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Comments against Fountain Wind #3

Comments previously sent to Shasta County Supervisors proving fraudulent impact research and fraudulent disclosures to the public.

Additional submitted attachment is included below.

Science seeks the truth. It's not an exercise in deception, collusion, with shill experts and government agencies being choked with nondisclosure agreements. This is an industry that has voluntary regulations, so they report very little. Green energy research data is created from contrived methodologies that have little to do with science and full disclosure. As I have found and can prove, data produced by this industry cannot be trusted.

Fraudulent green research is hiding a worldwide eagle slaughter

If wind turbines are so wonderful, why does the wind industry rely on gag orders and contrived nonscientific research to sell them to the public? Many important questions I raised about this proposed project and the proof provided of grossly deceptive studies conducted at Hatchet Ridge, were totally avoided in the FEIR. These factual, science-based comments posted in the FEIR, were completely dismissed by an anonymous source.

After weeks of trying, Lio Salazar in the Planning Department finally said he would not provide me with the names of the people associated with the absurd responses to my Fountain Wind EIR comments.

The Bald Eagle population surveys from Fountain DEIR are a complete farce

False bald eagle survey information from DEIR is shown below. The area around the Fountain Ridge project does not have near as many bald eagles and occupied bald eagle nests as implied in the DEIR. **Some nests said to be occupied in the DEIR are abandoned and while others listed appear to be alternate eagle nests that exist within the few existing eagle territories**. The sorry looking nest image shown for Lake Margaret has probably been abandoned for years. DEIR images prove this.

The false appearences of Shasta County's bald eagles thriving in and around the Hatchet Ridge wind turbines, could leave Supervisors thinking that incidential take permits are not needed for Fountain wind. But incidential permits will be needed because this project will be killing dozens and dozens of eagles over the life of the project. Also keep in mind that even though the Lake Margaret eagle territory was abandoned (See nest 299 images) prior to 2017 (See nest 299 images), new eagles and ospreys will continue to find this lake because of the food source and they will also be killed by turbines.

Some Important notes on the eagle surveys

DEIR images provided for the 2017 raptor survey show proof of only 6 bald eagle nests being occupied

Appendix A: Photographs of Bald Eagle Nests Documented During Nest Surveys Conducted in 2017 at the Fountain Wind Project, Shasta County, California

Nest 157, located approximately 6.2 miles northeast of the Fountain Wind Project.
Nest 307, located approximately 5.5 miles northeast of the Fountain Wind Project.
Nest 59, located approximately 6.5 miles northeast of the Fountain Wind Project.
Nest 58, located approximately 4.2 miles north of the Fountain Wind Project
Nest 178, located approximately 6.0 miles east of the Fountain Wind Project.
Nest 310, located approximately 5.5 miles northeast of the Fountain Wind Project.

Table 1. Summary of the 2018 bald eagle nest status surveys conducted within a 10-mile buffer of the Fountain Wind Project, Shasta County, California. Additional details on 2017 nest status surveys are available in the 2017 nest survey report (WEST 2018).

Images for 2018 show only proof of 4 nests being occupied. Nests 310,178, W4 and W2. Nest 308 and others shown were not occupied.

EIR Provided no knowledge of any successful and occupied raptor nests anywhere near Hatchet Ridge.

Nest 308, located approximately 5.0 mi (8.0 km) west of the Fountain Wind Project.
.....“an adult was observed in incubating/brooding posture at Nest 308.”

The unanswered Million-dollar DEIR question for Supervisors

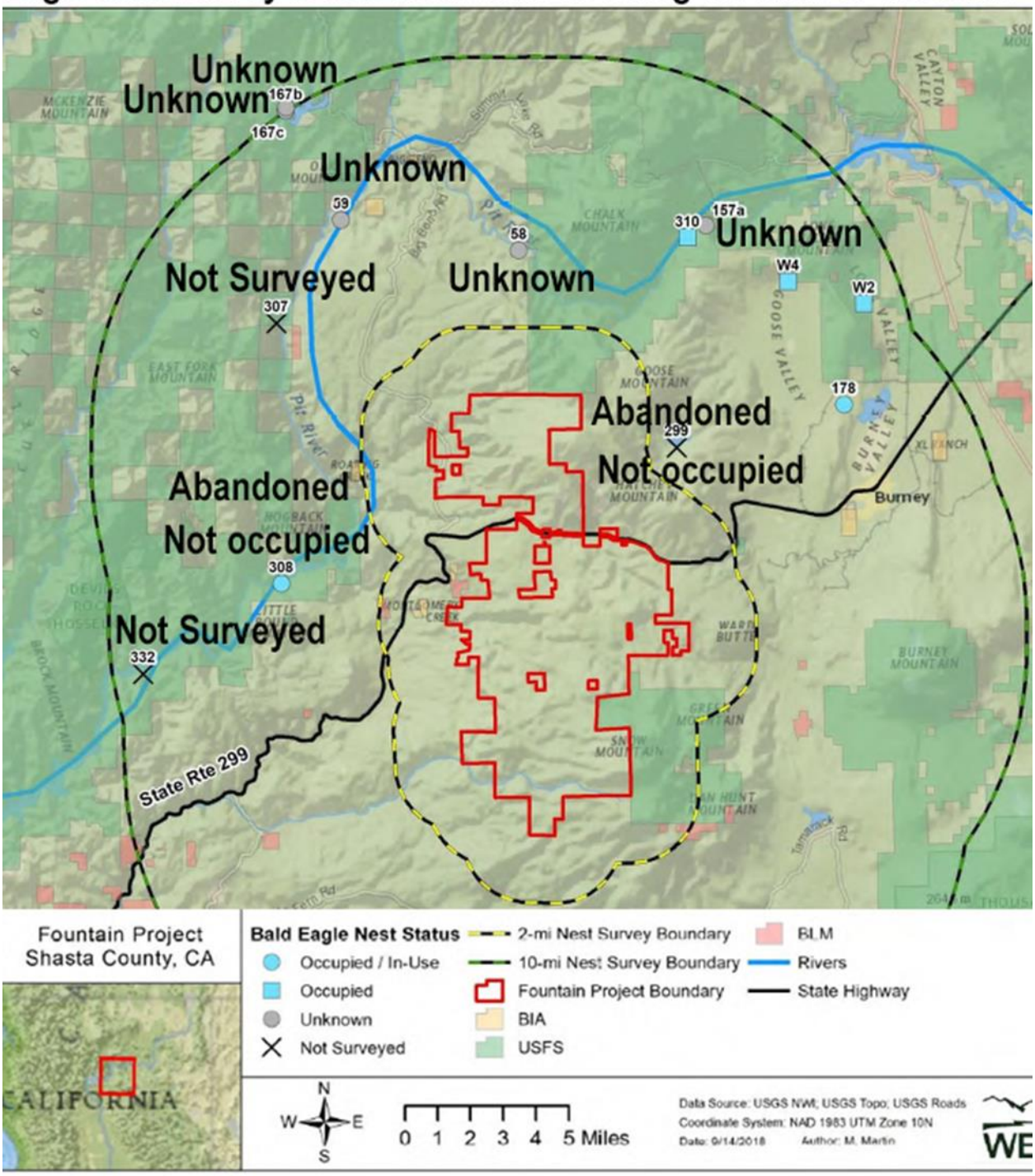
What is the nearest occupied and successful raptor and or bald eagle nesting territory to any of the Hatchet Ridge turbines?

I ask because this industry goes to great lengths to hide nesting failures and habitat abandonment. I can assure Shasta County Supervisors, that the closest truly occupied raptor nest is not Bald eagle nest 299. I say this because it’s easy to see from the DEIR image, this 2017 nest, was not being used. This nest is in terrible shape and is falling apart. Other bald eagle nests shown in the DEIR images are also abandoned nests and not really occupied. In addition, some nests claimed to be “occupied” were actually alternate nests, with no proof of any eagles being present.

Bald eagles also routinely build alternate nests within territories, but the DEIR failed to mention this behavior. Researchers however did express this multiple nest building

behavior with goshawks…… "Within their territories, goshawks will alternate the use of as many as eight nests sites that can be located up to 1.1 miles (1.8 km) apart."

Eagle nest survey is not even close to being credible or scientific



gure 1. Summary of the 2018 eagle nest status survey results for the Fountain Wind Shasta County, California. (BIA = Bureau of Indian Affairs, BLM = Bureau Management, USFS = U.S. Forest Service)

Nest 299, located approximately 2.9 miles east of the Fountain Wind Project.

"During eagle nest surveys conducted within a 10-mi radius of the Project area, 11 occupied bald eagle nests were documented, with the closest nests to the Project area located at Lake Margaret, approximately 4.7 km (2.9 mi) east of the Project, and along the Pit River approximately 6.8 km (4.2 mi) north of the Project."

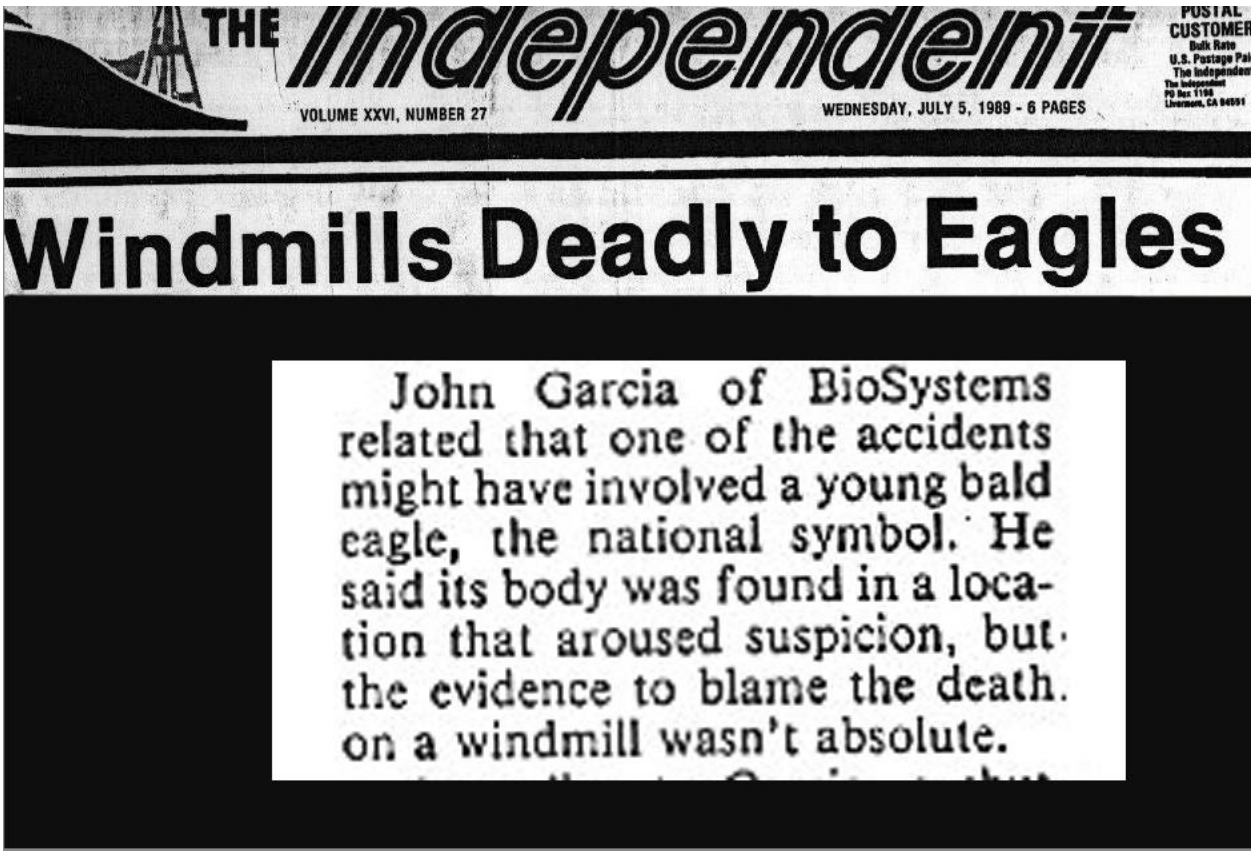
This abandoned nest is located about 1 1/2 miles from the Hatchet Ridge turbines.

NONE of this statement from the DEIR is true …….

"During eagle nest surveys conducted within a 10-mi radius of the Project area, 11 occupied bald eagle nests were documented, with the closest nests to the Project area located at Lake Margaret, approximately 4.7 km (2.9 mi) east of the Project, and along the Pit River approximately 6.8 km (4.2 mi) north of the Project (Thompson 2018). Despite a number of occupied bald eagle nests in the vicinity of the Project, only three of the 16 bald eagle observations documented during the Year 1 surveys were recorded in the spring and summer nesting season, suggesting even lower use of the Project area by breeding eagles than migrating or wintering bald eagles. **Based on the generally low direct impacts to bald eagles documented in the Pacific Northwest, including at Hatchet Ridge, as well as the relatively low use of the Project by bald eagles documented during the Year 1 study, risk of collision at the Project is anticipated to be low."**

Pay close attention to this DEIR deception…… the word "documented" actually means the number of bald eagles this industry, with voluntary regulations, chooses to report and the low use at the project site by bald eagles was "documented" with contrived methodologies.

This industry has been killing Bald eagle fatalities for decades. Even back when they were still classified as an endangered species.



THE Independent

VOLUME XXVI, NUMBER 27 WEDNESDAY, JULY 5, 1989 - 6 PAGES

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Windmills Deadly to Eagles

John Garcia of BioSystems related that one of the accidents might have involved a young bald eagle, the national symbol. He said its body was found in a location that aroused suspicion, but the evidence to blame the death on a windmill wasn't absolute.

More avoidance, doubletalk and utter DEIR nonsense

From the DEIR, Appendix C……. "Details on how the Lake Margaret pair utilizes the landscape may be available in the future; **however data were not available for inclusion** in this report. An adult was observed on the Lake Margaret nest (Nest 5; Figure 2, Table 1) in an incubating position during the March survey, **but no evidence of continued use was observed** during the follow-up survey in May, indicating the nesting attempt had failed. All other occupied bald eagle nests were more than 4.2 mi (6.8 km) from the Project Area boundary (Figure 2)."

What details? What data? What pair of eagles and why would an adult eagle ever be brooding eggs in a nest falling apart?

The answer……. The old nest was not an occupied by bald eagles at Lake Margaret and from the looks of the 2017 DEIR image, it hadn't been occupied for years.

So how many truly occupied eagles nests now exist? Is there only 3 or four occupied bald eagle nests within 10 miles of Hatchet Ridges turbines? Or are there even fewer? This is very important because if true, the Hatchet Ridge turbines are most likely the reason.

Shasta County must conduct new eagle surveys to find out. Not only for the public **but to determine accurately the number of bald eagles needed for the developer's incidential take permits.** In my expert opinion, this project will kill at least 10 bald eagles in the first year. But if Shasta County allows wind developers have their way, they will never be reported.

My previous DEIR comments clearly explain to Supervisors how to stop research and disclosure rigging.

The wind industry is and has been killing thousands of eagles in America and they don't have to tell you, so they don't. Reported eagle fatalities are generally the ones they choose to report or the ones reported because word leaks out. This deceptive "green" industry has been using the "no body, no required reporting, no crime, and no accountability" defense, to hide behind for years.

Do not accept any of the fraudulent DEIR Research and DO NOT do this to Shasta County's Bald Eagles

The Fountain Wind turbines will kill far more bald eagles than the Hatchet Ridge turbines because of:

1) a closer proximity to the occupied eagle territories along the Pit River drainage,

2) fledging dispersal,

3) the creeks holding fish that will always attract eagles into the Fountain Project,

4) turbine blade tip speeds for this project 50% faster than the Hatchet turbines, with over 300 mph tip speeds,

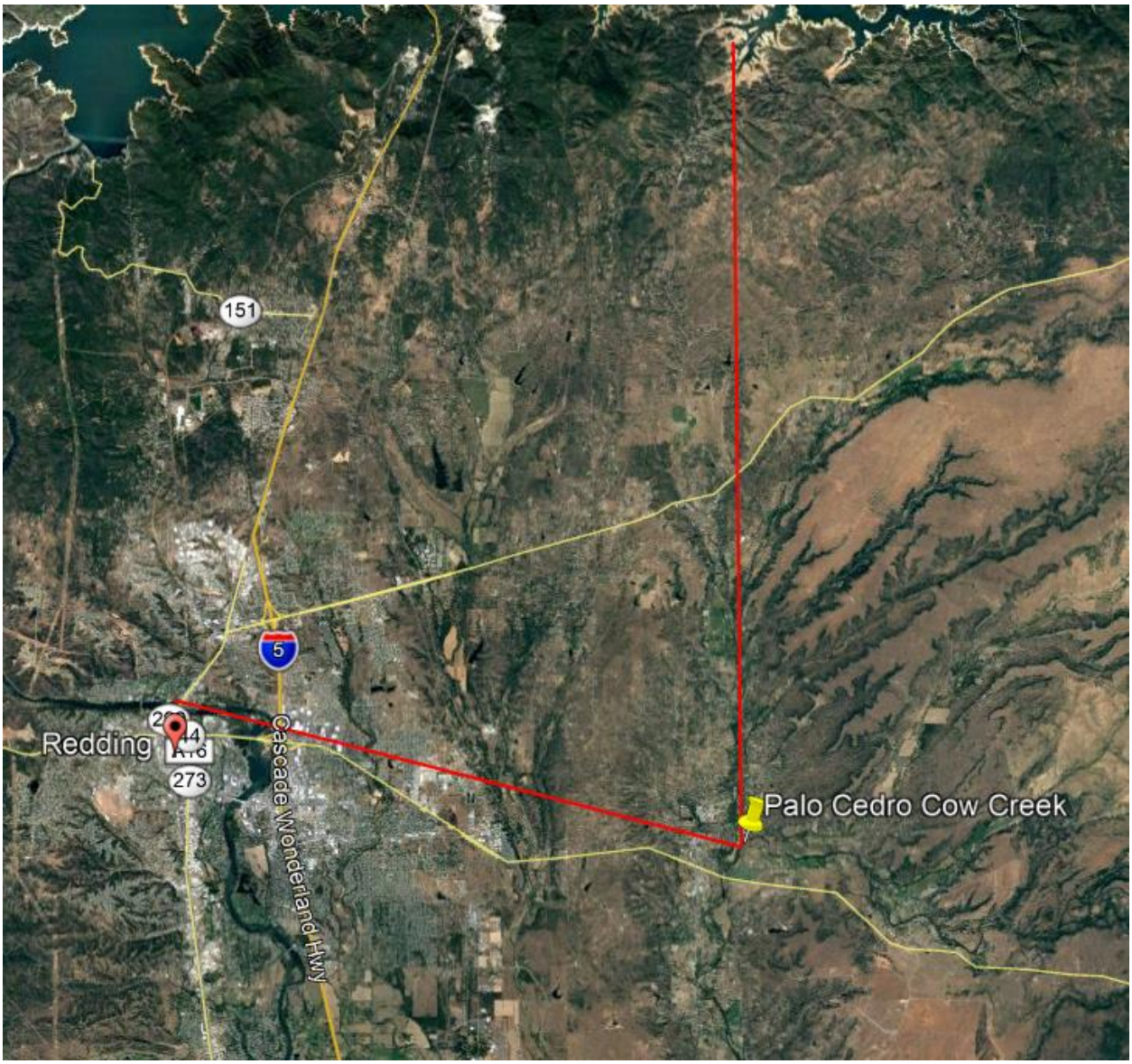
5) this project would have highest concentrated air volume of deadly rotor sweep in America, 5 times that of Hatchet ridge, and all being swept at speeds 50% faster,

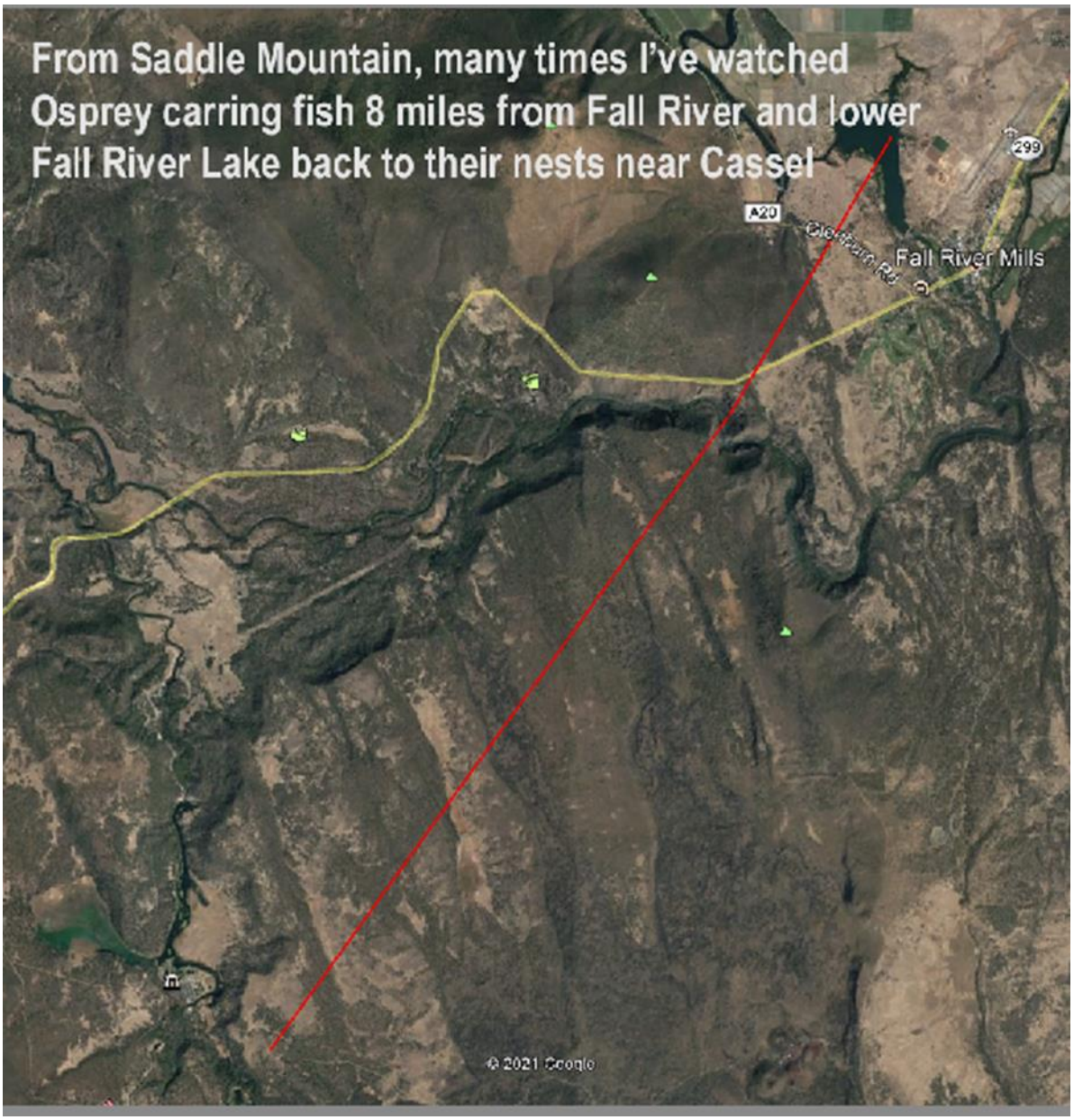
6) flying 5-10 miles for food is common for a hungry bald eagle or an eagle trying to feed its offspring,

7) abandoned eagle habitat along the Pit River arm of the lake and Pit River will eventually be repopulated with new eagle pairs that will also be killed by turbines.

Foraging Bald Eagles and Osprey travel many miles.

Cow Creek in Palo Cedro is 9 miles from the Redding/highway 44 nest and 12 miles from some of Lake Shasta bald eagle nests. Yet, Cow Creek is hunted by adult bald eagles in the spring and summer. Osprey I watched over the years in the Fall River area, would fly 8 miles or more with food going back to their nests near Cassel, CA. **(SEE images)**

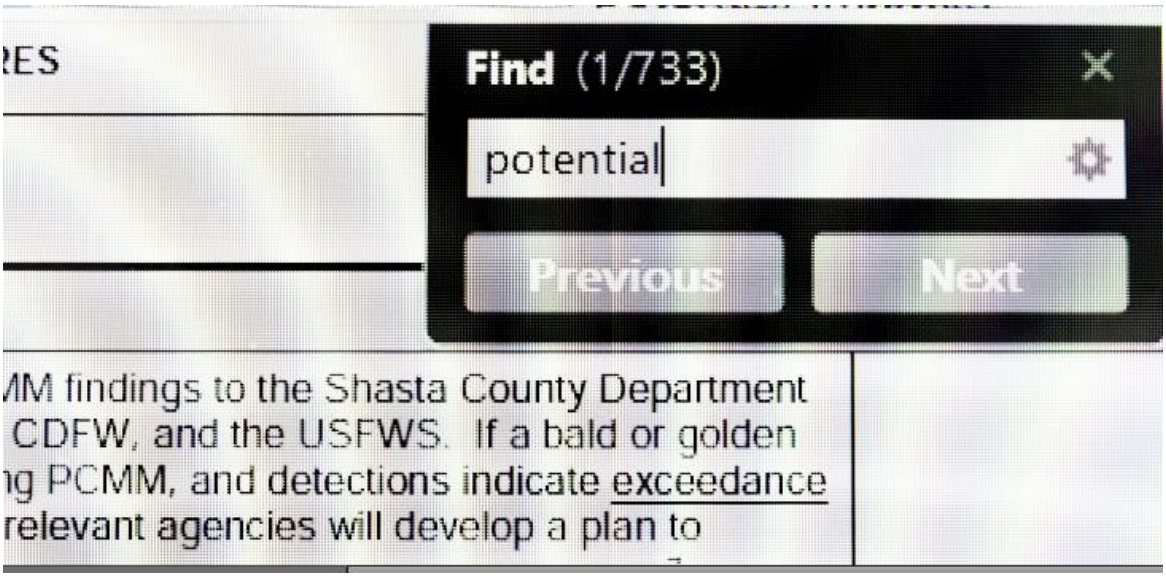

151
5
Redding
273
Cascade Wonderland Hwy
Palo Cedro Cow Creek



Shasta County Supervisors, do not be misled by a fraudulent industry. This project if built, will be killing bald eagles from the Pit River area of Shasta Lake.

Besides being filled with vague information and exclusionary comments, the Fountain Wind EIR and Appendix C - Biological Resources, are riddled with **weasel words**. Thousands of words, expressing uncertainty were deliberately used in the DEIR that should never be accepted. This is not science.

Weasel words …. Potential, may, possible, unlikely, could and might.



These 700 ft wind turbines do not have the potential to kill, may kill, might possiblely kill, or could kill….**They will kill and it will be with 100 percent certianly, they will kill every flying species type that is forced to share the same habitat with these turbines. This includes all migratory species and the regional Shasta County eagles.**

Dead Eagles and the Wind Industry

In Dec 2016 a law was secretly passed in the US allowing an industrial slaughter by modern turbines of 4200 Bald eagles a year. The public has no idea but these 4200 numbers, were needed to legally cover the ongoing hidden carnage to America's bald eagles by turbines. A slaughter that has been going on for decades and has escalated over time with the expansion of wind farms.

Cumulative mortality information like this below has been deliberately avoided by the Fountain Wind DEIR, by the industry and by government agencies for decades.

In Europe, the white-tailed Sea eagle is really their bald eagle, only without a white head. Read below and pay close attention to how quickly these turbines annihilated this fish-eating eagle population on Smola Island Wind.

"June 23, 2006, BBC News reported that 9 White-tailed Eagles have been killed at Norway's Smola Island Wind Energy Facility over a 10-month period. Smola is

located off the Norwegian coast where a key population of Europe's largest bird of prey resides.

Since the 68-turbine facility was built, reproductive output has plummeted, with breeding pairs at the site down from 19 to just one.

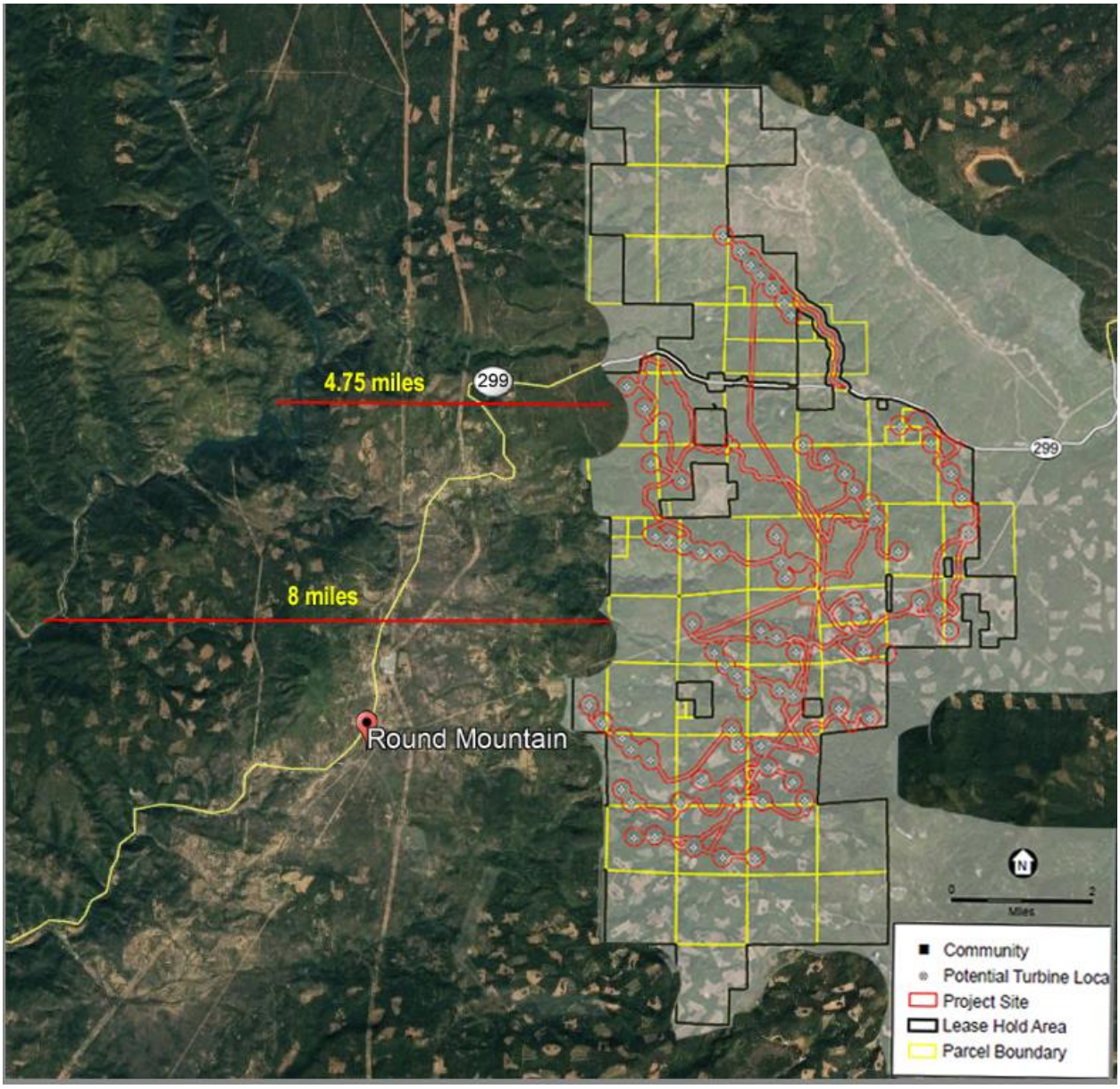
The Royal Society for the Preservation of Bird's Conservation Director (M. Avery) noted, "So this colony that is very important – was very important – has been practically wiped out because this wind farm was built in exactly the wrong place"

Smola Island region had at one time one of the world's densest breeding populations of white-tailed eagles and like the Shasta Lake region, has the highest density of bald eagles in CA.

These eagles were killed off by 2.3 MW turbines just like those installed at Hatchet Ridge. Somola is an area of about 250 square miles, yet the much smaller 68 turbine wind farm has a footprint of about 7 square miles. About the same size footprint as the Fountain Wind project will have.

A killing area of 250 square miles around the much bigger and more deadly Fountain Wind turbines, will be killing many eagles from Shasta Lake, the Pit River and migratory eagles.

Despite the phony risk analysis presented in the DEIR, bald eagles regularly visit the Fountain wind project area. The wind industry's surveys routinely avoid key migrations, special locations, courtship behavior and nest building activities. This has been an easy way for researchers to rig "risk analysis data" for developers. DEIR did not give exact dates and times for surveys and this is likely the reason.



Bald eagles regularly visit the planned Fountain wind project area. This industry's massive 700 ft "new generation" turbines, with blade tip speeds over 300 mph, will be chopping up Shasta County eagles.

The Eagle Repository in Denver

This 2013 report from the USFWS shows the eagle carcasses sent to Denver in a one year period. It also shows the numbers of eagles shipped from CA (region 8) and the Pacific Northwest (region 1).

Most of these repository eagles were fresh carcasses that could have only been found at wind farms. Rotted and decayed eagle carcasses are not given out to Native Americans with whole eagle orders. But the USFWS and wind farms won't tell you anything about any of this. All the annynonomous FEIR responses also avoided all my repository information.

USFWS numbers like these below are no longer available, and **based upon wind farm expansion since 2013, the current numbers of eagle carcasses being shipped to this facility are now over 3000 per year.**

NATIONAL EAGLE REPOSITORY ANNUAL REPORT: 10/01/12-09/30/13

REGION	WHOLE EAGLES & EAGLE PARTS RECEIVED			WHOLE EAGLE ORDERS FILLED	EAGLE FEATHER & PARTS ORDERS FILLED	COMBINED FILLED ORDERS BY REGION
	BALD	GOLDEN	REGION TOTALS	BALD/GOLDEN	BALD/GOLDEN	
1	186	60	246	143	384	527
2	30	30	60	527	1,222	1,749
3	547	10	557	164	446	610
4	281	10	291	26	119	145
5	206	3	209	36	166	202
6	256	246	502	197	558	755
7	273	4	277	3	13	16
8	16	136	152	74	260	334
TOTALS	1,795	499	2,294	1,170	3,168	4,338

NEW REQUESTS RECEIVED

BALD EAGLES	1,214
GOLDEN EAGLES	1,906
EITHER SPECIES	1,422
TOTAL	4,542

NOTES: Most of these eagles came from wind farms. Today turbines are killing twice as many.

Eagle carcass numbers after the developement of wind energy in Region 1.....

Repository does not maintain records of the state of origin of carcasses received but only for the region as a whole (Jeff Dillon and Bernadette Alensio USFWS pers comm. with M Nugent). The Repository has received 3,048 bald and golden eagles recovered dead in Region 1 of the USFWS (Oregon, Washington and Idaho) from 2000-2010. There is no breakdown available however for each species per state. In the instances where criminal activity is suspected or other unlawful

Published Jul 3, 2014 at 6:45 PM | Updated at 3:20 PM EDT on Jul 7, 2014

Fresh eagle carcasses being delivered to the Denver Repository .
This story from 2014 said that since 1995 they had processed 43000 eagle carcasses.

Table 10 below is from the Fountain Wind DEIR and it is highly deceptive. They show a total of only 101 eagles **"recorded"** as being killed by **"new generation"** turbines in CA and Pacific Northwest, 100 goldens and 1 bald eagle. Look over the Repository list again showing fresh THE bald eagle carcasses and think back to new Dec 2016, laws allowing 4200 bald eagles to be killed annually.

Table 10. Raptor fatalities, by species, recorded at new-generation wind energy facilities in the California and the Pacific Northwest regions of North America.

Species	Scientific Name	Number of Raptor Fatalities[1]	Percent Composition of Raptor Fatalities
red-tailed hawk	*Buteo jamaicensis*	551	53.5
American kestrel	*Falco sparverius*	261	25.4
golden eagle	*Aquila chrysaetos*	100	9.7
northern harrier	*Circus cyaneus*	19	1.8
Swainson's hawk	*Buteo swainsoni*	16	1.6
unidentified raptor		14	1.4
ferruginous hawk	*Buteo regalis*	14	1.4
rough-legged hawk	*Buteo lagopus*	12	1.2
Cooper's hawk	*Accipiter cooperii*	8	0.8
unidentified buteo		8	0.8
prairie falcon	*Falco mexicanus*	7	0.7
sharp-shinned hawk	*Accipiter striatus*	5	0.5
white-tailed kite	*Elanus leucurus*	4	0.4
merlin	*Falco columbarius*	4	0.4
unidentified hawk		2	0.2
peregrine falcon	*Falco peregrinus*	1	0.1
unidentified accipiter		1	0.1
bald eagle	*Haliaeetus leucocephalus*	1	0.1
red-shouldered hawk	*Buteo lineatus*	1	0.1
Total		**1,029**	**100**

"New generation" turbines happen to be the biggest eagle killers of all. At Altamont in the first year of operation (2009), with "new generation" turbines, 38 MW of installed capacity killed at least 4 golden eagles. I say at least 4 because 3 bodies were recovered and the fourth was found alive with its wing cut off. Others wander off to die and are never found. New generation turbines also are responsible for most of the 3048 eagles sent to the repository from the Pacific Northwest between 2000-2010,

I was also told by an employed wind tech, about 5 eagles killed in one month at hi wind farm, that were never reported.

Below is a list of reported Altamont golden eagle fatalities, emailed to me by a USFWS agent. In a 31-month period from Feb 2013 to Aug 2015, **85 eagle fatalities** were reported by their turbines

From: "Crum, Daniel" <daniel_crum@fws.gov>
Date: Oct 8, 2015 8:45 AM
Subject: Re: FW: dead eagles
To: "Jill Birchell" <jill_birchell@fws.gov>
Cc:

Jill:

Below is a monthly break-down for Altamont dating back to 2013 regarding eagle fatalities. I can not guarantee these numbers are exact, but I am confident that they are certainly close. I hi-lited the highest count (June 2014). If Jim W has a particularly month of interest, or identifies a possible shorted count, it is possible we have an independent record further accounted for in a specific INV.

February 2013: 4
March 2013: 3
April 2013: 3
May 2013: 1
June 2013: 3
July 2013: 2
August 2013: 5
September 2013: 5
October 2013: 6
November 2013: 1
December 2013: 0

January 2014: 1
February 2014: 0
March 2014: 4
April 2014: 3
May 2014: 5
June 2014: 8
July 2014: 3
August 2014: 2
September 2014: 5
October 2014: 4
November 2014: 2
December 2014: 0

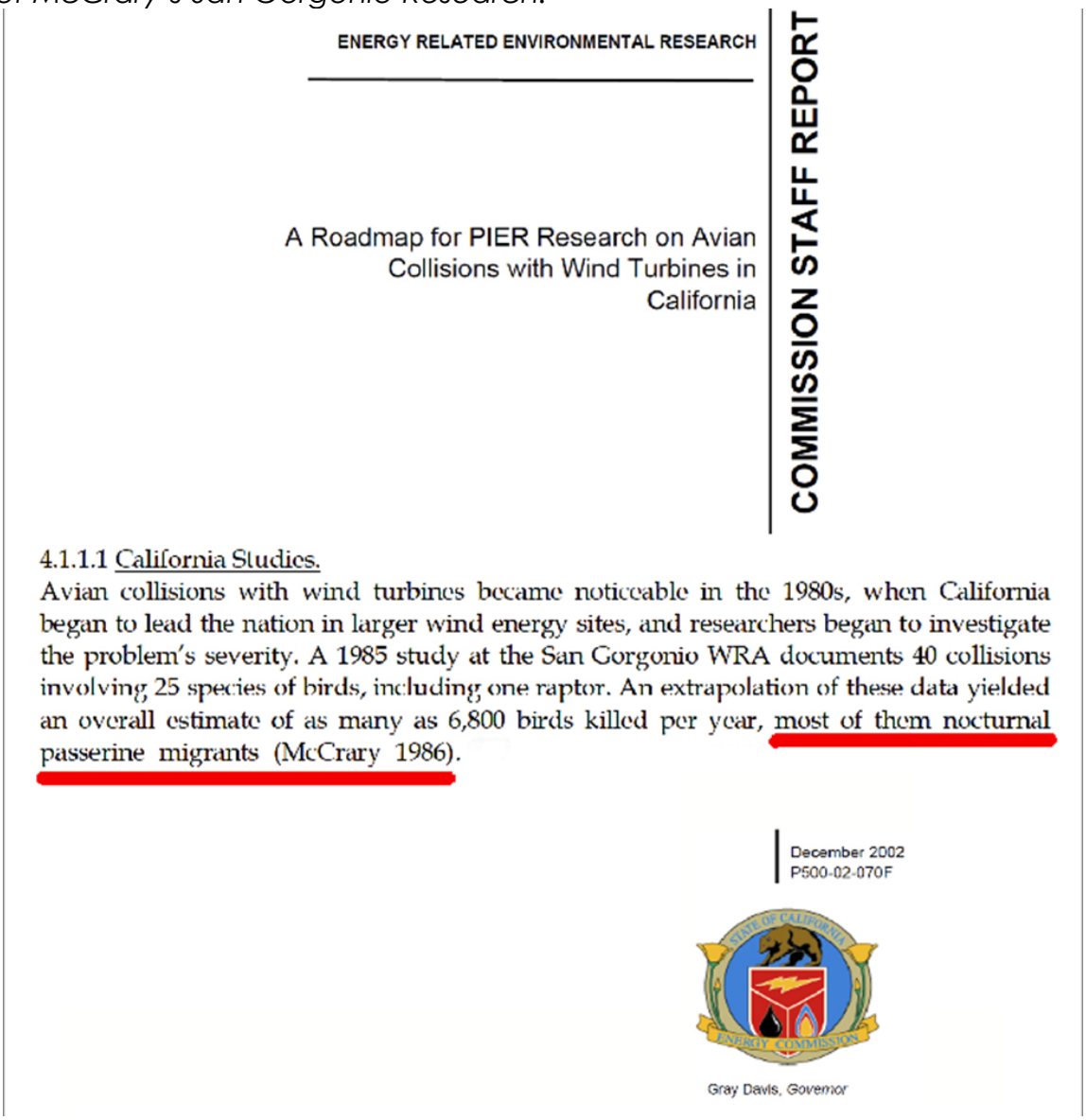
January 2015: 0
February 2015: 2
March 2015: 5
April 2015: 3
May 2015: 0
June 2015: 1
July 2015: 1
August 2015: 3

Just the "new generation" turbines at Altamont Pass have probably killed 300-400 hundred Golden Eagles, with most of the victims being Migratory. New

generation turbines have also killed bald and golden eagles trying to nest near the turbines in Solano County and are the most logical reason adult Bald Eagles disappeared from Grizzly Island, located about 5-8 miles away from new generation wind turbines.

Fountain DEIR research totally avoided Nocturnal migration risk analysis

This is so important because nocturnal fatalities are one of this industry's best kept secrets. Also note that this DEIR and the Final DEIR do not cite or quote any of McCrary's San Gorgonio Research.



ENERGY RELATED ENVIRONMENTAL RESEARCH

COMMISSION STAFF REPORT

A Roadmap for PIER Research on Avian Collisions with Wind Turbines in California

4.1.1.1 California Studies.

Avian collisions with wind turbines became noticeable in the 1980s, when California began to lead the nation in larger wind energy sites, and researchers began to investigate the problem's severity. A 1985 study at the San Gorgonio WRA documents 40 collisions involving 25 species of birds, including one raptor. An extrapolation of these data yielded an overall estimate of as many as 6,800 birds killed per year, most of them nocturnal passerine migrants (McCrary 1986).

December 2002
P500-02-070F

Gray Davis, *Governor*

"There is some concern that nocturnal migrating passerines may be compressed near the surface when cloud ceilings are low **or when flying over high mountain ridges, increasing the risk of collisions with turbines."**

McCrary, M. D., R. L. McKernan, W. D. Wagner, R. E. Landry, and R. W. Schreiber. 1983. Nocturnal avian migration assessment of the San Gorgonio wind resource study area, spring 1982. Report 83-RD-108 for Southern California Edison Co., Research and Development Division Los Angeles, California, USA.

McCrary, M. D., R. L. McKernan, W. D. Wagner and R. E.

A quote made by McCrary when wind turbines were only 60-100 feet tall.
Today wind turbines can reach up to 700 ft.

During spring 1982 migration in the WRSA most birds flew from 200 - 400 m above ground. However, many birds were recorded flying much lower than this, and a distinct proportion of all migrants were below 111 m (12.9%). Since most turbines considered for use in the WRSA are below 111 m in height, nocturnal migrants flying below 111 m are those that may potentially collide with wind turbine generators.

Numerous studies of avian mortality have shown that the nocturnal flight behavior of most migratory birds makes them particularly susceptible to collisions with a variety of man-made structures. Although many of these structures are considerably taller than the wind turbines presently planned for use in the WRSA, many shorter structures have also been implicated in bird mortality. From these studies avian collisions with wind turbines in the WRSA will almost undoubtedly occur. Because of the complex array of turbine designs (turbine height, number of blades, blade speed, presence and number of guy wires, etc.) available for use, the variety of possible geometrical

Advice from McCrary's 1986 research that's been ignored by the wind industry's fraudulent research for 35 years

the measurement of the actual number of birds colliding with turbines and how these numbers compare to the total population of birds flying over the turbines. The monitoring program should include extensive ground counts of dead or injured birds around a variety of wind turbine configurations combined with simultaneous vertical radar – image intensifier observations on the magnitude and altitude of nocturnal migration. This methodology will provide precise information on the number of individuals and species killed or crippled, percent killed of total birds flying over the turbines, altitudinal distribution of birds as related to the number killed, and the effects of weather and lighting on the number of birds killed. In this manner the biological significance of the number and species killed can be more accurately determined than with simple ground counts. As the number of migrants killed will vary with the type, density, and spacing array of turbines, we stress that these studies should be conducted throughout various stages of construction and not limited to monitoring a specific array of low density single design turbines.

FROM Fountain DEIR…….

Nocturnal Avian Surveys

Summary of CDFW Comments and Recommendations:

The Department recommends utilizing multiple survey methods to conduct a nocturnal migration survey at the Project. The Department also recommends the completion of focused nocturnal owl surveys, designed to detect all species of owls potentially present within the Project.

Response:

Although nocturnal radar studies at proposed wind energy projects have been implemented as a method to characterize migration patterns and potential exposure levels for nocturnal migrants, no correlation has been found between radar-measured passage rates of avian targets and post-construction fatality rates, indicating that preconstruction radar studies are not an effective tool for assessing risk to migrating birds at wind energy facilities (Tidhar et al. 2012**, Stantec 2017).** As such, nocturnal radar studies at Fountain are unlikely to inform risk at the Project and are unwarranted. Collision mortality of nocturnal migrant birds has generally been low at wind energy facilities, particularly in the western U.S., and multi-bird fatality events are extremely rare. This trend is supported by the results of the 3-year fatality study at Hatchet Ridge **(Tetra Tech 2014),** located adjacent to the Project and on the highest ridgeline in the immediately surrounding area, where nocturnal migrant fatality rates have been very low.

"The Department recommends utilizing multiple survey methods to conduct a nocturnal migration survey at the Project. The Department also recommends the completion of focused nocturnal owl surveys, designed to detect all species of owls potentially present within the Project."

None of this was done for the DEIR and the reasons given for not doing so ……complete rubbish. In addition, recommendations are not requirements. Do not give these flimflam researchers a free pass.

The DEIR statement above also quotes **Stantec** and **Tetra Tech** in their opinion of nocturnal radar studies. What's so absurd about that, is that if either of these outfits did conduct radar studies for the Fountain Wind Project, Supervisors would still never know real world conditions and the species mortality risks from the Fountain wind studies.

Truth is, one-sided and nonscientific wind industry studies, will never be an effective tool for assessing risk. Also, a correlation between radar studies and post construction studies will never exist because of this industry's fraudulent post construction research. Below I give an example of radar studies conducted by each of these outfits and explain their research methodologies that hid data.

Tetra Tech's disgraceful Radar Study conducted in one of America' greatest bird migration corridors

Tetra Tech conducted radar studies for Lake Erie's Ice breaker wind project. Like Dr. Kerlinger's research, which I am well aquatinted with (See Kerlinger's nonscientific research & comparisons later in these comments) Tetra Tech's radar study is just more of the wind industry's nonscientific studies ready for the dumpster.

2.2.1 Onshore Radar Data Results

The MERLIN Avian Radar System operated onshore at the Cleveland Lake Front State Park (East 55th Street Marina) from March 31 to April 30, 2010 (see **Figure 2.1**). A total of 128.8 total hours of onshore radar data were recorded during the onshore sampling period, out of a total of 712 available hours between March 31 and April 30. The onshore radar survey recorded substantial period of rain and wave clutter, resulting in only about 20% of available, clear air, radar data available for analysis. Wave clutter was less of a problem at the offshore Crib site; however there were still periods of rain.

As for Tetra Tech's Lake Erie research, I found that the their Avian and Bat Studies were deliberately designed so important "incidental" data could be excluded. Their radar sampling was set up to miss the highest concentrations of migrating species. Very important data detailing lower altitude bird flight patterns during periods of low visibility were also left out. Only 128.8 hours (18%) of radar data collected was used from a total of 712. How unscientific can you get?

*"Though **incidental observations of birds in the vicinity of the Study Area were not included** in the results of the standardized surveys, they provide insight on the avian community in the general area."*

*"The MERLIN Avian Radar System operated offshore at the Crib (see Figure 1.1) **during the 2010 sampling period, from May 1 to May 26, 2010, and again from August 16 to October 12, 2010."***

*"It is known that **concentrations of most waterfowl species peak on Lake Erie during March to early April (Prince et al., 1992) with fall migration spanning a three to four month period** where different species show peaks in abundance at different times late into the fall migration season (Ewert et al., 2006)."*

"Data was not collected or analyzed due to weather (precipitation or fog) interference and/or radar mechanical downtime."

When dealing with one of North America's most important and highest concentrations of birds, one would think that credible scientific radar studies would have included accurate year-round data collection and credible observations. But this isn't the case with wind industry research.

The **Tetra Tech studies** were supposed to provide baseline data for risk assessment. But this is not possible considering the limited unscientific data collected for this project. These studies also included no information or opinions about avian behavior responding to the absence of ice expected around these offshore turbines during winter months, the risk created by increased year-round perching availability attracting species, and the attraction of species from the

increased food available to raptors and fish-eating species at turbine sites that will accumulate because the cover provided by offshore turbines.

Supervisors should remember, Tetra Tech is the same outfit that conducted the nonscientific mortality studies for Shasta County's Hatchet Ridge project.

STANTEC's fatally flawed radar and eagle studies conducted for a project in Humboldt County with 700 ft wind turbines

Biological Resources: Humboldt Wind Energy Project Eagle and Raptor Aerial Nest Survey Report, Humboldt County, California, Spring 2018

I have seen time and again, that Stantec research is very good at designing studies that do not find target species and eliminate data. This eagle survey serves as a good example.

Stantec's eagle and raptor nest surveys should have used both ground-based and helicopter survey techniques. Stantec did not any conduct ground-based nesting surveys that routinely document nesting behaviors, foraging territories and nesting territories. Ground based surveys are even more important than helicopter surveys. So just because Stantec did not report any eagle nests, it does not mean that they do not exist. Bald eagles and golden eagles do live around and were seen around this project site. It is very likely that the nests of both of these eagle species exist in the vicinity of this project site.

But these Stantec helicopter surveys were also poorly done. While these flight patterns shown in the DEIR would probably be suitable for an open desert area like Nevada. They are not suitable for this forested project site. There are huge flight pattern gaps that are over than ten miles wide in this terrain. In this habitat, if the proper flight angle is not taken, a helicopter could miss an eagle nest only ¼ mile away. This is especially true for a golden eagle's nest.

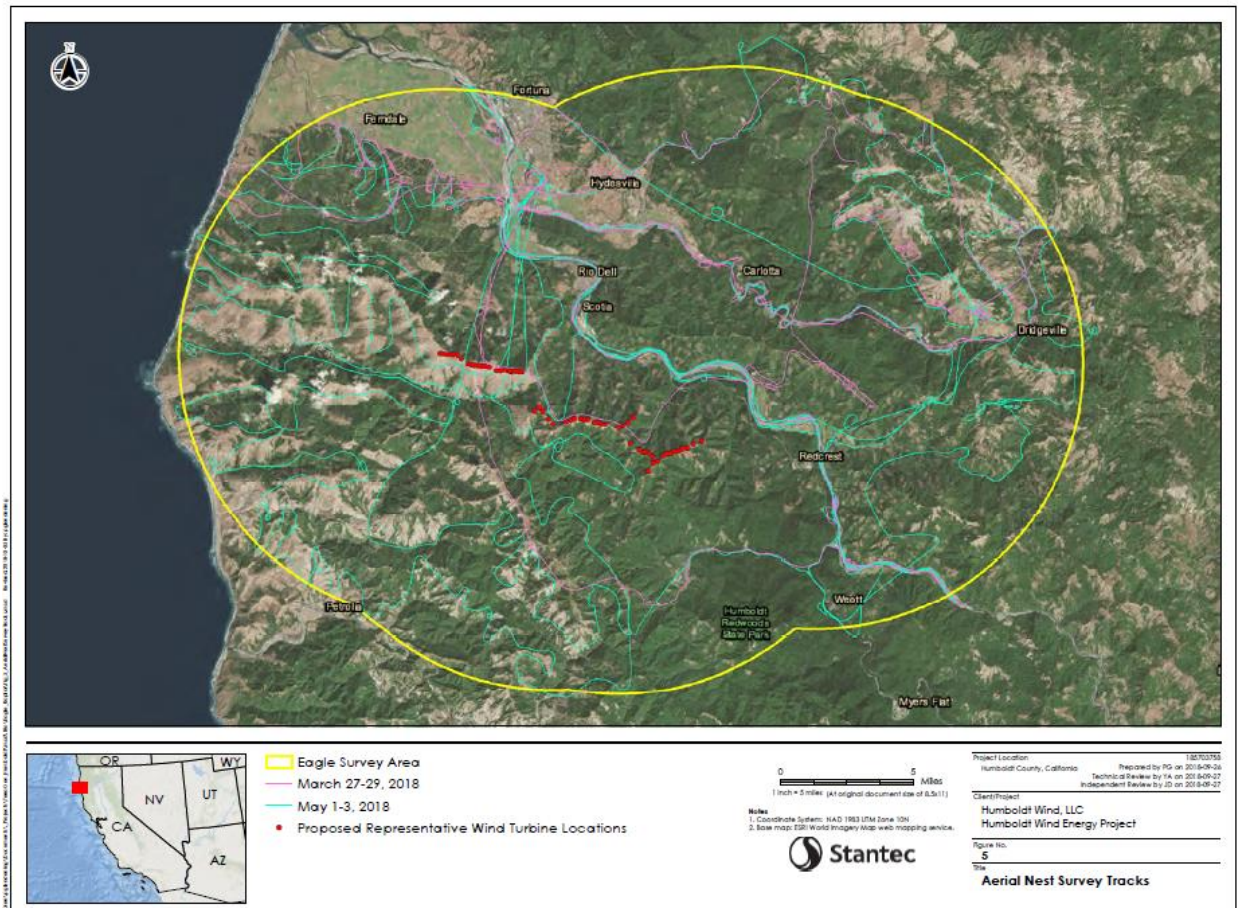
In my analysis of the habitat around the project site on google earth imagery, I would have never conducted these eagle surveys like Stantec did. It is also my opinion that these flight routes were staged. The eagle nest surveys also failed to take a simple boat trip down the river to document bald eagle behavior that could help observers verify a nest, nesting activity and or a nesting territory.

These eagle surveys are a scientific disgrace yet this DEIR falsely claims otherwise. ……."The range of avian species observed coupled with active and inactive stick nests of varying size detected suggest that the survey

methods are appropriate and suitable to observe eagles or their nests if the opportunity presented." The only truth in this statement is that these survey methods were only appropriate for wind energy's version of research.

The 86 square miles of the Altamont pass Wind Resource Area, including a large area that extends for miles in all directions, was abandoned decades ago by nesting golden eagles because of wind turbines. The region around the Humboldt wind project needs a much more definitive raptor nest inventory. This is very important because these turbines will kill off most of these local raptors and species habitats will be abandoned.

Stantec biologists reported seeing 21 different species of raptors in this excellent habitat. They produced very few raptor nests and provided no population estimates for these reported species.



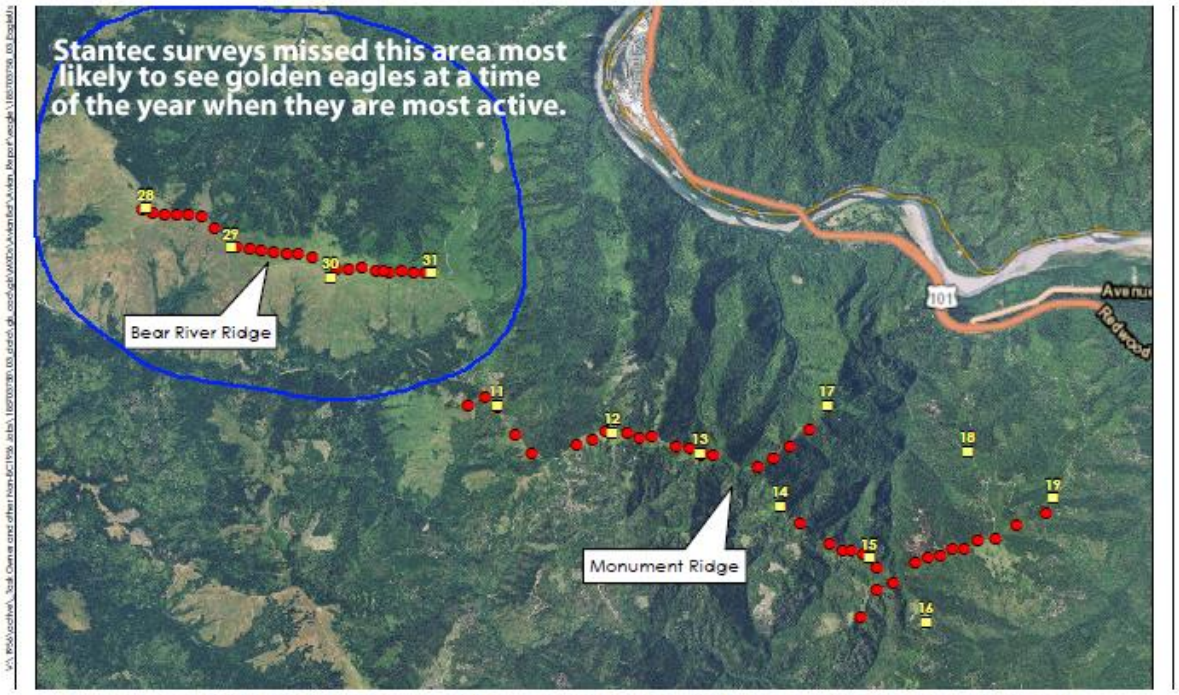


Table 1. Survey effort by plot number for eagle use surveys conducted at the Humboldt Wind Energy Project, Humboldt County, California, October 24, 2017–October 26, 2018

Plot No.	Month/Dates													Total Visits
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
	24–26	1, 19, 29	13, 19–20	3–4, 9–10	7, 14–15	7–8, 14	3	1, 23, 29	6–7, 15, 26	3–5, 11–12, 19, 25	8–9, 15, 27	13–14, 22, 24, 27–28	4, 15, 26	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	13
12	1	1	1	1	1	1	1	1	1	1	0	1	1	12
13	1	1	1	1	1	1	1	1	1	1	1	1	1	13
14	1	1	1	1	1	1	1	1	1	1	1	1	1	13
15	1	1	1	1	1	0	0	1	1	1	1	1	1	11
16	0	2	1	1	1	0	0	1	1	1	1	1	1	11
17	0	2	1	1	1	1	1	1	1	1	1	1	1	13
18	0	2	1	1	1	0	0	1	1	1	1	1	1	11
19	0	2	1	1	1	0	0	1	1	1	0	1	1	10
28	0	0	0	0	0	0	0	1	1	1	1	1	1	6
29	0	0	0	0	0	0	0	1	1	1	1	1	1	6
30	0	0	0	0	0	0	0	1	1	1	1	1	1	6
31	0	0	0	0	0	0	0	1	1	1	1	1	1	6
Total	5	13	9	9	9	5	5	13	13	13	11	13	13	131

Biological Resources: *Humboldt Wind Energy Project Marbled Murrelet* ***Radar Survey Report***,

The Marbled Murrelet is an endangered species. There are a number of problems with the Stantec radar surveys conducted and submitted for this

project. For the study there was not full horizontal and vertical radar coverage of the turbine sweep zones. In fact, there was very little. Then of the limited radar data that was collected, it was left for Stantec to interpret. Flight routes being taken by these murrelets into old growth stands near these turbine sites are not covered.

Look close at The DEIR images and study all the huge blind sports. With these blind spots, there is little radar coverage on most of these turbine sites. There is also no complete vertical and horizontal radar coverage for this project's turbine rotor sweep zones (see VSR and HSR image). This vital information is missing not only for these Marbled murrelets but for a multitude of other species as well. How manty thousands of total targets were seen in this radar study, only to be dismissed as not being murrelets?

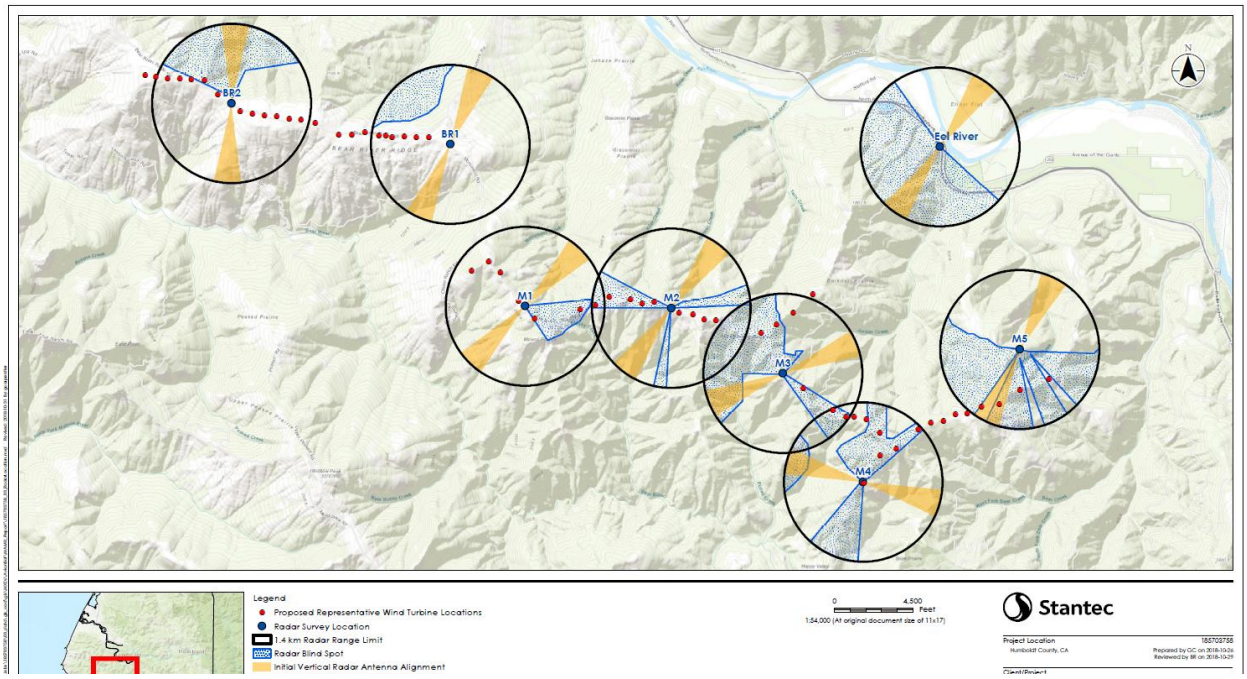
The Stantec radar studies also missed nearly a month and in some cases 2 months of very important murrelet flight data, and nesting location behavior data and courtship behavior data. That would put them in rotor sweep zones. The Stantec radar surveys also missed months of mid-day activity periods that could have shown murrelets flying back and forth from their nests after bringing food to offspring.

Examples of exclusionary statements ……

"Three observed ridge crossing flights **did not have any vertical data available,**" **"**Flight altitude, **when available**, for targets observed or projected to have crossed the ridge."

"**With some exceptions**, most murrelet activity that we observed was generally traveling parallel to the project area"

These radar studies and this DEIR, tell the public virtually nothing about the Murrelets travel routes, their nesting in the forests around these turbine sites, their, or behaviors that indicate nesting. All this missing information is important in order to estimate the number of Murrelets and other species that will be killed when passing through the millions of cubic feet of deadly rotor sweep.



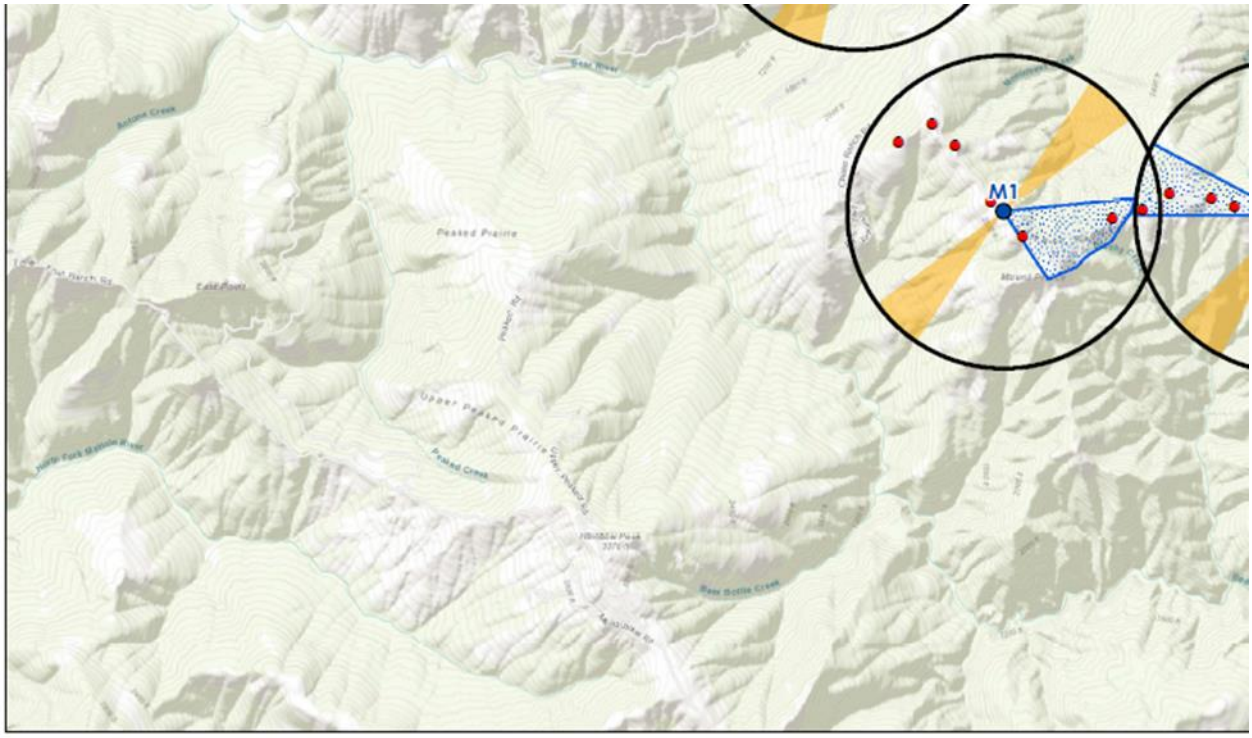
Legend
- Proposed Representative Wind Turbine Locations
- Radar Survey Location
- 1.4 km Radar Range Limit
- Radar Blind Spot
- Initial Vertical Radar Antenna Alignment

0 4,500 Feet
1:54,000 (At original document size of 11x17)

Stantec

Project Location
Humboldt County, CA

185703758
Prepared by CC on 2018-10-26
Reviewed by BR on 2018-10-29



Legend

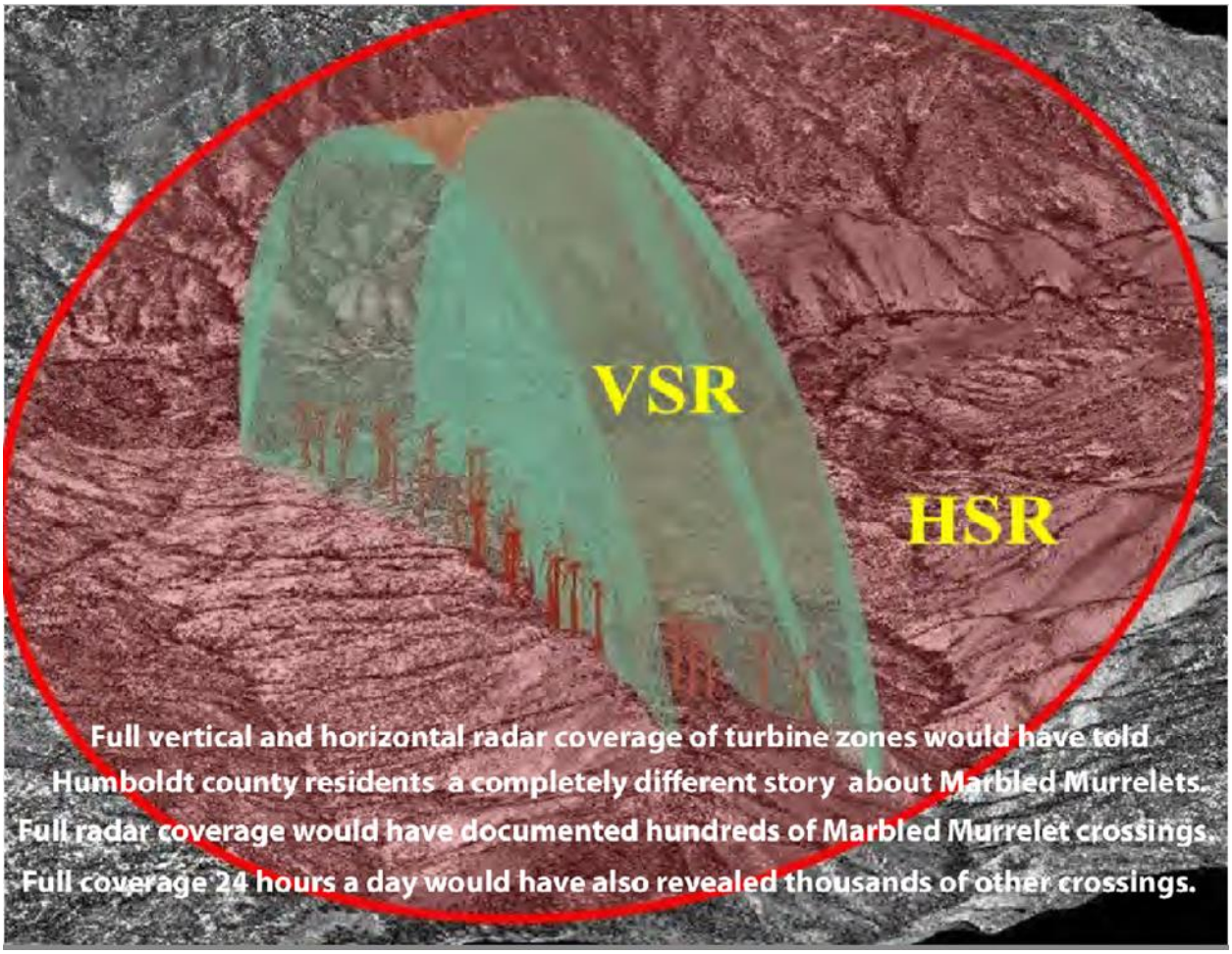
- Proposed Representative Wind Turbine Locations
- Radar Survey Location
- 1.4 km Radar Range Limit
- Radar Blind Spot
- Initial Vertical Radar Antenna Alignment

Table 2. Survey dates for marbled murrelet radar sampling at the Humboldt Wind Energy Project, Humboldt County, California, April 17, 2018 - September 27, 2018.

Radar Station	Morning Surveys	Evening Surveys	Mid-day Surveys
M1	4/22, 5/1, 5/5, 5/23, 6/18, 7/8, 7/25, 8/18, 9/8, 9/24	4/21, 4/30, 5/4, 5/22, 6/17, 7/7, 7/24, 8/17, 9/7	8/13, 8/14
M2	4/22, 5/1, 5/5, 5/23, 6/16, 7/9, 7/11, 7/26, 8/17, 9/9, 9/25	4/21, 5/4, 5/22, 6/15, 7/8, 7/25, 8/16, 9/8	
M3	4/19, 4/30, 5/6, 5/24, 6/20, 7/9, 7/26, 8/17, 9/9, 9/25	4/18, 4/29, 5/5, 5/23, 6/19, 7/8, 7/25, 8/16, 9/8	6/19
M4	4/20, 4/28, 5/4, 5/27, 6/16, 7/7, 7/28, 8/19, 9/10, 9/26	4/19, 4/27, 5/3, 5/27, 6/15, 7/6, 7/27, 8/18, 9/9	
M5	4/21, 4/26, 5/2, 5/25, 6/17, 7/10, 7/27, 8/14, 8/16, 9/12, 9/27	4/20, 4/25, 5/1, 5/26, 6/16, 7/9, 7/26, 8/15, 9/11	8/13
BR1	5/24, 6/17, 7/8, 7/25, 8/18, 9/8, 9/24	5/23, 6/16, 7/7, 7/24, 8/17, 9/7	6/20
BR2	5/26, 6/18, 7/7, 7/28, 8/19, 9/10, 9/26	5/24, 6/17, 7/6, 7/27, 8/18, 9/9	
ER	4/18, 4/27, 5/2, 5/22, 6/15, 7/10, 7/27, 8/20, 9/7, 9/12, 9/27	4/17, 4/26, 5/1, 5/21, 6/14, 7/9, 7/26, 7/28, 8/19, 9/6, 9/11	

The breeding season is defined by the earliest known nesting and latest known fledging dates, and is used by regulatory agencies to avoid adverse effects to the species. The breeding season extends 24 March – 15 September in California, and 1 April – 15 September in Oregon and Washington.

Nearly a month late
Two months late
Three to 5 months late or no surveys



Biological Resources: *Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California*

None of this discussion on avoidance has any merit because the data used was collected with severely tainted and deceptive non nonscientific research methodologies. There was not full radar turbine sweep coverage with this murrelet radar study. Important data was missed and other data excluded. In reality, there were likely hundreds of ridge crossings for each pair nesting near these proposed turbine sites. The Stantec radar studies also missed nearly a month and in some cases 2 months of very important murrelet flight and nesting behavior.

The logic used in this discussion on avoidance is particularly disturbing and absolutely inexcusable.

"There are no murrelet-specific studies of avoidance. However, Sanzenbacher and Cooper (2015) discuss cases of murrelet avoidance of structures where no collision occurred (100% avoidance). Murrelets fly in and out of the canopy of large trees at high speeds and are presumed to recognize and avoid obstacles, even in low-light. The amount of time a murrelet will spend in a turbine area is short."

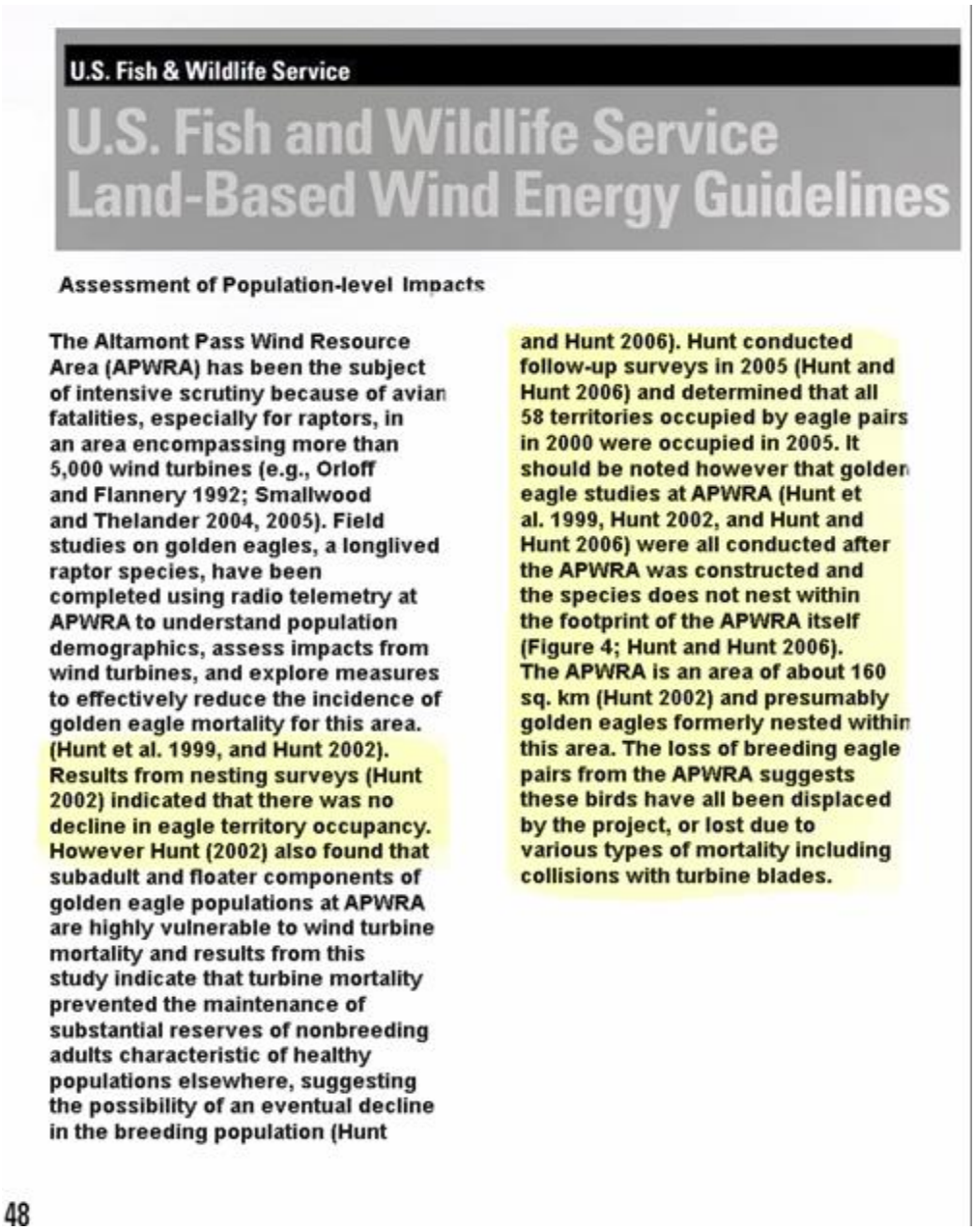
This same language was used in wind industry reports discussions when this industry invaded and destroyed the historical habitat for the California Condor around Tehachapi pass. The fact is every bird on this planet can recognize and avoid obstacles like branch even in low light. **But what birds can't and shouldn't be expected to avoid are massive blades coming at them with speeds up to 300 mph.** Any slim chances a bird has for avoidance also drops significantly in low light conditions, darkness, high winds (that inhibit maneuverability) and with low visibility foggy or low cloud conditions.

Fountain Wind FEIR RESPONSE P29-18 .....

" The comment shares a warning from "an insider" that golden eagles on occasion have attempted to nest within the 86 square mile area of the Altamont Wind Resource Area, but they fail**. The Altamont Pass is commonly regarded as supporting the highest concentration of breeding golden eagles in the world.[76] While golden eagle mortality is high in the Altamont, the area also supports successful breeding by this species (Id.).**

How green research created an imaginary population of golden eagles around Altamont.

When reading this over keep in mind that since 2016, wildlife agencies can't even verify100 truly occupied golden eagle nest sites in the entire state of CA. The few golden eagle nests that remain in the region are miles away from the 86 square mile wind resource area.



U.S. Fish & Wildlife Service

U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines

Assessment of Population-level Impacts

The Altamont Pass Wind Resource Area (APWRA) has been the subject of intensive scrutiny because of avian fatalities, especially for raptors, in an area encompassing more than 5,000 wind turbines (e.g., Orloff and Flannery 1992; Smallwood and Thelander 2004, 2005). Field studies on golden eagles, a longlived raptor species, have been completed using radio telemetry at APWRA to understand population demographics, assess impacts from wind turbines, and explore measures to effectively reduce the incidence of golden eagle mortality for this area. (Hunt et al. 1999, and Hunt 2002). Results from nesting surveys (Hunt 2002) indicated that there was no decline in eagle territory occupancy. However Hunt (2002) also found that subadult and floater components of golden eagle populations at APWRA are highly vulnerable to wind turbine mortality and results from this study indicate that turbine mortality prevented the maintenance of substantial reserves of nonbreeding adults characteristic of healthy populations elsewhere, suggesting the possibility of an eventual decline in the breeding population (Hunt and Hunt 2006). Hunt conducted follow-up surveys in 2005 (Hunt and Hunt 2006) and determined that all 58 territories occupied by eagle pairs in 2000 were occupied in 2005. It should be noted however that golden eagle studies at APWRA (Hunt et al. 1999, Hunt 2002, and Hunt and Hunt 2006) were all conducted after the APWRA was constructed and the species does not nest within the footprint of the APWRA itself (Figure 4; Hunt and Hunt 2006). The APWRA is an area of about 160 sq. km (Hunt 2002) and presumably golden eagles formerly nested within this area. The loss of breeding eagle pairs from the APWRA suggests these birds have all been displaced by the project, or lost due to various types of mortality including collisions with turbine blades.

48

On the Federal Wind industry guidelines, there is a short discussion about the Altamont Pass wind turbines and the impact they have had on the regional golden eagle population. None of it is true. Also not true, are the all the reports to the public that the Altamont Pass area reportedly has largest density of breeding Golden Eagles in the world. Sadly, this is a myth created from bogus wind industry research hiding industrial impacts.

What has taken place to golden eagles around Altamont is important because this wind energy site has been slaughtering golden eagles for decades. In 2015 the USGS published a report or survey that estimated the eagle population **to be**

approximately 280 pairs in a 2000 square mile region around Altamont. They came to this conclusion by relying on a previous bogus green energy study from the Clinton Era and rigging new methodology used for this study. https://pubs.usgs.gov/of/2015/1039/pdf/ofr2015-1039.pdf ;

I am aware of the Altamont Wind Resource Area because I conducted raptor and eagle research there in the 1970's. **I was also told that when the research was conducted in the 90's declaring that the region around Altamont had "59 golden eagle nesting territories within 30 kilometers" ……one of the participating researchers said he only knew of 6.**

USGS survey claims 280 pairs when there might actually be only 20 nesting pairs. Of course, real scientific research and ethical institutions could easily clear all this up.

The final USGS estimate of 280 pairs is even more remarkable when it is revealed that this study could **only verify 11 occupied eagle nests** that produced young in the region. To reach 280 pairs these studies basically used the arbitrary subjective term **"nesting territories"** from the earlier 90's studies and figured an average from these imaginary golden eagle territories.

Now look at this critical information below that was well hidden in this USGS study. What is circled in red is by far the most important information in this entire study. The researchers **could only document 11 occupied** golden eagle nest sites.

Table 1. Survey effort and detections of golden eagles and their young during multistate occupancy surveys conducted in the Diablo Range, California, 2014.

[Breeding stages were courtship (January 1–February 28), incubation (March 1–April 30), nestling (May 1–June 15), and fledgling (June 16–July 31)]

Survey occasion and breeding stage	Sites surveyed	Number of sites surveyed with 1 or more golden eagles detected (percentage)	Number of sites surveyed with 1 or more territorial pairs detected (percentage)	Number of occupied sites with 1 or more young produced (percentage)
1: courtship	111	95 (77.5)	64 (57.7)	
2: incubation	123	90 (72.6)	64 (52.0)	2 (1.6)
3: nestling	113	80 (64.0)	39 (34.5)	11 (9.7)
4: fledgling	71	49 (76.6)	20 (28.2)	11 (15.5)
All visits combined	133	119 (89.5)	87 (65.4)	17 (19.5)

How did these pseudo experts get 280 golden eagle pairs? With their contrived nonscientific methodology that allowed them to count the same eagles over and over again from different survey sites, in much larger golden eagle territories occupied by just one pair. I know for a fact that one golden nest site and territory I studies near Altamont, consumed at least 6 of these absurd unscientific polygon territories.

……"**As a consequence, we used a *probabilistic sampling approach* to infer estimates of occupancy, reproduction, and number of territorial pairs of golden eagles.**"

Look closely at the two images. One is from the fake Federal study; the other image is from a publication put together by the Mt. Diablo chapter of the Audubon Society with the help of the CA Department of Fish and Game and numerous other local agencies.

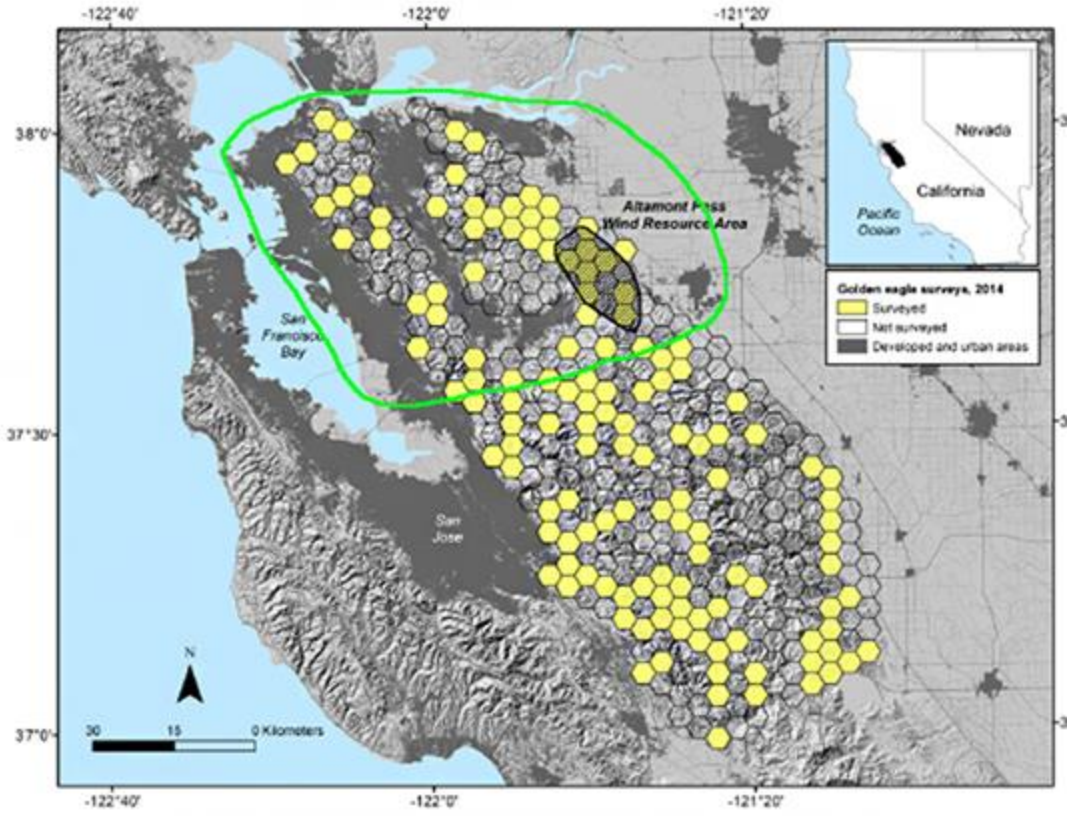
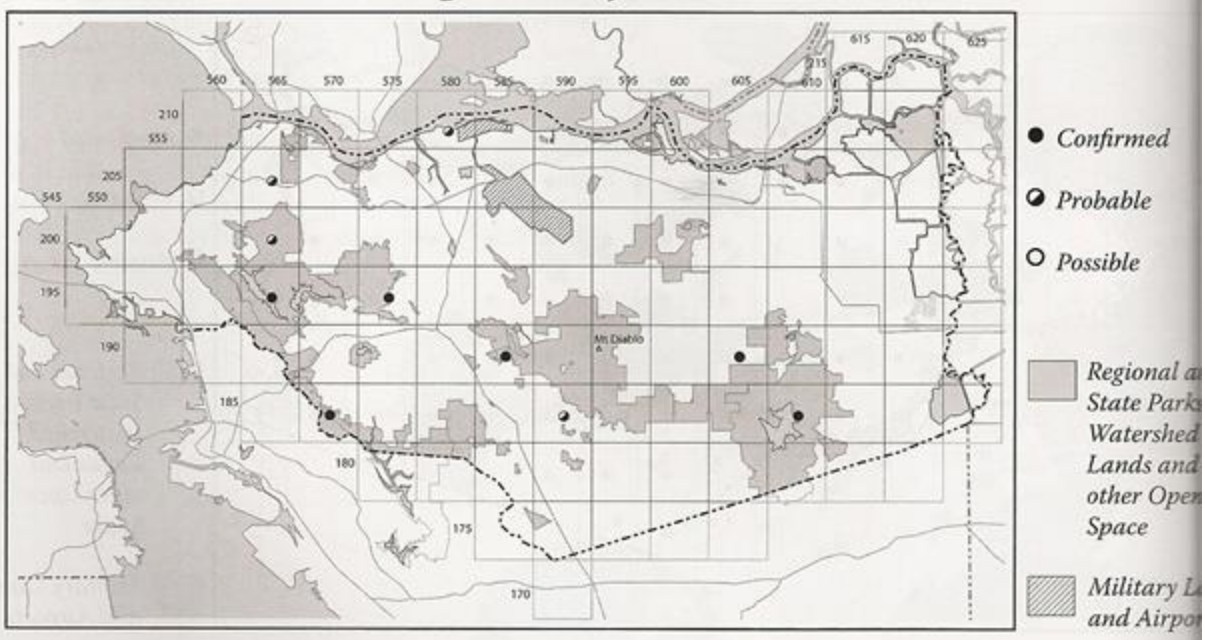


Figure 1. Map showing Diablo Range study area of west-central California and distribution of 133 randomly selected survey plots (1,385-hectare hexagons highlighted in yellow) that were repeatedly searched for evidence of occupancy and breeding success of golden eagles in 2014.

FAMILY ACCIPITRIDAE — HAWKS, KITES, EAGLES, AND ALLIES

GOLDEN EAGLE • *Aquila chrysaetos*



Massive, majestic and mortal enemy to ground-squirrels everywhere, the Golden Eagle is in a struggle against urban sprawl to maintain its local role as a symbol of wildness in a place becoming less wild with each passing day.

Current status and distribution

The Golden Eagle is an uncommon and local nester

but it is assumed they were taken from the Diablo Ran
west of town.

Breeding and natural history

The atlas team confirmed nesting eagles on ten occ
sions in 6 blocks. Nest building was recorded as early
16 December. Occupied nests (contents unknown) we
noted four times 9 March–24 April; nests with you

I want to point out that golden eagles did nest in the 160 sq. km footprint of APWRA and they have been killed off by these turbines. I was also told by a qualified observer that golden eagles have made unreported nesting attempts in the APWRA but these nests always failed.

Similar research with fraudulent data building methodology was created in Scotland to hide a rapidly declining population of golden eagles. These fraudulent studies from the UK claim there are 508 nesting pairs of golden eagles. An increasing population was reported, when there are probably less than 100 pairs remaining.

Just like in CA, this Scotland eagle population currently being killed off by wind turbines.

A review of two supposedly “scientific” wind energy studies

The 2006 Shiloh west coast and 2006 Maple Ridge east coast, mortality studies.
Both have fatal flaws, but one has far more

MAPLE RIDGE WIND POWER AVIAN AND BAT FATALITY STUDY REPORT

Prepared by: Aaftab Jain Paul Kerlinger Richard Curry Linda Slobodnik
Curry and Kerlinger, LLC

EXECUTIVE SUMMARY

“The Maple Ridge Wind Power Project consists of 195 wind turbines and three permanent meteorology towers on the Tug Hill Plateau of Lewis County, just west of Lowville, New York. In 2005, a total of 120 Vestas wind turbines were constructed within the Phase I project area; the remaining 75 turbines in Phase IA and II of the project were constructed in May to December 2006. **Each 1.65 MW turbine** consists of an 80-meter-(262-foot)- tall tubular steel tower; a maximum 82-meter-(269-foot)-diameter rotor; and a nacelle which houses the generator, transformer, and power train. The towers have a base diameter of approximately 4.5m (15 feet) and a top diameter of 2.5 m (8 feet). The tower is topped by the nacelle, which is approximately 2.8m (9 feet) high and 7.6m (25 feet) long, and connects with the rotor hub. **The rotor consists of three 41-m(134-foot)-long composite blades**. Approximately 30% (38 out of 120) of the nacelles are equipped with L-864 FAA aviation obstruction beacons (lights) consisting of flashing strobes (red at night) and with no beacon illumination during the day. With a rotor blade oriented in the 12 o’clock position, each turbine has a maximum **height of approximately 400 feet** (122meters). All components of the turbine are painted white.”

On the surface wind industry mortality research appears very credible, but upon expert scrutiny, there are always study methodologies to be found that hide mortality data. Then along with these studies I discover the obvious omission of facts, a lack of important information and an avoidance of important follow-up studies. With wind energy research, there really is no true science and the industry makes up research methodologies to suit their needs. It has been this way for decades.

While the Maple Ridge 3-year mortality study was not scientific, I will show, it did adhere to the ongoing wind industry pattern of severely flawed, inconsistent and unscientific research. There is a lot I could add about this flawed study, but I will only touch on enough proof needed to illustrate a lack of science a lack of good judgement and to make it clear to all, that most of the mortality went unreported.

The lesson from Maple ridge for everyone, is this, just because data is collected and then used in complex calculations, does make it science or the truth. The study methodologies for this study were flawed and true experts should have known better.

The Maple Ridge wind farm study claimed to use 120 by 130-meter rectangular search plot and then produced calculations for a circular area out to 90 meters from towers. The corners in this imaginary round search plot represented 90 meters. I use the word imaginary because the total average search areas in the study were about 11,300 sq. meters or only 71% of the stated 120 by 130 meters rectangle.

As I will show, this methodology produced severely flawed calculations and left a substantial amount of turbine mortality unreported. I also want to point out that this search area size selected for these large

turbines is not much bigger than the search areas used for the thousands of searches used around Altamont's 100kW turbines. The small turbines at Altamont Turbines have a rotor sweep of about 200 sq. meters each. The Maple Ridge turbines, were 26 times larger having 5278 sq. meters of rotor sweep. Going into this study all the researchers involved should have known better than to restrict the carcass study areas and follow-up calculations, to a 120 by 130-meter area around these very large turbines. The unscientific methodology used for this study also restricted searchers to only look at an average search area size of about 60 meters out from towers leaving 81% of the total study area 60-90 meters, not actually searched. The area beyond 60 meters is very important because for a turbine this size, this is the area where researchers should have expected to find the most carcasses.

If study design allowed for searches out to 150 meters and then added appropriate numbers for carcasses out to 200 meters. I could fully understand. Yet this entire area was avoided in the study. The reality in all this is that is that when considering a minimum search area of 150 meter, that should have used, searches missed over 95% of the areas around these turbines where carcass would have been found.

Is it scientific or credible to expect similar carcass dispersal distances from these wind turbines?

Maple Ridge had search areas of about 60 meters, the small turbines 50m

The Maple Ridge turbines have 26 times the rotor sweep and are 300 ft taller.

.

Years of research around small turbines at Altamont, using complete searches of a 50-meter distance out from towers, showed that even this search area size still missed many turbine fatalities. For turbines, the size of the Maple ridge turbines and from the research conducted up to 2007, most of the carcass dispersal for the Maple Ridge study should have expected to found beyond 60 meters from towers. The data shown below proves this point.

Below is carcass distribution data collected from Altamont turbines with approximately 9 meter blades and maximum heights of about 100 feet. Today's turbines are 400-500 feet tall and average carcass distribution is reported to be about 20-25 meters from around turbines with 50-60 meter blade lengths.

Table 2-5. Number and Percentage of Turbine-Related Avian Fatalities within and beyond 125 Meters from Turbines

Bird Year	Within 125 Meters	Beyond 125 Meters	Total
2005	545 (99.6%)	2 (<1%)	547
2006	1,185 (99.5%)	6 (<1%)	1,191
2007	1,338 (98.7%)	18 (2%)	1,356
2008	924 (99.1%)	8 (<1%)	932
2009	815 (99.5%)	4 (<1%)	819
Total	**4,807 (99.3%)**	**38 (<1%)**	**4,845**

ICF International. 2011. Altamont Pass Wind Resource Area Bird Fatality Study, Bird Years 2005–2009. September. (ICF 00904.08.) Sacramento, CA. Prepared for Alameda County Community Development Agency, Hayward, CA.

Carcass distribution for 631 small-bodied birds

Average turbine size 103 kW on 24 meter towers with average blade length of 9.25 meters

Small-bodied Birds

Our search radius included 90.5% of the carcasses of small-bodied bird species (Figure 2-9B), of which 75% were located within 34 m of the tower. The mean and standard deviation of these 631 distances was 23.8 ± 19.4 m. Most carcasses were found northeast of the tower, and a considerable number were located southwest (Figure 2-10B), just as the large-bodied bird carcasses had been distributed.

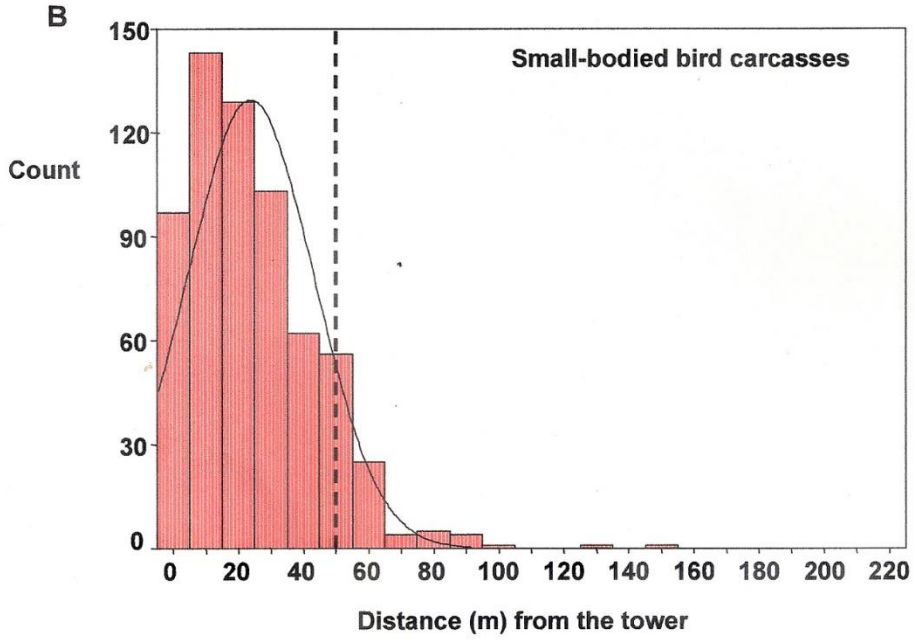


Figure 2-9. Frequency distributions of distance from the wind tower among carcasses of large-bodied (A) and small-bodied (B) bird species

[a] Set 1 includes the 1,526 wind turbines (151.165 MW) in the search rotation through September 2002.
[b] Set 2 includes 2,548 wind turbines (267.090 MW) in the November 2002–May 2003 rotation.
[c] Set 3 includes the 1,326 wind turbines (161.750 MW) not included in any search rotation. Mortality for Set 3 was estimated by taking the weighted average from the two sampled sets of wind turbines ((mortality of Set 1 × 151.165 MW) + (mortality of Set 2 × 267.09 MW)) ÷ 418.255 MW.

Smallwood, K. S., and C. G. Thelander, Developing Methods to Reduce Bird Fatalities in the Altamont Wind Resource Area, Final Report by BioResource Consultants to the California Energy Commission, Public Interest Energy Research – Environmenta Contract No. 500-01-019 (L. Spiegel, Project Manager), 2004.
http://altamontsrc.org/alt_doc/cec_final_report_08_11_04.pdf

Carcass distribution for 468 large bodied birds

Average turbine size 103 kW on 24 meter towers with average blade length of 9.25 meters

2.3.2 Distances of Bird Carcasses from Wind Turbines

Large-bodied Birds

Our search radius included 84.7% of the carcasses of large-bodied bird species determined to be killed by wind turbines or unknown causes (Figure 2-9A). Of these, 75% were located within 42 m of the tower. The mean and standard deviation of these 468 distances was 31.1 ± 30.0 m. Most carcasses were found northeast of the tower, and a considerable number were located southwest of the tower (Figure 2-10A).

Carcass locations of large-bodied bird species differed significantly by distance from wind turbines according to five ranges of tower heights (ANOVA F = 3.66; df = 4, 456; P = 0.006), and post-hoc LSD tests revealed that fatalities were located farther from 25-m and 32-m towers (means = 33 m and 57 m) than shorter towers (mean = 28 m for 14-m towers, and 26 m for 18.5-m towers) or 43-m towers (mean = 28 m). Distance from tower increased with tower height, according to linear regression analysis, although the precision of the model was poor (Figure 2-11A).

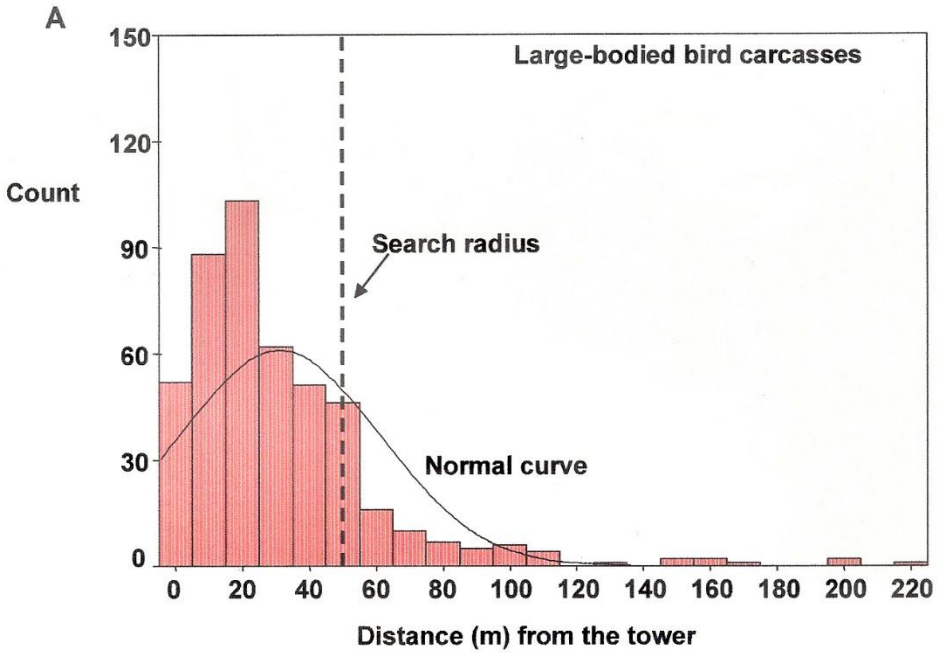


Figure 2-9. Frequency distributions of distance from the wind tower among carcasses of large-bodied (A) and small-bodied (B) bird species

[a] Set 1 includes the 1,526 wind turbines (151.165 MW) in the search rotation through September 2002.
[b] Set 2 includes 2,548 wind turbines (267.090 MW) in the November 2002–May 2003 rotation.
[c] Set 3 includes the 1,326 wind turbines (161.750 MW) not included in any search rotation. Mortality for Set 3 was estimated by taking the weighted average from the two sampled sets of wind turbines ((mortality of Set 1 × 151.165 MW) + (mortality of Set 2 × 267.09 MW)) ÷ 418.255 MW.

Smallwood, K. S., and C. G. Thelander, Developing Methods to Reduce Bird Fatalities in the Altamont Wind Resource Area, Final Report by BioResource Consultants to the California Energy Commission, Contract No. 500-01-019 (L. Spiegel, Project Manager), 2004.
http://altamontsrc.org/alt_doc/cec_final_report_08_11_04.pdf

The graphic below should be noted by all. It was produced from Altamont decades ago. It shows the carcass dispersal recorded in relation to the small turbines in use at Altamont at that time. These were turbines 60-100 feet tall and had blades about 8 meters long.

The search area size of 120 by 130 meters, which was selected for the Maple Ridge Studies, has been superimposed in blue on the carcass dispersal graphic from 1992. As anyone can see, the search plots used for Maple ridge probably would not have even found or reported all these Altamont carcasses.

Wind turbine carcasses distribution from Altamont pass around small turbines. Most of the carcasses found were reported far beyond turbine blade lengths.

Prepared for the:

Planning Departments of
ALAMEDA, CONTRA COSTA and SOLANO Counties

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Grant #990-89-003

Prepared by:

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Wind Turbine Effects on Avian Activity, Habitat Use, and Mortality in Altamont Pass and Solano County Wind Resource Areas

1989-1991

Final Report
March 1992

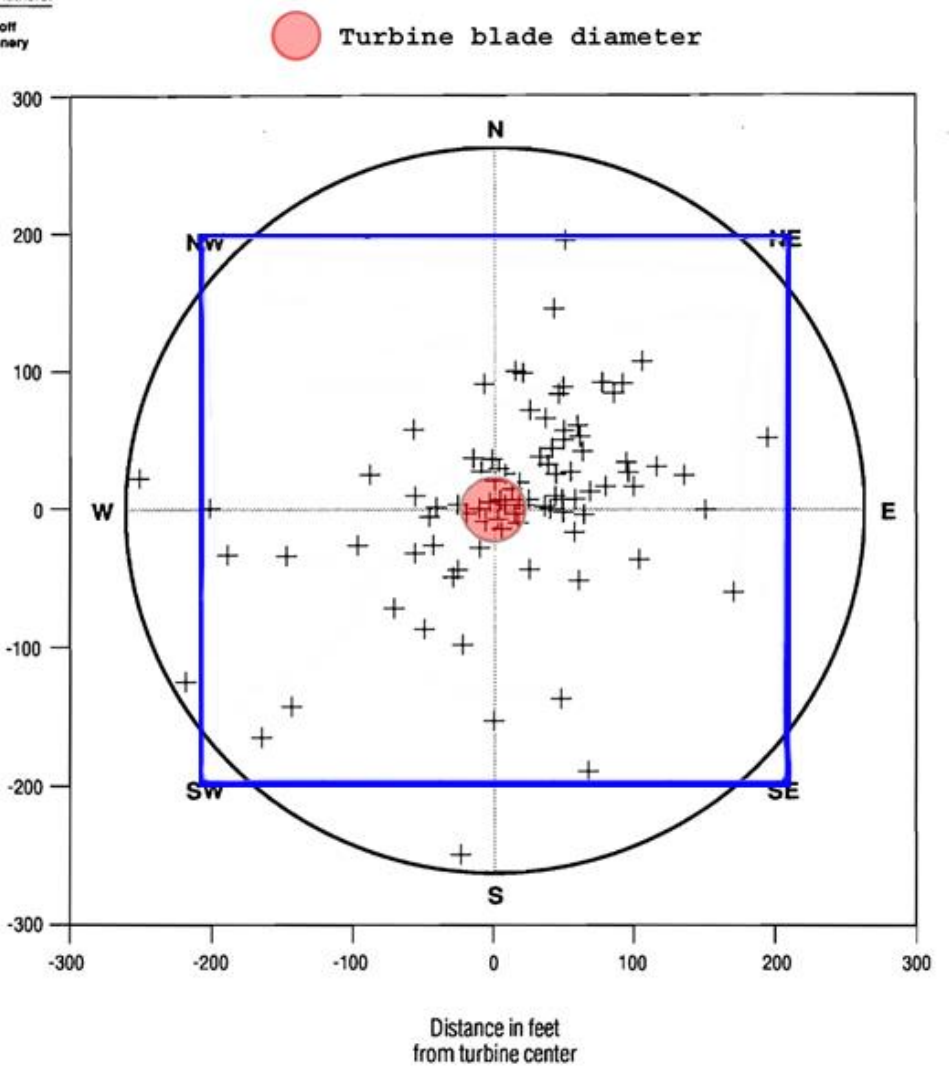


Figure 3-22. Locations of mortalities in relation to turbine centers.

For the Maple Ridge mortality studies, a search area size of 120 meters by 130 meters may have been acceptable for much smaller turbines at Altamont, but here it was many times too small. Then with this study methodology researchers had the nerve to calculate carcass totals out to 90 meters when 81 % of

the outer reaches of their declared study area (beyond 60 meters) were not even looked during this study. It is also no surprise that the Maple Ridge Study reported no birds or bats carcasses in the search area annulus of 80-90 meters because searchers during this study, only looked at about 1.5% of this total area or just 90 square feet, 80-90 meters out per turbine. This study by design, missed most of the carcasses.

Figure 12. Examples of searched towers showing searchable area divided into concentric annuli.

Table 13. Area Adjustment Factor (bird and bat incidents from standardized surveys conducted from April 30 to November 9, 2008 (not including 'added incidentals').

Below are the totals given for the areas searched at different distances for all 64 turbines.

Table 9. Number of incidents (Birds) versus total area searched per 10m distance annulus at 64 searched sites, April 30 to November 14, 2007.

Buffer	Area Searched	Bird Incidents	Bird Incident Density
0-10	20004	9	0.00045
10-20	60010	9	0.00015
20-30	98736	5	0.00005
30-40	132303	6	0.00005
40-50	144686	10	0.00007
50-60	153565	6	0.00004
60-70	123132	4	0.00003
70-80	52701	2	0.00004
80-90	5771	0	0.00000

60-90 meter annulus
Total area for 64 turbines
approx. 940480 sq meters

Total area searched - 181604
Total of area not searched - 81%

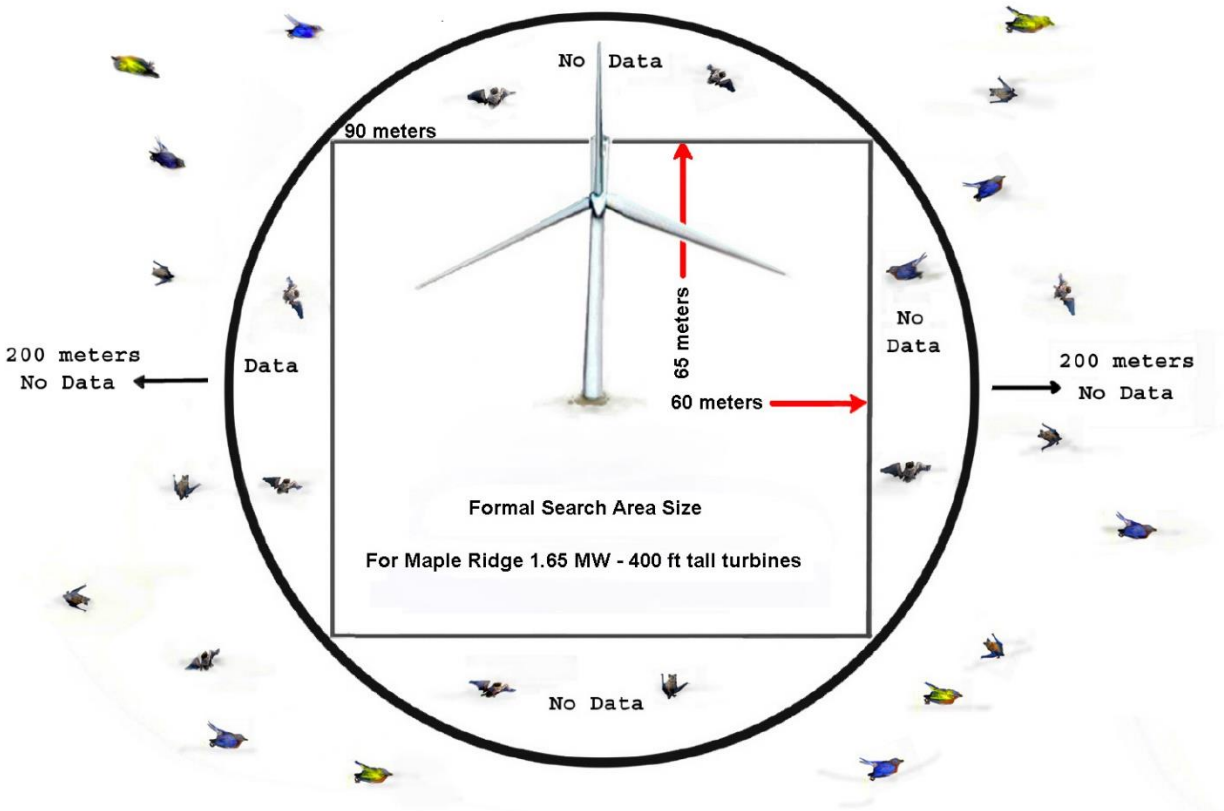
Table 10. Number of incidents (Bats) versus total area searched per 10m distance annulus at 64 searched sites, April 30 to November 14, 2007.

Buffer	Area Searched	Bat Incidents	Bat Incident Density
0-10	20004	18	0.00090
10-20	60010	55	0.00092
20-30	98736	45	0.00046
30-40	132303	43	0.00033
40-50	144686	23	0.00016
50-60	153565	13	0.00008
60-70	123132	4	0.00003
70-80	52701	1	0.00002
80-90	5771	0	0.00000

80-90 meter annulus
Total area for 64 turbines
approx. 353800 sq meters

Total area searched - 5771
Total of area not searched -98.5%

How square search plots produce deceptive wind turbine mortality data



For a turbine this size, most carcasses can be expected to fall beyond 60 meters.

The Maple Ridge wind farm study declared 120 by 130 meters rectangular search areas and then produced calculations for a circular area out to 90 meters. But searchers only looked at a total average search area size of about 60 meters out from towers. By no surprise, this study reported no carcasses in the search annulus of 80-90 meters because searchers only looked at about 1.5% of this total area. Missed data leaves nothing to calculate.

The average recorded bird carcass distance for Maple Ridge was 42.5m. The average recorded bat carcass distance was 25.9m. When thousands of turbine carcass have reported distances in the range of 2 times the length of a turbine's blade, these Maple Ridge 400 ft turbines, having 41-meter blades are not possible.

An inconsistent and disturbing revelation

By the time the Maple Ridge study got underway, another mortality study in California was already being conducted in California, by some of the very same people involved with New York's Maple Ridge fatality study.

Post-Construction Avian Monitoring Study
for the
Shiloh I Wind Power Project
Solano County, California

Prepared by:
CURRY & KERLINGER, LLC

Paul Kerlinger, Ph.D.
Richard Curry, Ph.D.

Curry and Kerlinger, L.L.C.

"EXECUTIVE SUMMARY

The Shiloh I Wind Power Project Area is situated on roughly 6,800 acres of agricultural land in the Montezuma Hills, near Rio Vista in Solano County, California. The project consists of 100 wind turbines rated at 1.5 MW each for a total capacity of up to 150 MW. All one hundred turbines went on-line in March 2006."

"The hub height of each wind turbine is 65 meters (213 feet) and the rotor diameter is 77 meters (253 feet), for a total height of approximately 103.5 meters (339.5 feet) above ground level (AGL) when the rotors are in the 12 o'clock position. At the 6 o'clock position the tip of the rotors are approximately 26 meters AGL."

The Maple Ridge turbines at 1.65 MW are 10% larger than the 1.5 MW turbines installed in California. The New York turbines are 60 feet taller and their rotating blades about 3 meters longer. In other words, being taller with longer blades, birds and bats hit by the Maple ridge turbines will be launched from higher elevations and catch more wind as they drift from towers. Bird and bats will sustain impacts sending them from further away from towers,

The Shiloh turbines had search areas that extended 105 meters out from towers and 50 turbines were searched. The Maple Ridge turbines had partial searches of areas around 64 turbines that amounted to

a total area about 60 meters out from towers. Total search area for the Shiloh study allowed for more than three times more search area per turbine area, **34636 square meters vs. 11300 sq meters** for the Maple ridge study.

The 3-year Maple Ridge carcass searches began on June 17, 2006, the 3-year Shiloh Monitoring studies for carcass started over 2 months earlier on April 10 ,2006.

By the time the Maple Ridge surveys had begun, the Shiloh surveys had already recovered several carcasses at distances beyond 90 meters from towers. At the end of year one, **124 of the 225** turbine casualties reported from weekly surveys, 55 % **were found beyond 60 meters**. **Sixty-one were found at 90 meters and beyond**. Had formal search areas been larger than 105 meters, many more turbine victims than 225 reported would have been found.

Also impacting this formal study, were intense farming practices taking place around these turbines.

"Where turbines and project roads are located the land use is rotating agricultural crops and grazed pastures. Crops include wheat, barley, hay, safflower and fallow fields. A multi-year rotation is the norm with wheat, fallow, and grazing alternating being the regime used most often."

Plowing the soil, dense crop growth and harvesting close to towers surely had a negative impact on the total carcass numbers found during searches. This impact was not discussed.

Mortality list- page 3 of 7

ID#	Report Date	Estimated Month Death	Species Name	Fatality /Injury	Species Group	Tower	Dist (m)	Deg (GN)*	Days Since Death
SH-053-07	2/15/2007	FEB	European Starling	Fatality	Passerine	C1	9	301	7
SH-153-06	12/5/2006	DEC	European Starling	Fatality	Passerine	C25	2	85	4
SH-116-06	10/12/2006	OCT	Golden-Crowned Kinglet	Fatality	Passerine	B14	80	81	4
SH-132-06	10/25/2006	OCT	Golden-Crowned Sparrow	Fatality	Passerine	A12	100	271	4
SH-137-06	10/27/2006	OCT	Hammond's Flycatcher	Fatality	Passerine	C5	19	173	1
SH-001-06	4/10/2006	MAR 06	Horned Lark	Fatality	Passerine	A12	102	248	14
SH-029-07	1/29/2007	JAN	Horned Lark	Fatality	Passerine	C8	95	10	7
SH-136-06	10/27/2006	OCT	Horned Lark	Fatality	Passerine	C8	72	262	4
SH-152-06	12/4/2006	NOV	Horned Lark	Fatality	Passerine	A22	100	296	7
SH-157-06	12/13/2006	DEC	Horned Lark	Fatality	Passerine	B7	71	48	7
SH-016-06	6/5/2006	JUN	House Sparrow	Fatality	Passerine	C4	5	118	1
SH-017-06	6/11/2006	JUN	Northern Mockingbird	Fatality	Passerine	E7	73	300	7
SH-006-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	91	180	7
SH-007-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	95	182	7
SH-008-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	102	181	7
SH-009-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	102	181	7
SH-010-06	5/15/2006	MAY	Red-winged Blackbird	Fatality	Passerine	B20	51	177	14
SH-011-06	5/17/2006	APR 06	Red-winged Blackbird	Fatality	Passerine	H10	61	136	30
SH-012A-07	1/9/2007	JAN	Red-winged Blackbird	Fatality	Passerine	E3	14	294	7
SH-014-06	5/24/2006	MAY	Red-winged Blackbird	Fatality	Passerine	A9	43	74	1
SH-019-06	6/17/2006	JUN	Red-winged Blackbird	Fatality	Passerine	D1	92	254	7
SH-019-07	1/23/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	80	248	7
SH-028-06	7/17/2006	JUL	Red-winged Blackbird	Fatality	Passerine	A6	0	38	7
SH-029-06	7/19/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B7	96	154	7
SH-032-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	45	7	7
SH-033-06	7/26/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B7	74	286	4
SH-033-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	55	10	7
SH-034-06	7/26/2006	JUL	Red-winged Blackbird	Fatality	Passerine	B4	0	38	4
SH-034-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	38	255	7
SH-036-07	1/29/2007	JAN	Red-winged Blackbird	Fatality	Passerine	C5	56	113	7
SH-037-06	7/28/2006	JUL	Red-winged Blackbird	Fatality	Passerine	E7	99	340	30
SH-040-06	8/7/2006	UNK	Red-winged Blackbird	Fatality	Passerine	A6	22	220	UNK
SH-040-07	1/30/2007	JAN	Red-winged Blackbird	Fatality	Passerine	E7	106	294	7
SH-059-07	3/1/2007	FEB	Red-winged Blackbird	Fatality	Passerine	C1	52	346	7
SH-065-07	3/10/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	G2	93	237	4
SH-067-07	3/13/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	A23	2	284	4
SH-073-07	3/20/2007	MAR 07	Red-winged Blackbird	Fatality	Passerine	C1	3	240	4
SH-090-06	9/28/2006	UNK	Red-winged Blackbird	Fatality	Passerine	A24	66	12	UNK
SH-139-06	11/3/2006	OCT	Red-winged Blackbird	Fatality	Passerine	B18	63	310	7
SH-056-07	2/28/2007	FEB	Savannah Sparrow	Injury	Passerine	A9	90	176	1
SH-079-06	9/15/2006	SEP	Savannah Sparrow	Fatality	Passerine	B4	62	144	7
SH-159-06	12/14/2006	DEC	Savannah Sparrow	Fatality	Passerine	E3	1	68	4
SH-036-06	7/27/2006	JUL	Tree Swallow	Fatality	Passerine	C3	43	20	4
SH-046-07	2/5/2007	JAN	Tree Swallow	Fatality	Passerine	E3	99	48	7
SH-066-06	9/6/2006	AUG	Tree Swallow	Fatality	Passerine	C8	10	275	7
SH-037-07	1/29/2007	JAN	Tri-colored Blackbird	Fatality	Passerine	C6	100	284	7
SH-020-07	1/23/2007	JAN	Unidentified Sparrow spp.	Fatality	Passerine	C8	87	174	7
SH-135-06	10/26/2006	OCT	Unidentified Sparrow spp.	Fatality	Passerine	C13	86	112	7

60-90 meters

90 meters and above

With science, proper study design and adjustments are made when looking for the truth. The researchers involved with both the Maple Ridge and the Shiloh study, knew over half the carcasses were flying past 60 meters at Shiloh's 1.5 MW turbines. Small birds were being smashed nearly 3 times further out from towers than those reported killed around Altamont's small 100 kW turbines. Some were inadvertently found out to 200 meters even though this area was not being formally searched.

Yet no changes were made to expand formal search areas in either the Maple Ridge or Shiloh 3-year studies. Nor were there any new (more than appropriate) mathematical adjustments to account for the many long-distance carcasses obviously being missed.

Instead of making logical suggestions or adjustments to either of these 3-year studies, I found changes like this …….

"The March 2007 golden eagle incident was wrongly included as a turbine incident in the Year 1 report but moved to "incidental" in this report as it was found outside the search area."

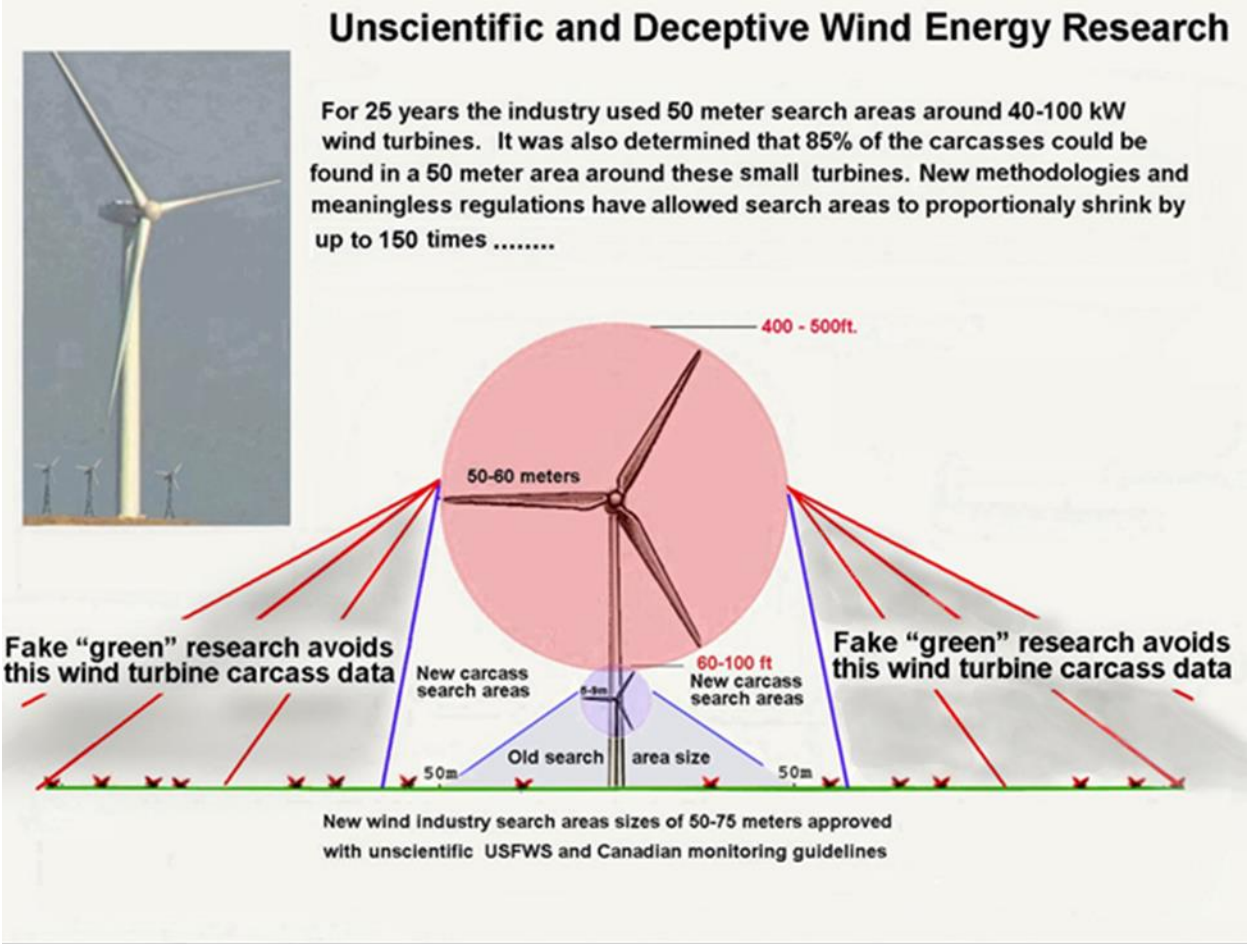
When comparing these two studies, the Shiloh carcass searches beyond 80 meters from towers, looked at about 15000 sq. meters per turbine, the Maple Ridge study about 90 sq. meters per turbine.

Both of the studies I have I discussed here were flawed for various reasons and both underreported turbine mortality. Of the two, the New York Maple Ridge study was more severely flawed. This study clearly concealed far more mortality, with grossly undersized search areas, deceptive search methodologies and inappropriate calculations.

Conclusion

In all my Fountain Wind comments are very clear reasons why **Shasta County must reject the flawed, nonscientific wildlife impact studies and opinions used in this EIR.** If had the desire, I could easily write with confidence and clarity, several thousand pages, pointing out the endless flaws in this green industry's hundreds of studies.

Below in the two images, is primarily what took place with the fraudulent Hatchet Ridge mortality research conducted around some of this industry's new generation turbines. If less mortality data is needed for developers and stakeholders, then by all means create bogus study methodologies that collect fewer dead birds and bats.



Why did Hatchet Ridge studies use carcass searches only out 63 meters from turbines, when carcasses can be found out to 250 meters or more with regularity around 400 ft. turbines?

Is it scientific or credible to expect similar carcass dispersal distances from these wind turbines?

It is with wind energy research. With voluntary guidelines and self-reporting.....No science, ethics or truth are required.

As for describing the mortality impacts to expect from these turbines, the DEIR and FEIR are basically an organized effort in deception with a few sprinkles of truth**. Keep in mind with these comments, I 've primarily discussed the fraudulent eagle impact information. But the Fountain Wind DEIR did not present the truth about what will happen to many other species, like the creek dwelling the red shouldered hawks that will be wiped out by this project.**

The Fountain DEIR presents the illusion that Hatchet Ridge turbines have had little impact to species and with this new project, similar impacts can be expected. This statement is partially true but very deceptive. **Similar impacts that have been hidden from Supervisors and the public can also be expected**, except with

turbines 300 ft taller, much longer blades and with much faster tip speeds, impacts will be far worse.

If there are any doubts about my expertise or the accuracy of what I have written, I would welcome an open discussion in front of Shasta County Supervisors, along with any number of wind energy experts present. We could talk about habitat abandonment around wind farms, hidden mortality impacts, nonscientific research and the wind industry's eagle morgue also known as the Denver Eagle Repository.

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