	266			6-Oct-09			WETA			20	neg	neg			6-Oct-09	B15:L85; B90:L10; B50:L50	
7184	M	217			6-Oct-09			WETA			20	neg	neg			6-Oct-09		
7185	M	267			7-Oct-09			WETA			20	neg	neg			7-Oct-09		
7186	M	316			7-Oct-09			WETA			20	neg	neg			7-Oct-09		
7187	M	255			6-Oct-09			WETA			20	neg	neg			6-Oct-09	B80:L20; B20:L80	
7188	F	223			9-Oct-09			WETA			12	neg	neg			9-Oct-09		
7189	F	218			5-Oct-09			WETA			32	neg	neg			5-Oct-09		
7190	M	280			7-Oct-09			WETA			20	neg	neg			7-Oct-09		
7191	F	213			4-Oct-09			WETA			32	neg	neg			4-Oct-09	B90:L10	
7192	F	204			5-Oct-09			WETA			32	pos	neg			5-Oct-09	B90:L10	
7193	F	237			6-Oct-09			WETA			32	neg	neg			6-Oct-09	B10:L90	
7194	M	258			7-Oct-09			WETA			19	neg	neg			7-Oct-09		
7195	M	198			7-Oct-09			WETA			19	neg	neg			7-Oct-09		
7196	F	241			8-Oct-09			WETA			20	neg	neg			8-Oct-09		
7197	M	282			8-Oct-09			WETA			20	neg	neg			8-Oct-09		
7198	F	220			8-Oct-09			WETA			19	neg	neg			8-Oct-09	B95:L5	B3:L97
7199	F	204			8-Oct-09			WETA			19	neg	neg			8-Oct-09	B75:L25	
7200	M	243			9-Oct-09			WETA			19	neg	neg			9-Oct-09	B5:L95	
7201	F	199			9-Oct-09			WETA			21	neg	neg			9-Oct-09		
7202	F	217			10-Oct-09			WETA			21	neg	neg			10-Oct-09		
7203	M	294			10-Oct-09			WETA			21	neg	neg			10-Oct-09	B75:L25	
7204	F	186			10-Oct-09			WETA			21	neg	neg			10-Oct-09	B50:L50	
7205	F	199			11-Oct-09			WETA			21	neg	neg			11-Oct-09	B90:L10	
7206	M	240			11-Oct-09			WETA			21	pos	neg			11-Oct-09		
7207	M	276			12-Oct-09			WETA			21	pos	neg			12-Oct-09	B75:L25	
7208	F	229			12-Oct-09			WETA			21	neg	neg			12-Oct-09		
7209	M	270			12-Oct-09			WETA			21	neg	neg			12-Oct-09		
7210	M	285			12-Oct-09			WETA			21	neg	neg			12-Oct-09		
7211	F	254			14-Oct-09			WETA			10	neg	neg			14-Oct-09	B70:L30	
7212	M	186			14-Oct-09			WETA			10	neg	neg			14-Oct-09	B5:L95	
7213	M	282			15-Oct-09			WETA			10	neg	neg			15-Oct-09		
7214	F	206			15-Oct-09			WETA			10	neg	neg			15-Oct-09		
7215	M	277			15-Oct-09			WETA			10	neg	neg			15-Oct-09		
7216	F	243			15-Oct-09			WETA			10	neg	neg			15-Oct-09		
7217	M	276			15-Oct-09			WETA			10	neg	neg			15-Oct-09		
7218	M	211			20-Oct-09			WETA			4	neg	neg			20-Oct-09	B90:L10	B75:L25
7219	F	231			20-Oct-09			WETA			4	neg	neg			20-Oct-09		
7220	F	231			20-Oct-09			WETA			4	neg	neg			20-Oct-09		
7221	M	274			10-Oct-09			WETA			12	neg	neg			10-Oct-09		
7222	F	201			9-Oct-09			WETA			12	neg	neg			9-Oct-09		
7223	M	268			12-Oct-09			WETA			12	neg	neg			12-Oct-09		
7224	F	184			10-Oct-09			WETA			12	neg	neg			10-Oct-09	B40:L60	
7225	F	237			11-Oct-09			WETA			12	neg	neg			11-Oct-09		
7226	F	242			10-Oct-09			WETA			12	neg	neg			10-Oct-09		
7227	M	287			10-Oct-09			WETA			12	neg	neg			10-Oct-09	B25:L75	
7228	M	250			12-Oct-09			WETA			12	neg	neg			12-Oct-09	B40:L60	
7229	M	260			11-Oct-09			WETA			12	neg	neg			11-Oct-09	B40:L60	
7230	M	261			12-Oct-09			WETA			12	neg	neg			12-Oct-09	B40:L60	B20:L80
7231	M	287			11-Oct-09			WETA			12	neg	neg			11-Oct-09	B90:L99	
7232	M	247			10-Oct-09			WETA			12	neg	neg			10-Oct-09		
7233	M	300			10-Oct-09			WETA			12	neg	neg			10-Oct-09		
7234	F	245			10-Oct-09			WETA			12	neg	neg			10-Oct-09	B20:L80	
7235	M	201			12-Oct-09			WETA			12	neg	neg			12-Oct-09	B30:L70	
7236	M	246			13-Oct-09			WETA			9	neg	neg			13-Oct-09		
7237	F	223			12-Oct-09			WETA			12	neg	neg			12-Oct-09	B20:L80	
7238	M	229			13-Oct-09			WETA			9	neg	neg			13-Oct-09		
7239	M	235			14-Oct-09			WETA			9	neg	neg			14-Oct-09		
7240	F	238			14-Oct-09			WETA			9	neg	neg			14-Oct-09		
7241	F	202			13-Oct-09			WETA			9	neg	neg			13-Oct-09	B40:L60	B10:L90
7242	M	201			14-Oct-09			WETA			9	neg	neg			14-Oct-09		
7243	M	304			16-Oct-09			WETA			3	sus	neg			16-Oct-09		

2	M	266	168.202	10-Apr-11	16-Dec-09	528066	3887805	SEA	ITS_Research	Resident	SD		neg	neg	n/a	neg	24-Sep-06		
7244	M	244			14-Oct-09			WETA			9		neg	neg			14-Oct-09	B15:L85	B10:L90
7245	M	223			14-Oct-09			WETA			9		neg	neg			14-Oct-09		
7246	F	206			14-Oct-09			WETA			9		neg	neg			14-Oct-09		
7247	F	215			16-Oct-09			WETA			3		neg	neg			16-Oct-09	B5:L95	
7248	M	303			16-Oct-09			WETA			3		neg	neg			16-Oct-09		
7249	M	282			17-Oct-09			WETA			3		neg	neg			17-Oct-09		
7250	M	308			17-Oct-09			WETA			8		neg	neg			17-Oct-09	B30:L70	
7251	M	254			17-Oct-09			WETA			3		neg	neg			17-Oct-09		
7252	M	260			18-Oct-09			WETA			3		pos	neg			18-Oct-09	B10:L90	B1:L99
7253	M	243			18-Oct-09			WETA			3		pos	neg			18-Oct-09		
7254	M	223			18-Oct-09			WETA			3		neg	neg			18-Oct-09		
7255	M	250			19-Oct-09			WETA			3		neg	neg			19-Oct-09	B15:L85	
7256	F	262			14-Oct-09			WETA			10		neg	neg			14-Oct-09		
7257	M	239			19-Oct-09			WETA			3		neg	neg			19-Oct-09		
7258	M	297			19-Oct-09			WETA			3		neg	neg			19-Oct-09		
7259	F	230			19-Oct-09			WETA			3		neg	neg			19-Oct-09	B90:L10	B10:L90
7260	M	332			20-Oct-09			WETA			3		neg	neg			20-Oct-09	B10:L90	
7270	F	219			20-Oct-09			WETA			4		neg	neg			20-Oct-09		
7271	M	265			20-Oct-09			WETA			4		sus	neg			20-Oct-09		
7272	M	237			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7273	M	250			21-Oct-09			WETA			4		pos	neg			21-Oct-09		
7274	F	217			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7275	M	259			21-Oct-09			WETA			4		neg	neg			21-Oct-09	B75:L25	
7276	F	235			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7277	F	225			21-Oct-09			WETA			4		neg	neg			21-Oct-09	lavage container leaked only 1ml left	
7278	M	250			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7279	M	214			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7280	F	186			21-Oct-09			WETA			4		neg	neg			21-Oct-09	B50:L50	
7281	M	202			21-Oct-09			WETA			4		neg	neg			21-Oct-09		
7282	F	228			22-Oct-09			WETA			2		neg	neg			22-Oct-09	B90:L10	B75:L25
7283	M	299			22-Oct-09			WETA			2		sus	neg			22-Oct-09		
7284	F	262			23-Oct-09			WETA			2		pos	neg			23-Oct-09	B90:L10	
7285	M	288			23-Oct-09			WETA			2		sus	neg			23-Oct-09		
7286	M	305			23-Oct-09			WETA			2		neg	neg			23-Oct-09	B90:L10	
7287	F	256			23-Oct-09			WETA			2		neg	neg			23-Oct-09		
7288	M	258			24-Oct-09			WETA			2		neg	neg			24-Oct-09		
7289	M	198			24-Oct-09			WETA			2		neg	neg			24-Oct-09		
7290	M	271			20-Oct-09			WETA			3		neg	neg			20-Oct-09		
7291	F	237			20-Oct-09			WETA			3		neg	neg			20-Oct-09	B2:L98; Nasal Lavage contains 2ml of urine	
7292	M	226			20-Oct-09			WETA			3		neg	neg			20-Oct-09	B15:L85	
7293	M	246			21-Oct-09			WETA			3		neg	neg			21-Oct-09	B20:L80	B1:L99
7294	M	232			21-Oct-09			WETA			3		neg	neg			21-Oct-09		
7295	F	244			22-Oct-09			WETA			5		neg	neg			22-Oct-09		
7296	M	287			22-Oct-09			WETA			5		neg	neg			22-Oct-09		
7297	F	243			23-Oct-09			WETA			5		neg	neg			23-Oct-09		
7310	F	245			19-Oct-09			WETA			4		neg	neg			19-Oct-09	B90:L10	
7311	M	274			19-Oct-09			WETA			4		sus	neg			19-Oct-09		
7312	F	250			19-Oct-09			WETA			4		pos	neg			19-Oct-09		
7313	F	238			19-Oct-09			WETA			4		pos	neg			19-Oct-09		
7314	M	270			24-Oct-09			WETA			2		neg	neg			24-Oct-09		
7315	F	227			25-Oct-09			WETA			1		neg	neg			25-Oct-09		
7316	F	241			25-Oct-09			WETA			1		neg	neg			25-Oct-09	B90:L10	B75:L25
7317	M	284			24-Oct-09			WETA			2		neg	neg			24-Oct-09		
7318	F	252			25-Oct-09			WETA			1		neg	neg			25-Oct-09		
7319	M	282			25-Oct-09			WETA			1		neg	neg			25-Oct-09	B90:L10	
7320	M	242			26-Oct-09			WETA			1		neg	neg			26-Oct-09		
7321	M	272			26-Oct-09			WETA			1		pos	neg			26-Oct-09		
7322	F	232			26-Oct-09			WETA			1		neg	neg			26-Oct-09		
7323	M	219			27-Oct-09			WETA			1		sus	neg			27-Oct-09	B90:L10	
7324	F	255			27-Oct-09			WETA			1		pos	pos			27-Oct-09		
7325	F	247			27-Oct-09			WETA			1		neg	neg			27-Oct-09		
7326	M	270			27-Oct-09			WETA			1		neg	neg			27-Oct-09		
7656	F	211			19-Oct-09			WETA			3		neg	neg			19-Oct-09		
111TMD	Juv				24-Oct-05	534520	3889010	SEA	USGS_Stress	Native	SEA								
3084b	M	233			16-Aug-06	511874	3889647	SEA	USGS_Stress	Native	1								
777TMD	unk				26-Oct-05	534585	3889005	SEA	USGS_Stress	Native	SEA								
ABD	M	275			8-May-09	544080	3882913	SEA	ITS	Monthly	Powerline	xmtr removed	neg	neg	n/a	neg	25-Sep-05	Referenced as 10001 in database. Old Stress animal, passed to ITS	
ABR	M	255	13-Jun-00		4-Jun-08	542902	3883116	SEA	USGS_Stress	Control	Powerline		neg	sus			2-Oct-08		
ADG	M	244	12-Jun-00		18-Jun-08	535068	3879084	SEA	USGS_Stress	Translocated	8	dead	neg	neg			2-Oct-08		
BCI	F	238	14-Jun-00		4-Jun-08	537480	3881273	SEA	USGS_Stress	Control	Powerline	dead	neg	neg	n/a	neg	4-Oct-07		
BMJ1	M				6-Jun-07	545277	3882970	SEA	USGS_Stress	Native	Powerline								
DM261	M	271			9-May-05	545963	3885227	SEA	USGS_Stress	Native	STA								
GOX	M	287			7-Sep-07	543809	3882365	SEA	USGS_Stress	Native	Powerline								
JR01	M				2-Oct-07	510021	3886803	SEA	USGS_Stress	Native	BTW 1&2								
JR02					6-Nov-07	553701	3882162	SEA	USGS_Stress	Native	Afton rd								
KLB	F				6-Aug-07	522861	3865145	SEA	USGS_Stress	Native	Minneola								
MAW33					5-Jun-07	522854	3865119	SEA	USGS_Stress	Native	Minneola								
MAW34	F	229			5-Jun-07	519285	3866718	SEA	USGS_Stress	Native	Minneola								
mBjR01			10-Jun-00		3-Dec-07	537491	3879253	SEA	USGS_Stress	Native	8								
mBjR02	Juv	43			3-Dec-07	537359	3879190	SEA	USGS_Stress	Native	8								
MW100	M	228			21-Jul-06	527574	3884367	SEA	USGS_Stress	Native	Mannix								
RET001	M	217			5-Apr-07	519533	3870800	SEA	USGS_Stress	Native	6								
TPD01					5-Apr-07	554183	3882571	SEA	USGS_Health	Native	Field Road								
UMM	M	281			25-Sep-05	542571	3881642	SEA	USGS_Stress	Native	STA								
unk w/4235	M	258			1-May-09			WETA			8		neg	neg	neg		1-May-09		
Unmarked	M		11-Jun-00		2-Apr-08	536760	3879577	SEA	USGS_Stress	Native	8								

Tortoise Number	Volume (cc)	Location	Team
11	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0551	ITS
19	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0552	ITS
22	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0553	ITS
29	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0554	ITS
33	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0555	ITS
35	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
42	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0556	ITS
43	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0557	ITS
47	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0558	ITS
55	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0559	ITS
890	1.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
890	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0560	ITS
2003	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0561	ITS
2007	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0562	ITS
2016	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0563	ITS
2018	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0564	ITS
2019	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2019	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0565	ITS
2026	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0566	ITS
2027	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0567	ITS
2034	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0568	ITS
2035	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0569	ITS
2037	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0570	ITS
2038	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2038	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0571	ITS
2039	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2039	0.38	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2040	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2041	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0572	ITS
2042	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0573	ITS
2044	1.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2044	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0574	ITS
2047	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2047	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0575	ITS
2048	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0576	ITS
2053	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0577	ITS
2054	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0578	ITS
2244	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2244	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0579	ITS
2418	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0580	ITS
2519	1.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2519	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0581	ITS
2523	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0582	ITS
2524	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0583	ITS
2525	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0584	ITS
2526	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0585	ITS
2527	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0586	ITS
2531	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0587	ITS
2532	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2533	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2533	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2533	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0588	ITS
2535	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2536	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2536	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2539	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0589	ITS
2540	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0590	ITS
2542	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0591	ITS
2543	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2543	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0592	ITS
2550	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2550	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0593	ITS
2551	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0594	ITS
2555	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0595	ITS
2557	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2565	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0596	ITS
2566	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0597	ITS
2567	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0598	ITS
2569	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0599	ITS
2570	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0600	ITS
2571	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0601	ITS
2572	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0602	ITS
2573	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0603	ITS
2574	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
2574	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0604	ITS

2583	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0605	ITS
2802	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0606	ITS
3001	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0607	ITS
3002	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0608	ITS
3003	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0609	ITS
3004	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0610	ITS
3005	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0611	ITS
3006	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0612	ITS
3007	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0613	ITS
3008	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0614	ITS
3009	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0615	ITS
3010	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0616	ITS
3011	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0617	ITS
3012	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0618	ITS
3013	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0619	ITS
3014	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0620	ITS
3015	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0621	ITS
3016	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0622	ITS
3018	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0623	ITS
3019	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0624	ITS
3020	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0625	ITS
3021	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0626	ITS
3022	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0627	ITS
3023	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0628	ITS
3024	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0629	ITS
3025	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0630	ITS
3026	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0631	ITS
3027	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0632	ITS
3028	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0633	ITS
3029	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0634	ITS
3030	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0635	ITS
3031	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0636	ITS
3032	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0637	ITS
3033	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0638	ITS
3034	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0639	ITS
3035	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0640	ITS
3036	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0641	ITS
3037	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0642	ITS
3040	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0643	ITS
3042	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0644	ITS
3046	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0645	ITS
3047	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0646	ITS
3048	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0647	ITS
3049	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0648	ITS
3050	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0649	ITS
3051	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0650	ITS
3052	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0651	ITS
3058	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0652	ITS
3059	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0653	ITS
3060	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0654	ITS
3062	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0655	ITS
3063	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0656	ITS
3064	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0657	ITS
3066	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0658	ITS
3067	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0659	ITS
3068	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0660	ITS
3069	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0661	ITS
3070	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0662	ITS
3071	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0663	ITS
3073	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0664	ITS
3075	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0665	ITS
3077	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3077	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0666	ITS
3078	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0667	ITS
3079	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0668	ITS
3081	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0669	ITS
3083	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0670	ITS
3089	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0671	ITS
3090	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0672	ITS
3091	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0673	ITS
3093	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0674	ITS
3094	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0675	ITS
3095	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0676	ITS
3096	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0677	ITS
3097	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0678	ITS
3098	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0679	ITS

3099	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3100	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0680	ITS
3101	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0681	ITS
3102	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3102	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0682	ITS
3103	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0683	ITS
3104	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0684	ITS
3107	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0685	ITS
3108	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0686	ITS
3109	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0687	ITS
3110	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0688	ITS
3111	0.55	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3111	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0689	ITS
3112	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0690	ITS
3113	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0691	ITS
3114	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3114	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0692	ITS
3116	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3116	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0693	ITS
3121	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0694	ITS
3123	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0695	ITS
3124	0.95	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3124	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3125	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0696	ITS
3126	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0697	ITS
3128	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0698	ITS
3129	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0699	ITS
3132	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0700	ITS
3134	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0701	ITS
3137	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0702	ITS
3138	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0703	ITS
3140	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0704	ITS
3141	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0705	ITS
3142	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0706	ITS
3144	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3146	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0707	ITS
3147	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0708	ITS
3148	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0709	ITS
3149	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0710	ITS
3151	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0711	ITS
3159	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0712	ITS
3160	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0713	ITS
3161	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0714	ITS
3163	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0715	ITS
3165	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0716	ITS
3168	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0717	ITS
3170	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0718	ITS
3171	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0719	ITS
3174	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0720	ITS
3175	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0721	ITS
3177	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0722	ITS
3178	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0723	ITS
3180	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0724	ITS
3184	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0725	ITS
3185	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0726	ITS
3186	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0727	ITS
3188	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0728	ITS
3189	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0729	ITS
3201	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0730	ITS
3202	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0731	ITS
3203	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0732	ITS
3204	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0733	ITS
3207	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0734	ITS
3208	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3208	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0735	ITS
3213	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0736	ITS
3217	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0737	ITS
3218	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0738	ITS
3219	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0739	ITS
3220	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0740	ITS
3222	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0741	ITS
3223	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0742	ITS
3224	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0743	ITS
3225	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0744	ITS
3226	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0745	ITS
3228	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0746	ITS

3229	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0747	ITS
3230	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0748	ITS
3234	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0749	ITS
3235	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0750	ITS
3236	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0751	ITS
3237	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0752	ITS
3241	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0753	ITS
3242	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0754	ITS
3244	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0755	ITS
3281	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0756	ITS
3285	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0757	ITS
3287	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0758	ITS
3288	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0759	ITS
3291	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0760	ITS
3298	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0761	ITS
3299	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0762	ITS
3300	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0763	ITS
3301	1.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3301	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0764	ITS
3302	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0765	ITS
3303	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3303	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0766	ITS
3306	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0767	ITS
3312	1.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3312	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0768	ITS
3314	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0769	ITS
3319	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3319	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0770	ITS
3320	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0771	ITS
3321	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0772	ITS
3381	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3381	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0773	ITS
3382	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3382	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3382	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0774	ITS
3392	1.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3392	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0775	ITS
3398	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0776	ITS
3399	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0777	ITS
3400	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0778	ITS
3403	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3403	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0779	ITS
3404	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0780	ITS
3405	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0781	ITS
3406	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0782	ITS
3408	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0783	ITS
3409	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0784	ITS
3410	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0785	ITS
3411	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0786	ITS
3412	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3412	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0787	ITS
3414	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0788	ITS
3415	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0789	ITS
3441	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0790	ITS
3442	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0791	ITS
3443	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0792	ITS
3444	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0793	ITS
3446	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0794	ITS
3448	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3448	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0795	ITS
3449	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0796	ITS
3450	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3450	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0797	ITS
3453	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3454	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0798	ITS
3458	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0799	ITS
3459	0.85	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3459	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0800	ITS
3460	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3460	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0801	ITS
3461	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0802	ITS
3462	1.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3462	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0803	ITS
3463	1.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3463	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0804	ITS
3464	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health

3464	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0805	ITS
3466	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3466	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0806	ITS
3467	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0807	ITS
3468	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3468	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0808	ITS
3469	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3469	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0809	ITS
3472	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0810	ITS
3473	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3473	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0811	ITS
3475	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0812	ITS
3476	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0813	ITS
3477	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3477	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0814	ITS
3479	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0815	ITS
3480	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0816	ITS
3481	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0817	ITS
3485	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0818	ITS
3487	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0819	ITS
3488	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0820	ITS
3490	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0821	ITS
3493	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3493	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0822	ITS
3494	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0823	ITS
3496	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0824	ITS
3497	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3497	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0825	ITS
3498	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0826	ITS
3500	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0827	ITS
3502	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0828	ITS
3506	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0829	ITS
3507	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0830	ITS
3508	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3508	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0831	ITS
3509	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3509	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0832	ITS
3510	1.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3510	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0833	ITS
3512	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0834	ITS
3526	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0835	ITS
3533	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3533	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0836	ITS
3539	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3539	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3539	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0837	ITS
3572	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0838	ITS
3580	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3580	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0839	ITS
3584	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0840	ITS
3590	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0841	ITS
3591	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0842	ITS
3592	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3592	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0843	ITS
3594	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0844	ITS
3600	0.95	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3600	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0845	ITS
3601	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0846	ITS
3602	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3602	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0847	ITS
3604	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3604	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0848	ITS
3605	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0849	ITS
3606	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0850	ITS
3607	1.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3607	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0851	ITS
3608	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3612	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0852	ITS
3613	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0853	ITS
3614	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0854	ITS
3615	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3615	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0855	ITS
3616	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3616	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0856	ITS
3618	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3618	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0857	ITS

3619	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0858	ITS
3620	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0859	ITS
3622	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0860	ITS
3623	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3623	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0861	ITS
3626	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3626	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0862	ITS
3627	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3627	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0863	ITS
3632	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0864	ITS
3633	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0865	ITS
3634	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0866	ITS
3639	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0867	ITS
3700	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3700	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0868	ITS
3701	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0869	ITS
3702	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0870	ITS
3703	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0871	ITS
3704	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3704	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0872	ITS
3705	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0873	ITS
3707	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0874	ITS
3708	0.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3708	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0875	ITS
3709	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0876	ITS
3710	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3710	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0877	ITS
3711	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0878	ITS
3712	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0879	ITS
3713	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3713	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0880	ITS
3714	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3714	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0881	ITS
3715	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3715	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0882	ITS
3716	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0883	ITS
3717	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3717	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0884	ITS
3718	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0885	ITS
3719	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0886	ITS
3720	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0887	ITS
3721	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0888	ITS
3722	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0889	ITS
3723	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0890	ITS
3724	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0891	ITS
3725	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3725	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0892	ITS
3726	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0893	ITS
3727	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3727	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0894	ITS
3728	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
3728	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0895	ITS
3729	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0896	ITS
3730	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0897	ITS
3740	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0898	ITS
3742	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0899	ITS
4001	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0900	ITS
4002	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0901	ITS
4003	0.75	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4003	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0902	ITS
4004	0.175	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4004	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0903	ITS
4005	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0904	ITS
4006	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0905	ITS
4007	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0906	ITS
4008	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0907	ITS
4009	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4009	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0908	ITS
4010	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4010	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0909	ITS
4011	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0910	ITS
4012	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0911	ITS
4013	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0912	ITS
4014	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4014	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0913	ITS
4015	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0914	ITS

4016	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0915	ITS
4018	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0916	ITS
4019	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0917	ITS
4020	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0918	ITS
4021	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0919	ITS
4022	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0920	ITS
4023	1.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4023	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0921	ITS
4024	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0922	ITS
4025	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0923	ITS
4026	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0924	ITS
4027	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0925	ITS
4028	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0926	ITS
4029	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4029	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0927	ITS
4030	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0928	ITS
4032	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0929	ITS
4033	0.85	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4033	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0930	ITS
4034	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0931	ITS
4035	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0932	ITS
4036	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0933	ITS
4037	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4037	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0934	ITS
4038	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0935	ITS
4039	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0936	ITS
4040	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4040	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0937	ITS
4041	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0938	ITS
4042	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0939	ITS
4043	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0940	ITS
4044	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0941	ITS
4045	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0942	ITS
4046	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4046	0.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4046	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0943	ITS
4048	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0944	ITS
4049	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0945	ITS
4050	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0946	ITS
4051	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4051	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0947	ITS
4052	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4052	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0948	ITS
4054	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0949	ITS
4055	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0950	ITS
4056	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4056	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0951	ITS
4057	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0952	ITS
4058	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0953	ITS
4059	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4059	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0954	ITS
4060	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4060	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0955	ITS
4061	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4061	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4061	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0956	ITS
4062	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0957	ITS
4063	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0958	ITS
4064	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0959	ITS
4065	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0960	ITS
4067	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0961	ITS
4068	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0962	ITS
4069	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4069	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0963	ITS
4070	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0964	ITS
4071	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4071	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0965	ITS
4072	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0966	ITS
4073	1.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4073	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0967	ITS
4074	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0968	ITS
4075	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0969	ITS
4078	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0970	ITS
4080	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0971	ITS
4081	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0972	ITS
4082	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0973	ITS

4083	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4083	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0974	ITS
4084	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0975	ITS
4085	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0976	ITS
4086	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0977	ITS
4087	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0978	ITS
4089	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0979	ITS
4090	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0980	ITS
4091	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0981	ITS
4092	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0982	ITS
4093	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0983	ITS
4094	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0984	ITS
4095	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0985	ITS
4097	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0986	ITS
4099	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4099	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0987	ITS
4100	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0988	ITS
4101	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0989	ITS
4102	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0990	ITS
4103	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0991	ITS
4104	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0992	ITS
4105	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0993	ITS
4106	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0994	ITS
4107	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0995	ITS
4109	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4110	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0996	ITS
4111	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0997	ITS
4112	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0998	ITS
4113	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-0999	ITS
4114	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4114	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1000	ITS
4115	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1001	ITS
4116	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1002	ITS
4117	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1003	ITS
4118	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4118	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4118	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4118	0.92	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4118	0.85	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4118	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1004	ITS
4119	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1005	ITS
4120	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1006	ITS
4121	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1007	ITS
4122	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1008	ITS
4123	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4123	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1009	ITS
4124	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1010	ITS
4125	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1011	ITS
4126	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1012	ITS
4127	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1013	ITS
4128	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1014	ITS
4129	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1015	ITS
4130	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4130	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1016	ITS
4131	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1017	ITS
4132	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1018	ITS
4133	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1019	ITS
4134	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1020	ITS
4135	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1021	ITS
4136	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1022	ITS
4137	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1023	ITS
4138	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1024	ITS
4139	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4139	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4139	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1025	ITS
4142	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1026	ITS
4143	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1027	ITS
4146	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4146	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4146	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1028	ITS
4148	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1029	ITS
4150	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4150	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1030	ITS
4151	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1031	ITS
4152	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1032	ITS
4153	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1033	ITS

4154	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1034	ITS
4157	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1035	ITS
4158	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4158	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1036	ITS
4159	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1037	ITS
4160	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1038	ITS
4161	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1039	ITS
4162	0.96	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4162	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1040	ITS
4163	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1041	ITS
4165	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1042	ITS
4166	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1043	ITS
4167	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1044	ITS
4169	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1045	ITS
4170	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1046	ITS
4171	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1047	ITS
4172	0.55	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4172	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1048	ITS
4173	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1049	ITS
4174	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1050	ITS
4176	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1051	ITS
4177	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1052	ITS
4178	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1053	ITS
4179	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4179	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1054	ITS
4180	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1055	ITS
4182	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1056	ITS
4183	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4183	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4183	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1057	ITS
4185	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1058	ITS
4186	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1059	ITS
4187	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1060	ITS
4188	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4190	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1061	ITS
4195	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1062	ITS
4199	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4200	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1063	ITS
4202	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1064	ITS
4203	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1065	ITS
4204	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1066	ITS
4205	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1067	ITS
4206	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1068	ITS
4207	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4207	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1069	ITS
4208	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1070	ITS
4209	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1071	ITS
4210	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4210	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1072	ITS
4211	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1073	ITS
4212	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1074	ITS
4213	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1075	ITS
4214	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1076	ITS
4215	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1077	ITS
4216	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1078	ITS
4217	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1079	ITS
4218	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1080	ITS
4219	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1081	ITS
4220	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1082	ITS
4221	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1083	ITS
4223	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1084	ITS
4225	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1085	ITS
4226	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1086	ITS
4227	0.75	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4227	0.85	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4227	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4227	1.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4227	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1087	ITS
4228	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4228	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1088	ITS
4230	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1089	ITS
4231	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1090	ITS
4232	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1091	ITS
4233	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1092	ITS
4234	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4234	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1093	ITS

4235	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4235	1.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4235	1.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4235	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1094	ITS
4236	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1095	ITS
4237	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1096	ITS
4238	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4238	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4238	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4238	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1097	ITS
4239	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4239	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1098	ITS
4240	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1099	ITS
4241	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1100	ITS
4242	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4243	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1101	ITS
4244	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1102	ITS
4245	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1103	ITS
4246	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1104	ITS
4247	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1105	ITS
4248	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1106	ITS
4250	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4250	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1107	ITS
4251	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1108	ITS
4252	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1109	ITS
4254	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1110	ITS
4256	0.85	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4256	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4256	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1111	ITS
4257	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4257	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4257	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1112	ITS
4259	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1113	ITS
4262	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1114	ITS
4263	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4264	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1115	ITS
4265	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1116	ITS
4266	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1117	ITS
4267	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1118	ITS
4269	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4269	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1119	ITS
4270	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1120	ITS
4271	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1121	ITS
4272	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4272	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1122	ITS
4273	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4273	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1123	ITS
4274	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1124	ITS
4275	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1125	ITS
4276	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1126	ITS
4277	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1127	ITS
4280	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1128	ITS
4281	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4281	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1129	ITS
4282	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1130	ITS
4283	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4286	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4286	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4288	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1131	ITS
4289	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4289	0.75	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4289	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1132	ITS
4291	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4292	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1133	ITS
4293	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1134	ITS
4294	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1135	ITS
4295	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4295	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1136	ITS
4296	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1137	ITS
4297	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1138	ITS
4299	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4299	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4299	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1139	ITS
4300	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4300	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4300	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health

4300	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1140	ITS
4301	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1141	ITS
4302	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1142	ITS
4303	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1143	ITS
4305	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1144	ITS
4306	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1145	ITS
4307	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1146	ITS
4312	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1147	ITS
4313	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1148	ITS
4314	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1149	ITS
4320	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1150	ITS
4341	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1151	ITS
4342	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1152	ITS
4343	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4343	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1153	ITS
4345	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1154	ITS
4346	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1155	ITS
4347	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1156	ITS
4349	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1157	ITS
4351	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1158	ITS
4353	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1159	ITS
4354	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1160	ITS
4356	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1161	ITS
4358	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1162	ITS
4359	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1163	ITS
4360	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1164	ITS
4362	0.65	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4362	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4362	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1165	ITS
4363	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4363	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4363	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1166	ITS
4364	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1167	ITS
4365	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1168	ITS
4366	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1169	ITS
4367	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1170	ITS
4368	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1171	ITS
4369	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1172	ITS
4370	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1173	ITS
4371	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1174	ITS
4372	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1175	ITS
4373	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1176	ITS
4374	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1177	ITS
4375	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1178	ITS
4377	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1179	ITS
4378	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1180	ITS
4379	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1181	ITS
4380	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1182	ITS
4381	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4381	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1183	ITS
4382	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1184	ITS
4383	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1185	ITS
4384	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4384	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1186	ITS
4385	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1187	ITS
4387	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4387	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1188	ITS
4388	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1189	ITS
4389	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1190	ITS
4390	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1191	ITS
4391	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4392	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1192	ITS
4396	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4396	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1193	ITS
4398	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4398	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4398	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4398	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1194	ITS
4399	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1195	ITS
4400	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1196	ITS
4401	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1197	ITS
4402	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1198	ITS
4403	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1199	ITS
4404	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1200	ITS
4405	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4405	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1201	ITS

4406	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1202	ITS
4408	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4408	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1203	ITS
4409	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1204	ITS
4410	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4410	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4410	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1205	ITS
4411	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1206	ITS
4412	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1207	ITS
4413	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1208	ITS
4415	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1209	ITS
4416	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1210	ITS
4417	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1211	ITS
4418	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4418	0.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4418	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4418	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1212	ITS
4419	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1213	ITS
4420	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1214	ITS
4421	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1215	ITS
4422	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1216	ITS
4423	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4423	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4423	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4423	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1217	ITS
4424	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4424	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1218	ITS
4425	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1219	ITS
4426	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1220	ITS
4427	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1221	ITS
4428	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4428	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1222	ITS
4429	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1223	ITS
4431	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1224	ITS
4432	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1225	ITS
4433	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1226	ITS
4434	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1227	ITS
4435	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1228	ITS
4436	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1229	ITS
4438	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4438	0.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4438	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1230	ITS
4440	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1231	ITS
4441	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4441	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1232	ITS
4442	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4442	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4442	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1233	ITS
4443	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4443	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1234	ITS
4447	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1235	ITS
4448	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1236	ITS
4451	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1237	ITS
4455	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1238	ITS
4456	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1239	ITS
4458	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1240	ITS
4460	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1241	ITS
4467	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1242	ITS
4481	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1243	ITS
4482	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1244	ITS
4483	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4483	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4483	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1245	ITS
4484	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4484	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1246	ITS
4485	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1247	ITS
4486	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1248	ITS
4488	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1249	ITS
4491	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1250	ITS
4494	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1251	ITS
4496	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1252	ITS
4497	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4497	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1253	ITS
4498	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4498	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1254	ITS
4499	0.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health

4499	1.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4499	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4499	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1255	ITS
4500	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4500	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1256	ITS
4504	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1257	ITS
4505	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1258	ITS
4506	0.55	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4506	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1259	ITS
4507	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4507	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1260	ITS
4508	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4508	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1261	ITS
4512	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1262	ITS
4514	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4514	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1263	ITS
4515	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1264	ITS
4516	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1265	ITS
4517	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1266	ITS
4518	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1267	ITS
4519	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4519	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1268	ITS
4520	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1269	ITS
4521	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1270	ITS
4525	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1271	ITS
4526	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1272	ITS
4527	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1273	ITS
4528	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1274	ITS
4529	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1275	ITS
4530	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1276	ITS
4531	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1277	ITS
4533	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1278	ITS
4535	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1279	ITS
4537	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1280	ITS
4538	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1281	ITS
4539	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1282	ITS
4540	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4540	1.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4540	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1283	ITS
4541	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1284	ITS
4542	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1285	ITS
4544	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4544	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1286	ITS
4545	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1287	ITS
4546	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1288	ITS
4547	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1289	ITS
4548	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1290	ITS
4549	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1291	ITS
4550	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1292	ITS
4551	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1293	ITS
4552	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1294	ITS
4553	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1295	ITS
4554	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1296	ITS
4555	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1297	ITS
4556	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4556	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1298	ITS
4557	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1299	ITS
4558	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1300	ITS
4559	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1301	ITS
4560	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1302	ITS
4561	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1303	ITS
4562	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1304	ITS
4564	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4564	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4564	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1305	ITS
4570	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1306	ITS
4571	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1307	ITS
4572	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1308	ITS
4573	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1309	ITS
4574	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1310	ITS
4575	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1311	ITS
4576	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1312	ITS
4577	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1313	ITS
4578	0.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4578	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1314	ITS
4579	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1315	ITS

4580	0.02	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4580	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1316	ITS
4581	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1317	ITS
4582	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1318	ITS
4586	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1319	ITS
4587	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1320	ITS
4588	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1321	ITS
4590	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1322	ITS
4591	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1323	ITS
4592	0.75	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4592	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1324	ITS
4593	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1325	ITS
4595	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1326	ITS
4596	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4596	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1327	ITS
4598	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1328	ITS
4599	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1329	ITS
4600	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1330	ITS
4601	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1331	ITS
4602	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1332	ITS
4604	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4605	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1333	ITS
4606	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1334	ITS
4607	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1335	ITS
4608	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1336	ITS
4609	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4609	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1337	ITS
4610	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1338	ITS
4611	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4611	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1339	ITS
4612	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1340	ITS
4613	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1341	ITS
4614	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1342	ITS
4615	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4615	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1343	ITS
4616	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4616	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1344	ITS
4617	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4617	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1345	ITS
4618	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1346	ITS
4619	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1347	ITS
4620	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1348	ITS
4623	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1349	ITS
4624	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1350	ITS
4625	0.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4625	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4625	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1351	ITS
4627	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1352	ITS
4628	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1353	ITS
4629	0.65	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4629	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1354	ITS
4630	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4630	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1355	ITS
4634	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1356	ITS
4639	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4639	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1357	ITS
4640	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1358	ITS
4641	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1359	ITS
4642	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1360	ITS
4643	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1361	ITS
4644	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1362	ITS
4645	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1363	ITS
4646	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1364	ITS
4649	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1365	ITS
4651	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1366	ITS
4652	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4654	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4654	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1367	ITS
4658	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1368	ITS
4659	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1369	ITS
4662	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4664	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1370	ITS
4665	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1371	ITS
4666	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1372	ITS
4667	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1373	ITS
4668	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1374	ITS

4669	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4669	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1375	ITS
4672	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1376	ITS
4673	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1377	ITS
4674	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1378	ITS
4675	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1379	ITS
4676	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4677	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1380	ITS
4678	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1381	ITS
4679	0.9	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4680	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1382	ITS
4684	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1383	ITS
4686	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4686	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1384	ITS
4692	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4692	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1385	ITS
4698	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1386	ITS
4699	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4699	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1387	ITS
4704	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1388	ITS
4709	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1389	ITS
4716	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1390	ITS
4719	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1391	ITS
4720	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4720	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4720	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1392	ITS
4721	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1393	ITS
4730	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1394	ITS
4731	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1395	ITS
4734	0.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4748	0.95	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4748	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
4748	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1396	ITS
4749	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1397	ITS
4754	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1398	ITS
4756	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1399	ITS
4757	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1400	ITS
5000	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1401	ITS
5001	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1402	ITS
5002	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5002	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1403	ITS
5003	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1404	ITS
5004	1.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5004	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1405	ITS
5008	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1406	ITS
5009	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5009	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1407	ITS
5010	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1408	ITS
5011	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1409	ITS
5012	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5012	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1410	ITS
5013	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5013	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1411	ITS
5014	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1412	ITS
5015	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1413	ITS
5016	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5016	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1414	ITS
5017	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5017	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1415	ITS
5018	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1416	ITS
5019	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1417	ITS
5020	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1418	ITS
5021	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5021	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1419	ITS
5022	1.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5022	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1420	ITS
5023	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5023	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1421	ITS
5024	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1422	ITS
5025	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1423	ITS
5026	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1424	ITS
5027	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1425	ITS
5028	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5028	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1426	ITS
5029	0.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5030	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1427	ITS

5034	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5041	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5042	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5043	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5044	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5052	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1428	ITS
5053	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1429	ITS
5054	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5054	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1430	ITS
5055	1.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5055	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1431	ITS
5056	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1432	ITS
5057	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5057	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1433	ITS
5058	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5058	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1434	ITS
5061	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1435	ITS
5063	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5063	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1436	ITS
5064	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1437	ITS
5065	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1438	ITS
5066	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1439	ITS
5067	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1440	ITS
5068	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5068	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1441	ITS
5069	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5069	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1442	ITS
5070	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1443	ITS
5072	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1444	ITS
5073	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5074	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1445	ITS
5094	1.25	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5099	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5102	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5102	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1446	ITS
5124	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1447	ITS
5125	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1448	ITS
5126	0.65	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5126	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1449	ITS
5127	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5127	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1450	ITS
5131	0.15	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5132	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5133	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5134	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1451	ITS
5135	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5135	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1452	ITS
5136	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1453	ITS
5137	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1454	ITS
5138	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1455	ITS
5139	0.02 cc	Genetics Laboratory at the Smithsonian Institution, National Zoological Park, 3001 Connecticut Ave., NW, Washington DC 20008-1456	ITS
5141	0.7	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5144	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5150	0.4	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5157	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5158	0.3	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5161	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5163	1.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5172	0.45	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5174	0.13	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5175	0.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5177	1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5180	0.5	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5204	0.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5206	0.2	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5209	0.8	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5210	1.35	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5211	1.05	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5234	0.6	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
5249	0.1	USGS, BRD, Western Ecological Research Center Falcon Business Park, 21803 Cactus Avenue, Suite F, Riverside, CA 92518	USGS Health
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PROGRESS REPORT FOR 2009

Health Status of Desert Tortoises (*Gopherus agassizii*) Remaining within Ft. Irwin's Southern Expansion Area in 2009: Recommendations for Disposition

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Abstract. During spring of 2009, 19 desert tortoises remaining within the confines of Ft. Irwin's boundaries in the Southern Expansion Area (SEA) were evaluated for health with blood and nasal lavage samples. One tortoise was ELISA positive and 18 others were ELISA negative for *M. agassizii*. All 19 tortoises were ELISA negative for *M. testudineum*. During fall, 8 tortoises were re-evaluated for health. One tortoise had a suspect ELISA test for *M. agassizii*, and 7 others were ELISA negative (Table 3). All 8 tortoises were ELISA negative for *M. testudineum*. Two tortoises were found dead and five tortoises could not be found by the end of 2009. Recommendations are offered for the disposition of 39 tortoises potentially remaining within the confines of Ft. Irwin's boundaries in the SEA. The 39 tortoises include live individuals with known locations and animals that are missing.

INTRODUCTION AND BACKGROUND

The Desert Tortoise Translocation Project at the National Training Center (NTC), Ft. Irwin, was initiated in 2005 in the Southern Expansion Area (SEA, Esque et al. 2005) with sampling of potential translocatees, resident tortoises, and control tortoises for health status. In spring of 2008, several hundred tortoises were translocated from within the boundaries of Ft. Irwin to study plots. After spring translocation in 2008, an estimated 96 tortoises still remained within Ft. Irwin boundaries and needed to be translocated, removed, or the disposition determined. Of the 96, 24 had received health evaluations in 2006 and 2007. The 96 tortoises had not been translocated for one or more reasons: 1) they were missing and could not be located; 2) the transmitters had become detached and the tortoises were lost; 3) the tortoises had tested suspect or positive with ELISA tests for either or both of the pathogens (*Mycoplasma agassizii*, *M. testudineum*) that cause upper respiratory tract disease (URTD); 4) the tortoises had one or more moderate to severe clinical signs of URTD; and/or 5) the tortoises had not previously been evaluated for health status.

The objectives of the health research team in 2008 and throughout 2009 for this part of the SEA were to: 1) conduct health evaluations on recently discovered tortoises that had not received a health evaluation, 2) re-evaluate each tortoise with suspect or positive ELISA tests for *Mycoplasma* spp., and 3) re-evaluate each tortoise with significant clinical signs of URTD. During 2008, 55 of the tortoises received health evaluations. By the end of 2008, of the 96 tortoises remaining in the SEA, transmitters had detached from 12 tortoises and the tortoises no longer could be found, and an additional 21 tortoises with radio transmitters were missing and could not be found.

By the end of 2008, we identified 33 individuals that still needed evaluations and testing in 2009: 14 individuals that had not been previously evaluated (6 of the 14 were on missing lists); 8 tortoises with previous suspect or positive ELISA tests for *M. agassizii* or *M. testudineum;* and 8 tortoises with clinical signs of URTD but negative ELISA tests. An additional 3 tortoises that had previously tested suspect or positive for

M. testudineum in October of 2008 were in ITS/QinetiQ studies but were not available for re-testing. This report summarizes the health status of the tortoises remaining and available for sampling.

METHODS

Desert tortoises had been previously fitted with radio transmitters by field workers from ITS/QinetiQ Corporation. The identification numbers, locations, frequencies of the radio transmitters, and other information were provided by ITS/QinetiQ Corporation to the U.S. Geological Survey's Health/Research Team. Each tortoise was sought in spring of 2009 and a health evaluation was conducted, if the tortoise could be found. The health evaluations included unique identification number, size (carapace length at the mid-line in mm, MCL), weight, sex, posture, behavior, activity, recent trauma, and clinical signs of disease (e.g., URTD and cutaneous dyskeratosis) on the eyes, beak, nares, integument, and shell using a standardized seven-page form modified from an appendix in Berry and Christopher (2001). Digital photographs were taken of the eyes, beak, nares, plastron, carapace, and any unusual trauma or lesion.

During health evaluations, samples of blood were drawn either by brachial venipuncture or from the subcarapacial site using standard protocols (Hernandez-Divers et al. 2002, Berry et al. 2006). Samples of blood that contained 15% or more of lymph were considered to be suboptimal because of the potential negative impact of dilution (e.g., Gottdenker and Jacobson 1995). Where possible, such samples were repeated with an objective of obtaining 90–100% blood with no lymph or only a trace of lymph (Berry et al. 2005). A nasal lavage was taken using standard protocols (Berry et al. 2006). Blood plasma and nasal samples were shipped to the Mycoplasma Laboratory at the University of Florida to determine the presence of antibodies to *Mycoplasma agassizii* or *M. testudineum* using enzyme-linked immunoassay (ELISA) tests (Schumacher et al. 1993; Brown et al. 1994, 2001, 2004; Wendland et al. 2007). The nasal samples were cultured, and when the test was positive, polymerase chain reaction (PCR) was used to amplify the *Mycoplasma* so that it could be identified to species (Brown et al. 2002). As part of the quality assurance and control protocols, the health evaluation data sheets and digital images were compared and changes were made to the data base where necessary.

Three databases were constructed for the potential SEA translocatees. One database contains the monthly monitoring data and has been included with excel files submitted to the permit holder, Clarence Everly, for the annual permit report to the U.S. Fish and Wildlife Service. The second database summarizes tissue samples obtained and includes data on type of samples obtained (blood plasma, plasma/lymph, and nasal lavage), date of collection, volume of samples, results of ELISA tests for *M. agassizii* and *M. testudineum*, and results of PCR tests for positive or suspect cultures. The third database contains the health evaluation data sets and, as of January 2010, was undergoing quality control. This third database will also become part of the permanent database for the Ft. Irwin project but is not ready for archiving. The databases described above are provided separately to Clarence Everly, the permit holder, and are not included herein.

RESULTS AND DISCUSSION

Health Status of 24 Tortoises

In 2009, the USGS Health team continued to monitor 9 tortoises that had been monitored in 2008 (Table 1). In May of 2009, we began monitoring an additional 7 tortoises which were previously monitored by the ITS/QinetiQ team. Unbeknownst to our team until January 2010, some of these tortoises were simultaneously monitored by bptj the OTS/QinetiQ team and USGS Health team in 2009. Two of the 7 tortoises had not been tracked by either research team between October 2008 and April 2009. Of these two tortoises, one (4483M) has remained missing, and the other (4232M) was located in August and September 2009 but disappeared again in October of 2009. A third tortoise (4560) of the 7 also has been missing since May of 2008, when its detached radio transmitter was located. In addition to these 16 tortoises, there were 14 tortoises (monitored by the ITS/QinetiQ team) that had never been evaluated for health; 8 of these tortoises were examined in spring of 2009 (Table 2). The other 6 were missing and could not be evaluated.

In spring, the tortoises that could be located were sampled between May 19 and 23; in fall the sampling was undertaken between October 6 and 22. During spring, 19 tortoises were evaluated for health with blood and nasal lavage samples. One tortoise (4289) was ELISA positive and 18 others were negative for *M. agassizii*. All 19 tortoises were ELISA negative for *M. testudineum*. All cultures were negative (Tables 2 and 3). During fall, 8 tortoises were re-evaluated for health. One tortoise (3111) had a suspect ELISA test and 7 others were ELISA negative for *M. agassizii* (Table 3). All 8 tortoises were ELISA negative for *M. testudineum*. The results of cultures are still pending for the fall.

The results of the most recent data on clinical signs of trauma and diseases are summarized in Table 4 for each of the 16 tortoises monitored by the USGS Health team, regardless of whether the tortoises were missing or found dead. The locations of both live and missing tortoises are shown in Fig. 1. For the 8 tortoises receiving their first health evaluations in spring of 2009, the clinical signs of trauma and disease are summarized in Table 5. Most tortoises that the USGS Health team has evaluated for the Ft. Irwin project since 2005 have had one or more clinical signs of URTD (mild edema of palpebrae, mild crusts on the palpebrae); these mild signs probably fall within normal limits of healthy tortoises. Of more interest and concern are tortoises with moderate to severe clinical signs of the ocular and nasal area. For the ocular area, these signs include mucoid drainage from the eyes, inflammation of the conjunctiva, and eyes that are closed or nearly closed and accompanied by other moderate to severe ocular signs. For the beak and nares, clinical signs of concern are those with moisture in or on the beak caused by drainage from the nares, discharge (especially purulent) from the nares, and nares occluded by a wet or dried discharge. Tortoises with signs of a nasal discharge and/or ocular discharge are more likely to have mycoplasmosis, herpes virus infections, or an infectious disease than tortoises without these clinical signs.

Since a tortoise with mycoplasmosis may have a nasal discharge intermittently (Jacobson et al. 1995), we rely on such signs as occluded or partially occluded nares, embedded mucus and dirt on the beak and around the nares, and eroded nares with peeling scales. These clinical signs provide an indication of a nasal discharge. Several tortoises (Tables 4, 5) had partially occluded nares and embedded dirt and/or mucus on the beak and face. Interpretation of the cause(s) of the occluded nares was complicated in spring by plant material from foraging. In spring of 2009, the wildflowers were plentiful. Many tortoises had green stains on the beak and remnants of sticky plant sap and plant parts on the beak. For some tortoises, the nares were partially occluded but the cause for the occlusion was not clear. To facilitate decisions on future disposition of each of the tortoises, whether the location is known or the tortoise is missing, we have made recommendations in the section titled Recommendations, below.

Dead Tortoises

Two of the tortoises were found dead in 2009. The remains of one tortoise (3453F) were located sometime between August 2008 and April 2009 by the ITS research team. Currently, we do not know the potential cause of death for the this tortoise. The second tortoise (4227F) was located dead in a rock shelter in October 2009. This tortoise was wedged tightly between the ground and the roof of the rock shelter, and the radio transmitter may have been caught on the rock shelter. The soil under the tortoise had to be excavated in order to extract the tortoise from the cover site. Once extracted, field workers noted that the entire shell was intact, the remaining soft tissue was mostly decomposed and odiferous, the radio transmitter was partially detached, and no signs of predation were evident.

Fences, Fence Gaps, and A Missing Tortoise

In September 2009, tortoise 4232M, was found walking in the open between two lines of fencing. Both lines of fencing were barbed-wire fences, with tortoise-proof fencing lining the lower 1.5 m portion of the fence. On that day, no openings or gaps in the fence were visible that would have allowed a tortoise in or out of this space. This tortoise was relocated north of the fencing (into presumed Fort Irwin boundaries) about 5 m from the location where it was found. In October 2009, we were unable to find 4232M, and were not been able to locate it in November or December of 2009. Tortoise 4232M is considered missing. While searching for the tortoise, we observed several gaps in the previously mentioned fence. Some gaps appeared to have been caused from structural damage and at least one gap was the result of a wash carving out space beneath the fence lining. Several gaps were sufficiently large to allow a tortoise to enter the corridor between two fences.

RECOMMENDATIONS

We have made recommendations for the disposition of each of the tortoises remaining within the boundaries Ft. Irwin in the SEA, regardless of whether the tortoise is alive and its location is known or whether it is missing.

1. The following SEA tortoises have not been sampled for health status since 2006 or 2007. For 2006, the identification numbers are: 2006, 4181, 4256, and 4352. For 2007, the identification numbers are 4012, 4066, 4105, 4190, 4211, 4231, 4259, 4268, 4353, 4382, 4394, 4395, 4397, 4406, 4425, 4527, 4571, 4600, 4659, and 4677. Thirteen of these tortoises are missing (see item 2. below). If any of these tortoises have had been in the vicinity of and potentially had contact with an ELISA positive tortoise or a tortoises with moderate to severe clinical signs of URTD, then they should be re-evaluated and re-tested before being translocated.

2. Thirteen tortoises that were evaluated in 2006 and 2007 for health are missing: 2006, 4352, 4012, 4353, 4382, 4394, 4397, 4406, 4425, 4527, 4571, 4600, and 4659. The status of each of these tortoises should be updated in the Ft. Irwin database. Tortoises 4012, 4397, and 4600 are shown as having detached transmitters. The rest of the tortoises are not shown as lost or the dates when last observed. When and if a missing tortoise is found, its location needs to be compared with the locations of tortoises with suspect or positive ELISA tests and signs of nasal discharge. Some of the missing tortoises, if found alive, may not be suitable for translocation.

3. Tortoises 2244 and 3405 are outside the boundaries of Ft. Irwin (see Fig. 1) and thus are not candidates for translocation based on location alone. Tortoise 2244 had an unusual clinical sign during the health evaluation in October 2009: a dried brown drainage from the left side of the mouth sufficient to stain the beak, mandible, and integument ventrally. The health status of this tortoise should continue to be tracked and the oral cavity periodically evaluated for signs of herpes virus infection. The clinical signs of URTD for tortoise 3405 are ambiguous and merit additional monitoring.

4. Tortoise 3111 is on the boundary of Plot 1.5 and the Western Expansion Area (WEA) and, in December 2009, was 100 m into the WEA. It has had three seasons of positive and suspect tests for *M. agassizi,* as well as some mild clinical signs of URTD (but no nasal discharge). (This tortoise has been tracked by both the USGS health and the ITS/Qinetiq teams.) It is not a suitable candidate for translocation.

5. Clinical signs and/or ELISA test results for tortoises 4289 and 4483 preclude translocation in 2010. Both 4289 and 4483 were missing in December 2009; if found, they should not be translocated. (In January 2010, we learned that ITS/Qinetiq has been monitoring 4289 and may have changed the transmitter and transmitter frequency.)

6. Tortoise 4232, missing in fall of 2009, should not be translocated if found. Tortoise 4232 was last evaluated for health in Fall of 2008; it was missing in spring of 2009, found and monitored briefly during summer of 2009, and then disappeared again prior to the fall health evaluation in 2009. Although this tortoise had negative ELISA tests for mycoplasmosis in 2007 and 2008, it should not be translocated until it is evaluated again.

At the fall 2008 health evaluation, the tortoise had a wet glob (4 to 6 mm in diameter) of whitish-yellow mucus on the gular horn, apparently from the nares. Other clinical signs of URTD were also present.

7. The tortoises listed below were located and evaluated in 2009. They had negative ELISA tests for *M. agassizii* and *M. testudineum* and no wet purulent discharge. On the basis of health status alone, they could be translocated in spring of 2010 IF they show no signs of nasal moisture or discharge, occlusions of the nares, or lesions in the mouth in spring of 2010:

a. 4217 (mild to moderate clinical signs of URTD, including dried white material occluding the L nare by 30%)

b. 4525, a marginal tortoise for translocation (mild to moderate clinical signs of URTD, including crusting and closure of the eyes, dried white material, potentially exudate on the beak and nares)

c. 4704, a tortoise with two previous suspect tests for *M. testudineum* in 2007 and 2008 but negative tests in 2009 (mild to moderate clinical signs of URTD, including ocular signs and the beak and nares have a dried white material (exudate?) embedded in the integument.

d. 4438 (mild to moderate clinical signs of URTD in fall of 2009) had a suspect ELISA test for *M. agassizii* in spring of 2008 and a suspect ELISA test for *M. testudineum* in fall 2008. The ELISA tests were subsequently negative spring and fall of 2009.

e. 4625 (mild ocular signs of URTD, right naris partially occluded in spring of 2009, no fall 2009 health evaluation). This tortoise had a suspect ELISA tests for *M. testudineum* in spring of 2008, was subsequently negative in spring of 2009 for the two species of *Mycoplasma*, but was missing in fall of 2009. We learned in January of 2010 that ITS/QinetiQ has been monitoring the tortoise and may have changed the transmitter and transmitter frequency.

8. The following tortoises are missing and have not received health evaluations at any time during the life of the translocation project: 4371, 4437, 4670, 4687, 4736, and 4749. If any of these tortoises are located, they will need to be evaluated before translocation occurs.

9. Tortoises 3111, 4289, 4438, and 4625 were monitored by both the USGS Health team and the ITS QinetiQ team after May 2009. The responsibilities for these tortoises should be resolved, so that only one team is monitoring each tortoise. All of these tortoises have previously tested positive or suspect for mycoplasmosis.

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Table 1. List of tortoises monitored by USGS Health team in 2009 and currently located in the Southern Expansion Area, with notes on status and history. Tortoises in the USGS Health group were being monitored prior to 2009, those in the ITS transfer group were transferred from the ITS research team to the USGS Health team in the spring of 2009, and those in the USGS Health and ITS/QinetiQ group were simultaneously monitored by both research teams from May through December 2009. ITS/QinetiQ may be aware of locations of missing tortoises 3111, 4289, 4438 and 4265 and may have changed their transmitters.

ID	Sex	MCL (mm)	Group	Status	Note
2244	M	288	USGS Health	Alive	
3405	M	267	USGS Health	Alive	
3453	F	207	USGS Health & ITS QinetiQ	Dead	Died between Oct 2008 and Apr 2009
4144	M	272	USGS Health	Missing since May 2009	
4217	M	286	USGS Health	Alive	
4227	F	216	USGS Health	Dead	
4525	M	261	USGS Health	Alive	
4616	F	221	USGS Health	Missing since July 2009	
4704	M	266	USGS Health	Alive	
3111	M	261	USGS Health & ITS/QinetiQ	Alive	At boundary of Plot 1.5 and WEA
4232	M	243	ITS transfer	Missing since Oct 2009	Not tracked Oct 2008-Apr 2009; located in Aug and Sep 2009
4289	M	264	USGS Health & ITS/QinetiQ	Missing since Nov 2009	
4438	F	196	USGS Health & ITS/QinetiQ	Alive	
4483	M	242	ITS transfer	Missing since Oct 2008	Not tracked Oct 2008-Apr 2009
4560	Imm	Unk	ITS transfer	Missing since May 2008	Detached radio found; no live or dead tortoise located
4625	F	231	USGS Health & ITS/QinetiQ	Missing since Oct 2009	

Table 2. List of tortoises living in the SEA and results of their first health evaluations in spring of 2009. These tortoises are not being monitored monthly by the USGS Health Research team.

Tortoise ID	**Size (MCL, mm)**	**Sex**	**Laboratory test results**		
			M. agassizii	*M. testudineum*	Cultures
4147	234	F	Negative	Negative	Negative
4191	286	M	Negative	Negative	Negative
4642	266	M	Negative	Negative	Negative
4679	218	F	Negative	Negative	Negative
4686	206	F	Negative	Negative	Negative
4699	264	M	Negative	Negative	Negative
4734	244	F	Negative	Negative	Negative
4748	246	M	Negative	Negative	Negative

Table 3. Summary of ELISA test results for *Mycoplasma agassizii* and *M. testudineum* of desert tortoises currently located in the Southern Expansion Area and currently monitored by the USGS Health team. Green cells represent negative status on ELISA tests, orange cells represent suspect status, and red cells represent positive test results. Tortoises with suspect tests in the spring of 2008 were sampled again that season, and both results are reported.

		M. agassizii					***M. testudineum***				
ID	**Status**	**Fa07**	**Sp08**	**Fa08**	**Sp09**	**Fa09**	**Fa07**	**Sp08**	**Fa08**	**Sp09**	**Fa09**
2244	Alive										
3111	Alive	N/A	Sus>Pos				N/A				
3405	Alive										
3453	Dead	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A
4144	Missing	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A
4217	Alive										
4227	Dead	N/A				N/A	N/A				N/A
4232	Missing				N/A	N/A				N/A	N/A
4289	Alive (ITS)										
4438	Alive		Sus>Neg								
4483	Missing				N/A	N/A				N/A	N/A
4525	Alive										
4560	Missing		N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
4616	Missing					N/A					N/A
4625	Missing	N/A				N/A	N/A				N/A
4704	Alive										

Table 4. Clinical signs of disease in potential translocatee tortoises remaining within the boundaries of Ft. Irwin.

Tort No.	Last health evaluation: Season/yr	Age	Sex	MCL (mm)	Weight (g)	Clinical signs of trauma and disease: Trauma	Shell disease, limb lesions	Upper respiratory tract disease
2244	Fall 2009	Adult	M	286	3950	No appreciable trauma	MILD: cutaneous dyskeratosis, ringing at base of scales on forelimbs, medial seam of plastron has white discoloration; carapace –some scutes have mild peeling, flaking of laminae typical of this age of tortoise (shell wear class 5).	MILD: Beak has dried material, dried brown drainage from mouth (L side) onto chin, skin posterior to gular horn ; R nare 20% occluded with dry dirt and/or exudate. None to mild edema of palpebrae and upper periocular area; crusts on palpebrae, mucus string in R eye; R eye 40% closed, L eye 80% closed; conjunctiva not visible –eyes closed
3111	Fall 2009	Adult	M	254	2725	Moderate to severe old trauma (healed) to gular and ant. humeral scutes	Mild to Moderate: cutaneous dyskeratosis, ringing at base of scales on forelimbs; seams on plastron have white discoloration and peeling, flaking laminae.	MILD: edema of lower palpebrae of both eyes, and crusts on upper and lower palpebrae and perioculars of both eyes; wet discharge on globe of L eye; both palpebra 40% closed; R nare is 5% occluded
3405	Fall 2009	Adult	M	266	3200	NONE:	MILD: cutaneous dyskeratosis, ringing at base of scales on forelimbs; all seams of plastron may be lightened, scutes of plastron and gular have peeling and flaking laminae	MILD to MODERATE: discoloration, edema, and crusts on upper and lower palpebrae and perioculars of both eyes, dried discharge from both eyes and both palpebra 50% closed; beak and nares have a dried white exudate (?) and both nares are 50% occluded (KB noted that nares are not occluded in photo).

Table 4, continued. Clinical signs of disease in potential translocatee tortoises remaining within the boundaries of Ft. Irwin.

Tort	Last health evaluation:	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease, limb lesions	Upper respiratory tract disease
3453	Spring 2008	Adult	F	207	2175	SEVERE: Right forelimb 50% missing and some scales missing from both forelimbs. MODERATE: healing trauma to gular; many other old healed chew marks	MILD: cutaneous dyskeratosis, ringing at base of scales on forelimbs; laminae peeling and flaking on gular	MILD: crusts and edema of lower palpebrae and upper perioculars of both eyes; embedded dirt in beak and around and in nares; peeling scales around nares
4144	Spring 2008	Adult	M	272	4050	SEVERE: old healed trauma to gular and humeral scutes. MILD: a few other old healed chips	MILD: cutaneous dyskeratosis, ringing at base of scales on forelimbs	MILD to MODERATE: edema on lower palpebrae of both eyes; wet and dry crusts on upper and lower palpebrae and periocular areas of both eyes; mucus in R eye; peeling scales on periocular area. Dirt embedded in integument of face.
4217	Fall 2009	Adult	M	285	4200	No appreciable signs	Age based changes to shell: all scutes of plastron and gular have peeling laminae. MILD: cutaneous dyskeratosis; ringing at base of scales on forelimbs	MILD to MODERATE: edema on upper and lower palpebrae of both eyes; mild crusts and wet and dried discharge from both eyes; both palpebrae partially closed (40%R, 50%L); beak and L nare has a dried white material (exudate or soil) and L nare is 30% occluded
4227	Spring 2009 (found dead Oct. 6, 2009)	Adult	F	215	2275	No appreciable signs	MILD: many seams of plastron have peeling laminae	MILD to MODERATE: edema of upper and lower palpebrae of both eyes; periocular area of both eyes have peeling scales; mild crusts on palpebrae of L eye; both palpebrae partially closed (30%); dried discharge from both nares, L nare is 50% occluded

Table 4, continued. Clinical signs of disease in potential translocatee tortoises remaining within the boundaries of Ft. Irwin.

Tort	Last health evaluation:	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease	Upper respiratory tract disease
4232	Fall 2008 (found trapped Sept 28, 2009; then missing)	Adult	M	243	2400	A few healed chips	Mild: cutaneous dyskeratosis, ringing at base of scales on forelimbs; plastron has lightened, flaking discoloration in all seams	MILD to SEVERE: edema, and crusts on palpebrae and perioculars of both eyes; peeling scales around both eyes; dried discharge from both eyes and both palpebra closed (15%); beak and L nares have a dried, white, exudate/dirt(?) and both nares are partially occluded; a thick, whitish-yellow exudate (4-6 mm) is present on gular
4289	Fall 2009	Adult	M	262	3150	SEVERE, limited to gular and anterior humeral scutes (old predator attack)	MILD: cutaneous dyskeratosis, forelimbs have ringing at base of scales. MODERATE: plastron seams are discolored, light.	MODERATE to SEVERE: edema, and crusts on upper and lower palpebrae of both eyes, dried and wet discharge from both eyes and both palpebrae closed (80%R, 100%L); beak and L nares have a dried, white, exudate and both nares are partially occluded
4438	Fall 2009	Adult	F	195	1300	NONE: a few healed chips	MODERATE: cutaneous dyskeratosis or new growth: ringing at base of scales of forelimbs; mild discoloration at medial seam of plastron; carapace -all seams have white discoloration	MILD to MODERATE: edema and crusts on upper and lower palpebrae of both eyes, palpebrae partially closed (40%R, 15%L); both eyes mildly recessed
4483	Fall 2008	Adult	M	242	2725	Minimal: a few healed chips	SEVERE: cutaneous dyskeratosis, ringing at base of scales on forelimbs; moderate flaking and lightening of laminae on dorsal surface of gular; flaking, lightening, discoloration of plastron seams	MILD: edema and crusts on upper and lower palpebrae of both eyes, peeling scales on periocular area of both eyes; discharge (dried) at fornix of both eyes; palpebra partially closed (15%R, 20%L); moist and dried exudate on beak and nares; embedding dirt and/or exudate on beak

Table 4, continued. Clinical signs of disease in potential translocatee tortoises remaining within the boundaries of Ft. Irwin.

Tort	Last health evaluation:	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease	Upper respiratory tract disease
4525	Fall 2009	Adult	M	260	2950	No appreciable signs	MODERATE: cutaneous dyskeratosis, ringing at base of scales of forelimbs; peeling and flaking of laminae on gular, also on scutes of carapace; seams of carapace with lightened discoloration; mild lightening and discoloration to medial seam of plastron	MILD to MODERATE: discoloration, edema, and crusts on upper and lower palpebrae and periocular area of both eyes, dried discharge from both eyes and both palpebra partially closed (60%R, 70%L); beak and nares have a dried white material (exudate?)
4560	Fall 2007	Imm	Unk	160	710	No appreciable signs	MILD: plastron has white discoloration along seams. MODERATE: cutaneous dyskeratosis, ringing at base of scales on forelimbs.	MILD: edema and crusts on upper and lower palpebrae of both eyes; discharge from R eye; nares have dried, matted exudate and are partially occluded (R nare 100%, L nare moderate occlusion)
4616	Spring 2009	Adult	F	220	2450	No appreciable signs	MILD: cutaneous dyskeratosis, ringing at base of scales on forelimbs; carapace-all scutes have flaking laminae; plastron seams have pale yellow discoloration and flaking	MILD to MODERATE: edema, and crusts on upper and lower palpebrae and periocular area of both eyes, perioculars have peeling scales; wet/ dried discharge from both eyes and both palpebra partially closed (15%R, 20%L); nares have moist/ dried white/cloudy exudate/dirt and are occluded (10%R, 40%L). Severe embedded dirt around eyes, beak, and nares
4625	Spring 2009	Adult	F	231	2750	Severe old damage to gular; healing of several chewed scales on forelegs	MILD: age-related changes on scutes; some seams of plastron have light-colored discoloration and peeling laminae	MILD: discoloration, crusts, and peeling scales on both eyes; moderate edema of upper periocular area and mild to lower periocular area, wet discharge; R eye with wet and dry crusts on palpebrae, mild edema of the periocular area; conjunctivae is 10% exposed in both eyes; R nare is partially occluded (10%)

Table 4, continued. Clinical signs of disease in potential translocatee tortoises remaining within the boundaries of Ft. Irwin.

Tort	Last health evaluation:	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease	Upper respiratory tract disease
4704	Fall 2009	Adult	M	266	2900	NONE:	MILD: cutaneous dyskeratosis, ringing at base of scales of forelimbs; all seams of plastron have pale flaking laminae	MILD to MODERATE: edema, and crusts on upper and lower palpebrae and periocular area of both eyes, dried and wet discharge from both eyes and both palpebra partially closed (30%); eyes are mildly swollen and recessed; conjunctivae is 20% exposed in both eyes; beak and nares have a dried, white, material (exudate?) embedded in the integument

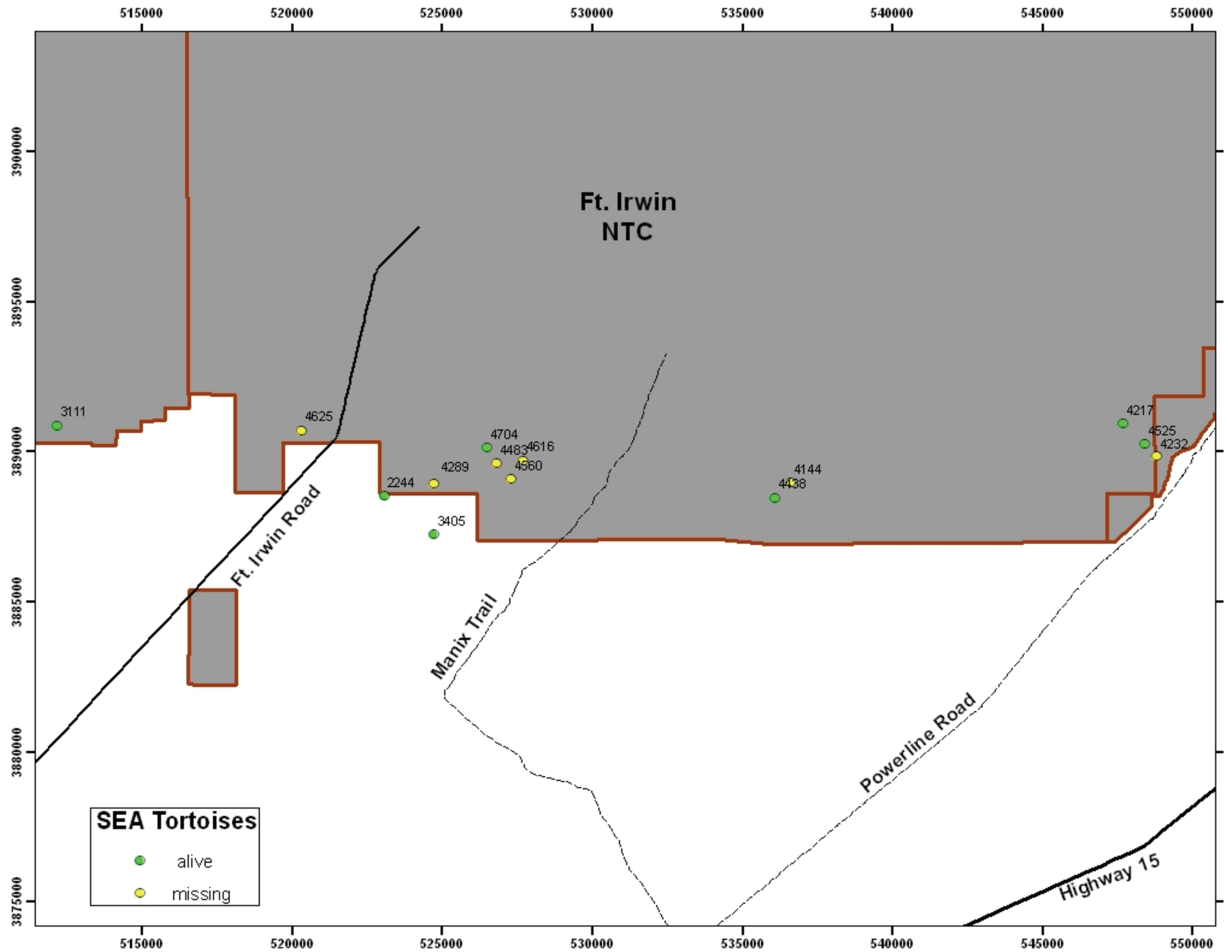
Table 5. Clinical signs of disease and trauma in tortoises sampled for the first time in 2009. The tortoises were within the boundaries of Ft. Irwin in the Southern Expansion Area.

Tort	Last health evaluation	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease	Upper respiratory tract disease
4147	Spring 2009	Adult	F	234	2350	No appreciable damage	MILD, age-related changes to seams of plastron and lightened discoloration and peeling of laminae	MILD edema and peeling scales on palpebrae and periocular area of both eyes; moderate wet and dry crusts on palpebrae and periocular area of both eyes; both eyes 20% closed; conjunctiva is visible in L eye (5%)
4191	Spring 2009	Adult	M	286	4650	No appreciable damage	MILD to MODERATE: cutaneous dyskeratosis, ringing at base of scales of forelimbs; seams of gular and plastron have whitish discoloration	MILD to MODERATE: edema, crusts, and peeling scales, on palpebrae and periocular area of both eyes, L eye has dried discharge; both palpebrae partially closed (15%); conjunctiva is visible (R 20%, L 15%); nares may have exudate and L nare is partially occluded (5%); embedded dirt/food in beak
4642	Spring 2009	Adult	M	266	3850	No appreciable damage	MILD to MODERATE: age-related changes to seams of plastron; scutes of plastron and carapace have flaking, peeling laminae	MILD: discoloration, wet and dry crusts, and peeling scales on palpebrae and periocular area of both eyes; L eye has wet mucus; both eyes have dried discharge and conjunctiva is visible (R 5%, L 10%); nares have dried exudate or dirt and are partially occluded (R 10%, L 5%)
4679	Spring 2009	Adult	F	218	2250	Moderate healing trauma, including missing R hind foot pad, scales on R foreleg	MILD: seams of plastron have yellowish discoloration and peeling laminae	MILD to MODERATE: discoloration and crusts on upper and lower palpebrae and periocular area of both eyes, periocular area has edema, peeling scales; both palpebrae partially closed (50%); nares have a dried white exudate (?) and are occluded (10%). Very dirty face, beak, and eyes with dirt embedded in integument

Table 5, continued. Clinical signs of disease and trauma in tortoises sampled for the first time in 2009. The tortoises were within the boundaries of Ft. Irwin in the Southern Expansion Area.

Tort	Last health evaluation	Age	Sex	MCL	Weight	Clinical signs of trauma and disease		
No.	Season/yr			(mm)	(g)	Trauma	Shell disease	Upper respiratory tract disease
4686	Spring 2009	Adult	F	206	2250	Old healed punctures or bites to gular and other areas (small)	MILD: laminae and seams of plastron have yellowish discoloration, flaking	MILD to MODERATE: discoloration, edema, and crusts on upper and lower palpebrae and periocular area of both eyes, lower periocular areas have peeling scales; both palpebrae are nearly closed (R 90%, L 80%); L nare partially occluded (5%). Very dirty beak and eyes, with dirt embedded in integument.
4699	Spring 2009	Adult	M	264	3825	NONE: a few healed chips	MILD: cutaneous dyskeratosis, ringing of scales on forelimbs; gular and plastron has lightened flaking discoloration in most seams	MILD: discoloration, crusts on palpebrae and periocular area of both eyes; peeling scales on periocular area; conjunctiva is visible in both eyes (5%); edema only on R palpebrae; eyes recessed.
4734	Spring 2009	Adult	F	244	2925	No appreciable damage	SEVERE: gular has white discoloration and flaking on dorsal and ventral surfaces. MODERATE: carapace has yellow flaking on laminae; plastron has white flaking discoloration in all seams; ringing on scales of forelimbs	MILD: discoloration, crusts, and peeling scales on palpebrae and periocular area of both eyes, both eyes 20% closed; edema of palpebrae of R eye and drainage from R eye; conjunctiva is visible in both eyes (10%)
4748	Spring 2009	Adult	M	246	3000	A few healed areas with scute/bone replacement and damaged scales on forelegs.	MODERATE: active cutaneous dyskeratosis, gular and plastron have whitish discoloration at seams;	MILD discoloration and peeling scales on palpebrae and periocular area of both eyes; moderate to severe crusts on palpebrae and periocular area of both eyes; both eyes very dirty and recessed ventrally; conjunctiva is visible in both eyes (R 5%. L 10%); R nare is partially occluded (10%)

Fig 1. Last known locations of tortoises known to be alive and those missing in and around the Southern Expansion Area.



PROGRESS REPORT FOR 2009

The Health Status of Translocated Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area and Surrounding Release Plots, San Bernardino County, California: Year 2

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The Health Status of Translocated Desert Tortoises (*Gopherus agassizii*) in the Fort Irwin Translocation Area and Surrounding Release Plots, San Bernardino County, California

Abstract. In spring of 2008, we translocated 158 adult and subadult tortoises (82 females and 76 males) from the Southern Expansion Area (SEA) to four plots located in the Superior-Cronese Desert Wildlife Management Area (DWMA) as part of the Desert Tortoise Health and Disease Research Project for the Ft. Irwin Expansion. Long-term objectives include modeling and predicting effects of translocation on survival of tortoises by health status, presence of infectious diseases and trauma, size and age class, and sex. Tortoises were placed in 4 health categories: 1) healthy or control tortoises, 2) tortoises with moderate to severe clinical signs of past trauma, 3) tortoises with moderate to severe clinical signs of shell disease, and 4) tortoises with moderate to severe clinical signs of upper respiratory tract disease but with no evidence of nasal discharge and negative laboratory tests.

As of December 2008, 43 of the initial 158 translocated tortoises had been found dead or had been salvaged for necropsy, and an additional 15 tortoises were missing. We started Year 2 in January 2009, with 100 live tortoises and 15 missing tortoises in the project. During 2009, we conducted health evaluations for clinical signs of health, disease, and trauma for 81 tortoises in the spring and 65 tortoises in the fall. In the spring 4 (4.9%) and 2 (2.5%) tortoises had positive or suspect ELISA tests for *Mycoplasma agassizii* and *M. testudineum,* respectively. In the fall 6 of 65 (9.2%) tortoises tested positive or suspect for *M. agassizii*; none had positive or suspect tests for *M. testudineum*. Overall during 2009, 9 of 81 individual tortoises (11.1%) had ELISA test results that were positive or suspect for *Mycoplasma* species. When weights of tortoises were compared for 2008 and 2009, spring weights were significantly higher than fall weights. In addition, weights in fall 2009 were significantly lower than weights in fall 2008.

Between January and December of 2009, 27 (23.5%) of the remaining 115 live and missing tortoises were found dead. Of the 27, 24 were probably killed by coyotes or other canids, one was killed by a vehicle, and 2 died of unknown causes. Overall, since the translocation began in March of 2008, 44.3% of tortoises have been found dead or were salvaged for necropsy. Combining data from 2008 and 2009, death rates were significantly higher on two plots, plots 3 and 5, than on plots 1.5 and 8. In contrast to 2008, in 2009 the size of a tortoise was not related to risk of death; the average carapace length did not differ from those still alive. Likewise, in contrast to 2008, in 2009 death rates did not differ between sexes. Death rates also did not differ significantly among the four health categories. At the end of 2009, an additional 20 tortoises (17.4%, 20/115) were missing.

We analyzed movement patterns for live tortoises between the time of initial release in spring 2008 and December 2009 (N = 68). Overall, the mean dispersal distance for males was twice that of females; likewise, males moved twice the total distances compared to females. Total distances moved were higher on plots 3 and 5 than

on plots 1.5 and 8 but were not significantly different. However, the minimum total distances moved in 2009 were significantly less than in 2008. Females were more likely to use the same cover sites between 2008 and 2009 than males, a potential indication of settling.

INTRODUCTION

The desert tortoise (*Gopherus agassizii*) is a Federally- and State-listed threatened species. Critical habitat for the species occurs north and west of the Colorado River/Grand Canyon complex, including habitat on and adjacent to the National Training Center, Ft. Irwin, in the central Mojave Desert (U.S. Fish and Wildlife Service 1990, 1994). As part of the Ft. Irwin Translocation Project, an estimated 600 to 1000 tortoises have been or are planned to be translocated from the southern and western parts of the expanded Ft. Irwin base to areas outside the Ft. Irwin boundary (Esque et al. 2005).

The primary goal of this research project is to monitor the health and disease status of the translocated tortoises, with an emphasis on the spread of infectious disease. Because infectious diseases have been linked to declining desert tortoise populations (Jacobson et al. 1991; Brown et al. 1994, 1999; Homer et al. 1998; Christopher et al. 2003), the incidence of disease is a critical factor in determining success of translocation. We designed our project to measure the success of translocation, depending on health status of translocated tortoises. Specifically, the translocated tortoises were grouped into one of four health categories: 1) healthy or control tortoises, without moderate to severe clinical signs of infectious disease, trauma, or shell disease; 2) tortoises with moderate to severe clinical signs of past trauma; 3) tortoises with moderate to severe clinical signs of shell disease; and 4) tortoises with moderate to severe clinical signs of upper respiratory tract disease (URTD), but with no evidence of nasal discharge and negative laboratory tests.

Several long-term objectives are to be addressed during the life of the multi-year project. First, we are tracking and sampling tortoises for several years to model and predict the effects of translocation on survival by health status, size and age class, and sex. More specifically, we hope to determine whether or not translocatees in each of the four health categories develop new disease, more severe clinical signs of URTD, more severe cases of shell disease, or new trauma post-translocation. To better understand the epidemiology and distribution of mycoplasmosis or URTD in the Ft. Irwin Translocation Project area, the health status of tortoises and locations of tortoises that have previously tested positive or suspect for mycoplasmosis are being continuously monitored. As part of these analyses, we are also examining differences in survivorship and causes of death among health status categories; differences in survivorship among size and age classes, sexes, and translocation release sites; and differences in the pathogenesis of mycoplasmosis among size and age classes, sexes, and levels of anthropogenic impacts.

Second, the anthropogenic factors most likely to influence translocation success need to be identified and modeled. Anthropogenic factors include but are not limited to roads, military maneuver areas, and rural or urban areas. Third, ecological factors, including landscape and topography, are other variables in the analysis. Both anthropogenic and ecological factors have the potential of affecting health status and degree of trauma of translocated tortoises. We will also explore differences in survivorship among size and age classes and sexes by comparing habitat conditions between initial capture sites and translocation release sites, including levels of anthropogenic disturbance at original home sites and release sites.

This report is a progress report summarizing the status of 158 tortoises that were translocated in the spring of 2008 and were subsequently monitored for health and disease (Berry et al. 2009). Briefly, in spring of 2008, a total of 82 females and 76 males were translocated from the Southern Expansion Area (SEA) to four plots located in the Superior-Cronese Desert Wildlife Management Area (DWMA). As of December 2008, 43 of the initial 158 translocated tortoises had been found dead (41) or salvaged for necropsy (2), and an additional 15 tortoises were unable to be located and were considered missing. We started the 2009 field season in January with 100 remaining tortoises. In addressing the previously stated objectives, we tracked the remaining translocated tortoises monthly, continued to search for missing tortoises, conducted health evaluations on the tortoises during spring and fall, analyzed movement patterns and use of cover sites, and determined causes of death for dead individuals. Our preliminary findings for 2009 are summarized below.

METHODS

Translocation

Between March 26 and April 8, 2008, 158 desert tortoises were translocated from the SEA to one of four designated plots (plots 1.5, 3, 5, and 8; see Fig. 1). These translocation plots, each about one square mile in size, are located outside the Ft. Irwin boundary and are within or bordering the Superior-Cronese DWMA. Prior to translocation, tortoises located in the SEA were fitted with radiotransmitters and were assigned to one of the following four health status categories based on previous health evaluations: 1) healthy tortoises, without moderate to severe clinical signs of infectious disease, trauma, or shell disease; 2) tortoises with moderate to severe clinical signs of past trauma; 3) tortoises with moderate to severe clinical signs of shell disease; and 4) tortoises with moderate to severe clinical signs of URTD, but with no evidence of nasal discharge and negative laboratory tests. Approximately 20 adult males and 20 adult females in each of the four health status categories were selected to be translocated (Berry et al. 2009). Tortoises that had previously tested positive for mycoplasmosis or had signs of nasal discharge were not considered for translocation.

Tortoises were tracked daily, then weekly, and finally at least once per month after translocation using radio telemetry (Berry et al. 2009). Beginning in July 2008, all translocated tortoises were tracked on a monthly basis, unless behavioral or health reasons dictated more frequent checks. Upon locating tortoises during monthly tracking, critical data were recorded, including, but not limited to: date, weather conditions, time observed, location in UTMs (NAD 83), behavioral observations, specific location of the tortoise (e.g., inside cover site, in open, under shrub), interactions with other tortoises, and general condition of the tortoise (e.g. appearing ill, stressed, lethargic, or healthy). When tortoises were located and found to be dead, the location, position, and condition of remains, along with evidence for cause of death were recorded and the remains were photographed.

Health Evaluations

Periodically, comprehensive health evaluations of each tortoise were conducted. In general, the health status of each tortoise was evaluated once in the spring (April 27 to May 4) and once in the fall (October 7 to October 27) in 2009, but these evaluations were more frequent for tortoises showing indications of illness or stress. The evaluations included recording data regarding posture, behavior, activity, recent trauma, and clinical signs of disease, such as URTD and cutaneous dyskeratosis, on the eyes, beak, nares, integument, and shell on a standardized seven-page form modified from an appendix in Berry and Christopher (2001). Length at the carapace midline (MCL) and weight of each tortoise were measured during evaluations, and digital photographs were taken of the eyes, beak, nares, plastron, carapace, and any unusual trauma or lesions. Blood and nasal lavage samples were also collected during health evaluations.

Samples of blood were drawn either by brachial venipuncture or from the subcarapacial site using standard protocols (Hernandez-Divers et al. 2002, Berry et al. 2006). Samples of blood that contained 15% or more of lymph were considered to be suboptimal because of the potential negative impact of dilution (e.g., Gottdenker and Jacobson 1995). Where possible, such samples were repeated with an objective of obtaining 90–100% blood with no lymph or only a trace of lymph (Berry et al. 2005). A nasal lavage was taken using standard protocols (Berry et al. 2006). Blood plasma and nasal samples were shipped to the Mycoplasma Laboratory at the University of Florida to determine the presence of antibodies to *Mycoplasma agassizii* or *M. testudineum* using enzyme-linked immunoassay (ELISA) tests (Schumacher et al. 1993; Brown et al. 1994, 2004; Wendland et al. 2007). Cultures and polymerase chain reaction tests (Brown et al. 2002) were also used. The laboratory procedures are summarized in Berry (2006).

Three primary databases were constructed for each calendar year. One database is the monthly monitoring with dates and locations in UTMs. The second database summarizes tissue samples obtained and includes data on type of samples obtained (blood plasma, plasma/lymph, and nasal lavage), date of collection, volume of samples, results of ELISA tests for *M. agassizii* and *M. testudineum*, and results of polymerase chain reaction tests for positive or suspect cultures. The first two databases are being transmitted separately to Clarence Everly, permit holder, for the federal U.S. Fish and Wildlife Service permit. They contain all Ft. Irwin-related data sets. The third database contains the data collected from health evaluations, including clinical signs of disease and trauma. This database is still in the process of receiving quality assurance and control and will be provided at a later time.

Movement Patterns

Two variables relating to movement patterns were calculated for the translocated tortoises. The first variable, dispersal distance, was calculated as the straight-line distance between the point of release and the location furthest from the release point at which the tortoise was located. The second variable, minimum total distance, was calculated as the summation of the straight-line distances between consecutive locations. Both of these measurements were calculated with straight-line distances and, as such, should be considered conservative estimates. Only live tortoises with known locations (i.e., those not dead or missing) as of December 2009 were used in these analyses (n = 68).

To determine the degree of settlement of translocated tortoises, the minimum total distance moved in 2008 was compared to that in 2009 for the 68 tortoises described above. Fidelity to cover sites was also examined (n = 68) by comparing summer (July and August) and winter (December and January) cover site locations for 2008 and 2009. The distance moved each month by these 68 tortoises was also plotted to examine seasonal and annual variation in movements patterns and differences between sexes. Finally, the number of tortoises still remaining on each plot (i.e. within the one square mile boundary of the initial release plots) was compared to the number of tortoises that have dispersed from the plot.

Data Analysis

We used repeated measures ANOVA to examine changes in weight within individual tortoises across seasons after translocation. A post hoc test was used to determine which seasons differed. Only tortoises with weight data for all four seasons (spring 2008, fall 2008, spring 2009, and fall 2009) were used in this analysis (n = 64).

One-way ANOVAs were used to compare movement variables (dispersal distance and minimum total distance) between sexes and among plots. A paired t-test was used to compare minimum total distances between 2008 and 2009. Because tortoises were released at translocation sites in March-early April 2008, we analyzed and compared movements from March-December of 2008 with movements from March-December 2009.

Fisher's exact tests were used to compare cover site fidelity between sexes, as well as death rates between translocation plots, between sexes, and between health categories (healthy, shell disease, URTD, or trauma). Fisher's exact tests were also used to compare the proportion of tortoises still remaining within plot boundaries among translocation sites and among sexes. One-way ANOVAs were used to compare the sizes (MCL) of tortoises that died to those still alive. All statistical tests were conducting using SYSTAT Software version 12.0 (SYSTAT Software Inc. 2007).

RESULTS

Summary of 2008

A total of 82 females and 76 males were translocated from the SEA to plots located in the DWMA. Of the 158 translocated tortoises, 21 females and 17 males were translocated to Plot 1.5, 21 females and 19 males were translocated to Plot 3, 19 females and 20 males were translocated to Plot 5, and 21 females and 20 males were translocated to Plot 8. As of December 2008, 43 of the initial 158 translocated tortoises were found dead (41) or salvaged for necropsy (2), and an additional 15 tortoises were unable to be located at the time and were considered missing. As of December 2008, the locations of 100 live tortoises were known. The sex ratio of these tortoises was 44 females and 56 males.

Health Evaluations

In January 2009, 44 females and 56 males were known to be alive; in December 2009, 32 females and 36 males were known to be alive. Comprehensive health evaluations were conducted on 81 translocated tortoises in the spring of 2009 (April 27 to May 4). Blood plasma and nasal lavage samples were also collected from each of these 81 tortoises. Three of these blood samples (3.7%) were a blood/lymph mixture, with at least 90% of the sample composed of blood; the remaining samples were composed of 100% blood. As of the end of spring of 2009, 55 tortoises had been found dead or salvaged for necropsy and 22 were unable to be located.

Comprehensive health evaluations were conducted on 65 translocated tortoises in the fall of 2009 (October 7 to October 27). Blood plasma and nasal lavage samples were also collected from each of these 65 tortoises. Eight of these blood samples were a blood/lymph mixture, with at least 95% of the sample composed of blood; one sample (from 4499F) was a blood/lymph mixture with 50% of the sample composed of blood; the remaining samples were composed of 100% blood. As of the fall of 2009, 69 tortoises had been found dead or salvaged for necropsy, 20 were unable to be located, and four were unable to be extracted from their cover sites for health evaluations.

Tests for Mycoplasmosis

In the spring of 2009, four (4.9%) of 81 tortoises had positive or suspect ELISA tests for *Mycoplasma agassizii* (Table 1). Three tortoises had suspect tests and one tortoise had a positive ELISA test for *M. agassizii*. Of the four tortoises with positive or suspect ELISA tests for *M. agassizii*, two were located on plot 8, one was on plot 1.5, and one was on plot 3 (Fig. 2). Additionally, two tortoises (2.5%) had positive or suspect ELISA tests for *M. testudineum*. One tortoise had a positive test and the other a suspect ELISA test for *M. testudineum*; both were located on plot 1.5 (Fig. 3). Of the 81 nasal lavage samples collected in the spring, all cultures were negative for both *M. agassizii* and *M. testudineum*.

In the fall of 2009, six (9.2%) of 65 tortoises tested for *M. agassizii* had positive or suspect ELISA tests (Table 1). Three tortoises had positive tests and three tortoises had suspect ELISA tests for *M. agassizii*. All six tortoises were located on plots 1.5 or 8 (Fig. 4). Five of these tortoises had previous positive or suspect tests for mycoplasmosis (Table 1). All 65 tortoises tested for *M. testudineum* in the fall had negative ELISA tests (Fig. 5). Two tortoises (4024M and 4257F) which had previously tested positive and suspect, respectively, for *M. testudineum* in spring, were not available to be tested because they had been killed by predators. Results are not yet available for cultures from the 65 nasal lavage samples.

Weight

There was a significant effect of season on measured weight ($F_{3,189} = 132.0$, $p < 0.001$). The post-hoc test revealed weight was greatest in spring 2008 just after translocation, fell in fall 2008, increased back to initial levels in spring 2009, and fell again in fall 2009 (Fig. 6). Weight was not significantly different among the two spring seasons ($p = 0.964$), however it was significantly lower in fall 2009 compared to fall 2008 ($p = 0.001$).

Movements and Fidelity to Cover Sites

Summary statistics for dispersal distance and minimum total distance are reported in Table 2. The tortoise which has moved the most, 4143M translocated to plot 8, has been located on multiple dates just outside the Ft. Irwin boundary fence in the SEA, 12.6 km from its initial release location, and has moved a total distance of at least 18.8 km since its release. Overall, males have dispersed further from their release locations compared to females (means = 3256.4 m for males, 1517.9 m for females; $F_{1, 66} = 12.3$, $p = 0.001$). Males also had greater total distances moved compared to females (means = 6858.4 m for males, 3492.0 m for females; $F_{1, 66} = 23.9$, $p < 0.001$). Although the total distances that remaining live tortoises moved was greater on plots 5 (mean = 7403.3 m) and 3 (6020.8 m) compared to plots 1.5 (4899.8 m) and 8 (4778.4 m), these differences were not statistically significant ($F_{3, 64} = 1.5$, $p = 0.224$). Similarly, dispersal distance did not vary among translocations plots ($F_{3, 64} = 1.1$, $p = 0.351$).

The minimum total distance moved in 2009 (mean = 1854 m) was significantly less than that in 2008 (mean = 3222 m; $t_{67} = 4.837$, $p < 0.001$). Regarding use of cover sites, five of 68 (7.4%) tortoises have used the same cover site every season (summer and winter of 2008 and summer and winter of 2009), and an additional 36 (52.9%) tortoises have used the same cover site in at least two of these seasons. In contrast, 27 (39.7%) of 68 tortoises had minimal fidelity to sites and used a different cover site for each season examined. Females were more likely to use the same cover sites than males (Fisher's exact test, $p < 0.001$); 22 of 38 males used different cover sites for each season compared to just 5 of 30 females.

Eighteen tortoises still remain within the boundaries of their initial release plots. On plot 1.5, six tortoises still remain on the plot, compared to two on plot 3, one on plot 5, and nine on plot 8 (Table 3). However, when considering the total number of tortoises alive at each translocation site, the proportion of tortoises on plot to those off plot is not significantly different among translocation plots (Fisher's exact test, p = 0.801). Additionally, the number of females remaining on the plots does not differ from the number of males (Fisher's exact test, p = 1.00).

There has been marked seasonal variation in movement. Tortoises moved the greatest distances in the spring months immediately following translocation (Fig. 7). Tortoises travelled large distances in the spring of 2009 and, to a lesser extent, in the fall seasons of 2008 and 2009. Tortoises were least active during summer and winter months. The distances moved in 2009 were noticeably less than those in 2008 for both the spring and fall seasons, respectively (Fig. 7). Corroborative with the previous analyses, in general males moved more than females in each month.

Mortality

As of December 2009, 70 (44.3%) of the initial 158 tortoises had been found dead (68) or had been salvaged for necropsy (2). For 2009, the death rate of the 115 remaining tortoises (27 of 115), was similar (23.5%) but slightly lower than that of 2008, the year in which tortoises were first translocated (43 of 158, 27.2%). In 2009, 24 tortoises were probably killed by coyotes or other canids, and the causes of death were unable to be conclusively determined for three tortoises (Table 4). One of these tortoises, 4644F, had been missing for six months before its remains were located. When located, the carcass was crushed, the head and limbs were still remaining and intact, and there were no obvious signs of scavenging or predation (tooth marks, gnashes, tears). A relatively well-used, Bureau of Land Management-designated dirt road was approximately 300 m from where the carcass was located. The most likely cause of death, based on the condition of remains, was crushing by a vehicle. The tortoise was probably transported to the site by a person to conceal the death. The other two tortoises, 4548F and 4441M, were found dead in the open, with no evidence of predation; the head and limbs were still intact. Both tortoises moved large distances during the summer months prior to their deaths, and the expenditures of energy may have contributed to the causes of death.

Combining data for both sexes and both years, death rates varied significantly among translocation plots (Fisher's exact test, $p < 0.001$); 12 of the tortoises that died were located on plot 1.5, 24 were located on plot 3, 26 were located on plot 5, and eight were located on plot 8. More dead tortoises were females (42) than males (28), but the difference was not statistically significant (Fisher's exact test, p = 0.126). Death rates did not differ among health categories (i.e. groups to which tortoises were assigned prior to translocation; Fisher's exact test, p = 0.7918); 21 tortoises with clinical signs of shell disease died, followed by 17 tortoises with clinical signs of trauma, 16 healthy tortoises, and 16 tortoises with clinical signs of URTD. The size of a tortoise was not related to risk of death, as the average carapace length of tortoises that died did not differ from those still alive ($F_{1,137}$ = 1.719, p = 0.192). However, tortoises that died in 2009 were larger than those that died in 2008 (mean MCL ± SE = 246.5 ± 4.7 mm vs. 231.7 ± 3.7; $F_{1,68}$ =6.05, p = 0.016). Males were driving the statistical difference between years. Males dying in 2009 were significantly larger than those dying in 2008 (MCL = 262.5 ± 7.5 mm vs. 226.3 ± 8.1 mm; $F_{1,26}$ = 10.67, p = 0.003), whereas sizes of females were not significantly different between years (MCL = 226.5 ± 4.5 mm in 2009 vs. 234.0 ± 2.8 mm in 2008; $F_{1,40} = 1.98$, $p = 0.167$).

For data from 2009 alone, there was a significant effect of translocation plot on death rates (Fisher's exact test, $p = 0.005$; see Table 4), with again the highest rates on plots 3 and 5. Seven of the remaining 32 tortoises on plot 1.5 died in 2009, compared to six of the remaining 16 on plot 3, ten of the remaining 15 on plot 5, and four of the remaining 31 on plot 8. In 2009 alone, there was no difference in death rates among the sexes (Fisher's exact test, $p = 0.501$); 11 of the remaining 45 females died compared to 16 of the 51 remaining males.

Three of the 43 tortoises found dead in 2008 (4014F, 4720F, 4011F) previously had suspect ELISA tests for mycoplasmosis. In 2009, eleven of the 27 tortoises found dead had previous positive or suspect tests for *M. testudineum* (2533M positive in spring 2009; 4024M suspect in spring 2009; 4136F, 2023M, 2557F, 4179F, 4644F, 4085F, 4106M, 4361M, and 4442M suspect in fall 2008). Several of these tortoises had suspect ELISA tests for *M. testudineum* from fall 2008, a season with an unexpectedly high number of suspect tests for this species (Berry et al. 2009).

Of the initial 158 translocated tortoises, 20 tortoises (17.4%, 20/115) were unable to be located in December 2009 and are considered missing. Of the 20 currently missing tortoises, six had their radiotransmitters detached by a predator or otherwise, and the radiotransmitter signals of the remaining 14 are inaudible at previously known locations. As of December 2009, the locations of 68 live tortoises were known. The sex ratio of these tortoises (32 females and 36 males) is not significantly different than the sex ratio in December 2008 ($X^2 = 0.05$, df = 1, $p = 0.82$).

DISCUSSION

The results for the second year of the SEA translocation project reveal that the death rate of translocated tortoises is still high. In January 2009, 115 tortoises were known to be alive or missing. By the end of 2009, 23.5% of the tortoises had died and an additional 17.4% either remained missing or were newly missing. Overall, in December 2009, 40.9% had either been found dead or were still missing. Combining the data from 2008 and 2009, from the time of initial translocation of 158 tortoises in March-April of 2008, 70 (44.3%) tortoises have died and an additional 20 (12.7%) are missing.

As in the first year, predation by coyote continues to be the primary cause of deaths (Table 4). Overall, death rates were highest in the months immediately following translocation in 2008 and in the spring and fall of 2009 (Fig. 8). These time frames correspond to when tortoises were active and spending more time above-ground (i.e., just after translocation to a novel location, foraging in spring, and seeking mating opportunities in late summer/fall; see Fig. 7). Correspondingly, death rates were lowest in the winter of 2008 and summer of 2009 when tortoises spent more time in well-developed cover sites. While death rates were higher among females and smaller tortoises in 2008 (Berry et al. 2009), this was not the case in 2009. There is an apparent trend that predation was initially highest among small females, but now larger males are also targets of predation (Fig. 9). This pattern may be an artifact of fewer females on the study plots after the initial wave of predation, or it may signify that coyotes have increased their abilities to successfully prey upon the larger male tortoises.

Disease may be an important factor in predation. A substantial portion of the tortoises that died in 2009 (40.7%) had previously tested positive or suspect for mycoplasmosis after being translocated. This figure includes all tortoises in the project, regardless of health group. We need to conduct further research and analysis on effects of health and disease on survival.

Between 2008 and 2009, the proportion of tortoises with suspect or positive ELISA tests increased for *M. agassizii* but decreased for *M. testudineum*. In the spring and fall of 2009, 4.9% and 9.2% of tortoises had positive or suspect ELISA tests for *M. agassizii*. These proportions of ELISA suspect and positive tortoises for *M agassizii* are higher than in 2008 (Berry et al. 2009) and higher than reported for 669 tortoises sampled in and around the SEA in 2007 (Berry and Mack 2008). Similar to findings in 2008 (Berry et al. 2009), tortoises with positive or suspect tests for *M. agassizii* are concentrated on or near plots 1.5 and 8 (Figs. 2 and 4). Three individuals had multiple positive or suspect tests for *M agassizii* during 2008 and 2009 (Table 1).

In the spring of 2009, two tortoises (2.5%) had positive or suspect ELISA tests for *M. testudineum*. These two tortoises were killed by predators during summer and thus could not be sampled in fall. All remaining tortoises had negative tests for *M. testudineum* in the fall. While the proportion of tortoises with positive or suspect tests in spring of 2008 and 2009 are similar, there is a notable discrepancy when comparing rates from the fall seasons of the same years, 31.5% in 2008 vs. 0% in 2009 (Berry et al. 2009). Shifts from positive or suspect ELISA tests for *M. testudineum* to negative status may be due to the quality of blood samples and dilution with lymph, the virulence of *Mycoplasma* spp., timing of sampling in fall, variations in the tests, or other factors.

Weight can be an important indicator of overall health (Henen et al. 1998; Christopher et al. 1999, 2003; Berry et al. 2002). Weight may reflect hydration status, expenditures of energy, availability of food and water, ability of a tortoise to find food and water, and health status. The seasonal differences in weight between spring, summer, and fall observed in the SEA tortoises are comparable to previous studies of desert tortoise populations; weight is generally higher in the spring than in fall (Christopher et al. 1999). However, the decrease in weight between the 2008 and 2009 fall seasons is of concern, and weight should continue to be monitored in conjunction with health assessments or more frequently.

The data on movement patterns of translocated tortoises will be useful for determining the appropriate size for future translocation release sites, the effects of translocation on behavior, and potentially, the effects of habitat type and quality on behavior. Our preliminary results show that translocated tortoises may disperse up to 13 km from their release location within the first two years. Therefore future managers and scientists responsible for designing and managing translocations should consider translocation sites with a buffer zone of suitable habitat at least this large in each direction. Additionally, only 18 of the initial 158 tortoises have not dispersed from the one square mile release plots, indicating the need for translocation sites with much larger areas of quality habitat. In some regards, the translocated tortoises in this study have exhibited movement patterns similar to those reported in previous studies. Differences exist between sexes, with males moving more than females (Berry 1986, O'Connor et al. 1994), and differences exist between seasons, with higher activity levels in the spring and fall compared to the summer and winter when temperature extremes and/or lack of water limit above ground activity (see Fig. 7; Henen 1997, Henen et al. 1998, Nagy and Medica 1986). Tortoises moved less in 2009 compared to 2008, the year in which tortoises were first translocated, and some tortoises have repeatedly used the same cover sites. These results suggest that some translocated tortoises have begun to "settle" into the new sites and may be establishing home ranges, a first step in assimilating with the resident population. Also of note is that movements were greater (statistically in 2008 [Berry et al. 2009], but not for both years combined) on plots 3 and 5 compared to plots 1.5 and 8. Plots 3 and 5 also had higher death rates, and the possible relationship between increased movement and risk of mortality deserves further attention.

Continued work on this project will be directed at addressing the previously stated objectives. Health, including prevalence of mycoplasmosis and other diseases, weight, and general condition, of translocated tortoises will continue to be monitored at regular intervals by incorporating clinical signs of disease recorded during health evaluations with ELSIA test results. Signs of trauma and shell disease, along with signs of URTD, will be analyzed to determine the effects of translocation and anthropogenic impacts on these variables and whether or not incidences of disease and trauma have increased since translocation. The survival and movement patterns of translocated tortoises will continue to be monitored to assess the success of translocation. Finally, habitat characteristics, including topography, foraging and cover site availability, and levels of anthropogenic impacts, will be compared between initial capture sites and translocation release sites as well as among the four translocation plots.

RECOMMENDATIONS

1. This report does not contain a complete analysis of all health data for the translocated tortoises, between the time of translocation and December 2009, e.g., the analysis of changes in clinical signs between seasons and years. This analysis will be conducted as time permits.

2. The abnormally high death rates that began shortly after the initial translocation in March and April of 2008 have continued, and have again risen to high levels in the fall of 2009. The high death rates are primarily the result of canid (coyote) predation. The result has been loss of a significant portion of the sample population. Scientists have reported high death rates of tortoises from predators in other Ft. Irwin studies and in other research projects in California and Nevada during the last few years, and have summarized findings in a draft manuscript for the open literature (Esque et al.,

unpublished paper). Little or no action has been taken (depending on the site) by managing agencies to mitigate the impact to tortoise populations. In our study, which is in critical habitat, we designed the health and disease project to provide valuable information for recovery efforts and to mitigate some impacts of the translocation. Unfortunately, the high death rates have compromised the quality and quantity of data, as well as our ability to achieve many of the initial research objectives. Many elements of the research project will need to be repeated in future translocation efforts using a more robust sample if we are to achieve our initial goals.

3. Based on the unpublished manuscript by Esque et al. on predation, the high death rate from translocatees appears to be influenced by proximity to urban/rural areas and topographical features. There may be other local factors that contribute to elevated populations of coyotes and other predators of tortoises, including proximity to old agricultural fields, roads, trails, and recreation. The younger and smaller subadult and adult tortoises are probably more vulnerable than larger, older tortoises. We need to explore and analyze any and all factors that may affect predation of tortoises and the success of the future translocation of tortoises from the Western Expansion Area to the Western Expansion Translocation Area prior to moving tortoises.

4. Based on unexplained deaths of two tortoises during 2009 (4548F in September 2009, 4441M in August 2009), we may need to increase the health sampling of tortoises from twice per year to three or four times per year or once per season. Additional sampling may be limited to weighing the tortoises and conducting an abbreviated health evaluation (no drawing of blood or taking a nasal lavage).

5. The ELISA test for *M. testudineum* needs to be validated for *G. agassizii*. (This recommendation is repeated from Berry et al. [2009]). This research project is a very high priority, is essential to resolving questions about translocation, and should be undertaken with appropriate financial support as soon as possible. Until the test is validated, we will have continuing questions about the test and cut-off points for suspect and positive titers. We will be able to make better decisions about translocatees if the validation research has been completed.

6. Quality of Habitat (a recommendation repeated from Berry et al. [2009]). The quality of habitat where translocated tortoises were placed is a topic that needs to be addressed as soon as possible. Were the locations appropriate and if not, why not? As we can see from our data, death rates were highest on plots 3 and 5 and movements of tortoises from their original release points were highest on plot 3 and lower on plots 1.5. The soils, surficial geology, vegetative cover and composition of shrubs, elevation, and potential food sources should be evaluated retrospectively for each release site and for the original home sites as soon as possible to reveal critical factors essential to improving the chances for successful translocations. We plan to initiate such a study in 2010.

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Table 1. Previous ELISA test results for desert tortoises with positive or suspect tests in 2009. Green cells represent negative status, orange cells represent suspect, and red cells represents positive.

			M. agassizii				***M. testudineum***			
ID	**Sex**	**Plot**	**Sp08**	**Fa08**	**Sp09**	**Fa09**	**Sp08**	**Fa08**	**Sp09**	**Fa09**
4410	M	8								
2040	M	8								
4166	F	1.5								
4423	F	3								
2533	M	1.5				N/A				N/A
4024	M	1.5				N/A				N/A
4257	F	1.5								
4300	M	1.5								
4611	F	8								

Table 2. Summary statistics for movement variables of translocated desert tortoises from March 2008 through December 2009.

	Maximum (m)	Minimum (m)	Mean (m)	SD	N
Dispersal distance	12,567.3	275.2	2,438.3	2,203.6	68
Minimum total distance	18,814.4	1,070.7	5,274.2	3,280.7	68

Table 3. Counts of translocated desert tortoises that are still remaining (On Plot) or that have dispersed (Off Plot) from the boundaries of their initial release plots.

	On Plot		Off Plot		
Plot	M	F	M	F	Total
1.5	5	1	8	10	24
3	1	1	5	3	10
5	0	1	5	1	7
8	4	5	8	10	27

Table 4. Summary of translocated desert tortoises found dead in 2009.

ID	Sex	Plot	MCL	Date Located	Notes
2038	F	1.5	214	22-Sep-09	Likely predation by coyote
4136	F	1.5	201	20-Oct-09	Likely predation by coyote
4162	F	1.5	227	22-Sep-09	Likely predation by coyote
4554	F	1.5	211	4-May-09	Likely predation by canid
2533	M	1.5	260	13-Aug-09	Likely predation by coyote
4024	M	1.5	255	22-Sep-09	Likely predation by coyote
4060	M	1.5	275	22-Oct-09	Likely predation by coyote
2557	F	3	206	4-May-09	Likely predation by coyote
4179	F	3	240	24-Feb-09	Likely predation by coyote
2023	M	3	267	22-Apr-09	Likely predation by coyote
4158	M	3	266	22-Apr-09	Likely predation by coyote
4239	M	3	274	22-Apr-09	Likely predation by coyote
4640	M	3	263	4-May-09	Likely predation by coyote
2550	F	5	211	23-Sep-09	Likely predation by coyote
4288	F	5	229	18-Mar-09	Likely predation by coyote
4548	F	5	227	23-Sep-09	Cause of death unknown; no signs of predation
4556	F	5	280	21-Oct-09	Likely predation by coyote
4644	F	5	232	23-Apr-09	Crushed shell, probable vehicle kill
4073	M	5	262	14-Aug-09	Likely predation by coyote
4108	M	5	266	14-Apr-09	Likely predation by coyote
4129	M	5	284	23-Sep-09	Likely predation by coyote
4291	M	5	262	21-Oct-09	Likely predation by coyote
4442	M	5	273	08-Dec-09	Likely predation by coyote
4085	F	8	223	15-Apr-09	Likely predation by coyote
4106	M	8	265	16-Apr-09	Likely predation by coyote
4361	M	8	211	15-Apr-09	Likely predation by coyote
4441	M	8	246	18-Aug-09	Cause of death unknown; no signs of predation

Fig 1. Overview map of the Ft. Irwin Southern Expansion Area and translocation plots.

Fig 2. Results of ELISA tests for *Mycoplasma agassizii* from desert tortoises sampled in spring of 2009.

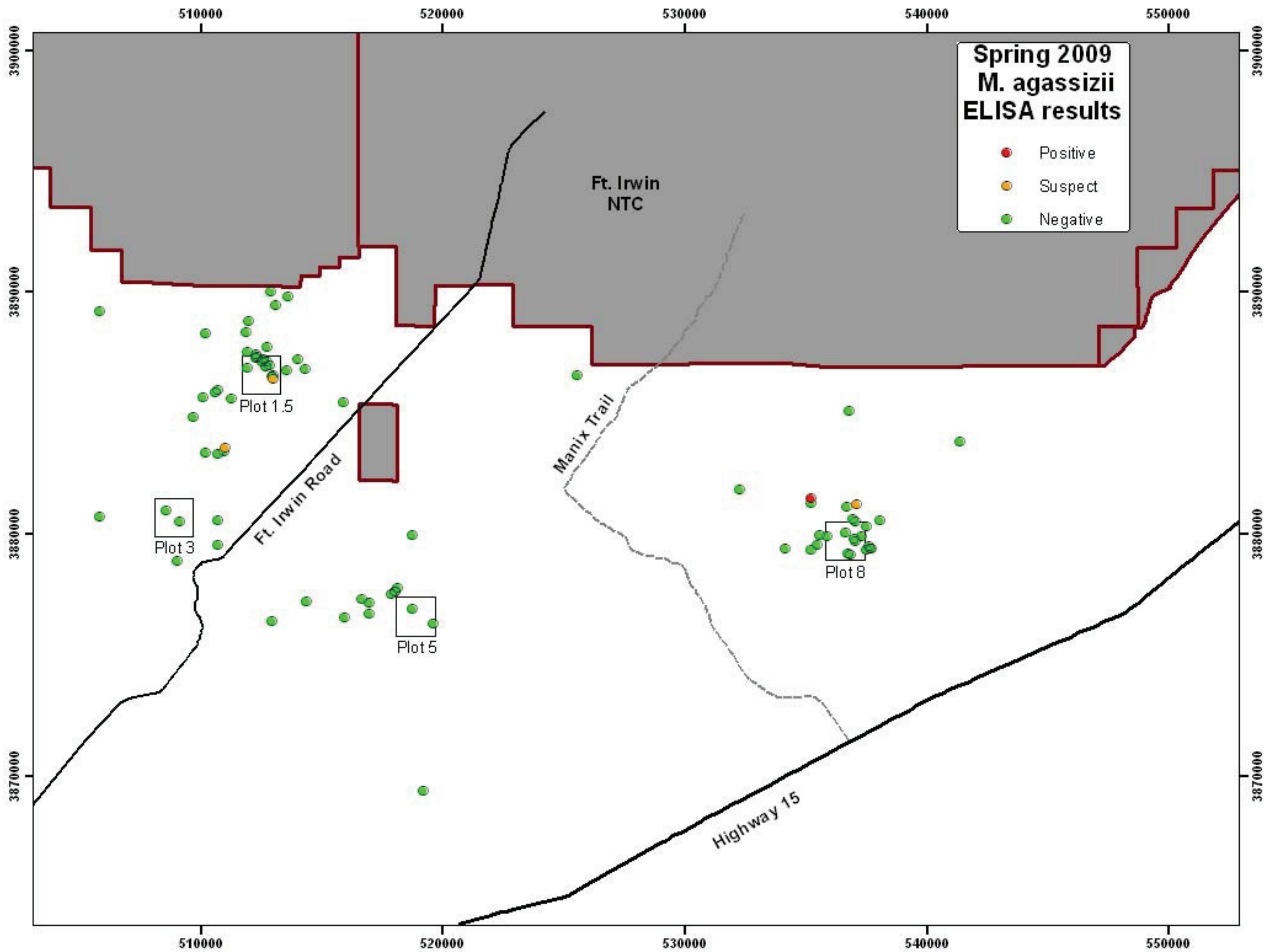


Fig 3. Results of ELISA tests for *Mycoplasma testudineum* from desert tortoises sampled in spring of 2009.

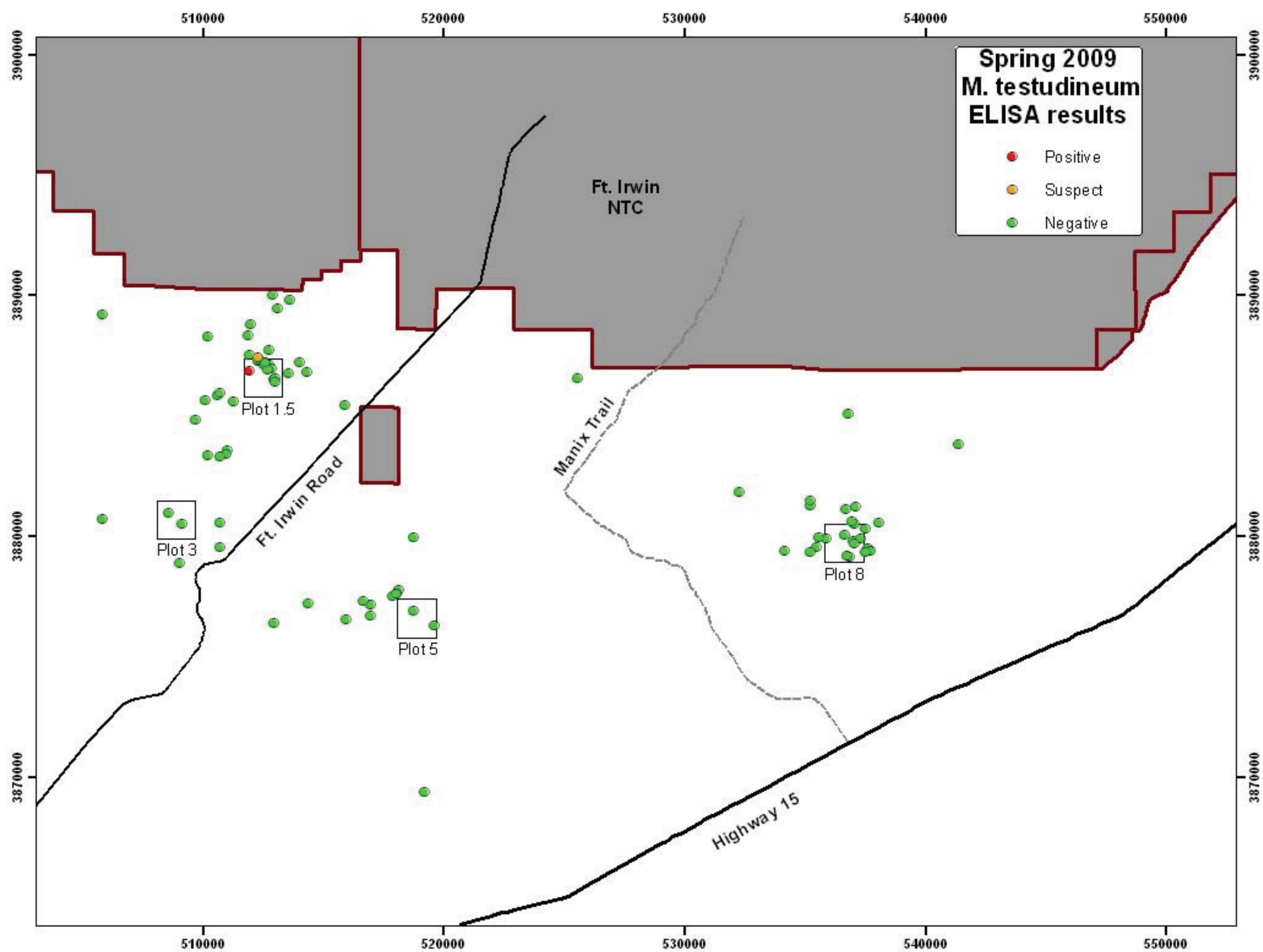


Fig 4. Results of ELISA tests for *Mycoplasma agassizii* from desert tortoises sampled in fall of 2009.

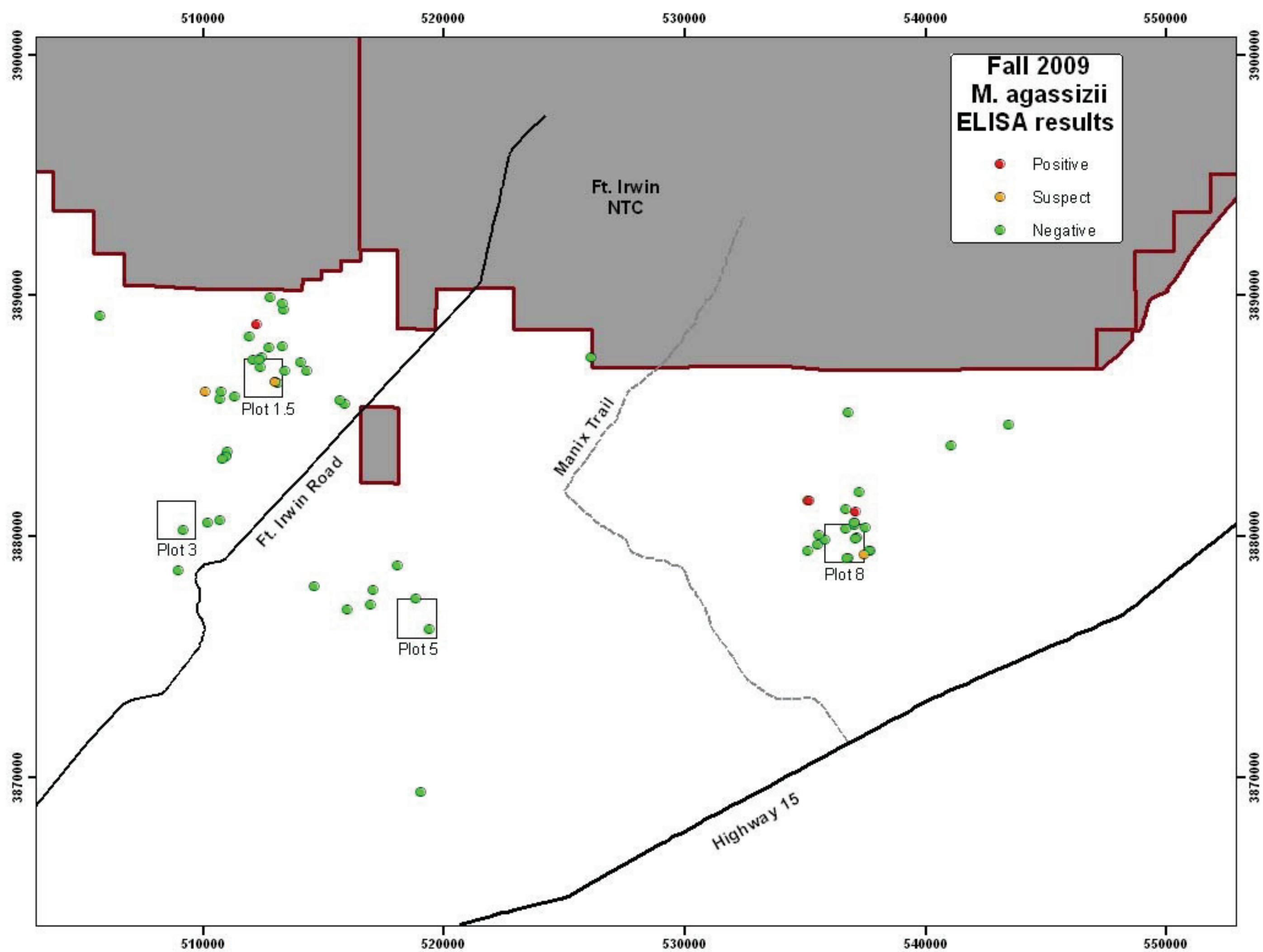


Fig 5. Results of ELISA tests for *Mycoplasma testudineum* from desert tortoises sampled in fall of 2009.

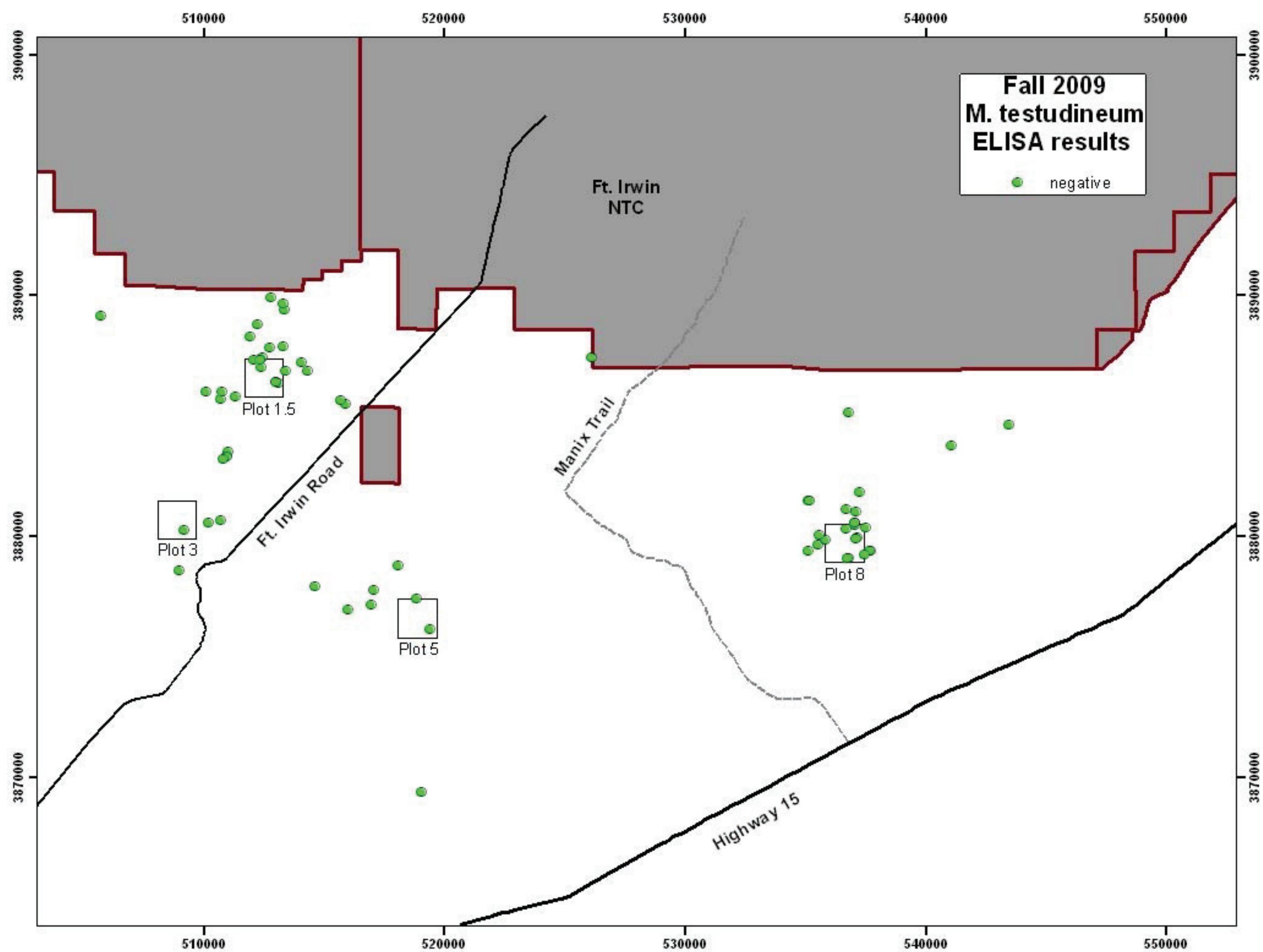


Fig 6. Mean (± SE) weight of desert tortoises (n=64) in four seasons post-translocation.

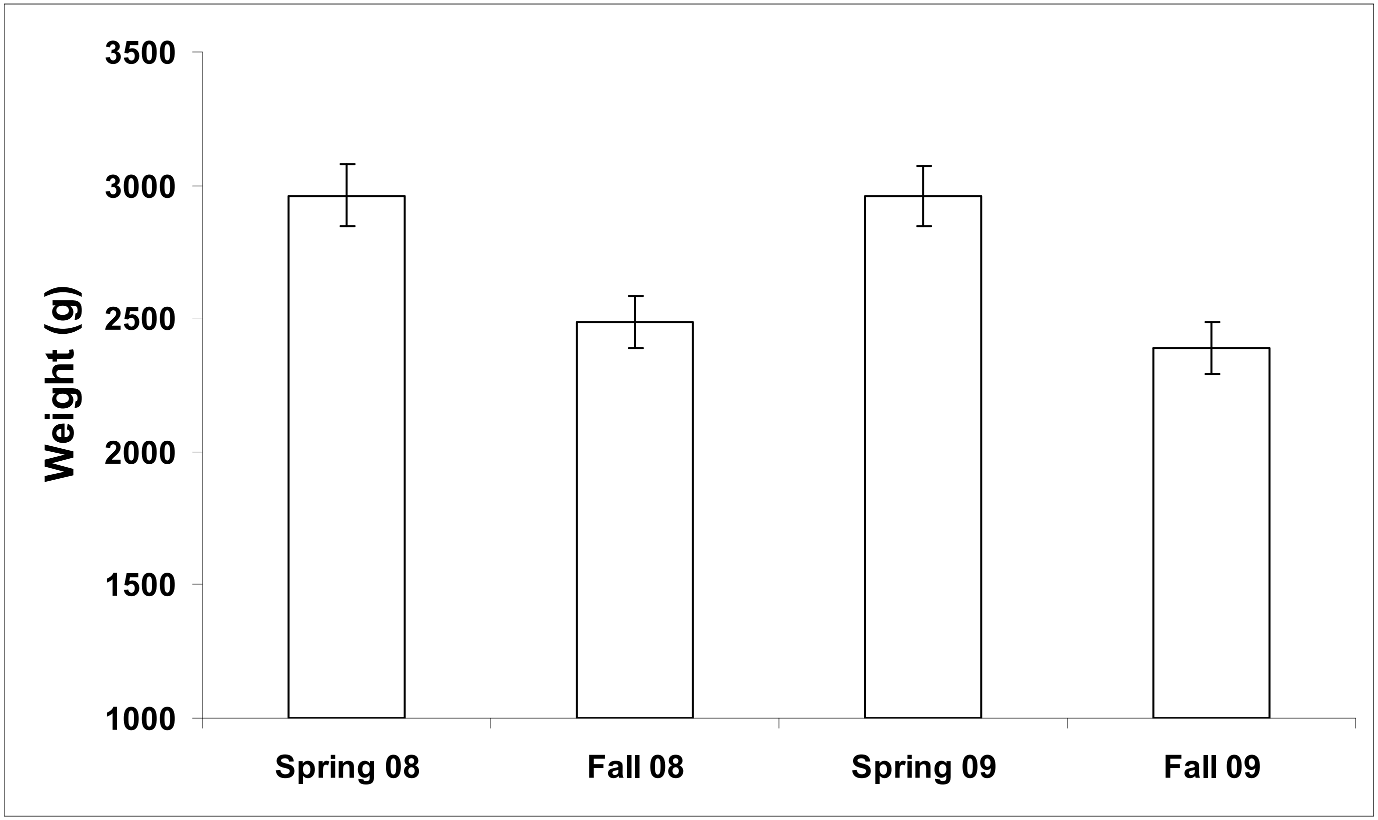


Fig 7. Mean (± SE) distances moved by desert tortoises for each month after translocation.

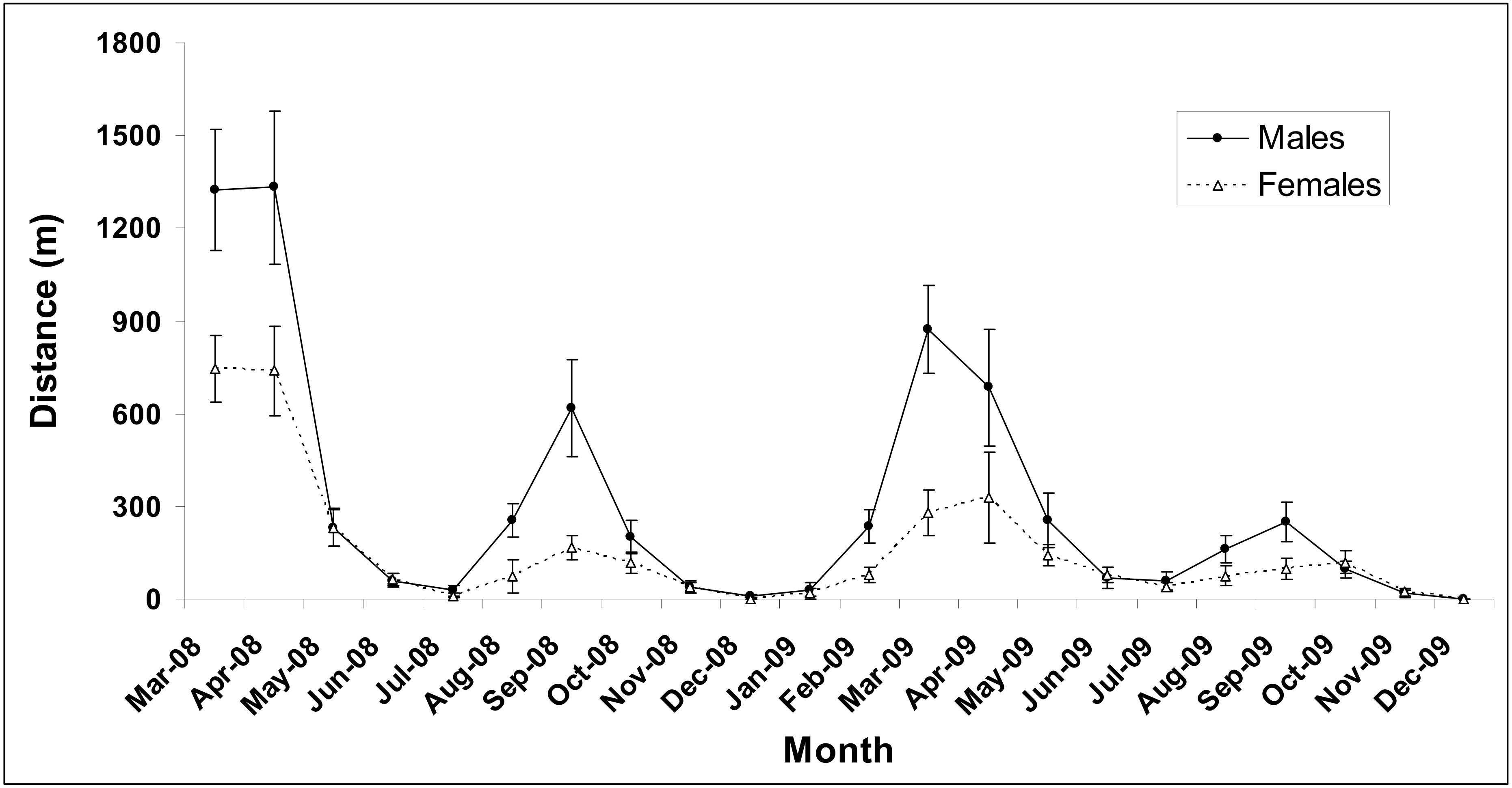


Fig 8. Percent of desert tortoises found dead (# dead/# remaining) by season for the first 20 months after translocation.

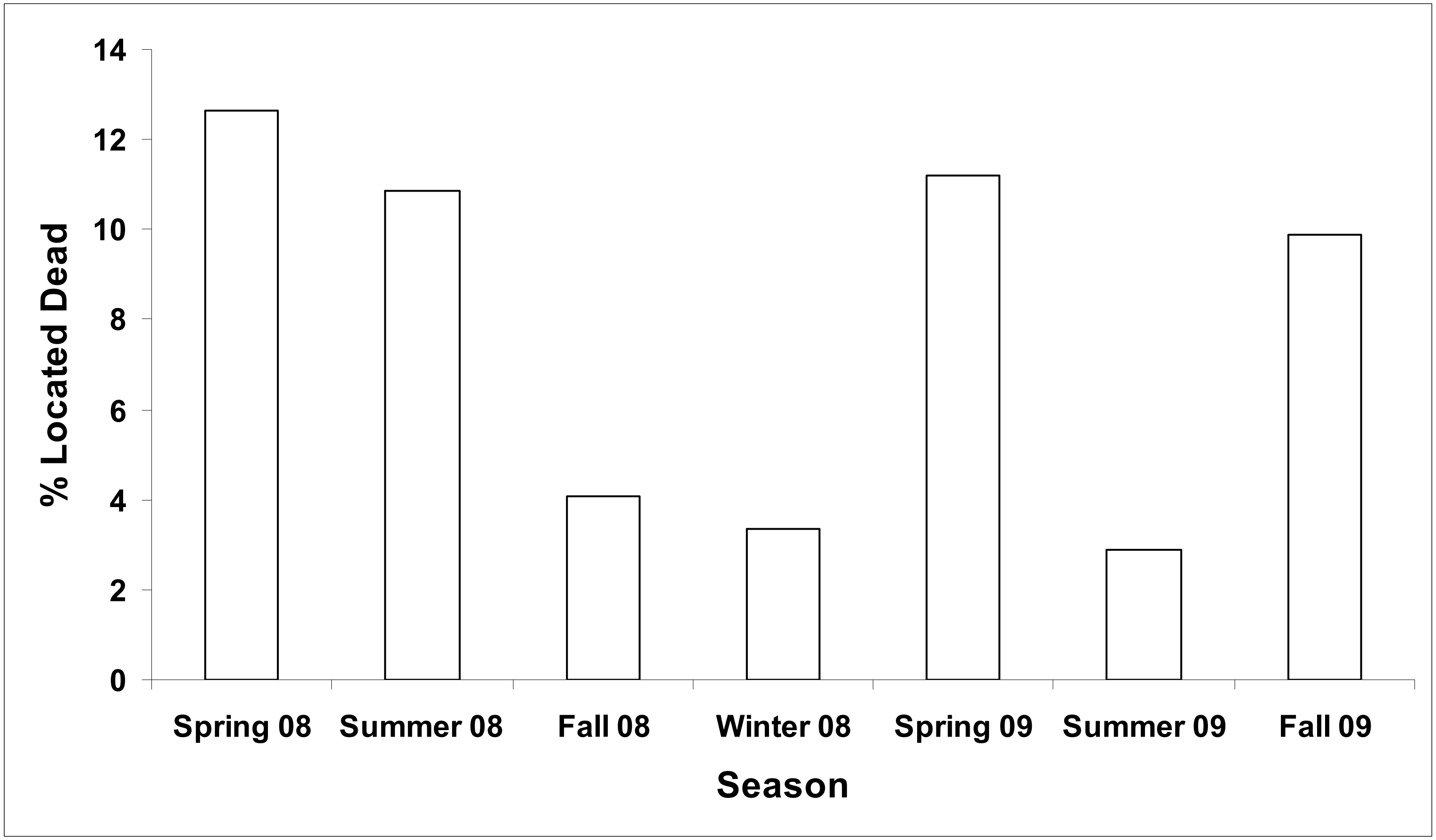
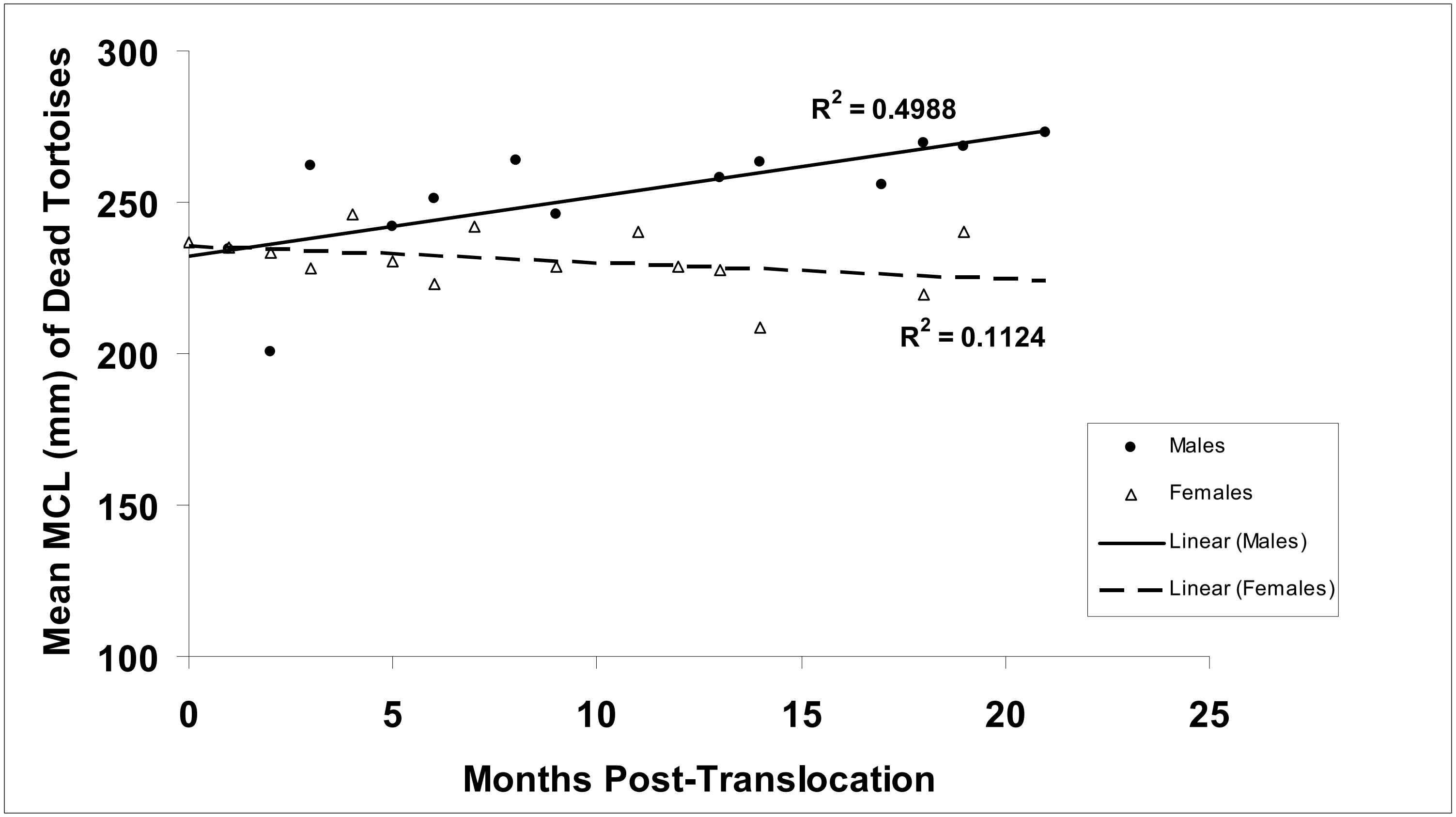


Fig 9. Mean MCL (carapace length at midline, mm) of desert tortoises located dead for each month after translocation. Note the increase in size of males found dead over time and the decrease in size of females.



PROGRESS REPORT FOR 2009

An Evaluation of Desert Tortoises (*Gopherus agassizii*)
and Their Habitats at 47 Sample Plots in the
Western Expansion Translocation Area,
Fort Irwin Translocation Project, San Bernardino
County, California

Kristin H. Berry, etc.
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An Evaluation of Desert Tortoises (*Gopherus agassizii*) and Their Habitats at 47 Sample Plots in the Western Expansion Area, Fort Irwin Translocation Project, San Bernardino County, California

Abstract. The Ft. Irwin Translocation Project (FITP) for desert tortoises (*Gopherus agassizii*) is in the fifth year of a multi-year effort. During 2009, 48 plots were selected for surveys in the Western Expansion Translocation Area (WETA). The data are to be used to prepare a model which would identify potential release areas for tortoises to be translocated from the western expansion of Ft. Irwin. Of the 48 plots, three plots previously received preliminary or comprehensive surveys during fall of 2008. Surveys were not repeated on these plots in 2009 and the data are not included here.

Two types of surveys were conducted: (1) preliminary surveys of each plot to count signs of tortoises and common predators of tortoises and to evaluate habitat and anthropogenic impacts; and (2) comprehensive surveys to locate and evaluate each adult tortoise for health and disease on each plot. For the preliminary surveys, fieldworkers walked transects on 45 plots to collect data on tortoise and predator sign and to characterize vegetation, topography, surficial geology and anthropogenic impacts. Transects were 10 m wide by 5.3 km to 11.0 km in length, and each plot was 2.59 km^2. Counts of tortoise sign ranged from 0.0 to 4.1/km of transect with 12 plots having moderate to high counts ($\geq$1.0 sign/km). Sign counts of tortoise predators ranged from 0.23/km to 7.97/km with higher counts on 8 plots (plots 1, 4, 5, 7, 8, 27, 34, and 35) than elsewhere.

Plots ranged in elevation from 604 to 1205 m. Dominant vegetation on 40 plots was creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*); salt bushes (*Atriplex* spp.) and other members in the Chenopodiaceae formed the dominant vegetation on five plots. Perennial vegetation in some disturbed areas was characterized by almost monotypic stands of salt bushes. The composition of shrubs in areas historically and recently grazed by livestock favored unpalatable species, such as Cooper's goldenbush (*Ericameria cooperi*), cheese bush (*Hymenoclea salsola*), and matchweed (*Gutierrezia* spp). The plots had a wide range of topographic features and surficial geology, from playas on valley floors to alluvial fans, rolling hills, rocky outcrops, badlands, and cliffs. Thirty-three plots had >80% of surface area and soils suitable for walking and digging. Parts of two plots were playas or old lakebeds and one plot had substantial volcanic fields. Parts of seven plots had one or more features of terrain and soils that were unsuitable for walking or digging (steep, rocky, or boulder-strewn slopes, cliffs, badlands).

Anthropogenic impacts were numerous and included trash and balloons; dirt roads; motorcycle trails and tracks left by cross-country travel of off-road vehicle users; areas denuded of vegetation; old structures and a shrine to off-road vehicle users; casings and targets from firearms; livestock scat and watering areas; and hazards in the form of mining shafts and pits, unexploded ordnance, and signs of domestic dogs. Several plots had hazards that present risks to tortoises. Plots with high counts of anthropogenic impacts were 7, 6, 2, 47, and 41.

Forty-seven plots received comprehensive surveys for live tortoises using 15-m wide transects. From 0 to 21 tortoises and from 0 to 87 shell-skeletal remains were found on each plot, for a grand total of 267 live tortoises and 1457 dead tortoises on the 47 plots. Of the 267 tortoises, 240 were available and of sufficient size for health evaluations. The sex ratio of adult tortoises was predominantly male. The 240 tortoises were evaluated for health and blood samples were drawn; 21 (8.75%) tortoises had positive or suspect ELISA tests for *Mycoplasma agassizii;* one tortoise with a positive ELISA test for *M. agassizii* also had a positive ELISA test for *M. testudineum.*

INTRODUCTION

The Ft. Irwin Translocation Project (FITP) for desert tortoises (*Gopherus agassizii*) is in its fifth year of a multi-year effort. Tortoises were translocated from the National Training Center's Southern Expansion Area (SEA) into parts of the Superior-Cronese Desert Wildlife Management Area and critical habitat in spring of 2008 (e.g., Berry et al. 2009, Gowan and Berry 2010). Planning has been underway for several years to undertake a similar translocation of tortoises from Ft. Irwin's Western Expansion Area (WEA) into the Western Expansion Translocation Area (WETA). The plan for the translocation of the SEA tortoises (Esque et al. 2005) was amended for translocation of the WEA tortoises (Esque et al. 2009). In early 2009, Esque and others selected 48 plots for evaluation. Three of the 48 plots had received preliminary surveys and one had been comprehensively surveyed in the fall of 2008 (Berry 2009).

The U.S. Geological Survey's health team (led by PI Kristin Berry of the Box Springs Field Station) had the task of evaluating the 48 plots and the health of tortoises on the plots. During spring and fall of 2009, the health team focused on two objectives: (1) to evaluate the relative densities of tortoises and their sign, vegetation type, topography, surficial geology, and anthropogenic impacts; and (2) to determine the health and disease status of resident tortoises on the plots. The ultimate objective was to determine the suitability of the sites, or sites like these, for release of the translocated WEA tortoises.

MATERIALS AND METHODS

Collection of Data

Todd Esque, Ken Nussear, Phil Medica, and Karla Drake (U.S. Geological Survey's office in Henderson, Nevada) provided the locations of the 48 1–mi^2 (2.59 km^2) plots to sample (Figure 1, Appendix 1). We conducted two types of surveys: (1) preliminary surveys of each of the 48 plots to count signs of tortoises and common predators of tortoises and to evaluate habitat and anthropogenic impacts; and (2) a comprehensive search of the plots most likely to have tortoises for assessing health status. Three of the plots had received partial or complete surveys in fall of 2008, thus reducing the survey effort in 2009 to 45 plots to receive preliminary surveys and 47 plots to receive comprehensive surveys.

Preliminary Surveys of the 45 Plots

These surveys were conducted between May 5 and June 9 in spring and September 29 and November 15 in fall by three experienced field workers (primarily K. Anderson, also P. Kermoian, T. Hockin, and J. Hillman). They walked 10-m wide transects along the plot boundaries (west, north, east, south), except in cases where the habitat was unlikely to support tortoises (e.g., volcanic fields, steep and rough terrain). Where habitat appeared to be appropriate for supporting tortoises and was heterogeneous, and additional information was desired, fieldworkers walked additional, diagonal transects, i.e., from the northwest to southeast and southwest to northeast corners.

Data recorded for the preliminary surveys on tortoises included numbers of live tortoises (with estimated size/age), shells or shell-skeletal remains, active and inactive cover sites, scats, and other, miscellaneous sign (tracks, courtship rings, drinking depressions, etc.). Middens of wood rats were superficially examined for tortoise remains. Scats of tortoise predators, in particular coyotes (*Canis latrans*) and kit foxes (*Vulpes macrotis*) were checked for remains of tortoises. Locations of each live tortoise and remains of dead tortoises were noted but not extracted. Tortoise cover sites or shelters (burrows, caves, pallets, and rock shelters) were counted and each assigned a status based on activity. An active cover site was defined as currently having a tortoise, showing signs of recent use, or a tortoise could walk or plow into it and use it immediately. An active cover site also contained minimal plant debris or drifted sand. Inactive cover sites required some excavation by the tortoises, had signs of structural degradation at the corners of the burrow opening and at the mouth, or were collapsed or partially collapsed, requiring a major excavation effort for use.

Signs and presence of predators (individual predators or calls; numbers of scats, roost sites, dens, and digs) were recorded for coyotes, kit foxes, common ravens (*Corvus corax*), and domestic dogs (*Canis familiaris*). Scats were noted as occurring individually or as a group of scats or marking area.

Qualitative data were collected for perennial shrubs and non-native annual plants. Fieldworkers recorded species present and placed each species in one of five categories: 1) dominant or ubiquitous, 2) common, 3) sparse, 4) rare, or 5) one or two individuals on transects. Plant nomenclature followed Baldwin et al. (2002). The types of topography, soil surface, and surficial geology were noted by the estimated percentage within the plot. The types of topography included alluvial fan, badlands, lake beds, large and small washes, rolling hills (low), sand dunes, very large boulders, very steep slopes or cliffs, volcanic field, or other. The categories of surfaces of the substratum were designed to estimate the ease of walking for tortoises: 1) alluvial fan, valley floor, no obstacles; 2) alluvial fan, valley floor with minor obstacles; 3) desert pavement (tortoises can walk on it); 4) rocky surface (very difficult for walking); 5) steep, rocky surfaces (very difficult walking); and 6) other. The definitions for surficial geology were designed to measure ease of constructing and maintaining burrows or other cover sites: 1) sandy loam, easy digging and will support a burrow; 2) wash banks with easy digging and supporting a burrow or cave; 3) existing caliche caves in washes, easy digging under granitic boulders; 4) surficial geology not amenable for supporting burrows or only a rare burrow; and 5) other.

Anthropogenic impacts were quantified and included: cattle or sheep sign (scat, trails and wallows); trash (separated into general, balloons, and firearm casings/targets); people (present or as footprints); people (evidence of vandalism); paved roads, dirt roads, vehicle tracks (categorized as recent, old, or denuded area); road berms or other berms to redirect water; evidence of fire/campsites; fences; mining (pits, excavations); power/utility lines; signs of domestic dogs; structures; and other.

Comprehensive Searches of 47 Plots for Tortoises.

Teams of several people searched for live tortoises and remains on each plot between May 5 and June 10 in spring and September 15 and October 31 in fall by walking 15-m wide transects. When a tortoise was located, it was processed using standard procedures described in earlier reports (e.g., Berry and Mack 2008). Briefly, the health/disease research team evaluated the tortoises for health status using a seven page health evaluation form, a modification of the appendix in Berry and Christopher (2001). Samples of blood were drawn from most tortoises, either by subcarapacial or brachial venipuncture using standard protocols (Hernandez-Divers et al. 2002, Berry et al. 2006a). Samples of blood that contained ≥10% lymph were considered to be suboptimal because of the potential for dilution (e.g., Gottdenker and Jacobson 1995, Berry et al. 2005). A nasal lavage was taken only on tortoises with clinical signs of upper respiratory tract disease. Plasma and nasal samples were shipped to the Mycoplasma Laboratory at the University of Florida to determine the presence of antibodies to *Mycoplasma agassizii* or *M. testudineum* using enzyme-linked immunoassay (ELISA) tests (Schumacher et al. 1993; Brown et al. 1994, 1995, 2001, 2004; Wendland et al. 2007). The nasal lavage samples were cultured and if *Mycoplasma* spp. grew in culture, then the taxon was identified (Brown et al. 2002).

RESULTS

Preliminary Surveys of the 45 Plots

The distances that fieldworkers walked on transects for each plot ranged from 5.3 to 11.0 km; most plots received ≥6.4 km of transects. For all 45 plots, 11 live tortoises, remains of 59 dead tortoises, 29 active and 152 inactive cover sites, and 152 scats were observed on 432 km of transects (Table 1). Counts of tortoise sign per kilometer of transect varied from 0.0/km to 4.09/km with plots 1, 2, 3, 4, 12, 20, and 21 having high counts (2.18–4.09/km), followed by plots 5, 9, 10, 18, and 26 with counts of 1.00–1.91/km. Twenty-two plots had counts of 0.2–0.9 sign/km, and 11 plots had very low sign counts (0–0.18/km).

Observations of predators or predator sign included coyote, kit fox, ravens, bobcats, and domestic dogs. Sign counts of predators per kilometer of transect ranged from a low of 0.23/km on plot 32 to a high of 7.97/km on plot 7 (Table 2). Plots with high sign counts per transect (2.0–7.97/km), in descending order, included: 7, 8, 35, 4, 1, 27, 34, and 5. Lower counts of sign (<1.0/km) were on plots 6, 10, 14, 22, 28, 30, 32, 36, 37, 38, 41, and 63. The plots with sign or sounds of domestic dogs were 2, 4, 5, 6, 7, 22, and 27.

The perennial vegetation, represented by 23 species of shrubs, Joshua trees, and four species of perennial grass, varied from plot to plot (Table 3). Overall, creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*) were among the top five dominant (common to abundant) species on 40 plots. Salt bushes (*Atriplex* spp.), family Chenopodiaceae (e.g., allscale, *A. polycarpa*; shadscale, *A. confertifolia*; four-wing salt bush, *A. canescens*) formed the dominant vegetation on 5 plots (6, 7, 36, 40, 47). Some species of salt bushes thrive in disturbed areas (allscale, four-wing salt bush), adjacent to playas, and in alkaline soils—all areas of potentially poor habitat for tortoises. Playas, areas with the appearance of old lake beds, and vegetation typical of alkaline soils were present on plots 36 and 47. Cooper's golden bush (*Ericameria cooperi*), a colonizer or "increaser" species, is typical in areas grazed by livestock because it is unpalatable. It can be a sign of fair to poor range condition, especially when it is common. Eleven plots had Cooper's golden bush among the top five perennial species (plots 8, 19, 37, 38, 39, 41, 44, 45, 61, 62, 64).

Using the transects and observations of the landscape, the topography and surficial geology were evaluated to assess suitability for tortoises to travel, construct burrows, and have suitable cover to survive temperature extremes during or after translocation. Much of the area was composed of valley floor, alluvial fans and low, rolling hills cut with small washes or washlets—topographic features that are typical of tortoise habitat. Elevations ranged from 604-1205 m; 20 (43%) of the plots were below 950 m (plots 1–7, 10–14, 20–23, 27, 29, 36, 40, and 47). However some sites contained unsuitable habitat or areas that would support few or no tortoises: playas or barren areas that appeared to be either old lakebeds or heavily disturbed sites denuded of vegetation (parts of plots 36, 40, and 47), volcanic fields, badlands, steep slopes with cliffs, and boulder fields (parts of plots 3, 6, 9, 16, 19, 20, 21, 22, 24, 25, 27, 28, 29, 32, 38, 39, 45, 62) (Table 4). The plots were ranked on whether the topography was suitable, as well as the percentage of the plot where the tortoise could walk and dig a burrow. Most plots showed high potential for supporting tortoises based solely on topography and surficial geology (90–100% of habitat usable): 1, 2, 4, 5, 6, 7, 8, 10, 12, 13, 14, 16, 17, 18, 20, 21, 22, 23, 30, 33, 46, 37, 40, 41, 44, 61, 63, and 64. The next or mid-level group of plots had 50-89% usable and suitable habitat: 3, 19, 24, 25, 26, 27, 29, 32, 34, 26, 38, 39, 45, 47, and 62. The plots with 10 to 40% suitable habitat were 9 and 28.

Anthropogenic impacts for the plots are summarized in Table 5. The transects represent a surface area of 0.053–0.11 km^2, or 2–4% of each plot. The most common types were balloons (all plots), trash (44 of 45 plots), old vehicle tracks (43 of 45 plots), and firearm casings/targets (43 of 45 plots). Plots 47, 23, 21, and 14, in descending order, had the highest numbers of balloons; plots 2, 47, 7, 5, 10, and 6 had higher levels of trash than elsewhere. Firearm casings and shooting targets were present on all but plots 2 and

21, with higher levels on plots 5, 26, 14, 62, 47, and 44 (descending order of counts) than on other plots. Ordnance was observed on plots 1, 4, 12, 14, and 23; possible unexploded ordnance was present on plot 63 (Table 5, notes). At the edge of plot 10 were 21 tires; on plot 38, 16 vehicle tires in 3 groups of 10, 3, and 3 had been bolted together and dragged to the southeast corner of the plot.

Recent vehicle tracks were present on transects for 35 of 45 plots and old vehicle tracks were evident on 43 of 45 plots (Table 5). Plots with higher levels of recent tracks included 29, 6, 13, 41, 5 and 28 (descending order); plots with higher levels of old tracks were 41, 6, 29, 9, 21, 17, 20, 16, and 30 (descending order). Active motorcycle trails were noted on 19/45 plots, with more trails on plots 41 and 19 than others. Dirt roads at densities of 0.11–2.53 km of transect/plot were present on 37/45 plots. Some plots had major dirt roads that were a part of or led to points of interest: plot 64, the Twenty Mule Team Road; plot 63, road to Blackwater Well; plot 29, Black Canyon Road and Black Mountain Wilderness; plots 17, 25, and 31 Copper City Road; plot 26, Opal Mountain Road and road to springs; plot 5, Hinkley Road; plots 1 and 2, road to Fossil Canyon; plot 3, adjacent to Rainbow Basin; plot 12, crossed by Coolgardie Road; plot 18, routes leading to Williams, Lane, and Noble wells; and plot 33, BLM route C312. In addition, many plots had dirt roads along one or more boundaries to the north, east, south, and/or west.

Cross-country motorcycle trails and tracks were observed on transects for plots 6, 9, 16, 17, 19 (cross-country motorcycle trail following an unauthorized route marked by orange flagging), 22, 24, 25, 27, and 29 (Table 5). Areas severely damaged and/or denuded, probably by vehicles, occurred on plots 6, 10, 16, and 30. Nine plots had camping and/or shooting areas. Plot 30 had an apparent stolen car with belongings (CA license 1LJA319). Plot 41 had a shrine consisting of an upright motorcycle with other off-road vehicle (ORV) parts scattered about, e.g. ~40 plaques commemorating deceased ORV racers, and an American flag. Sixteen people in four groups visited the shrine while the fieldworker was walking transects. Discarded signs (vandalism) for vehicle routes, closed areas, and Wilderness were found on plots 7, 29, 30, 36, and 41.

Livestock scat and/or bones were present on transects for 25 of 45 plots (Table 5). Livestock sign was highest on plot 7, followed by plots 6, 61, 5, and 4 (descending order). Plot 6 had heavy pressure with almost no shrubs present; an old cattle watering site is on plot. Old cattle trails are evident on plot 7. Plots 6 and 7 are bordered by active agricultural fields; plot 6 has a ranch. Signs of a burn were on plot 44. Signs of domestic or feral dogs (scats, barking) were observed on plots 6, 7, 14, and 27; kennels with > 100 dogs were on plot 7. Plot 29 has an upland game guzzler, which is a known source of death to tortoises (depending on whether it has been retrofitted or appropriately fenced).

Mining activities were evident on transects for 15 of the 45 plots (Table 5**).** Hazards in the form of mining shafts, pits, and well casings—sources of deaths for tortoises—were present on plots 7, 16, 19, 24, and 30. Current and historic placer mining (craters, pits, trenches) has or is occurring on plots 9, 10, 16, 17, 18, 24, and 25.

Abandoned shacks, probably associated with mining and/or livestock use or both, were present or nearby on plots 9, 16, 18, and 19.

When the total counts of impacts per kilometer of transect are summed and a grand total is computed for each plot, plot 7 has the highest level of impacts (143.60), followed, in descending order by plots 6, 2, 47, and 41 (Table 5). The impacts are not weighted by potential severity or risk of mortality for the tortoises with this method, however.

The land where the plots occur is currently managed primarily by the Bureau of Land Management (BLM). Plots 61, 62 and 64 are on the boundary with the Naval Air Weapons Station (NAWS). The southwest corner of plot 62 borders the northeast corner of the Cuddeback Impact Area, an area with substantial surface disturbance in limited areas and formerly under the jurisdiction of the Air Force.

The region in which the 47 plots occur has several points of interest for recreationists who visit BLM-administered lands (U.S. BLM, 1980 as amended): the Grass Valley Wilderness and Black Mountain Wilderness; the Barstow Woolly Sunflower Area of Critical Environmental Concern (ACEC), Harper Dry Lake ACEC, Rainbow Basin National Natural Landmark ACEC, Inscription Canyon Petroglyph Site, Superior Dry Lake (used for land sailing), Cuddeback Dry Lake (numerous recreation uses), and Owl Canyon Campground.

Evaluation of Tortoise Sign from Comprehensive Surveys of 47 Plots

Forty-seven of the 48 plots in the study design received comprehensive surveys in 2009; the exception was plot 31, which was previously surveyed in fall of 2008. The objectives were to locate 15 to 20 live adult tortoises, conduct health evaluations and collect blood and potentially nasal lavage samples for ELISA tests and cultures for *Mycoplasma agassizii* and *M. testudineum*. Data were also collected on numbers of live tortoises, shell-skeletal remains, burrows, scats and other sign (Table 6). From 0 to 21 live tortoises and from 0 to 87 shell-skeletal remains of tortoises were found on each plot, for a total of 267 live tortoises and 1457 dead tortoises. When the counts of live tortoises were converted to live tortoises observed per kilometer walked, plot 12 had the highest number, followed by plots 3, 20, 4, 36, and 24. No live tortoises were found on plots 6, 7, 17, 28, 29, 30, 35, 41, 61 and 64. Likewise, when all the live and dead tortoises, burrows, scats and other types of sign are summed and converted to sign per kilometer walked, plot 12 had the highest counts, followed by plots 20, 2, 3, 1, and 4. Plots 6, 7, 30, 41, and 61 had substantially lower counts, and the sign was of shell-skeletal remains, inactive burrows, and scat. Many plots had high ratios of dead to living tortoises (plots 8, 13, 14, 22, 23) or many remains and no live tortoises (plots 17, 28, 29, 30, 35).

Tortoises (N=267) were observed in and out of burrows during the comprehensive surveys of plots. Of these, only 9 (3.4%) were juveniles or immature sizes (Table 7). Of the 267 tortoises, 240 received health evaluations. The sex ratio of subadult and adult tortoises was 141 males to 99 females and was significantly different from the expected 1:1 ratio (Z =2.769, $p < 0.05$); no adult tortoises were found on five plots. Three plots (8, 13, 14) had live tortoises, but none of the tortoises received health evaluations because tortoises could not be retrieved from burrows or were too small for sampling.

The Health Status of Tortoises on 47 Plots

Two hundred forty tortoises were evaluated for health. Of the 240 tortoises, a total of 21 tortoises (21/240 = 8.75%) had positive or suspect ELISA tests (Figures 2 and 3). Fourteen of the 21 tortoises with suspect or positive ELISA tests were males. Thirteen tortoises had positive ELISA tests and 8 had suspect ELISA tests for *M. agassizii.* One tortoise had positive ELISA tests for both *M. agassizii* and *M. testudineum* (tortoise 7324). These tortoises had mild to severe clinical signs of upper respiratory tract disease (URTD) (Table 8). Ten tortoises with negative ELISA tests for *Mycoplasma* spp. also exhibited moderate to severe clinical signs of URTD (Table 9).

We conducted a preliminary analysis of trauma to the shell and limbs of the 240 tortoises and identified 42 individuals that showed signs of having been attacked by a canid predator, particularly a domestic dog. These tortoises had moderate to severe damage to the gular horn and other parts of the shell and limbs (Table 10). Tortoises with signs of this type of attack occurred on 21 plots (Figure 4).

DISCUSSION

NOTE: some material is repeated from Berry (2009)

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Suitability of Habitat at the 47 Sites for the Translocatees

The following discussion is based on the assumption that the 47 sites are typical of habitat in the general area where translocatees from the WEA are likely to be released. It is similar to the information presented in Berry (2009) for the 2008 Progress Report on the same topic.

Many factors should be considered in determining whether an area or region is suitable to receive several hundred translocated tortoises. Questions to be addressed include, but are not limited to:

- Is the habitat where the translocatees will be placed similar to the original home sites of the translocatees? How similar? Elevation, rainfall patterns, cover values and composition of perennial plants, and surficial geology are important factors.
- Do the release sites present hazards to the tortoises?
- Will the release sites support the translocatees? Will forage be adequate and of the appropriate composition of species? What is known about the annual plants at home sites vs. potential release sites?

- Will the translocated tortoises be likely to remain at the new home sites or will they leave? If the translocatees are likely to travel until they find habitat similar to the original home sites, where is the nearest such habitat?
- If translocatees move away from the release sites, what hazards might they encounter and would these hazards reduce their potential for survival? What is the proximity of the hazards?

We do not have answers to all of the questions above, nor are data currently available to address all of the questions. We do have some relevant information on the original home sites and the potential release area from visits to the home sites and from transects walked on the 47 plots. The elevations where the potential translocatees now live are generally higher (>900 to 1300 m) than on the 47 sampled plots (604 to 1205 m). Twenty (43%) of the plots were <950 m in elevation. The composition of perennial plants where most of the potential translocatees now live is, in general, typical of higher elevations, e.g., areas with Joshua tree woodlands, mixed desert scrub, and a creosote bush-mixed scrub. In contrast, a substantial part of the perennial vegetation in the areas proposed for release of translocatees is typical of lower, more alkaline areas with playas and old dry lakebeds, badlands, and volcanic fields. While there are areas with Joshua trees and mixed desert scrub, such sites are more limited and patchy in distribution. Most of the tortoises likely to be translocated may have had little experience with the almost monotypic allscale and other alkali sink communities that border playas, old dry lake beds, disturbed areas, and edges of some volcanic fields—habitats that are common in the proposed release areas and that may present hazards of exposure due to low cover of shrubs and limitations on constructing burrows. The above statements are generalities based on field observations.

The lands proposed for release of the translocatees probably have had a more layered and complex history of disturbance than the lands where the potential translocatees now live. The history of human uses is relevant because anthropogenic uses affect condition of habitat, biomass of forage available for tortoises, cover of shrubs, and potential hazards to survival. For convenience, we can divide the Central Mojave Desert into lands considered as potential release areas (west and south, where plots 1–64 occur in the WETA) and home sites of the WEA translocatees (east).

The lands have been used by people for a long time. Native Americans used the region and water sources. One such water source, now known as Blackwater Well (close to plots 61–64), was used at least periodically from ~1200 B.C. to 1820 A.D. (Whitley 1999, National Register of Historic Places 2000). The west Central Mojave Desert was crossed both north-south and east-west from the 1850s by explorers, government employees from the General Land Office, settlers, and travelers headed to points of interest and mining towns (see Bureau of Land Management, 1854, 1855, 1856; Surveyor General of California 1857; Bancroft and Co. 1868; Birnie 1876; Wheeler 1879; Palmer 1891; Merriam 1893). Roads were already described in journals in 1855-1856 (Bureau of Land Management [McDonald], 1855-56). A principal north-south route extended from the vicinity of Barstow north to Pilot Knob, and from Pilot Knob north to Panamint City, Darwin, and many mining towns. The route to Pilot Knob also had travelers heading west to Blackwater Well, to springs in the El Paso Mountains and to points further west (e.g., Kernville, Central Valley), as well as east to Death Valley and parts of the eastern Mojave Desert. The Twenty Mule Team Road is an example of an east-west/southwest route from Death Valley to the rail head at Mojave (Weight 1955); it passed through the Pilot Knob area and Granite Wells. Travelers removed shrubs for fire wood, a "desert load of hay," for personal use and for the mills, stripping areas of vegetation (Spears 1892, Hufford 1902, Mendenhall 1909). These routes were also stock driveways.

Livestock, primarily sheep and cattle, grazed throughout the area from at least the 1870s (Birnie, 1876, Palmer 1891, Spears 1892, Starry 1974) until the 1990s. Feral burros are still common on the NAWS in the south range, adjacent to the study area. The west half of the area has several former grazing allotments, as well as numerous springs, wells, and troughs (Mendenhall 1909, Thompson 1921). The distribution and density of the water sources is an important consideration in terms of hazards to tortoises and current habitat condition. Each of the water sources is likely to have an associated piosphere of disturbance (Brooks et al. 2006), limited cover of perennial shrubs, and increased cover of alien annual plants. Piospheres and associated waters may also serve as attractants to predators. The travel corridors and history of livestock grazing are important in terms of evaluating the potential of release areas to support high quality forage for the tortoises (e.g., Brooks and Berry 2006). Some parts of the proposed release area, e.g., former travel corridors or grazing allotments, may no longer have the supply and composition of annuals essential for maintaining healthy tortoises (Oftedal 2002). The east Central Mojave Desert, where the potential translocatees now live, may have more suitable forage. These topics are appropriate for hypothesis testing.

Human traffic and recreation pressures in the WETA are likely to be more substantial than observed in the lands associated with tortoises translocated from the SEA in 2008. (Using Desert Access Guides, compare distribution of ACECs, wilderness areas, National Natural Landmarks in the proposed release areas for WEA tortoises with the existing release areas for the SEA tortoises). The locations and densities of graded and ungraded dirt roads, authorized designated routes and unauthorized motorcycle trails, campgrounds, ACECs, designated wilderness, and hunting sites should be documented, mapped, and included in the revised model. Vehicle traffic on roads and unauthorized off-road vehicle use present risks to tortoises (Keith and Berry 2005; Berry et al. 2008; Boarman and Sazaki 2006; Keith et al. 2008). For example, in 2008 and 2009 at least two of 158 translocated tortoises in the health research program were killed by vehicles on dirt roads and a third translocated tortoise was trapped in its damaged burrow by a person travelling off a designated route during the first nine months post-translocation (Berry et al. 2009). No roads have been fenced to protect tortoises in the areas proposed as release sites in the WETA.

The fieldworkers who walking transects for the preliminary surveys of plots recorded the presence of several unfenced mining shafts or holes—hazards (deaths) to tortoises. The shafts, ordnance, campgrounds, agricultural areas, settlements (including individual dwellings) are other potential hazards. The transects walked as part of the preliminary surveys covered from 2 to 4% of the surface area of plots; thus far more hazards occur on plots than were identified.

Status and Health of Desert Tortoises on the 47 Plots

For the purposes of this discussion, we assume that the data on tortoises, collected from the 47 plots, represent the distribution, relative abundance, status, and health of tortoises in the general area where translocatees from the WEA are likely to be released. Questions to be addressed include, but are not limited to:

- What is the distribution and relative abundance of tortoises in the proposed release area?
- What is the composition of the population (size-age class, sex ratio)? What are mortality rates and causes of death?
- What is the distribution of tortoises with infectious diseases? What is the prevalence of disease and trauma?
- Does the current distribution reflect habitat quality or some other factors? Why do some plots with apparently good habitat for tortoises have few signs of tortoises? What historic information is available for the region for tortoise populations and how do the data assist us in understanding the current condition of the population?
- What is the carrying capacity of the area for tortoises now and in the near future, given the likelihood of climate change and a warmer, drier desert in this part of the Southwest? What are potential effects of releasing several hundred tortoises into this area?

We have preliminary answers to some questions. Data are currently unavailable or insufficient to address all of the questions. Both the counts of tortoise sign and the more comprehensive coverage of 47 plots support several key points:

(1) Sign Counts and Live Tortoises. Sign counts from the comprehensive coverage of 47 plots indicate that tortoises were present in the recent past or are currently present on all plots. Plots can be grouped by level of sign counts from very low to high. Sign counts were very low (0.02–0.07/km of transect) on plots 6, 7, 30, 41, and 61. On these plots, sign consisted of combinations of dead tortoises, inactive burrows or scat; no live tortoises were observed. The next group, plots with low sign (0.12 to 0.30/km of transect) included plots 8, 13, 22, 35, 37, 38, 42, 44, and 45. With one exception (plot 35), all nine plots had 1 to 4 live tortoises, and several had high ratios of dead to live tortoises.

Plots with 0.34 to 0.62 sign/km of transect form the next group with moderate or low moderate levels of sign (16, 17, 19, 23, 25–29, 32, 34, 40, 46, 47, 62, and 64). These plots have from 0 to 7 live tortoises and several have high ratios of dead to live tortoises. The dead tortoises account for a substantial portion of sign on many of these plots. Plots with 0.79 to 0.97 sign/km of transect include 5, 14, 22, 24, 39, and 63. Plots 5, 14, 22, and 63 had from 2 to 5 live tortoises, whereas plots 24 and 39 had 15 and 10 live tortoises, respectively. Plot 24 and 39 may fit better into the group of plots with moderately high numbers of live tortoises (plots 1, 2, 3, 4, 9, 10, 12, 18, 20, 21, and 36).

In general, the plots with moderate to high sign counts and numbers of live tortoises occur primarily between Black Mountain Wilderness on the west and the Copper City Road on the east. This block extends north to the vicinity of Murphy's Well. There are four "outliers" with moderate to high counts of live tortoises to this block: two plots to the east of the Copper City Road (plots 18 and 24) and two plots to the west and south of Superior Dry Lake (plots 36 and 39). Plots with the lower sign counts are in the northwestern, western, and southwestern parts of the study area.

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(2) Counts of Shell-skeletal Remains and Live Tortoises. Shell-skeletal remains of subadult and adult tortoises may persist for many years in the desert. We counted shell-skeletal remains but did not undertake a comprehensive assessment of estimated time since death or cause(s) of death. With this limited information in hand, we can sort the plots into four groups. (The notes below are estimates, given that each set of remains was not analyzed.)

a. Low numbers (0–6) of both live tortoises and shell-skeletal remains, implying very low densities in last 10 years (plots 6, 7, 26, 30, 37, 41, 42, 47, 61-64)

b. No or low to moderate numbers of live tortoises (0–10) but numbers of shell-skeletal remains were also low to moderate (9–23), implying that more tortoises occurred on the site recently but the density was low to moderate in the recent past (plots 5, 8, 16, 18, 25, 33, 34, 38, 40, 44, 45, 46)

c. No or low numbers of live tortoises (0–8) but moderate to high numbers of shell-skeletal remains (30–87), implying that tortoise densities were substantially higher in the last 10 to 20 years (plots 9, 13, 14, 17, 19, 23, 27-29, 32, 35, 37)

d. Numbers of live tortoises ≥ 10 and numbers of shell-skeletal remains ≥30, implying that densities were higher, possibly double, in the last 10 to 20 years (plots 1-4, 10, 12, 20, 21, 24, 36).

Eighteen plots with low counts of live tortoises and low to high counts of shell-skeletal remains occur in the northwestern and western parts of the study area, extending from the NAWS boundaries in the north to Harper Dry Lake in the south (plots 13, 14, 22, 23, 27-29, 34, 35, 37, 38, 41, 42, 44, 61-64). These 18 plots had 31 live tortoises, 10 of which occurred on plots 62 and 63; they also had remains of 483 tortoises, of which only 4 occurred in the northern part of the study area. Thus the land between the Grass Valley Wilderness and Black Mountain Wilderness and land west of the Black Mountain Wilderness had 27 live tortoises and 479 dead tortoises. We can conclude that the tortoise population experienced a die-off in the last 10 to 20 years and that densities are currently very low in this area. Historically, there were probably more tortoises in the area— Berry and Nicholson (1984) showed estimated densities of ≥20 to 50 tortoises/mi^2 lands to the south and west of the NAWS based on a map developed from strip transects walked in the late 1970s.

(4) Composition of the live tortoise population on the 47 plots. During the comprehensive surveys, 267 tortoises were located above and below ground. Of the 267, all but 9 were adults (96.6%). Two hundred forty adults and subadults were evaluated for health; significantly more males were present in the sample than females, a similar pattern observed in samples of tortoises from the SEA (Berry and Mack 2008).

(5) Infectious Diseases—Mycoplasmosis. Of the 240 tortoises, 8.75% had positive or suspect ELISA tests for *M. agassizii* or *M. testudineum* (Figs. 2-3). The protocol for relocation of tortoises from the WEA to the WETA states that 5 km buffer will be drawn around the locations of tortoises with positive and suspect tests for the two species of *Mycoplasma* (Esque et al. 2009). With the 5 km buffer, limited lands for translocation are available to the south of the WEA in the vicinity of plot 8, 16-18, and 24, as well as lands to the west of Pilot Knob and the Black Mountain Wilderness (Fig. 5). If the data set from the 2008 sampling of WETA plots is also used (plots 13, 16, 17, and 19), then the potential area available for translocation is further limited (Fig. 6). We can expect the map to change further, if and when more tortoises with suspect and positive ELISA tests area found in the WEA.

(6) Suitable Habitat and Anthropogenic Impacts. As described earlier, not all the plots have habitat suitable for release of translocated tortoises. Examples include, but are not limited to plots 6 and 7 (adjacent agricultural fields or disturbed grazing lands), 47 (67% playa, also impacts are high) and 41 (vegetation in fair condition, impacts high). Additional maps will be prepared to delineate suitable habitat and different levels of anthropogenic impacts.

RECOMMENDATIONS

Prior to translocation, data should be collected and analyzed on annual biomass in late winter, spring, summer and fall (with an emphasis on key forage species), and the home sites of tortoises compared with potential release sites.

1. We recommend and plan to conduct surveys of vegetation, soils, and topography of the WEA where the potential translocatees are now living. The survey will include belt or line transects of perennial vegetation with an objective of obtaining data on cover values and composition. Vegetative communities will be mapped, or previous maps, if appropriate for use to describe desert tortoise habitat, will be checked. Data, similar or identical to the data collected on elevations, topography, surficial geology, predator sign counts, and anthropogenic impacts for the 47 plots, will be collected where the potential translocatees are currently living. The data will be analyzed and compared with data from the proposed release areas. With this information, scientists and decision-makers can develop a better understanding of the similarities and differences of current tortoise home sites with the areas considered for release. Answers can be developed for such questions as: do habitats at home sites of the potential translocatees match habitats in the proposed release areas? If not, how much do the habitats differ? Are the habitats that now have very low numbers of tortoises to the west and south of Pilot Knob and Cuddeback Dry Lake have lowered carrying capacity compared with the past? In the

latter case, review of historical journal notes and photographs may provide valuable information.

2. The topic of available forage for tortoises has not been adequately addressed. The presence and availability of high quality forage for tortoises are essential to survival of the tortoises and long-term success of translocation efforts. Prior to translocation, data should be collected and analyzed on annual biomass in late winter, spring, summer and fall (with an emphasis on key forage species in spring), and the home sites of tortoises compared with potential release sites. We propose to undertake this effort in spring of 2010.

3. At the Ft. Irwin science meetings, some scientists and agency personnel have raised the topic of a dispersed release of the translocated tortoises throughout the entire WEA instead of using a clustered release on plots, as was done in the SEA translocation in 2008. This approach is a different experiment than what was done previously for the SEA tortoises and will require hypothesis testing and a research program to monitor the success.

4. We need to have a better understanding why tortoises are absent or virtually absent from some areas in the Central Mojave Desert. We can make the assumption that populations have experienced similar declines to the populations on long-term permanent plots to the west, northwest, and south (Berry and Medica 1995). We can also assume that the causes of decline are numerous, cumulative, and similar to those recorded earlier for the western, central and southern Mojave (U.S. Fish and Wildlife Service 1994). Examples include mycoplasmosis and other diseases, drought and starvation, predation by ravens, road kills, vandalism, a change in the composition of available food compared with preferred forage species, and trauma from domestic dogs (e.g., Jacobson et al. 1991, 1994; Berry 1986; Boarman 1993; Boarman and Berry 1995; Christopher et al. 2003; Homer et al. 1998; Brown et al. 1999; Jennings 1997; Berry et al. 1986, 2002, 2006b, 2008; Kristan and Boarman 2003; Keith and Berry, 2005; Boarman and Sazaki 2006; Brooks and Berry 2006, Brooks et al. 2006; Johnson et al. 2006; Keith et al. 2008; Carlson et al. in review).

From our preliminary evaluation of the data from the 48 plots as well as the data collected in 2008 using different sample sites, we can obtain a better understanding of historical and current issues by mapping and modeling the distribution and densities of the tortoises, the habitat types, results of disease and health sampling, and the many different types of anthropogenic impacts. We plan to undertake this effort using the existing data sets in 2010.

5. For the analysis of anthropogenic impacts, we will re-evaluate and weight the anthropogenic impacts. For example, roads will be separated by type: paved, dirt with high berms and high use, dirt with low berms and high use, low use dirt roads, authorized and unauthorized motorcycle trails, etc. The Copper City Road, for example, has high berms in some areas and has been observed to trap tortoises within the road bed. Recreation areas (e.g., Inscription Canyon, Fossil Beds, Cuddeback Dry Lake and

Superior Dry Lake) where people concentrate will be included, as well as agricultural fields, where active or abandoned. The locations of individual homes and settlements will be part of the analysis. Likewise, the volcanic fields and small lakebeds will be identified, even if relatively small, and treated as potentially hazardous areas.

6. As time permits, the shell-skeletal remains on the existing plots should be re-evaluated for time since death, size-age class, and potential causes of death.

7. Prior to translocation, mining and other hazards should be fenced to exclude tortoises.

8. The current and most up-to-date literature on climate change projections forecast a drier Mojave Desert. It is essential the climate change be considered as a potential factor in at least one of the revised models.

9. An increase in infectious disease(s) should be considered as part of the revised model, based on experiences from the SEA translocation in 2008.

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Table 1. A summary of tortoise sign found during preliminary surveys of 45 plots sampled during 2009. All sign includes live tortoises as well as other sign.

				Number of tortoises and tortoise sign					
Plot no.	**Transect distance (km)**	**All sign/km**	**Live tortoises/km**	**Live**	**Dead**	**Active burrows**	**Inactive burrows**	**Scats**	**Other**
1	11	3.909	0.000	0	0	1	6	36	0
2	11	2.273	0.000	0	0	0	12	13	0
3	8.7	2.184	0.114	1	4	1	11	2	0
4	11	2.818	0.000	0	2	1	12	16	0
5	11	1.273	0.000	0	1	0	6	7	0
6	6.4	0.000	0.000	0	0	0	0	0	0
7	6.4	0.000	0.000	0	0	0	0	0	0
8	11.0	0.546	0.000	0	4	0	2	0	0
9	11.7	1.795	0.171	2	3	2	7	7	0
10	11	1.909	0.091	1	0	2	13	5	0
12	11	4.091	0.091	1	2	3	25	12	2
13	11.0	0.364	0.000	0	3	1	0	0	0
14	11	0.182	0.000	0	1	0	1	0	0
16	11	0.273	0.000	0	2	0	1	0	0
17	10.1	0.198	0.000	0	2	0	0	0	0
18	11	1.000	0.091	1	0	0	5	5	0
19	11	0.455	0.000	0	2	1	1	1	0
20	11	2.818	0.091	1	3	3	12	11	0
21	11	3.000	0.182	2	5	2	11	13	0
22	8.7	0.804	0.000	0	1	1	2	3	0
23	11	0.636	0.000	0	1	2	2	2	0
24	8.7	0.920	0.000	0	3	3	1	1	0
25	11.0	0.727	0.091	1	0	1	0	5	1
26	11.0	1.091	0.091	1	1	4	4	2	0
27	8.7	0.460	0.000	0	3	0	0	1	0
28	7.3	0.411	0.000	0	2	0	1	0	0
29	8.7	0.345	0.000	0	3	0	0	0	0
30	11	0.000	0.000	0	0	0	0	0	0
32	11	0.636	0.000	0	1	1	4	1	0
33	11	0.364	0.000	0	2	0	2	0	0
34	11	0.273	0.000	0	1	0	2	0	0
35	11	0.182	0.000	0	2	0	0	0	0
36	6.4	0.469	0.000	0	2	0	1	0	0
37	8.7	0.345	0.000	0	0	0	1	2	0
38	8.7	0.115	0.000	0	1	0	0	0	0

Table 1, continued. A summary of tortoise sign found during preliminary surveys of 45 plots sampled during 2009. All sign includes live tortoises as well as other sign.

				Number of tortoises and tortoise sign					
Plot no.	**Transect distance (km)**	**All sign/km**	**Live tortoises/km**	**Live**	**Dead**	**Active burrows**	**Inactive burrows**	**Scats**	**Other**
39	8.7	0.229	0.000	0	1	0	1	0	0
40	6.4	0.469	0.000	0	1	0	1	1	0
41	8.7	0.000	0.000	0	0	0	0	0	0
44	8.7	0.345	0.000	0	0	0	2	1	0
45	8.7	0.000	0.000	0	0	0	0	0	0
47	5.3	0.755	0.000	0	0	0	0	4	0
61	8.7	0.000	0.000	0	0	0	0	0	0
62	8.7	0.345	0.000	0	0	0	1	2	0
63	6.4	0.313	0.000	0	0	0	1	1	0
64	10.5	0.095	0.000	0	0	0	1	0	0
Totals	**432**	**0.947**	**0.026**	**11**	**59**	**29**	**152**	**154**	**4**

Table 2. A summary of predators and predator sign by plot for surveys undertaken in 2009

Plot no.	Transect (km)	Sign/km	Total sign	Number of predators or predator sign					
				Ravens	Live canid/ felid	Canid scats	Canid dens	Sign concen-tration areas	Other sign, not included in counts: digs, howling coyotes, and barking dogs
1	11	2.45	27	0	0	20	0	0	7 bobcat scats
2	11	1.45	16	0	0	13	0	2	Also: 1 domestic dog scat
3	8.7	1.26	11	0	0	9	0	2	2 sign concentration areas are bobcat
4	11	2.54	28	4	0	18	0	3	Also: 3 domestic dog scats
5	11	2.00	22	0	0	12	1	6	Also: 3 domestic dog scats
6	6.40	0.94	6	0	0	6	0	0	approximately 10 canid digs, dogs barking, dogs living at nearby home
7	6.40	7.97	51	20	1	~30	0	0	dog kennels nearby (>100 dogs); >6 domestic dog scats; 6 canid dig sites; considerable dog scat along roads and fenceline
8	8.7	3.22	28	0	0	28	0	0	> 40 digs; several coyotes howling just north of plot
9	11.70	1.71	20	0	0	15	0	5	~35 canid dig sites
10	11	0.36	4	0	0	3	0	1	
12	11	1.09	17	0	0	13	1	31	
13	8.7	1.37	12	0	0	7	5	0	>50 canid dig sites
14	11	0.636	7	0	0	5	0	2	
16	8.7	1.72	15	0	0	14	0	1	>50 canid dig sites
17	8.7	1.03	9	0	0	7	0	2	>50 canid dig sites
18	8.7	1.38	12	0	0	6	0	6	~ 55 canid dig sites
19	8.7	1.15	10	0	0	9	0	1	~ 35 canid dig sites
20	8.7	1.26	11	0	0	8	3	0	>50 canid dig sites
21	8.7	1.15	10	0	0	10	0	0	>45 canid dig sites; coyotes calling
22	8.7	0.69	6	0	0	6	0	0	Also, 1 domestic dog scat,far from dirt road

Table 2, continued. A summary of predators and predator sign for plots surveyed in 2009

Plot no.	Transect (km)	Sign/ km	Total sign	Number of predators or predator sign					
				Ravens	Live canid/ felid	Canid scats	Canid dens	Sign concen-tration area	Other sign, not included in counts: digs, howling coyotes, and barking dogs
23	11.0	1.64	18	2	0	10	1	5	
24	8.70	1.61	14	0	0	12	0	2	>60 canid dig sites and mine shaft with 1 barn owl and 2 eggs
25	8.70	1.38	12	0	0	12	0	0	> 50 canid dig sites
26	8.70	1.49	13	0	0	13	0	0	>50 canid dig sites
27	8.70	2.18	19	0	0	3	16	0	~8 digs, prints of domestic dogs
28	7.30	0.82	6	1	0	3	0	2	~15 canid dig sites; coyotes howling
29	8.70	1.38	12	0	0	9	0	3	~ 50 canid dig sites and 1 falcon w/nest
30	8.70	0.80	7	0	0	5	2	0	~ 40 canid dig sites
32	8.70	0.23	2	0	0	2	0	0	> 50 canid dig sites
33	8.70	1.61	14	1	0	10	0	3	~ 50 canid dig sites
34	8.70	2.18	19	0	0	14	0	5	> 50 canid dig sites
35	8.70	2.76	24	0	0	17	0	7	~50 canid dig sites and kit fox tracks
36	6.40	0.47	3	0	0	3	0	0	~70 canid dig sites, remains of 1 jack rabbit
37	8.70	0.34	3	0	0	3	0	0	6 canid dig sites
38	8.70	0.34	3	0	0	3	0	0	37 canid dig sites
39	8.70	1.49	13	0	0	11	1	1	56 canid dig sites
40	6.40	1.88	12	0	0	11	0	1	~45 canid dig sites and 1 bobcat den with kittens
41	8.70	0.69	6	0	0	4	0	2	~40 canid dig sites
44	8.70	1.15	10	1	0	6	0	3	1 inactive raven/raptor nest site in Joshua tree; ~40 canid dig sites
45	8.70	1.72	15	0	0	15	0	0	26 canid dig sites

Plot no.	Transect (km)	Sign/km	Total sign	Number of predators or predator sign					
				Ravens	Live canid/felid	Canid scats	Canid dens	Sign concentration areas	Other sign, not included in counts: digs, howling coyotes, and barking dogs
47	5.3	1.32	7	0	0	6	0	1	~20 canid dig sites
61	8.70	1.26	11	0	0	10	0	1	many canid tracks; ~24 dig sites
62	8.70	1.03	9	0	0	8	0	1	>24canid dig sites
63	6.40	0.63	4	0	0	4	0	0	>50 canid dig sites
64	8.7	1.26	11	1	0	10	0	0	>50 canid dig sites

Table 3. 2009, Suitability of plots as tortoise habitat: a summary of vegetation notes relevant to potential translocation of desert tortoise.

Plot No.	Dominant and common shrubs	Quality of vegetation; initial notes on limitations or problems
1	Joshua trees (*Yucca brevifolia*) are sparse; burro bush is dominant in numbers; other common shrubs include creosote bush, goldenhead (*Acamptopappus sphaerocephalus*), big galleta grass (*Pleuraphis rigida*), winterfat (*Kraschen-innikovia lanata*) and California scale broom (*Lepidospartum squamatum*).	Good. Perennial plants (24 spp.) moderately diverse. *Brassica* spp. and *Bromus* spp. are common, *Amsinckia* is ubiquitous outside of washes. Wash vegetation: California scale broom, rabbit brush (*Ericameria nauseosa*), and matchweed (*Gutierrezia* spp.)
2	The common perennial plants are big galleta grass, burrobush, creosote bush, peach thorn (*Lycium cooperi*), and winterfat. Joshua trees are rare.	Good. Perennial plants (19 spp.) moderately diverse. *Brassica* spp. are common.
3	The common perennial plants are burro bush, creosote bush, peach thorn, big galleta grass, peach thorn, and shadscale (*Atriplex confertifolia*). Joshua trees are sparse.	Fair to poor. Perennial plants (33 spp.) are diverse, including paperbag bush (*Salazaria mexicana*), desert straw (*Stephanomeria pauciflora*), matchweed, and California scale broom in washes. *Brassica* spp. are rare.
4	Burrobush is the dominant shrub. Other common plants include big galleta grass, creosote bush, peach thorn, and cheese bush (*Hymenoclea salsola*). Joshua trees and Mojave yuccas (*Yucca schidigera*) are rare.	Good. Perennial plants (25 spp.) are present. *Bromus* spp are common; *Brassica* spp. are sparse. Three washes dominated by California scale broom, rabbit brush, and cheese bush.
5	Common perennial plants include: big galleta grass, burrobush, creosote bush, cheese bush, and goldenhead. Joshua trees are rare..	Fair to good. Cover of perennial plants (18 spp.) is sparse. History of cattle grazing may have affected quality and composition of vegetation.
6	Allscale (*Atriplex polycarpa*) is dominant, other shrubs include: burro bush, cheese bush, and creosote bush. Russian thistle is also common.	Very poor. 16 spp. of perennial plants noted. Habitat quality is extremely poor due to grazing and fires. Plot adjacent to old agricultural field and residence; boundary lies between graded dirt road and tumbleweed (*Salsola* spp.)-piled private property fence. Few shrubs present; allscale is indicative of alkaline soils and/or disturbance, cheese bush is associated with disturbed sites.
7	Allscale is the predominant species, followed by four-wing saltbush (*Atriplex canescens*), peach thorn, burrobush, and shadscale.	Poor. The plot lies on uniform valley floor and has few shrubs (8 spp.). *Shismus* spp. inhabits the inter-shrub space. Evidence of intense past livestock grazing is pervasive. Habitat unsuitable for translocation.
8	Cheesebush is dominant; other common shrubs include Cooper's goldenbush, spiny hopsage (*Grayia spinosa*), creosote bush, turpentine bush (*Thamnosma montana*), and Mojave horsebrush.(*Tetradymia stenolepis*)	Fair to Good. Joshua trees are relatively numerous though not common. 24 spp. of shrubs present. Cheese bush and Cooper's golden bush are indicators of past livestock grazing pressure. Cheese bush is also associated with disturbed sites.
9	Burro bush is the dominant shrub; other common shrubs include creosote bush, indigo bush (*Psorothamnus arborescens, P. fremontii*) cheese bush, and winterfat. Joshua trees present but sparse.	Good; 31 spp. of perennial shrubs, cacti, and grass. Vegetation is diverse and healthy looking. Cheese bush is a pioneer species and is often associated with disturbed sites.
10	Burro bush is dominant; other common shrubs include creosote bush, cheese bush, shadscale, and Mojave woody aster (*Xylorhiza tortifolia*).	Good. *Brassica* spp. are present; *Bromus* spp are common. Perennial plants, 28 spp. noted. Joshua trees are rare.

Table 3, continued: 2009, Suitability of plots as tortoise habitat: a summary of vegetation notes relevant to potential translocation of desert tortoise.

Plot No.	Dominant and common shrubs	Quality of vegetation; initial notes on limitations or problems
12	Creosote bush is the dominant shrub. Other common shrubs are burrobush, shadscale, peach thorn and paper bag bush are more common in washes. Joshua trees are present but rare.	Good. *Brassica* spp. are sparse. Perennial plants—21 species noted. The presence of saltbush is indicative of alkaline soils.
13	Vegetation is almost exclusively allscale saltbush. Burrobush is present but much less abundant, followed by sparsely distributed winter fat, cheesebush and *Tetradymia*	Poor. Vegetation is almost a monoculture of allscale, indicative of alkaline soils and/or disturbance (12 spp. of perennial plants present). The plot supports few other shrubs and is poor quality habitat for tortoise.
14	Burrobush and creosote bush are by far the most common shrubs across the plot, followed by allscale, spiny hopsage, and cheese bush (washes). Three species of salt bush are present; allscale dominates the SW quarter of the plot	Fair to good. 14 spp. of perennial plants are present. Few shrubs in the intershrub spaces between creosote bush and burro bush with the exception of alien annual plants.
16	Creosote bush is the dominant shrub; other common shrubs include burrobush, spiny hopsage, cheese bush, and peach thorn. Joshua trees are present and sparse.	Good to Fair. 29 spp. perennial plants. The south and east ends of the plot have diverse and closely spaced vegetation; the north and west portions have decreased diversity and increased spacing between shrubs.
17	Creosote bush is dominant; other common shrubs include burro bush, spiny hopsage, winterfat, goldenhead, and Nevada joint fir. Joshua trees sparsely distributed.	Good. 24 spp. of perennial plants. Large Joshua trees and fairly dense vegetation characterize the southern end of the plot. In the north, vegetation is more widely spaced.
18	Burro bush is dominant; other common shrubs include spiny hopsage, creosote bush, goldenhead and winterfat. Joshua trees present but sparse.	Good. 28 spp. of perennial plants. Shrub mixture is fairly diverse and varies throughout the plot. The plot appears to be a promising relocation spot.
19	Creosote bush is dominant; other common shrubs include burro bush, cheese bush, Cooper's golden bush, and turpentine bush. Joshua trees are present but sparse.	Good. 31 spp of perennial plants. A variety of terrain supports diverse vegetation. The presence of Cooper’s golden bush indicates past livestock grazing pressure. Cheese bush is also a pioneer species associated with disturbed sites.
20	Burrobush and creosote bush are co-dominants across the plot; allscale also common. One or 2 Joshua trees on the plot.	Fair to Poor. 20 spp. of perennial plants. Vegetation in wash and in SE corner is diverse and healthy. In all other areas, shrubs are widely spaced.
21	Burrobush is the dominant shrub; common shrubs include creosote bush, turpentine bush, cheese bush, and paper bag bush. Joshua trees and Mojave yuccas rare.	Good to excellent. 28 spp. of perennial shrubs, cacti, and grasses. Cheese bush is a pioneer species often associated with disturbed sites.
22	Burrobush and creosote bush are common shrubs, followed by allscale, indigo bush, cheese bush, and shadscale. Joshua trees are rare.	Fair to good. 27 spp. of perennial plants. Some significant washes with *Brickellia incana*, California scalebroom, sandpaper plant (*Petalonyx thurberi*).

Table 3, continued: 2009, Suitability of plots as tortoise habitat: a summary of vegetation notes relevant to potential translocation of desert tortoise.

Plot No.	Dominant and common shrubs	Quality of vegetation; initial notes on limitations or problems
23	Burro bush and creosote bush are the more common shrubs, followed by Anderson thornbush (*Lycium andersonii*), indigo bush, and goldenhead.	Good. 12 spp. of perennial plants are present.
24	Creosote bush is dominant; other common shrubs include burro bush, cheese bush, allscale and shadscale. Joshua trees and Mojave yuccas are present but sparse.	Fair to poor. 26 spp. perennial shrubs, cacti, and grasses. The plot has substantial historic disturbance from mining, bulldozing, and human habitation. Allscale and cheese bush, pioneer species often associated with disturbed sites, may be indicators of historic disturbances.
25	Burro bush is the dominant shrub; common shrubs include cheese bush, creosote bush, spiny hopsage, and winterfat. Joshua trees present but rare	Poor to fair. 30 spp. of perennial plants are present. The bajada to the north is rocky and vegetated almost exclusively by creosote bush. To S and E, valley floor has poor habitat with low, sparse, and stunted shrubs. The N and W portions support a mix of vegetation and appeared to be better habitat.
26	Creosote bush is dominant; common shrubs include burro bush, cheese bush, Nevada joint fir (*Ephedra nevadensis*), and California buckwheat (*Eriogonum fasciculatum*).	Good to Fair. 28 spp. of perennial plants. Cheese bush is a pioneer species often associated with disturbed sites.
27	Burro bush is the dominant shrub; common shrubs include creosote bush, cheese bush, indigo bush, and allscale. Joshua trees present and rare.	Good; 29 spp. of perennial plants. This plot has a good mix of suitable soils and a variety of vegetation.
28	Creosote bush is dominant; common shrubs include: burro bush, cheese bush, allscale, and Nevada joint fir. Joshua trees are present but rare.	Poor. 32 spp. of perennial plants are present Poor terrain with limited sites for tortoise burrows. The presence of saltbush is indicative of alkaline soils on at least part of the plot.
29	Creosote bush is dominant; common shrubs include burro bush, cheese bush, allscale, and Nevada joint fir.	Poor. 39 ssp. of perennial plants are present.The SE part of plot is steep, very rocky, and apparently not suitable for use by tortoises. The rest would, at best, be low density habitat. The best habitat available on this plot is highly impacted by OHV use.
30	Creosote bush and burro bush are co-dominant; less common are cheese bush, Anderson thorn bush, and peach thorn. Joshua trees and Mojave yucca are present but sparse	Fair to Poor. 21 spp. perennial plants present. Vegetation on >90% of plot consists of widely spaced creosote bush with few to no shrubs between. Vegetation between shrubs is almost exclusively *Erodium, Schismus* and *Amsinckia*.

Table 3, continued: 2009, Suitability of plots as tortoise habitat: a summary of vegetation notes relevant to potential translocation of desert tortoise.

Plot No.	Dominant and common shrubs	Quality of vegetation; initial notes on limitations or problems
32	Creosote bush is dominant; common shrubs include burro bush, cheese bush, turpentine bush, and Mojave horse brush. Mojave yucca and Joshua trees are present but rare.	Fair to Good. 32 spp. of perennial plants present. Vegetation is creosote bush and a mix of other shrubs. S plot: widely spaced creosote bush and other shrubs are sparse to rare. N plot: poor habitat. Cheese bush is a pioneer species often associated with disturbed sites.
33	Creosote bush is dominant; common shrubs include burro bush, cheese bush, turpentine bush and Nevada joint fir. Mojave yucca is sparse, Joshua trees are rare.	Good. 29 spp. perennial plants; cheese bush is a pioneer species often associated with disturbed sites.
34	Creosote bush is dominant shrub; common shrubs include: burro bush, cheese bush, Nevada joint fir, and indigobush. Joshua trees and Mojave yucca are present and rare.	Good. 25 spp. perennial plants; cheese bush is a pioneer species often associated with washes and human-related disturbed lands.
35	Creosote bush is dominant; common shrubs burro bush, cheese bush, turpentine bush, and Nevada joint fir. Joshua trees are present but rare.	Good to fair. 28 spp. of perennial plants. Cheese bush was the third most common shrub and is a pioneer species associated with washes and disturbed sites.
36	Allscale saltbush is dominant shrub; common shrubs include shadscale, apricot mallow, cheese bush, and Anderson thorn bush.	Fair to Poor. 27 spp. of perennial plants. Most of plot, except central areas, lacks suitable habitat. Saltbush species and proximity to Superior Lake playa are indicative of alkaline soil. The interior of the plot appears to be more suitable.
37	Creosote bush is dominant; common shrubs include spiny hopsage, Cooper's goldenbush, turpentine bush, and Nevada joint fir. Joshua trees present but sparse	Fair. 26 spp. perennial plants. About half the plot supports a variety of perennial shrubs with the other half supporting more open and sparse vegetation. The presence of Cooper’s golden bush and cheese bush indicates past disturbance, e.g., livestock.
38	Creosote bush is dominant; common shrubs include spiny hopsage, Cooper's goldenbush, burro bush, and Anderson thornbush. Joshua trees are present but sparse.	Fair to poor. 28 spp. of perennial plants. The presence of Cooper’s golden bush is indicative of past livestock grazing pressure.
39	Creosote bush is dominant; common plants include Cooper's goldenbush, burro bush, Anderson’s thornbush, and spiny hopsage.	Fair to poor. 25 spp. of perennial plants. The presence of Cooper’s golden bush is indicative of past livestock grazing pressure.
40	Allscale saltbush is the dominant shrub; other common shrubs are Anderson’s thorn bush, spiny hopsage, winterfat, and burrobush.	Poor. 26 spp. of perennial plants. Plot consists of low valley floor with sparse, low vegetation Saltbush is dominant on part of plot, indicating the existence of alkaline soils. The north end appears to be contiguous with more productive habitat north of the plot.

Table 3, continued: 2009, Suitability of plots as tortoise habitat: a summary of vegetation notes relevant to potential translocation of desert tortoise.

Plot No.	Dominant and common shrubs	Quality of vegetation; initial notes on limitations or problems
41	Creosote bush is the dominant shrub; common shrubs include Nevada joint fir, Cooper's goldenbush, Anderson's thornbush, and turpentine bush. Joshua trees are rare.	Fair. 23 spp of perennial shrubs and grasses. Cooper's golden bush and cheese bush are indicative of past livestock grazing pressure.
44	Creosote bush is dominant overall; other common plants include burro bush, cheese bush, Cooper's goldenbush, and Nevada joint fir.	Good to fair. 30 spp. of perennial plants. This plot consists of low hills, bajada, and valley floor, with a diverse plant assemblage. Cooper's golden bush and cheese bush indicate past livestock grazing pressure.
45	Creosote bush is the dominant shrub; common shrubs are turpentine bush, Cooper's goldenbush, burro bush, and California buckwheat.	Good to Fair. 29 spp of perennial plants. The presence of Cooper's golden bush indicates possible past livestock grazing pressure.
47	Allscale saltbush is the dominant shrub; common plants are shadscale, Anderson's thornbush, apricot mallow, and desert alyssum.	Very poor. 14 spp. of perennial plants. The majority of the plot is bare playa. The saltbush species are indicative of alkaline soils.
61	Creosote bush is dominant; common plants include burro bush, Cooper's goldenbush, cheese bush, and blackbrush. Joshua trees present and rare.	Good to Fair. 27 spp. of perennial plants. Cooper's golden bush and cheese bush are often indicative of past livestock grazing pressure. Matchweed also present.
62	Creosote bush is dominant; common plants include burro bush, Cooper's goldenbush, Anderson's thornbush and spiny hopsage. Joshua trees are present and rare.	Good to Fair. 27 spp of perennial plants. Cooper's golden bush and cheese bush, common indicators of past livestock grazing pressure, are common.
63	Creosote bush is dominant; common plants include burro bush, cheese bush, Mojave aster, and Anderson thorn bush.	Good to Fair.17 spp. The indicators of substantial historical grazing are present, e.g., cheese bush.
64	Creosote bush is dominant; common plants include: burro bush, Cooper's goldenbush, cheese bush, and spiny hopsage. Joshua trees are present but sparse.	Good to Fair. 26 spp. on uniform valley floor. The presence of Cooper's golden bush and cheese bush are indicators of past livestock grazing pressure.

Table 4. Suitability of plots as tortoise habitat: topography and surficial geology.

Plot No.	Elevations (m)	Topography: % of plot suitable for tortoises	Surficial geology: % of soils and soil surfaces suitable for easy to moderate		Notes on topography and suitability of soils for walking and digging burrows
			Walking	Digging	
1	725-774	98	100	100	The topography on 86% of the plot is alluvial fan; soils suitable for digging are on 100%. There are three significant washes and two areas with steep banked canyons (2% steep canyon walls, unsuitable for tortoises).
2	664-689	98	100	100	This plot is composed of 95% gently sloping alluvial fan with 3% large wash and 2% washlets.
3	884-946	50	55	75	This plot has varied topography including rolling hills, badlands, washes, and alluvial fan with soils suitable for digging. About 45% of the plot is unsuitable for tortoises to walk due to steep or rocky surfaces and 25% is unsuitable for digging burrows
4	738-780	98	98	100	Topography includes gently sloping alluvial fan and several washes with soils suitable throughout for burrows. About 2% is unsuitable for walking due to steep wash banks.
5	677-719	100	100	100	Topography includes gently sloping alluvial fan and several washes. Soil is suitable for burrows. About 1% of the plot has steep banks on washes, presenting minor obstacles.
6	640-792	96	96	96	Valley floor, uniform and almost flat, except the northeast corner, which is part of the Black Mtn Wilderness Area (a steep volcanic field). 4% too steep and rocky for walking and would not support burrows.
7	622-628	100	100	100	Valley floor: 100% suitable for walking or digging.
8	1085-1158	100	100	98	90% alluvial fan and 10% low rolling hills. Easy to moderate walking and digging; only 1% not suitable for digging.
9	1036-1092	30	100	30	90% low rocky slopes, moderate difficulty for walking; 60% rocky soil –moderate to difficult digging; 10% unsuitable for digging
10	604-689	100	98	100	2% steep rocky surface. The topography is primarily alluvial fan with low hills and several washes and washlets draining through the bajada. Soil is suitable for burrows. Only 2% has steep, rocky surfaces, difficult for walking.
12	768-829	100	100	100	This plot consists of gently sloping bajada with several washes. Soil is suitable for burrows.
13	625-671	100	100	100	Valley floor; soils sandy to clay-loam; 5% is a low unvegetated area.
14	655-695	100	100	100	The topography is alluvial fan ~12% in large and small washes. Soils are suitable for burrow construction and surficial geology is suitable for easy walking,

Table 4, continued. Suitability of plots as tortoise habitat: topography and surficial geology.

Plot No.	Elevations (m)	Topography: % of plot suitable for tortoises	Surficial geology: % of soils and soil surfaces suitable for easy to moderate		Notes on topography and suitability of soils for walking and digging burrows
			Walking	Digging	
16	1055-1156	97	96	95	40% alluvial fan, 57% gentle and rolling hills, and 3% very steep.
17	1030-1091	100	100	99	Primarily alluvial fan, valley floor; < 1% unsuitable for digging burrows
18	1067-1097	100	100	99	Alluvial fan/valley floor; < 1% unsuitable for digging burrows
19	1006-1177	75	85	75	10% steep slopes, 5% cliffs; 15% very rocky surfaces, unsuitable for digging burrows and very difficult for walking
20	811-853	98	98	98	Primarily valley floor with large washes; 2% volcanic field; 2% very rocky surface, unsuitable for digging burrows
21	914-945	90	90	90	90% is alluvial fan/valley floor with washes; 10% very rocky surface difficult for walking and unsuitable for digging burrows
22	747-884	97	97	97	3% large boulders; The topography on 97% of plot is alluvial fan and rolling hills suitable for walking and digging. Washes are present (12%); 3% is too steep with large volcanic boulders (unsuitable for tortoises).
23	713-786	100	100	100	The topography is 96% alluvial fan with rolling hills and small washes; soils are suitable for walking and digging.
24	1030-1168	80	92	80	Primarily alluvial fan and valley floor, low hills; 5% steep cliffs; 8% rocky, difficult for walking; 20% unsuitable for digging burrows
25	1030-1109	80	100	80	20% soil with gravel and cobbles present moderate to difficult for digging burrows
26	908-1036	85	99	85	Almost entirely low, rolling hills with minor obstacles; 1% volcanic field-difficult for walking; 15% unsuitable for digging burrows
27	835-920	70	70	90	Mixed habitat: alluvial fan, rolling hills, large and small washes: 30% very rocky surface, difficult for walking, 10% unsuitable for digging burrows
28	872-975	25	25	25	75% steep, deeply ridged “badlands” with rocky surface difficult to walk and unsuitable for digging burrows
29	884-945	75	85	65	15% volcanic field, rocky and very difficult to walk; 85% low hills with large ash deposits and minor obstacles for walking; 35% unsuitable for digging burrows
30	985-1018	100	95	98	95% alluvial fan, 5% rolling hills. 5% minor obstacles for walking; 2% unsuitable for digging burrows

Table 4, continued. Suitability of plots as tortoise habitat: topography and surficial geology

Plot No.	Elevations (m)	Topography: % of plot suitable for tortoises	Surficial geology: % of soils and soil surfaces suitable for easy to moderate		Notes on topography and suitability of soils for walking and digging burrows
			Walking	Digging	
32	1036-1177	~50	90	20	Primarily alluvial fan and rolling hills; 10% with large boulders or steep slopes making walking difficult; 70% with minor obstacles for walking; 70% gravelly to rocky loam, moderate to difficult digging; 10% unsuitable for digging burrows
33	1140-1195	90	99	90	Rolling hills (low) with occasional large boulders (1%); 1% difficult for walking; 10% unsuitable for digging burrows
34	969-1006	~80	100	65	100% low rolling hills and small washes. 98% low hills with minor obstacles for walking; 30% soil has gravel/cobble and poses moderate difficulty for digging; 5% unsuitable for digging burrows
35	945-1022	~90	100	90	65% low hills, 20% large washes and 15% alluvial fan; 65% with minor obstacles for walking; 10% unsuitable for digging burrows
36	914-924	75	75		2% associated with playa and old lake beds; 23% gravel/cobble desert pavement minor obstacles for walking; 25% unsuitable for digging burrows
37	969-1027	100	100	100	50% low rolling hills, 50% valley/alluvial fan
38	1006-1157	80	80	90	80% rolling hills and alluvial fans; 18% boulders or steep cliffs; 20% steep rocky cliffs or rocky surface very difficult for walking; 10% unsuitable for digging burrows
39	945-997	75	75	95	Primarily valley/alluvial fan and rolling hills with10% rocky hills; 25% rocky surface very difficult for walking; 5% unsuitable for digging burrows
40	945-945	99	99	99	Primarily alluvial fan and rolling hills; 1% associated with small playas; 1% rocky –navigable but unsuitable for digging burrows
41	1036-1061	95	95	95	Primarily alluvial fan and rolling hills; 5% rocky areas pose moderate difficulty for walking; 5% unsuitable for digging burrows
44	1006-1067	90	90	90	Predominantly alluvial fan with rolling hills and washlets; 10% hills with minor obstacles for walking; 10% unsuitable for digging burrows
45	1024-1109	70	70	90	90% of plot is valley and alluvial fan, 10% is steep cliffs; 30% steep and/or rocky surface very difficult for walking; 10% unsuitable for digging burrows
47	917-917	<33	100	67	67% of plot is playa; remaining is valley floor. While the soils and surface are suitable for digging and walking, tortoises do not construct burrows in playas
61	1055-1122	96	96	98	Primarily alluvial fan with 4% rolling hills and 1% washlets; 4% hills with rocks –difficult for walking; 2% unsuitable for digging burrows

Table 4, continued. Suitability of plots as tortoise habitat: topography and surficial geology

Plot No.	Elevations (m)	Topography: % of plot suitable for tortoises	Surficial geology: % of soils and soil surfaces suitable for easy to moderate		Notes on topography and suitability of soils for walking and digging burrows
			Walking	Digging	
62	1018-1205	70	80	70	85% of plot is alluvial fan and low rolling hills with washlets. 15% steep cliffs; 20% steep and/or rocky surface very difficult for walking; 30% unsuitable for digging burrows
63	939-1000	100	100	100	Uniform alluvial fan with a few small washes (1%); overall easy digging; occasional small boulders present
64	1067-1189	100	100	100	Alluvial fan with 1% rolling hills; gentle slopes and good digging

Table 5. A summary of anthropogenic impacts recorded on transects from 45 one-square mile plots in the Western Expansion Translocation Area, in 2009. All sign counts have been converted to sign per kilometer of transect.

Types of anthropogenic impacts	Number of impacts/km of plot by plot identification number									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Cattle scat	2.09	4.27	1.84	7.09	8.00	37.97	111.41	0.57	0.00	0.64
General garbage	4.64	46.18	0.23	2.27	19.90	10.16	22.50	3.33	5.75	12.27
Balloons	0.82	0.82	0.46	0.73	0.82	0.31	0.47	0.69	0.69	0.82
Firearm casings/targets	0.27	0.00	0.11	0.09	11.82	1.25	0.31	1.15	0.46	1.09
People or footprints	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00
Paved roads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dirt roads	0.00	1.18	0.69	0.00	1.82	1.25	0.78	1.61	1.84	1.18
Recent vehicle tracks	0.55	1.00	1.83	0.55	2.09	4.22	0.00	0.00	0.34	1.73
Old vehicle tracks	2.27	1.82	3.20	2.91	2.45	25.31	5.00	8.40	15.29	1.64
Motorcycle trails	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.23	1.15	0.00
Camp sites, fires	0.00	0.00	0.00	0.00	0.09	0.16	0.00	0.11	0.00	0.09
Fences	0.00	0.00	0.00	0.00	0.00	0.47	0.16	0.00	0.00	0.00
Mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	**2.18**
Sign of dogs	0.00	0.00	0.00	0.00	0.00	0.16	2.66	0.00	0.00	0.00
Survey markers, signs, posts, cairns	0.45	0.64	0.00	0.18	0.91	0.31	0.31	0.34	1.26	0.64
Other (see below)	OR			OR		U, W	V, W, H			D= 0.36
Total	11.09	55.91	8.70	13.82	47.9	81.57	143.60	16.43	27.50	22.64

Plot 1: 1 4-wheel drive road; close proximity to Hinkley; history of livestock grazing
Plot 2: 4.8 km of road on 3 boundaries
Plot 6: Human impacts are severe from grazing and vehicles; almost no shrubs are present. Vehicle use is high on open dirt roads and unauthorized cross-country routes; plot bordered on W by active agricultural field and ranch; old cattle watering site on plot. This is not an appropriate site to translocate tortoises.
Plot 7: Dirt roads bound 2.5 sides of the section, as well as fence on E side. One deep, unfenced hole on W boundary. Wilderness to the N. E edge of plot is adjacent to private property with agricultural fields, buildings, and dog kennels with >100 dogs. Six old cattle trails on plot; pulled up Wilderness sign.
Plot 8: pinflags, possible associated with rare plants, along N boundary.
Plot 9: Substantial evidence (craters and pits) of current and historic placer mining for gold; abandoned structures and grave N of plot. Most of plot consists of hills with rocky soils, which are light to moderately impacted by cross-country motorcycle use. People observed using the area for mining and OHV activities during survey and at other times.
Plot 10: One area denuded by vehicles, and three other denuded areas; significant general garbage near old mine excavation off plot, E edge, including old trucks, 21 tires, denuded areas.

OR = ordnance	V = vandalism
U = utility corridor	H = hazards, such as unfenced mining shafts
W = boundary with wilderness, or within wilderness	D = denuded, vehicles B = berms

Table 5. A summary of anthropogenic impacts recorded on transects from 45 one-square mile plots in the Western Expansion Translocation Area, in 2009. All sign counts have been converted to sign per kilometer of transect.

Types of anthropogenic impacts	Number of impacts/km of plot by plot identification number									
	12	**13**	**14**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Cattle scat, bones	0.82	0.34	0.27	0.00	0.00	0.34	0.11	1.49	0.23	0.00
General garbage	2.82	2.18	3.55	4.25	2.99	10.11	4.83	1.84	1.15	1.03
Balloons	0.73	0.57	1.09	0.23	0.46	0.69	0.46	0.69	1.15	0.46
Firearm casings/targets	0.36	0.23	3.55	0.80	0.34	0.34	1.03	0.69	0.00	1.03
People or footprints	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paved roads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dirt roads	0.55	1.03	0.73	1.61	0.91	2.53	0.80	0.34	0.46	0.57
Recent vehicle tracks	1.09	3.33	1.55	0.46	0.00	0.34	1.26	0.46	0.34	0.46
Old vehicle tracks	1.73	7.7	7.91	12.64	14.71	3.22	6.89	14.25	14.71	8.28
Motorcycle trails	0.00	0.11	0.00	0.46	0.80	0.34	0.46	0.34	0.11	0.46
Camp sites, fires	0.00	0.00	0.18	0.11	0.00	0.11	0.11	0.00	0.00	0.00
Fences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mining	0.00	0.00	0.00	0.80	0.11	0.92	0.22	0.00	0.00	0.00
Signs of dogs	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Survey markers, signs, posts, benchmarks	0.27	0.57	0.36	0.46	0.34	0.23	0.00	0.69	0.23	0.00
Other (see below)	OR		OR	D, H,		B=0.11	S			
Total	8.37	16.06	19.28	21.82	20.66	19.28	16.17	20.79	18.38	12.29

Plot 14: ~1.3 km of 4-strand barbed wire fence parallel and inside E boundary of plot; one dirt road cuts completely through the plot and another partially cuts through the plot.
Plot 16: Human impacts are high: several roads through the plot, unauthorized cross-country motorcycle use, several mining sites and an unfenced vertical shaft, denuded areas, and one shack. Abandoned shack S of plot.
Plot 17: High-bermed and high speed Copper City Road crosses north end of plot; scrapes, old encampment outside and adjacent to north boundary; mining claims; old cross-country motorcycle tracks.
Plot 18: Old cattle watering site N of N boundary, abandoned structure several hundred meters NW of N plot corner; inhabited residence ~500 m W; moderate impacts due to small-scale mines with associated roads and trash. Abandoned dirt road and berm are present.
Plot 19: Collapsed shack with large amount of trash (in addition to tally); also 40 m E is 2 x 2 x 5 m deep shaft fenced on 3 sides; additional associated trash. Plot currently is used as camp and shooting area. A cross-country motorcycle trail following an illegal route, marked by orange flagging is present also.
Plot 22: Closed road with vehicle tracks; 4 motorcycle trails.

OR = ordnance	D = denuded
B = Berms	H = hazards, such as unfenced mining shafts
S = structures	

Table 5, continued. A summary of anthropogenic impacts recorded on transects from 45 one-square mile plots in the Western Expansion Translocation Area, in 2009. All sign counts have been converted to sign per kilometer of transect.

Types of anthropogenic impacts	Number of impacts/km of plot by plot identification number									
	23	24	25	26	27	28	29	30	32	33
Cattle scat or bones	0.00	0.00	0.11	0.00	0.00	0.41	0.34	0.00	0.00	0.00
General garbage	1.82	1.49	5.63	8.74	0.11	0.14	2.87	1.95	3.33	2.29
Balloons	1.64	0.23	0.34	0.69	0.46	0.41	0.34	0.92	0.11	0.57
Firearm casings/targets	0.82	1.49	1.38	6.09	0.57	0.41	0.57	0.69	0.23	0.69
People or footprints	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00
Paved roads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dirt roads	0.00	0.69	1.03	1.84	0.46	0.00	0.46	1.38	0.23	0.69
Recent vehicle tracks	0.00	0.80	1.26	0.69	1.15	2.05	4.71	0.46	0.11	0.00
Old vehicle tracks	3.09	11.38	13.22	8.39	1.61	10.96	15.98	14.02	2.41	5.86
Motorcycle trails	0.00	0.34	0.34	0.00	0.00	0.00	0.00	0.23	0.11	0.34
Camp sites, fires	0.00	0.34	0.57	0.23	0.11	0.00	0.00	0.00	0.00	0.11
Fences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mining	0.00	0.34	0.46	0.23	0.00	0.00	0.00	0.46	0.23	1.03
Signs of dogs	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
Survey markers, signs, posts	0.00	1.72	0.09	0.46	0.00	0.14	0.00	0.46	0.23	0.69
Other (see legend below)	OR		S= 0.23	Cu= 0.34			V= 0.11	D= 0.80; Car; H		aban. road = 0.34
Total	7.37	18.82	24.66	27.70	5.04	14.52	25.38	21.37	6.99	12.61

Plot 24: Extensive mining activity in central part of plot: many 2-3 m trenches, craters, 2 vertical shafts, small scraped tailing piles; moderate level of cross-country motorcycle travel, several minor roads.
Plot 25: High level of human impacts-Copper City road with high berm runs through plot; also several dirt roads cross the plot; significant cross-country motorcycle use; 4 long-term camps and shooting areas, some associated with small-scale mining; debris fields and 2 collapsed structures.
Plot 26: Springs (not on topographic map), weather station, trash associated with hunters and upslope mining. Unlike other plots, all firearm casings are shotgun shells; Native American stone rings (?).
Plot 27: Heavy vehicle use on and off road, concentrations in N and W part of plot where steep hill and washes occur.
Plot 28: Most of plot is too rugged to access easily; all motorcycle tracks in largest wash.
Plot 29: Habitat includes volcanic field in Black Mountain Wilderness and semi-badland topography. Vehicle tracks primarily associated with washes; some cross-country travel too; upland game guzzler on plot; vandalism = "closed" sign hidden in shrub.
Plot 30: BLM road stake at 500588E, 3893109N (Open route 7292) is placed in area with tracks or no roads (7292 is an actual road across the plot). One ORV camp with firewood and shooting use is N of transect; apparent stolen car with belongings abandoned at 501574E, 3893471N, CA license 1LJA319. Sandy pit used at motorcycle play area. Hazard: well casing that is extremely deep.
Plot 32: Closed dirt road with motorcycle tracks (2 observations, different transects).

OR = ordnance	D = denuded
B = Berms	H = hazards, such as unfenced mining shafts
S = structures	Cu = cultural resources

Table 5, continued. A summary of anthropogenic impacts recorded on transects from 45 one-square mile plots in the Western Expansion Translocation Area, in 2009. All sign counts have been converted to sign per kilometer of transect.

Types of anthropogenic impacts	Number of impacts/km of plot by plot identification number									
	34	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**44**	**45**
Cattle scat	0.92	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General garbage	1.15	0.46	3.28	0.46	0.00	0.34	0.78	1.49	1.03	0.57
Balloons	0.34	0.46	0.63	0.11	0.34	0.11	0.47	0.69	0.34	0.23
Firearm casings/targets	0.57	0.57	1.25	0.57	0.68	0.92	1.09	0.34	2.07	0.57
People or footprints	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00
Paved roads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
Dirt roads	0.00	0.00	0.63	0.34	0.00	0.11	0.31	0.92	0.23	0.00
Recent vehicle tracks	0.00	1.15	0.47	0.34	1.03	0.57	0.00	2.41	0.00	0.23
Old vehicle tracks	5.17	8.39	1.72	0.11	0.00	2.18	0.00	28.05	1.61	0.11
Motorcycle trails	0.00	0.23	0.0	0.00	0.46	0.00	0.00	1.95	0.00	0.00
Evidence of fire/camp sites	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Fences	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Signs of domestic dogs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Survey markers, signs, posts	0.34	0.34	0.47	0.00	0.00	0.00	0.16	0.23	0.57	0.00
Other (see legend below)		Cu	V= 0.16					V = 0.57		
Total	8.49	11.71	8.61	2.04	2.51	4.23	2.81	37.22	5.85	1.71

Plot 36: 2 pulled up “Open Route” signs 20 m from a road, under a shrub, 490475E, 3896784N
Plot 38: 16 vehicle tires in 3 groups of 10, 3, and 3 have been bolted together and dragged to SE corner of plot, just off transect line.
Plot 41: Shrine consisting of upright motorcycle with other ORV parts scattered about; ~40 plaques commemorating deceased ORV racers, including American flag (471104E, 3897032N); 4 groups totaling 16 people visited the shrine. Vandalism: 4 red fiberglass stakes and one T-post used to designate “closed” vehicle routes had been pulled and stashed under a creosote at 471222E 3897024N.
Plot 44: Evidence of burn in SE edge of plot.

Cu = Cultural artifacts	V = vandalism

Table 5, continued. A summary of anthropogenic impacts recorded on transects from 45 one-square mile plots in the Western Expansion Translocation Area, in 2009. All sign counts have been converted to sign per kilometer of transect.

Types of anthropogenic Impacts	No. of impacts/km of plot by plot identification number				
	47	61	62	63	64
Cattle scat	0.00	8.85	6.21	1.41	1.15
General garbage	38.49	0.57	1.72	3.59	0.92
Balloons	1.69	0.46	0.23	0.63	0.57
Firearm casings/targets	2.26	1.61	3.22	0.63	0.92
People or footprints	0.00	0.00	0.00	0.00	0.00
Paved roads	0.00	0.00	0.00	0.00	0.00
Dirt roads	0.94	0.57	1.38	0.63	0.34
Recent vehicle tracks	0.38	0.00	0.46	0.00	0.92
Old vehicle tracks	5.85	2.41	1.03	0.63	2.76
Motorcycle trails	0.00	0.00	0.00	0.00	0.00
Evidence of fire/camp sites	0.00	0.00	0.00	0.00	0.00
Fences	0.00	0.23	0.11	0.00	0.00
Mining pits, excavation	0.00	0.00	0.46	0.16	0.46
Signs of domestic dogs	0.00	0.00	0.00	0.00	0.00
Survey markers, signs, posts	0.38	0.00	0.57	0.00	0.00
Other			Cu= 2 sites	OR	0.57 burro scat
Total	49.99	14.70	15.39	7.68	8.61

Plot 47: Old habitation site at NE corner with substantial trash. Substantial trash also associated with roads. Occupied residence about 500 m to the N of plot. Two large trash sites with > 50 pieces each.
Plot 63: possible unexploded ordnance at UTMs 466526E, 3913125N; boundary fence of NAWS is parallel to and almost adjacent to north edge of plot.
Plot 64. boundary fence of NAWS parallels northern plot boundary; walked 10 m south of fence to avoid under-representation of garbage and impacts associated with fence.

Cu = cultural artifacts OR = ordnance

Table 6. A summary of tortoise sign found on 47 plots with complete coverage during 2009. Total sign includes live tortoises and all other sign.

Plot #	Transect distance (km)	Total sign/km	Live tortoises/ km	Number of tortoises and tortoise sign					
				Live	Dead	Active burrows	Inactive burrows	Scats	Other
1	263.6	2.84	0.046	12	60	20	126	513	18
2	255.0	3.13	0.051	13	30	29	231	494	12
3	228.3	2.92	0.092	21	78	61	151	349	6
4	260.9	2.62	0.073	19	62	32	271	289	11
5	251.2	0.87	0.012	3	23	14	71	106	1
6	185.6	0.07	0.000	0	5	0	5	3	0
7	189.4	0.03	0.000	0	2	0	0	4	0
8	259.2	0.12	0.004	1	21	1	7	1	0
9	252.3	1.37	0.039	10	77	18	109	132	0
10	253.6	1.98	0.032	8	82	48	125	238	4
12	135.6	7.30	0.155	21	35	97	267	555	15
13	268.8	0.18	0.004	1	34	0	13	0	0
14	259.2	0.79	0.008	2	59	8	53	83	1
16	254.5	0.62	0.024	6	23	13	85	28	4
17	187.7	0.35	0.000	0	35	0	30	0	0
18	262.9	1.03	0.034	9	12	26	116	104	3
19	260.7	0.49	0.019	5	52	9	17	44	1
20	241.3	3.29	0.091	22	78	67	216	407	5
21	260.0	1.48	0.038	11	87	40	135	111	1
22	259.2	0.97	0.042	2	84	12	49	103	2
23	257.7	0.50	0.004	1	36	3	41	48	0
24	260.5	0.78	0.058	15	40	40	64	34	11
25	259.2	0.34	0.019	5	14	10	45	11	3
26	254.4	0.48	0.008	2	4	12	50	53	2
27	235.6	0.55	0.017	4	56	12	23	34	0
28	*242.4	0.43	0.000	0	72	0	12	20	0
29	235.6	0.34	0.000	0	44	0	11	22	2
30	259.0	0.04	0.000	0	5	0	4	1	0
32	256.0	0.53	0.027	7	30	13	25	60	1
33	259.2	0.23	0.008	2	19	1	18	21	0
34	261.8	0.38	0.008	2	18	5	69	5	0
35	259.9	0.17	0.000	0	30	1	10	3	0
36	252.0	1.09	0.059	15	51	30	84	89	6
37	258.6	0.19	0.008	2	6	4	28	9	1
38	251.2	0.24	0.008	2	20	8	14	16	1
39	251.2	0.79	0.039	10	9	20	80	79	1
40	260.2	0.35	0.027	7	15	18	33	15	4
41	258.3	0.02	0.000	0	1	0	4	0	0
42	260.5	0.23	0.008	2	6	4	42	2	3
44	259.2	0.30	0.012	3	13	10	45	5	3
45	260.9	0.22	0.015	4	10	9	24	7	3
46	257.0	0.34	0.027	7	15	22	31	12	0
47	78.10	0.55	0.013	1	0	6	6	30	0
61	257.7	0.03	0.000	0	0	0	9	0	0
62	259.2	0.32	0.01	5	2	11	60	6	0
63	260.00	0.85	0.019	5	1	22	144	49	1
64	233.5	0.59	0.000	0	1	3	134	1	0

* Total transect distance was estimated for plot 28 (using grand mean average of transect distances). High ridges, steep gullies, and dangerous slopes required that coverage in parts of the plot be completed by walking ridges and washes rather than standard transect lines.

Table 7. Size-age class summary live desert tortoises on 37 plots receiving complete coverage in 2009. Ten other plots (plots 6, 7, 17, 28, 29, 30, 35, 41, 61, 64) also received a complete coverage but did not have live tortoises. All tortoises in this table received health evaluations unless noted as unprocessed.

Plot no.	Tortoises with completed health evaluations					Unprocessed tortoises		
	Adult males	Sub adult males	Adult females	Sub adult females	Total	Immature or juvenile tortoises	Adults: size and sex unknown	Total no. tortoises/ plot
1	5		6		**11**		1	**12**
2	6	1	3		**10**		3	**13**
3	16		4		**20**		1	**21**
4	8	1	9	1	**19**			**19**
5	1		2		**3**			**3**
8					**0**	1 immature		**1**
9	5	1	2	1	**9**		1	**10**
10	3	1	3	1	**8**			**8**
12	10	1	7	2	**20**		1	**21**
13					**0**		1	**1**
14					**0**	1 immature	1	**2**
16	3		1	1	**5**		1	**6**
18	5		3		**8**		1	**9**
19	2	1	1	1	**5**			**5**
20	14		5	1	**20**		2	**22**
21	5		2	3	**10**		1	**11**
22			2		**2**			**2**
23	1				**1**			**1**
24	6	3	3	1	**13**		2	**15**
25	2		3		**5**			**5**
26			1		**1**	1 immature		**2**
27	2		1		**3**	1 immature		**4**
32	1		5	1	**7**			**7**
33	2				**2**			**2**
34	1				**1**		1	**2**
36	7	1	5		**13**	1 immature, 1 juvenile		**15**
37	1		1		**2**			**2**
38	2				**2**			**2**
39	4		4	1	**9**		1	**10**
40	3		3		**6**	1 immature		**7**
42	1		1		**2**			**2**
44	1	1		1	**3**			**3**
45	2		1		**3**	1 immature		**4**
46	3	1	2		**6**	1 immature		**7**
47	1				**1**			**1**
62	2	1	1	1	**5**			**5**
63	3		2		**5**			**5**

* Note: Health evaluation forms have been completed for these individuals unless specified as unprocessed

Table 8, Tortoises with suspect or positive ELISA tests for *Mycoplasma agassizii* or *M. testudineum* or both species of *Mycoplasma,* with notes on clinical signs of upper respiratory tract disease.

Plot no.	Tort ID	Age	Size (mm)	Sex	ELISA status	Clinical signs of upper respiratory tract disease
1	7321	Adult	272	M	*M. agassizii* **positive**	MILD: L nare 10% occluded; mild crusts on palpebrae and periocular area; mild discharge in fornix of both eyes; mild peeling of scales on upper palpebrae of both eyes
1	7323	Adult	219	M	*M. agassizii* **suspect**	MODERATE to SEVERE: R nare 10% occluded; moderate to severe edema and crusts on upper and lower palpebrae of both eyes; moderate to severe wet discharge on lower palpebrae, mild peeling of scales of upper periocular area
1	7324	Adult	255	F	*M. agassizii* **positive** *M. testudineum* **positive**	MODERATE to SEVERE: Dried exudate in nares (moderate to severe); R and L nares 20% and 80% occluded respectively; A small amount of cloudy white particulates flushed from nares during lavage; mild edema and crusts of palpebrae and periocular area; mild peeling of scales in periocular area of both eyes, R eye 10% closed; moderate mucus present on R globe; conjunctiva 10% exposed in both eyes
2	7283	Adult	299	M	*M. agassizii* **suspect**	MODERATE. Partial (moderate) occlusion of L nare (with dried dirt -no % given); mild to severe crusts on palpebrae and periocular area of both eyes; mild wet discharge from L eye; mild peeling of scales on upper periocular area of R eye; conjunctiva 5% exposed in R eye
2	7284	Adult	262	F	*M. agassizii* **positive**	MILD to MODERATE: Mild to moderate edema (mostly of L eye); mild discharge at fornix of R eye; mild peeling of scales on lower periocular area of both eyes; R eye 40% closed; L eye 35% closed;
2	7285	Adult	288	M	*M. agassizii* **suspect**	MODERATE: Mild occlusion of L nare (10%- with dirt); moderate to severe crusts on palpebrae of both eyes; moderate dry discharge from R eye; mild peeling of scales on lower periocular area of L eye; R eye 50% closed; L eye 25% closed and covered with dirt (conjunctiva condition unclear)
3	7243	Adult	304	M	*M. agassizii* **suspect**	MILD to MODERATE: Mild discoloration of palpebrae of both eyes; mild edema in palpebrae and periocular area of both eyes; mild to moderate crusts of palpebrae and periocular area in both eyes; mild wet discharge from L eye, mild to moderate peeling of scales in palpebrae and periocular area of both eyes; conjunctiva 5% exposed in both eyes
3	7252	Adult	260	M	*M. agassizii* **positive**	MILD: Mild dried, yellow exudate in both nares; mild edema of periocular area of both eyes; mild to moderate crusts on palpebrae and periocular area of both eyes; mild peeling of scales in periocular area of both eyes; conjunctiva 5% exposed in both eyes
3	7253	Adult	243	M	*M. agassizii* **positive**	MODERATE to SEVERE: R and L nares 60% and 10% occluded, respectively; mild edema of palpebrae of both eyes; mild to moderate crusts on palpebrae and periocular area of both eyes; mild wet discharge from L eye, mild peeling of scales on palpebrae and periocular area of both eyes; R eyes mildly swollen; conjunctiva 5% exposed in L eye
4	7271	Adult	265	M	*M. agassizii* **suspect**	MILD: R and L nares both 5% occluded; mild discoloration of lower palpebrae of both eyes and upper palpebrae of L eye; mild edema of periocular area of both eyes; mild to moderate crusts in both eyes; mild wet discharge at fornix of both eyes; mild peeling of scales on periocular area of both eyes; R eye 50% closed

Table 8, continued. Tortoises with suspect or positive ELISA tests for *Mycoplasma agassizii* or *M. testudineum* or both species of *Mycoplasma,* with notes on clinical signs of upper respiratory tract disease.

Plot no.	**Tort ID**	**Age**	**Size (mm)**	**Sex**	**ELISA status**	**Clinical signs of upper respiratory tract disease**
4	7273	Adult	250	M	*M. agassizii* **positive**	MILD: R and L nares both 5% occluded; mild discoloration of upper palpebrae of L eye; mild edema of L eye; mild to moderate crusts in both eyes; mild wet discharge in fornix of L eye; mild peeling of scales on lower periocular area of both eyes; R and L eyes both 5% closed; conjunctiva 5% exposed in L eye (R not visible)
4	7311	Adult	274	M	*M. agassizii* **suspect**	MILD: mild peeling of scales in periocular area of L eye; R eye 40% closed; L eye 40% closed; conjunctiva 2% exposed in R eye and 5% exposed in L eye
4	7312	Adult	250	F	*M. agassizii* **positive**	MODERATE: Mild wet exudate dripping from R nare; mild clear wet exudate on beak; glaze of exudate partially occluding both nares; mild discoloration of upper and lower palpebrae of both eyes; mild to moderate edema (upper periocular area) and crusts on lower palpebrae of both eyes; mild dried discharge at fornix of R eye; mild peeling of scales in periocular area of both eyes; R eye 15% closed; L eye 20% closed; moderate dried and wet mucus present on R globe; conjunctiva 10% exposed in R eye
4	7313	Adult	238	F	*M. agassizii* **positive**	MILD: L nare 10% occluded; mild edema on upper palpebrae of both eyes; mild to moderate crusts on palpebrae of both eyes; mild amount of peeling scales at fornix of L eye
21	7206	Adult	240	M	*M. agassizii* **positive**	MILD: R nare 50% occluded (by dirt); mild edema of upper palpebrae of R eye; crusts of palpebrae and periocular areas in L eye; mild peeling of scales on palpebrae and periocular areas of both eyes; conjunctiva 5% exposed in both eyes
21	7207	Adult	276	M	*M. agassizii* **positive**	MILD: R and L nares 10% and 30% occluded respectively; mild edema and crusts of palpebrae and periocular area of both eyes; mild peeling of scales in periocular area of both eyes
32	7192	Adult	204	F	*M. agassizii* **positive**	MILD: R and L nares 10% and 5% occluded respectively; mild edema of upper palpebrae of both eyes; mild crusts on lower palpebrae of both eyes
39	7126	Adult	265	M	*M. agassizii* **positive**	MILD: mild edema of lower palpebrae and mild to moderate edema of lower periocular area of both eyes; mild crusts of palpebrae and periocular areas in both eyes; mild peeling of scales on palpebrae and periocular area of both eyes; both eyes partially closed (30%R, 20% L); conjunctiva 5% exposed in R eye, 10% in L eye
39	7143	Adult	253	F	*M. agassizii* **suspect**	MILD: R and L nares 10% and 15% occluded, respectively; mild edema and crusts of upper palpebrae of both eyes; mild dried discharge of both eyes; mucus present on globe of R eye
40	7124	Adult	210	F	*M. agassizii* **positive**	MODERATE to SEVERE: R nare 10%; mild discoloration of R eye and periocular area; mild to severe edema of palpebrae and periocular area of both eyes; mild to moderate crusts on palpebrae and periocular areas of both eyes; mild to moderate wet discharge from L eye, mild peeling of scales on periocular area of both eyes; R eyes partially closed (5%); mucus present on globe of both eyes; conjunctiva 5% exposed in R eye
63	7091	Adult	209	M	*M. agassizii* **suspect**	MILD to MODERATE: partial occlusion of the R nare (20%) and L nare (5%). Mild to moderate discoloration and edema of palpebrae of both eyes; mild crusts on palpebrae and moderate crusts on periocular areas of both eyes; moderate discharge at fornix of both eyes, also mucus. Eyes 25% closed; mild lateral swelling of eyes, and mild peeling of scales on R upper periocular area.

Table 9. Tortoises with **negative** ELISA tests for *Mycoplasma agassizii* and *M. testudineum,* but which exhibit multiple clinical signs of upper respiratory tract disease.

Plot no.	Tort ID	Age	Size (mm)	Sex	ELISA status	Clinical signs of upper respiratory tract disease
1	7318	Adult	252	F	negative	MODERATE to SEVERE: Nares occluded (90%R:50%L); both nares wet (moderate to severe); mild to severe edema of palpebrae of both eyes and mild edema of upper periocular area of L eye; mild to moderate crusts on palpebrae and periocular area of both eyes; mild wet discharge from both eyes; mucus present on globe of both eyes
1	7324	Adult	255	F	negative	MODERATE to SEVERE: Nares occluded (20%R:80%L); both nares damp (moderate to severe); mild to severe edema of palpebrae of both eyes and mild edema of upper periocular of L eye; mild to moderate crusts on palpebrae and periocular area of both eyes; mild wet discharge from both eyes; mucus present on globe of both eyes
1	7325	Adult	247	F	negative	MODERATE: L nare is 20% occluded and has moderate amount of dried exudate; mild edema of R eye upper palpebrae and periocular area and mild edema of L eye upper palpebrae; mild to moderate crusts on palpebrae and periocular area of both eyes; mild discharge from both eyes; L eye has mild peeling scales overall; eyes partially closed (50%R, 20%L); both eyes are dull and cloudy with a filmy covering; conjunctiva 2% exposed in L eye
4	7279	Adult	214	M	negative	MODERATE: Nares occluded (10%R:5%L); mild edema of palpebrae of both eyes and mild to severe crusts on palpebrae and periocular area of both; R eye severely swollen and partially closed with moderate wet discharge; conjunctiva exposed 40% in R eye and 10% in L eye
4	7310	Adult	245	F	negative	MODERATE: Nares occluded (10%R:30%L); mild crusts on lower palpebrae of R eye and mild to severe crusts on palpebrae and periocular area of L eye; R eye has moderate peeling scales overall and L eye has mild peeling scales on lower palpebrae
16	7136	Adult	290	M	negative	MODERATE to SEVERE: L nare 75% occluded; mild to moderate edema of palpebrae and periocular area of both eyes; mild crusts on palpebrae and moderate to severe crusts on periocular area of both eyes; mild wet discharge from both eyes, mild peeling of scales of upper periocular area on both eyes; conjunctiva 5% exposed in both eyes
45	7098	Adult	316	M	negative	MODERATE: Mild to severe edema and crusts on palpebrae and periocular area of both eyes; mild to moderate discharge from fornix of both eyes; L eye is moderately sunken; eyes partially closed (10%R:70%L); conjunctiva 5% exposed in R eye and L eye is obscured by crusts
46	7099	Adult	255	M	negative	MODERATE: L nare 20% occluded; mild to moderate edema and crusts of palpebrae and perioculars of both eyes; mild dry discharge from both eyes, mild peeling of scales of periocular area on both eyes; R eye mildly swollen; both eyes 20% closed and have mucus present on globes; conjunctiva exposed in both eyes (40%R:10%L)
63	7072	Adult	244	M	negative	MODERATE: Mild to moderate edema of palpebrae and periocular area of both eyes; mild to severe crusts on palpebrae and periocular area of both eyes; mild to moderate discharge from both eyes; R eye is moderately sunken; both eyes 20% closed; mucus present on globes of both eyes; R eye cloudy
63	7073	Adult	210	F	negative	MODERATE: R nare 20% occluded; mild edema of palpebrae and periocular area of both eyes; moderate to severe crusts on palpebrae/periocular area of both eyes; mild dry discharge from both eyes, mild peeling of scales of upper periocular area on both eyes; conjunctiva 20% exposed in both eyes

Table 10. Tortoises with signs of severe trauma from predators.

Plot no.	Tort ID	Age	Size (mm)	Sex	Trauma rating on gular horn			Signs of severe trauma
					Distribution	Severity	Chronicity	
1	7315	Adult	227	F	severe	moderate	Injuries healed or healing	Predator trauma to 25% of plastron including gular (100%); ≥ 9 marginal scutes have chips
1	7318	Adult	252	F	severe	severe	Injuries healed or healing	Most of gular chewed off
2	7283	Adult	299	M	severe	severe	Injuries healed or healing	Severe trauma from predator to entire gular, bone/scute replacement underway ≥ 5 marginal scutes
2	7284	Adult	262	F	severe	severe	Injuries healed or healing	Entire gular chewed off, 25% of humeral scutes chewed; ≥ 4 marginal scutes have chips
2	7285	Adult	288	M	severe	severe	Injuries healed or healing	Entire gular chewed off, ≥ 3 marginal scutes have chips
2	7286	Adult	305	M	severe	severe	Injuries healed or healing	Entire gular chewed off, ≥4 marginal scutes have chips
2	7317	Adult	284	M	moderate	severe	Injuries healed or healing	Trauma from predator on 90% of gular (bone/ scute replacement), carapace and plastron have 4 patches of trauma, ≥ 9 marginal scutes have chips
3	7656	Adult	211	F	severe	severe	Injuries healed or healing	Extensive trauma from predator on entire gular horn, 30% of both humeral scutes, and ≥ 14 other locations on shell; tooth marks present
4	7311	Adult	274	M	severe	severe	Injuries healed or healing	Trauma from predator to gular horn (completely chewed off), to plastron including both humeral scutes and 4 other patches with damaged scutes, ≥ 8 marginal scutes with trauma from chewing
5	7296	Adult	287	M	severe	severe	Injuries healed or healing	Extensive trauma from predator on gular (it is missing) and humeral scutes (25% with bone/scute replacement); trauma to plastron includes claw/gnash marks and ~ 4 sites with chewing; ≥ 15 marginal scutes have damage from chewing; forelimbs and foot pads have missing scales from chewing
9	7240	Adult	238	F	moderate	severe	Injuries healed or healing	Tip of gular horn chewed away on R side, numerous other small chips in laminae that appear to be from chewing
12	7169	Adult	238	F	mild	severe	Injuries healed or healing	Tips of both gular horns broken or chewed off

Table 10, continued. Tortoises with signs of severe trauma from predators.

Plot no.	Tort ID	Age	Size (mm)	Sex	Trauma rating on gular horn			Signs of severe trauma
					Distrubution	Severity	Chronicity	
12	7225	Adult	237	F	severe	severe	Injuries healed or healing	Tips of both gular horns chewed off, chipping and trauma from chewing on ≥ 5 marginal scutes
12	7228	Adult	250	M	severe	moderate	Injuries healed or healing	Extensive trauma from predator on gular and humeral scutes, plastron, carapace and ≥13 marginal scutes, forelimbs and foot pads also appear to have missing scales.
16	7136	Adult	290	M	severe	severe	Injuries healed or healing	Entire gular chewed off; predator trauma to 11 marginal scutes; 5 patches of bone and scute replacement on carapace and on plastron (10 total)
16	7139	Young adult	192	F	moderate	moderate	Injuries healed or healing	Trauma from predator to L gular horn (edge missing); predator-caused chips and bone/scute replacement on 16 marginal scutes, 15 sites on carapace and 10 patches on plastron
16	7162	Adult	237	F	severe	severe	Injuries healed or healing	Predator trauma: 100% of gular consists of replaced scute and bone; gular is deformed and leading edges are missing; 13 marginal scutes have bone/scute replacement and 13 additional patchs are visible on plastron
18	7138	Adult	248	F	moderate	moderate	Injuries healed or healing	Predator trauma on entire gular (most is missing); 6 marginal scutes have chips; 25% of humeral scutes have damage from chewing and gnawing
18	7156	Adult	224	M	moderate	severe	Injuries healed or healing	Tips of both gular horns have been chewed off, 3 seams of marginal scutes have bone/scute replacement
19	7195	Young adult	198	M	severe	moderate	Injuries healed or healing	Extensive trauma to gular horn from predator
20	7194	Adult	258	M	moderate	severe	Injuries healed or healing	Gnawing marks on both sides of gular horn
20	7173	Adult	245	F	moderate	severe	Injuries healed or healing	Predator damage to entire gular horn, missing layers of laminae and tip missing
21	7205	Young adult	199	F	severe	severe	Injuries healed or healing	Severe trauma to tips of both gular horns from predator
22	7090	Adult	220	F	severe	severe	Injuries healed or healing	Predator trauma to 100% of gular horn, tips missing; bone/scute replacement underway on 25% of humeral scutes, 4 marginal scutes and 4 patches on carapace; plastron has 5 additional small chips or tooth marks

Table 10, continued. Tortoises with signs of severe trauma from predators.

Plot no.	Tort ID	Age	Size (mm)	Sex	Trauma rating on gular horn			Signs of severe trauma
					Distribution	Severity	Chronicity	
22	7176	Adult	220	F	moderate	moderate	Injuries healed or healing	Predator trauma to >25% of gular horn, 50% of L horn is missing; patches of bone/scute replacement are visible on 4 marginal scutes, 4 scutes of carapace and 2 sites on plastron
24	7056	Young adult	200	F	severe	severe	Injuries healed or healing	Predator trauma to 50% of gular horn, 14 marginal scutes have chips/bone scute replacement, 22 additional locations with chips or bone/scute replacement on carapace and plastron
24	7087	Adult	254	M	severe	severe	Injuries healed or healing	Predator trauma to 60% of gular horn and humeral scutes; 3 additional locations have chips, forelimbs have a few damaged scales
24	7131	Adult	219	F	severe	moderate	Injuries healed or healing	Predator trauma to 100% of gular horn, tips chewed off; chips and bone/scute replacement on 9 marginal scutes, 7 locations on plastron and carapace
25	7152	Adult	226	F	severe	severe	Injuries healed or healing	Predator trauma to 100% of gular horn and tip of L horn is missing; severely chewed areas covers 25% of humeral scutes and 12 marginal scutes
25	7153	Adult	256	M	severe	severe	Injuries healed or healing	Predator trauma to 50% of gular horn, tip of R horn chewed off; trauma to 6 marginal scutes from chewing; 3 sites on carapace, 4 patches of bone/ scute replacement on humeral and femoral scutes
26	7177	Adult	236	F	severe	severe	Injuries healed or healing	Predator trauma to 100% of gular horn (anterior edge also chewed off); trauma to 9 marginal scutes; humeral and femoral scutes, forelimbs and hind toe pads are missing scales
27	7163	Adult	297	M	severe	moderate	Injuries healed or healing	Predator trauma to gular horn (30% of R horn missing), chips/tooth marks and gnawing visible on 2 marginal scutes and 7 locations on plastron and carapace
32	7158	Adult	232	F	severe	severe	Injuries healed or healing	Predator trauma to 100% of gular horn (scarring from bone/scute replacement); trauma covers 25% of humeral scutes, 6 marginal scutes with bone/scute replacement

Table 10, continued. Tortoises with signs of severe trauma from predators.

Plot no.	Tort ID	Age	Size (mm)	Sex	Trauma rating on gular horn			Signs of severe trauma
					Distribution	Severity	Chronicity	
32	7191	Adult	213	F	severe	moderate	Injuries healed or healing	Predator trauma to 25% of gular horn, tip of L horn is missing; scales missing on forelimbs and exposed bone from chewing on L hind toe
32	7192	Young Adult	204	F	severe	moderate	Injuries healed or healing	Predator trauma to 40% of gular horn, chewing resulting in chips on 3 marginal scutes and 7 other small patches on carapace and plastron
37	7069	Adult	280	M	severe	mild	Injuries healed or healing	Predator trauma to 100% of gular horn, 5 marginal scutes with chips or bone/scute replacement
37	7078	Adult	230	M	severe	moderate	Injuries healed or healing	Predator trauma to all of gular horn, anterior edge appears chewed off; 7 sites with predator damage on plastron, marginal scutes from LM4 to RM2 have extensive trauma from chewing; ≥9 small chips/trauma on carapace, both forelimbs have missing scales due to trauma
39	7119	Adult	234	F	severe	severe	Injuries healed or healing	Predator trauma to gular horn (almost completely chewed off), damage extends into vertebral scute 1 and first costal scutes; 11 anterior and posterior marginal scutes severely chewed
39	7120	Adult	246	M	severe	moderate	Injuries healed or healing	Severe predator trauma to 50% of gular horn, L tip of horn missing; bone/scute replacement on humeral and posterior scutes of plastron; chips/chews to 10 marginal scutes, 4 small chips on carapace
39	7127	Adult	253	F	severe	severe	Injuries healed or healing	Predator damage to 100% of gular horn, L tip is missing, 5% of humeral scutes have bone/scute replacement, 11 chips and chew marks are visible on plastron and carapace
39	7129	Adult	260	F	severe	moderate	Injuries healed or healing	Predator damage to 70% of gular horn and R horn is missing tip, 5 sites of chewing visible on plastron, LM scutes 1-3 have extensive trauma from chewing
42	7077	Adult	270	M	severe	moderate	Injuries healed or healing	Left tip of gular partially chewed off, remaining gular damaged, humeral scutes have missing laminae (5%), parts of anal and femoral scutes are missing, 9 marginal scutes have been chewed, all limbs have some missing scales due to trauma

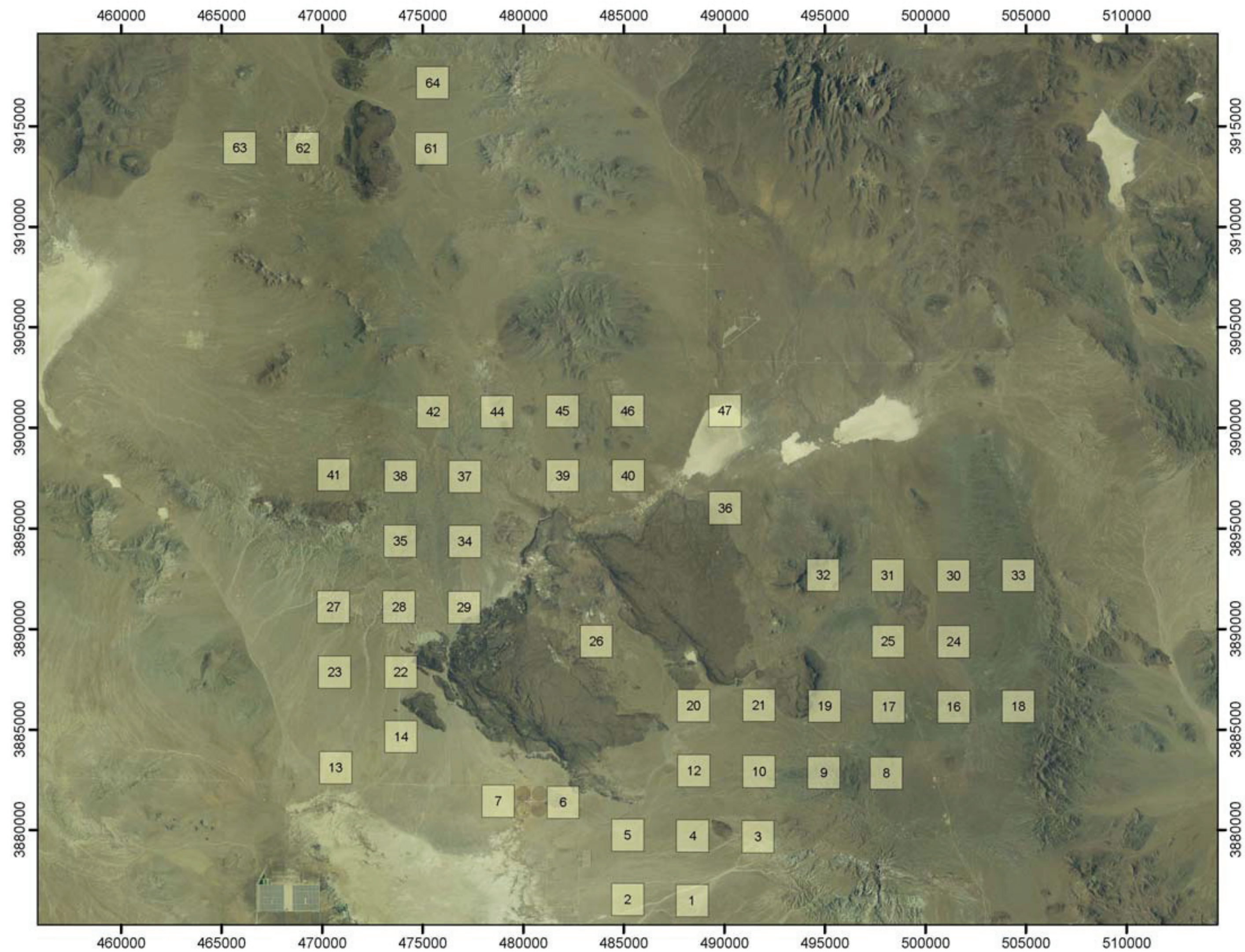

Figure 1. Location of 48 survey plots for 2009 in the Western Expansion Translocation Area (WETA) of Ft. Irwin.

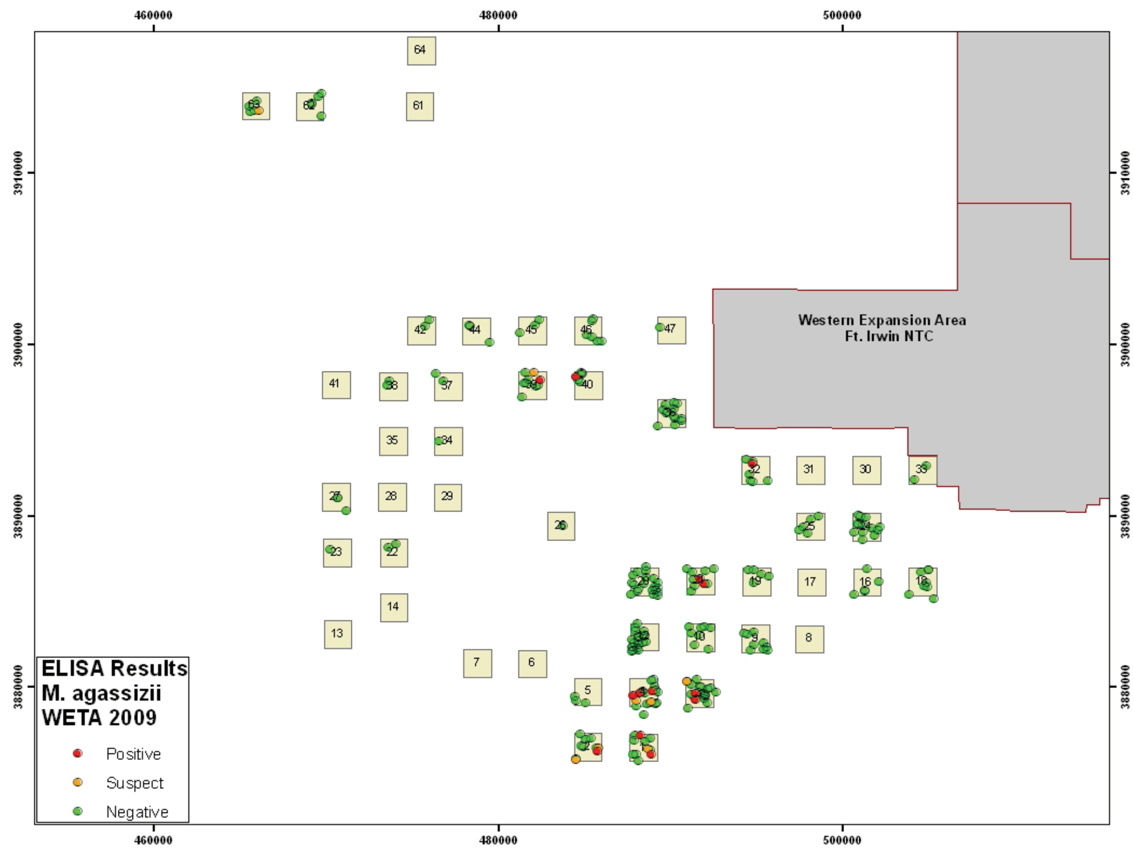

Figure 2. Distribution of 240 tortoises with negative, suspect, and positive ELISA tests for *Mycoplasma agassizii* in the Western Expansion Translocation Area.

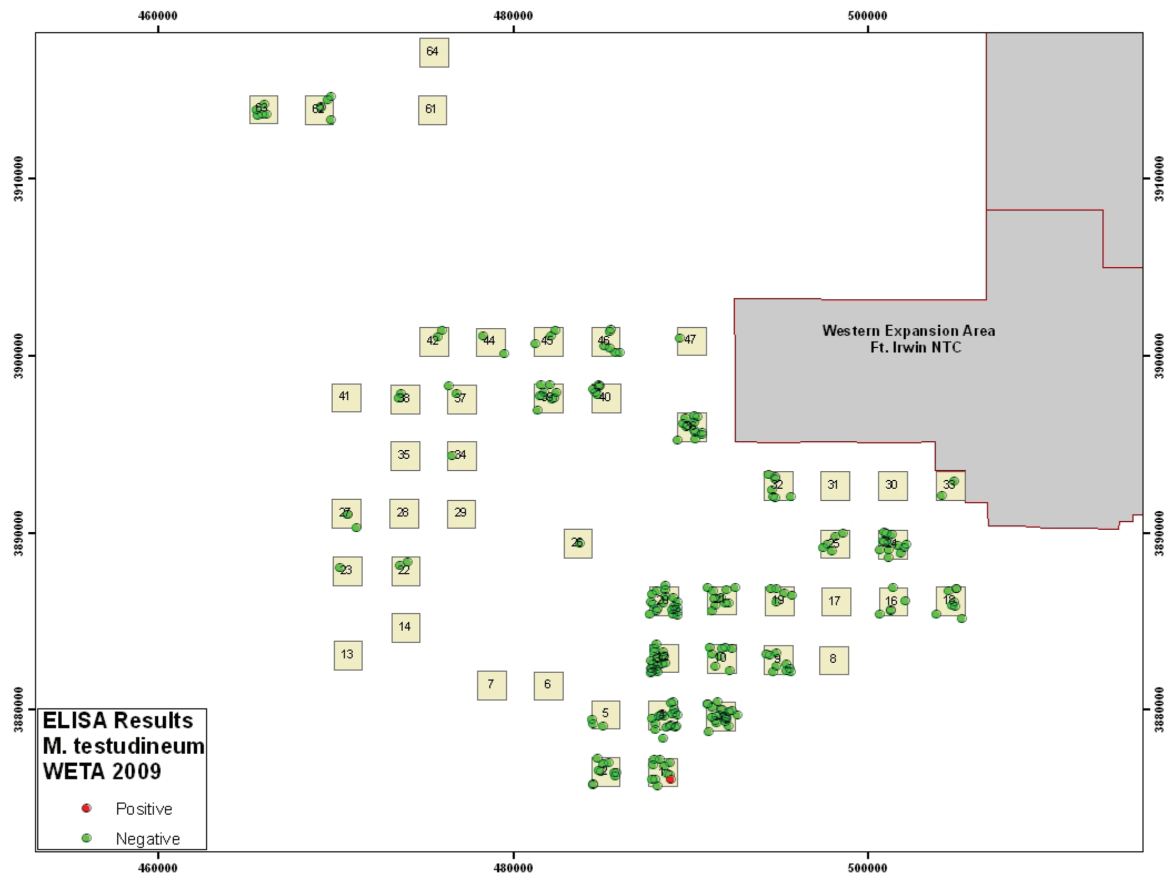

Figure 3. Distribution of 240 tortoises with negative and positive ELISA tests for *Mycoplasma testudineum* in the Western Expansion Translocation Area. No tortoises had suspect ELISA tests.

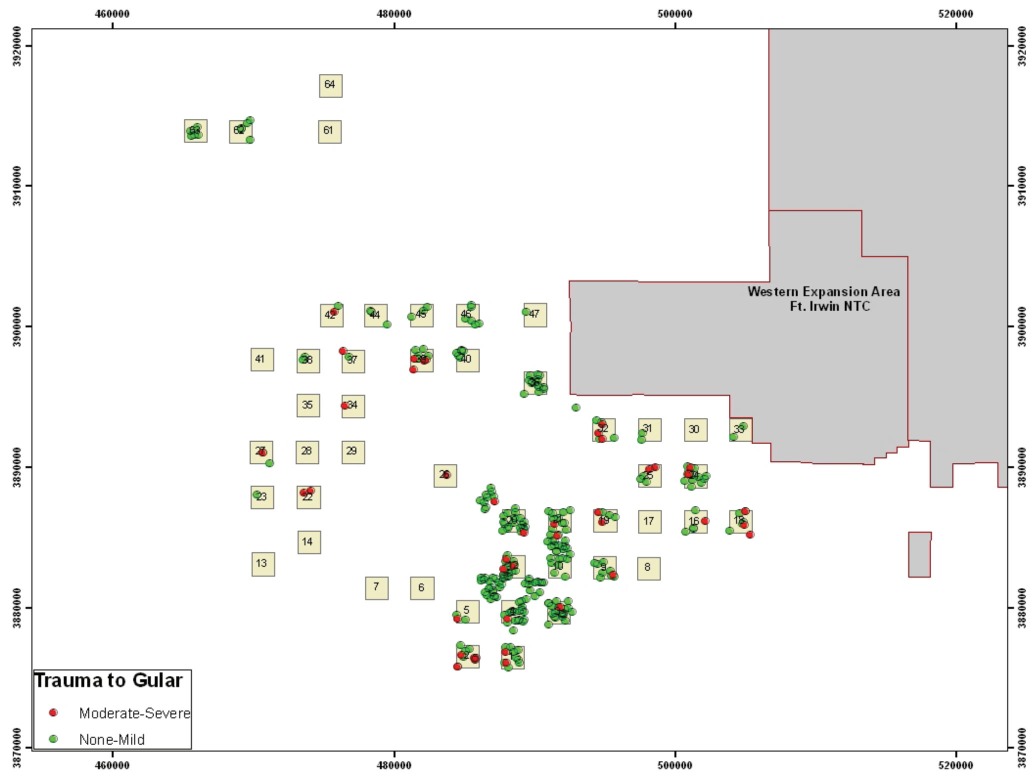

Figure 4. Locations of tortoises with evidence of severe trauma from predator attacks in the WEA and WETA.

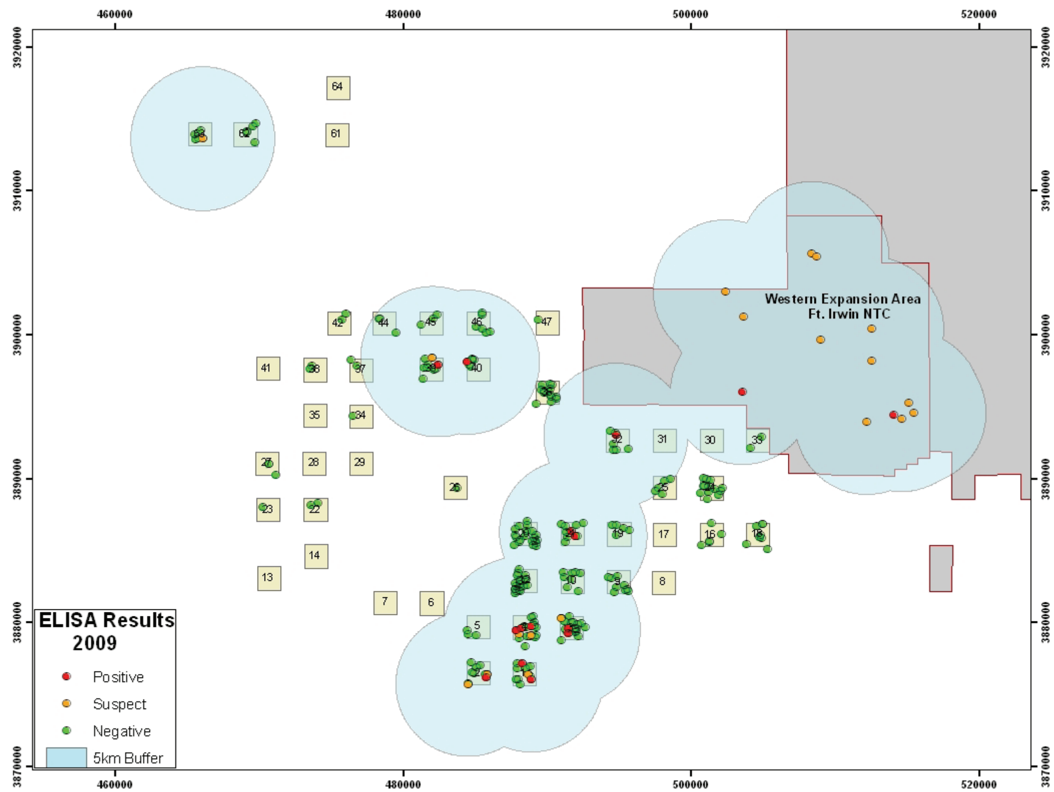

Figure 5. Locations of tortoises in the WEA and WETA in 2009 with a 5 km buffer (blue) drawn around individuals with suspect, and positive ELISA test results for *Mycoplasma agassizii* and *M. testudineum*.

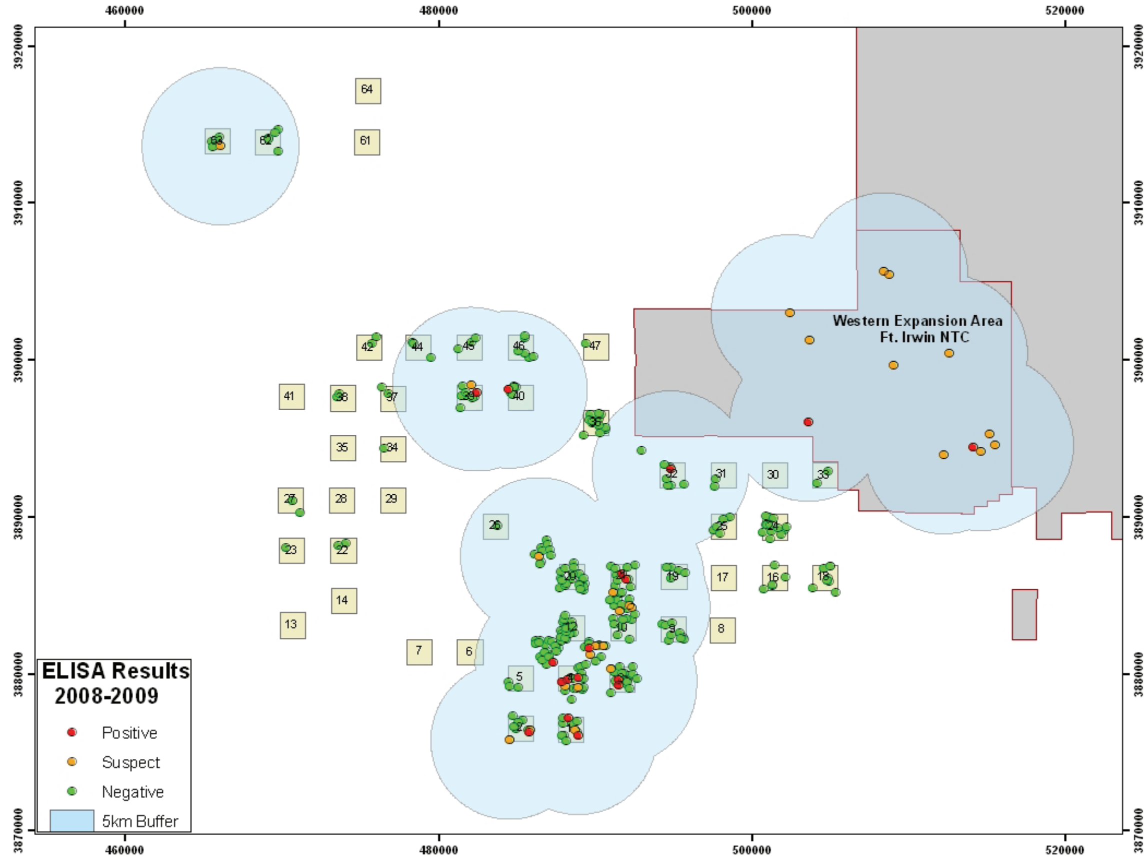

Figure 6. Locations of tortoises in the WEA and WETA in 2008 and 2009, with a 5 km buffer (blue) drawn around individuals with suspect and positive ELISA tests for *M. agassizii* and *M. testudineum*.

APPENDIX 1: Locations of 48 sample plots.

Plot no.	Township, Range, Section	UTMs ,Southwest corner	
		Easting	Northing
1	T11N, R2W, Sec. 19	487599	3875684
2	T11N, R3W, Sec. 23	484391	3875732
3	T11N, R2W, Sec. 9	490870	3878861
4	T11N, R2W, Sec. 7	487623	3878904
5	T11N, R3W, Sec. 11	484394	3878946
6	T11N, R3W, Sec. 4	481184	3880572
7	T11N, R3W, Sec. 6	477958	3880622
8	T12N, R1W, Sec. 31	497255	3882018
9	T12N, R2W, Sec. 35	494141	3882040
10	T12N, R2W, Sec. 33	490924	3882101
12	T12N, R2W, Sec. 31	487684	3882139
13	T12N, R4W, Sec. 32	469876	3882304
14	T32S, R44E, Sec. 32	473128	3883840
16	T32S,R47E, Sec. 30	500597	3885319
17	T32S, R46E, sec. 26	497366	3885324
18	T32S, R47E, Sec. 28	503815	3885342
19	T32S, R46E, Sec. 28	494181	3885368
20	T32S, R45E, Sec. 26	487661	3885381
21	T32S, R46E, Sec. 30	490927	3885395
22	T32S, R44E, Sec. 20	473115	3887058
23	T32S, R43E, Sec. 24	469825	3887054

24	T32S, R47E, Sec. 18	500594	3888565
25	T32S, R46E, Sec. 14	497338	3888578
26	T32S, R45E, Sec. 17	482834	3888594
27	T32S, R43E, Sec. 12	469762	3890289
28	T32S, R44E, Sec. 8	473023	3890288
29	T32S, R44E, Sec. 10	476257	3890282

APPENDIX 1 (Continued): Locations of 48 sample plots.

Plot no.	**Township, Range, Section, Meridian**	**UTMs ,Southwest corner**	
		Easting	Northing
30	T32S, R47E, Sec. 6	500593	3891853
31	T32S, R46E, Sec. 2	497330	3891866
32	T32S, R46E, Sec. 4	494106	3891886
33	T32S; R47E, Sec. 4	503815	3891859
34	T31S, R44E, Sec. 34	476296	3893547
35	T31S, R44E, Sec. 32	473088	3893576
36	T31S, R45E, Sec. 25	489235	3895197
37	T31S, R44E, Sec. 22	476298	3896761
38	T31S, R44E, Sec. 20	473092	3896769
39	T31S, R45E, Sec 19	481160	3896806
40	T31S, R45E, Sec. 21	484411	3896805
41	T31S, R43E, Sec. 24	469786	3896845
42	T31S, R44E, Sec. 9	474721	3899987
44	T31S, R44E, Sec. 11	477902	3899983
45	T31S, R45E, Sec. 7	481154	3900013
46	T31S, R45E, Sec. 9	484392	3900027
47	T31S, R45E, Sec. 12	489226	3900038
61	T29S, R44E, Sec. 33	474635	3913083
62	T29S, R43E, Sec. 35	468250	3913106
63	T29S, R43E, Sec. 33	465104	3913124
64	T29S, R44E, Sec. 21	474699	3916353

US FISH AND WILFLIFE ANNUAL REPORT:

DESERT TORTOISE HOMING BEHAVIOR RESEARCH ACTIVITIES IN SUPPORT OF THE FORT IRWIN NATIONAL TRAINING CENTER EXPANSION PROJECT

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ABSTRACT
Translocation of threatened or vulnerable species is a tool increasingly used for conservation and management. For the threatened desert tortoise (*Gopherus agassizii*) there are current and future plans that rely on translocation to augment populations. In some areas, homing behavior has been described as a cause of translocation failure. However, the extent to which desert tortoises exhibit homing behavior is not well understood. This project explored the homing behavior or forty tortoises: 23 tortoises were experimentally translocated, 9 tortoises were handled but not translocated and 8 tortoises served as the control group. The experiment was conducted in September and October 2009, and all tortoises were radio tracked daily to examine their ability to navigate in a homeward direction. The tortoises were displaced within 8km of their established home range, and 5 tortoises were able to navigate to their source location. Handling tortoises had no effect on their movement patterns. Within the translocated group, males were found to move significantly more than females. This experiment addresses a key data gap by identifying homing behaviors in desert tortoises, and provides essential information to promote successful translocations in future efforts.

INTRODUCTION

The 2008 land expansion of the Fort Irwin National Training Center (NTC), near Barstow, California annexed 545 km^2 to the existing army base (Public Law 2002), land which supports an estimated 2000 desert tortoises (*Gopherus agassizii*) (USFWS 1994; Heaton, Nussear et al. 2008). Translocation was deemed an acceptable management tool for this particular population (USFWS 2008), and more than 600 tortoises were moved from the NTC's Southern Expansion Area to nearby translocation sites in April 2008. It is anticipated another 500 - 1000 tortoises will be translocated from the NTC's Western Expansion Area, WEA, to adjacent habitat, in the near future. (see Appendix I).

Translocation is a conservation management tool used to establish, re-establish or augment populations in decline (Griffith, Scott et al. 1989; Dodd and Seigel 1991; Germano and Bishop 2009). However, a review of hepetofauna translocations suggests translocations result in success rates ranging from 14% – 42%, a clear indication that improved translocation strategies are essential (Dodd and Seigel 1991; Germano and Bishop 2009). Existing studies suggest animals move away from the translocation site and move through the landscape at a higher rate than control animals (Sullivan, Kwiatkowski et al. 2004; Bertolero, Oro et al. 2007; Field, Tracy et al. 2007). More specifically, in a recent review of 91 herpetofauna translocations, the leading cause of translocation failure was homing behavior (Germano and Bishop 2009), defined as orientation of movements towards a certain angle, usually a homeward direction (Rittenhouse, Millspaugh et al. 2007). Desert tortoises are believed to have homing abilities, although neither the mechanism, nor the extent has been extensively studied. The mechanism which drives increased movement after translocation is not fully understood, but could be explained by increased stress levels, disease exposure, displacement by conspecifics, avoidance of predators or anthropogenic influence, habitat suitability, or homing (Bertolero, Oro et al. 2007; Field, Tracy et al. 2007; Teixeira, De Azevedo et al. 2007).

Translocation is listed in the 2008 Draft Recovery Plan as a key component to reverse current declines in desert tortoise populations. Given the importance of translocation to this population, continued research is essential to ascertain how this management strategy can be done most effectively. Greater understanding of a desert tortoises' ability to traverse a landscape in search of their source location is essential for the success of future translocations.

MATERIALS AND METHODS

Study Site

The study was conducted on the Western Expansion Area of the National Training Center, near Barstow, California. This expansion area is bounded to the north and east by active training areas of the NTC, and to the south and west by land mostly managed by the Bureau of Land Management. The study site was historically used by both the military and public, although is currently closed to both user groups, and is therefore relatively undisturbed. The study area encompassed approximately 140km^2 after the tortoises were experimentally translocated. The study area is characterized by a perennial vegetation structure typical of the Western Mojave, dominated by Creosote (*Larrea tridentata*) Burr Sage (*Ambrosia dumosa*) and Ephedra (*Ephedra californica*) with no significant topographic barriers.

Radio Tracking

Extensive clearance surveys were conducted on the WEA commencing in April 2008 and this initial capture group provided the animals for this study. Tortoises were processed upon this initial encounter (weighed, MCL measured, fitted with a radio transmitter) under permit TE-102235-3, and processed a second time to draw blood and test for disease and antibodies to *Mycoplasma agassizii*. From this larger group of animals, 40 desert tortoises (20 Males, and 20 Females) comprised the sample for this homing study: 23 tortoises were experimentally translocated (12M, 11F), 9 tortoises (4M, 5F) were handled and returned to their location of capture and 8 tortoises (5M, 3F) acted as controls and were observed, but not handled. The criteria for selection included tortoises that had a midline carapace length (MCL) > 209, tested negative for *Mycoplasma agassizii* (with two exceptions that had not been tested) and showed no clinical signs of disease upon capture. All tortoises were radio tracked up to four times per day, with an average of 1.52 tracking events per day. Tortoises in the translocated group were captured on September 21-24, October 1 and 3, 2009 using hand-held radio receivers (R-1000 Communication Specialist Inc. Orange, CA) and a Yagi-Uda directional hand-held antenna, and moved between 2km and 8km away from their capture location. The tortoises were observed continually for a minimum of the first 30 minutes after release, and radio tracked daily until they were returned to their capture location on October 25, 27 or 28, 2009. Tortoises in the handling control group were captured on September 21, 23, 24, October 2, or 3, 2009. 4 tortoises were handled at their burrow for less than 1 hour (weighed, measured, health assessment), and 5 tortoises were handled for up to 3 hours, 12 minutes, (weighed, measured, health assessment, soaked for 20 minutes, then placed in a vehicle and transported 8km), then returned to their initial capture site. The control tortoises were located, but not handled at all during this experiment. At each tracking event, tortoise geographic location (Universal Transverse Mercator, UTM), disposition, activity, and compass orientation was recorded. The geographic locations were recorded with Garmin GPSMap76 unit, with an estimated error rate of 3-6 meters. Desert tortoise processing and handling procedures were conducted as outlined in USFWS permit TE-201918-1.

RESULTS

For each tortoise, data was collected daily regarding the habitat location (burrow, pallet, rock, shrub, other), behavioral activity, geographic location (UTMs) and compass orientation. Thirty-two tortoises were handled between September 21 – October 3, 2009, and 18 tortoises were handled October 25 – 28, 2009. Eight tortoises voided during handling. (see Appendix II). Two tortoises were not returned to their original capture location as they could not be extracted from their burrow in the novel location. These tortoises will be returned to their capture location after emergence in the spring. All tortoises were alive and in their winter hibernation burrows at the conclusion of the experiment on November 8, 2009.

A significant number of tortoises were able to navigate to their source location, analyzed with Cochrane's test of linear trend for ordered data (X^2 = 3.76, d.f. = 1, p = 0.052). (See Table 1. See Appendix III).

Arrived Home	Displacement Distance			Total
	2km	5km	8km	
Yes	4	1	0	5
No	6	6	6	18
Totals	10	7	6	23

Table 1. Number of tortoises that arrived back to their source location after translocation.

An analysis of the total distance traveled by each group (T = Translocated, H = Handling control, or C = Control) shows that translocated tortoises moved significantly more than either the handling or control (Translocated: 5.6 km +/- 2.8 S.D., Handling: 1.7 km +/- 2.4 S.D., Control: 1.0 km +/- 0.7 S.D.). There were no differences between movements in the handling and control group (ANOVA p-value <0.001, Tukey's post hoc values C:T and H:T, p-value <0.001 and H:C, p-value = 0.8). There were no differences in total distance moved between the handling and control groups, even when examining the data 1, 3, and 7 days post-treatment.

There was a significant difference in the distance traveled between translocated males and females (2-way ANOVA, p-value = 0.014); translocated males moved more than translocated females. (two-sample t-test for pooled variance, p-value = 0.004).

To consider whether the likelihood of returning home could be explained by the distance a tortoise traveled following treatment, logistic regression was used. A significant effect was found, which suggests that the likelihood of returning to the home location decreasing by 1.9 fold for every kilometer moved ($\beta_0 = -0.955$, $\beta_1 = 0.635$, $X^2 = 4.64$, d.f = 1, p-value = 0.031). See Fig. 1.

CONCLUSION

The 2008 Draft Recovery Plan for desert tortoises includes a number of recovery actions specific to augmenting depleted populations through a strategic program. Notably sections 3.1 and 3.3 propose to "implement translocations in target areas to augment populations….in conjunction with threat management" (USFWS 2008). Because translocation is one of the primary management tools to recover desert tortoise populations, information that can improve the success rate of translocation efforts is essential.

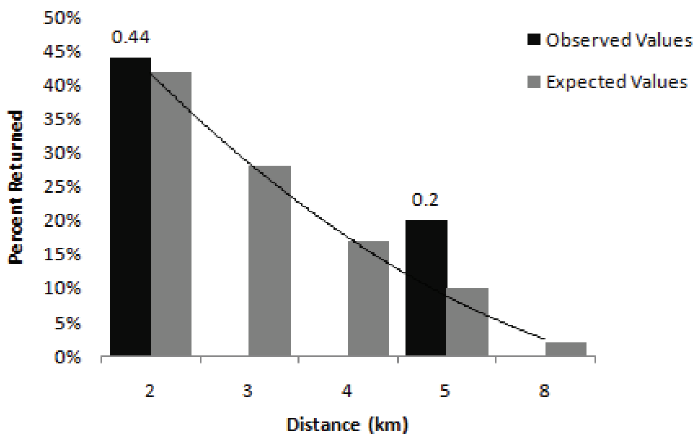

Fig. 1. The observed and expected likelihood of returning to the source location.

Evidence from this experiment suggests that tortoises are likely to exhibit homing behavior when translocated. This experiment also suggests that tortoises have a higher likelihood of returning to their source location when their translocated destination is less than 2km from their source location. This is consistent with the 2009 review paper citing the most common reported causes of herpetofauna translocation failure as homing and poor habitat (Germano and Bishop 2009). Furthermore, homing behavior is prevalent in many species of turtles and tortoises. Empirical homing studies conducted on wood turtles (*Clemmys insculpta*), painted turtles (*Chrysemys picta marginata*), box turtles (*Terrapene carolina*), three-toed box turtle (*Terrapene carolina triunguis*), musk turtles (*Sternotheriis odoratus*) and European pond turtles (*Emys orbicularis*) suggest site fidelity to a home range and to nesting sites, and an ability to home which may be dependent on a turtles' sex, displacement distance and direction, and topographic barriers. There also appears to be a critical distance, or threshold, upon which a turtle is unable to navigate back to familiar territory (Gould 1957; Emlen 1969; Carroll and Ehrenfeld 1978; Lebboroni and Chelazzi 2000; Smar and Chambers 2005; Rittenhouse, Millspaugh et al. 2007).

Translocated animals moved significantly more than animals that were not translocated (this included the handled and control groups). Increased movement likely has short term and long term effects upon the translocated individuals. Such patterns are biologically meaningful and certainly imply translocation elicits behaviors outside of their optimal range (Teixeira, De Azevedo et al. 2007). Animals within their own home range are familiar with the spatial distribution of resources and conspecifics, and can access those resources efficiently. Conversely, translocated individuals move in less-optimal patterns, as they are unfamiliar with their novel surroundings. It is likely that such increased movement heightens vulnerability to predation, mortality, disease, and competition (Dodd and Seigel 1991; Teixeira, De Azevedo et al. 2007). Thus, tortoises will have to invest resources in finding an appropriate new home range and will reveal a range of movement patterns and behaviors in doing so.

Furthermore, translocated males moved longer distances than translocated females. Differences in movement patterns between sexes are consistent with males having larger home range and good spatial memories (O'Connor, Zimmerman et al. 1994; Field, Tracy et al. 2007; Harless, Walde et al. 2009), and considering these differences is important when choosing translocation sites and strategies.

This experiment occurred in the fall, during a time when tortoises are becoming metabolically torpid and less active (Woodbury and Hardy 1948; Nussear, Esque et al. 2007). Furthermore, the Western Mojave had not experienced significant rainfall since March 2008, and a likely strategy for tortoises would be to minimize activity. Repeating the experiment in the spring when tortoises have access to annual vegetation is an important next step. It is anticipated there will be seasonal differences in movement patterns, and that an increased number of tortoises will navigate home in the spring season. A comprehensive understanding of desert tortoise homing behavior will greatly improve success rates of translocation actions and as a result, improve the effective management of desert tortoises.

Translocations of threatened and endangered species are becoming more common as habitat loss increases. Although the success rate of herpetofaunal translocations has increased, improvements are still needed (Germano and Bishop 2009). The compounding effects of disease, habitat loss, predation and climate change have substantially impacted desert tortoises and the population continues to decline despite federal protection since 1990 (Woodbury and Hardy 1948; Berry 1995; Berry and Van Abbema 1997; Berry, Spangenberg et al. 2002; Christopher, Berry et al. 2003; Bjurlin and Bissonette 2004). The 2008 U.S. Fish and Wildlife Draft Recovery Plan for the desert tortoise acknowledges the vast majority of threats to the desert tortoises and its habitat are associated with human land uses (USFWS 2008) and the western Mojave population of tortoises is particularly vulnerable; it has been argued that the NTC military expansion could have a severe effect on the long term population viability of desert tortoises, by impacting up to 13% of the western Mojave population (Doak, Kareiva et al. 1994). Understanding the extent to which tortoises are able to navigate across a landscape, back to their source location, is essential to effectively manage a translocated population, and the extent of this impact will be determined by the future management of the habitat and of the tortoise population from this point forward.

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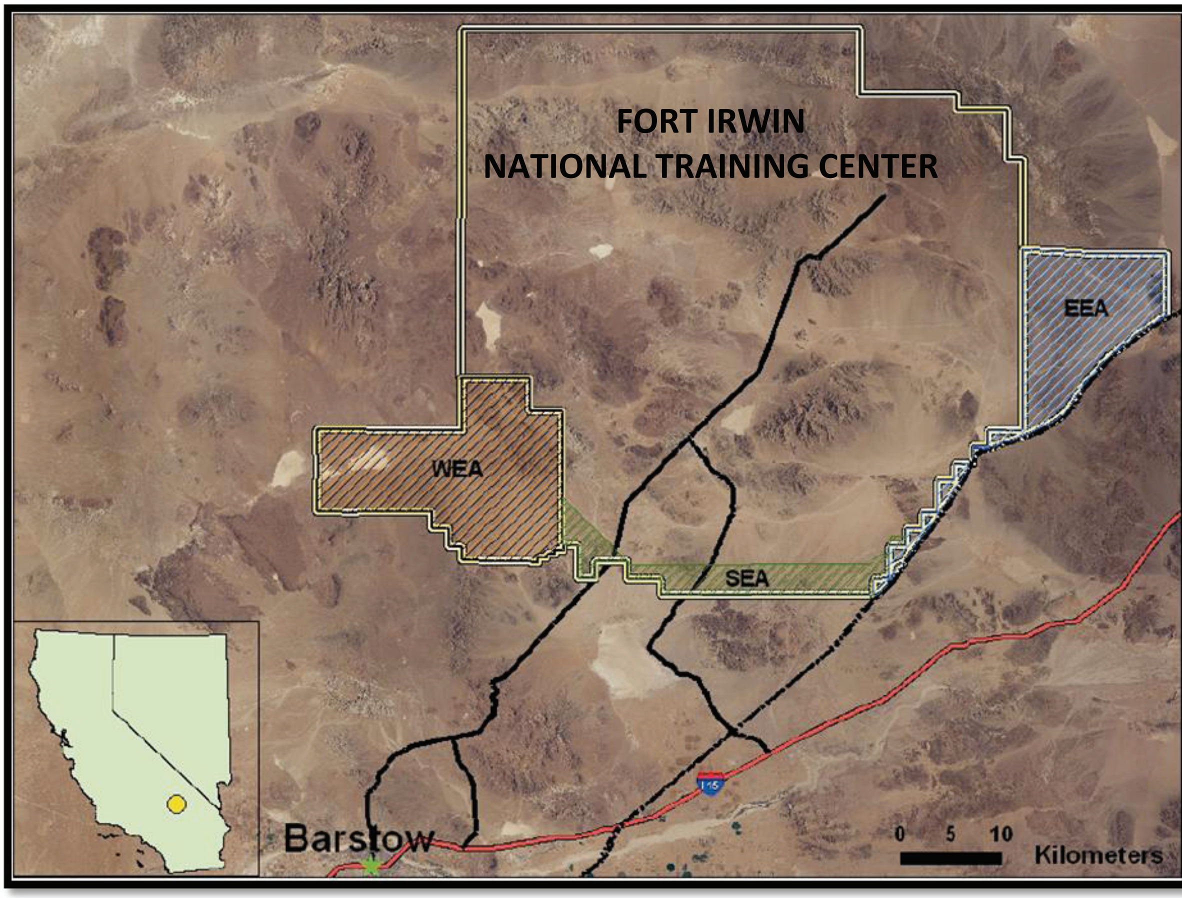
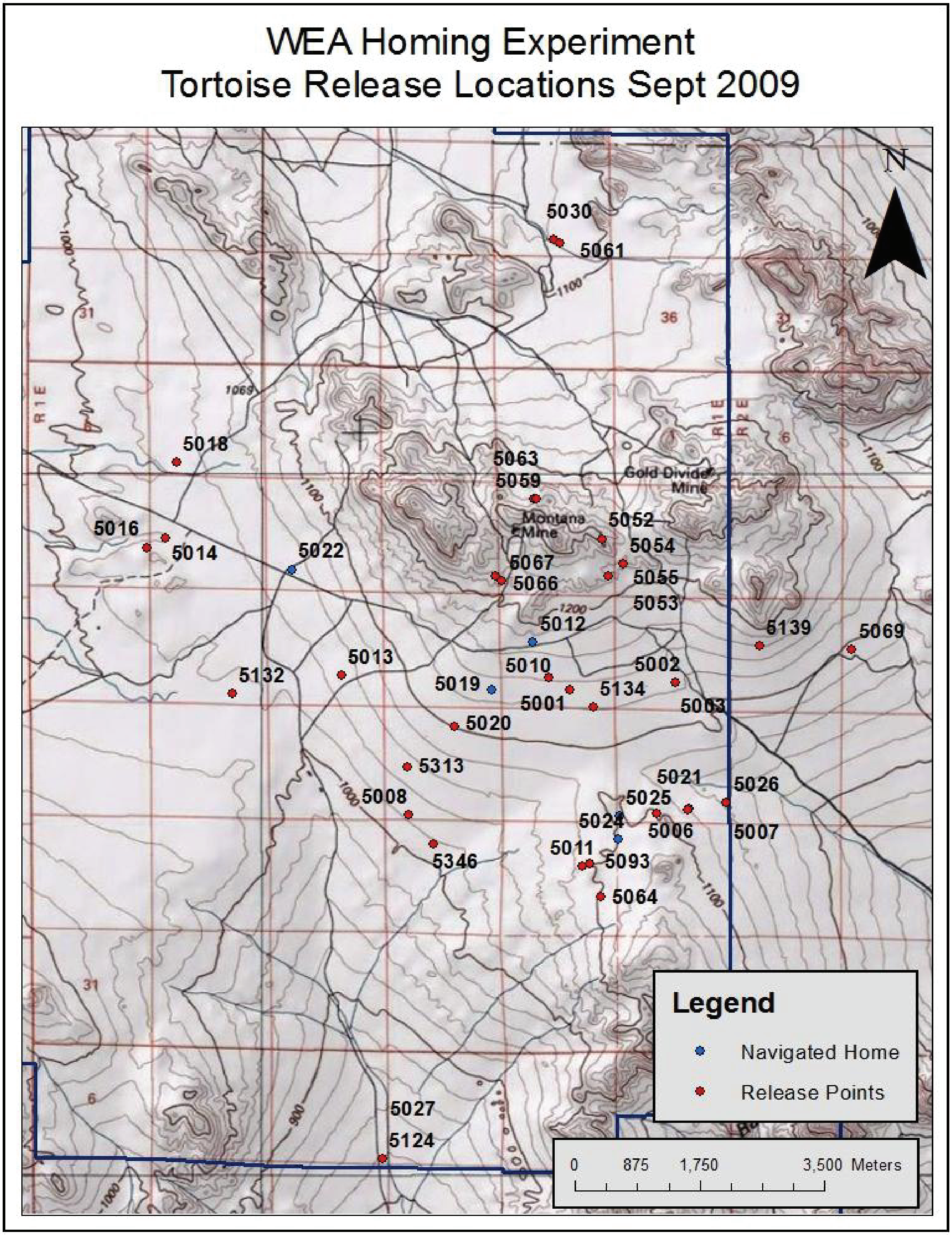
APPENDIX I

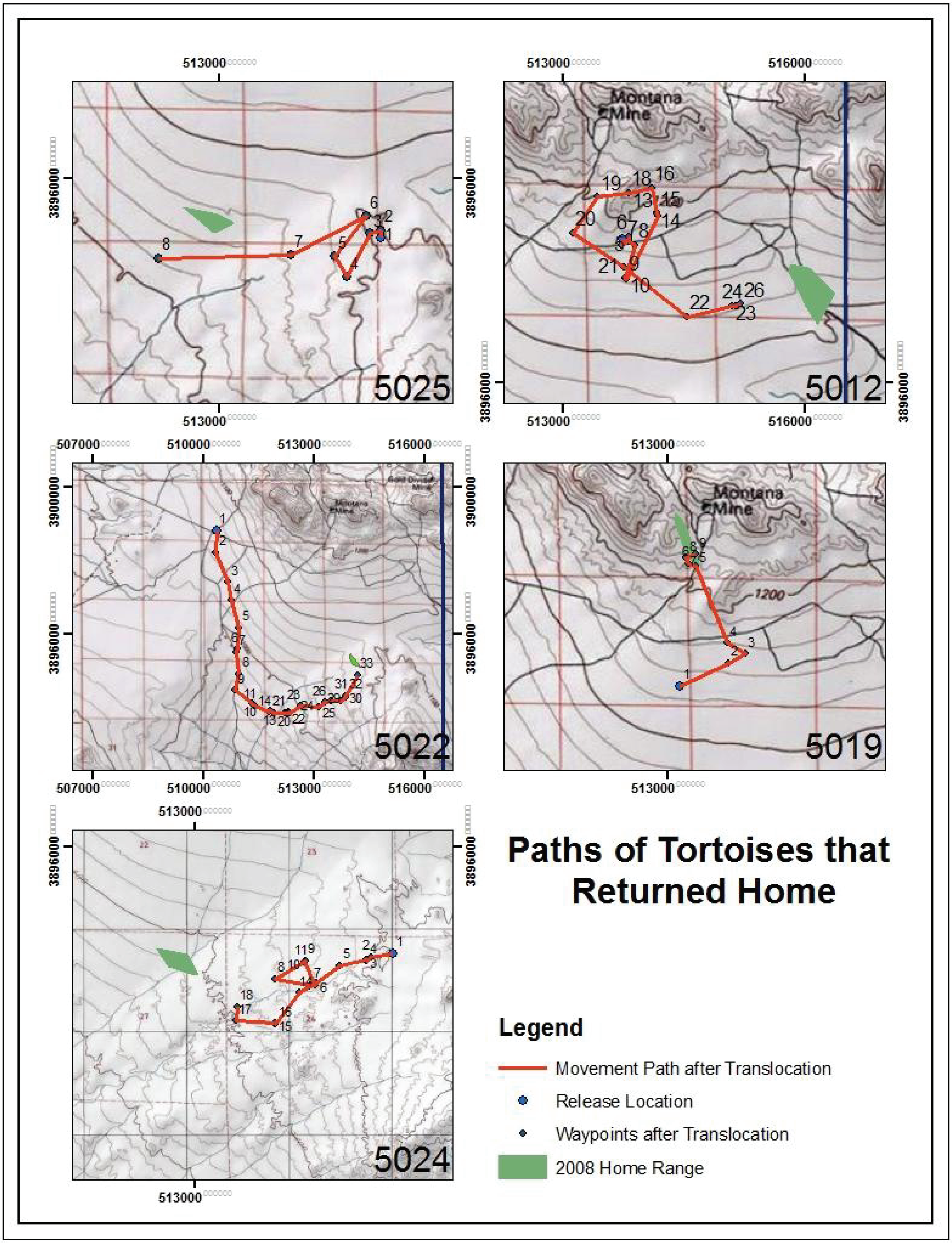

FORT IRWIN
NATIONAL TRAINING CENTER
EEA
WEA
SEA
Barstow
0 5 10
Kilometers

APPENDIX II

Tortoise ID	Sex	MCL	Distance Displaced	Experimental Group	Date Handled1	Date Handled2	Date Tortoise Navigated Home	Total Distance Traveled	Voided
5001	Female	225	2	TRANSLOCATED	21-Sep-09	28-Oct-09		1527.60	n
5002	Female	221	0	CONTROL				76.73	n
5003	Male	259	0	CONTROL				850.02	n
5006	Female	252	0	HANDLING	21-Sep-09			416.38	n
5007	Male	268	0	HANDLING	3-Oct-09			88.02	n
5008	Female	237	4	TRANSLOCATED	21-Sep-09	27-Oct-09		4887.81	n
5010	Male	260	2	TRANSLOCATED	22-Sep-09	27-Oct-09		4931.75	n
5011	Female	232	0	CONTROL				472.16	n
5012	Male	211	2	TRANSLOCATED	21-Sep-09		14-Oct-09	9526.50	y
5013	Male	264	5	TRANSLOCATED	21-Sep-09	27-Oct-09		11101.20	n
5014	Female	227	8	TRANSLOCATED	21-Sep-09	27-Oct-09		4674.97	n
5016	Male	260	8	TRANSLOCATED	21-Sep-09	27-Oct-09		5727.61	n
5018	Female	240	5	TRANSLOCATED	22-Sep-09	27-Oct-09		6257.57	y
5019	Male	276	2	TRANSLOCATED	22-Sep-09		2-Oct-09	3880.66	n
5020	Female	239	2	TRANSLOCATED	22-Sep-09			2982.85	y
5021	Male	236	0	CONTROL				168.04	n
5022	Male	266	5	TRANSLOCATED	22-Sep-09	27-Oct-09	27-Oct-09	8526.15	n
5024	Female	232	2	TRANSLOCATED	23-Sep-09		12-Oct-09	2933.06	n
5025	Male	225	2	TRANSLOCATED	23-Sep-09	30-Oct-09	29-Sep-09	5323.67	n
5026	Male	277	4	TRANSLOCATED	23-Sep-09	27-Oct-09		9982.35	n
5027	Male	278	8	TRANSLOCATED	23-Sep-09	28-Oct-09		4546.60	n
5030	Female	210	3	TRANSLOCATED	22-Sep-09	25-Oct-09		2259.85	y
5052	Female	251	0	HANDLING	2-Oct-09			535.19	n
5053	Male	272	0	HANDLING	21-Sep-09			3594.14	n
5054	Female	235	0	HANDLING	24-Sep-09			607.69	n
5055	Female	246	0	HANDLING	23-Sep-09			787.66	y
5059	Male	276	0	CONTROL				1593.23	n
5061	Male	288	2	TRANSLOCATED	22-Sep-09	25-Oct-09		9670.25	n
5063	Male	270	0	CONTROL				1746.13	n
5064	Male	288	5	TRANSLOCATED	23-Sep-09	27-Oct-09		8467.07	n
5066	Male	242	0	HANDLING	23-Sep-09			7548.34	y
5067	Female	242	0	HANDLING	23-Sep-09			1181.40	n
5069	Male	267	8	TRANSLOCATED	1-Oct-09			3296.14	n
5093	Female	244	0	CONTROL				820.79	n
5124	Female	215	8	TRANSLOCATED	23-Sep-09	28-Oct-09		6484.02	y
5132	Male	285	0	HANDLING	3-Oct-09			67.20	n
5134	Female	254	5	TRANSLOCATED	1-Oct-09	27-Oct-09		8018.02	n
5139	Female	234	8	TRANSLOCATED	1-Oct-09	27-Oct-09		6835.45	y
5313	Female	240	2	TRANSLOCATED	1-Oct-09	27-Oct-09		232.37	n
5346	Male	242	0	CONTROL				2398.34	n

APPENDIX III




Paths of Tortoises that Returned Home
Legend
Movement Path after Translocation
Release Location
Waypoints after Translocation
2008 Home Range
5025
5012
5022
5019
5024
Montana Mine
1200
507000
510000
513000
516000
3896000
3900000

Calico Solar – 08-AFC-13
DECLARATION OF SERVICE

I, Carol Horton, declare that on August 5, 2010, I served and filed copies of the attached CALIFORNIA UNIONS FOR RELIABLE ENERGY EXHIBIT 439, 2008 and 2009 ANNUAL REPORTS FOR THE FORT IRWIN TRANSLOCATION PROJECT, dated August 5, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at www.energy.ca.gov/sitingcases/calicosolar/CalicoSolar_POS.pdf. The document has been sent to both the other parties in this proceeding as shown on the Proof of Service list and to the Commission's Docket Unit electronically to all email addresses on the Proof of Service list; and by depositing in the U.S. mail at Sacramento, CA, with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list to those addresses NOT marked "email preferred."

AND

By sending an original paper copy and one electronic copy, mailed and emailed respectively to:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS 4
Sacramento, CA 95814-5512
docket@energy.state.us.ca.

I declare under penalty of perjury that the foregoing is true and correct. Executed at Sacramento, CA, on August 5, 2010

/s/
Carol Horton

CALIFORNIA ENERGY COMMISSION
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