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**IVANPAH SOLAR ELECTRIC GENERATING SYSTEM
AVIAN & BAT MONITORING PLAN**

2014 - 2015 ANNUAL REPORT

and TWO YEAR COMPARISON

21 October 2014 – 20 October 2015



Prepared for:

Solar Partners I, II, and VIII

100302 Yates Well Road

Nipton, CA 92364



Prepared by:

**Western EcoSystems
Technology, Inc.**



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Executive Summary

This report represents the summary of the four quarters of avian and bat monitoring surveys conducted from 21 October 2014 to 20 October 2015 at the Ivanpah Solar Electric Generating System facility (referred to in this report as "Ivanpah" or "Project") in accordance with the Project's Avian & Bat Monitoring and Management Plan (Plan). Specifically, avian point count surveys, raptor/large bird surveys, facility monitoring for avian detections, searcher efficiency trials, and carcass persistence trials were conducted. This report represents the second annual report for the second year of monitoring. A planned personnel change took place towards the end of the 2014 – 2015 winter seasons on 2 March 2015, Western EcoSystems Technology, Inc (WEST) completed the monitoring after this date.

During avian point count surveys, a total of 71 bird species were recorded. Species richness was highest in the desert bajada survey area throughout the year with 54 unique species, and lowest in the heliostat arrays with 44 unique species. The three most abundant species during avian use counts were black-throated sparrow (27.7% of annual observations), cactus wren (14.3% of annual observations), and yellow-rumped warbler (4.5% of annual observations).

During annual raptor and large bird surveys, 12 raptor species and 7 other large bird species, were observed and identifiable. Common ravens comprised 57.0% of all raptor and large bird observations. Other species that contributed significantly to raptor and large bird surveys were red-tailed hawk (16.4%), American kestrel (8.7%), and turkey vulture (5.1%).

Avian and bat fatality monitoring searches were conducted in 1) the “tower area”, consisting of the power block and inner high-density (HD) heliostats surrounding each power block on approximately 154 acres, which was surveyed with 100% coverage; 2) the “heliostat area”, consisting of the inner and outer heliostat segments outside of the inner HD heliostats on approximately 2,991 acres, which was surveyed with 24.1% coverage (720 acres) in randomly selected arc-shaped plots; and 3) the “fenceline”, consisting of the perimeter fences, which was 100% surveyed. Overall, approximately 29.2% of the facility was searched (not including the offsite transects, which are outside the facility). Searches were conducted within the winter and summer season at intervals of approximately 21 days, and within the spring and fall season at intervals of approximately 7 days.

All bird and bat fatalities and injuries, referred to as “detections” in this report, including those found incidentally and during standardized facility searches, were documented and categorized as singed, collision, other project causes or unknown based on examination with a binocular microscope and evidence collected from the location of the detection. During the 2014 - 2015 monitoring year, a total of 31 bat fatalities, and 1098 avian detections (including 30 injured birds), were found. Avian detections were highest in fall (461 total detections), followed by winter (340 total detections), spring (185 total detections), and lowest in summer (112 total detections). Yellow-rumped warbler was the most numerous identifiable avian detection (87 detections) for the year, followed by mourning dove (73 detections), and greater roadrunner (72 detections).

According to the specifications of the Plan, the number of avian detections was categorized by facility structure and cause. These avian fatality search results, along with searcher efficiency and carcass persistence rates from trials conducted onsite, were input into a fatality estimator model (Huso 2010) to provide an estimate of the fatalities for the facility.

Using the fatality estimator model and the methods and seasonal dates as prescribed in the Plan, during the 2014 – 2015 monitoring year, there were an estimated 2500 fatalities from known causes and 3686 fatalities from unknown causes. Of the fatalities by known causes, 1000 were estimated for the tower area, and 1472 fatalities were estimated for the heliostat area; detections of known causes in the fenceline and collector line areas were too low to provide separate estimates in section 5.3, but account for the remaining 28 estimated fatalities by known causes. Of the known fatalities estimates, 45.8% were attributed to singeing and 54.1% to collision. Fatality estimates of known cause varied by season, with 949 fatalities, 665 fatalities, 459, and 428 fatalities in the fall, winter, summer and spring, respectively. Of the unknown causes, 486 fatalities were estimated for the tower area, 3031 fatalities were estimated for the heliostat area, and 158 fatalities were estimated for the fenceline area. Fatality estimates for unknown causes varied by season, with 1303 fatalities, 1205 fatalities, 771 fatalities, and 406 fatalities in the fall, winter, summer and spring, respectively. Overall, based on the monitoring results and estimates for known and unknown causes for the 2014 - 2015 monitoring year, the effect of the Project on birds will not rise above the “low” category.

In looking at the patterns of avian mortality between the year 1 and year 2 fatality estimates, the number of non-resident detections per day was examined to ensure that the ABMMP-defined seasons accounted for the migration patterns observed on site. Non-resident birds were detected into the early part of the 2014 – 2015 winter season (as defined by the ABMMP) indicating that migratory birds moving through this area may adjust their migration season annually based on climatic or other factors. In an effort to better understand impacts to different guilds of birds, the fall/winter seasonal dates were adjusted to allow for the use of biologically informed seasons to estimate fatalities over the two-year period. This alternate assessment is presented as a method to provide a meaningful comparison across years, especially for migratory species. These estimates, based on biologically informed seasons and complete bias trials data (searcher efficiency and carcass persistence), were 2086 fatalities from known causes and 3042 fatalities from unknown causes in year 1, and 2143 fatalities from known causes and 3038 fatalities from unknown causes in year 2 (see section 5.8).

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Section 1.0 Introduction

1.1 Project Background

The Ivanpah Solar Electric Generating System (referred to in this report as "Ivanpah" or "Project") consists of three solar power electrical generating facilities (Units 1, 2, and 3) with a combined net capacity of 377 megawatts. Each unit includes a central power tower with an air cooled condenser (ACC) and associated electrical generating equipment, surrounded by a heliostat array that reflects sunlight to a boiler at the top of the power tower. Ivanpah is located on approximately 1,457 hectares (3,600 acres) of Bureau of Land Management (BLM) land west of Interstate 15 near the town of Nipton in San Bernardino County, California (Figure 1). Construction was initiated in 2010 and completed in late 2013.

1.2 Monitoring Plan Overview and Goals

An Avian & Bat Monitoring and Management Plan (2013; "Plan") was prepared by the Project proponent in collaboration with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Energy Commission (CEC), and Bureau of Land Management (BLM) to guide comprehensive monitoring of impacts to birds and bats associated with the operation of the Project. Final agency acceptance of the Plan occurred in November 2013. The Plan is also intended to: 1) satisfy the BLM Right-of-Way (ROW) Permit requirement that the proponent develop an avian plan as well as a Migratory Bird Treaty Act (MBTA) Conservation Agreement; 2) satisfy the requirements for the Avian & Bat Monitoring and Management Plan approved by the CEC for Ivanpah per CEC Condition of Certification BIO-21; and 3) achieve the avian and bat protection objectives of the USFWS in relation to the MBTA, Bald and Golden Eagle Protection Act (Eagle Act), and Federal Endangered Species Act (FESA), including preparing written records of the actions that have been taken to avoid, minimize, and compensate for potential adverse impacts to avian and bat species. By developing a proactive management plan in close consultation with the USFWS and other relevant state and federal agencies, Project proponents can effectively comply with the intent of the federal MBTA, Eagle Act, FESA, and relevant state regulations (USFWS 2012).

The Plan details the onsite and offsite surveys to be conducted and the data analysis and reporting processes that will be implemented by Ivanpah in collaboration with the USFWS, CDFW, CEC, and BLM and supports four main goals and associated objectives. As identified in the Plan, they are:

Goal 1. Identify Collision Risks: Risks will be identified by monitoring and identifying avian mortality and injury associated with facility structure collisions.

Objective 1. Estimate collision-related avian mortality and injury with the following facility structures, using empirical data to calculate facility-wide mortality and injury rates:

- Power towers
- Perimeter fences

- Heliostats
- Project transmission line (Unit 3 collector line)

Goal 2. Identify Solar Flux Risks: Risks from flux will be assessed by monitoring and identifying avian mortality and injury associated with solar flux generated by the facility.

- Objective 2. Estimate flux-related avian mortality and injury using empirical data to calculate facility-wide mortality and injury rates.

Goal 3. Identify Patterns of Avian Use at the Facility: Patterns of avian use will be assessed by conducting onsite and offsite surveys to document avian species composition onsite and offsite, compare abundance in representative habitats onsite and offsite, and document changes in avian use in these areas over time.

- Objective 3: Document patterns of collision- or flux-related mortality/injury associated with species, age/sex, season, weather, and visibility.
- Objective 4: Document spatial patterns associated with collision- or flux-related mortality/injury.
- Objective 7. Document use patterns of various avian species, including migratory birds, raptors, and golden eagles, particularly the seasonal variation of bird communities through breeding, migratory, and overwintering periods.

Goal 4. Provide a Framework for Management of and Response to Risks: The designation and description of the functioning of the Technical Advisory Committee (TAC) provides a management and decision framework for the identification and implementation of potential adaptive management measures.

- Objective 5: Provide quantitative information for developing and implementing adaptive management responses commensurate with identified impacts.
- Objective 6: Provide a framework for the TAC to jointly review, characterize, and recommend responses, based on monitoring results, to the appropriate lead agency representatives.

1.3 Purpose of This Report

This report represents the annual report for the second year of monitoring summarizing monitoring methods and results for avian and bat fatalities and injuries based on the procedures and requirements specified in the USFWS-accepted Plan and as required by CEC Condition of Certification BIO-21. This report covers the 2014 - 2015 monitoring year and includes the 2014 – 2015 winter (21 October 2014 – 15 March 2015), the 2015 spring (16 March – 24 May 2015), the 2015 summer (25 May – 17 August), and 2015 fall (18 August - 20 October) seasons.

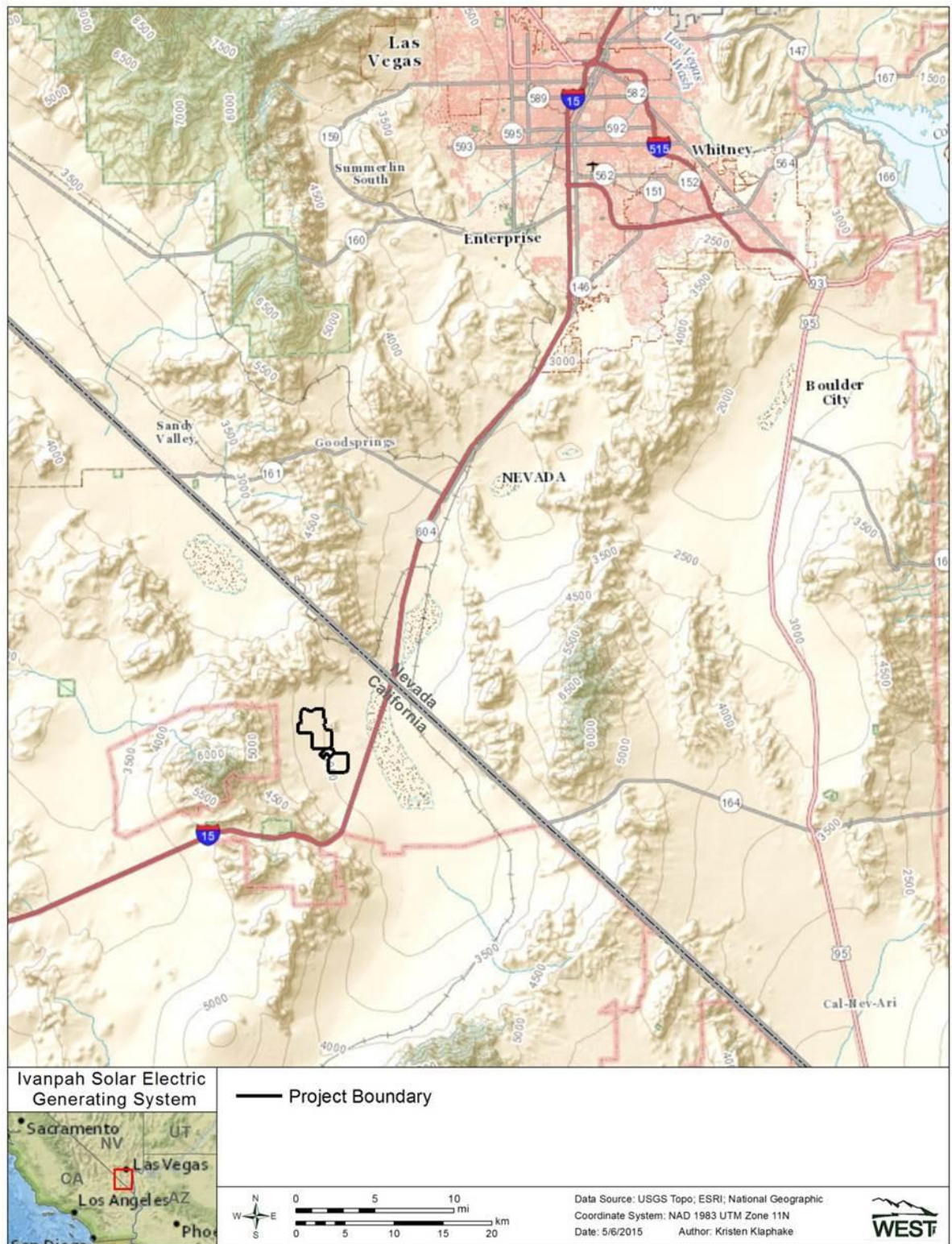


Figure 1. Ivanpah Vicinity Map.

Section 2.0 Methods

The Plan describes the methods by which monitoring and certain analyses, including compilation of the overall fatality estimate, occurred. Below is an abridged description of methods (see Plan for detailed methods).

2.1 Avian Use Monitoring

Methods for monitoring avian use of the Project and nearby desert areas, as well as the methods for monitoring the occurrence of raptors and other large birds on and around the facility are described in this section.

2.1.1 Avian Monitoring Surveys

Avian use surveys were conducted using standard, variable-radius point counts to assess bird use of the vegetated areas within the heliostat fields associated with each unit as well as nearby (offsite) areas of desert habitat. Eighty survey points (Figure 2) were surveyed by CEC- and BLM-approved avian biologists. In accordance with the Plan, these 80 points were randomly selected from within the following five survey areas:

1. 20 points within an approximately 2.59 square-kilometer (1-square-mile) study area located in Unit 1, within the lower bajada environment of the facility.
2. 20 points within an approximately 2.59 square-kilometer offsite study area located in comparable lower bajada environment as far as practicable from (and south of) the Unit 1 fenceline.
3. 10 points within an approximately 1.29 square-kilometer (0.5-square-mile) study area located in Unit 2, within the upper bajada environment.
4. 10 points within an approximately 1.29 square-kilometer (0.5-square-mile) located in Unit 3, in the upper bajada portion of the facility.
5. 20 points within an approximately 2.59 square-kilometer (1.0-square-mile) offsite study area located in comparable upper bajada environment and as far as practicable from (and southwest of) the Unit 3 fenceline.

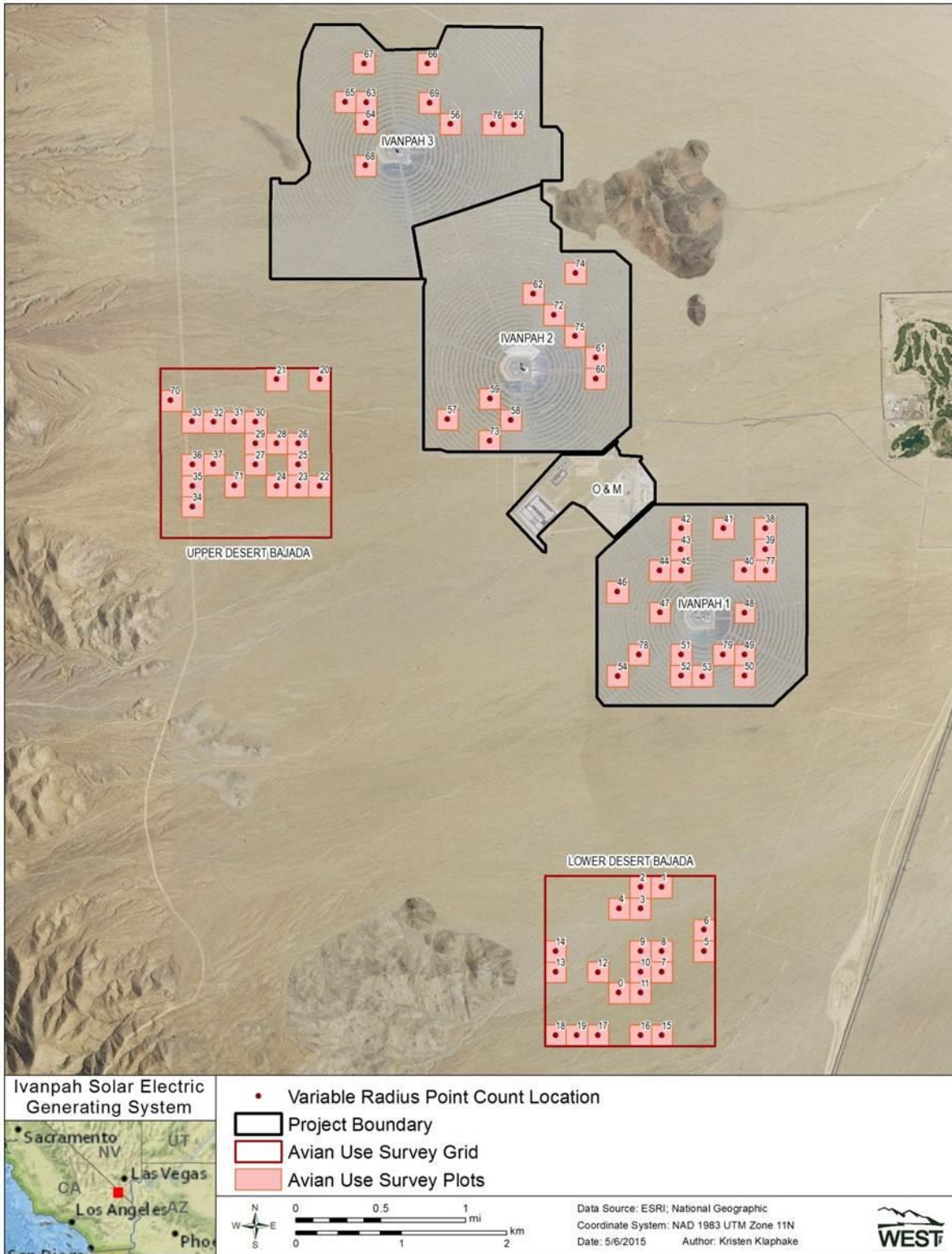


Figure 2. Avian Use Monitoring Survey Locations.

Each survey area described above was divided into 200-m by 200-m square areas to create distinct sample plots. Within each survey area, either 10 or 20 (as indicated above) avian use survey points were randomly selected from the sample plots, resulting in 20 point counts per 2.59 square kilometer for each habitat type in the facility and off-site areas, with each count location affording a minimum, non-overlapping survey radius of 100 m. Points were surveyed for 10 minutes each, and were conducted between first light and three hours after sunrise.

The Plan prescribes that avian use surveys are conducted once per month during the winter and summer survey periods (21 October 2014 – 15 March 2015 and 25 May – 17 August 2015), and twice per month during the spring and fall survey periods (16 March – 24 May and 18 August – 20 October 2015). Only the surveys conducted during the 2014 – 2015 monitoring year (October 21 2014 – October 20 2015) have been included in this report.

Data Analysis. According to the Plan, all birds heard or seen at each point up to 100 meters from the observer will be recorded to document species occurrence and estimate abundance. Thus, all birds observed are used to calculate species richness and abundance. Results for species composition (number of species recorded) and avian abundance (number of observations) are presented by survey area. For visualization of results, data from Unit 2 and Unit 3 are combined because these areas had 10 survey points compared to 20 survey points in other areas. Thus, when combined, Unit 2 and Unit 3 have an equivalent number of points to the other areas and results can be compared. In addition to the number of points in each survey area, the ability to compare results among survey areas depends on the number of visits. Mean use (number of birds/survey) are presented to standardize data among survey areas to account for unequal number of visits per survey area.

Avian abundance metrics such as total observations can help describe patterns in bird occurrence, especially when sampling effort is equal among survey areas. However, because survey effort differed among survey areas, and bird detectability varies among species (i.e., some birds are more easily detected than others) and could differ between the heliostat area and desert bajada area, other analytical methods may be more appropriate to examine patterns in bird use among survey areas (Buckland et al. 1993). As a result, program Distance 6.0 (Thomas et al. 2010) was used to evaluate avian densities for the heliostat area and desert bajada areas. Densities were calculated based on birds observed using the plots, only; thus, birds flying over or transitioning through the plot were not included in the density analysis.

The Cornell Lab of Ornithology's BirdCast website (www.birdcast.info) provides a regional migration forecast and a regional migration analysis, and uses two types of data; observations submitted voluntarily by birdwatchers through the eBird website (www.ebird.org) and radar data from over 140 weather stations. Taken together, these data can be used to examine trends in bird migration in spring and fall over broad geographic scales. BirdCast provides two data summaries: 1) a regional summary that uses radar and weather data to interpret bird movements and reports a range of migration amounts (e.g., light through heavy) based on the radar measurements used to compare the reflectivity of a remote object (decibels of Z value or dBZ); and 2) a list of 'species on the move' showing common migrant birds reported by birdwatchers in eBird with arrival and departure dates. Thus, the species on the move data relies on birdwatchers reporting observations, and birding 'hotspots' are likely overrepresented in the dataset compared to rural and less visited areas. The regional summaries provided in BirdCast are broad, and the West region includes Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana,

Wyoming, Colorado, and New Mexico. Therefore, the BirdCast West regional migration analysis was examined for every week during the 2014 - 2015 monitoring year for specific mentions of California or Desert Southwest (what this region encompasses is undefined). Additionally, the BirdCast West regional migration analysis was examined for a distinct migration end dates.

2.1.2 Raptor/Large Bird Monitoring Surveys

Surveys were conducted from each of eight points to assess raptor/large bird use of the facility and offsite project areas (Figure 3). The locations of the points relative to those described in the Plan are discussed in the Fall 2014 report.

Each point was surveyed for 4 hours per survey (except during weather hazards or other circumstances that required suspending the survey) using unlimited-distance point count methodology. CEC and BLM-approved avian biologists performed these surveys using binoculars and spotting scopes, recording detailed location and flight path data for all observed raptors and large birds, including shorebirds, waterfowl, and common raven (*Corvus corax*). The Plan specifies that surveys for raptors and other large birds be conducted twice per month during all months except summer (June – August). Only the surveys conducted during the 2014 – 2015 monitoring year (21 October 2014 – 20 October 2015) were included in this report.

Data Analysis. Results for species composition (number of species), abundance (number of observations), and habitat use (location of the observation) are presented in Section 3.2. Although all raptors and large birds are recorded to an unlimited sight distance, according to the Plan, observations within 800 meters will be used for standardized assessments and comparison of mean use (number of observations/survey hour) for raptors and large birds. Based on the location of the bird observation, the habitat was classified as Ivanpah facilities (anywhere perched or flying over a part of the Project), desert, golf course, or mountains. The Clark Mountain Range lies to the North, West, and South of the Project with the foothills being approximately 3.2 km from the closest raptor and large bird survey point. Thus, given the distance to the mountains, raptors and other large birds likely had a lower detectability than those observed within 800 meters. In addition, Section 3.2 provides information on the number of individuals of these species observed perched versus those in flight, as well as the heights at which flying birds were recorded. Due to the long duration of each survey and the mobility of these birds, it was not always possible to track individuals throughout a survey to avoid counting the same individuals multiple times. Consequently, results of large bird use monitoring surveys are reported as the number of observations rather than individuals.

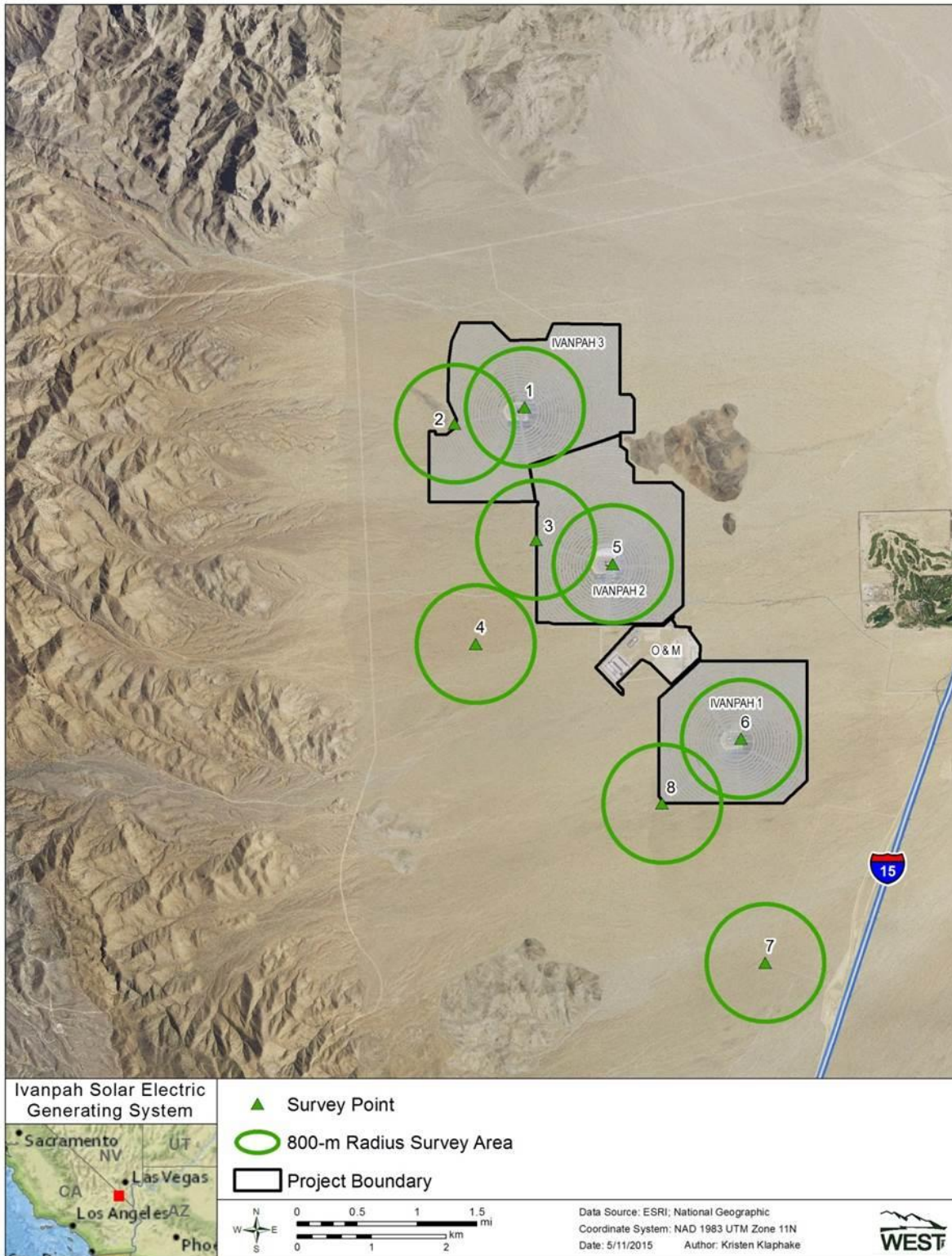


Figure 3. Raptor and Large Bird Use Monitoring Survey Locations.

2.2 Facility Monitoring

This section describes areas surveyed, the timing and frequency of the searches, and the methods by which standardized searches were conducted to identify dead/injured birds and bats (hereafter detections) at the Project. This section also describes the methods for conducting carcass persistence and searcher efficiency trials; how data were reported and analyzed for incidental detections; and the methods for producing fatality estimates for the Project.

2.2.1 Standardized Searches

2.2.1.1 Areas Surveyed

Per the Plan, monitoring was conducted in the “tower area”, defined as the power block (the area consisting of the tower, the ACC unit, the associated control building, and immediately adjacent areas defined by the ring road and berm/slopes surrounding these facilities) and inner high-density (HD) heliostats surrounding each power block (100% survey coverage); the “heliostat area”, defined as the inner and outer heliostat segments outside of the inner HD heliostats (24.1% survey coverage in randomly selected arc-shaped plots); the “fenceline” defined as the unit perimeter fences and common logistics area (CLA) fence (100% survey coverage); the “collector line”, defined as the Unit 3 electrical transmission line (100% survey coverage); and offsite transects. Table 1a provides the acreage searched within each of these areas, as well as the percent of the facility comprised by these search areas. Overall, approximately 29.2% of the Project (not including the offsite transects, which are outside the facility) was searched (Figure 4).

To ensure a balanced distribution of heliostat field survey plots, each unit was divided into inner and outer heliostat area, and approximately 20% of each sub-area was randomly selected for monitoring. This stratified random sampling design ensures that survey plots will not be clustered or biased in any distance or direction from the towers. Survey plots used were consistent from year to year and season to season.

Table 1a. Monitoring Areas, 2014 - 2015 Monitoring Year

Area	Facility Locations Included	Acreage Searched	Percent of Facility
Tower Area	ACC, Power Block, Inner HD	154	4.80%
Heliostat Area	Inner and Outer Heliostat Segments	720	22.40%
Fenceline	Unit Fences, CLA Fence	39	1.20%
Collector Line	Collector Line	26	0.80%
Offsite Transects	Offsite Transects	7	NA*
Total		939	29.20%

*NA = Not applicable as offsite survey areas are located outside of the facility

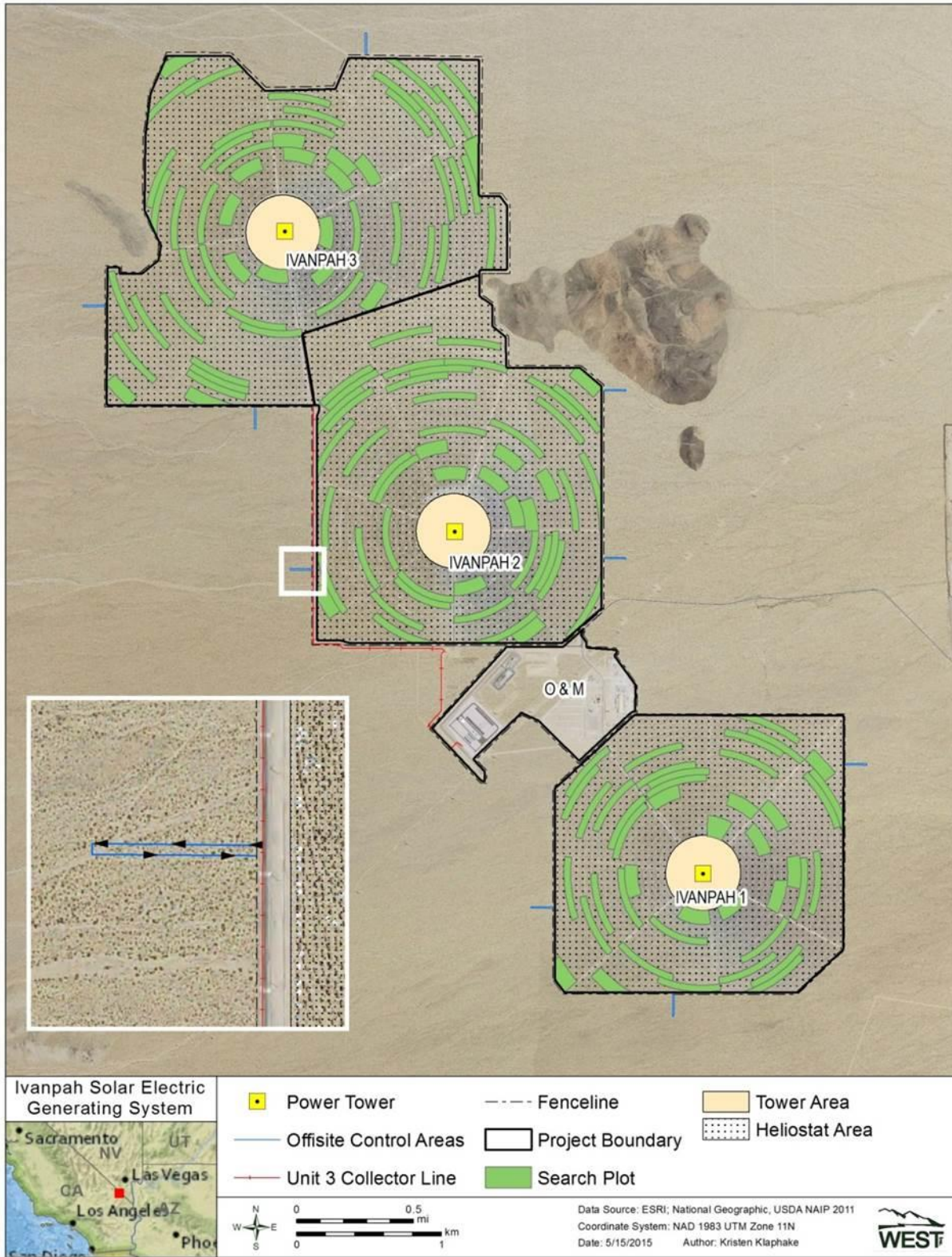


Figure 4. Ivanpah Search Areas.

2.2.1.2 Search Frequency and Timing

Standardized searches occurred at each unit on a 21-day interval through the 2014 – 2015 winter season and the 2015 summer season. Standardized search frequency was increased in spring and fall 2015, occurring at each unit on a 7-day interval to accommodate an increase in bird activity due to migration. Variation in search interval was anticipated to occur due to the transition from a 21-day search interval to a 7-day search interval between seasons of differing length. A longer transition period occurred between the 2015 summer and fall seasons. Thus, the 7-day search interval did not begin until the first week of September (the fall season began on 21 August 2015).

A planned personnel change took place towards the end of the 2014 – 2015 winter seasons, beginning on 2 March 2015, which resulted in increased surveys during the transition period. Overall, the survey areas of Units 1 and 2 were surveyed 8 times and Unit 3 was surveyed 7 times during the winter. All survey areas were visited a total of 8 times in the spring, 5 times in the summer, and 8 times during the fall (with the exception that Unit 1 was surveyed seven times in 2015 fall).

2.2.1.3 Search Methods

Biologists performed surveys in the tower area, fenceline, offsite transects, collector line, and the heliostat area. Standardized walking surveys for fatalities were performed by CEC and BLM-approved biologists, in accordance with the methods outlined in the Plan. In the heliostat area, a pair of biologists walked a total of four transects oriented longitudinally along the complete length of each arc-plot, with the ring roads serving as the outer boundaries of each arc plot (Figure 5). While walking each transect, biologists walked a narrow search section approximately 10 meters (m) wide. Within the power block, biologists walked through and around the power tower and ACC unit looking for dead and injured birds and bats, and walked transects through the gravel surrounding the structures to achieve 100% coverage within physically accessible areas. Within the inner HD heliostats surrounding each power block, biologists walked transects to ensure 100% coverage. Thus, the tower area, comprising the area within 260 m of each tower, was completely covered during each survey, excepting any areas that were physically inaccessible or unsafe to survey. Inaccessible areas were, to the extent possible, scanned using binoculars. Along the fenceline, a 6-m wide transect was surveyed, centered on the fence itself (i.e., 3 m on either side of the fence). The collector line was surveyed using a 30-m wide transect (i.e., 15 m on either side of the center line). Offsite transects were surveyed along two randomly selected 152-m long transects, separated by approximately 10 m extending outward from, and back to, the unit perimeter fence at nine locations (three per unit), including the north, east, south, and west borders of the facility.



Figure 5. Monitoring Search Pattern for Arc Plots.

Carcass and Feather Spot Examination. Every carcass and feather spot was examined visually by a CEC and BLM-approved biologist for evidence of singeing or collision. Singeing to feathers can occur when a bird enters the flux around the power tower. When no obvious evidence of singeing or collision were evident to the naked eye, the carcass or feather spot was then examined using an AmScope SE306R-AZ-E2 20X-40X-80X Digital Binocular Stereo Microscope. When singed detections involving carcasses (as opposed to only feather spots) were found, the singeing was assigned a grade based on Kagan et al. (2014), as follows.

- Grade 1 – curling of less than 50% of the flight feathers
- Grade 2 – curling of 50% or more of the flight feathers
- Grade 3 – curling and visible charring of contour feathers

Kagan et al. (2014) originally found no singeing of contour feathers in the absence of curling of 50% or more of the flight feathers. In contrast, we have found singeing of contour feathers with curling of less than 50% of flight feathers, and in the absence of curling or singeing of any flight feathers. We therefore assigned grade 3 independent of grades 1 and 2.

When a carcass was detected, biologists looked for evidence of collision, including obvious physical trauma or detection adjacent to a heliostat with a bird-strike imprint, smudge mark, and/or feathers on or near the surface of the mirror. If there was no evidence of collision or singeing (e.g., charring, curling, or melting of feathers), as confirmed through microscopic examination, the cause of injury or fatality was listed as “unknown”.

For the purpose of these surveys, feather spots were considered detections when they met the following criteria:

At least two or more primary flight feathers, 5 or more tail feathers, or 10 or more feathers of any type concentrated together in an area 1-m² or smaller (Smallwood 2007), without any bone, beak, or significant amounts of flesh or skin.

In some cases, an individual detection was broken up into aggregations of feathers that would meet the criteria for a feather spot, but with pieces of the carcass that contained bone or significant amounts of flesh or skin also present. In these cases, the detection was categorized as a partial carcass (rather than a feather spot), per the “feather spot” definition above.

2.2.2 Carcass Persistence Trials

Carcass persistence trials were performed throughout the 2015 spring, summer, and fall monitoring seasons. At the request of the TAC, the number of trials conducted during these seasons was increased compared to previous monitoring periods. A total of 127 trials were conducted, divided among small (N=97) and large (N=30 bird carcasses). The facility contains vegetated and unvegetated areas that could affect the ability to detect a carcass or the amount of time a carcass persists until it is scavenged. The tower area (power block and inner high density (HD) heliostat area, where most singed detections occur,

is unvegetated; all other areas are considered vegetated. In order to examine carcass persistence times for vegetated and unvegetated areas, carcasses were also distributed through the facility, with 85 carcasses placed in the unvegetated tower area, and 42 carcasses placed in the vegetated heliostat arrays, along fence lines, or underneath the collection line. Non-native species were used for both size classes; house sparrows (*Passer domesticus*) or Coturnix quail (*Coturnix japonica*) were used for small carcass trials, and either rock pigeons (*Columbia livia*), ring-necked pheasant (*Phasianus colchicus*) or mallard (*Anas platyrhynchos*) were used for all large birds trials conducted during throughout the spring, summer and fall monitoring seasons. A camera was placed at each carcass to record the time of scavenging and the scavenging species.

2.2.3 Searcher Efficiency Trials

Searcher efficiency trials were conducted throughout the 2014 – 2015 monitoring year, and at the request of the TAC, the number of trials conducted was increased compared to previous monitoring periods. A total of 320 human searcher efficiency trials (129 small birds, 96 large birds, and 95 feather spots) were conducted during the 2014 – 2015 monitoring year. Carcasses and feather spots were placed in various vegetation heights and in areas that had different soil and vegetation colors to represent the range of conditions under which searches occur. Trials were placed in the heliostat areas, tower areas, and along fencelines of all three units; however, no trials were placed in the ACC building since detection probability is assumed to be 100% in this area of the power block. Ground cover along the underneath overhead lines is similar to that of the heliostat area and fencelines, therefore no searcher efficiency trials were placed in this survey area. Overall, 188 searcher efficiency trials were placed in the tower area (76 small birds, 55 large birds, and 57 feather spots) and 132 trials were placed in the heliostat area and along fencelines (53 small birds, 41 large birds, and 38 feather spots).

Detection Dog Searcher Efficiency Trials. During the 2014 summer, fall, and 2014 – 2015 winter season, 48 small carcasses, 31 large carcasses, and 431 feather spots were placed throughout the heliostat area surveyed by canines to determine the searcher efficiency of detection dog teams. As with the human searcher efficiency trials, only blind searches (i.e., those in which handlers did not know the carcass locations) were used to determine canine searcher efficiency. The carcass and feather spots were placed in locations with various vegetation heights and in areas that had different soil and vegetation colors and values to represent the various conditions under which searches occur. These subjects used for canine searcher efficiency trials were placed one week prior to the survey to avoid leaving human scent trails that dogs could follow to carcasses and feather spots. Detection dog searches were discontinued prior to the start of the 2015 spring monitoring season. However, as detection dogs were used for monitoring during the 2014 – 2015 winter season, detection dog searcher efficiency data is used to adjust detections discovered by dogs during the 2014 – 2015 winter season.

2.2.4 Incidental Reporting

Some detections were made outside standardized search areas, or were within search areas but not during standardized searches. Such detections were found by the Project's designated biologists and operational personnel. These detections were reported in accordance with the facility's Wildlife Incident Reporting System (described in Section 3.4 of the Plan) and were considered "incidental" detections. Data on these incidental detections were reported in the SPUT permit database. As described in Section 2.2.5,

incidental data could be included in the fatality estimates when they were found in areas covered during standardized surveys (e.g., tower area or along the fenceline). Incidental detections from outside the survey areas or those older than the search interval were not included in the fatality estimates as discussed further in Section 2.2.5; however, all detections regardless of the method or source of detection are reported in the SPUT permit database.

2.2.5 Fatality Estimator

Fatality rate estimation is a complex task due to several variables inherent to every fatality monitoring study. Carcasses may persist for variable amounts of time due to local scavenger activity or environmental conditions leading to carcass degradation over time. Carcasses and feather spots are also detected with varying levels of success based on carcass characteristics and ground cover (e.g., vegetated areas underneath heliostats versus cleared areas around towers). For these reasons, it is generally inappropriate to draw conclusions based on the raw number of fatalities alone. The desire to estimate fatalities given these variables has driven the development of several statistical methods for estimating fatalities (e.g., Smallwood 2007, Huso 2010, Korner-Nievergelt 2011). All of these fatality estimation methods share a similar underlying model. Generally, the fatality estimation for a given site may be expressed as:

$$F=C/rp,$$

where F is the total number of fatalities, C is the number fatalities detected and included in fatality estimation, r is the probability a carcass is unscavenged and available to be found at the end of the search interval, and p is the probability of detecting a carcass (Huso 2010).

The bias correction factors r and p are estimated by covariates that may influence the detectability and persistence of each carcass, such as carcass size, presence of vegetation, and stage of decay or scavenging (i.e., feather spot versus carcass). For this study, the Huso estimator was used to correct for detection and scavenging bias; the estimator was demonstrated to perform well under a variety of conditions (Huso 2010). The Huso model was developed in the context of estimating fatalities for post-construction fatality studies at wind energy facilities; however, the Huso estimator is suitable for other sources of anthropogenic avian mortality, including power lines and utility scale solar facilities (Huso 2010).

All fatality estimates were calculated using the Huso estimator, as well as 90% confidence using bootstrapping (Manly 1997). Bootstrapping is a computer simulation technique that is useful for calculating point estimates, variances, and confidence intervals for complicated test statistics. A total of 1,000 bootstrap replicates were used. The lower 5th and upper 95th percentiles of the 1,000 bootstrap estimates provide estimates of the lower limit and upper limit of an approximate 90% confidence interval on all estimates.

Estimating Carcass Persistence Times. Measurements of carcass persistence rates are often subject to censoring. In this context, censoring refers to the fact that a value (e.g., days a carcass is present before being removed) may not be known exactly, but within a finite range. For example, suppose a carcass was checked on day 7 and was present, and was checked again on day 10, but was found to be missing. The exact time until removal is unknown; however, it is known that the carcass was available to be found for between 7 and 10 days. This carcass would be considered “interval censored”. Similarly, if a carcass lasts

the entire six-week trial period, that carcass is “right censored”—we know the carcass lasted at least six weeks, but it could have persisted longer. Due to the fact that camera traps (e.g., cameras that automatically document activity at the trial carcass) were used for carcass persistence trials, the majority of scavenging times were known precisely, and the data were not censored. However, when cameras failed to record the moment of scavenging, interval censoring was applied.

There are four commonly used distributions implemented in the survival models used to estimate the value of r : exponential, Weibull, loglogistic, and lognormal. These four distributions exhibit varying degrees of flexibility in order to model a wide variety of removal time distributions. Akaike’s Information Criterion adjusted for sample size (AICc; Akaike 1973) was used to rank the fit of each survival model fit to carcass persistence data. The exact time of death for detected fatalities is usually unknown, so the probability of persistence cannot be calculated exactly for each carcass; however, it can be estimated from the selected survival model and bootstrapped to obtain a range of estimates of r for each carcass. Beginning spring 2015, individual models were fit for small birds and large birds due to the distinct difference in carcass persistence time between the two size classes. See Section 5.1.2 for details on the model fitting procedure.

Estimating Searcher Efficiency. Searcher efficiency, or the proportion of carcasses detected, p , is represented most simply by the following equation:

$$p = \frac{\textit{Number of Carcasses Observed}}{\textit{Number of Carcasses available}}$$

Model Selection for Searcher Efficiency Trials. The Plan states that searcher efficiency trials will be conducted during each season in which vegetation differs from the prior season, because changes in vegetative cover may affect carcass detectability. *A priori* decisions were not made regarding whether vegetative cover would differ between seasons, but rather, searcher efficiency trials were conducted in all season. Following the completion of fall searcher efficiency trials, there was sufficient cumulative data for the year to assess whether searcher efficiency differed significantly by Project area (e.g. unvegetated tower area versus vegetated heliostat area, fenceline, and collector line), season, and/or carcass size. The nearly complete lack of vegetation cover in the tower area suggested that searcher efficiency may be higher in the tower area than in other Project areas. If this hypothesis were true, accounting for this difference in searcher efficiency across Project areas would be important for producing accurate fatality estimates.

To evaluate various hypotheses regarding differences in carcass detectability among Project areas, seasons, and/or carcass size, logistic regression models were fit to searcher efficiency data and corrected Akaike’s Information Criteria (AICc) was used to compare models. The Project area was defined using two categories to reflect the suspected differences in searcher efficiency due to differences in vegetation cover: the tower area, which consists of the power block and the inner HD heliostats, and other areas, which consists of all other Project areas not included in the tower area. Models were constructed to compare the effects of season, year, carcass size, and Project area, compared to the null model. There were too few trials of some carcass sizes in some seasons to consider a model with season and carcass size combined. The data for this analysis included all human searcher efficiency trials of carcasses from the beginning of trials in the 2013 – 2014 winter season through the 2015 fall season.

Fatality Estimates. Per Section 3.1 of the Plan, estimates for the number of detections in the tower area components (i.e., the power block and inner HD heliostats) are reported separately and combined, because 100% of these areas was searched. Power block and inner HD estimates were calculated separately due to the inclusion of many more incidental observations from the power block. A separate estimate was produced for the heliostat area (the inner and outer heliostat segments combined), in which 24.1% of the total area was searched. Fatality estimates reported in the heliostat area were adjusted to account for the unsearched area in the inner/outer heliostat areas (i.e., divided by 0.241).

The ACC buildings are only marginally accessible to scavengers from the outside; therefore, they act primarily as a closed system with a scavenging rate that approaches zero. Furthermore, carcasses are, generally, visible against the industrial backgrounds. Thus, the fatalities found in the ACC were not adjusted using the Huso estimator; rather, raw counts of ACC detections were added to fatality estimates for the power block. All detections within the ACC buildings were assigned as having a known cause of fatality, whether or not they showed evidence of singeing or collision.

Within the power block, during the 2014 - 2015 monitoring year, incidental detections accounted for 20.7% of the detections recorded. Thus, as treated in previous analyses, incidentals found within the power block were included in estimates, but handled differently from other fatalities. To reflect the high amount human activity in the power block—and frequent observation of the areas within the power block—the search interval for these detections was set to one day (Table 1b).

In the winter 2014 – 2015 and previous seasons, incidental detections found outside of the power block but within standardized search areas were partially processed in the field and left in place to give searchers the opportunity to discover the carcass on the next scheduled search. As approved by the TAC, this method was discontinued in the 2015 spring season to prevent the scenario where an incidental detection is recorded, left in place, but scavenged before the next standard search and no carcass is associated with the data. In the 2015 spring, summer, and fall seasons, incidental detections found outside of the power block, but within standardized search areas were removed from field and included in fatality estimates under the conservative assumption that the search interval was the time between the last search of the area and the time of incidental discovery (Table 1b).

Table 1b. Treatment of Incidental Detections by Location

Location	Search Interval	Included in Analysis?
Power Block	1 Day	Yes, if carcass age is less than 24 hours
All Other Standardized Search Areas	Calculated days between date of detection and date of previous standard search in that location	Yes, if carcass age is less than calculated search interval

All fatality estimators have limitations, particularly when fatality counts are low. In particular, when detections are five or fewer, regardless of survey effort, estimates and confidence intervals can be subject to uncontrolled bias and must be interpreted with caution (Korner-Nievergelt et. al 2011). Rather than report estimates with little inferential value, no estimates were provided for combinations of covariates (e.g. size, location, cause) resulting in fewer than five detections.

The fatality estimator accounts for imperfect detection probability by using bias trials to estimate searcher efficiency. The Huso estimator is constructed under the assumption that searchers have a single opportunity to discover a carcass. Therefore, if a carcass is missed on the first search it was available, then found on the next search, it will effectively be over-counted. The method typically used to overcome multiple-detection-bias is to exclude any detection determined to be significantly older than the search interval. Each detection made during the 2014 – 2015 monitoring year was evaluated for exclusion from the estimator based on the observed time since death (i.e., the length of time between an animal's death and when the detection was discovered), and the search interval associated with that detection. For example, if a detection was determined to have been on the ground for > 1 week and was made in the inner HD of Unit 2, which had been searched 21 days earlier that carcass would be excluded from analysis.

Determining the age of a carcass is based on detailed qualitative analysis of every detection (carcasses and feather spots) recovered onsite. Qualitative analysis began with in situ aging analysis in the field by CEC and BLM certified biologists, followed by a more detailed analysis in the lab. In the field, biologists noted the presence of rigor mortis, condition of eyes and feathers, and condition of blood or viscera (if present). In the lab, each carcass was further examined and compared to photographs of decomposed test carcasses. The test carcasses were used to document decomposition over time at Ivanpah to better inform biologist of site-specific characteristics of avian decomposition that could be expected at the Project.

Decomposition test carcasses were placed in tamper-proof containers, exposed to environmental conditions and allowed to decompose. Carcasses used in decomposition tests were placed to account for variation in space (e.g. underneath fans in the ACC unit versus shaded under a heliostat) and time (e.g. ephemeral weather patterns). As the test carcasses aged, the biologists photographed and recorded the condition of body tissue and fluids, eyes, feathers, and indications of rigor mortis. All decomposition specimens were placed during the 2015 spring monitoring season.

To correctly account for searcher efficiency in the fatality estimate model, when partial carcasses are initially identified as feather spots by the observer in the field, they are modeled (in the fatality estimates) as a feather spot. In other words, the primary means of identification of the detection (feather spot, small carcass, or large carcass) is the appropriate classification to utilize in the modeled estimates. The primary identification approach is appropriate since different searcher efficiency rates are estimated for feather spots as opposed to carcasses. Because searcher efficiency is an important component of the fatality estimator, what the surveyors detect first (i.e., feather spot versus a complete or partial carcass) influences how that detection should be included in the model. Such detections are noted in Appendix A as “partial carcass + feather spot” in the “Description of Carcass/Injury” column.

2.3 Deterrence Measures

2.3.1 Avian Measures

Ivanpah commenced an investigation of the use of various deterrence measures to reduce avian mortality at the facility in 2013. These initial investigations combined with the results of the monitoring conducted during 2014 resulted in a list of potential deterrence measures for adaptive management. The list of

deterrence measures has been updated, and progress reports towards deterrence implementation have been provided to the TAC on a periodic basis.

Several deterrence measures have been implemented at Unit 1 for birds. Specifically, new ground-level LED lighting and spikes were installed 5 February 2015. As approved by the TAC, a chemosensory deterrence measure commercially known as BirdBuffer, was deployed on 12 October 2014 at Unit 1, and on 29 September 2015 on both Units 2 and 3, and a sonic deterrence measure commercially known as BirdGard, was deployed on 13 March 2015 at Unit 1, on 25 August 2015 in Unit 2, and 31 August 2015 in Unit 3. The chemosensory deterrence measure is hypothesized to deter resident species, since the deterrent induces a conditioned response over time, and the sonic deterrence measure is hypothesized to deter transient and migrant species, as the sounds produced by the system are thought to startle and deter subjects. Together, the combination of BirdBuffer and BirdGard systems are intended to deter avian species from entering this area associated with elevated flux mortality.

These avian deterrence measures were installed to reduce overall risk to birds and therefore an effect of one type of deterrence cannot be isolated. Detections will be considered after one full year of deterrence deployment to determine if effectiveness of these measures can be assessed through fatality survey data.

2.3.2 Bat Measures

Bat fatalities were detected primarily in the ACC, and as the ACC provides a roosting location, a Binary Acoustic Technology Ultrasonic Bat Deterrence was tested at Unit 3. The bat deterrence measure is not designed to elicit a fear response in bats, but is designed to interfere with the echolocation capabilities of bats. As bats navigate utilizing sonar, the method deployed “jams” the sonar signals and bats species avoid the area as a result of the inherent difficulties to navigate under these conditions. Although bats can adjust echolocation under jamming conditions, the use of broadband ultrasound requires bats to shift frequencies to avoid overlap that interferes with echolocation and therefore deters within the area subject to broadband ultrasound (Arnett, et al. 2013). As a result of the broadband ultrasonic signal and the inherent “jamming” effect, adaptation to the deterrence measure is minimal. The deterrence measure has been installed at all Units, and the installation dates are as follows: 10 September 2014 at Unit 1, 23 April 2015 at Unit 2, and 23 April 2015 at Unit 3. In November 2015 all bat deterrents were inspected. The deterrents in Units 1 and 2 were plugged in and turned on; however, in Unit 3, four of the eight bat deterrent units were discovered not functioning and subsequently unplugged. Upon investigation, the initial cause of the malfunction was not identified; however, power was restored to the four deterrent units. An ultrasonic testing protocol is currently being developed and will be implemented in early 2016 to ensure proper function of all deterrent units. After the testing protocol is implemented, patterns of bat detections will be examined after one full year of deterrence deployment to determine if effectiveness of these measures can be assessed through fatality survey data.

Section 3.0 Avian Use and Raptor/Large Bird Monitoring Survey Results

3.1 Avian Use Monitoring

During the 2014 – 2015 monitoring year, a total of 1450 avian use counts were conducted across all survey areas and points. Survey effort among survey areas was as follows: upper bajada = 340 counts, lower bajada = 380 counts, Unit 1= 360 counts, Unit 2 and Unit 3 combined = 350 counts. Mean use (birds/survey) is presented to account for unequal survey effort among survey areas.

3.1.1 Species Richness

A total of 71 identifiable bird species and 3231 total observations were recorded during avian use surveys during the 2014 – 2015 monitoring year. Table 2a lists these species and the number of individuals observed within the heliostat and desert survey areas by season.

Table 2a. Avian Use Survey Results – Number of Observations by Species and Survey Grid.

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
black-throated sparrow	272	2	213	19	227	32	120	9	894
cactus wren	81	0	139	2	117	12	95	16	462
yellow-rumped warbler	8	120	6	1	0	0	5	5	145
Bewick's wren	69	0	13	0	17	0	36	0	135
Brewer's sparrow	65	0	64	0	0	0	3	0	132
Le Conte's thrasher	5	0	35	0	42	0	41	1	124
Sagebrush sparrow	116	0	1	0	0	0	4	0	121
horned lark	1	34	0	43	2	18	8	12	118
house finch	11	15	12	26	4	8	25	13	114
Gambel's quail	10	0	2	0	12	0	65	0	89
loggerhead shrike	13	2	25	1	27	10	6	1	85
unidentified sparrow	58	3	2	0	0	0	3	10	76
Verdin	23	0	12	0	11	0	19	0	65
black-tailed gnatcatcher	8	0	0	0	24	0	32	0	64
pinyon jay	0	0	0	0	0	0	62	0	62
common raven	2	6	11	8	1	10	1	17	56
western meadowlark	22	19	1	1	0	0	5	8	56
ash-throated flycatcher	0	0	32	0	17	1	1	0	51
blue-gray gnatcatcher	0	0	7	0	10	0	22	1	40
American pipit	7	10	0	5	0	0	5	4	31
white-crowned sparrow	8	3	18	0	0	0	1	0	30
unidentified passerine	7	4	1	0	1	0	0	9	22
rock pigeon	0	0	0	0	0	21	0	0	21
rock wren	5	1	1	0	0	0	14	0	21
unidentified bird (small)	0	0	0	0	0	1	0	18	19
crissal thrasher	2	0	0	0	8	0	8	0	18
Brewer's blackbird	0	13	0	0	0	0	0	0	13

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
ladder-backed woodpecker	0	0	1	0	3	0	7	0	11
greater roadrunner	4	0	0	0	2	0	2	1	9
lark sparrow	0	0	3	1	0	0	5	0	9
mourning dove	0	0	3	1	2	1	1	1	9
barn swallow	0	0	1	1	0	0	4	1	7
Phainopepla	3	0	0	0	0	0	2	1	6
Savannah sparrow	0	2	0	1	0	0	0	3	6
Say's phoebe	0	0	0	0	3	0	2	1	6
white-throated swift	0	0	6	0	0	0	0	0	6
American kestrel	0	3	0	1	0	1	0	0	5
lesser nighthawk	0	0	3	0	2	0	0	0	5
ruby-crowned kinglet	4	0	0	0	0	0	1	0	5
tree swallow	0	0	0	0	1	3	1	0	5
unidentified swallow	0	0	0	0	1	4	0	0	5
violet-green swallow	0	0	3	1	1	0	0	0	5
gray flycatcher	0	0	4	0	0	0	0	0	4
orange-crowned warbler	0	0	0	0	0	0	3	1	4
Vaux's swift	0	0	0	0	0	0	4	0	4
California quail	0	0	0	0	3	0	0	0	3
cliff swallow	0	0	0	0	0	0	0	3	3
red-tailed hawk	0	0	0	0	1	0	1	0	3
western kingbird	0	0	3	0	0	0	0	0	3
western tanager	0	0	1	1	0	0	1	0	3
black-throated blue warbler	0	0	2	0	0	0	0	0	2
chipping sparrow	0	0	2	0	0	0	0	0	2
lesser goldfinch	0	0	0	0	0	0	1	1	2
MacGillivray's warbler	0	0	0	0	0	0	1	1	2
northern flicker	0	0	0	0	0	0	1	1	2
northern harrier	1	0	0	1	0	0	0	0	2
northern mockingbird	0	0	0	0	1	0	1	0	2
northern rough-winged swallow	0	0	0	2	0	0	0	0	2
unidentified woodpecker	0	0	0	0	0	2	0	0	2
western scrub-jay	0	0	0	0	0	0	0	2	2
Wilson's warbler	0	0	2	0	0	0	0	0	2
yellow-headed blackbird	0	0	0	0	0	0	0	2	2
yellow warbler	0	0	0	0	0	0	0	2	2
American avocet	0	0	0	0	0	1	0	0	1
blue-throated hummingbird	0	0	1	0	0	0	0	0	1
Bullock's oriole	0	0	1	0	0	0	0	0	1
great blue heron	0	0	0	0	0	0	0	1	1
greater yellowlegs	0	0	0	0	0	1	0	0	1
house wren	0	0	0	1	0	0	0	0	1
Killdeer	0	0	0	0	0	0	0	1	1
least sandpiper	0	0	0	1	0	0	0	0	1
Lincoln's sparrow	0	0	0	0	0	0	0	1	1
Nashville warbler	0	0	1	0	0	0	0	0	1

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
Scott's oriole	0	0	0	0	1	0	0	0	1
unidentified bird (medium)	0	0	0	0	0	1	0	0	1
unidentified bird (unknown size)	0	0	0	0	0	0	0	1	1
unidentified bluebird	0	0	0	0	0	0	0	1	1
unidentified warbler	0	0	0	0	0	0	0	1	1
vesper sparrow	1	0	0	0	0	0	0	0	1
Total	806	237	632	118	541	127	619	151	3231

As shown on Figure 6, species richness was consistently highest in the desert (54 species) throughout the year, lowest in the heliostat grids (44 species). Species richness was subject to temporal variation and increased during the spring and fall season in both the desert and heliostat grids (Figure 6). This increase is as anticipated; as greater numbers of bird species migrate through the area during these seasons.

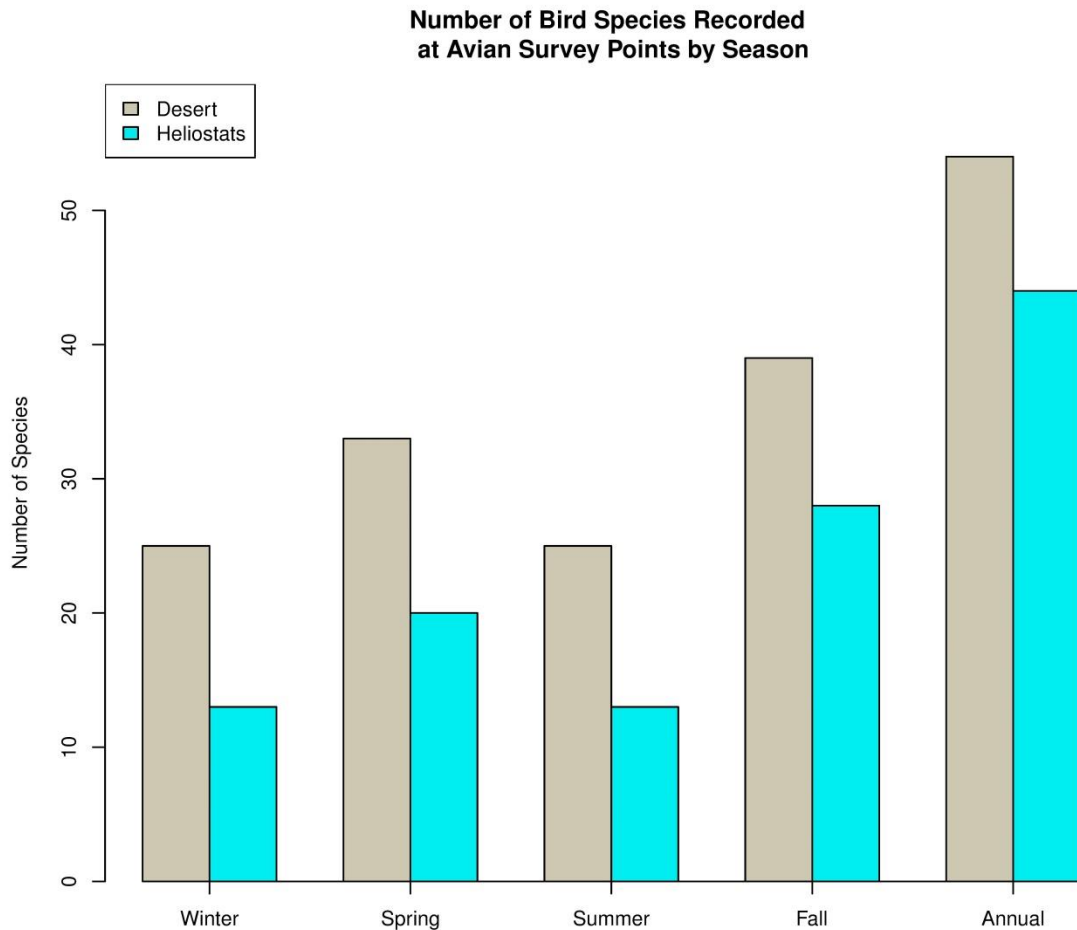


Figure 6. Number of Bird Species Recorded at Avian Survey Points by Season.

3.1.2 Avian Abundance and Density

As with species richness, avian abundance was consistently higher in the desert areas than in the heliostat areas. A total of 3231 observations were recorded during avian use surveys, with 2598 observations occurred in the desert bajada survey areas and 633 observations in the heliostat survey areas (Table 2a). Overall, avian abundance was highest during the 2014 – 2015 winter season and lowest in 2015 summer season. The most frequently observed species overall during avian use surveys in the 2014 – 2015 monitoring year were black-throated sparrow, cactus wren, yellow-rumped warbler, Bewick’s wren, and Brewer’s sparrow (Table 2a).

Since an equal number of plots were surveyed in each habitat, comparison of avian mean use within each area is appropriate. Avian mean use (birds/survey) results were consistent with observation and was highest in the desert bajada survey areas, and lowest in the heliostat survey areas. However, mean use varied seasonally and by survey area (Table 2b).

Table 2b. Avian Use Survey Results – Mean use (Birds/Survey) by Species and Survey Grid.

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
black-throated sparrow	1.05	0.01	1.12	0.13	1.89	0.25	0.80	0.06	5.30
cactus wren	0.31	0.00	0.73	0.01	0.98	0.09	0.63	0.11	2.87
Le Conte's thrasher	0.02	0.00	0.18	0.00	0.35	0.00	0.27	0.01	0.83
Bewick's wren	0.27	0.00	0.07	0.00	0.14	0.00	0.24	0.00	0.72
horned lark	0.00	0.12	0.00	0.29	0.02	0.14	0.05	0.08	0.70
house finch	0.04	0.05	0.06	0.17	0.03	0.06	0.17	0.09	0.68
Brewer's sparrow	0.25	0.00	0.34	0.00	0.00	0.00	0.02	0.00	0.61
Gambel's quail	0.04	0.00	0.01	0.00	0.10	0.00	0.43	0.00	0.58
yellow-rumped warbler	0.03	0.41	0.03	0.01	0.00	0.00	0.03	0.03	0.55
loggerhead shrike	0.05	0.01	0.13	0.01	0.23	0.08	0.04	0.01	0.55
Sagebrush sparrow	0.45	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.48
black-tailed gnatcatcher	0.03	0.00	0.00	0.00	0.20	0.00	0.21	0.00	0.44
pinyon jay	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.41
Verdin	0.09	0.00	0.06	0.00	0.09	0.00	0.13	0.00	0.37
common raven	0.01	0.02	0.06	0.05	0.01	0.08	0.01	0.12	0.35
unidentified sparrow	0.22	0.01	0.01	0.00	0.00	0.00	0.02	0.07	0.33
ash-throated flycatcher	0.00	0.00	0.17	0.00	0.14	0.01	0.01	0.00	0.33
blue-gray gnatcatcher	0.00	0.00	0.04	0.00	0.08	0.00	0.15	0.01	0.27
western meadowlark	0.09	0.07	0.01	0.01	0.00	0.00	0.03	0.05	0.25
rock pigeon	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.16
American pipit	0.03	0.03	0.00	0.03	0.00	0.00	0.03	0.03	0.15
white-crowned sparrow	0.03	0.01	0.10	0.00	0.00	0.00	0.01	0.00	0.14
unidentified bird (small)	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.12	0.13
crissal thrasher	0.01	0.00	0.00	0.00	0.07	0.00	0.05	0.00	0.13
rock wren	0.02	0.00	0.01	0.00	0.00	0.00	0.09	0.00	0.12
unidentified passerine	0.03	0.01	0.01	0.00	0.01	0.00	0.00	0.06	0.12
ladder-backed woodpecker	0.00	0.00	0.01	0.00	0.03	0.00	0.05	0.00	0.08

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
mourning dove	0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.01	0.06
lark sparrow	0.00	0.00	0.02	0.01	0.00	0.00	0.03	0.00	0.06
greater roadrunner	0.02	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.05
barn swallow	0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.01	0.05
Brewer's blackbird	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Say's phoebe	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.01	0.05
unidentified swallow	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.04
tree swallow	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.04
Savannah sparrow	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.03
lesser nighthawk	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.03
Phainopepla	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.03
white-throated swift	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03
violet-green swallow	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.03
orange-crowned warbler	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.03
Vaux's swift	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03
American kestrel	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.03
California quail	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
ruby-crowned kinglet	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02
gray flycatcher	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02
cliff swallow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
red-tailed hawk	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02
western tanager	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.02
western kingbird	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02
northern mockingbird	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02
unidentified woodpecker	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
lesser goldfinch	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
MacGillivray's warbler	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
northern flicker	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
western scrub-jay	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
yellow-headed blackbird	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
yellow warbler	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
northern rough-winged swallow	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
black-throated blue warbler	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
chipping sparrow	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
northern harrier	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Wilson's warbler	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
American avocet	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
greater yellowlegs	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Scott's oriole	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
unidentified bird (medium)	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
great blue heron	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
house wren	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01

Species	Winter		Spring		Summer		Fall		Total
	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	Desert	Heliostats	
Killdeer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
least sandpiper	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Lincoln's sparrow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
unidentified bird (unknown size)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
unidentified bluebird	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
unidentified warbler	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
blue-throated hummingbird	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Bullock's oriole	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
Nashville warbler	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
vesper sparrow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.10	0.82	3.33	0.79	4.51	0.98	4.13	1.03	18.68

Avian density (birds/hectare) was estimated since abundance between grids and detectability among species may vary. However, density estimates require a fairly large amount of data. Due to the low number of individuals recorded for most species during these surveys (owing to the naturally low abundance of birds in the habitat surveyed), it was not possible to obtain reliable density estimates on a species-by-species basis. Even when data were pooled within a 20-point grid, sample sizes were insufficient to allow for determination of reliable density estimates within a grid (e.g., to allow for comparisons between the two 20-point heliostat grids or the two 20-point desert habitat grids). Under the assumption that the two heliostat grids were more similar to each other (in terms of habitat and resident bird communities) than to either of the desert bajada grids, and making the same assumption with respect to the two desert bajada grids, we pooled data from the 40 heliostat points and compared bird densities to data from the 40 pooled desert bajada points.

As with the total observations and the mean use, the estimated density of birds using desert bajada survey areas was greater than the density of birds using the heliostat survey areas (Table 3). Further, the 95% confidence intervals around density estimates for each habitat type did not overlap in all seasons, except fall. However, the 95% confidence intervals around the annual density estimates do not overlap; this provides statistical evidence that bird density in the desert bajada survey areas are significantly higher than bird density in the heliostat survey area during (Table 3).

Table 3. Avian Density Estimates for Heliostat vs. Desert Bajada Survey Area by Season, and Annual (Derived Using Program DISTANCE).

	Stratum	Estimate (birds/hectare)	%Coefficient of Variation	95% Confidence Interval Low	95% Confidence Interval High
Winter	Desert Half-normal/Cosine adjustment order 2	2.025	18.73	1.406	2.916
	Heliostats Half-normal/No Cosine adjustment	0.369	16.74	0.266	0.513
Spring	Desert Half-normal/Cosine adjustment order 2	1.874	19.15	1.291	2.721
	Heliostats Half-normal/No Cosine adjustment	0.530	14.00	0.402	0.699
Summer	Desert Half-normal/Cosine adjustment order 2	2.069	33.98	1.080	3.962
	Heliostats Half-normal/No Cosine adjustment	0.355	19.14	0.243	0.518
Fall	Desert Half-normal/Cosine adjustment order 2	2.231	21.98	1.456	3.419
	Heliostats Half-normal/No Cosine adjustment	0.969	29.51	0.547	1.716
Annual	Desert Half-normal/Cosine adjustment order 2	2.73	21.09	1.82	4.12
	Heliostats Half-normal/No Cosine adjustment	0.55	7.10	0.48	0.64

3.2 Raptor and Large Bird Use Monitoring

During the 2015 monitoring year, a total of 179 surveys were conducted at the eight survey points for a total of 666.8 hours (Table 4). During the monitoring year, 12 raptor species and 6 other large bird species were observed and identifiable. Table 4 summarizes the number of observations of each species. Mean use (birds/survey hour) is shown on Table 5.

Common ravens comprised 57.0% of all large bird observations during raptor/large bird surveys, and were consistently the most frequently observed species throughout the 2014 – 2015 monitoring year. A total of 662 raptors/large birds representing 17 identified species were observed across all seasons (Table 4). Of these, 307 individuals (mostly common ravens) were recorded at or over the Project facilities, and 355 individuals were recorded perched in or flying over habitats outside the facilities, such as the desert, or the mountains to the north and west.

The frequency of occurrence of raptors/large birds across all seasons offsite ranged from 0.81 to 1.83 birds observed per survey hour. Onsite, the frequency ranged from 2.43 to 3.41 birds observed per survey hour (Table 5). Common ravens, red-tailed hawks (*Buteo jamaicensis*), American kestrels (*Falco sparverius*), and turkey vultures (*Cathartes aura*), comprised 87.2% of all large bird observations. Golden eagles comprised 4.1% of all raptor and large bird observations for the 2014 – 2015 monitoring year. Golden eagles were most frequently observed in the desert and during the 2014 – 2015 winter season.

Overall abundance and diversity was greatest during winter, with 9 species and 380 individuals observed. Summer had the lowest abundance and diversity, with only six species and 37 individuals. Spring and fall had intermediate levels of diversity and abundance (Table 4).

Table 4. Raptor/Large Bird Point Count Results Summary (Number of Total Observations).

Species	Ivanpah Facilities				Desert/Offsite				Total	Species Composition
	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall		
common raven	98	44	40	23	131	14	10	18	378	57.0%
red-tailed hawk	5	6	4	3	59	11	11	10	109	16.4%
American kestrel	30	4	5	11	6	0	0	2	58	8.7%
turkey vulture	0	0	0	6	0	4	8	16	34	5.1%
golden eagle	2	4	1	1	15	3	0	1	27	4.1%
northern harrier	7	0	0	0	6	0	0	0	13	2.0%
unidentified raptor	1	0	0	0	6	1	0	3	11	1.7%
Cooper's hawk	0	0	0	0	5	0	0	0	5	0.8%
peregrine falcon	1	1	0	0	2	0	0	0	4	0.6%
prairie falcon	0	1	0	0	1	1	0	0	3	0.5%
greater roadrunner	0	0	0	1	0	0	0	1	2	0.3%
osprey	0	0	0	0	0	2	0	0	2	0.3%
sharp-shinned hawk	0	0	0	1	0	1	0	0	2	0.3%
unidentified buteo	0	0	0	0	0	0	0	2	2	0.3%
unidentified gull	2	0	0	0	0	0	0	0	2	0.3%
unidentified large bird	0	0	1	0	0	0	0	1	2	0.3%
California gull	1	0	0	0	0	0	0	0	1	0.2%
Canada goose	0	0	0	0	1	0	0	0	1	0.2%
merlin	0	1	0	0	0	0	0	0	1	0.2%
mourning dove	0	0	0	1	0	0	0	0	1	0.2%
red-shouldered hawk	0	0	0	0	0	0	0	1	1	0.2%
Swainson's hawk	0	0	0	0	0	0	0	1	1	0.2%
unidentified falcon	0	0	0	0	1	0	0	0	1	0.2%
unidentified hawk	0	1	0	0	0	0	0	0	1	0.2%
Total	147	62	51	47	233	37	29	56	662	100.0%

Table 5. Raptor/Large Bird Mean Use (Birds/Survey Hour) within 800 meters.

	Ivanpah Facilities				Desert/Offsite			
	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
common raven	1.50	2.51	2.48	1.05	0.95	0.51	0.61	0.62
American kestrel	0.62	0.29	0.29	0.68	0.07	0.00	0.00	0.15
red-tailed hawk	0.09	0.25	0.13	0.25	0.18	0.10	0.00	0.40
turkey vulture	0.00	0.00	0.00	0.42	0.00	0.10	0.30	0.53
golden eagle	0.05	0.26	0.00	0.00	0.11	0.00	0.00	0.00
northern harrier	0.07	0.00	0.00	0.00	0.08	0.00	0.00	0.00
greater roadrunner	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.06
sharp-shinned hawk	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00
Osprey	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00
red-shouldered hawk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
prairie falcon	0.00	0.05	0.00	0.00	0.02	0.00	0.00	0.00
mourning dove	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Cooper's hawk	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
peregrine falcon	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00
merlin	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
unidentified raptor	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
unidentified gull	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
California gull	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.43	3.41	2.89	2.62	1.47	0.81	0.91	1.83

The majority of observations of raptors and other large birds involved individuals seen in flight. Per Section 2.3 of the Plan, the height of flight above ground level (agl) was recorded. Table 6 provides the number of observations of each species that were perched or that were flying in each height category. Most species were not uniformly distributed across flight height categories. In general, more individuals were observed in flight than perched with most in-flight observations at or below 100 m agl.

Table 6. Flight Heights of Raptors and Other Large Birds Over Ivanpah Facilities and Other Habitats/Areas within 800 meters.

Species	Outside Ivanpah Facilities Flight Height Category (m)						At Ivanpah Facilities Flight Height Category (m)					
	0	<10	10- 100	100- 200	Perched	Total	0	<10	10- 100	100- 200	Perched	Total
common raven	11	35	6	2	5	59	34	68	8	9	28	147
American kestrel	0	3	0	0	2	5	4	17	6	0	17	44
red-tailed hawk	0	3	4	7	0	14	0	5	3	4	1	13
turkey vulture	0	6	4	2	0	12	0	3	2	1	0	6
golden eagle	0	1	2	1	0	4	0	1	3	1	0	5
northern harrier	2	0	0	0	1	3	2	1	0	0	0	3
Cooper's hawk	2	0	0	0	0	2	0	0	0	0	0	0
greater roadrunner	0	0	0	0	1	1	0	0	0	0	1	1
Osprey	0	0	0	2	0	2	0	0	0	0	0	0
peregrine falcon	0	1	0	0	0	1	0	1	0	0	0	1
prairie falcon	0	0	0	0	1	1	0	0	0	1	0	1
California gull	0	0	0	0	0	0	0	0	0	0	1	1
Merlin	0	0	0	0	0	0	0	0	0	1	0	1
mourning dove	0	0	0	0	0	0	0	1	0	0	0	1
red-shouldered hawk	0	0	0	1	0	1	0	0	0	0	0	0
sharp-shinned hawk	0	0	0	0	0	0	0	0	0	1	0	1
unidentified gull	0	0	0	0	0	0	0	1	0	0	0	1
unidentified raptor	0	0	0	0	0	0	0	0	0	1	0	1
Total	15	49	16	15	10	105	40	98	22	19	48	227

Section 4.0 Monitoring Results

4.1 Summary of Avian Detections

During the 2014 – 2015 monitoring year, a total of 1098 avian detections (including injured birds and incidentals) of 101 identified species (Table 7, Figures 6 – 8) were recorded. Avian detections were highest in the 2015 fall season (461 total detections), followed by the 2014 – 2015 winter season (340 total detections), the 2015 spring season (185 total detections), and lowest in the 2015 summer season (112 total detections). Overall, the most numerous detection of an identified species was yellow-rumped warbler (87 detections), followed by mourning dove (76 detections), greater roadrunner (73 detections), white-crowned sparrow (39 detections), and yellow warbler (36 detections).

Table 7. Number of Individual Bird Detections, by Species and Season.

Common Name	Winter		Spring		Summer		Fall		Total	
	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries
yellow-rumped warbler	36	0	33	2	0	0	16	0	85	2
unidentified passerine	34	0	18	0	2	0	22	0	76	0
mourning dove	26	0	14	0	9	0	24	0	73	0
greater roadrunner	25	0	5	0	15	0	27	0	72	0
unidentified bird (small)	0	0	0	0	2	0	63	0	65	0
white-crowned sparrow	25	0	2	0	1	0	11	0	39	0
unidentified sparrow	14	0	0	0	0	0	24	0	38	0
yellow warbler	3	0	2	1	1	0	28	0	34	1
unidentified warbler	1	0	0	0	0	0	31	0	32	0
American pipit	30	0	0	0	0	0	0	0	30	0
unidentified bird (unknown size)	16	0	0	0	0	0	5	0	21	0
northern rough-winged swallow	0	0	4	2	5	0	11	0	20	2
unidentified swallow	3	0	2	0	5	0	10	0	20	0
black-throated sparrow	0	0	7	0	11	0	1	0	19	0
western meadowlark	15	0	2	0	0	0	2	0	19	0
American kestrel	1	0	1	1	4	0	12	0	18	1
house finch	10	0	0	0	4	1	3	0	17	1
tree swallow	1	0	1	0	4	0	11	0	17	0
Wilson's warbler	0	0	6	0	2	1	8	0	16	1
horned lark	1	0	3	0	3	0	8	0	15	0
lesser nighthawk	3	0	3	0	4	2	5	0	15	2
savannah sparrow	10	0	2	0	0	0	3	0	15	0
violet-green swallow	5	0	2	0	1	0	6	0	14	0
brown-headed cowbird	5	0	0	0	1	0	7	0	13	0
calliope hummingbird	0	0	12	0	0	0	1	0	13	0
ruby-crowned kinglet	4	0	2	0	0	0	7	1	13	1
rufous hummingbird	0	0	6	0	2	0	4	0	12	0

Common Name	Winter		Spring		Summer		Fall		Total	
	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries
orange-crowned warbler	2	0	3	1	0	0	6	1	11	2
unidentified hummingbird	1	0	4	0	4	0	2	0	11	0
cliff swallow	0	0	1	0	6	0	1	0	8	0
Costa's hummingbird	1	0	4	0	3	0	0	0	8	0
lesser goldfinch	5	0	1	0	0	0	2	0	8	0
MacGillivray's warbler	0	0	3	0	0	0	5	1	8	1
western tanager	0	0	1	1	2	0	5	0	8	1
loggerhead shrike	3	0	0	0	3	0	1	0	7	0
rock pigeon	4	1	1	0	0	0	2	1	7	2
American coot	5	0	0	1	1	0	0	0	6	1
cactus wren	0	0	1	0	1	0	4	0	6	0
common raven	0	2	1	0	2	0	2	0	6	1
eared grebe	2	0	2	0	0	0	2	2	6	2
blue-gray gnatcatcher	1	0	1	0	0	0	3	0	5	0
green-winged teal	2	0	2	0	0	0	1	0	5	0
Anna's hummingbird	1	0	0	0	2	0	1	0	4	0
blue-winged teal	0	0	0	0	0	1	4	0	4	1
Brewer's blackbird	4	0	0	0	0	0	0	0	4	0
Brewer's sparrow	2	0	2	0	0	0	0	0	4	0
chipping sparrow	0	0	2	0	0	0	2	0	4	0
Gambel's quail	4	0	0	0	0	0	0	0	4	0
lark sparrow	0	0	0	0	0	0	4	0	4	0
sagebrush sparrow	3	0	0	0	0	0	1	0	4	0
unidentified kinglet	1	0	0	0	0	0	3	0	4	0
unidentified large bird	0	0	0	0	0	0	4	0	4	0
verdin	0	0	1	0	1	0	2	0	4	0
American robin	2	0	1	0	0	0	0	0	3	0
barn swallow	2	0	0	1	0	0	1	0	3	1
black-tailed gnatcatcher	0	0	1	0	1	0	1	0	3	0
black-throated gray warbler	0	0	0	0	0	0	3	0	3	0
Bullock's oriole	0	0	1	0	0	0	2	0	3	0
cedar waxwing	2	0	0	0	0	0	1	0	3	0
ladder-backed woodpecker	1	0	0	0	0	0	2	0	3	0
Townsend's warbler	0	0	2	0	0	0	1	0	3	0
black-chinned hummingbird	0	0	2	0	0	0	0	0	2	0
crissal thrasher	2	0	0	0	0	0	0	0	2	0
dark-eyed junco	2	0	0	0	0	0	0	0	2	0
house wren	0	0	1	0	0	0	1	0	2	0
lazuli bunting	1	0	0	1	0	0	1	0	2	1
Lincoln's sparrow	0	0	0	0	0	0	2	0	2	0
northern mockingbird	1	0	0	0	0	0	1	0	2	0

Common Name	Winter		Spring		Summer		Fall		Total	
	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries
pine siskin	1	0	0	0	0	0	1	0	2	0
red-naped sapsucker	0	0	0	0	0	0	2	0	2	0
unidentified dove	0	0	0	0	0	0	2	0	2	0
unidentified finch	0	0	0	0	0	0	2	0	2	0
unidentified gnatcatcher	0	0	0	0	0	0	2	0	2	0
varied thrush	2	0	0	0	0	0	0	0	2	0
vesper sparrow	0	0	0	0	0	0	2	0	2	0
white-winged dove	0	0	1	0	0	0	1	0	2	0
Wilson's snipe	2	0	0	0	0	0	0	0	2	0
yellow-headed blackbird	0	0	2	0	0	0	0	0	2	0
American avocet	0	0	0	0	0	0	1	0	1	0
American wigeon	0	0	1	0	0	0	0	0	1	0
ash-throated flycatcher	0	0	0	0	1	0	0	0	1	0
band-tailed pigeon	1	0	0	0	0	0	0	0	1	0
bank swallow	0	0	0	1	0	0	1	0	1	1
Bewick's wren	0	0	0	0	0	0	1	0	1	0
black-headed grosbeak	0	0	1	0	0	0	0	0	1	0
Bushtit	0	0	0	0	0	0	1	0	1	0
cinnamon teal	0	0	1	0	0	0	0	0	1	0
common poorwill	0	0	0	0	0	0	1	0	1	0
Cooper's hawk	0	0	1	0	0	0	0	0	1	0
European starling	1	0	0	0	0	0	0	0	1	0
golden-crowned kinglet	0	0	0	0	0	0	1	0	1	0
hermit thrush	1	0	0	0	0	0	0	0	1	0
hermit warbler	0	0	0	0	1	0	0	0	1	0
least sandpiper	0	0	0	0	0	0	1	0	1	0
Lucy's warbler	0	0	0	0	1	0	0	0	1	0
mountain bluebird	1	0	0	0	0	0	0	0	1	0
Nashville warbler	0	0	0	0	0	0	1	0	1	0
northern harrier	1	0	0	0	0	0	0	0	1	0
Pacific-slope flycatcher	0	0	0	0	0	0	1	0	1	0
pie-billed grebe	1	0	0	0	0	0	0	0	1	0
red-winged blackbird	1	0	0	0	0	0	0	0	1	0
rock wren	0	0	0	0	0	0	1	0	1	0
Ross' goose	0	1	0	0	0	0	0	0	1	0
semipalmated sandpiper	0	0	0	0	0	0	1	0	1	0
snowy egret	0	0	1	0	0	0	0	0	1	0
sora	0	0	0	0	0	0	1	0	1	0
unidentified blackbird	0	0	0	0	0	0	1	0	1	0
unidentified duck	0	0	0	0	0	0	1	0	1	0
unidentified grebe	0	0	0	0	0	0	1	0	1	0

Common Name	Winter		Spring		Summer		Fall		Total	
	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries	Fatalities	Injuries
unidentified shorebird	1	0	0	0	0	0	0	0	1	0
unidentified teal	1	0	0	0	0	0	0	0	1	0
Vaux's swift	0	0	0	0	0	0	1	0	1	0
vermilion flycatcher	0	0	0	0	0	0	1	0	1	0
western grebe	0	0	0	0	0	0	1	0	1	0
western kingbird	0	0	0	0	0	0	1	0	1	0
peregrine falcon	0	0	0	0	0	1	0	0	0	1
red-tailed hawk	0	0	0	0	0	1	0	0	0	1
ruddy duck	0	0	0	0	0	0	0	1	0	1
Total	336	4	173	12	105	7	454	7	1068	30

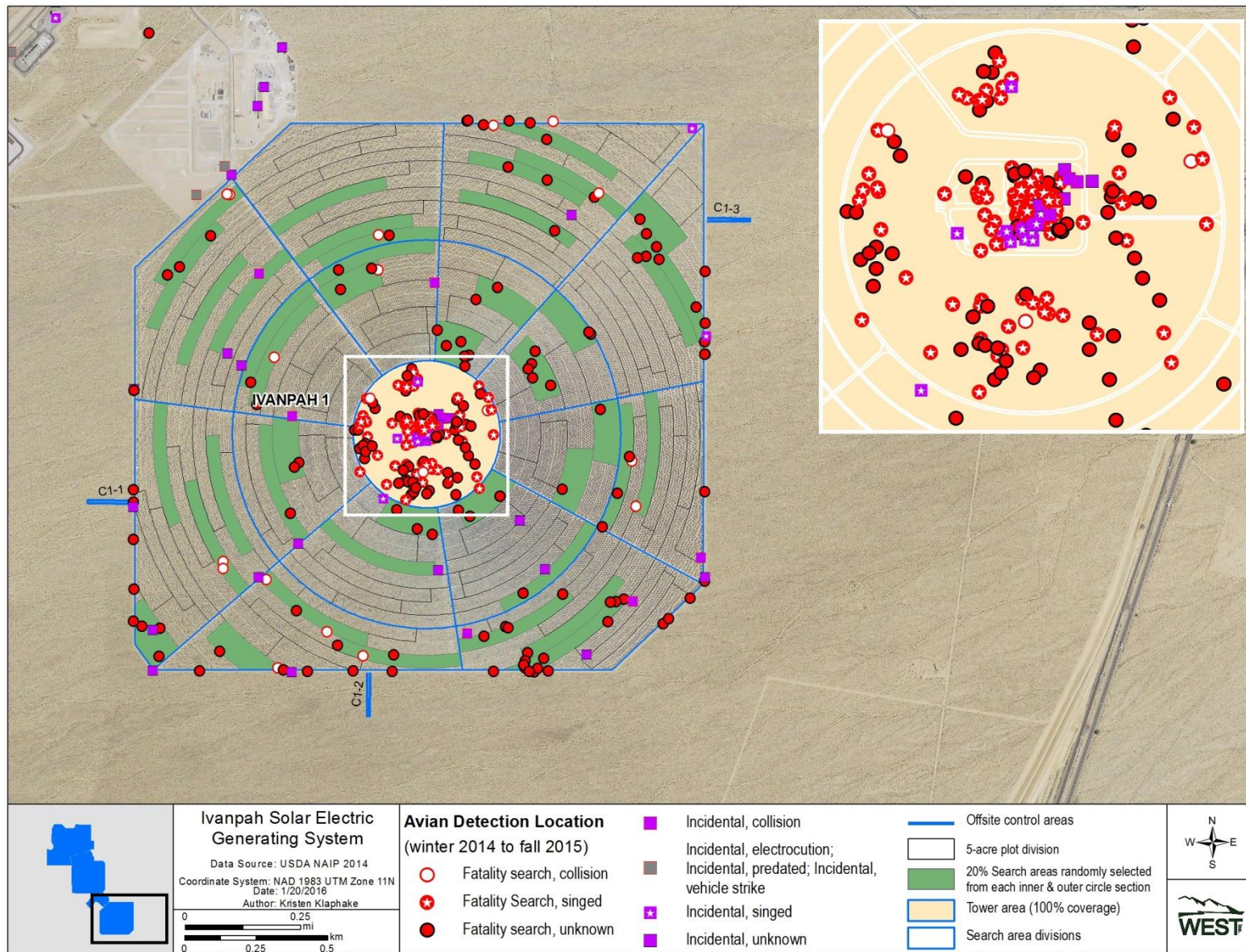


Figure 6. Ivanpah 1 Detections.

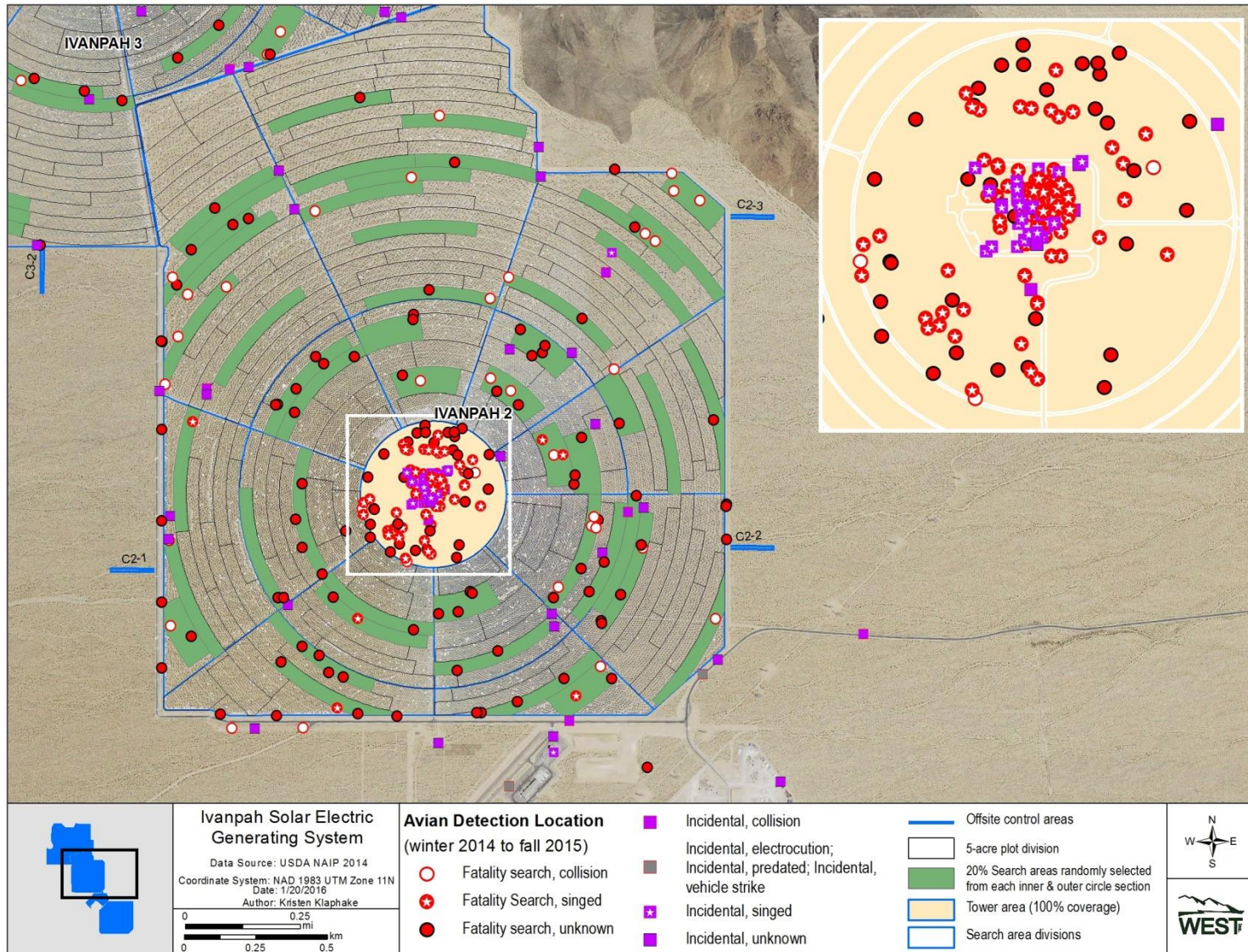


Figure 7. Ivanpah 2 Detections.

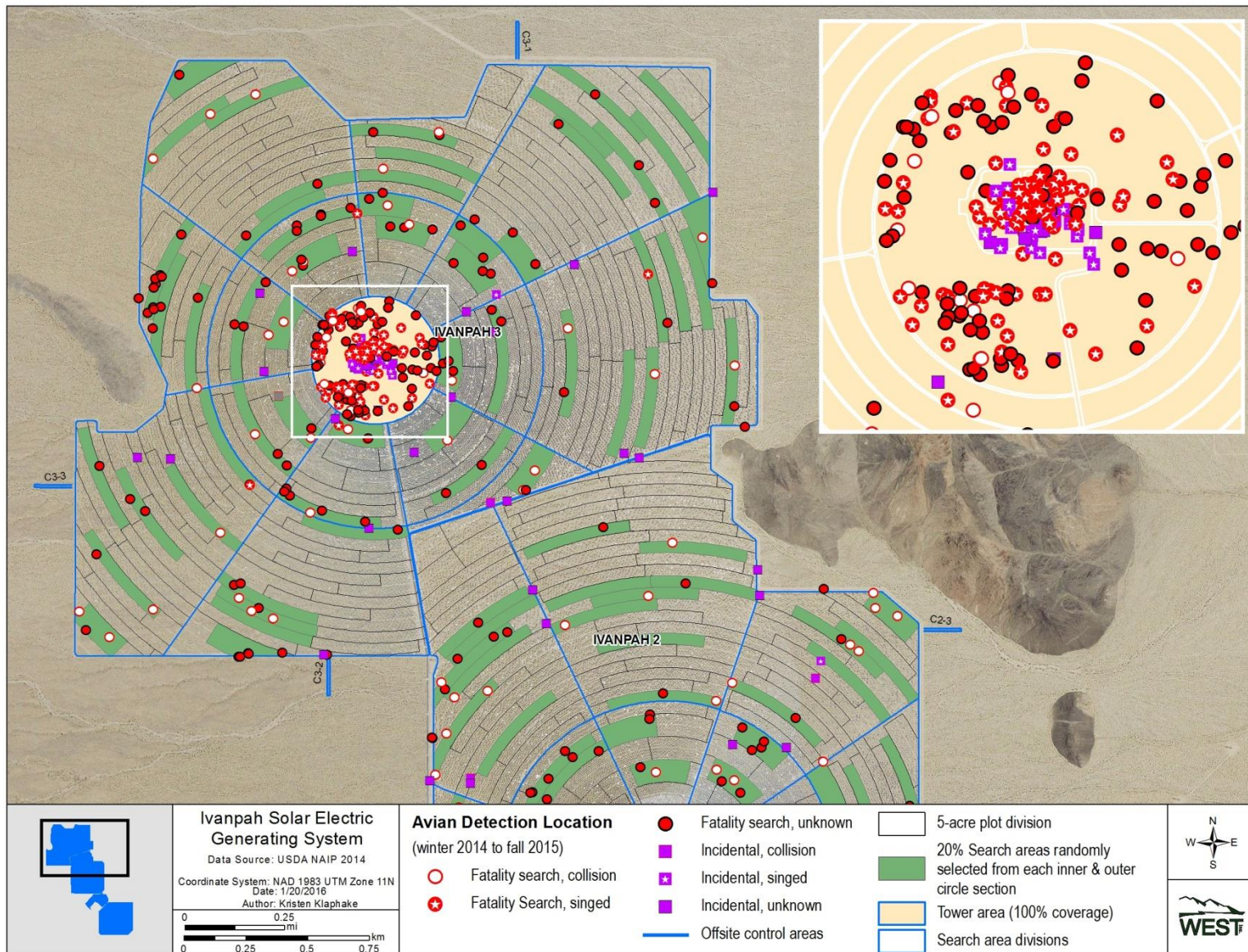


Figure 8. Ivanpah 3 Detections.

4.1.1 Temporal Patterns of Avian Detections

The number of detections reported per day varied during the 2014 – 2015 monitoring year. The number of detections per day represents the accumulation of detections over the search interval minus those detected incidentally and removed between searches. Thus, to better understand if search interval or the area that was searched influences the number of detections reported per day, the tower area and heliostat area were examined separately (Figure 9a-b). Detections per day in the tower area showed a strong seasonal pattern with detections highest in the early 2014 – 2015 winter season and again in the 2015 fall season. Detections per day at the heliostat area were lower than that of the tower area and generally reflected the seasonal pattern of the tower area. These trends appear to correspond with fall migration.

Specifically, data from BirdCast suggests that the 2014 – 2015 winter season captured the end of fall 2014 migration, as migration was reported to have ended on 14 November 2014. Data from BirdCast suggests that the 2015 spring season captured almost the entire period of spring migration. During the 2015 spring season, movements were described as light to moderate in California and Desert Southwest each week with only locally heavy movements noted 14 April 2015. Data from BirdCast suggests that the 2015 fall season captured the entire period of fall migration. During the 2015 fall season, movements were described as light to moderate in California and Desert Southwest each week with only locally heavy movements noted 23 – 24 September. The locally heavy movement noted on 23 September coincides with the highest number of detections in one day (24) during the 2015 fall season. However, a peak in detections on 15 September coincided with light to moderate movements noted in BirdCast.

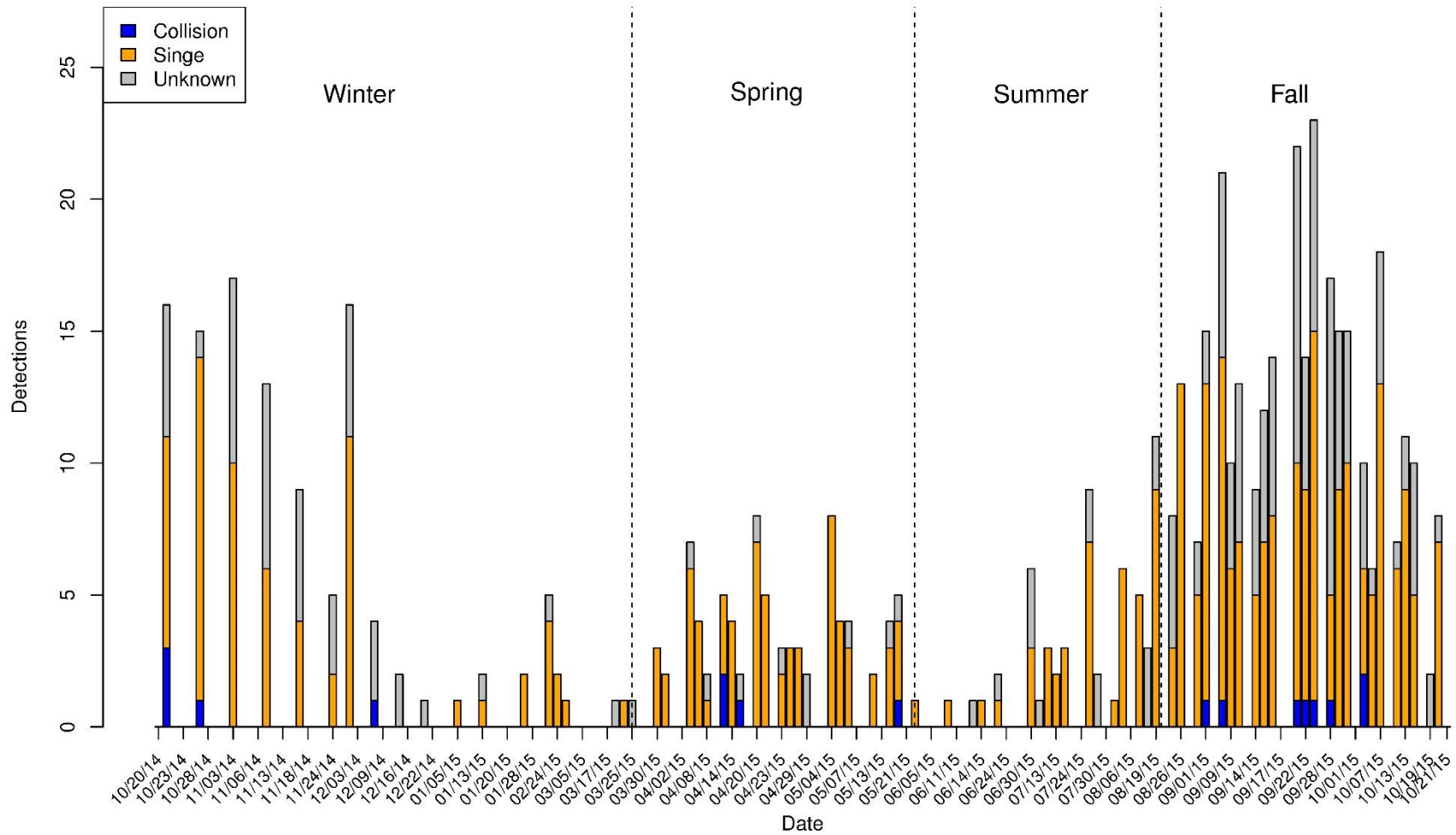


Figure 9a. Number of Detections on Each Survey Date in the Tower Area 2014 – 2015 Monitoring Year

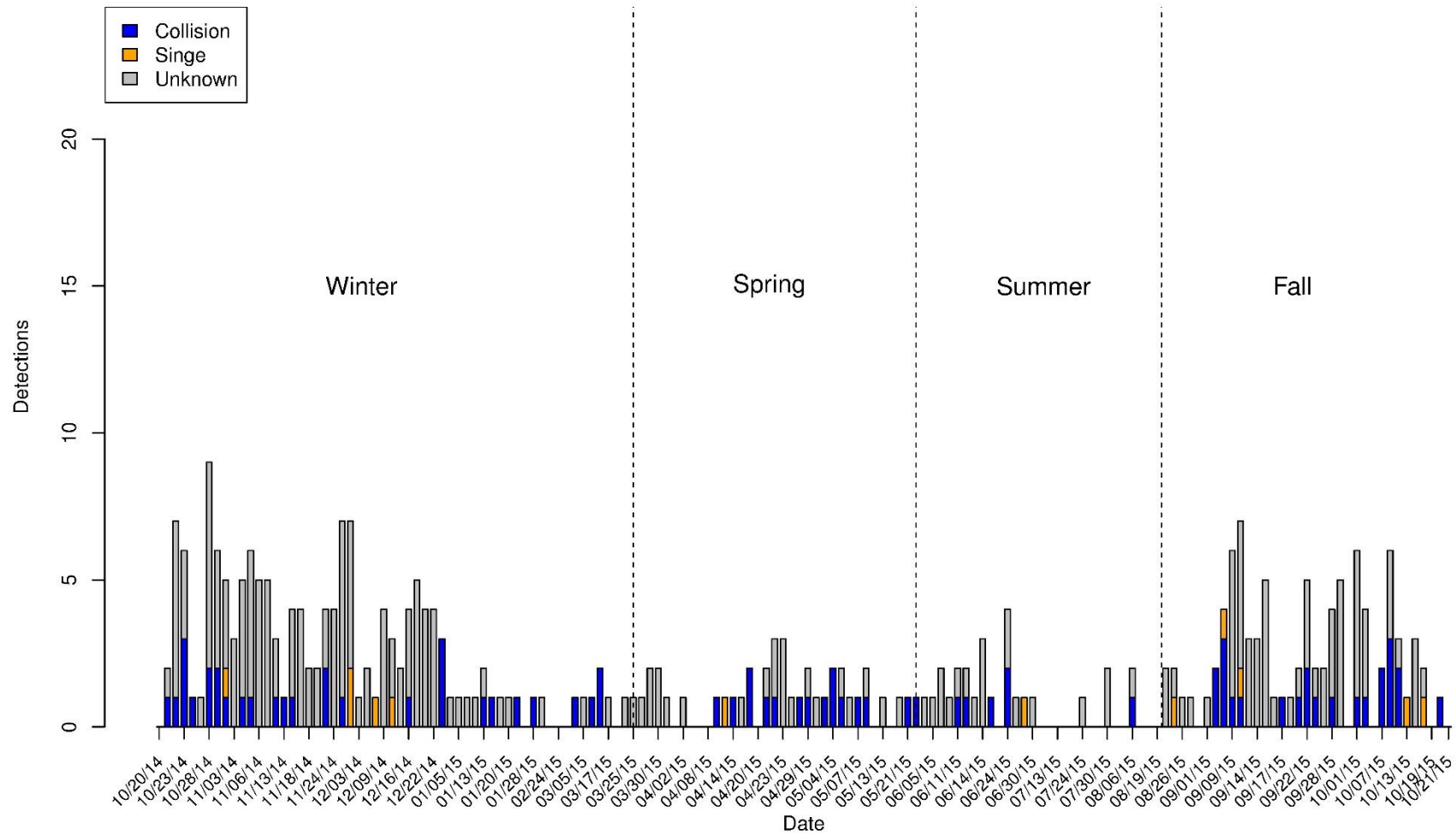


Figure 9b. Number of Detections on Each Survey Date in the Heliostat Area 2014 - 2015 Monitoring Year

4.1.2 Summary of Injured Birds

Thirty injured birds were detected during the 2014 – 2015 monitoring year (Table 8). Details of injuries per season are provided in each seasonal report.

Table 8. Avian Injuries Detected 18 August – 20 October 2015.

Date	Species	Age	Sex	Suspected Cause of Injury	Fate
11/15/2014	Ross' goose	Juvenile	Unknown	Collision	Died after capture
11/25/2014	rock pigeon	Unknown	Unknown	Singed	Released alive
2/26/2015	common raven	Unknown	Unknown	Singed	Died on site Alive at rehab facility
2/26/2015	common raven northern rough-winged	Adult	Unknown	Singed	Died at rehab
3/27/2015	swallow northern rough-winged	Adult	Unknown	Singed	Died on site
4/12/2015	swallow	Unknown	Unknown	Singed	Died at rehab
4/12/2015	bank swallow	Unknown	Unknown	Singed	Alive at rehab
4/13/2015	American kestrel	Adult	Male	Singed	Died on site
4/20/2015	yellow-rumped warbler	Unknown	Male	Singed	Died on site
4/22/2015	orange-crowned warbler	Adult	Unknown	Singed	Died on site
4/28/2015	yellow-rumped warbler	Adult	Male	Singed	Died on site
4/28/2015	barn swallow	Adult	Unknown	Singed	Died on site
4/28/2015	lazuli bunting	Adult	Female	Collision	Released off-site
4/30/2015	yellow warbler	Adult	Male	Singed	Died on site
5/4/2015	American coot	Adult	Unknown	Unknown	Released off-site
5/8/2015	western tanager	Adult	Male	Unknown	Released off-site
6/28/2015	red-tailed hawk	Juvenile	Unknown	Unknown	Released off site
7/21/2015	lesser nighthawk	Juvenile	Female	Collision	Released on site
7/22/2015	peregrine falcon	Adult	Unknown	Singed	Euthanized at rehab on 9/6/15
7/29/2015	house finch	Unknown	Unknown	Singed	Died on site
7/29/2015	lesser nighthawk	Adult	Male	Unknown	Died on site
8/12/2015	blue-winged teal	Unknown	Unknown	Unknown	Released off site
8/12/2015	Wilson's warbler	Adult	Male	Singed	Died on site
9/8/2015	rock pigeon	Unknown	Unknown	Singed	Died on-site.
9/10/2015	ruddy duck	Unknown	Unknown	Unknown	Released off-site
9/20/2015	Macgillivray's warbler	Juvenile	Female	Unknown	Died on-site.
10/7/2015	orange-crowned warbler	Unknown	Unknown	Singed	Died at rehab facility.
10/16/2015	eared grebe	Unknown	Unknown	Unknown	Released off-site.
10/16/2015	eared grebe	Unknown	Unknown	Unknown	Released off-site.
10/20/2015	ruby-crowned kinglet	Unknown	Male	Collision	Released on-site.

4.1.3 Comparison of Avian Use Survey Results to Fatality Detections

The number of bird species recorded during avian use surveys (71 identifiable species) was lower than the identifiable species recorded as detections during fatality monitoring (101 identifiable species). Comparison of the most frequently observed species on the avian use surveys at the heliostat areas to the species most frequently recorded as detections showed limited association (Table 9). Yellow-rumped warblers, the most frequently observed species at avian use surveys in the heliostat area (21.8% of total) were the most frequently recorded detection (10.7% of total). Of identified species, the four next most frequently observed species in the heliostat area accounted for 7.2% of total detections. The five most frequently observed species in the desert area accounted for only 3.5% of total detections.

Table 9. Comparison of the Most Abundant Bird Species Recorded as Detections and Recorded During Avian Use Surveys for Identified Species Only.

Detections		Avian Use Survey - Heliostats		Avian Use Survey – Desert	
Species	Percent of Total	Species	Percent of Total	Species	Percent of Total
yellow-rumped warbler	10.7%	yellow-rumped warbler	21.8%	black-throated sparrow	32.9%
mourning dove	8.9%	horned lark	18.5%	cactus wren	17.1%
greater roadrunner	8.8%	black-throated sparrow	10.7%	Bewick's wren	5.3%
white-crowned sparrow	4.8%	house finch	10.7%	Brewer's sparrow	5.2%
yellow warbler	4.3%	common raven	7.1%	Le Conte's thrasher	4.9%
American pipit	3.7%	cactus wren	5.2%	Sagebrush sparrow	4.8%
northern rough-winged swallow	2.7%	western meadowlark	4.8%	Gambel's quail	3.5%
black-throated sparrow	2.3%	rock pigeon	3.6%	loggerhead shrike	2.8%
western meadowlark	2.3%	American pipit	3.3%	verdin	2.6%
American kestrel	2.3%	loggerhead shrike	2.4%	black-tailed gnatcatcher	2.5%
house finch	2.2%	Brewer's blackbird	2.2%	pinyon jay	2.5%
tree swallow	2.1%	Savannah sparrow	1.0%	house finch	2.1%
Wilson's warbler	2.1%	American kestrel	0.9%	ash-throated flycatcher	2.0%
lesser nighthawk	2.1%	cliff swallow	0.5%	blue-gray gnatcatcher	1.5%
horned lark	1.8%	mourning dove	0.5%	western meadowlark	1.1%
Savannah sparrow	1.8%	tree swallow	0.5%	white-crowned sparrow	1.1%

4.1.4 Summary of Bat Detections

Seventeen bats were detected during the 2014 – 2015 monitoring year. Canyon bat (*Parastrellus Hesperus*) represented 9 of the bat detections, California myotis (*Myotis californicus*) represented 3 detections, Mexican free-tailed bat (*Tadarida brasiliensis*) represented 1 detection, and 4 detections were unidentifiable to a lower taxonomic level. Of the detections, 3 were recorded in winter, 4 were recorded in spring, zero detections were recorded in summer, and 10 were recorded in fall. The facility investigated the deterrent units in the fall and discovered that some deterrent systems had lost power. The facility is developing a protocol for 2016 to ensure the deterrents are functional. As bat detections are limited to the ACC Unit, fatality estimates are not provided.

4.2 Locations of Avian Detections

4.2.1 Detections by Project Area

During 2014 - 2015 monitoring year, of the 1098 total detections, 662 detections (60.3%) were recorded at the tower area, 355 detections (32.3%) were recorded over the much larger heliostat area, 65 (5.9%) of the detections were located at the perimeter fence, 4 detections (0.3%) were recorded at the collector line, and 12 detections (1.1%) were recorded on other project areas (Table 10). The number of detections recorded in the tower area and the heliostat area was lowest during the summer season. The number of detections in the tower area was highest in fall and comparable during winter and spring; while in the heliostat area the number of detections was highest in winter, and decreased during the fall and spring. The number of detections recorded at the other survey areas are shown in Table 11.

Table 10. Number of Bird Detections in Each Project Element, by Season 2014 – 2015.

Location	Winter	Spring	Summer	Fall	Annual
Tower Area	132	118	62	350	662
Heliostat Area	179	52	31	93	355
Fenceline	25	8	14	18	65
Collector Line	0	3	1	0	4
Other Project Areas	4	4	4	0	12
Total	340	185	112	461	1098

4.3 Cause of Injury or Fatality

The following section describes the number of detections with evidence of singeing or collision; the number from other known causes; the number for which cause of injury or fatality is unknown; and the spatial distributions of detections with these causes. Table 11 shows the number of detections by cause, and Figure 10 shows the distribution of detections by cause.

4.3.1 Singeing Effects

Of the 1098 avian detections during the 2014 – 2015 monitoring year, 454 detections (41.3%) showed signs of singed feather damage (Table 11). The number of detections showing signs of singeing was highest in the 2015 fall seasons, compared to the 2015 spring and 2014 – 2015 winter seasons, and lowest in 2015 summer seasons.

4.3.2 Collisions

Of the 1098 avian detections, evidence of collision was observed in the case of 113 detections (10.3%). As described in Section 2.1 of the Plan, evidence of collision consists of birds with broken bones, chipped beaks, or other evidence of collision trauma, or birds found at the base of heliostats with bird-strike imprints in the dust on the heliostat. Collision related detections were comparable in the 2014 – 2015 winter season, the 2015 fall season, and the 2015 spring season; collision related detections were lowest in the 2015 summer season.

4.3.3 Other Known Causes

Two avian detections (less than 2.0% of all detections) were determined to have been electrocuted, according to carcass condition, proximity to a power line that is not associated with the Project, or necropsy. Of avian detections of other known causes, two were determined to have been predated, and one were determined to have been caused by vehicle strike.

Table 11. Number of Bird Detections by Cause, and by Season 2014 – 2015.

Cause	Winter	Spring	Summer	Fall	Annual
Singed	86	101	48	219	454
Collision	39	29	10	35	113
Electrocution	0	1	0	1	2
Vehicle strike	0	0	1	0	1
Predated	2	0	0	0	2
Unknown	213	54	53	206	526
Total	340	185	112	461	1098

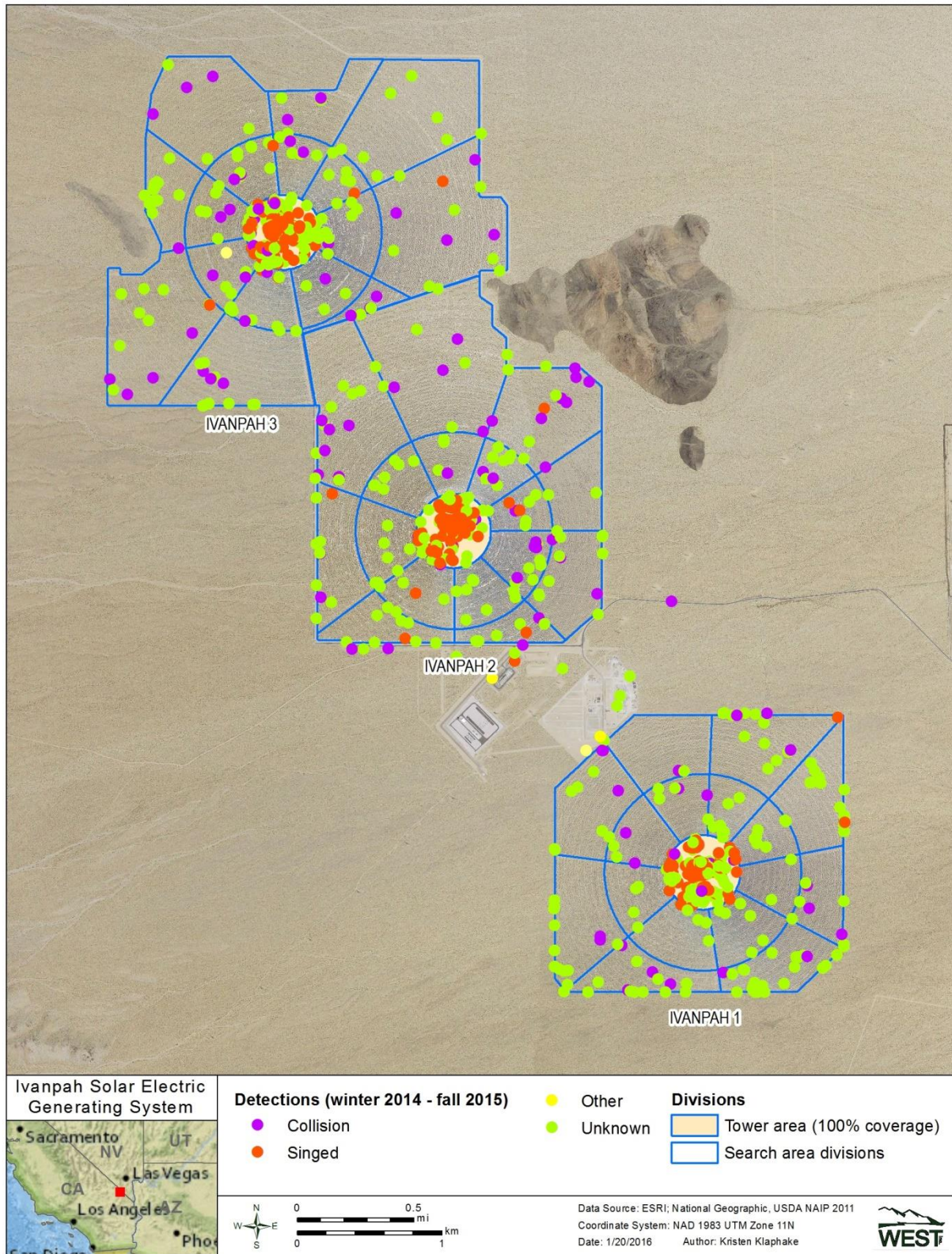


Figure 10. Locations of Singed and Unsinged Detections within Solar Units.

4.3.4 Detections of Unknown Cause

Of the 1098 avian detections, evidence of singeing, collision, or other cause could not be assigned for 526 detections (47.9% of total detections; Table 11). Per the Plan section 2.1, these detections cannot be presumed, or presumed without a reasonable doubt, to be caused by the facility; see Section 6.2 of this report for further discussion. Detections of unknown causes were highest in the 2014 – 2015 winter and 2015 fall seasons and lowest in the 2015 spring and summer seasons. Unknown cause detections showed no external evidence of collision effects, and microscopic analysis did not indicate signs of singeing.

4.4 Types of Detections

Feather spots comprised a large proportion of avian detections at Ivanpah facilities during the 2014 – 2015 monitoring year. Of the 1098 total detections, 53.3% overall consisted of feather spots (Table 12a). Feather spot composition was highest at the fenceline every season and high in both the heliostat area and the tower area. Feather spots were highest in the 2015 fall season and lowest in 2015 spring season. Tower Area, fenceline, and overall feather spot composition was highest in the 2015 fall and 2014 – 2015 winter seasons, and lowest in the 2015 spring and summer seasons; in the heliostat area, feather spot composition was highest in the summer and fall.

Feather spots accounted for 73.4% of unknown cause detections during the 2014 – 2015 monitoring year. The percent of feather spots of unknown cause was similar in all seasons (Table 12b).

Table 12a. Percent Composition Feather Spots to Carcasses Relative to Site Locations by Season.

Location	Winter	Spring	Summer	Fall	Annual
Tower Area	56.8%	16.9%	16.1%	63.4%	49.4%
Heliostat Area	55.9%	40.4%	64.5%	68.8%	57.7%
Fenceline	84.0%	62.5%	78.6%	83.3%	80.0%
Collector Line	NA†	0.0%	0.0%	NA	0.0%
Other Project Lands	0.0%	25.0%	0.0%	NA	8.3%
Total*	57.6%	25.4%	36.6%	65.3%	53.3%

* Total percent feather spot is total feather spots divided by total detections.

†NA = no detections at that location.

Table 12b. Percent Composition Feather Spots to Carcasses Relative to Cause by Season.

Cause	Winter	Spring	Summer	Fall	Annual
Singed	47.7%	9.9%	6.2%	55.3%	38.5%
Collision	23.1%	13.8%	30.0%	22.9%	21.2%
Electrocution	NA†	0.0%	NA	0.0%	0.0%
Vehicle strike	NA	NA	0.0%	NA	0.0%
Predated	0.0%	NA	NA	NA	0.0%
Unknown	68.5%	61.1%	66.0%	83.5%	73.4%
Total*	57.6%	25.4%	36.6%	65.3%	53.3%

*Total percent feather spot is total feather spots divided by total detections.

†NA = no detections at that location.

Section 5.0 Fatality Estimation

This section utilizes the detection data as described in Section 4.0 to develop an overall fatality estimate in accordance with the Plan. Estimates are also presented for fatalities by cause (singeing, collision or unknown) and location for the tower area, heliostat area, and fenceline (detections at the other survey areas are too low to provide estimates).

5.1 Estimating Model Parameters

5.1.1 Carcass persistence Trials

A total of 127 carcass persistence trials were conducted during the 2014 - 2015 monitoring year, including 97 small birds and 30 large birds distributed throughout the facility. The top scavengers included common ravens (*Corvus corax*, N = 67) and the desert kit fox (*Vulpes macrotis*; N=44). Other common scavengers included white-tailed antelope squirrels (*Ammospermophilus leucurus*; N=11), greater roadrunner (*Geococcyx californianus*; N=25), desert woodrat (N=4), and ants (N=4). For 28 trial carcasses, the scavenger species was not captured on camera; all carcasses were removed or scavenged to some degree. Carcass persistence differed between large birds and small birds in all seasons with large birds persisting almost the entire trial period and small birds being scavenged more rapidly, typically within 7 days. Carcass persistence ranged from less than one day, in the case of 37 carcasses (0 large and 37 small), to a full six-week trial period in the case of the 35 carcasses (28 large and 7 small), the remains of which persisted throughout the trial. Details on carcass persistence times are presented in each seasonal report.

Carcass persistence data from 87 trials performed during the first year of monitoring (29 October 2013 – 20 October 2014) were included with the 2014 – 2015 trial data to model carcass persistence time. The first year trials included 30 large bird carcasses and 57 small bird carcasses. Scavenger species included common ravens (N=22), desert kit fox (*Vulpes macrotis*; N=15), white-tailed antelope squirrels (*Ammospermophilus leucurus*; N=11), greater roadrunner (*Geococcyx californianus*; N=1), turkey vulture (N=1), and an unidentified canid (N=1). For 27 scavenged carcasses (six carcasses were not scavenged), the scavenger species was not captured on camera. Carcass persistence ranged from less than one day, in the case of 15 carcasses (one large and 14 small), to a full six-week trial period in the case of the 32 carcasses (25 large and seven small), the remains of which persisted throughout the trial.

5.1.2 Model Selection for Carcass Persistence Distribution

The cumulative dataset, with 7 seasons of data suggests that the removal process for small birds and large birds is markedly different. Therefore, in contrast to the first year of reporting, two separate carcass persistence models were fit to this dataset: one for small birds and one for large birds. Specifically, large birds consistently persist for long periods of time (typically greater than six weeks), while small birds tend to be removed with days or hours, and exhibit seasonal variability. Fitting separate models by size allows for more flexibility, enabling different distributions with different shapes to be fit to the small bird and large bird data, respectively.

Based on the carcass persistence data from the cumulative trials, 16 survival models were compared for the small bird and large bird datasets, respectively. Models were compared for relative explanatory power using the corrected Akaike information criterion (AICc) score (Akaike 1973), as suggested in Huso (2010). AICc provides a relative measure of model fit and parsimony among a selection of candidate models. Season was considered as a possible covariate due to cyclical variation in scavenging pressure and environmental conditions associated with seasons. Year was also incorporated as a covariate to assess whether respective seasons could be pooled across the first two years (i.e. combine 2014 fall with 2015 fall persistence trial results). At the conclusion of the first year of monitoring, the location of a carcass (unvegetated tower area or the vegetated heliostat area, fenceline, or collector line) was not present in the top models for carcass persistence. Thus, carcass location was not included as a covariate for this report.

The model with lowest AICc is typically chosen as the “best-fit” model relative to other models tested; however, any model within two AICc point of the best model is considered strongly supported (Burnham and Anderson 2004). For small birds the loglogistic and lognormal models that included season had ΔAICc values ≤ 2 ; for large birds, the exponential, Weibull, loglogistic, and lognormal models with intercept only had ΔAICc values ≤ 2 (Tables 13a, b). Ultimately, a loglogistic model with season covariate was chosen for small birds, and a lognormal model with no covariates was chosen for large birds. Thus, the selected model for small birds can be interpreted to treat as separate the persistence probability for each season, with seasons pooled across years. For large birds, the top model does not have any temporal covariates, and thus uses all large bird data collected to date to estimate persistence probability. The chosen models predicted 96.5% to 98.8% of large carcasses persisted for the nominal search intervals, and 19.3% to 56.1% of small bird carcasses persisted for the nominal search intervals of during the 2014 – 2015 monitoring year (Table 13c).

Table 13a. AICc Values for Small Bird Carcass Persistence Models

Small Bird Trials			
Covariates	Distribution	AICc	Δ AICc
Season	lognormal	807.99	0
Season	loglogistic	808.28	0.29
Year + Season	lognormal	809.43	1.44
Year + Season	loglogistic	810.06	2.07
Season	weibull	812.43	4.44
Year + Season + Year*Season	loglogistic	812.48	4.49
Year + Season + Year*Season	lognormal	812.59	4.6
Intercept	lognormal	813.44	5.45
Year + Season	weibull	813.95	5.96
Intercept	loglogistic	814.54	6.55
Year + Season + Year*Season	weibull	816.17	8.18
Intercept	weibull	821.44	13.45
Year + Season + Year*Season	exponential	910.54	102.55
Season	exponential	911.04	103.05
Year + Season	exponential	912.19	104.2
Intercept	exponential	938.59	130.6

Table 13b. AICc Values for Large Bird Carcass Persistence Models

Large Bird Trials			
Covariates	Distribution	AICc	Δ AICc
Intercept	exponential	97.00	0
Intercept	weibull	97.96	0.96
Intercept	loglogistic	98.03	1.03
Intercept	lognormal	98.15	1.15
Year + Season	exponential	101.15	4.15
Year + Season	lognormal	101.42	4.42
Season	exponential	101.48	4.48
Year + Season	loglogistic	102.22	5.22
Season	lognormal	102.38	5.38
Year + Season	weibull	102.6	5.6
Season	loglogistic	102.7	5.7
Season	weibull	102.73	5.73
Year + Season + Year*Season	exponential	107.18	10.18
Year + Season + Year*Season	lognormal	108.6	11.6
Year + Season + Year*Season	loglogistic	108.88	11.88
Year + Season + Year*Season	weibull	108.93	11.93

Table 13c. Average Probability of Carcass Persistence by Size and Season, Based on the Nominal Search Interval

Size	Season (Nominal Search Interval)			
	Winter (21 day)	Spring (7 day)	Summer (21 day)	Fall (7 day)
Small Bird	0.436	0.561	0.193	0.528
Large Bird	0.965	0.988	0.965	0.988

5.1.3 Searcher Efficiency Trials

During the 2014 - 2015 monitoring year, a total of 320 human searcher efficiency trials (129 small birds, 96 large birds, and 95 feather spots) were conducted. Of the 320 trial carcasses placed, 268 (129 small carcasses, 96 large carcasses, and 95 feather spots) were available to be found; 52 carcasses (42 small carcasses, 8 large carcass, and 2 feather spots) were removed from the trial location before searchers had an opportunity to detect the carcass.

The 179 searcher efficiency trials conducted in the first year of the study were included in searcher efficiency model building. Of 179 trial carcasses from the first year of monitoring, 168 were not removed and thus available to be found by a searcher. The top searcher efficiency models from the full first year of monitoring included size and project area (unvegetated tower area versus the vegetated heliostat area, fencelines, and collector line) covariates, but not season. Consistent with the findings of the first year of monitoring, season was not explicitly included as a covariate in candidate searcher efficiency models; however, due to personnel changes which occurred at the conclusion of the 2014 – 2015 winter season, it was necessary to measure potential differences in searcher efficiency between new personnel, as compared to the personnel conducting the field work during the first year of monitoring. Therefore, a “year” covariate was included in candidate models to capture any differences between personnel groups.

The best model for searcher efficiency included project area (disaggregated to vegetated and unvegetated) and carcass size with an AICc value 2.03 points lower than the second best model that included size, project area, and year (Table 14). Thus, the most supported searcher efficiency model included a combination of project area (unvegetated tower area and vegetated heliostat area, fenceline, and collector line) and carcass size. As a result, the model including size and project area was chosen and searcher efficiency data were pooled for all seasons and personnel groups but were separated by project area and carcass size. Table 16 provides the searcher efficiency rates.

Overall searcher efficiency rates applied to detections from the 2014 – 2015 monitoring year were higher in the unvegetated tower area. In unvegetated areas, searcher efficiency was 68% for small birds, 86% for large birds, and 69% for feather spots. In the vegetated areas in the heliostat area and offsite transects, fencelines, and collector line, searcher efficiency was 37% for small birds, 63% for large birds, and 38% for feather spots (Table 15).

Table 14. Covariates, AICc Values, and Δ AICc values for Searcher Efficiency Models of Carcasses. Data consist of all searcher efficiency trials for carcasses from the initiation of trials through 20 October 2015.

Covariates	AICc	Δ AICc
Size + Project Area	509.8986	0.000
Size + Project Area + Year	511.9291	2.030
Size*Project Area	513.3291	3.431
Size + Size*Project Area	513.3291	3.431
Project Area + Size*Project Area	513.3291	3.431
Size + Project Area + Size*Project Area	513.3291	3.431
Project Area + Size*Year	513.9767	4.078
Size + Project Area + Size*Year	513.9767	4.078
Project Area + Year + Size*Year	513.9767	4.078
Size + Project Area + Year + Size*Year	513.9767	4.078
Year + Size*Project Area	515.3847	5.486
Size + Year + Size*Project Area	515.3847	5.486
Project Area + Year + Size*Project Area	515.3847	5.486
Size + Project Area + Year + Size*Project Area	515.3847	5.486
Size*Project Area + Size*Year	517.2674	7.369
Size + Size*Project Area + Size*Year	517.2674	7.369
Project Area + Size*Project Area + Size*Year	517.2674	7.369
Year + Size*Project Area + Size*Year	517.2674	7.369
Size + Project Area + Size*Project Area + Size*Year	517.2674	7.369
Size + Project Area + Year + Size*Project Area + Size*Year	517.2674	7.369
Size + Year + Size*Project Area + Size*Year	517.2674	7.369
Project Area + Year + Size*Project Area + Size*Year	517.2674	7.369
Project Area	524.7448	14.846
Project Area + Year	526.6003	16.702
Size + Year	544.0985	34.200
Size	545.8773	35.979
Size*Year	546.0637	36.165
Size + Size*Year	546.0637	36.165
Year + Size*Year	546.0637	36.165
Size + Year + Size*Year	546.0637	36.165
Year	556.4352	46.537
Intercept	559.0630	49.164

Table 15. Human Searcher Efficiency Values for Size and Project Area Categories.

Size	Project Area	Found	Available	Placed	Estimated Searcher Efficiency (90% CI)
Feather spot	Tower area (Unvegetated)	49	70	72	0.69 (0.63 – 0.77)
Large bird	Tower area (Unvegetated)	51	61	66	0.86 (0.81 – 0.91)
Small bird	Tower area (Unvegetated)	47	67	90	0.68 (0.61 – 0.76)
Feather spot	Heliostat area (Vegetated)	30	80	80	0.38 (0.31 – 0.46)
Large bird	Heliostat area (Vegetated)	43	66	74	0.63 (0.55 – 0.71)
Small bird	Heliostat area (Vegetated)	24	68	92	0.37 (0.29 – 0.45)

5.2 Fatality Estimates of Known and Unknown Causes for 2014 – 2015 Monitoring Year

Fatality estimates were calculated separately for the tower area, heliostat area, collector line, and fencelines. Note that estimates are not provided for factor combinations with five or fewer detections; thus, marginal totals (e.g. total singed, total known cause in the heliostat area, etc.) for the tables below may not reflect the sum of estimates within a given row or column (and are generally higher). A total of 6185 fatalities (90% confidence interval 5324 – 7515) were estimated for the 2014 – 2015 monitoring year (Sections 5.3 and 5.4, below). Fatality estimates by carcass size, cause, and season are presented in Appendix C. Note that the fatality estimates provided in Section 5.2 through 5.7 are calculated in accordance with the anticipated seasons prescribed in the ABMMP. Section 5.8 provides a comprehensive analysis of the detections in the two-year dataset accounting for biologically relevant seasons, and compares those results to year 1; section 6.3 discusses the factors driving differences in the estimates presented in section 5.7 and 5.8.

5.3 Total Fatality Estimates for Known Causes

Per Section 3.1 of the Plan, fatality estimates are to be provided based on detections of birds where the cause of death can be determined and is facility related. As discussed in Section 2.2.5 above, the Huso model was used.

5.3.1 Model Input

There were 572 bird detections where the cause of death or injury could be determined and were facility related, of which 496 were included in the fatality estimate model (Tables 16a); of these 496 detections, 112 were from the ACC. Detections within the ACC were added unadjusted to the estimator output to produce the total fatality estimate of known cause. Detections excluded from the model are shown in Table 16b. Five detections were excluded because they were outside the standardized survey areas and 67 were excluded because they were determined to be older than the search interval. One detection attributed electrocution and one detection attributed to a vehicle strike were excluded because they occurred on other project lands not subject to monitoring. Two detections were excluded because the carcass condition suggested the cause of death was loggerhead shrike predation.

Table 16a. Number of Bird Detections Based on Known Causes in Each Project Element Included in Fatality Estimates, by Cause.

Location	Collision	Singed	Other (Electrocution)	Other (Predated)	Other (Vehicle Strike)	Total
Tower Area	22	390	0	0	0	412
Heliostat Area	66	12	0	0	0	78
Fenceline	1	2	1	0	0	4
Collector Line	2	0	0	0	0	2
Other Project Lands	0	0	0	0	0	0
Total	91	404	1	0	0	496

Table 16b. Number of Bird Detections Based on Known Causes in Each Project Element Excluded in Fatality Estimates, by Cause.

Location	Collision	Singed	Other (Electrocution)	Other (Predated)	Other (Vehicle Strike)	Total
Tower Area	1	46	0	0	0	47
Heliostat Area	19	2	0	1	0	22
Fenceline	1	1	0	0	0	2
Collector Line	0	0	0	0	0	0
Other Project Lands	1	1	1	1	1	5
Total	22	50	1	2	1	76

5.3.2 Known Cause Fatality Estimates

During the 2014 – 2015 monitoring year, there were an estimated 2500 fatalities (90% confidence interval 2101 - 3087) based on detections from known causes (i.e., singeing, collision, or other) with the breakdown by season provided in Table 17 and by project element provided in Table 18. Fatalities of known causes comprised 40.4% of the total 2014 – 2015 monitoring year fatality estimate. Of fatalities of known causes, 54.1% were estimated to have been singed, and 45.9% were estimated to have been caused by collision. No estimates are given for other causes because there were either 0 or five or fewer fatalities ($N \leq 5$) for the 2014 – 2015 monitoring year. Estimates of fatalities from known causes were highest in the 2015 fall season and lowest in 2015 spring season.

Of the 2500 estimated fatalities of known cause (90% confidence interval 2101 - 3087), 1472 fatalities (58.9%) were estimated for the 2,991-acre heliostat area and 1000 fatalities (40.0%) were estimated for the 154-acre tower area (Table 18). No estimates are given for the fence line and the collector line because there were either zero or fewer than five fatalities ($N \leq 5$) for the year at these locations.

Table 17. 2014 – 2015 Annual Avian Fatality Estimates by Cause and Season (with 90% Confidence Interval) Based on Detections of Known Causes Included in the Model.

Season	Collision	Singed	Other	Total Estimates†
Winter	445 (290 - 679)	220 (142 - 306)	0	665 (462 - 954)
Spring	251 (138 - 398)	177 (153 - 213)	0	428 (310 - 595)
Summer	267 (92 - 521)	191 (120 - 319)	0	458 (257 - 753)
Fall	389 (242 - 583)	558 (465 - 699)	$N \leq 5$	949 (750 - 1203)
Annual	1352 (1018 - 1850)	1146 (987 - 1366)	$N \leq 5$	2500 (2101 - 3087)

* $N \leq 5$ indicates 5 or fewer detections and no fatality estimate is provided

† Rows and columns may not sum to estimated totals since estimates are not provided when 5 or fewer detections are recorded in a fatality category; however, contributions from these categories *are included* in the total estimates

Table 18. 2014 – 2015 Annual Avian Fatality Estimates by Cause and Project Element (with 90% Confidence Interval) Based on Detections of Known Causes Included in the Model.

Location	Collision	Singed	Other	Total Estimate by Location†
Tower Area	54 (49 - 63)	946 (845 - 1084)	0	1000 (894 - 1146)
Heliostat Area	1275 (951 - 1775)	197 (82 - 350)	0	1472 (1109 - 2012)
Fence line	$N \leq 5$	$N \leq 5$	$N \leq 5$	$N \leq 5$
Collector Line	$N \leq 5$	0	0	$N \leq 5$
Total	1352 (1018 - 1850)	1146 (987 - 1366)	$N \leq 5$	2500 (2101 - 3087)

* $N \leq 5$ indicates 5 or fewer detections and no fatality estimate is provided

† Rows and columns may not sum to estimated totals since estimates are not provided when 5 or fewer detections are recorded in a fatality category; however, detections from these categories *are included* in the total estimates.

5.4 Fatality Estimates from Unknown Causes

Per Section 3.1 of the Plan, fatality estimates are also to be provided based on detections of birds that were injured or that died of unknown causes. Because no observable evidence of known causes (i.e., singeing, collision, entrapment, or predation) was noted in the case of these unknown detections, they cannot be clearly included in an estimate attributed to a specific cause. As discussed in Section 2.2.5 above, the Huso model was used to estimate the fatalities from unknown causes.

5.4.1 Model Input

The methods for determining fatality estimates for these unknown detections are the same as those described in Section 5.3 for detections with direct evidence of the cause of the fatality (i.e., singeing, collision, or other). With respect to the detections used in the model, there were 526 bird detections where the cause of death or injury could not be determined, of which 385 were included in the fatality estimate model and 141 were excluded (Table 19).

Table 19. Number of Detections from Unknown Causes in Each Project Element, and Number Included in Fatality Estimates.

Location	Included	Excluded	Total
Tower Area	171	31	202
Heliostat Area	164	92	256
Fenceline	48	12	60
Collector Line	2	0	2
Other Project Lands	0	6	6
Total	385	141	526

5.4.2 Unknown Cause Fatality Estimates

During the 2014 – 2015 monitoring year, the total estimate of fatalities from unknown cause was 3685 (90% confidence interval 3036 - 4692; Table 21). A total of 486 (90% confidence interval 431 – 578) were attributed to the tower area, 3031 (90% confidence interval estimates 2442 - 4022) in the heliostat area, 158 (90% confidence interval estimates 125 - 179) were attributed to the fenceline. No estimates are given for the collector line because there were either fewer than five fatalities ($N \leq 5$) for the year at this location. The estimated number of unknown cause fatalities showed differences among seasons with the highest estimate in the 2014 – 2015 winter season (Table 20).

Table 20. Annual Site-Wide Fatality Estimates from Unknown Causes (with 90% Confidence Interval) by Location and Season.

Season	Tower Area	Heliostat Area	Fenceline	Collector Line	Total Estimate
Winter	114 (88 - 156)	1128 (790 - 1676)	61 (51 - 76)	0	1303 (947 - 1880)
Spring	20 (17 - 24)	360 (196 - 594)	N ≤5	N ≤5	406 (222 - 620)
Summer	57 (46 - 74)	673 (349 - 1198)	41 (34 - 51)	0	771 (445 - 1311)
Fall	295 (250 - 361)	870 (614 - 1212)	40 (34 - 49)	0	1205 (922 - 1592)
Total	486 (431 - 578)	3031 (2442 - 4022)	158 (125 - 179)	N ≤5	3685 (3036 - 4692)

* N ≤ 5 indicates 5 or fewer detections and no fatality estimate is provided

† Rows and columns may not sum to estimated totals since estimates are not provided when 5 or fewer detections are recorded in a fatality category; however, detections from these categories *are included* in the total estimates.

5.5 Total Fatality Estimates for Top Ten Detected Species

Fatality estimates were calculated for the ten most frequently detected species (Table 21). These ten species account for 38.7% of the estimated fatalities during the 2014 – 2015 monitoring year. Of fatality estimates, the ten most frequently detected species account for 41.9% of fatalities of known cause, and 36.3% of those of unknown cause. Not one of these species contributes more than 9% of total fatality estimates. Yellow warbler, a California species of special concern, comprises less than 2% of total fatality estimates for the year.

Table 21. Fatality Estimates for Top 10 Species Detected and Included in Analysis (with 90% Confidence Interval).

Season	Known Cause	Unknown Cause	Total Estimate (90% CI)†
white-crowned sparrow	235 (107 - 402)	273 (164 - 431)	508 (338 - 729)
black-throated sparrow	210 (61 - 433)	226 (69 - 453)	436 (201 - 774)
American pipit	153 (73 - 271)	162 (85 - 274)	315 (195 - 496)
greater roadrunner	N ≤5*	271 (179 - 371)	305 (206 - 414)
yellow-rumped warbler	166 (115 - 222)	122 (54 - 223)	288 (197 - 405)
mourning dove	72 (38 - 113)	165 (99 - 243)	237 (156 - 335)
yellow warbler	84 (50 - 149)	30 (13 - 61)	114 (68 - 186)
northern rough-winged swallow	25 (23 - 30)	N ≤5	72 (38 - 139)
house finch	27 (22 - 30)	N ≤5	63 (28 - 107)
ruby-crowned kinglet	41 (18 - 84)	N ≤5	47 (23 - 90)

* N ≤ 5 indicates 5 or fewer detections and no fatality estimate is provided

† Rows and columns may not sum to estimated totals since estimates are not provided when 5 or fewer detections are recorded in a fatality category; however, detections from these categories *are included* in the total estimates.

5.6 Golden Eagle Data Summary

Data related to golden eagle territory occupancy and reproductive success is being tracked by other entities, and such data, to the extent obtainable, is included in this report. As of 5 August 2015, new information has not been received regarding golden eagle monitoring efforts being performed near the Project. However, information for golden eagle activity is provided in the winter 2014 – 2015 winter report.

5.7 Regional Awareness Monitoring

As per the plan requirements, a communication protocol was implemented to monitor local veterinarians, game wardens, and wildlife rehabilitation facilities during facility operations to determine if significant new incidences of avian injury or fatality are reported to occur in the facility vicinity and region.

During the 2014 - 2015 monitoring year, a Project Designated Biologist regularly contacted local wildlife rehabilitators regarding indication of presence or increase of singed birds in the region. The rehabilitators did not indicate an increase in avian fatalities, nor did they receive singed birds brought in by the public during the 2014 - 2015 monitoring year.

5.8 Two-Year Comparison Analysis

Comparisons between fatality estimates in this report and the first year annual report (H.T. Harvey & Associates 2015b) are not appropriate for several reasons. First in reviewing the fatality data for migratory birds from the first year annual report and the second year of data collection, in 2014 the fall migration was longer than anticipated in the ABMMP (WEST 2015). Therefore, biologically speaking, the 2014 annual report does not account for the full fall migration period. Second, comparison of winter seasonal fatality estimates between years is difficult to interpret, since sampling of the facility occurred concurrently with the phased start-up of the project in the 2014 winter. This “phased-in” approach resulted in a reduced number of surveys in winter 2014 relative to winter 2015. Therefore, the winter season would need to be adjusted to capture equivalent survey data information. Finally, a substantially larger searcher efficiency and carcass persistence trial data set has been amassed since the first year annual report was completed.

In an effort to make the two years of data collected more comparable, both years could be reanalyzed using more biologically informed seasons to produce revised fatality estimates, using the best fit models from the full 2-year bias trial data set. The results of the revised analysis are presented below.

5.8.1 Two-Year Analysis Based on Biologically Informed Season Dates

The ABMMP (2013) seasonal monitoring periods were based on available data for the region. To better assess the Project effects on migratory (or non-resident) birds, the seasons should capture the full extent of migration in both years and analyze the same survey effort within each season. It was noted in the 2014 – 2015 winter report (WEST 2015) that the high number of detections per day observed though early December was the result of fall migration that was longer than assumed in the ABMMP, which was

supported by information provided by BirdCast, a tool that monitors migration of birds. Therefore, as the 2014 fall season (as defined in the ABMMP) fails to account for the detection of birds migrating through the project site in November and December, it is not comparable to the 2015 fall season for assessing impacts on migratory birds.

In an effort to address the annual variation in migration seasons for non-resident birds, a step-wise, data-driven process was used to define biologically informed seasons. First, all bird species found as detections at Ivanpah were categorized as resident or non-resident (Appendix D). Resident species are defined as those that occur year round, such as a black-throated sparrow. These species would be expected to have a more similar fatality risk profile year round than non-resident species. Non-resident species were defined as either those that are transient (e.g., passing through the area during migration such as yellow-rumped warbler) or seasonal resident (e.g., those species that migrate into the areas to overwinter or breed on an annual basis such as tree swallow) and therefore would be expected to have periodic risk.

Second, isolating the number of non-resident detections per day and depicting these results graphically allows the fall migration periods in the first year and second year to be visualized and compared. The number of non-resident detections per day differed between the first year and second year with non-resident species detected through early December in the first year but not the second year (Figure 11). Regardless of the difference between years, in order to define a fall migratory season, the season dates must account for the observed extended presence and temporal variation of non-residents. Moreover, although the extent of non-resident detections per day differed between 2014 and 2015 fall seasons, the season dates must be aligned because equal survey effort in each year is required to compare total fatality estimates between years within any given season. Based on the dates of non-resident species observed in the data, a decision was made to use December 15, as representing the end of the fall migration for the purposes of comparing seasonal fatality data between the two years.

Third, due to the resulting revision to the fall and winter seasons and the desire to compare two full calendar years of data, the period of 29 October through December 15 in the 2013 – 2014 winter season, constituting 7 detections (4 detections of known causes and 3 detections of unknown cause), was excluded from the data set used to compare years. The revision also eliminates most of the phased-in sampling due to the phased start-up of the project that occurred between October 2013 and January 2014 (H.T. Harvey & Associates 2014). By altering the season dates, the survey effort during the 2013 – 2014 and 2014 – 2015 winter seasons becomes more comparable, and thus fatality estimates for the winter seasons can be compared between years and interpreted appropriately.

Utilizing these new time periods for data analyses, based on the date of detection, a total of 202 detections (85 detections of known causes and 117 detections of unknown cause) from the 2014 – 2015 winter season were reassigned to the 2014 fall season, and 39 detections (19 detections of known causes and 20 detections of unknown cause) from the 2015-2016 winter season were reassigned to the 2015 fall season (Figure 12). Full details of the 39 detections from the 2015-2016 winter season will be presented in the corresponding quarterly report, to be released later in 2016. No changes were made to detections in spring and summer seasons, as the detection data support these seasons as defined by the ABMMP (2013).

5.8.2 Two-Year Analysis Based on Full Bias Trial Dataset

Fatality estimates presented in the first year annual report (H.T. Harvey & Associates 2014) were based on a limited bias trial data set from the first year of monitoring. Having accumulated a more robust, second year of bias trial data, it is appropriate to adjust the fatality estimates in the first year using the entire two-year dataset, including bias trial data collected between 20 October, 2015 and 15 December, 2015 (83 searcher efficiency trials, 29 small bird carcass persistence trials). Details for the additional bias trial data collected after 20 October, 2015 will be presented in the quarterly report for the 2015-2016 winter season, to be released later in 2016.

Detections from the first year of monitoring, were adjusted for searcher efficiency and carcass persistence using the best-fit models described in Section 5.1. As reported in Section 5.1, the top model for searcher efficiency includes covariates for carcass size (feather spot, large bird, small bird) and project area (unvegetated versus vegetated), the top model for large bird carcass persistence has no covariates, and the top model for small bird carcass persistence has a covariate for season. Therefore, all small bird detections included in analysis were adjusted for carcass persistence based on ABMMP season dates. Seasons dates used for bias trials remained unchanged because bias trial placement was planned based on these seasons dates to achieve balanced sample sizes across space and time. Furthermore, two years of carcass persistence trial data indicate that the ABMMP seasons already capture meaningful variation in small bird persistence rates, and there is no biological or statistical necessity to match the seasons defined for carcass persistence models to those used for comparing fatality estimates.

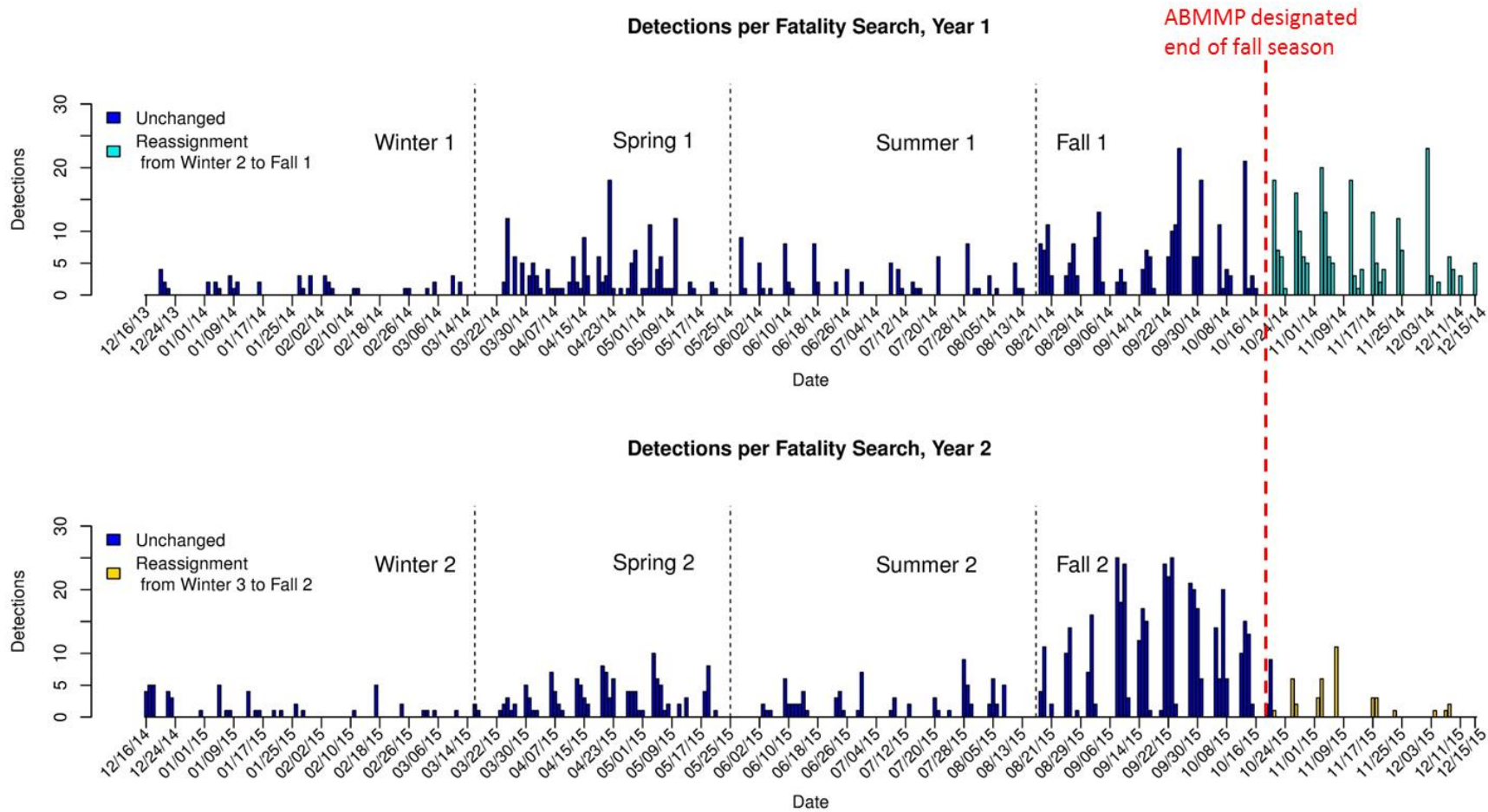


Figure 11. Avian Detections Reassigned from ABMMP Seasons to Biologically Informed Seasons for Comparisons of Fatality Estimates over a 2 Year Period.

5.8.3 Two-Year Fatality Estimate Comparison

Based on the revised estimates derived from the biologically informed seasons and two-year bias trial data set, Table 22 presents fatality estimates for known causes and Table 23 presents fatality estimates for unknown cause.

Table 22. Annual Known Cause Avian Fatality Estimates by Season (with 90% Confidence Interval) Based on the Complete Bias Trial Dataset and Biologically Informed Seasons.

Season	Year 1	Year 2
Winter	155 (71-281)	275 (142-460)
Spring	367 (258-518)	399 (286-535)
Summer	192 (114-325)	462 (260-779)
Fall	1372 (1091-1748)	1007 (810-1316)
Annual	2086 (1766-2583)	2143 (1790-2688)

Table 23. Annual Unknown Cause Avian Fatality Estimates by (with 90% Confidence Interval) Based on the Complete Bias Trial Dataset and Biologically Informed Seasons.

Season	Year 1	Year 2
Winter	208 (103-354)	273 (159-433)
Spring	310 (199-461)	374 (215-569)
Summer	536 (296-953)	774 (453-1299)
Fall	1988 (1554-2562)	1617 (1248-2161)
Annual	3042 (2531-3826)	3038 (2471-3897)

Section 6.0 Discussion

The 2014 – 2015 monitoring year represented the second year of standardized monitoring of avian and bat detections and avian use per the Plan. The annual monitoring data is discussed below in terms of the temporal and spatial patterns in the detections data and fatality estimates.

6.1 Temporal Patterns in Detections

During the second year monitoring the highest numbers of detections and fatality estimates were associated with seasonal migration. The 2014 – 2015 winter season captured the end of 2014 fall migration, thus the winter season estimate includes fall migration and over-represents fatalities during winter. Increases in the number of detections in the tower area during spring and fall aligns with general patterns of bird migration in the Western US as reported by BirdCast. However, peaks in detections per day within spring and fall were not associated with migratory pulses as described by BirdCast. Thus, based on the second year monitoring, anticipating local bird movements and the potential for daily peaks in detections is not feasible using BirdCast because the scale at which BirdCast reports migration patterns.

6.2 Spatial Patterns in Detections and Fatality Estimates

The distribution of the 526 detections from known causes varied by facility area. Of collision detections, 75.2% were located in the heliostat area consistent with the risk of the heliostats to birds; 20.35% were located in the tower area, which also contains heliostats that present collision risk. Of singed detections, 96.3% occurred in the tower area indicating that singed birds rarely transition outside of the tower area. Although more detections were discovered in the tower area, the fatality estimate for the tower area is lower than the heliostat area. Unlike the tower area, which is 100% searched, the heliostat area receives an area adjustment to account for unsearched areas. Fifteen detections of birds determined to be electrocuted, struck by a vehicle, or predated were also discovered during monitoring (1.3% of total detections).

Unknown cause detections accounted for approximately 48% of all detections during the 2014 – 2015 monitoring season. Of the unknown cause detections, 73.4% were feather spots. The fatality estimate for unknown cause detections was highest in the heliostat area. It should be noted that the conservative assumption that one feather spot (defined as: at least two or more primary flight feathers, five or more tail feathers, or 10 or more feathers of any type concentrated together in an area 1 m² or smaller, or if any skin, flesh, or bone was attached to the feathers.) represents one carcass was used to calculate fatality estimates. Determining a cause of mortality from a feather spot is challenging because sources of mortality such as collision or predation would rarely leave visible evidence on the clump of feathers, as would flux effects. Thus, feather spots with an unknown cause of mortality could be encountered anywhere birds occur, and are not unique to the Project. Further, the large proportion of feather spots among the detections for the Project as a whole, can make assessing project impacts difficult, based on the potential for multiple feather spots resulting from one bird fatality, feather spots resulting from predation not associated with the facility, or other causes.

6.3 Comparison of the First Year and Second Year Fatality Estimates

To provide for a more biologically meaningful comparison between years, a revised analysis was conducted as described in Section 5.8, above. After the fall season dates are adjusted to account for the variability in the presence of non-resident bird detections (i.e., to account for the full fall migration) and the complete bias trial dataset is used, the fatality estimates for the first year and second year differ only slightly. The second year fatality estimates of known causes increased by 57 birds as compared to the first year, while the second year fatality estimates of unknown causes decreased by 4 birds between years.

The estimates presented in section 5.8, based on biologically informed seasons, are different from 1) estimates for the first year of monitoring (H.T. Harvey and Associates 2015b), and 2) estimates for the second year presented in sections 5.3 and 5.4, above. Overall, the estimates calculated using biologically informed seasons are greater for the first year, lower for the second year, and greater overall for both years combined. The changes are driven by two main factors: re-categorizing a number of detections from winter seasons to fall seasons because a monitoring year ends in fall, and the effect of additional bias trial data from the period between 21 October 2015 and 15 December 2015.

With respect to re-categorizing of detections into biologically informed seasons, 85 detections of known causes and 117 detections of unknown cause were reassigned to the first year fall from the second year winter, and 4 detections of known causes and 3 detections of unknown cause were excluded from the first year winter; the net change in the first year was an increase of 81 detections of known causes and 114 detections of unknown cause. Nineteen detections of known cause and 20 detections of unknown cause were reassigned to the second year fall from the third year winter; thus, the net change in year two was a decrease of 66 detections of known causes and 97 detections of unknown cause.

With respect to bias trials, additional carcass persistence trials collected between 21 October, 2015 and 15 December, 2015 (i.e. third year winter) changed the seasonal adjustment for carcass persistence used to calculate estimates with biologically informed seasons. In particular, by adding the additional winter carcass persistence data, the average probability of persistence over a 21-day search interval during winter seasons decreased from 0.436 to 0.292. Thus the estimate for detections adjusted by the winter probability of persistence increased compared to the estimate for the winter limited to ABMMP seasons. Additionally, as described in section 5.8, detections reassigned from the ABMMP winter season to the biologically informed fall season were adjusted for carcass persistence using the ABMMP season, but this reassignment resulted in increased overall estimates for each fall, each year, and both years combined.

In sum, based on the reanalysis of data using the more biologically informed seasons, the seasonal estimates for total, known cause, and unknown cause estimates are similar between years 1 and 2. Moreover, the new analysis does not change any conclusion of the impacts of the Project presented in Section 7.0.

6.4 Deterrence Measures

Deterrence measures were installed at various times over the course of year 2; however, the evaluation of their effectiveness is not considered for this analysis for several reasons. The avian chemosensory and sonic deterrence systems were not fully installed on Unit 1 until March of 2015, while installation was not completed on Units 2 and 3 until the end of August 2015 and September 2015, respectively. As a result, the deterrence systems have not yet been operational for a sufficient amount of time to assess their effectiveness, as measured through the fatality monitoring program implemented to meet the goals and objects of the Plan.

Section 7.0 Framework for Management and Risk Response

According to Section 5.3 of the Plan, migratory bird mortality at Ivanpah is categorized as high, medium, or low to provide an appropriate biological basis for TAC review and decision making, based on the following definitions:

1. “High: Estimated avian mortality or injury levels are facility-caused and likely to seriously and negatively affect local, regional, or national avian populations within a particular species or group of species.”
2. “Medium: Estimated avian mortality or injury levels are facility-caused and have the potential to negatively affect local, regional, or national populations within a particular avian species or group of species.”
3. “Low: Estimated avian mortality or injury levels that have minimal or no potential to negatively affect local, regional, or national populations within a particular species or group of species.”

Approximately 60% of the species detected were small passerines, and in general small passerines are short-lived, have high reproductive output, and their population growth rates are less sensitive to changes in survival rates than to changes in reproductive rates (Stahl and Oli 2006). Therefore, mortality of most small passerine species is expected to have negligible effects on population dynamics.

None of the 22 species represented by more than three detections is particularly rare locally, regionally, or nationally. Rather, all 22 species are relatively abundant and widespread. In addition, detections not identifiable to an individual species (e.g. passerine, sparrow species, etc.) are most likely from one of most highly represented species. Thus, the magnitude of fatality estimates of these species (including detections not identified to species) at Ivanpah during the 2014 – 2015 monitoring year does not rise above the “low” category.

Nine special-status species were recorded as detections (Table 24). Only one, yellow warbler (California species of special concern), had more than 10 detections during the 2014 – 2015 monitoring year. One California state threatened species (bank swallow) and one California fully protected species (peregrine falcon) were also found during the 2014 – 2015 monitoring year. These three species are discussed below.

Table 24. Status, Fatalities, and Injuries of Top10 Identifiable Species Detected During the Second Year of Monitoring at Ivanpah.

Season	Status*	Fatalities	Injuries	Total
yellow warbler	SSC	34	1	35
loggerhead shrike	SSC	7	0	7
bank swallow	ST	1	1	2
crissal thrasher	SSC	2	0	2
yellow-headed blackbird	SSC	2	0	2
Vaux's swift	SSC	1	0	1
peregrine falcon	FP	1	0	1
Lucy's warbler	SSC	1	0	1
vermillion flycatcher	SCC	1	0	1
Total		50	2	52

*SSC = California species of special concern, ST = State threatened, FP = California fully protected species

Yellow warblers are one of the most abundant warblers in North America and occur as both migrants and summer residents in California (Shuford and Gardali 2008). Yellow warblers occur in the Mojave Desert as common migrants, but they typically do not breed there. An estimated 600,000 yellow warblers occur within California and an estimated 34,000,000 occur in the United States (Partners in Flight Science Committee 2013). Both the actual number of detections (34; Table 24), and the estimate from known causes (84 with a confidence interval of 50 – 149; Table 21), continue to represent a very small proportion of these populations; thus, the estimated yellow warbler fatalities during the monitoring year 2014 – 2015 does not rise above the “low” category, as loss of this magnitude would have a minimal effect on populations at all geographic scales (local, regional, national or global).

The bank swallow is listed as California state threatened due to a declining population throughout the state, and most bank swallows nest along the Sacramento River and its tributaries (BSTAC 2013). An estimated 20,000 bank swallows occur within California and an estimated 6,000,000 occur in North America (Partners in Flight Science Committee 2013). As the Project area does not contain bank swallow nesting habitat, the detections likely result from migrating individuals that could breed as far north as Alaska. The fatality of one bank swallow represents a very small proportion of these populations; thus, the estimated bank swallow fatalities during monitoring year 2014-2015 does not rise above the “low” category, as loss of this magnitude would have a minimal effect on populations at all geographic scales (local, regional, national or global).

The peregrine falcon is a California fully protected species, and was federally delisted in 1999, (64 FR 46542–46558) and state delisted in 2009 (California Fish and Game Commission 2009). According to the USFWS Peregrine Falcon Fact Sheet, “In August 1999, the U.S. Fish and Wildlife Service removed the American peregrine falcon from the list of endangered and threatened species, marking one of the most dramatic successes of the Endangered Species Act” (USFWS 2006). According to the CDFW status review in 2008 that supported the state delisting, the peregrine falcon had recovered in California sufficiently to support delisting, finding that the breeding population size increased dramatically by 2008, as the threat by pesticides has been largely removed, though some hotspots remain (Comrack and

Longdon 2008). Per the status review, the Project is not located in the breeding range (see Table 1 and Figure 1, Comrack and Longdon 2008). Currently, the CDFW California Natural Diversity Database (2015) ranks peregrine falcon in California as “G4T4 S3S4”. G4 indicates that at the global level, the species is “Apparently Secure”, which is defined as “Uncommon but not rare; some cause for long-term concern due to declines or other factors”. T4 indicates that at the subspecies level, the global condition is also “Apparently Secure.” The S3S4 designation means that at the state level, the species falls in between Vulnerable and Apparently Secure. It is unclear if the individual was from the Nevada or California population. Nationwide, results show that there are about 3,000 breeding pairs (Green et al. 2006). No separate peregrine falcon population estimate is provided in California. Regardless, the increasing population overall and a state ranking that rises to Apparently Secure indicate that the loss of one individual from the population is unlikely to affect the regional, national, or global population and does not rise above the “low” category. Overall, total annual fatality estimates of known and unknown causes at Ivanpah are in the “low” category

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Appendix A. Individual Avian Detections.

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_663_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/21/2014	10/21/2014	Broken up	2 weeks	partial carcass + feather spot; leg and foot, part of body; articulated leg and lower pelvis with feathers; patch of body feathers with flesh; ~50+ feathers; singed body feathers	Scorched or singed	NA	3	637510, 3937751	heliostat	NA
2014_664_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	10/21/2014	10/21/2014	Broken up	2 weeks	Broken up: partial carcass + feather spot, primaries attached to bone; 1 rectrix, 8 remiges	Unknown	NA	3	637586, 3937841	heliostat	NA
2014_665_ISEGS	Horned Lark	HOLA	Carcass Survey	10/21/2014	10/21/2014	Broken up	3-6 days	Feather spot + partial carcass: leg and foot, flight feathers, 2 partial wings held together by small amount of flesh; 11 retrices, ~20 countour feathers	Collision with solar panel/heliostat	NA	1	637670, 3937858	heliostat	NA
2014_666_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	10/21/2014	10/21/2014	Feather spot	7 days	10+ contour, 2 tertials, 2 retrices, 1 secondary, 1 primary; no evidence of singeing (checked under scope).	Unknown	NA	3	637684, 3937930	heliostat	NA
2014_667_ISEGS	Crissal Thrasher	CRTH	Carcass Survey	10/21/2014	10/21/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: small maggots in carcass; in rigor; eyes sunken but present. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	637044, 3938013	heliostat	NA
2014_668_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/21/2014	10/21/2014	Feather spot	7 days	2 retrices; 2 secondaries; 1 primary, 4 countour feathers. Singed primary, light curling on secondaries, slight curling to 1 rectrix	Scorched or singed	NA	3	637580, 3938042	heliostat	NA
2014_669_ISEGS	Gambel's Quail	GAQU	Carcass Survey	10/21/2014	10/21/2014	Feather spot	7 days	100+ body, 13 flight feathers; large clump of breast feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637289, 3938090	heliostat	NA
2014_670_ISEGS	Unkown Passerine	UNKN	Carcass Survey	10/21/2014	10/21/2014	Feather spot	3-6 days	Partial right wing (feathers intact); 7 loose wing feathers, 3 body feathers; no evidence of singeing (checked under scope).	Unknown	NA	3	637357, 3937987	fire hydrant	NA
2014_671_ISEGS	Mourning Dove	MODO	Carcass Survey	10/21/2014	10/21/2014	Mummified	1 month +	Whole carcass minus flesh; desiccated, skin dried onto carcass; missing many body feathers. No evidence of singeing (checked under scope).	Unknown	NA	3	637819, 3938456	heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_672_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/21/2014	10/21/2014	Feather spot	3-6 days	5 retrices, 7 loose remiges; partial right wing with 9 primaries and secondaries connected by tissue; one curled retrice; light singeing on 2-3 other feathers; flux effect grade unknown	Scorched or singed	NA	3	637470, 3938021	ACC bldg	NA
2014_673_ISEGS	Cedar Waxwing	CEDW	Carcass Survey	10/21/2014	10/21/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass: head detached; singed on both wings; tail missing; most of dorsal surface singed; chin and black mask singed; flux effect grade 2 and 3.	Scorched or singed	NA	3	637440, 3937930	Project bldg	Corrected Spits code (from CEWA); B. Sousa; 11/12/14
2014_674_ISEGS	Mourning Dove	MODO	Carcass Survey	10/21/2014	10/21/2014	Feather spot	3 weeks	5 flight; 30 + body feathers; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637278, 3938003	heliostat	NA
2014_675_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/21/2014	10/21/2014	Broken up	2 days	Feather spot + partial carcass: whole left wing with bones and body feathers, retrices; retrices singed, light singeing on right remiges; singed undertail coverts; flux effect grade unknown	Scorched or singed	NA	3	637257, 3937801	heliostat	NA
2014_676_ISEGS	Unkown passerine or swift	UNKN	Incidental	10/21/2014	10/21/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: entire carcass burnt, all flight feathers burned down to pins. Flux effect grade 2 and 3.	Scorched or singed	NA	1	640387, 3933514	ACC power station	NA
2014_677_ISEGS	Unknown hummingbird	UNHU	Incidental	10/21/2014	10/21/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass burnt. Flux effect grade 2 and 3. Neck pliable, rigor not set in.	Scorched or singed	NA	1	640384, 3933501	chemical skid	NA
2014_678_ISEGS	Unknown Swallow	UNKN	Incidental	10/21/2014	10/21/2014	Mummified	2 weeks	Whole carcass: all flight singed, back, rump, and crown singed; flux effect grade 2 and 3.	Scorched or singed	NA	1	640396, 3933504	ACC support beam	NA
2014_679_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/21/2014	10/21/2014	Broken up	2 days	Feather spot + partial carcass: both wings, 2 legs/feet, seven clumps of skin with feathers attached; 2 tail and ~25 body feathers; no evidence of singeing (checked under scope).	Unknown	NA	3	637345, 3937814	heliostat	NA
2014_680_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/21/2014	10/21/2014	Feather spot	3-6 days	20+ flight feathers, 50+ body feathers; feathers singed. Flux effect grade unknown.	Scorched or singed	NA	3	637400, 3937807	heliostat	NA
2014_681_ISEGS	Unknown passerine	UNKN	Carcass Survey	10/21/2014	10/21/2014	Feather spot	3-6 days	19 flight feathers; 30+ body feathers; 4 flight feathers bent/curled; flux effect grade unknown	Scorched or singed	NA	3	637376, 3937708	heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_682_ISEGS	House Finch	HOFI	Carcass Survey	10/21/2014	10/21/2014	Feather spot	8-24 hours	20+ flight feathers; partial wing (4 primaries and coverts attached by flesh); 10+ contour feathers; all flight feathers singed, several contour feathers singed; flux effect grade unknown.	Scorched or singed	NA	3	637402, 3937765	heliostat	NA
2014_683_ISEGS	Wilson's Snipe	WISN	Carcass Survey	10/21/2014	10/21/2014	Broken up	3-6 days	Partial carcass + feather spot: wings, retrices, body feathers, bill, foot, part of head; no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	637377, 3937709	heliostat	NA
2014_684_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	10/22/2014	10/22/2014	Broken up	1 month +	Partial R wing with bones, primaries and secondaries. No evidence of singeing (checked under scope).	Unknown	NA	3	637240, 3938625	Heliostat	NA
2014_685_ISEGS	Ladder-backed Woodpecker	LBWO	Carcass Survey	10/22/2014	10/22/2014	Mummified	1 month +	whole carcass; no obvious external injuries; smudge on mirror; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637507, 3938685	Heliostat	NA
2014_686_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	10/22/2014	10/22/2014	Broken up	3 weeks	L wing with bones; pelvic girdle with feathers articulated to L leg. No evidence of singeing (checked under scope).	Unknown	NA	3	637591, 3938448	heliostat	NA
2014_687_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/22/2014	10/22/2014	Broken up	3-6 days	partial carcass + feather spot; partial wing, leg (no foot), 100+ body feathers, ~10 flight feathers	Unknown	NA	3	636573, 3938040	Heliostat	NA
2014_688_ISEGS	Unknown	UNKN	Carcass Survey	10/22/2014	10/22/2014	Feather spot	2 weeks	~50 body and 5 flight feathers; partial L wing - no bones; no evidence of singeing (checked under scope)	Unknown	NA	3	636606, 3938128	heliostat	NA
2014_689_ISEGS	Unknown	UNKN	Incidental	10/22/2014	10/22/2014	Mummified	1 month +	desiccated carcass; feathers matted, all flesh and soft tissue gone, Singed tail feather and flight feathers, rest of carcass too matted and decayed to determine singeing	Scorched or singed	NA	1	640370, 3933520	Other Machinery	NA
2014_690_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	10/22/2014	10/22/2014	Feather spot	7 days	12 primaries, 2 secondaries, 20+ body feathers; no evidence of singeing (checked under scope).	Unknown	NA	3	636577, 3938125	heliostat	NA
2014_691_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	10/22/2014	10/22/2014	Feather spot	2 weeks	30+ body, 2 retrices. No evidence of singeing (checked under scope).	Unknown	NA	3	636585, 3938241	heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_692_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/23/2014	10/23/2014	Dead, fresh (eyes moist)	0-8 hours	Fresh whole carcass. Bill tip bent with white keratin. A few breast feathers loose. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	636277, 3936893	heliostat	NA
2014_693_ISEGS	American Pipit	AMPI	Carcass Survey	10/23/2014	10/23/2014	Mummified	2 weeks	carcass desiccated, eyes gone, sockets clean, part of body eaten by insects, neck twisted on carcass. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	638074, 3937386	heliostat	NA
2014_694_ISEGS	Unknown passerine	UNKN	Carcass Survey	10/23/2014	10/23/2014	Feather spot	3-6 days	30 + body feathers. No evidence of singeing (checked under scope).	Unknown	NA	3	637789, 3937867	heliostat	NA
2014_695_ISEGS	Mourning Dove	MODO	Carcass Survey	10/23/2014	10/23/2014	Broken up	3 weeks	Carcass with head and neck detached. Loose 10+ flight and 10+ body feathers near carcass. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	636923, 3936948	heliostat	NA
2014_696_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/23/2014	10/23/2014	Feather spot	3-6 days	~100 body, 8 flight feathers; leg and foot; partial left wing (0.1 m feather spot diameter). No evidence of singeing (checked under scope).	Unknown	NA	3	637217, 3937635	heliostat	NA
2014_697_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/23/2014	10/23/2014	Broken up	7 days	Left wing attached to partial torso (desiccated) with 20 + body feathers under partial carcass. No evidence of singeing (checked under scope).	Unknown	NA	3	637117, 3937485	heliostat	NA
2014_698_ISEGS	Ruby-crowned Kinglet	RCKI	Incidental	10/23/2014	10/23/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass: singed on crown, wings and back. Flux effect grade 2 and 3.	Scorched or singed	NA	1	640330, 3933471	Control room bldg	NA
2014_699_ISEGS	Brewer's Blackbird	BRBL	Carcass Survey	10/24/2014	10/30/2014	Feather spot	3-6 days	~50 100+ body and 8 flight feathers; (feather spot diameter = 10 m); no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	639111, 3935203	heliostat	NA
2014_700_ISEGS	White-Crowned Sparrow	WCSP	Incidental	10/24/2014	10/24/2014	Feather spot	3-6 days	~80 body feathers; 9 tail feathers; (feather spot diameter = 1 m); no evidence of singeing (checked under scope).	Unknown	NA	3	636647, 3937511	heliostat	NA
2014_701_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/24/2014	10/25/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	whole carcass; entire dorsal surface and all wing and tail feathers singed; flanks and axillaries singed.	Scorched or singed	NA	1	640365, 3933468	Solar Concentrating Tower	NA
2014_702_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/24/2014	10/25/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	whole carcass; all flight feathers, back, rump, head, R side, breast, throat, and R flank singed.	Scorched or singed	NA	1	640365, 3933467	Other Machinery	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_703_ISEGS	Pine Siskin	PISI	Incidental	10/24/2014	10/25/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	whole carcass; nape, overtail coverts, all retrices, and both sides singed	Scorched or singed	NA	3	637406, 3937874	Project Building	NA
2014_704_ISEGS	Unknown	UNKN	Incidental	10/24/2014	10/25/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	whole carcass; entire body singed	Scorched or singed	NA	3	637400, 3937958	Project Building	NA
2014_705_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	10/27/2014	10/27/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: singeing on left side of bird; tail singed off; singed crown, throat, belly, sides; both wings singed and curled. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638686, 3935893	ACC Building	NA
2014_706_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	2 days	Whole carcass: singed flight feathers (primaries, secondaries, retrices), top of head, nape and upper left side singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638665, 3935894	ACC Building	NA
2014_707_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	2 days	Whole carcass: singed flight feathers, head and back, let side of breast singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638663, 3935899	ACC Building	NA
2014_708_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass: flight feathers singed, top of head and left side of body singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638678, 3935893	ACC Building	NA
2014_709_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/27/2014	10/27/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass: Entire body singed with the exception of the vent area. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638681, 3935895	ACC Building	NA
2014_710_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	2 days	Whole carcass: top of head, breast feathers, flight feathers singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638649, 3935893	ACC Building	NA
2014_711_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/27/2014	10/27/2014	Broken up	2 days	Partial carcass: 6 body and 1 flight feather; left leg and foot, rump with tail, part of left wing. No evidence of singeing (checked under scope).	Unknown	NA	2	638730, 3936050	heliostat	NA
2014_712_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	2 days	Whole carcass: curling and singeing to all flight feathers, singed on top of head, left side of face and flank; all wing coverts singed and curled. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638680, 3935895	ACC Building	NA

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2014_713_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: singeing on flight feathers, head and back, singeing on breast and back and uppertail coverts, singed on face. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638667, 3935909	ACC Building	NA
2014_714_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	3-6 days	Whole carcass: flight feathers singed; singed on crown of head, right side of body, breast, undertail coverts, median and greater covers singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638648, 3935908	ACC Building	NA
2014_715_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Dead, fresh (eyes moist)	3-6 days	Whole carcass: flight feathers, top of head singed; extending down back, breast and axillaries singed. Flux effect grade 2 and 3.	Scorched or singed	NA	2	638643, 3935898	ACC Building	NA
2014_716_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/27/2014	10/27/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass: feathers fresh, eyes sunken and dried. No evidence of singeing.	Collision with solar panel/heliostat	NA	2	638407, 3935797	heliostat	NA
2014_717_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/27/2014	10/27/2014	Feather spot	7 days	~4 flight feathers, ~15 body feathers; 1 flight feather singed and curled, 4+ body feathers singed. Flux effect grade unknown.	Scorched or singed	NA	2	638624, 3935686	heliostat	NA
2014_718_ISEGS	Unknown kinglet	UNKN	Carcass Survey	10/27/2014	10/27/2014	Feather spot	7 days	~20 body, 7 flight feathers; all flight feathers singed and curled; 75% of body feathers singed. Flux effect grade unknown.	Scorched or singed	NA	2	638657, 3935831	Turbine	NA
2014_719_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/27/2014	10/27/2014	Broken up	2 weeks	Both wings attached to partial sternum; primaries and secondaries of both wings singed and curled; wing coverts also singed and curled. Flux effect grade unknown.	Scorched or singed	NA	2	638593, 3935924	aqueduct pipe	NA
2014_720_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/27/2014	10/27/2014	Feather spot	3 weeks	~50 body feathers; 8 flight feathers (feather spot diameter 6 m); no evidence of singeing	Unknown	NA	2	638586, 3936476	heliostat	NA
2014_721_ISEGS	American Coot	AMCO	Carcass Survey	10/28/2014	10/28/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass: desiccated, decayed; no evidence of singeing (checked under scope)	Unknown	NA	2	639306, 3936095	heliostat	NA

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2014_722_ISEGS	Eared Grebe	EAGR	Carcass Survey	10/28/2014	10/28/2014	Broken up	3 weeks	Partial carcass + feather spot: >100 of all feathers; head, full body (feather spot diameter = 8 m); no evidence of singeing (checked under scope)	Unknown	NA	2	638378, 3936328	heliostat	NA
2014_723_ISEGS	Unknown passerine	UNKN	Carcass Survey	10/28/2014	10/28/2014	Feather spot	2 weeks	30 + body feathers. No evidence of singeing (checked under scope).	Unknown	NA	2	638877, 3936207	heliostat	NA
2014_724_ISEGS	American Pipit	AMPI	Carcass Survey	10/28/2014	10/28/2014	Dead, fresh (eyes moist)	3-6 days	Whole carcass: pliable carcass; no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	638855, 3936253	heliostat	NA
2014_725_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/28/2014	10/28/2014	Feather spot	3-6 days	100+ body feathers; 32 flight feathers (feather spot diameter = 2 m); no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	638926, 3936210	heliostat	NA
2014_726_ISEGS	Hermit Thrush	HETH	Carcass Survey	10/28/2014	10/28/2014	Feather spot	7 days	3 flight, ~100 body feathers (feather spot diameter = 2 m); no evidence of singeing (checked under scope).	Unknown	NA	2	638952, 3936161	heliostat	NA
2014_727_ISEGS	American Pipit	AMPI	Incidental	10/28/2014	10/28/2014	Broken up	2 weeks	partial carcass + feather spot: ~10 flight feathers, ~25 body feathers; 2 legs (feather spot diameter = 1.25 m); no evidence of singeing (checked under scope).	Unknown	NA	2	639138, 3936343	heliostat	NA
2014_728_ISEGS	Mourning Dove	MODO	Carcass Survey	10/28/2014	10/28/2014	Broken up	2 weeks	partial carcass + feather spot: ~25 flight feathers, ~35 body feathers; 1 foot. (feather spot diameter = 1.5 m). No evidence of singeing (checked under scope).	Unknown	NA	2	638528, 3935072	Fence	NA
2014_729_ISEGS	House Finch	HOFI	Carcass Survey	10/28/2014	10/28/2014	Feather spot	2 weeks	2 retrices, 16 primaries/secondaries, 50+ body feathers; (feather spot diameter = 5 m). No evidence of singeing (checked under scope).	Unknown	NA	2	638272, 3936304	heliostat	NA
2014_730_ISEGS	Red-winged Blackbird	RWBL	Carcass Survey	10/28/2014	10/28/2014	Mummified	2 weeks	carcass without head; body desiccated and mummified, feathers weathered; no evidence of singeing (checked under scope)	Unknown	NA	2	638175, 3936217	heliostat	NA
2014_731_ISEGS	Gambel's Quail	GAQU	Carcass Survey	10/28/2014	10/28/2014	Feather spot	2 weeks	~100 body feathers (feather spot diameter = 9 m). no evidence of singeing (checked under scope)	Unknown	NA	2	638738, 3935232	heliostat	NA

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2014_732_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/29/2014	10/29/2014	Broken up	7 days	feather spot + partial carcass (feather spot diameter = 10 m); 100+ body; 13 flight feathers; partial right wing. No evidence of singeing (checked under scope).	Unknown	NA	2	638195, 3935662	heliostat	NA
2014_733_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/29/2014	10/29/2014	Broken up	2 weeks	feather spot + partial carcass (feather spot diameter = 3 m); 100+ body; 4 wing feathers; pieces of bone from wing and skull. No evidence of singeing (checked under scope).	Unknown	NA	2	639253, 3935610	heliostat	NA
2014_734_ISEGS	White-Crowned Sparrow	WCSP	Incidental	10/29/2014	10/29/2014	Broken up	2 weeks	feather spot + partial carcass (feather spot diameter = 1.5 m); ~25 body feathers, 9 tail feathers, 1 cm piece of bone. No evidence of singeing (checked under scope).	Unknown	NA	2	639246, 3935645	heliostat	NA
2014_735_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/29/2014	10/29/2014	Broken up	7 days	feather spot + partial carcass (feather spot diameter = 5 m); 14 flight, 100 + body feathers, leg entailing foot, tarsus, and tibiotarsus, pygostyle bone attached to tail feathers. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	639224, 3935730	heliostat	NA
2014_736_ISEGS	American Pipit	AMPI	Carcass Survey	10/29/2014	10/29/2014	Dead, fresh (eyes moist)	3-6 days	Whole carcass: very fresh, pliable carcass; no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	639208, 3935737	heliostat	NA
2014_737_ISEGS	Lazuli Bunting	LABU	Carcass Survey	10/29/2014	10/29/2014	Broken up	1 month +	Partial carcass: no head. Ribs, 2 legs, Right wing, tail with vertebrae, pelvic girdle present. No evidence of singeing (checked under scope).	Unknown	NA	2	639076, 3935486	heliostat	NA
2014_738_ISEGS	Unknown passerine	UNKN	Carcass Survey	10/29/2014	10/29/2014	Broken up	3 weeks	Single small passerine leg with tufts of feathers. No evidence of singeing (checked under scope).	Unknown	NA	2	639171, 3935588	heliostat	NA
2014_739_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/30/2014	10/30/2014	Broken up	7 days	Partial carcass and feather spot; partial right wing and tail with bones, ~100 body feathers and 4 wing feathers; no evidence of singeing (checked under scope).	Unknown	NA	2	638255, 3935285	heliostat	NA
2014_740_ISEGS	Gambel's Quail	GAQU	Carcass Survey	10/30/2014	10/30/2014	Mummified	3 weeks	carcass without head; body desiccated and mummified, feathers weathered; no evidence of singeing (checked under scope)	Unknown	NA	2	639279, 3935204	heliostat	NA

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2014_741_ISEGS	Mourning Dove	MODO	Carcass Survey	10/30/2014	10/30/2014	Mummified	3 weeks	Whole carcass; body desiccated; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	639077, 3935984	heliostat	NA
2014_742_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/30/2014	10/30/2014	Broken up	3 weeks	Partial carcass - body missing head, legs, and left wing; singed on 6 of 9 tail feathers singed; rump, primaries, secondaries, and greater coverts singed; burn grade unknown	Scorched or singed	NA	2	639036, 3936039	heliostat	NA
2014_743_ISEGS	Northern Mockingbird	NOMO	Carcass Survey	10/30/2014	10/30/2014	Feather spot	2 weeks	3 primaries and 2 coverts; no evidence of singeing (checked under scope)	Unknown	NA	2	638807, 3935084	heliostat	NA
2014_744_ISEGS	White-Crowned Sparrow	WCSP	Incidental	10/30/2014	10/30/2014	Feather spot	2 weeks	~100 body 6 tail, and 27 wing feathers; no evidence of singeing (checked under cope)	Unknown	NA	2	637732, 3935772	heliostat	NA
2014_745_ISEGS	Mourning Dove	MODO	Incidental	10/30/2014	NA	Broken up	Unknown	Partial carcass and feather spot; 18 feathers and top of skull; no evidence of singeing.	Unknown	NA	3	637486, 3937708	heliostat	Updated species (from UNKN) after review of photos; fatality no longer there on subsequent survey; B. Sousa; 11/12/14
2014_746_ISEGS	Barn Swallow	BARS	Carcass Survey	11/3/2014	11/3/2014	Feather spot	3 weeks	6 flight and ~30 body feathers; all flight feathers found and a few body feathers singed. Flux effect grade unknown.	Scorched or singed	NA	1	640164, 3933615	heliostat	NA
2014_747_ISEGS	Unknown	UNKN	Carcass Survey	11/3/2014	11/3/2014	Feather spot	2 weeks	9 flight and ~50 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	640194, 3933580	Heliostat	NA
2014_748_ISEGS	House Finch	HOFI	Carcass Survey	11/3/2014	11/3/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	whole carcass; flanks, chest, and face singed; flux effect grade 1 and 3.	Scorched or singed	NA	1	640410, 3933544	ACC Building	NA
2014_749_ISEGS	Mourning Dove	MODO	Carcass Survey	11/3/2014	11/3/2014	Feather spot	3 weeks	~30 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	640122, 3933505	Heliostat	NA
2014_750_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/3/2014	11/3/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	whole carcass; primaries, secondaries and retrices singed; upper coverts of both wings singed; crown, face and flanks singed; flux effect grades 2 and 3	Scorched or singed	NA	1	640384, 3933523	ACC Building	NA
2014_751_ISEGS	House Finch	HOFI	Carcass Survey	11/3/2014	11/3/2014	Feather spot	7 days	6 wing feathers and ~100 body feathers; all flight feathers and a few body feathers singed; flux effect grades unknown	Scorched or singed	NA	1	640168, 3933481	heliostat	NA

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2014_752_ISEGS	Mourning Dove	MODO	Incidental	11/3/2014	11/3/2014	Feather spot	2 weeks	3 secondaries and 50+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	640787, 3933018	heliostat	NA
2014_753_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/3/2014	11/3/2014	Feather spot	2 weeks	10 flight, ~25 body feathers (feather spot diameter = 40 m); 4 singed body feathers; 4 flight feathers singed; flux effect grade unknown.	Scorched or singed	NA	1	640265, 3933380	Heliostat	NA
2014_754_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	11/3/2014	11/3/2014	Broken up	3-6 days	partial right wing, 8 flight, ~60 body feathers; singed primaries, primary coverts, greater coverts, and tail feathers	Scorched or singed	NA	1	640394, 3933367	heliostat	NA
2014_755_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/3/2014	11/3/2014	Feather spot	7 days	4-5 flight feathers, 50 + body feathers (feather spot diameter = 10 m); a few body feathers curled; flux effect grade unknown	Scorched or singed	NA	1	640389, 3933369	heliostat	NA
2014_756_ISEGS	Unknown Swallow	UNKN	Carcass Survey	11/3/2014	11/3/2014	Broken up	3 weeks	partial right wing; no evidence of singeing (checked under scope)	Unknown	NA	1	640404, 3933528	power unit bldg	NA
2014_757_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/3/2014	11/3/2014	Broken up	3 weeks	partial carcass + feather spot: ball of singed feathers with spine and ribs; flux effect grade unknown; feather spot diameter = 10 m	Scorched or singed	NA	1	640340, 3933350	heliostat	NA
2014_758_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/3/2014	11/3/2014	Feather spot	2 weeks	10 flight and 50+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	639779, 3933593	heliostat	NA
2014_759_ISEGS	American Pipit	AMPI	Carcass Survey	11/3/2014	11/3/2014	Feather spot	7 days	14 retrices, 16 remiges, 30+ body feathers (feather spot diameter = 5 m); no evidence of singeing (checked under scope).	Unknown	NA	1	640321, 3933278	Heliostat	NA
2014_760_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/3/2014	11/3/2014	Broken up	7 days	partial carcass + feather spot: 23 flight, 20 body feathers (feather spot diameter = 1 m); 2 partial wings, 1 foot; all flight feathers singed; flux effect grade unknown	Scorched or singed	NA	1	640326, 3933311	heliostat	NA
2014_761_ISEGS	House Finch	HOFI	Carcass Survey	11/3/2014	11/3/2014	Feather spot	2 weeks	5 flight, 30+ body feathers (feather spot diameter = 6 m); no evidence of singeing (checked under scope)	Unknown	NA	1	640481, 3933609	heliostat	NA
2014_762_ISEGS	Mourning Dove	MODO	Carcass Survey	11/3/2014	11/3/2014	Feather spot	1 month +	17 flight, 100+ body feathers (feather spot diameter = 4 m); no evidence of singeing (checked under scope)	Unknown	NA	1	641065, 3932912	heliostat	NA

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2014_763_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/3/2014	11/3/2014	Feather spot	2 weeks	~100 body feathers (feather spot diameter = 2 m); no evidence of singeing (checked under scope)	Unknown	NA	1	640784, 3932706	heliostat	NA
2014_764_ISEGS	Barn Swallow	BARS	Carcass Survey	11/3/2014	11/3/2014	Feather spot	3 weeks	2 body, 7 flight feathers (feather spot diameter = 40 m); singed body feather, flight feathers singed; flux effect grade unknown	Scorched or singed	NA	1	640265, 3933380	heliostat	NA
2014_765_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/3/2014	11/3/2014	Feather spot	3 weeks	~15 body feathers attached to skin (feather spot diameter = 0.1 m); no evidence of singeing (checked under scope)	Unknown	NA	1	640340, 3933350	heliostat	NA
2014_766_ISEGS	American Pipit	AMPI	Carcass Survey	11/3/2014	11/3/2014	Feather spot	7 days	14 retrices, 16 remiges, 30+ body feathers (feather spot diameter = 5 m); no evidence of singeing (checked under scope).	Unknown	NA	1	640321, 3933278	heliostat	NA
2014_767_ISEGS	American Pipit	AMPI	Carcass Survey	11/4/2014	11/4/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	whole carcass; tip of lower mandible broken off; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	1	641092, 3933395	heliostat	NA
2014_768_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	2 weeks	~20 body feathers and 1 secondary; no evidence of singeing (checked under scope)	Unknown	NA	1	639619, 3934183	heliostat	NA
2014_769_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	3-6 days	8+ retrices, 8+ flight feathers and 250+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	640573, 3934572	heliostat	NA
2014_770_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	11/4/2014	11/4/2014	Broken up	1 month +	lower half of body, including partial spinal column, synsacrum, tail, and one leg with some feathers, some primaries; no singeing found (checked under scope)	Unknown	NA	1	640485, 3933223	heliostat	NA
2014_771_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Broken up	3-6 days	Partial carcass and feather spot; 350+ body and flight feathers, upper mandible, flesh;	Unknown	NA	1	639580, 3932661	Fencing	NA
2014_772_ISEGS	American Pipit	AMPI	Carcass Survey	11/4/2014	11/4/2014	Feather spot	1 month +	3 primaries, 4 retrices, 3+ coverts, 20+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	639928, 3933390	heliostat	NA
2014_773_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	3-6 days	4 retrices, 1 primary, 4 secondaries, and 5 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	641202, 3932827	Fencing	NA

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2014_774_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	1 month +	8+ retrices, 6+ flights and body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	641297, 3932917	Fencing	NA
2014_775_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	3-6 days	8+ remiges, 200+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	641348, 3932976	Fencing	NA
2014_776_ISEGS	Savannah Sparrow	SAVS	Incidental	11/4/2014	11/4/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	whole carcass missing head and most wing feathers; no evidence of singeing (checked under scope); impaled on yucca in manner typical of loggerhead shrike predation	Predated	NA	NA	639568, 3934327	Fencing	NA
2014_777_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Broken up	2 weeks	partial carcass and feather spot; 200+ feathers (body, tail, and flight), leg bone, partial top of skull; no evidence of singeing (checked under scope)	Unknown	NA	1	641349, 3933769	Fencing	NA
2014_778_ISEGS	Unknown	UNKN	Carcass Survey	11/4/2014	11/4/2014	Broken up	1 month +	partial left wing (4 primaries attached to bone) and 1 disarticulated primary; no evidence of singeing (checked under scope)	Unknown	NA	1	641347, 3933769	Fencing	NA
2014_779_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/4/2014	11/4/2014	Feather spot	2 weeks	22 flight and ~70 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	641348, 3933814	Fencing	NA
2014_780_ISEGS	Mourning Dove	MOD0	Carcass Survey	11/4/2014	11/4/2014	Feather spot	2 weeks	6 primaries, 1 retrix, 7+ secondaries, 5+ coverts, 20+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	1	641349, 3933878	Fencing	NA
2014_781_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/5/2014	11/5/2014	Broken up	7 days	partial carcass + feather spot: 9 tail feathers; ~40 body feathers; small part of bone attached to tail feather (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	1	640509, 3933727	heliostat	NA
2014_782_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	11/5/2014	11/5/2014	Broken up	1 month +	partial carcass + feather spot: ~50 body feathers, flight feathers, 2 wings, skull, detached tail, vertebrae, 2 legs, pelvic girdle; (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	640522, 3933766	heliostat	NA

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2014_783_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/5/2014	11/5/2014	Broken up	3-6 days	partial carcass + feather spot: 1 alula, 2 secondaries, 2 retrices; piece of body unknown (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640494, 3933813	heliostat	NA
2014_784_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/5/2014	11/5/2014	Broken up	1 month +	partial carcass: lower leg and foot; scales eaten off to the bones; bone stripped of flesh.	Unknown	NA	1	640181, 3934070	heliostat	NA
2014_785_ISEGS	American Pipit	AMPI	Carcass Survey	11/5/2014	11/5/2014	Dead, fresh (eyes moist)	2 days	Whole carcass: no evidence of singeing (checked under scope); fresh carcass.	Collision with solar panel/heliostat	NA	1	640204, 3934065	Heliostat	NA
2014_786_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	11/5/2014	11/5/2014	Mummified	3 weeks	Carcass with no head; very desiccated; no evidence of singeing (checked under scope)	Unknown	NA	1	640066, 3934064	Heliostat	NA
2014_787_ISEGS	White-Crowned Sparrow	WCSP	Incidental	11/5/2014	11/5/2014	Broken up	0-8 hours	Partial carcass + feather spot: Carcass found impaled on yucca, separated head impaled on yucca; ~100 body feathers, 10 tail feathers, 11 secondaries (feather spot size = small); no evidence of singeing (checked under scope).	Predated	NA	3	637084, 3937765	heliostat	NA
2014_788_ISEGS	Mourning Dove	MODO	Carcass Survey	11/6/2014	11/6/2014	Feather spot	3-6 days	~200 + body feathers, 8+ retrices, 12 primaries/secondaries (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	641142, 3934112	heliostat	NA
2014_789_ISEGS	Mourning Dove	MODO	Incidental	11/6/2014	11/6/2014	Broken up	1 month +	Partial carcass + feather spot: ~12 retrices, ~50 + body feathers; 2 legs, sternum, lower spinal cord, skull, wing with exposed bones (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	1	640700, 3933188	heliostat	NA
2014_790_ISEGS	Brown-headed cowbird	BHCO	Incidental	11/6/2014	11/6/2014	Broken up	1 month +	Whole carcass; head separated from from body; carcass very desiccated; 2 flight feathers loose by carcass; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	1	640515, 3932794	heliostat	NA
2014_791_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	11/6/2014	11/6/2014	Broken up	1 month +	Partial carcass: right and left wing attached to legs, sternum and head. No tail or rump bones. No evidence of singeing (checked under scope).	Unknown	NA	1	640575, 3932783	heliostat	NA

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2014_792_ISEGS	Mourning Dove	MODO	Carcass Survey	11/6/2014	11/6/2014	Feather spot	1 month +	3 primaries, 3 secondaries, 3 retrices, ~50+ body feathers (feather spot size = large); No evidence of singeing (checked under scope).	Unknown	NA	1	640651, 3932816	heliostat	NA
2014_793_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/6/2014	11/6/2014	Broken up	1 month +	Partial carcass + feather spot: ~10 body feathers, 1 leg, partial rib cage, 1 wing bone (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	1	641188, 3934102	heliostat	NA
2014_794_ISEGS	Mourning Dove	MODO	Carcass Survey	11/6/2014	11/6/2014	Broken up	1 month +	Leg: femur, tarsometatarsus, tarsus and 2 toe bones; no evidence of singeing (checked under scope)	Unknown	NA	1	641317, 3933935	heliostat	NA
2014_795_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	11/10/2014	11/10/2014	Dead, fresh (eyes moist)	8-24 hours	whole carcass; R axillaries and side singed; R wing and all retrices singed and curled; tips of L wing flights singed; vert, rump, face, crown, upper breast, and some L coverts singed. Flux effects grade 2, 3.	Scorched or singed	NA	3	637458, 3937900	Solar Concentrating Tower	NA
2014_796_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Feather spot	2 weeks	8 flight and 8 body feathers; flux effects grade 3, unknown.	Scorched or singed	NA	3	637380, 3937802	heliostat	NA
2014_797_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Broken up	2 weeks	feather spot and partial carcass; partial R and L wings with bones, clump of ~30 feathers attached to skin, 6 flight feathers; singed retrix and end of primaries of wing; flux effects grade unknown	Scorched or singed	NA	3	637288, 3937788	heliostat	NA
2014_798_ISEGS	Western Meadowlark	WEME	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	6 retrices, 2 secondaries, and ~75 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637347, 3937777	heliostat	NA
2014_799_ISEGS	Dark-Eyed Junco	DEJU	Incidental	11/11/2014	11/11/2014	Feather spot	3-6 days	3 retrices, 20+ primaries and secondaries, 40+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637313, 3937674	heliostat	NA
2014_800_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/11/2014	11/11/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	whole carcass; all flight feathers singed off; all feathers except throat singed; flux effects grade 2, 3.	Scorched or singed	NA	3	637459, 3937952	ACC Building	NA

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2014_801_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	11/11/2014	11/11/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	whole carcass; all remiges and retrices singed and curled; face, crown and axillaries singed; flux effect grade 2, 3	Scorched or singed	NA	3	637461, 3937954	ACC Building	NA
2014_802_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	partial wing (no bone), ~8 body feathers and 3 additional primaries; primary and body feathers singed; flux effect grade 3, unknown	Scorched or singed	NA	3	637408, 3937719	heliostat	NA
2014_803_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Feather spot	7 days	3 flight feathers connected by flesh; all singed and curled; flux effect grade unknown	Scorched or singed	NA	3	637624, 3937758	heliostat	NA
2014_804_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	11/11/2014	11/11/2014	Broken up	3-6 days	partial right wing; no evidence of singeing (checked under scope)	Unknown	NA	3	637468, 3937952	ACC Building	NA
2014_805_ISEGS	American Pipit	AMPI	Carcass Survey	11/11/2014	11/11/2014	Broken up	2 weeks	feather spot and partial carcass; Partial right and left wings, 24 flight, and 50+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637032, 3938227	heliostat	NA
2014_806_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	2 flight and 40+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637421, 3937716	heliostat	NA
2014_807_ISEGS	Brewer's Blackbird	BRBL	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	1 secondary, 30+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637366, 3937694	heliostat	NA
2014_808_ISEGS	Greater Roadrunner	GRRO	Incidental	11/11/2014	11/11/2014	Feather spot	3-6 days	20+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637009, 3938181	heliostat	NA
2014_809_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	11/11/2014	11/11/2014	Broken up	1 month +	articulated R wing and body with R flank feathers and overtail coverts; no evidence of singeing (checked under scope)	Unknown	NA	3	637258, 3937301	heliostat	NA
2014_810_ISEGS	American Pipit	AMPI	Carcass Survey	11/11/2014	11/11/2014	Broken up	2 weeks	feather spot and partial carcass; both wings, 1 leg, 1 clump of breast feathers, 50+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637114, 3937392	heliostat	NA
2014_811_ISEGS	Unknown	UNKN	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	3 primaries, 9 secondaries, 5 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	636942, 3938047	heliostat	NA
2014_812_ISEGS	American Pipit	AMPI	Carcass Survey	11/11/2014	11/11/2014	Broken up	3-6 days	feather spot and partial carcass; head, 6 retrices, 100+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637241, 3938005	heliostat	NA

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2014_813_ISEGS	Gambel's Quail	GAQU	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	30+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637285, 3938034	heliostat	NA
2014_814_ISEGS	Western Meadowlark	WEME	Carcass Survey	11/11/2014	11/11/2014	Broken up	7 days	feather spot and partial carcass; partial L wing, 9 primaries, coverts, and 35+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637941, 3938261	heliostat	NA
2014_815_ISEGS	American Pipit	AMPI	Carcass Survey	11/11/2014	11/11/2014	Feather spot	3-6 days	4 primaries, 1 retrix, 2 secondaries, 1 tertial, 30+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	637704, 3937966	heliostat	NA
2014_816_ISEGS	Unknown Teal	UNKN	Carcass Survey	11/12/2014	11/12/2014	Broken up	7 days	Left and right wing with bone attached. No evidence of singeing (checked under scope). Left wing was found 14 m from right wing.	Collision with solar panel/heliostat	NA	3	636990, 3938986	heliostat	NA
2014_817_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/12/2014	11/12/2014	Feather spot	3-6 days	3 retrices, 1 secondary, 4 greater coverts, ~50 body feathers. (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	3	637706, 3938439	heliostat	NA
2014_818_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/12/2014	11/12/2014	Broken up	7 days	Left wing with bone attached. No evidence of singeing (checked under scope).	Unknown	NA	3	637465, 3938835	heliostat	NA
2014_819_ISEGS	American Coot	AMCO	Incidental	11/12/2014	11/12/2014	Broken up	3-6 days	Partial right wing, tail, and 1 body feather. No evidence of singeing (checked under scope).	Unknown	NA	3	638841, 3938590	Fence	NA
2014_820_ISEGS	Western Meadowlark	WEME	Incidental	11/13/2014	11/13/2014	Feather spot	3-6 days	2 primaries and ~30 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	638483, 3937534	heliostat	NA
2014_821_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/13/2014	11/13/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	whole carcass minus one wing; tip of lower mandible broken off; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637214, 3937597	heliostat	NA
2014_822_ISEGS	House Finch	HOFI	Incidental	11/13/2014	11/13/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	whole carcass; no evidence of singeing (checked under scope)	Unknown	NA	2	638695, 3935866	Other Machinery	NA
2014_823_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/14/2014	11/14/2014	Feather spot	3-6 days	~100 body feathers; 2 flight feathers; partial wing (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	3	637984, 3938068	heliostat	NA

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2014_824_ISEGS	American Pipit	AMPI	Carcass Survey	11/14/2014	11/14/2014	Feather spot	3-6 days	1 retrace, 8 primaries, 1 secondary, ~40 body feathers, 1 undertail covert (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	3	636757, 3938164	heliostat	NA
2014_825_ISEGS	American Pipit	AMPI	Carcass Survey	11/14/2014	11/14/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: No evidence of singeing (checked under scope). Eyes missing, but feathers look fresh and unweathered.	Collision with solar panel/heliostat	NA	3	637766, 3937586	heliostat	NA
2014_826_ISEGS	American Pipit	AMPI	Carcass Survey	11/14/2014	11/14/2014	Feather spot	3-6 days	4 primaries, ~50 body feathers (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	3	637741, 3938004	heliostat	NA
2014_827_ISEGS	Ross's Goose	ROGO	Incidental	11/15/2014	11/15/2014	Alive, injured	0-8 hours	No evidence of external trauma, neck palpation has possible cervical spinal injury, left wing slight droop, no fracture immediately evident, possible head trauma. Several episodes of nystagmus noted, but still able to stand. Bird was captured at 0720. At	Collision (other)	NA	2	638637, 3935759	heliostat	NA
2014_828_ISEGS	Cedar Waxwing	CEDW	Carcass Survey	11/17/2014	11/17/2014	Feather spot	7 days	3 tail, 14 wing, ~60 body feathers (feather spot size = large); 4 wing feathers curled, 2 tail feathers singed and curled, a few body feathers singed. Flux effect grade: unknown.	Scorched or singed	NA	2	638646, 3935742	heliostat	NA
2014_829_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	11/17/2014	11/17/2014	Feather spot	7 days	15 flight feathers, 25 body feathers. (feather spot size = small). All flight feathers singed and curled, a few body feathers singed. Flux effect grade unknown.	Scorched or singed	NA	2	638646, 3935740	heliostat	NA
2014_830_ISEGS	Unknown shorebird	UNKN	Carcass Survey	11/17/2014	11/17/2014	Broken up	7 days	partial right and left wing with bone, disarticulated; no evidence of singeing (checked under scope)	Unknown	NA	2	638643, 3935720	heliostat	NA
2014_831_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/17/2014	11/17/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass: singed wings, tail, singed ventral, dorsal body, head, right flank and belly, undertail coverts singed. Flux effect grade 2 and 3	Scorched or singed	NA	2	638646, 3935893	ACC Building	NA
2014_832_ISEGS	Mourning Dove	MODO	Carcass Survey	11/17/2014	11/17/2014	Feather spot	1 month +	~20 body feathers (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	2	638633, 3935654	heliostat	NA

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2014_833_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/17/2014	11/17/2014	Feather spot	2 weeks	11 body feathers (feather spot size = small). No evidence of singeing (checked under scope).	Unknown	NA	2	638646, 3935639	heliostat	NA
2014_834_ISEGS	American Pipit	AMPI	Carcass Survey	11/17/2014	11/17/2014	Feather spot	3 weeks	~20 body feathers, 5 flight feathers, partial wing with no bone; no evidence of singeing (checked under scope).	Unknown	NA	2	638505, 3935646	heliostat	NA
2014_835_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	11/17/2014	11/17/2014	Mummified	2 weeks	Desiccated, stiff, eyes gone; whole carcass; found inside of heliostat torque tube; no evidence of singeing (checked under scope).	Unknown	NA	2	638122, 3935262	heliostat	NA
2014_836_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/17/2014	11/17/2014	Feather spot	2 weeks	9 flight, 100+ body feathers (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	2	638736, 3935627	heliostat	NA
2014_837_ISEGS	American Pipit	AMPI	Carcass Survey	11/17/2014	11/17/2014	Broken up	3-6 days	partial carcass + feather spot: 2 partial wings with bone; 3 secondaries, 2 greater coverts, ~25 body feathers (feather spot size = small). No evidence of singeing (checked under scope).	Unknown	NA	2	638547, 3936263	heliostat	NA
2014_838_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/17/2014	11/17/2014	Feather spot	7 days	13 flight feathers, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	2	638391, 3935081	heliostat	NA
2014_839_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/17/2014	11/17/2014	Broken up	3-6 days	feather spot + partial carcass: partial wing with bone, 3 body feathers (feather spot size = small). No evidence of singeing (checked under scope).	Unknown	NA	2	638584, 3936459	heliostat	NA
2014_840_ISEGS	Lesser Nighthawk	LENI	Incidental	11/17/2014	11/17/2014	Feather spot	1 month +	~15 body feathers in a clump (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	3	637548, 3937897	Other	NA
2014_841_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	11/17/2014	11/17/2014	Feather spot	2 weeks	2 wing feathers, ~10 body feathers (feather spot size = small); uppertail covert singed and curled. Flux effect grade unknown.	Scorched or singed	NA	2	638646, 3935639	heliostat	NA
2014_842_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	11/18/2014	11/18/2014	Feather spot	7 days	20+ body feathers; 4 flight feathers (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	2	638340, 3935208	heliostat	NA

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2014_843_ISEGS	Dark-Eyed Junco	DEJU	Carcass Survey	11/18/2014	11/18/2014	Broken up	3-6 days	Partial wings with bone, plus 3 secondaries loose. No evidence of singeing (checked under scope).	Unknown	NA	2	637910, 3935079	Fencing	NA
2014_844_ISEGS	European Starling	EUST	Incidental	11/18/2014	11/18/2014	Feather spot	3-6 days	~5 flight, ~40 body feathers (feather spot size = small). No evidence of singeing (checked under scope).	Unknown	NA	2	638167, 3936845	heliostat	NA
2014_845_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/18/2014	11/18/2014	Feather spot	3 weeks	5 primaries, some coverts attached, small clump of body feathers (feather spot size = small). No evidence of singeing (checked under scope).	Unknown	NA	2	638111, 3935487	heliostat	NA
2014_846_ISEGS	Mourning Dove	MODO	Carcass Survey	11/18/2014	11/18/2014	Feather spot	2 weeks	50+ body feathers; 10 flight feathers (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	2	638107, 3935073	Fencing	NA
2014_847_ISEGS	Crissal Thrasher	CRTH	Carcass Survey	11/18/2014	11/18/2014	Feather spot	3-6 days	25+ flight feathers, 100+ body feathers (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	2	639680, 3935813	Fencing	NA
2014_848_ISEGS	Mourning Dove	MODO	Incidental	11/18/2014	11/18/2014	Feather spot	1 month +	~50 body feathers, 1 primary, 10 retrices, secondaries (feather spot size = large). No evidence of singeing (checked under scope).	Unknown	NA	2	638008, 3937341	Heliostat	NA
2014_849_ISEGS	Western Meadowlark	WEME	Carcass Survey	11/19/2014	11/19/2014	Feather spot	2 weeks	8 flight, 100+ body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	2	639231, 3935758	Heliostat	NA
2014_850_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/19/2014	11/19/2014	Feather spot	2 weeks	2 tail, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	2	638173, 3935760	Heliostat	NA
2014_851_ISEGS	American Pipit	AMPI	Incidental	11/19/2014	11/19/2014	Broken up	2 weeks	partial carcass + feather spot: ~20 body feathers (feather spot size = small); body with feet, detached wing with bone, part of spine with attached back, head w/skull showing feathers; no evidence of singeing (checked under scope).	Unknown	NA	2	639068, 3935430	heliostat	NA
2014_852_ISEGS	American Coot	AMCO	Incidental	11/19/2014	11/19/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass: blood seeping out of bill, eyes present and moist; trauma to keratin on bill; no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	639335, 3935786	heliostat	NA

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2014_853_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	11/20/2014	11/20/2014	Feather spot	8-24 hours	6 flight feathers and ~50 body feathers (small); no evidence of singeing (checked under scope)	Unknown	NA	2	638288, 3935224	heliostat	NA
2014_854_ISEGS	American Pipit	AMPI	Carcass Survey	11/20/2014	11/20/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3 weeks	whole carcass; imprint on closest heliostat, no obvious external injuries; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	639240, 3935245	heliostat	NA
2014_855_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/20/2014	11/20/2014	Feather spot	1 month +	8 flight and 100+ body feathers; imprint on nearby heliostat; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	637731, 3935687	heliostat	NA
2014_856_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	11/20/2014	11/20/2014	Broken up	1 month +	partial carcass and feather spot (small); partial wing, 10 flight and ~12 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	2	637807, 3935351	heliostat	NA
2014_857_ISEGS	Loggerhead Shrike	LOSH	Incidental	11/20/2014	11/20/2014	Dead, fresh (eyes moist)	0-8 hours	Whole carcass: fresh pliable carcass; no evidence of singeing (checked under scope)	Unknown	NA	NA	639650, 3935270	fencing	NA
2014_858_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	11/21/2014	11/21/2014	Dead, fresh (eyes moist)	0-8 hours	whole carcass; all remiges and retrices singed and curled; face, crown, entire back, breast, flanks and axillaries singed; flux effect grade 2, 3	Scorched or singed	NA	2	638619, 3935817	Project Building	NA
2014_859_ISEGS	Mountain Bluebird	MOBL	Carcass Survey	11/24/2014	11/24/2014	Broken up	2 weeks	partial carcass + feather spot: head, body, tail detached; 2 clumps of body feathers, 5 primaries attached (feather spot size = large); singed right side of face, singed primaries and tail feathers, singed right flank, right wing all coverts singed; part o	Scorched or singed	NA	1	640303, 3933333	heliostat	NA
2014_860_ISEGS	American Coot	AMCO	Carcass Survey	11/24/2014	11/24/2014	Broken up	3-6 days	partial carcass + feather spot: partial wing, 2 body feathers, 3 greater coverts, 6 medium coverts (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640449, 3933319	Heliostat	NA
2014_861_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	11/24/2014	11/24/2014	Feather spot	3-6 days	4 retrices, ~50 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	641017, 3932903	heliostat	NA
2014_862_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/24/2014	11/24/2014	Broken up	2 weeks	partial left wing; no evidence of singeing (checked under scope)	Unknown	NA	1	640392, 3933494	Other	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2014_863_ISEGS	Mourning Dove	MODO	Carcass Survey	11/24/2014	11/24/2014	Mummified	1 month +	Torso with right leg, left and right wing, very weathered and desiccated; no evidence of singeing (checked under scope)	Unknown	NA	1	640719, 3932696	heliostat	NA
2014_864_ISEGS	Unknown passerine	UNKN	Carcass Survey	11/24/2014	11/24/2014	Feather spot	7 days	~15 body feathers in clump; all body feathers singed at tips (feather spot size = small); flux effect grade unknown	Scorched or singed	NA	1	640558, 3933659	heliostat	NA
2014_865_ISEGS	Rock Pigeon	ROPI	Carcass Survey	11/24/2014	11/24/2014	Feather spot	1 month +	4 wing, 80+ body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	641008, 3932834	heliostat	NA
2014_866_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	11/24/2014	11/24/2014	Feather spot	7 days	4 secondaries, 50+ body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	641037, 3932904	heliostat	NA
2014_867_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/24/2014	11/24/2014	Feather spot	2 weeks	2 flight, ~30 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640322, 3933719	heliostat	NA
2014_868_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/24/2014	11/24/2014	Feather spot	2 weeks	18 wing feathers, ~25 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	639347, 3933252	Fencing	NA
2014_869_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/24/2014	11/24/2014	Feather spot	2 weeks	3 retrices, 3 large body feathers, ~10 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640750, 3932658	Fencing	NA
2014_870_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/24/2014	11/24/2014	Feather spot	2 days	200+ body, 4 tail, ~25 flight feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	640515, 3934585	Fencing	NA
2014_871_ISEGS	Band-tailed Pigeon	BTPI	Carcass Survey	11/25/2014	11/25/2014	Broken up	2 weeks	partial carcass + feather spot: 8 tail feathers, 5 secondary feathers, 200+ body feathers; piece of keel bone (feather spot size = large); no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	1	640206, 3934188	heliostat	NA
2014_872_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/25/2014	11/25/2014	Feather spot	3-6 days	10 retrices, 8 primaries, ~20 body feathers (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	1	640631, 3933272	heliostat	NA

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2014_873_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	11/25/2014	11/25/2014	Broken up	1 month +	Partial carcass: partial wing with bone, rib bones, skull and beak, leg, part of spine; 1 covert, 3 flight feathers; No evidence of singeing (checked under scope).	Unknown	NA	1	640526, 3933203	heliostat	NA
2014_874_ISEGS	Rock Pigeon	ROPI	Incidental	11/25/2014	11/25/2014	Alive, injured	8-24 hours	Singed right flank and belly, undertail coverts, all retrices, primaries, secondaries; head, face and neck singed. Flux effect grade 2 and 3. Largely unable to fly. No obvious trauma to eyes. Has pink band with #7 on left leg.	Scorched or singed	NA	1	640371, 3933498	Solar Concentrating Tower	NA
2014_875_ISEGS	Yellow Warbler	YEWA	Carcass Survey	11/25/2014	11/25/2014	Broken up	3-6 days	partial carcass + feather spot: ~10 flight, ~35 body feathers, 1 leg (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	639911, 3933374	heliostat	NA
2014_876_ISEGS	Savannah Sparrow	SAVS	Incidental	11/25/2014	11/25/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass: stiff body, eyes sunken, no insects, feathers fluffy. No evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	1	639903, 3933553	heliostat	NA
2014_877_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	11/25/2014	11/25/2014	Feather spot	3-6 days	6 retrices, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	640659, 3934425	heliostat	NA
2014_878_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	11/25/2014	11/25/2014	Feather spot	3-6 days	6 retrices, 1 uppertail covert, 5 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640797, 3934378	heliostat	NA
2014_879_ISEGS	Unknown	UNKN	Carcass Survey	11/25/2014	11/25/2014	Broken up	1 month +	Partial carcass: Piece of flesh with body feathers attached. No evidence of singeing (checked under scope).	Unknown	NA	1	640631, 3933272	heliostat	NA
2014_880_ISEGS	Brewer's Blackbird	BRBL	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	3 flight, 40 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637375, 3937685	heliostat	NA
2014_881_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	5 flight, 10 body feathers; clump of flight feathers (feather spot size = small); singed flight feathers; flux effect grade unknown.	Scorched or singed	NA	3	637436, 3937689	heliostat	NA

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2014_882_ISEGS	Mourning Dove	MODO	Carcass Survey	12/2/2014	12/2/2014	Broken up	1 month +	10 flight, ~50 body feathers, piece of skull (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	637484, 3937705	heliostat	NA
2014_883_ISEGS	American Pipit	AMPI	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 days	~20 flight, ~150 body feathers (feather spot size = large); singed feathers; flux effect grade unknown.	Scorched or singed	NA	3	637328, 3937647	heliostat	NA
2014_884_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	4 primaries (feather spot size = small); all feather singed; flux effect grade unknown	Scorched or singed	NA	3	637440, 3937929	Steam Pipe	NA
2014_885_ISEGS	American Pipit	AMPI	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	12 flight, 30 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637181, 3938293	heliostat	NA
2014_886_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	14 flight, 50 body feathers (feather spot size = large); all feathers singed; flux effect grade unknown	Scorched or singed	NA	3	637440, 3937929	Steam Pipe	NA
2014_887_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	12/2/2014	12/2/2014	Feather spot	3-6 days	24 flight, 18 body feathers (feather spot size = small); 2 secondaries singed; flux effect grade unknown	Scorched or singed	NA	3	637328, 3937730	heliostat	NA
2014_888_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	2 flight, ~10 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	636906, 3938056	heliostat	NA
2014_889_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	12/2/2014	12/2/2014	Feather spot	7 days	5 flight, ~40 body feathers (feather spot size = small); rectrice singed, half of unknown flight feathers singed; body feathers singed; flux effect grade unknown	Scorched or singed	NA	3	637416, 3937743	heliostat	NA
2014_890_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	3 weeks	~15 body, 1 flight feathers (feather spot size = small); 3 body feathers singed	Scorched or singed	NA	3	637443, 3937592	heliostat	NA
2014_891_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	16 flight feathers (feather spot size = small); all feathers singed.	Scorched or singed	NA	3	637479, 3937911	Other Machinery	NA
2014_892_ISEGS	Western Meadowlark	WEME	Carcass Survey	12/2/2014	12/2/2014	Broken up	7 days	3 flight, 5 body feathers, clump of feathers with and bone attached (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637374, 3937765	heliostat	NA

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2014_893_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Broken up	2 weeks	partial carcass + feather spot: ~10 body feathers, partial wing with bone (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637326, 3937791	heliostat	NA
2014_894_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	3 flight, 4 body feathers; 1 primary singed, all body feathers singed (feather spot size = small); flux effect grade unknown	Scorched or singed	NA	3	637440, 3937929	Steam Pipe	NA
2014_895_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	25+ body feathers (feather spot size = small); most feathers found singed; flux effect grade unknown	Scorched or singed	NA	3	637472, 3937925	Other Machinery	NA
2014_896_ISEGS	House Finch	HOFI	Carcass Survey	12/2/2014	12/2/2014	Broken up	3-6 days	Partial carcass: partial left wing with bone, 1 secondary, 2 alula underneath; primary covert singed, 2 primaries singed at tips; flux effect grade unknown	Scorched or singed	NA	3	637473, 3937805	heliostat	NA
2014_897_ISEGS	American Pipit	AMPI	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	3 flight, ~50 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	637791, 3938304	heliostat	NA
2014_898_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	2 weeks	25 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637129, 3937363	heliostat	NA
2014_899_ISEGS	Yellow Warbler	YEWA	Carcass Survey	12/2/2014	12/2/2014	Broken up	7 days	partial carcass + feather spot: 3 flight, 30 body feathers, section of skull with singed head feathers (feather spot size = small); flux effect grade unknown	Scorched or singed	NA	3	637479, 3937911	Other Machinery	NA
2014_900_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Feather spot	7 days	3 flight, ~25 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637262, 3937949	heliostat	NA
2014_901_ISEGS	Yellow Warbler	YEWA	Carcass Survey	12/2/2014	12/2/2014	Broken up	2 weeks	partial carcass + feather spot: 3 flight, 20 body feathers, piece of skeleton with attached feathers (feather spot size = small); flight feathers singed and curled; flux effect grade unknown	Scorched or singed	NA	3	637518, 3937910	Other Machinery	NA

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2014_902_ISEGS	Western Meadowlark	WEME	Incidental	12/2/2014	12/4/2014	Broken up	3-6 days	partial carcass + feather spot: partial carcass missing, breast eaten, lower torso, legs, and back attached; tail feathers partially intact, ~20 body feathers (feather spot size = small); no evidence of singeing	Unknown	NA	3	637450, 3937230	heliostat	NA
2014_903_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/2/2014	12/2/2014	Broken up	3-6 days	partial carcass + feather spot: 14 flight, ~30 body feathers, primary has small wing bone attached (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637905, 3937487	heliostat	NA
2014_904_ISEGS	Green-winged Teal	GWTE	Carcass Survey	12/3/2014	12/3/2014	Feather spot	2 weeks	12 flight, 17 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	638969, 3937642	Fencing	NA
2014_905_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/3/2014	12/3/2014	Broken up	2 weeks	partial carcass + feather spot: ~150 body, 14+ rectrices, leg bone, upper half of bill (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	638837, 3938222	Fencing	NA
2014_906_ISEGS	Mourning Dove	MODO	Carcass Survey	12/3/2014	12/3/2014	Feather spot	3 weeks	12 flight feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	641121, 3934241	heliostat	NA
2014_907_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	12/5/2014	12/5/2014	Broken up	2 days	partial carcass: foot and leg with ~5 body feathers attached; no evidence of singeing (checked under scope)	Unknown	NA	3	637375, 3938527	heliostat	NA
2014_908_ISEGS	Western Meadowlark	WEME	Incidental	12/5/2014	12/5/2014	Broken up	2 weeks	partial carcass + feather spot: 6 flight, 30+ body feathers, partial left and right wing with bone (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637782, 3937761	heliostat	NA
2014_909_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	12/5/2014	12/5/2014	Broken up	3 weeks	partial carcass + feather spot: 7 flight, 5 body feathers, partial wing with bone (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637749, 3937897	heliostat	NA

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2014_910_ISEGS	American Coot	AMCO	Incidental	12/5/2014	12/5/2014	Broken up	3-6 days	partial carcass + feather spot: 100+ body feathers in clumps attached by skin (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	3	637844, 3938106	heliostat	NA
2014_911_ISEGS	American Pipit	AMPI	Carcass Survey	12/8/2014	12/8/2014	Feather spot	3-6 days	12 flight, 30 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	2	638658, 3936029	heliostat	NA
2014_912_ISEGS	American Robin	AMRO	Carcass Survey	12/8/2014	12/8/2014	Broken up	7 days	partial left wing with bone, partial tail with feathers joined; 2 loose flight feathers (1 tail, 1 wing); no evidence of singeing (checked under scope)	Unknown	NA	2	638552, 3935908	Other	NA
2014_913_ISEGS	American Pipit	AMPI	Carcass Survey	12/8/2014	12/8/2014	Feather spot	3 weeks	8 flight, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	2	638756, 3936078	heliostat	NA
2014_914_ISEGS	American Pipit	AMPI	Carcass Survey	12/8/2014	12/8/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: eyes gone, but plumage does not look weathered; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	638802, 3935924	heliostat	NA
2014_915_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/8/2014	12/8/2014	Feather spot	2 days	10+ body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	2	639679, 3935806	Fencing	NA
2014_916_ISEGS	American Kestrel	AMKE	Carcass Survey	12/8/2014	12/8/2014	Broken up	1 month +	partial carcass + feather spot: 4 body feathers, part of right wing with bone, part of right scapulars, secondaries (feather spot size = small); all primaries in dark barred areas and secondaries, plus tail feathers singed.	Scorched or singed	NA	2	638319, 3935101	heliostat	NA
2014_917_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/9/2014	12/9/2014	Broken up	1 month +	partial carcass + feather spot: ~100 body feathers, 2 complete wings, head to neck vertebrae, pieces of skin and bits of bone (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	2	637757, 3936579	heliostat	NA
2014_918_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	12/9/2014	12/9/2014	Feather spot	7 days	10 tail and ~100 body feathers, 2 partial wings (no bone) (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	2	638170, 3936134	heliostat	NA

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2014_919_ISEGS	Western Meadowlark	WEME	Carcass Survey	12/9/2014	12/9/2014	Broken up	7 days	partial carcass: partial wing with some skin and connective tissue, 1 flight, 1 body feather; no evidence of singeing (checked under scope)	Unknown	NA	2	638673, 3935430	heliostat	NA
2014_920_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	12/9/2014	12/9/2014	Broken up	7 days	partial carcass + feather spot: ~30 body feathers, bone with feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	2	638783, 3935508	heliostat	NA
2014_921_ISEGS	Northern Harrier	NOHA	Carcass Survey	12/11/2014	12/11/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	3 weeks	Whole carcass: eyes gone, ant scavenged; all tail feathers and 90% of wing feathers singed. ~90% of head and body feathers singed; flux effect grade 2 and 3.	Scorched or singed	NA	2	639154, 3935143	heliostat	NA
2014_922_ISEGS	Brewer's Blackbird	BRBL	Carcass Survey	12/11/2014	12/11/2014	Feather spot	3-6 days	~25 body, ~3 flight feathers (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	2	638823, 3935085	heliostat	NA
2014_923_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	12/11/2014	12/11/2014	Feather spot	3-6 days	~25 flight, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	2	638948, 3935123	heliostat	NA
2014_924_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/15/2014	12/15/2014	Feather spot	7 days	300+ body feathers, 10 retrices and 35 remiges (feather spot = large). No evidence of singeing (checked under scope).	Unknown	NA	1	640719, 3932672	heliostat	NA
2014_925_ISEGS	Eared Grebe	EAGR	Carcass Survey	12/15/2014	12/15/2014	Broken up	3-6 days	partial carcass missing head and with wing bones exposed; no evidence of singeing (checked under scope).	Unknown	NA	1	640301, 3933642	heliostat	NA
2014_926_ISEGS	Unknown Swallow	UNKN	Carcass Survey	12/15/2014	12/15/2014	Feather spot	2 weeks	2 secondaries, 2 greater coverts connected by small amount of flesh (feather spot size = small); no evidence of singeing (checked under scope).	Unknown	NA	1	640318, 3933693	heliostat	NA
2014_927_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/15/2014	12/15/2014	Feather spot	2 weeks	2 retrices, 2 remiges, 100+ body feathers (feather spot = large); no evidence of singeing (checked under scope)	Unknown	NA	1	639348, 3932835	Fencing	NA
2014_928_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/15/2014	12/15/2014	Broken up	2 weeks	feather spot and partial carcass; 2 retrices, undertail coverst, 20+ body and flight feathers, lower piece of bill (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640728, 3932724	heliostat	NA

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2014_929_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	12/16/2014	12/16/2014	Dead, fresh (eyes moist)	8-24 hours	Whole carcass: fresh plumage; eyes present but sunken, not in rigor; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	1	639685, 3934327	heliostat	NA
2014_930_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	12/16/2014	12/16/2014	Broken up	2 weeks	Partial carcass: body missing head, most body feathers missing, all flight feathers missing; no evidence of singeing (checked under scope).	Unknown	NA	1	639897, 3933213	heliostat	NA
2014_931_ISEGS	Mourning Dove	MODO	Carcass Survey	12/16/2014	12/16/2014	Feather spot	1 month +	~15 flight; ~15 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640961, 3934318	heliostat	NA
2014_932_ISEGS	American Pipit	AMPI	Carcass Survey	12/16/2014	12/16/2014	Feather spot	2 weeks	23 flight, 10 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637910, 3938327	heliostat	NA
2014_933_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	12/17/2014	12/17/2014	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass: eyes sunken, maggots in torso, right side of head scavenged, missing right leg, 1/2 of left leg; no evidence of singeing (checked under scope)	Unknown	NA	3	636553, 3938103	heliostat	NA
2014_934_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	12/17/2014	12/17/2014	Broken up	2 weeks	partial carcass; right wing, head with neck bones, 2 body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	636579, 3938205	heliostat	NA
2014_935_ISEGS	Mourning Dove	MODO	Carcass Survey	12/17/2014	12/17/2014	Broken up	1 month +	partial carcass + feather spot: torso, skull and ~20 body, 6 flight feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	636586, 3938219	heliostat	NA
2014_936_ISEGS	Rock Pigeon	ROPI	Carcass Survey	12/17/2014	12/17/2014	Broken up	1 month +	Partial carcass + feather spot: both wings with bone and connective tissue; partial keel and back; 11 body and 9 tail feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	636604, 3938256	heliostat	NA
2014_937_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	12/17/2014	12/17/2014	Feather spot	3 weeks	7 flight, ~50 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	639441, 3932810	heliostat	NA
2014_938_ISEGS	White-Crowned Sparrow	WCSP	Incidental	12/17/2014	12/17/2014	Feather spot	2 weeks	100+ body, 46 flight feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	639415, 3932805	heliostat	NA

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2014_939_ISEGS	Varied Thrush	VATH	Carcass Survey	12/18/2014	12/18/2014	Broken up	2 weeks	partial carcass + feather spot: 50 body feathers, 18 flight feathers; internal viscera, and partial right and left wings with bone (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	637361, 3937752	heliostat	NA
2014_940_ISEGS	Western Meadowlark	WEME	Carcass Survey	12/18/2014	12/18/2014	Broken up	2 weeks	partial carcass + feather spot: 9 flight, 200+ body feathers, partial wings attached by bone; neck, back, rib, keel, and all leg bones (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	640341, 3933159	heliostat	NA
2014_941_ISEGS	Mourning Dove	MODO	Carcass Survey	12/18/2014	12/18/2014	Broken up	3 weeks	partial carcass: torso with back and keel and both legs; no evidence of singeing (checked under scope)	Unknown	NA	1	640659, 3932813	heliostat	NA
2014_942_ISEGS	Unknown passerine	UNKN	Carcass Survey	12/18/2014	12/18/2014	Broken up	7 days	partial carcass: right wing bones, right leg, right side of carcass; no evidence of singeing (checked under scope)	Unknown	NA	1	640851, 3932931	heliostat	NA
2014_943_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	12/18/2014	12/18/2014	Feather spot	7 days	36 flight, ~100 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	641144, 3934190	heliostat	NA
2014_944_ISEGS	Unknown Sparrow	UNKN	Incidental	12/18/2014	12/18/2014	Broken up	3-6 days	partial carcass + feather spot: 50+ body feathers (feather spot size = large), partial left wing; no evidence of singeing (checked under scope)	Unknown	NA	1	640414, 3933015	heliostat	NA
2014_945_ISEGS	Unknown	UNKN	Carcass Survey	12/22/2014	12/22/2014	Broken up	1 month +	connected bones only: part of pelvic girdle, part of spine and neck, left femur, part of left tarsus; no evidence of singeing.	Unknown	NA	3	638083, 3937386	heliostat	NA
2014_946_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	12/22/2014	12/22/2014	Broken up	2 days	partial carcass + feather spot: 4 rectrices, 6 primaries, secondaries, 300+ body feathers; both mandibles, with piece of skull, partial right and left wing (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	638606, 3938547	heliostat	NA
2014_947_ISEGS	Unknown Warbler	UNKN	Carcass Survey	12/22/2014	12/22/2014	Feather spot	2 weeks	9 flight feathers, 14 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637446, 3937595	Heliostat	NA

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2014_948_ISEGS	Unknown passerine	UNKN	Incidental	12/22/2014	12/22/2014	Feather spot	3-6 days	7 tail feathers stuck in clump with skin only, 4 body feathers (feather spot size = small); evidence of singeing (checked under scope)	Unknown	NA	3	637025, 3937865	Heliostat	NA
2014_949_ISEGS	Unknown Sparrow	UNKN	Carcass Survey	12/22/2014	12/22/2014	Feather spot	3 weeks	3 flight, 50 body feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	637079, 3937532	Heliostat	NA
2014_950_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	12/23/2014	12/23/2014	Dead, fresh (eyes moist)	0-8 hours	Whole carcass: fresh, in partial rigor, bill tips has signs of trauma evidence of collision; no evidence of singeing (checked under scope).	Collision with solar panel/heliostat	NA	3	638799, 3938407	Heliostat	NA
2014_951_ISEGS	Varied Thrush	VATH	Carcass Survey	12/23/2014	12/23/2014	Broken up	2 weeks	partial carcass + feather spot: 10 body, 5 flight feathers, carcass missing left leg, head and neck, parts of right wing (feather spot size = small); no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	636752, 3937798	Heliostat	NA
2014_952_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	12/23/2014	12/23/2014	Feather spot	2 weeks	40 body, 24 flight feathers (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	3	637951, 3938025	heliostat	NA
2014_953_ISEGS	Western Meadowlark	WEME	Carcass Survey	12/23/2014	12/23/2014	Broken up	2 weeks	partial carcass + feather spot: 2 partial wings with bone, 2 wing feathers, 2 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637613, 3938460	heliostat	NA
2014_954_ISEGS	Violet-green Swallow	VGSW	Incidental	12/29/2014	12/29/2014	Mummified	1 month +	Whole carcass: singed on wings; flux effect grade 1	Scorched or singed	NA	2	638620, 3935848	Solar Concentrating Tower	NA
2014_955_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	12/31/2014	12/31/2014	Broken up	7 days	partial carcass + feather spot: 3 flight, ~100 body feathers (feather spot size = large), small pieces of skull; no evidence of singeing (checked under scope)	Unknown	NA	2	638196, 3935884	heliostat	NA
2014_956_ISEGS	Pied-billed Grebe	PBGR	Incidental	12/31/2014	12/31/2014	Broken up	3 weeks	partial carcass + feather spot: 35 flight, 80 body feathers (feather spot size = large), left wing bones, partial ribcage, corticoid, clavicle and part of sternum; no evidence of singeing (checked under scope)	Unknown	NA	2	639077, 3935386	heliostat	NA

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2015_001_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	1/5/2015	1/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3 weeks	partial carcass: carcass missing head; singeing evident on outermost primaries of left wing; no other feathers singed; flux effect grade 1	Scorched or singed	NA	1	640404, 3933501	Auxiliary Boiler	NA
2015_002_ISEGS	Brown-headed cowbird	BHCO	Incidental	1/5/2015	1/5/2015	Broken up	1 month +	Partial carcass: most of wing including primaries, secondaries, greater coverts; no evidence of singeing (checked under scope)	Unknown	NA	1	639726, 3933731	heliostat	NA
2015_003_ISEGS	Greater Roadrunner	GRRO	Incidental	1/5/2015	1/5/2015	Feather spot	7 days	10+ rectrices, 120 primaries, undertail coverts, 150+ body feathers (feather spot size = large); no evidence of singeing	Unknown	NA	2	639221, 3936094	heliostat	NA
2015_004_ISEGS	House Finch	HOFI	Carcass Survey	1/5/2015	1/5/2015	Broken up	3 weeks	partial carcass + feather spot: 20 body, 9 flight feathers, part of wings, part of tail; no evidence of singeing (checked under scope)	Unknown	NA	1	640983, 3933576	heliostat	NA
2015_005_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	1/5/2015	1/5/2015	Feather spot	7 days	1 secondary, 1 wing covert, 20 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	639347, 3933295	Fencing	NA
2015_006_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	1/5/2015	1/5/2015	Broken up	3-6 days	partial carcass + feather spot: 120 rectrices, 20+ primaries, secondaries, undertail coverts, ~250 body feathers; piece of skull and bill (feather spot size = large); no evidence of singeing (checked under scope)	Unknown	NA	1	640253, 3932660	Fencing	NA
2015_007_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	1/5/2015	1/5/2015	Feather spot	2 weeks	2 rectrices, 2 primaries, 10 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	640519, 3934587	Fencing	NA
2015_008_ISEGS	Mourning Dove	MODO	Carcass Survey	1/7/2015	1/7/2015	Mummified	1 month +	whole carcass minus head, desiccated and hollow; no evidence of singeing (checked under scope)	Unknown	NA	1	639649, 3932730	heliostat	NA
2015_009_ISEGS	Mourning Dove	MODO	Carcass Survey	1/8/2015	1/8/2015	Feather spot	1 month +	1 retrix, 2 secondaries, and 15+ body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	1	641113, 3934106	heliostat	NA

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2015_010_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	1/13/2015	1/13/2015	Feather spot	3-6 days	12 rectrices, 20+ primaries/secondaries, 50 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637909, 3938271	heliostat	NA
2015_011_ISEGS	American Robin	AMRO	Carcass Survey	1/13/2015	1/13/2015	Feather spot	2 weeks	5 rectrices, 1 wing flight feather, 5 undertail coverts (feather spot size = small); no evidence of singeing (checked under scope)	Unknown	NA	3	637709, 3937983	heliostat	NA
2015_012_ISEGS	American Pipit	AMPI	Carcass Survey	1/13/2015	1/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: eyes present, fluid leaking, maggots present; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637365, 3937632	heliostat	NA
2015_013_ISEGS	Unknown passerine	UNKN	Carcass Survey	1/13/2015	1/13/2015	Feather spot	3 weeks	15 body feathers (feather spot size = small); no evidence of singeing (checked under scope)	Scorched or singed	NA	3	637433, 3937957	Project Building	NA
2015_014_ISEGS	Unknown passerine	UNKN	Carcass Survey	1/15/2015	1/15/2015	Feather spot	3-6 days	65 body feathers, 6 secondaries, and 2 primaries (feather spot size = large); no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	3	637786, 3937829	heliostat	NA
2015_015_ISEGS	American Pipit	AMPI	Carcass Survey	1/16/2015	1/16/2015	Broken up	7 days	right wing attached to keel; no evidence of singeing (checked under scope)	Unknown	NA	3	637254, 3938501	heliostat	NA
2015_016_ISEGS	American Pipit	AMPI	Carcass Survey	1/20/2015	1/20/2015	Feather spot	3 weeks	23 body, 8 primary/secondary, 2 clumps of body feathers; no evidence of singeing (checked under scope).	Unknown	NA	2	639037, 3936343	heliostat	NA
2015_017_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	1/22/2015	1/22/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: keratin of bill damaged; no evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	637735, 3935387	heliostat	NA
2015_018_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	1/26/2015	1/26/2015	Mummified	1 month +	Whole carcass; singed rectrices and singed on top of head	Scorched or singed	NA	1	640345, 3933564	ACC Building	NA
2015_019_ISEGS	Unknown passerine	UNKN	Carcass Survey	1/26/2015	1/26/2015	Broken up	3 weeks	~15 body feathers in 2 clumps with piece of bone and guts (feather spot size = small); several body feathers singed	Scorched or singed	NA	1	640372, 3933502	Other Machinery	NA
2015_020_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	1/26/2015	1/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass; desiccated; carcass covered in ants; no evidence of singeing (checked under scope)	Unknown	NA	1	640933, 3932719	heliostat	NA

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2015_021_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	1/28/2015	1/28/2015	Dead, fresh (eyes moist)	8-24 hours	whole carcass; damaged keratin on lower mandible	Collision with solar panel/heliostat	NA	1	639853, 3932673	heliostat	NA
2015_022_ISEGS	Unknown	UNKN	Incidental	1/28/2015	NA	Feather spot	1 month +	bones of left wing; bones are separated; ~5 body and several flight feathers (feather spot size = small)	Unknown	NA	1	639414, 3932663	fencing	NA
2015_023_ISEGS	White-Crowned Sparrow	WCSP	Incidental	2/4/2015	2/5/2015	Feather spot	2 weeks	6 retrices, 2 uppertail coverts, 2 undertail coverts, ~25 body feathers (feather spot size = small); no evidence of singeing (checked under dissecting scope).	Unknown	NA	3	637383, 3938351	heliostat	NA
2015_024_ISEGS	Western Meadowlark	WEME	Incidental	2/10/2015	2/10/2015	Feather spot	7 days	80 body feathers, 5 flight feathers (feather spot size = large); no evidence of singeing (checked under scope).	Unknown	NA	2	638920, 3936355	heliostat	NA
2015_025_ISEGS	Savannah Sparrow	SAVS	Incidental	2/10/2015	2/10/2015	Broken up	1 month +	partial torso including R leg and partial R wing; no evidence of singeing (checked under scope).	Unknown	NA	2	638144, 3935461	heliostat	NA
2015_026_ISEGS	Rock Pigeon	ROPI	Carcass Survey	2/11/2015	2/11/2015	Broken up	1 month +	partial carcass + feather spot: 6 flight, ~40 body feathers; partial left wing with ulna & radius, dried skin and feathers; no evidence of singeing (checked under scope).	Unknown	NA	2	637808, 3936703	heliostat	NA
2015_027_ISEGS	Western Meadowlark	WEME	Incidental	2/16/2015	2/16/2015	Broken up	1 month +	partial carcass: part of right wing (primaries with coverts); no evidence of singeing (checked under scope)	Unknown	NA	1	639924, 3933108	heliostat	NA
2015_028_ISEGS	House Finch	HOFI	Carcass Survey	2/17/2015	2/17/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: all primaries, secondaries, and retrices singed and curled; flux effect grade 2, 3	Scorched or singed	NA	1	640411, 3933551	ACC Building	NA
2015_029_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	2/17/2015	2/17/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass: tail singed off, flight feathers, top of head, axillaries and breast singed; flux effect grade 2, 3	Scorched or singed	NA	1	640362, 3933536	ACC Building	NA
2015_030_ISEGS	Unknown passerine	UNKN	Carcass Survey	2/17/2015	2/17/2015	Broken up	1 month +	partial left wing with primaries; no evidence of singeing (checked under scope)	Unknown	NA	1	640378, 3933488	Project Building	NA

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2015_031_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	2/17/2015	2/17/2015	Broken up	2 weeks	partial carcass + feather spot: 12 rectrices, 1uppertail covert; humerus and part of tibiotarsus, 5 undertail coverts, ~50 body feathers; singed on rectrices; flux effect grade unknown	Scorched or singed	NA	1	640380, 3933496	Project Building	NA
2015_032_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	2/17/2015	2/17/2015	Mummified	1 month +	whole carcass: most bones, most body and flight feathers present, but all flesh and skin gone; 2 greater coverts and 3 rectrices singed; flux effect grade unknown	Scorched or singed	NA	1	640322, 3933491	Project Building	NA
2015_033_ISEGS	Unknown	UNKN	Carcass Survey	2/24/2015	2/24/2015	Feather spot	1 month +	4 flight feathers; some body feathers; most body feathers and all flight feathers singed; flux effect grade unknown	Scorched or singed	NA	3	637462, 3937934	EDT / IDT pit	NA
2015_034_ISEGS	Unknown	UNKN	Carcass Survey	2/24/2015	2/24/2015	Feather spot	1 month +	15 body feathers; 10 body feathers singed; flux effect grade unknown	Scorched or singed	NA	3	637464, 3937931	EDT / IDT pit	NA
2015_035_ISEGS	Common Raven	CORA	Incidental	2/26/2015	2/26/2015	Alive, injured	8-24 hours	all flight feathers, wing and tail singed, left face singed; eye half closed; left breast feathers singed down to skin; back singed	Scorched or singed	NA	1	639075, 3934946	Admin bldg water tank	NA
2015_036_ISEGS	Common Raven	CORA	Incidental	2/26/2015	2/26/2015	Alive, injured	8-24 hours	severe singeing on head and body.	Scorched or singed	3	1	641303, 3934559	Other	NA
2015_037_ISEGS	Green-winged Teal	GWTE	Incidental	2/27/2015	2/27/2015	Feather spot	3 weeks	100+ body feathers; no evidence of singeing (checked under scope)	Unknown	NA	3	636514, 3937518	Heliostat	NA
2015_038_ISEGS	House Finch	HOFI	Carcass Survey	3/2/2015	3/2/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	All flight feathers, head, back, breast singed. All flight feathers including rectrices curled.	Scorched or singed	3	2	638642, 3935890	ACC Building	NA
2015_039_ISEGS	Rock Pigeon	ROPI	Incidental	3/2/2015	3/2/2015	Broken up	1 month +	Remains are parts of right wing: 6 primaries, 5 coverts, 1 underwing covert. No singeing observed.	Unknown	NA	2	638702, 3935928	Project Building	NA
2015_040_ISEGS	Unknown passerine	UNKN	Incidental	3/2/2015	3/2/2015	Mummified	1 month +	Torso with attached wing and leg, pin feathers apparent throughout, evident juvenile. No singeing observed. Overall size, and size of intact foot show evidence that bird is passerine. Carcass dried.	Unknown	NA	1	640384, 3933533	Solar Concentrating Tower	NA

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2015_041_ISEGS	Wilson's Snipe	WISN	Carcass Survey	3/3/2015	3/3/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found, 4 feet from heliostat. No singeing observed. Impact marks present on nearest heliostat matching size and shape of bird. Photo documentation of these marks recorded.	Collision with solar panel/heliostat	NA	2	638579, 3936956	heliostat	NA
2015_042_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	3/5/2015	3/5/2015	Feather spot	3 weeks	3 tail feathers, 20+ body feathers. No singeing observed.	Unknown	NA	2	637891, 3936849	heliostat	NA
2015_043_ISEGS	Mourning Dove	MODO	Incidental	3/6/2015	3/6/2015	Mummified	1 month +	Whole body, some tail feathers missing. Completely desiccated, no eyes, 4 maggots present. No singe.	Unknown	NA	1	640362, 3933555	ACC Building	NA
2015_044_ISEGS	Tree Swallow	TRES	Incidental	3/10/2015	3/10/2015	Feather spot	0-8 hours	20+ feathers consisting of primaries, secondaries, and body feathers. Individual was observed being singed in real time and fell to ground. At this point it was relocated and collected. Feathers were curled and singed.	Scorched or singed	2	3	637419, 3937938	Light Pole	NA
2015_045_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	3/11/2015	3/11/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, semi-fresh. Eyes not present, active maggots present. No obvious external injury, collision suggested by proximity to heliostat, but no imprint mark observed on heliostat. No singe present.	Collision with solar panel/heliostat	NA	1	640151, 3932715	heliostat	NA
2015_046_ISEGS	Western Meadowlark	WEME	Incidental	3/12/2015	3/12/2015	Broken up	8-24 hours	Carcass intact excepting lower bill broken off, lower foot missing on both legs. All of these missing parts show clean breaks at point of separation. Carcass pliable, with no discernable smell at time of collection, no sign of rigor mortis, eyes present b	Collision with solar panel/heliostat	NA	1	640402, 3934020	heliostat	NA

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2015_047_ISEGS	Green-winged Teal	GWTE	Carcass Survey	3/16/2015	3/16/2015	Broken up	7 days	Primarily feather spot, accompanied by part of leg. >500 body feathers. Detached leg with small amount of dried skin and feathers. Heliostat imprint observed. No singe. Feather spot= large	Collision with solar panel/heliostat	NA	3	636975, 3936896	Heliostat	Updated 'Condition': Broken Up. Remainder of carcass was found on 03/24/2015 during fatality surveys in two different spots ~ 65m from initial fatality discovery location of 2015_047_ISEG S. Determined to be the same individual based on feather type, male plumage, feather wear, and corresponding anatomical parts, specifically matching set of legs (left and right) with no duplicate parts of bird found. Updated 03/25/2015 CJM
2015_048_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	3/16/2015	3/16/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass. Damaged keratin on upper mandible. Eyes sunken and desiccated. Maggots found in carcass. No evidence of singeing	Collision with solar panel/heliostat	NA	3	636848, 3937212	Heliostat	NA
2015_049_ISEGS	Rufous Hummingbird	RUHU	Incidental	3/16/2015	3/16/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singeing on head, rump, and 2 Tail feathers. Flux grade effect 1,3. Eyes present and moist, body pliable with no rigor mortis.	Scorched or singed	1	3	637510, 3937910	Auxiliary Boiler	NA
2015_050_ISEGS	Unknown passerine	UNPA	Carcass Survey	3/17/2015	3/17/2015	Broken up	3 weeks	6 retrices, 10+ undertail coverts, all held together by small connecting portion of flesh/carcass. No singe.	Unknown	NA	3	637255, 3938495	heliostat	NA
2015_051_ISEGS	Black-Throated Sparrow	BTSP	Incidental	3/18/2015	3/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass, no apparent trauma. No singe.	Unknown	NA	NA	638029, 3935030	Transmission Tower	NA

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2015_052_ISEGS	Greater Roadrunner	GRRO	Incidental	3/19/2015	3/18/2015	Mummified	1 month +	Whole carcass. Bird was discovered inside heliostat worm drive area. Body is contorted and pressed into the shape of the surrounding worm drive, with broken leg, evidencing collision with/crushing by mechanical operation of heliostat assembly. No imprint	Collision with solar panel/heliostat	NA	2	639257, 3936623	heliostat	NA
2015_053_ISEGS	Eared Grebe	EAGR	Incidental	3/21/2015	3/21/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Broken bill, bleeding, and proximity to project buildings as evidence of impact. Eyes moist and no sign of rigor mortis. No singe.	Collision (other)	NA	1	640396, 3933500	Solar Concentrating Tower	NA
2015_054_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	3/23/2015	3/23/2015	Broken up	1 month +	Right wing found. Feathers very weathered. No evidence of singeing.	Unknown	NA	3	637453, 3937919	Steam Pipe	NA
2015_055_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	3/24/2015	3/24/2015	Broken up	7 days	Whole wing, leg, and clumps of breast feathers found. Evidence of singeing on flight and body feathers.	Scorched or singed	1	2	638498, 3935707	Heliostat	NA
2015_056_ISEGS	Black-tailed Gnatcatcher	BTGN	Carcass Survey	3/24/2015	3/24/2015	Broken up	7 days	Partially intact right wing (no bone), partial tail attached to piece of flesh, 50+ body feathers. No evidence of singeing.	Unknown	NA	3	636681, 3939066	Heliostat	NA
2015_057_ISEGS	American Wigeon	AMWI	Carcass Survey	3/25/2015	3/25/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass, no evidence of singeing, no evidence of collision.	Unknown	NA	2	639199, 3935507	Heliostat	NA
2015_058_ISEGS	Mourning Dove	MODO	Carcass Survey	3/25/2015	3/25/2015	Broken up	1 month +	9 coverts, 30+ body feathers with pieces of flesh holding feathers together.	Unknown	NA	1	640544, 3933385	heliostat	NA
2015_059_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	3/25/2015	3/25/2015	Feather spot	2 weeks	15 flight feathers, > 500 body feathers.	Unknown	NA	1	640736, 3934579	Fencing	NA
2015_060_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	3/26/2015	3/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, eyes sunken. Tail and upper tail coverts broke from carcass during processing, but were intact at time of discovery. No singe.	Unknown	NA	1	640794, 3934521	heliostat	NA
2015_061_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	3/27/2015	3/27/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass, eyes sunken. Tail and upper tail coverts broke from carcass during processing, but were intact at time of discovery. No singe.	Unknown	NA	1	640073, 3933996	heliostat	NA

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2015_062_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	3/27/2015	3/27/2015	Broken up	3-6 days	Partial carcass, torso, wings, and tail feathers recovered. No singe.	Unknown	NA	1	640547, 3933960	heliostat	NA
2015_063_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	3/27/2015	3/27/2015	Alive, injured	0-8 hours	Over 50% of wing and tail feathers showing clear signs of singeing and curling.	Scorched or singed	3,3	3	637417, 3937963	Power Block	NA
2015_064_ISEGS	Ruby-crowned Kinglet	RCKI	Incidental	3/28/2015	3/28/2015	Dead, fresh (eyes moist)	0-8 hours	Grade 3 flux curling and charring. Majority of feathers with singe. No sign of impact trauma.	Scorched or singed	3	2	638598, 3935870	Power Block	NA
2015_065_ISEGS	Lesser Goldfinch	LEGO	Incidental	3/29/2015	3/29/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass at discovery. Scavenged pre-collection. Charring and curling on contour and flight feathers. No other collision trauma.	Scorched or singed	3	2	638669, 3935849	Power Block	NA
2015_066_ISEGS	Mourning Dove	MODO	Carcass Survey	3/30/2015	3/30/2015	Broken up	1 month +	20+ body feathers/tail feathers with evidence of chewing. Skin attached.	Unknown	NA	3	638926, 3937724	Heliostat	NA
2015_067_ISEGS	Green-winged Teal	GWTE	Carcass Survey	3/30/2015	3/30/2015	Feather spot	2 weeks	Body feathers and down feathers ~125 found.	Unknown	NA	3	638364, 3938987	heliostat	NA
2015_068_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	3/30/2015	3/30/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found on power block. Majority of flight feathers curled and singed. Body contour feathers also show singe. Some feathers scattered in immediate area. Flux grade 3. No sign of collision trauma.	Scorched or singed	3	3	637511, 3938014	Power Block	NA
2015_069_ISEGS	Tree Swallow	TRES	Carcass Survey	3/30/2015	3/30/2015	Dead, fresh (eyes moist)	0-8 hours	Curling and singeing on over 90% of dorsal side. Carcass intact.	Scorched or singed	1	3	637491, 3937946	ACC Building	NA
2015_070_ISEGS	Verdin	VERD	Carcass Survey	3/30/2015	3/30/2015	Dead, fresh (eyes moist)	8-24 hours	Singe at outer tips of primaries on both wings, difficult to discern naked eye but visible through dissecting scope. Grade 1 flux effect.	Scorched or singed	1	3	637463, 3937953	ACC Building	NA
2015_071_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	3/31/2015	3/31/2015	Dead, fresh (eyes moist)	8-24 hours	Flux grade 3, flight and body feathers curled and singed. Whole carcass found.	Scorched or singed	3	2	638641, 3935893	ACC Building	NA
2015_072_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	3/31/2015	3/31/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Majority of flight and body feathers show singe and curling, flux grade 3.	Scorched or singed	3	2	638654, 3935891	ACC Building	NA
2015_073_ISEGS	Cooper's Hawk	COHA	Incidental	3/31/2015	3/31/2015	Mummified	1 month +	Carcass with small amount (approximately 20) small contour feathers detached and in immediate area. Carcass mummified and completely desiccated. Signs of past scavenging are present. Age and condition of carcass make cause of death diagnosis difficult to	Unknown	NA	1	639677, 3933773	heliostat	NA

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2015_074_ISEGS	Eared Grebe	EAGR	Incidental	3/31/2015	3/31/2015	Broken up	1 month +	Head, spine pieces, downy body feathers (approx 130) found incidentally by workers. Dessicated skull with few feathers. No singe or visible impact trauma.	Unknown	NA	NA	639868, 3934843	Project Building	NA
2015_075_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	3/31/2015	3/31/2015	Feather spot	3-6 days	9 tail feathers, 39 body feathers. FS = Large. No sign of singe or collision trauma.	Unknown	NA	3	636358, 3937483	heliostat	NA
2015_076_ISEGS	Cinnamon Teal	CITE	Carcass Survey	4/1/2015	4/1/2015	Feather spot	3-6 days	Large feather spot. Heliostat imprint of matching size found. ~400 body feathers found in addition to small flight feathers. No evidence of singeing.	Collision with solar panel/heliostat	NA	1	640817, 3934584	Fencing	NA
2015_077_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	4/2/2015	4/2/2015	Feather spot	3-6 days	Large feather spot. 3 retricies, 3 trailing secondaries, and 50+ body feathers. No singe	Unknown	NA	1	639509, 3934075	Heliostat	NA
2015_078_ISEGS	Cliff Swallow	CLSW	Carcass Survey	4/6/2015	4/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass found. Flux grade 2 & 3, flight and body feathers curled and singed.	Scorched or singed	3	3	637487, 3937970	ACC Building	NA
2015_079_ISEGS	Unknown Swallow	UNSW	Carcass Survey	4/6/2015	4/6/2015	Broken up	7 days	Broken up partial carcass- body feathers attached to dried skin and right leg. No singe.	Unknown	NA	3	637520, 3937926	Auxiliary Boiler	NA
2015_080_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/6/2015	4/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Flux grade 2 & 3, flight and body feathers curled and singed.	Scorched or singed	3,3	3	637432, 3937950	Project Building	NA
2015_081_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/6/2015	4/6/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Flux grade 2 & 3, flight and body feathers curled and singed.	Scorched or singed	3,3	3	637433, 3937967	Steam Pipe	NA
2015_082_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	4/6/2015	4/6/2015	Broken up	3-6 days	Broken up partial wing with exposed bone. Evidence of singeing on primaries and secondaries on wing.	Scorched or singed	2	3	637399, 3938000	Ground	NA
2015_083_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/6/2015	4/6/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass with curled feathers, no evidence of collision. Singed.	Scorched or singed	3,3	3	637589, 3937951	heliostat	NA
2015_084_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/6/2015	4/6/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass with Grade 2&3 flux evident. Flight and contour feathers curled. No evidence of collision.	Scorched or singed	3,3	3	637584, 3937938	heliostat	NA
2015_085_ISEGS	Unknown passerine	UNPA	Carcass Survey	4/7/2015	4/7/2015	Mummified	1 month +	Evidence of curling on all major flight feathers. Additional singe on head, back, breast, flanks. Singed.	Scorched or singed	3,3	2	638688, 3935883	ACC Building	NA

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2015_086_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	4/7/2015	4/7/2015	Dead, fresh (eyes moist)	8-24 hours	Evidence of singeing on back, breast, side, and top of head. Flight feathers singed and curled, retrices singed and missing.	Scorched or singed	3,3	2	638672, 3935894	ACC Building	NA
2015_087_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	4/7/2015	4/7/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Singe on head, back, flank, and flight feathers, specifically in retrices.	Scorched or singed	1,3	2	638583, 3935891	Water Tank Pipe	NA
2015_088_ISEGS	American Kestrel	AMKE	Carcass Survey	4/7/2015	4/7/2015	Feather spot	2 weeks	Feather spot = Large. 3 Retrices, 19 body feathers. Tail curled from singe, body feathers singed (Flux grade 3).	Scorched or singed	3	2	638583, 3935889	Water Tank Pipe	NA
2015_089_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	4/8/2015	4/8/2015	Broken up	3-6 days	Sternum with exposed bone and dried muscle, partial wing, dried stomach, and feathers found (3 secondaries, approx 150 body feathers). No singe or collision evidence found.	Unknown	NA	1	640161, 3933428	heliostat	NA
2015_090_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	4/8/2015	4/8/2015	Broken up	8-24 hours	Carcass with partial tail. Bill shows convex warping, possibly from collision, post-singe. Entire dorsal side and head singed. Tips of flight feathers singed. Flux grade 1 & 3.	Scorched or singed	3	1	640360, 3933534	ACC Building	NA
2015_091_ISEGS	Horned Lark	HOLA	Incidental	4/9/2015	4/9/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass intact. Fledgling bird, no trauma or sign of scavenging. No singe.	Unknown	NA	2	638113, 3936980	heliostat	Updated 'How Found': found incidentally outside outer heliostat 5-acre plot after completing standard survey. 07/15/2015 CJM
2015_092_ISEGS	Horned Lark	HOLA	Incidental	4/9/2015	4/9/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass intact. Fledgling bird, no trauma or sign of scavenging. No singe.	Unknown	NA	2	638113, 3936980	Heliostat	Updated 'How Found': found incidentally outside outer heliostat 5-acre plot after completing standard survey. 07/15/2015 CJM
2015_093_ISEGS	American Robin	AMRO	Incidental	4/9/2015	4/9/2015	Broken up	2 weeks	Partial carcass (wing). All primaries and secondaries intact on right wing. No evidence of collision. No singe.	Unknown	NA	1	639785, 3932990	heliostat	NA

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2015_094_ISEGS	Cactus Wren	CACW	Carcass Survey	4/9/2015	4/9/2015	Broken up	1 month +	Portions of skull and skeleton found with feather spot (~55 feathers) at collapsed nest. Nest inside worm drive of heliostat. Skull shows signs of impact, as does nest, suggesting crushing by heliostat assembly. ROPI feathers found at nest appear to have	Collision with solar panel/heliostat	NA	2	639642, 3935412	Heliostat	NA
2015_095_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	4/12/2015	4/12/2015	Alive, injured	0-8 hours	Singed feathers on both wings, tail, dorsal contour feathers, and right side of face. Flux grades 2 & 3. Bird unable to fly.	Scorched or singed	3,3	3	637408, 3937879	Solar Concentrating Tower	NA
2015_096_ISEGS	Bank Swallow	BANS	Incidental	4/12/2015	4/12/2015	Alive, injured	0-8 hours	Singed on both wings, tail, and dorsal contour feathers. Singe grade 2 & 3. Bird alive when found.	Scorched or singed	3,3	3	637408, 3937879	Project Building	NA
2015_097_ISEGS	American Kestrel	AMKE	Carcass Survey	4/13/2015	4/13/2015	Alive, injured	0-8 hours	Singed primaries, secondary coverts, tail feathers, body and head feathers, flux grade 2 & 3. Unable to fly. At time of capture the bird had sufficient fat (breast) and water stores.	Scorched or singed	3,3	3	637404, 3938505	heliostat	NA
2015_098_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/13/2015	4/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Intact carcass, singeing on contour feathers, tail feathers, rump, chest, and flanks. Flux grades 1 & 3.	Scorched or singed	1,3	3	637465, 3937982	ACC Building	NA
2015_099_ISEGS	Unknown hummingbird	UNHU	Carcass Survey	4/13/2015	4/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Flight, body, and tail feathers singed.	Scorched or singed	3	3	637523, 3937937	ACC Building	NA
2015_100_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	4/13/2015	4/13/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Found near heliostat with imprint matching size and species structure. No singe.	Collision with solar panel/heliostat	NA	3	637303, 3938070	heliostat	NA
2015_101_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/13/2015	4/13/2015	Dead, fresh (eyes moist)	8-24 hours	Intact carcass. Imprint matching size and species on nearest heliostat, evidencing collision. No singe.	Collision with solar panel/heliostat	NA	3	637417, 3938106	Heliostat	NA
2015_102_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/13/2015	4/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Tail feathers and tips of primaries singed and curled.	Scorched or singed	3,3	3	637488, 3937857	Solar Concentrating Tower	NA

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2015_103_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/14/2015	4/14/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing on majority of flight feathers and dorsal side of body feathers. Carcass fresh with unweathered feathers and no rigor mortis.	Scorched or singed	3,3	2	638654, 3935865	ACC Building	NA
2015_104_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	4/14/2015	4/14/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of singeing on majority of body and all flight feathers.	Scorched or singed	3,3	2	638648, 3935873	ACC Building	NA
2015_105_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	4/14/2015	4/14/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Fatality fresh due to no rigor mortis and body condition with no unweathered feathers. Evidence of singeing on body, head, and flight feathers.	Scorched or singed	3,3	2	638579, 3935886	Project Building	NA
2015_106_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/14/2015	4/14/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Tail and body feathers singed and curled, flux grade 1 & 3.	Scorched or singed	1,3	2	638592, 3935927	Other Machinery	NA
2015_107_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/14/2015	4/14/2015	Broken up	3-6 days	Broken up. Carcass missing head. Evidence of collision on heliostat mirror matching size and shape of species. No singe.	Collision with solar panel/heliostat	NA	3	636988, 3937611	Heliostat	NA
2015_108_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	4/15/2015	4/15/2015	Feather spot	3-6 days	Feather Spot = Small. 1 primary (P4), and 25 body feathers. Heliostat imprint matches species size/shape. No singe.	Collision with solar panel/heliostat	NA	1	640177, 3933614	heliostat	NA
2015_109_ISEGS	Unknown Passerine	UNPA	Carcass Survey	4/15/2015	4/15/2015	Feather spot	3-6 days	Feather spot = small. 30 body feathers found. No singe.	Unknown	NA	1	639467, 3934046	heliostat	NA
2015_110_ISEGS	Unknown hummingbird	UNHU	Incidental	4/15/2015	4/15/2015	dead, fresh (eyes moist)	8-24 hours	Carcass with grade 2 & 3 flux/singe on dorsal (back, head, rump) tail, and majority of wing flight feathers. Majority of tail absent. Broken bill suggests post-singe collision.	Scorched or singed	3,3	3	637522, 3937901	Project Building	NA
2015_111_ISEGS	House Wren	HOWR	Carcass Survey	4/15/2015	4/15/2015	Feather spot	3-6 days	Feather spot = small. 4 retrices, 3 primaries, 2 secondaries, 4 broken flight feathers, 15 body feathers. No singe.	Unknown	NA	1	640152, 3933449	heliostat	NA
2015_112_ISEGS	Unknown passerine	UNKN	Incidental	4/15/2015	4/15/2015	Feather spot	3-6 days	Feather spot = small. 10 contour feathers with trace amount of singe at terminal ends, discernable only through dissecting scope.	Scorched or singed	NA	2	638640, 3935871	Other Machinery	NA

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2015_113_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	4/16/2015	4/16/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Bill fractured, apparent break in bird's neck. No singe.	Collision with solar panel/heliostat	NA	2	637742, 3936607	heliostat	NA
2015_114_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	4/16/2015	4/16/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Fractured lower mandible and blood found on bill. No singe.	Collision with solar panel/heliostat	NA	2	638677, 3937171	heliostat	NA
2015_115_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	4/17/2015	4/17/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Tail and flight feathers curled, body and head feather singed.	Scorched or singed	3	3	637539, 3937866	Power Block	NA
2015_116_ISEGS	Unknown passerine	UNPA	Carcass Survey	4/20/2015	4/20/2015	Feather spot	3-6 days	Secondaries, body feathers, tail and primaries found, ~110 feathers total.	Unknown	NA	3	637384, 3937959	Power Block	NA
2015_117_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Bird visibly singed: 80% flight feathers singed and curled. Head singed.	Scorched or singed	3,3	3	637370, 3937935	Power Block	NA
2015_118_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	4/20/2015	4/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	0-8 hours	Whole carcass found. 30% of primary feathers curled, singeing on coverts, flanks, rump fully singed, tail feathers singed.	Scorched or singed	3,3	3	637415, 3937948	Power Block	NA
2015_119_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Singeing on crown, primaries, retrices, rump, and back. Curling on all flight and tail feathers.	Scorched or singed	3,3	3	637397, 3937949	Power Block	NA
2015_120_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Alive, injured	0-8 hours	Found alive, injured with Grade 2&3 flux. Transported to office, whereupon it was found dead at 1340 (see notes). Head, underside, rump, tail and wings singed. All of tail and primaries curled.	Scorched or singed	3,3	2	638622, 3935873	Power Block	NA
2015_121_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. 70% of flight feathers curled with singeing. Head and flanks singed.	Scorched or singed	3,3	2	638622, 3935873	Power Block	NA
2015_122_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. All flight feathers and body feather singed and curled. Chest, head, and flanks are singed. Grade 2 and 3 flux.	Scorched or singed	3,3	2	638620, 3935879	Power Block	NA
2015_123_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. 80% flight feathers curled, 80% of body feathers singed. Only back found unsinged.	Scorched or singed	3,3	2	638619, 3935881	Power Block	NA

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2015_124_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Retrises singed, 50% of flight feathers singed, singeing on left wing. Chest and head singed.	Scorched or singed	3	2	638619, 3935895	Power Block	NA
2015_125_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. All retrices curled. Singeing on all back and head feathers. All primaries curled, as well as secondaries and most coverts. Throat and belly feathers singed.	Scorched or singed	3,3	2	638618, 3935905	Power Block	NA
2015_126_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Singe on head, back, wing coverts, and rump. >50% flight feathers curled. Few viable primaries remain.	Scorched or singed	3,3	2	638647, 3935922	Power Block	NA
2015_127_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. All flight feathers and body feather singed and curled. Head, back and rump singed. Grade 2 and 3 flux.	Scorched or singed	3,3	2	638625, 3935855	Power Block	NA
2015_128_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Singe extensive over whole body. Flight feathers curled with no viable barbs left. Few viable feathers remain on back only.	Scorched or singed	3,3	2	638642, 0	Power Block	NA
2015_129_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. 100% flight feathers curled. Breast and head singed. Tail missing due to singe.	Scorched or singed	3,3	2	638651, 3935860	Power Block	NA
2015_130_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Underparts, head and back singed. All but outermost primaries (3 on left, 4 on right) curled. All but 2 tail feathers curled.	Scorched or singed	3,3	2	638634, 3935834	Power Block	NA
2015_131_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Head, back, left flank, tail singed - flux grade 2&3. Flight feathers singed, evident under dissecting scope.	Scorched or singed	3,3	3	637453, 3937950	Power Block	NA
2015_132_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. No evidence of collision or flux.	Unknown	NA	2	638645, 3935820	Power Block	NA
2015_133_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Carcass. Entire body and all of flight feathers singed and curled. Tail is missing. Head, flanks, dorsal and ventral body singed, flux grade 2&3.	Scorched or singed	3,3	3	637443, 3937948	Power Block	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_134_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Tail feathers curled. Over 50% flight feathers on each wing singed. Back and nape singed.	Scorched or singed	3,3	3	637437, 3937953	Power Block	NA
2015_135_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Light singe on wing coverts, retrices and head. Whole carcass found.	Scorched or singed	3	2	638562, 3935923	Power Block	NA
2015_136_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	4/20/2015	4/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Head and back lightly singed. Retrices curled. Singeing present on belly and flanks.	Scorched or singed	3,3	3	637476, 3937933	Power Block	NA
2015_137_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	4/21/2015	4/21/2015	Dead; fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of curling/singeing in all major flight feathers and nape and face; flux grade effect 2 & 3.	Scorched or singed	3,3	2	638678, 3935805	Power Block	NA
2015_138_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	4/21/2015	4/21/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of curling/singeing in all major flight feathers and face and top of head; flux grade effect 2 & 3.	Scorched or singed	3,3	2	638665, 3935805	Power Block	NA
2015_139_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	4/21/2015	4/21/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of singeing on top of head and left nape, curling on retrices, flux grade effect 1 & 3.	Scorched or singed	1,3	2	638678, 3935837	Power Block	NA
2015_140_ISEGS	Mourning Dove	MODO	Carcass Survey	4/21/2015	4/21/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No trauma, no singe. Proximity to heliostat and fresh carcass.	Collision with solar panel/heliostat	NA	3	636577, 3936902	heliostat	NA
2015_141_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	4/21/2015	4/21/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Flux grade 2&3 on primaries, secondaries, tail, and coverts - all singed and curled. Singe present on dorsal section of head, right side of face, flank and axillary.	Scorched or singed	3,3	2	638606, 3935899	Powerblock	NA
2015_142_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/21/2015	4/21/2015	Mummified	3 weeks	Whole carcass found. Evidence of singeing on head and rump and in secondary flight feathers, flux grade effect 3. Body was desiccated and dry and feathers slightly weathered.	Scorched or singed	3	2	638595, 3935852	Powerblock	NA
2015_143_ISEGS	Western Meadowlark	WEME	Carcass Survey	4/21/2015	4/21/2015	Feather spot	7 days	Feather spot = small. 6+ primaries, 20+ flight feathers total, 150+ contour feathers. No singe.	Unknown	NA	3	637566, 3937224	heliostat	NA

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2015_144_ISEGS	Mourning Dove	MODO	Incidental	4/21/2015	4/21/2015	Broken up	7 days	Partial carcass. Left wing, 7 tail feathers, 40+ contour feathers. No singe.	Unknown	NA	NA	639074, 3935002	Fencing	NA
2015_145_ISEGS	Western Meadowlark	WEME	Carcass Survey	4/22/2015	4/22/2015	Mummified	2 weeks	Whole carcass found. Mummified based on desiccation of body, internal organs dried. Evidence of collision based on broken upper mandible tip. No evidence of singeing.	Collision with solar panel/heliostat	NA	2	639431, 3936733	heliostat	NA
2015_146_ISEGS	Calliope Hummingbird	CAHU	Incidental	4/22/2015	4/22/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singed, grade 1&3 flux on dorsal side of head, left body and flanks, left retrices, and 25% of left wing. No evidence of collision.	Scorched or singed	1,3	3	637416, 3937929	Powerblock	NA
2015_147_ISEGS	Orange-crowned Warbler	OCWA	Incidental	4/22/2015	4/22/2015	Alive, injured	0-8 hours	Bird found alive. Grade 2&3 singe evident on dorsal body, crown of head, flanks, and majority of wing and tail flight feathers. No evidence of collision.	Scorched or singed	3,3	3	637500, 3937931	Auxiliary Boiler	NA
2015_148_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	4/22/2015	4/22/2015	Feather spot	7 days	Feather spot comprised of 24 flight feathers and 100 body feathers. No evidence of singeing or collision. Feather size spot small.	Unknown	NA	2	638729, 3937008	Heliostat	NA
2015_149_ISEGS	Unknown Passerine	UNPA	Carcass Survey	4/22/2015	4/22/2015	Broken up	3-6 days	Broken up carcass. Partial left and right wings found. No evidence of singeing or collision. Species undetermined due to limited diagnostic features.	Unknown	NA	1	640809, 3933661	Heliostat	NA
2015_150_ISEGS	Black-chinned Hummingbird	BCHU	Incidental	4/22/2015	4/22/2015	Dead, fresh (eyes moist)	0-8 hours	Singe grade 2&3 on 80% of dorsal side, 30% of ventral side (chest), wing and tail feathers 60% singed. Gorget singed but intact. No evidence of collision.	Scorched or singed	3,3	3	637472, 3937942	Powerblock	NA
2015_151_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	4/23/2015	4/23/2015	Broken up	7 days	Large feather spot with portion of bone and flesh. 8 primaries (right wing), 6+ secondaries, 7+rectrices, right wing with dry flesh and bone. No singe.	Unknown	NA	1	641084, 3933411	Heliostat	NA
2015_152_ISEGS	White-winged Dove	WWDO	Carcass Survey	4/23/2015	4/23/2015	Broken up	7 days	Feathers found: ~75 body feathers and coverts. No evidence of collision or flux.	Unknown	NA	2	639244, 3935397	Heliostat	NA
2015_153_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	4/23/2015	4/23/2015	Broken up	7 days	5 primaries and right wing found. No evidence of collision or flux.	Unknown	NA	2	639242, 3935406	Heliostat	NA

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2015_154_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	4/23/2015	4/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Singe grade 2/3 on dorsal side, head/crown, majority of flight feathers, and chest.	Scorched or singed	3,3	1	640395, 393350	Power Block	NA
2015_155_ISEGS	Unknown Passerine	UNPA	Carcass Survey	4/23/2015	4/23/2015	Feather spot	3-6 days	11 primaries/secondaries, ~40 body feathers collected. Singe on all flight feathers and few body feathers, flux grade 2 and 3.	Scorched or singed	3,3	1	640366, 3933506	Power Block	NA
2015_156_ISEGS	Yellow-headed Blackbird	YHBL	Carcass Survey	4/23/2015	4/23/2015	Broken up	3-6 days	Partial bird found: both wings, 2 feet, 2 flight feathers, 5 body feathers recovered. No singe effect.	Unknown	NA	1	640409, 3933481	Power Block	NA
2015_157_ISEGS	Yellow-headed Blackbird	YHBL	Incidental	4/23/2015	4/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Carcass. No singe. Bill is broken and lower mandible missing sections, due to breakage.	Collision with solar panel/heliostat	NA	2	637861, 3936219	Heliostat	NA
2015_158_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	4/23/2015	4/23/2015	Broken up	3 weeks	Partial right wing, tail with bone & flesh, keel and ribcage, arm bone found, with 65+ body feathers. No singe.	Unknown	NA	2	637861, 3936198	Heliostat	NA
2015_159_ISEGS	Unknown Passerine	UNPA	Incidental	4/23/2015	4/23/2015	Mummified	1 month +	Partial carcass - head missing. No singe.	Unknown	NA	NA	638672, 3934979	Project Building	NA
2015_160_ISEGS	Horned Lark	HOLA	Carcass Survey	4/27/2015	4/27/2015	Broken up	8-24 hours	Partial carcass. Head and left wing missing. 19 flight feathers (5 tail, 14 wing) and 50+ body feathers. Body found stuck on creosote branch, partly scavenged at breast and wing suggesting depredation. No singe.	Unknown	NA	3	637770, 3937907	heliostat	NA
2015_161_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/27/2015	4/27/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Tail and breast feathers with flux grade 1 & 3 singe.	Scorched or singed	1,3	3	637471, 3937962	ACC Building	NA
2015_162_ISEGS	Rock Pigeon	ROPI	Carcass Survey	4/27/2015	4/27/2015	Broken up	3-6 days	Partial carcass and feather spot (primary, secondary, and tail flight feathers) with both legs, feet, and partial breast. Singe visible on primaries.	Scorched or singed	1,3	3	637415, 3938114	heliostat	NA
2015_163_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	4/27/2015	4/27/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Singe on top of head, nape, rump, and left flank. Retrices singed and curled. Slight singe on tip of primaries on left wing.	Scorched or singed	3,3	3	637512, 3937965	ACC Building	NA

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2015_164_ISEGS	Mourning Dove	MODO	Incidental	4/28/2015	4/28/2015	Broken up	0-8 hours	Broken up; feather spot with head. ~12 primaries and rectrices and 200+ body feathers. Carcass fresh with eyes moist and feathers unweathered. No evidence of singeing.	Unknown	NA	2	639022, 3937063	Fencing	NA
2015_165_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	4/28/2015	4/28/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of singeing on flight feathers and rump, back, and nape of body. Flux grade 2 & 3. Slight rigor mortis and eyes dehydrated.	Scorched or singed	3,3	2	638678, 3935902	ACC Building	NA
2015_166_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/28/2015	4/28/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Carcass fresh due to moist eyes and pliable body. Evidence of curling on flight feathers and rectrices, singeing on >75% of entire body. Flux grade effect 2 & 3.	Scorched or singed	3,3	2	638629, 3935778	Ground	NA
2015_167_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	4/28/2015	4/28/2015	Alive, injured	0-8 hours	Evidence of singeing on secondaries and edge of primaries on left wing.	Scorched or singed	1	2	638558, 3935624	Heliostat	NA
2015_168_ISEGS	Barn Swallow	BARS	Incidental	4/28/2015	4/28/2015	Alive, injured	0-8 hours	Evidence of curling on primaries, secondaries of both wings and rectrices. Bird died eventually. Flux grade effect 2 & 3.	Scorched or singed	3,3	2	638584, 3935817	Project Building	NA
2015_169_ISEGS	Calliope Hummingbird	CAHU	Incidental	4/28/2015	4/28/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singeing on flight feathers and rump, back, and nape of body. Flux grade 2 & 3.	Scorched or singed	3,3	1	640343, 3933464	Vehicle	Updated Species: Calliope Hummingbird; Species based on buffy flanks and white belly, partial streaked rosy gorget, rufous in tail, wing chord and bill length. Updated 04/29/2015 CJM
2015_170_ISEGS	Lazuli Bunting	LAZB	Carcass Survey	4/28/2015	4/28/2015	Alive, injured	0-8 hours	Injured bird found alive, captured, and translocated back to office. No evidence of singeing. Heliostat imprint found.	Collision with solar panel/heliostat	NA	2	639218, 3935769	Heliostat	NA
2015_171_ISEGS	Unknown Passerine	UNPA	Carcass Survey	4/29/2015	4/29/2015	Broken up	3-6 days	Broken up, feather spot connected by dried flesh. 20+ body feathers. No evidence of singeing.	Unknown	NA	1	640306, 3933694	Heliostat	NA

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2015_172_ISEGS	Rufous Hummingbird	RUHU	Incidental	4/29/2015	4/29/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass found. Evidence of curling in flight feathers and retrices and singeing in head, rump, and nape. Flux grade effect 2 & 3. Carcass pliable, fresh, and feathers unweathered.	Scorched or singed	3,3	2	638706, 3935932	Ground	NA
2015_173_ISEGS	Unknown Passerine	UNPA	Carcass Survey	4/29/2015	4/29/2015	Feather spot	3-6 days	Feather spot consisting of 13 body feathers. No evidence of collision or singeing. Feathers fluffy but weathered.	Unknown	NA	1	640754, 3933780	Heliostat	NA
2015_174_ISEGS	Orange-crowned Warbler	OCWA	Incidental	4/29/2015	4/29/2015	Mummified	3 weeks	Whole carcass found. Mummified based on desiccation of body, internal organs dried. Evidence of singeing on crown, upper dorsal, and tips of primaries..	Scorched or singed	1,3	1	640378, 3933488	Solar Concentrating Tower	NA
2015_175_ISEGS	Mourning Dove	MODO	Carcass Survey	4/29/2015	4/29/2015	Mummified	2 weeks	Whole carcass found with 50 body feathers. Carcass dried and stiff with heavy rigor mortis, eyes gone indicating 2 weeks plus. Evidence of collision with observed heliostat imprint. No evidence of singeing.	Collision with solar panel/heliostat	NA	2	639497, 3936908	Heliostat	NA
2015_176_ISEGS	Mourning Dove	MODO	Carcass Survey	4/29/2015	4/29/2015	Broken up	8-24 hours	Broken up, feather spot with 2 partial wings. 10 flight feathers, 30 body feathers, 2 partial wings in addition to flesh and bone. No evidence of collision or singeing. Feathers fresh and unweathered.	Unknown	NA	1	640407, 3933480	Auxiliary Boiler	NA
2015_177_ISEGS	Mourning Dove	MODO	Carcass Survey	4/30/2015	4/30/2015	Broken up	3-6 days	Broken up, feather spot with head and partial right wing. Feather spot large consisting of primaries, secondaries, retrices and ~400 body feathers. No evidence of singeing or collision.	Unknown	NA	1	641042, 3933283	Heliostat	NA
2015_178_ISEGS	Yellow Warbler	YEWA	Incidental	4/30/2015	4/30/2015	Alive, injured	0-8 hours	Alive at time of discovery, died 1115. Singed grade 2 & 3 on majority of primaries, secondaries (both wings) and majority of tail feathers. Singed dorsally on flank, nape, back.	Scorched or singed	3,3	2	638646, 3935836	Powerblock	NA

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2015_179_ISEGS	Wilson's Warbler	WIWA	Incidental	4/30/2015	4/30/2015	Dead, fresh (eyes moist)	0-8 hours	Carcass. Trauma at tip of upper mandible, blood present, upper and lower mandible not in alignment. Small area of singe on right wing (tips of secondaries), flux grade 1. Singe would have logically occurred prior to collision.	Scorched or singed	1	2	638628, 3935826	Powerblock	NA
2015_180_ISEGS	Calliope Hummingbird	CAHU	Incidental	4/30/2015	4/30/2015	Dead, fresh (eyes moist)	0-8 hours	Carcass. Singe, flux grade 3, on top of crown and left dorsal flank. No collision evident.	Scorched or singed	3	2	638675, 3935917	Powerblock	NA
2015_181_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	5/1/2015	5/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Evidence of dried blood at base of bill, small fracture on bill indicate collision trauma.	Collision with solar panel/heliostat	NA	1	640608, 3934570	heliostat	NA
2015_182_ISEGS	American Coot	AMCO	Incidental	5/4/2015	5/4/2015	Alive, injured	0-8 hours	Whole intact bird, alive and alert at discovery. No apparent trauma observed, but bird was disoriented and unable to fly. Released successfully off site. No singe.	Unknown	NA	3	638281, 3938297	heliostat	NA
2015_183_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling to primaries, secondaries and retrices, singeing to left side of face and nape. Flux grade effect 2 & 3.	Scorched or singed	3,3	3	637443, 3937969	ACC Building	NA
2015_184_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling on retrices, singeing on top of head, primaries, right side of face, nape, flank, and breast. Flux grade effect 1 & 3.	Scorched or singed	1,3	3	637494, 3937980	ACC Building	NA
2015_185_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	5/4/2015	5/4/2015	Broken up	2 weeks	Broken up with body, wing, and head found. Evidence of singeing on head and retrices. Flux grade effect 1 & 3.	Scorched or singed	1,3	3	637234, 3937932	Heliostat	NA
2015_186_ISEGS	Mourning Dove	MODO	Carcass Survey	5/4/2015	5/4/2015	Broken up	7 days	Broken up, with body, tail, secondaries, and leg found. Evidence of collision with heliostat imprint matching size and shape of species. No evidence of singe.	Collision with solar panel/heliostat	NA	3	637733, 3938835	Heliostat	NA

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2015_187_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of curling on primaries, secondaries, of both wings; singeing on top of head, sides of face, flanks, and retrices. Flux grade effect 2 & 3.	Scorched or singed	3,3	3	637455, 3937943	Powerblock	NA
2015_188_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Curling to entire tail, singe on primaries, nape, rump, both flanks, and axillaries. Singe grade 2 & 3.	Scorched or singed	3,3	3	637458, 3937953	Powerblock	NA
2015_189_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/4/2015	5/4/2015	Feather spot	7 days	Feather spot = small. 26 body feathers. Tips of several feathers singed, visible under scope. Singe grade 3.	Scorched or singed	3	3	637434, 3937921	Powerblock	NA
2015_190_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, tail separated after pickup. Carcass moderately desiccated, with singe on outer tail feathers and top of head, nape, and rump. Flux grade 1.	Scorched or singed	1	3	637430, 3937911	Powerblock	NA
2015_191_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/4/2015	5/4/2015	Broken up	3-6 days	Wing - 5 primaries with attached flesh. Singe present on primaries, grade 2.	Scorched or singed	2	3	637406, 3937922	Powerblock	NA
2015_192_ISEGS	Mourning Dove	MODO	Carcass Survey	5/4/2015	5/4/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found with 2 body feathers (attached to mirror - imprint present). No singe.	Collision with solar panel/heliostat	NA	3	638606, 3937854	heliostat	NA
2015_193_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/5/2015	5/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Grade 1 & 3 flux, singe on rump, left flank, nape - less extensive singe on tips of primary wing feathers.	Scorched or singed	1,3	2	638654, 3935881	ACC Building	NA
2015_194_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/5/2015	5/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Flux grade 2 & 3 singe. Curling on wings (primaries, secondaries) and tail feathers. Singe on right side of face, nape, axillary, flank, and rump.	Scorched or singed	3,3	2	638621, 3935896	ACC Building	NA
2015_195_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	5/5/2015	5/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Curling on primaries, secondaries, retrices; singeing on head, nape, and back. Flux grade effect 2 & 3.	Scorched or singed	3,3	2	638648, 3935909	ACC Building	NA

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2015_196_ISEGS	Black-chinned Hummingbird	BCHU	Carcass Survey	5/5/2015	5/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass found. Evidence of singeing on head, back, rump; retrices slightly curled on outer sides. Flux grade effect 1 & 3.	Scorched or singed	1,3	2	638730, 3935830	Powerblock	NA
2015_197_ISEGS	Mourning Dove	MODO	Carcass Survey	5/5/2015	5/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Imprint on heliostat mirror matching size and shape of species supports evidence of collision. No singe.	Collision with solar panel/heliostat	NA	3	636400, 3936790	Heliostat	NA
2015_198_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/5/2015	5/5/2015	Mummified	1 month +	Skull, beak, and vertebrae found. No evidence of singeing or collision.	Unknown	NA	3	636929, 3937008	Heliostat	NA
2015_199_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	5/6/2015	5/6/2015	Broken up	3-6 days	Carcass, with partial head. Singe grade 2&3 on majority of flight feathers (tail, wing) and majority of dorsal body. Small area of singe on upper back.	Scorched or singed	3,3	1	640304, 3933538	Powerblock	NA
2015_200_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/6/2015	5/6/2015	Feather spot	3-6 days	Feather spot consisting of 16 body feathers. No evidence of singeing or collision. Feather spot size small.	Unknown	NA	2	639359, 3936782	Heliostat	NA
2015_201_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/6/2015	5/6/2015	Feather spot	3-6 days	Feather spot consisting of 6 flight feathers and 8 contour feathers. Evidence of singeing on flight feathers. Flux grade effect 1. Feather size spot small.	Scorched or singed	1	1	640355, 3933511	Powerblock	NA
2015_202_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	5/6/2015	5/6/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of singeing on flight feathers, nape, left side of face, flanks, and rump. Flux grade effect 2 & 3.	Scorched or singed	3,3	1	640370, 3933546	ACC Building	NA
2015_203_ISEGS	Mourning Dove	MODO	Carcass Survey	5/6/2015	5/6/2015	Feather spot	3-6 days	Feather spot consisting of tail and ~ 500 body feathers. No evidence of singeing or collision. Feather size spot small.	Unknown	NA	1	640183, 3933448	Heliostat	NA
2015_204_ISEGS	Townsend's Warbler	TOWA	Carcass Survey	5/7/2015	5/7/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No obvious sign of trauma. Fresh, close to heliostat.	Collision with solar panel/heliostat	NA	1	639662, 3933019	Heliostat	NA
2015_205_ISEGS	Western Tanager	WETA	Incidental	5/8/2015	5/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found on Colosseum Road by designated biologist. Evidence of collision with car based on location of carcass and condition of exposed organs. No singe.	Collision (other)	NA	NA	639129, 3935056	Fencing	Updated 'Suspected Cause': Collision (other) 05/13/2015 BGZ

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_206_ISEGS	Townsend's Warbler	TOWA	Incidental	5/8/2015	5/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found as incidental. Evidence of collision by structurally damaged and partially detached lower mandible. No evidence of singe.	Unknown	NA	NA	637695, 3936209	Fencing	NA
2015_207_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	5/8/2015	5/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of collision by broken neck. No evidence of singe.	Collision with solar panel/heliostat	NA	2	637717, 3936233	Heliostat	NA
2015_208_ISEGS	Western Tanager	WETA	Carcass Survey	5/8/2015	5/8/2015	Alive, injured	0-8 hours	Injured bird found alive along Unit #2 perimeter fence. It was captured, and translocated back to office. No evidence of singeing.	Unknown	NA	2	637704, 3935470	Fencing	NA
2015_209_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	5/11/2015	5/11/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of curling on primaries, secondaries, and retrices of flight feathers, singeing on right side of face, nape, back, and left flank. Flux grade effect 2 & 3.	Scorched or singed	3,3	2	638620, 3935899	ACC Building	NA
2015_210_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/11/2015	5/11/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of curling on primaries, secondaries, and retrices of flight feathers, singeing on head, nape, back, and rump. Flux grade effect 2 & 3.	Scorched or singed	3,3	2	638647, 3935883	Powerblock	NA
2015_211_ISEGS	Snowy Egret	SNEG	Incidental	5/12/2015	5/12/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of collision on heliostat mirror matching size and shape of species, structural damage to tip of bill. No singe effect.	Collision with solar panel/heliostat	NA	1	641334, 3933059	heliostat	NA
2015_212_ISEGS	Black-Headed Grosbeak	BHGR	Carcass Survey	5/13/2015	5/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of collision by structural damage to upper mandible. No evidence of singe.	Collision (other)	NA	2	637950, 3935030	Overhead Lines	Updated 'Suspected Cause': Collision (other) 05/18/2015 CJM
2015_213_ISEGS	Mourning Dove	MODO	Carcass	5/13/2015	5/13/2015	Feather spot	3-6 days	Feather spot consisting of 9 flight feathers and 20 body feathers. No evidence of collision or singe.	Unknown	NA	2	638243, 3936329	heliostat	NA
2015_214_ISEGS	Wilson's Warbler	WIWA	Incidental	5/13/2015	5/13/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. No evidence of singeing or collision.	Unknown	NA	2	639403, 3934893	Overhead Lines	NA
2015_215_ISEGS	Wilson's Warbler	WIWA	Incidental	5/13/2015	5/13/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of vehicular collision supported by fractured neck and location in road. No singe.	Collision (other)	NA	NA	640158, 3935360	Power Pole	NA

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2015_216_ISEGS	Unknown hummingbird	UNHU	Incidental	5/14/2015	5/14/2015	Broken up	7 days	Carcass intact, excepting tail. All present feathers show sign of singe and/or curl - grade 2 & 3.	Scorched or singed	3,3	2	638652, 3935829	Powerblock	NA
2015_217_ISEGS	Unknown Passerine	UNPA	Incidental	5/14/2015	5/14/2015	Mummified	1 month +	Carcass intact but completely desiccated and heavily weathered. Singe grade 3 on covert feathers.	Scorched or singed	3	2	638581, 3935892	Powerblock	NA
2015_218_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	5/18/2015	5/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Extensive (Grade 2 & 3) singe on entire carcass (breast, head, wing) and flight feathers, excepting central dorsal (belly) area, which is the only area without singe.	Scorched or singed	3,3	1	640352, 3933520	ACC Building	NA
2015_219_ISEGS	Yellow Warbler	YWAR	Carcass Survey	5/18/2015	5/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curling on majority of secondary and primary wing feathers. Singe and curl on tail, left wing, and small amount of singe on head, scapular, and rump. Flux grade 1 & 3.	Scorched or singed	1,3	1	640358, 3933534	ACC Building	NA
2015_220_ISEGS	Mourning Dove	MODO	Carcass Survey	5/18/2015	5/18/2015	Broken up	2 weeks	Partial carcass (one wing, head, keel, legs). No evidence of singe/collision. Body desiccated.	Unknown	NA	1	640348, 3933556	Powerblock	NA
2015_221_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	5/18/2015	5/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Singe, flux grade 3, on rump and upper tail coverts.	Scorched or singed	3	1	640404, 3933520	Powerblock	NA
2015_222_ISEGS	Yellow Warbler	YWAR	Carcass Survey	5/19/2015	5/19/2015	Feather spot	7 days	Feather spot = small. 4 primaries, 5 secondaries, 20 contour feathers found. No singe.	Unknown	Unk	1	640362, 3933560	Powerblock	NA
2015_223_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/19/2015	5/19/2015	Feather spot	3-6 days	Feather spot = large. 4 primaries, 5 secondaries, 1 tail feather found. Curling and singe on 5 of the 10 found feathers.	Scorched or singed	3,3	1	640363, 3933508	Powerblock	NA
2015_224_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	5/19/2015	5/19/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass, no singe. Imprint matching size found on nearest heliostat. Upper mandible broken at tip.	Collision with solar panel/heliostat	NA	1	640363, 3933357	heliostat	NA
2015_225_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	5/19/2015	5/19/2015	Broken up	3-6 days	Feather spot with partial carcass fragments. 50 body feathers, 10 retrices, 30 wing feathers, pieces of mandible, skull. No singe.	Unknown	NA	1	639350, 3933643	Fencing	NA

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2015_226_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	5/19/2015	5/19/2015	Feather spot	7 days	Feather spot = large. 10 rectrices and 2 undertail coverts. No singe.	Unknown	NA	1	641221, 3932845	Fencing	NA
2015_227_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	5/19/2015	5/19/2015	Broken up	0-8 hours	Partial carcass and feather spot. Feather spot = small. 200 body, tail, and wing feathers, 2 partial wings, full tail, 1 leg found. No singe.	Unknown	NA	1	640746, 3933686	heliostat	NA
2015_228_ISEGS	Unknown Swallow	UNSW	Carcass Survey	5/19/2015	5/19/2015	Feather spot	7 days	Feather spot = small. 15 contour feathers, 5 primaries, 8 secondaries found. Singe and curl on secondaries.	Scorched or singed	1	1	640362, 3933559	Powerblock	NA
2015_229_ISEGS	Unknown Passerine	UNPA	Carcass Survey	5/19/2015	5/19/2015	Broken up	3-6 days	Feather spot = small. Partial right wing with flesh and 3 primaries from left wing. Singe at tips of 5 flight feathers, Grade 1.	Scorched or singed	1	1	640362, 3933559	Powerblock	NA
2015_230_ISEGS	Common Raven	CORA	Incidental	5/20/2015	5/20/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Burned on feet and throughout ventral body and on bill. Strong burning odor when collected. Found under transmission line, apparent electrocution. Exit wounds on feet typical of electrocution death. No flux related singe evident.	Electrocution	NA	NA	639665, 3934427	Power Pole	NA
2015_231_ISEGS	Bullock's Oriole	BUOR	Carcass Survey	5/21/2015	5/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. No singe. Found with broken bill near heliostat. Heavily scavenged by ants.	Collision with solar panel/heliostat	NA	1	640977, 3934333	heliostat	NA
2015_232_ISEGS	Mourning Dove	MODO	Incidental	5/28/2015	5/28/2015	Broken up	3-6 days	Broken up carcass with feather spot. Scavenged torso with wings found, piece of skull, flesh with attached leg. Additionally, 7 rectrices and several body feathers found. No evidence of singeing or collision.	Unknown	NA	2	638542, 3937516	heliostat	NA
2015_233_ISEGS	Wilson's Warbler	WIWA	Incidental	5/28/2015	5/28/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Singe and curling found on contour feathers of rump, lower chest, right shoulder, right wing coverts, and few secondaries of right wing.	Scorched or singed	1,3	3	637465, 3937866	Powerblock	NA

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2015_234_ISEGS	Horned Lark	HOLA	Carcass Survey	6/3/2015	6/3/2015	Mummified	1 month +	Whole carcass, found in proximity of heliostat. No evidence of singeing (checked under scope)	Collision with solar panel/heliostat	NA	2	639092, 3935523	Heliostat	Updated 'Description of Carcass/Injury', 'Suspected cause of injury/mortality': Collision, and 'Level of certainty for suspected cause': Probable (>50%). Updated 09/30/2015 CJM
2015_235_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	6/3/2015	6/3/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass found. Evidence of curling on all major flight feathers, singeing on crown of head, nape, and both flanks. Flux grade effect 2 & 3.	Scorched or singed	2,3	2	638574, 3935934	Powerblock	NA
2015_236_ISEGS	Mourning Dove	MODO	Carcass Survey	6/4/2015	6/4/2015	Broken up	3-6 days	Whole wing found. No evidence of singeing or collision.	Unknown	NA	2	638102, 3936161	Heliostat	Updated 'Disposition': Freezer on site. Updated 09/30/2015 CJM
2015_237_ISEGS	Mourning Dove	MODO	Carcass Survey	6/5/2015	6/5/2015	Broken up	3-6 days	Broken up with feather spot. Partial right wing consisting of mostly primaries and secondaries with 75 body feathers. No evidence of singeing or collision.	Unknown	NA	2	639365, 3935843	Heliostat	NA
2015_238_ISEGS	Loggerhead Shrike	LOSH	Incidental	6/8/2015	6/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. No evidence of collision or singeing (checked under scope)	Unknown	NA	1	640415, 3933522	ACC Building	NA
2015_239_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	6/9/2015	6/9/2015	Feather spot	3-6 days	Feather spot size = large. 20 flight feathers consisting of primaries, secondaries, and retrices, and 50+ body feathers. No evidence of singeing or collision.	Unknown	NA	1	640941, 3933846	Heliostat	NA
2015_240_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	6/9/2015	6/9/2015	Feather spot	2 weeks	Feathers spot = small. 5 retrices and 7 primaries found. No evidence of singeing or collision.	Unknown	NA	1	640949, 3933840	Heliostat	NA
2015_241_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/9/2015	6/9/2015	Feather spot	7 days	Feather spot size= large. 6 retrices, 16 primaries, and 50+ body feathers collected. No evidence of singeing or collision.	Unknown	NA	1	639348, 3933122	Fencing	NA
2015_242_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/9/2015	6/9/2015	Feather spot	2 days	Feather spot size= large. 10 retrices, 26 primaries/secondaries, and 300+ body feathers collected. No evidence of singeing or collision.	Unknown	NA	1	639957, 3932660	Fencing	NA

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2015_243_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/9/2015	6/9/2015	Feather spot	7 days	Feather spot size= large. 11 retrices, 20+ primaries/secondaries, and 100+ body feathers collected. No evidence of singeing or collision.	Unknown	NA	1	640116, 3932661	Fencing	NA
2015_244_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/9/2015	6/9/2015	Feather spot	7 days	Feather spot size= large. 9 retrices, 30 primaries/secondaries, and 50+ body feathers collected. No evidence of singeing or collision.	Unknown	NA	1	640733, 3932659	Fencing	NA
2015_245_ISEGS	Unknown Passerine	UNPA	Carcass Survey	6/10/2015	6/10/2015	Feather spot	2 weeks	Feather spot = small. 18 flight feathers, 30+ body feathers in 1m square area. No evidence of singe or collision.	Unknown	NA	1	640848, 3933298	heliostat	NA
2015_246_ISEGS	Cliff Swallow	CLSW	Carcass Survey	6/10/2015	6/10/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Intact carcass. Singed, flux grade 2 & 3, on majority of flight feathers (wing and tail both) and entirety of head, crown, and scapulars.	Scorched or singed	2,3	1	640388, 3933533	ACC Building	NA
2015_247_ISEGS	Unknown Passerine	UNPA	Carcass Survey	6/11/2015	6/11/2015	Feather spot	3-6 days	Feather spot size= small. 7 flight feathers and ~ 50 body feathers, uppertail coverts. No evidence of singeing or collision (checked under scope).	Unknown	NA	1	640990, 3933165	Heliostat	NA
2015_248_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	6/11/2015	6/11/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of collision by heliostat imprint and tip of broken bill. No singeing.	Collision with solar panel/heliostat	NA	1	641107, 3933238	Heliostat	NA
2015_249_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	6/12/2015	6/12/2015	Feather spot	2 weeks	Feather spot size = small. 17 flight feathers, 100+ body feathers. Found 2m from heliostat with imprint matching species size. No singe.	Collision with solar panel/heliostat	NA	1	639662, 3933045	Heliostat	NA
2015_250_ISEGS	Western Tanager	WETA	Carcass Survey	6/12/2015	6/12/2015	Feather spot	2 weeks	Feather spot = small. 8 retrices, 7 primaries, 9 secondaries, 50+ body feathers. No singe.	Unknown	NA	1	639918, 3932873	Heliostat	NA
2015_251_ISEGS	Horned Lark	HOLA	Carcass Survey	6/13/2015	6/13/2015	Mummified	2 weeks	Whole carcass. Designated mummified due to dessication, appears to have been subjected to high insect activity and extreme heat. No evidence of singe or collision.	Unknown	NA	3	637406, 3937709	Heliostat	NA
2015_252_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/13/2015	6/13/2015	Feather spot	3 weeks	Feather spot size= large. 35+ body feathers. No evidence of singe or collision. Nest located inside heliostat- feather and eggshell fragments scattered to comprise feather spot.	Unknown	NA	3	637449, 3938563	Heliostat	NA

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2015_253_ISEGS	Mourning Dove	MODO	Carcass Survey	6/14/2015	6/14/2015	Feather spot	1 month +	Feather spot = large.	Unknown	NA	3	636303, 3936818	Heliostat	NA
2015_254_ISEGS	Unknown	UNID	Carcass Survey	6/14/2015	6/14/2015	Feather spot	2 weeks	Feather spot size = small. 11 body feathers. No evidence of singe or collision.	Unknown	NA	3	637760, 3937373	Heliostat	NA
2015_255_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	6/14/2015	6/14/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass. Flux grade 2 & 3 singe on majority of dorsal side, head, and all flight feathers. Bill broken at upper mandible, suggesting collision after singe event.	Scorched or singed	2,3	3	637451, 3937969	ACC Building	NA
2015_256_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	6/14/2015	6/14/2015	Feather spot	1 month +	Feather spot size = large. 5 tail feathers, 4 body, 3 wing feathers. No evidence of singe or collision.	Unknown	NA	3	637735, 3938822	Heliostat	NA
2015_257_ISEGS	Cactus Wren	CACW	Carcass Survey	6/15/2015	6/15/2015	Dead, fresh (eyes moist)	0-8 hours	Bill bent at tip and dried blood present. Matching imprint found on nearest heliostat. No singe.	Collision with solar panel/heliostat	NA	3	637062, 3936865	Heliostat	NA
2015_258_ISEGS	Greater Roadrunner	GRRO	Incidental	6/15/2015	6/15/2015	Feather spot	2 weeks	Feather spot size = large. 14 flight feathers, 200+ body feathers. No singe.	Unknown	NA	3	637267, 3936719	Fencing	NA
2015_259_ISEGS	Lucy's Warbler	LUWA	Incidental	6/18/2015	6/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling on secondaries and primaries of flight feathers, singeing present on retrices, top of head, nape, and back. Flux grade effect 2 & 3.	Scorched or singed	2,3	3	637453, 3937898	Powerblock	NA
2015_260_ISEGS	Tree Swallow	TRES	Incidental	6/19/2015	6/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling on outer primaries on both wings and slight singeing on retrices. Flux grade effect 1.	Scorched or singed	1	1	640374, 3933487	Solar Concentrating Tower	NA
2015_261_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	6/23/2015	6/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of singeing on tips of tail feathers. Flux grade effect 1.	Scorched or singed	1	3	637482, 3937912	Solar Concentrating Tower	NA
2015_262_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	6/23/2015	6/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. No evidence of singeing or collision.	Unknown	NA	2	638740, 3935984	Heliostat	NA
2015_263_ISEGS	House Finch	HOFI	Carcass Survey	6/23/2015	6/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling on 5 primaries on left wing. Flux grade effect 1.	Scorched or singed	1	2	638624, 3935881	Powerblock	NA

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2015_264_ISEGS	American Coot	AMCO	Carcass Survey	6/23/2015	6/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass found. No evidence of singeing or collision.	Unknown	NA	2	637705, 3935241	Fencing	NA
2015_265_ISEGS	Mourning Dove	MODO	Carcass Survey	6/24/2015	6/24/2015	Feather spot	3-6 days	Feather spot consisting of 150 body feathers, 7 retrices, and 9 primaries/secondaries. Evidence of collision with found heliostat imprint. No singe.	Collision with solar panel/heliostat	NA	2	637762, 3936399	Heliostat	NA
2015_266_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	6/24/2015	6/24/2015	Feather spot	2 weeks	Feather Spot consisting of 11 retrices, 3 secondaries, 150 body feathers, some clumps of feathers attached by skin. No evidence of singeing or collision.	Unknown	NA	2	638742, 3935437	Heliostat	NA
2015_267_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	6/24/2015	6/24/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of collision with upper and lower mandible fractured and placement of found carcass under heliostat mirror. No singe.	Collision with solar panel/heliostat	NA	2	637930, 3936573	Heliostat	NA
2015_268_ISEGS	Cliff Swallow	CLSW	Incidental	6/24/2015	6/24/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of curling on edges of all primaries and tail feathers, singeing on throat and upper chest.	Scorched or singed	2	1	640377, 3933486	Solar Concentrating Tower	NA
2015_269_ISEGS	Horned Lark	HOLA	Carcass Survey	6/24/2015	6/24/2015	Broken up	2 weeks	Broken up carcass consisting of tail, feathers with skin attached, torso including both wings, and 75 body feathers. No evidence of singeing or collision.	Unknown	NA	2	638585, 3935373	Heliostat	NA
2015_270_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	6/25/2015	6/25/2015	Feather spot	2 weeks	Feather spot consisting of 5 primaries, 1 tertial, and 3 body feathers. No evidence of singeing or collision.	Unknown	NA	2	637954, 3936791	Heliostat	NA
2015_271_ISEGS	Mourning Dove	MODO	Incidental	6/26/2015	6/26/2015	Broken up	2 weeks	Broken up consisting of partial carcass, seperated wings, and some seperated feathers. No evidence of singeing or collision.	Unknown	NA	2	639389, 3935802	Heliostat	NA
2015_272_ISEGS	Greater Roadrunner	GRRO	Incidental	6/26/2015	6/26/2015	Feather spot	3-6 days	Feather spot consisting of 5 retrices, 20 primaries/secondaries, and 200+ body feathers. No evidence of singeing or collision.	Unknown	NA	1	639349, 3933648	Fencing	NA

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2015_273_ISEGS	Greater Roadrunner	GRRO	Incidental	6/26/2015	6/26/2015	Broken up	2 days	Feather spot consisting of > 200 body feathers, 30 flight feathers, top of skull, and upper mandible. No evidence of singeing or collision.	Unknown	NA	1	639346, 3933236	Fencing	NA
2015_274_ISEGS	Mourning Dove	MODO	Incidental	6/26/2015	6/26/2015	Broken up	2 weeks	Broken up. Whole carcass minus head with scattered feathers with attached skin. No evidence of singeing or collision.	Unknown	NA	1	641348, 3932990	Fencing	NA
2015_275_ISEGS	Red-tailed Hawk	RTHA	Incidental	6/28/2015	6/28/2015	Alive, injured	0-8 hours	No evidence of singe or collision. Bird appeared disoriented and dehydrated.	Unknown	NA	2	638639, 3935869	Powerblock	NA
2015_276_ISEGS	Unknown Swallow	UNSW	Carcass Survey	6/29/2015	6/29/2015	Broken up	2 weeks	Portion of left wing found. Three flight feathers, 5 coverts. All 3 discovered flight feathers with singe.	Scorched or singed	Unk	1	640560, 3933301	HelioStat	NA
2015_277_ISEGS	Cliff Swallow	CLSW	Carcass Survey	6/30/2015	6/30/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling to all major flight feathers, singeing to top of head, throat, top of breast, and shoulders.	Scorched or singed	2,3	1	640388, 3933530	ACC Building	NA
2015_278_ISEGS	House Finch	HOFI	Carcass Survey	6/30/2015	6/30/2015	Mummified	2 weeks	Whole carcass found. Evidence of singeing to tips of inner primaries of left wing and coverts, curling present on chest feathers	Scorched or singed	1,3	1	640356, 3933550	ACC Building	NA
2015_279_ISEGS	American Kestrel	AMKE	Carcass Survey	6/30/2015	6/30/2015	Broken up	7 days	Broken up feather spot consisting of 11 primaries, 8 retrices, 25+ body feathers, 10 coverts and 2 partial wings attached by flesh. No evidence of singeing or collision.	Unknown	Unk	1	640352, 3933485	Powerblock	NA
2015_280_ISEGS	American Kestrel	AMKE	Carcass Survey	6/30/2015	6/30/2015	Broken up	3-6 days	Broken up carcass consisting of 2 wings, 2 legs with sacrum, section of vertebral column, with 12 retrices, 4 primaries, and 100+ contour feathers. No evidence of singeing or collision.	Unknown	NA	1	640530, 3933518	HelioStat	NA
2015_281_ISEGS	Mourning Dove	MODO	Carcass Survey	6/30/2015	6/30/2015	Broken up	2 weeks	Broken up carcass consisting of 2 wings, 2 legs, half of retrices, and >75 body feathers. No evidence of singeing or collision.	Unknown	NA	1	640481, 3933532	HelioStat	NA

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2015_282_ISEGS	Unknown Swallow	UNSW	Carcass Survey	6/30/2015	6/30/2015	Broken up	2 weeks	Broken up feather spot consisting of 9 primaries, 4 secondaries, 5 body feathers, and section of left wing attached by flesh. Evidence of curling on primaries and secondaries.	Scorched or singed	Unk	1	648371, 3933498	Powerblock	NA
2015_283_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	6/30/2015	6/30/2015	Feather spot	2 weeks	Feather spot consisting of 10 primaries, 6 retrices, and 2 body feathers. No evidence of singeing or collision.	Unknown	NA	1	640507, 3933763	Heliostat	NA
2015_284_ISEGS	Cliff Swallow	CLSW	Incidental	7/1/2015	7/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	No singe or evidence of collision. Flesh pulled from body at flank and head, suggesting scavenging.	Unknown	NA	2	638597, 3935874	Powerblock	NA
2015_285_ISEGS	Lesser Nighthawk	LENI	Incidental	7/7/2015	7/7/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found by designated biologist on Coliseum Road with suspected evidence of vehicle strike. No evidence of singeing.	Vehicle Strike	NA	NA	639597, 3935219	Road	NA
2015_286_ISEGS	Mourning Dove	MODO	Carcass Survey	7/8/2015	7/8/2015	Feather spot	8-24 hours	Feather spot consisting of 100+ body feathers, 14 retrices, and 4 coverts. No evidence of singeing or collision.	Unknown	NA	3	637582, 3937879	Heliostat	NA
2015_287_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	7/9/2015	7/9/2015	Mummified	2 weeks	Whole carcass found. Evidence of curling to primaries, secondaries and retrices, singeing to head, nape, back, rump, and axilleries. Flux grade effect 2 & 3.	Scorched or singed	2,3	3	637549, 3937952	ACC Building	NA
2015_288_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	7/9/2015	7/9/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling present on tips of retrices, singeing to left side of head. Flux grade effect 1 & 3.	Scorched or singed	1,3	3	637458, 3937944	ACC Building	NA
2015_289_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	7/9/2015	7/9/2015	Mummified	2 weeks	Whole carcass found. Evidence of curling to primaries, secondaries, retrices, singeing to flanks. Flux grade effect 2 & 3.	Scorched or singed	3-Feb	3	637439, 3937946	ACC Building	NA
2015_290_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	7/9/2015	7/9/2015	Mummified	2 weeks	Whole carcass found except right wing. No evidence of singeing or collision.	Unknown	NA	3	637472, 3937912	Solar Concentrating Tower	NA
2015_291_ISEGS	Verdin	VERD	Carcass Survey	7/13/2015	7/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Carcass intact, excepting tail which was lost due to singe. Singed, flux grade 2&3, on all flight feathers and majority of dorsal area. No collision evidence.	Scorched or singed	3	2	638656, 3935867	Powerblock	NA

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2015_292_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	7/13/2015	7/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	7 days	Whole carcass with one wing and tail lost due to singe. Singed, flux grade 2&3, on remaining flight feathers and majority of body. Bill slightly bent, suggesting collision post-singe.	Scorched or singed	2,3	2	638674, 3935872	Powerblock	NA
2015_293_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	7/20/2015	7/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Carcass, without tail. Flux grade 2&3. Singe on majority of body feathers. Singe and curl on all flight feathers.	Scorched or singed	2,3	1	640371, 3933534	ACC Building	NA
2015_294_ISEGS	Cliff Swallow	CLSW	Carcass Survey	7/20/2015	7/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Carcass with flux grade 2 & 3 singe on majority of flight feathers and both dorsal and ventral sides of body.	Scorched or singed	2,3	1	640308, 3933500	Powerblock	NA
2015_295_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	7/20/2015	7/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass with flux grade 1 & 3 singe on retrices and several primary flight feathers, throat and upper breast.	Scorched or singed	1,3	1	640303, 3933452	Powerblock	NA
2015_296_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	7/21/2015	7/21/2015	Feather spot	2 weeks	Feather spot consisting of 7 body, 4 retrices, 9 primaries, and 9 secondaries. No evidence of singeing or collision.	Unknown	Unk	1	639349, 3932948	Fencing	NA
2015_297_ISEGS	Lesser Nighthawk	LENI	Incidental	7/21/2015	7/21/2015	Alive, injured	0-8 hours	Injured bird found by WEST biologist as incidental while conducting CRT trail completion. Damage and blood were observed inside mouth, evidencing collision.	Collision with solar panel/heliostat	NA	1	641094, 3932906	Heliostat	Updated 'Description of Carcass/Injury', 'Suspected cause of injury/mortality': Collision, and 'Level of certainty for suspected cause': Valid (>90%). Updated 07/30/2015 CJM
2015_298_ISEGS	Cliff Swallow	CLSW	Incidental	7/22/2015	7/22/2015	Mummified	2 weeks	Whole carcass found in mummified state. Evidence of curling to all flight feathers, singeing to contour feathers on head, neck, back, rump, and chest.	Scorched or singed	2,3	1	640373, 3933466	Solar Concentrating Tower	NA
2015_299_ISEGS	Peregrine Falcon	PEFA	Incidental	7/22/2015	7/22/2015	Alive, injured	0-8 hours	Alive and with injury. Bird died in rehab (euthanized). Bird was returned to site on 9/15/2015 and processed on 9/16/2015.	Scorched or singed	2,3	1	641352, 3933833	Fencing	NA
2015_300_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	7/24/2015	7/24/2015	Feather spot	3-6 days	Feather spot: 1 rect, 13 body feathers. No evidence of singe.	Unknown	NA	1	640063, 3932751	Heliostat	NA

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2015_301_ISEGS	Yellow Warbler	YWAR	Incidental	7/26/2015	7/26/2015	Broken up	8-24 hours	14 primaries, 2 secondaries, 3 tertials and associated coverts. Pieces of both wing with associated feathers. No evidence of collision or flux.	Unknown	Unk/NA	3	637442, 3937888	Power Block	NA
2015_302_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	7/28/2015	7/28/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Entire. Neck, back and rump singed. Singe on both wings.	Scorched or singed	2,3	3	637445, 3937956	Power Block	NA
2015_303_ISEGS	Tree Swallow	TRES	Carcass Survey	7/28/2015	7/28/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Entire. Tail and wings visibly curled with light singeing on nape and rump.	Scorched or singed	2,3	3	637455, 3937956	Power Block	NA
2015_304_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	7/28/2015	7/28/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Entire. Curling on both wings, as well as tail. Light singe on both sides of neck.	Scorched or singed	2,3	3	637473, 3937957	Power Block	NA
2015_305_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	7/28/2015	7/28/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Entire. Wings and tail curled with singeing on head, back and flanks. Grades 2 and 3 flux. Body crushed by vehicle.	Scorched or singed	2,3	3	637477, 3937937	Power Block	NA
2015_306_ISEGS	Common Raven	CORA	Carcass Survey	7/28/2015	7/28/2015	Feather spot	2 days	1 primary, 4 secondaries, 14 body feathers and coverts found. Feathers show singe and curling.	Scorched or singed	Unk	3	637443, 3937964	Power Block	NA
2015_307_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	7/28/2015	7/28/2015	Dead; fresh (eyes moist)	0-8 hours	Entire. Tail curled with singeing present on head, neck and upper breast.	Scorched or singed	1,3	3	637485, 3937905	Power Block	NA
2015_308_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	7/28/2015	7/28/2015	Feather spot	3-6 days	2 primaries found. No evidence of collision or flux.	Unknown	NA	3	637480, 3937929	Power Block	NA
2015_309_ISEGS	Unknown	UNID	Carcass Survey	7/28/2015	7/28/2015	Mummified	2 weeks	Partial; spine, both femurs, and pelvis found. Bones picked clean and bleached white. No evidence of collision or flux.	Unknown	NA	3	637550, 3937947	Power Block	NA
2015_310_ISEGS	House Finch	HOFI	Carcass Survey	7/28/2015	7/28/2015	Broken up	2 days	Disarticulated carcass found. All present flight feathers singed and culred. Grades 2 and 3 flux.	Scorched or singed	2,3	3	637484, 3937920	Power Block	NA
2015_311_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	7/29/2015	7/29/2015	Broken up	2 weeks	2 partial wings, loose feathers, primary section (p6-10), 1 partial secondary section. No evidence of collision or flux.	Unknown	NA	3	637266, 3938054	heliostat	NA

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2015_312_ISEGS	Unknown Swallow	UNSW	Carcass Survey	7/29/2015	7/29/2015	Broken up	2 weeks	Partial right wing, body feathers connected with tissue, loose primary and secondaries from left wing: ~15 total primaries, 15+ contour, 2-3 retrices. No evidence of collision or singe.	Unknown	NA	3	637502, 3938067	heliostat	NA
2015_313_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	7/29/2015	7/29/2015	Feather spot	3-6 days	5 retrices, 25+ body feathers, 8 contour feathers. No evidence of collision or flux.	Unknown	NA	3	636927, 3936711	Fencing	NA
2015_314_ISEGS	Ash-Throated Flycatcher	ATFL	Carcass Survey	7/29/2015	7/29/2015	Feather spot	2 weeks	6 retrices, 6 primaries, 5 secondaries, >30 body feathers. No sign of collision or flux.	Unknown	NA	3	636921, 3936710	Fencing	NA
2015_315_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	7/29/2015	7/29/2015	Feather spot	2 weeks	8 rects, 6 primaries, <10 body feathers. No evidence of collision or flux.	Unknown	NA	3	637279, 3936719	Fencing	NA
2015_316_ISEGS	House Finch	HOFI	Incidental	7/29/2015	7/29/2015	Alive, injured	0-8 hours	Bird found alive. Grade 2&3 singe evident on dorsal body, crown of head, flanks, and curling on all wing and tail flight feathers. Charring in chest and undertail parts, bleeding from cloaca. No evidence of collision. Bird died in transit from tower to	Scorched or singed	2,3	1	640372, 3933477	Power Block	Updated 'Injured animal outcome': Bird died in transit to office lab. 11/10/2015 CJM
2015_317_ISEGS	Lesser Nighthawk	LENI	Incidental	7/29/2015	7/29/2015	Alive, injured	0-8 hours	Bird found alive. Severely emaciated body condition due to being trapped in HAB for several days. Bird died within a few hours of holding at lab.	Unknown	NA	3	639782, 3934639	HAB	NA
2015_318_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	7/30/2015	7/30/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Entire. Left primary and secondary feathers curled, left coverts singed. No evidence of collision, grade 1 flux.	Scorched or singed	1	1	640359, 3933481	Power Block	NA
2015_319_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	7/30/2015	7/30/2015	Feather spot	3-6 days	15 primary, 10 secondary, 6 retrices, and 100+ body feathers. No evidence of collision or flux.	Unknown	NA	3	636962, 3936722	heliostat	NA
2015_320_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	7/30/2015	7/30/2015	Feather spot	2 weeks	8 retrices found. No evidence of collision or flux.	Unknown	NA	3	636960, 3936725	heliostat	NA
2015_321_ISEGS	Black-tailed Gnatcatcher	BTGN	Incidental	8/3/2015	8/3/2015	Dead; fresh (eyes moist)	0-8 hours	Whole carcass. Tip of bill cracked, indicating collision damage.	Collision with solar panel/heliostat	NA	1	640364, 3933485	Power Block	NA
2015_322_ISEGS	Lesser Nighthawk	LENI	Incidental	8/3/2015	8/3/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass with no evidence of singe or collision.	Unknown	NA	NA	639804, 3934705	Project Building	NA

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2015_323_ISEGS	Tree Swallow	TRES	Carcass Survey	8/4/2015	8/4/2015	Mummified	2 weeks	Whole carcass. Singed, flux grade 2. All primary feathers and both wings singed and curled.	Scorched or singed	2	2	638535, 3935696	heliostat	NA
2015_324_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	8/4/2015	8/4/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Fresh blood, but without any obvious external injury. No singe. Found directly under overhead line.	collision (other)	NA	NA	638199, 3935032	Transmission Tower	NA
2015_325_ISEGS	Unknown Swallow	UNSW	Carcass Survey	8/5/2015	8/5/2015	Mummified	2 weeks	Partial carcass, missing tail and lower/ventral body. Singe extensive on all areas excepting throat. Skeleton exposed. Grade 2/3 flux.	Scorched or singed	2,3	2	638644, 3935825	Power Block	NA
2015_326_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	8/5/2015	8/5/2015	Dead, fresh (eyes moist)	8-24 hours	Entire. Left wing, tail, back, rump, face and chest singed. Grades 2/3 flux.	Scorched or singed	2,3	2	638664, 3935880	Power Block	NA
2015_327_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	8/5/2015	8/5/2015	Mummified	2 weeks	Entire. Extensive singe/charring on whole body, only chest and throat with light or no singe. Grades 2/3 flux.	Scorched or singed	2,3	2	638656, 3935894	Power Block	NA
2015_328_ISEGS	Tree Swallow	TRES	Carcass Survey	8/5/2015	8/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Entire. All flight feathers singed. Chest, left side of face and back singed. Grades 2/3 flux.	Scorched or singed	2,3	2	638644, 3935907	Power Block	NA
2015_329_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	8/5/2015	8/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Entire. Singed on majority of dorsal, 75% of flight feathers curled. Grades 2/3 singeing.	Scorched or singed	2,3	2	638620, 3935920	Power Block	NA
2015_330_ISEGS	Costa's Hummingbird	COHU	Carcass Survey	8/5/2015	8/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Entire. All flight feathers and majority of dorsal body singed. Ventral side with 25% singe. Bill shows warping from collision. Grades 2/3 singe.	Scorched or singed	2,3	2	638652, 3935881	Power Block	NA
2015_331_ISEGS	American Kestrel	AMKE	Incidental	8/5/2015	8/5/2015	Mummified	3-6 days	Entire. Singed feathers on head and nape. Grade 3 flux.	Scorched or singed	3	3	637520, 3937891	Power Block	NA
2015_332_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	8/6/2015	8/6/2015	Mummified	2 weeks	Partial. Keel, body feathers, and tail feathers found caught in worm drive of heliostat.	Collision with solar panel/heliostat	NA	2	638242, 3936838	heliostat	NA
2015_333_ISEGS	American Kestrel	AMKE	Carcass Survey	8/6/2015	8/6/2015	Broken up	2 weeks	Partial. 11 retrices, left wing highly worn with single intact primary. No signs of collision or flux.	Unknown	NA	2	638008, 3936811	heliostat	NA
2015_334_ISEGS	House Finch	HOFI	Incidental	8/6/2015	8/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, with singe grade 2&3 on all flight feathers, chest, back and head.	Scorched or singed	2,3	3	637487, 3937914	Powerblock	NA

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2015_335_ISEGS	Common Raven	CORA	Incidental	8/7/2015	8/7/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Extensive singe on all contour feathers and flight feathers. Belly shows little singe but was rotted and damaged. Grades 2/3 flux.	Scorched or singed	2,3	2	639279, 3936692	Heliostat	NA
2015_336_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	8/8/2015	8/8/2015	Broken up	2 weeks	Partial. Wing found with 9 primaries intact and attached. Flight feathers curled.	Scorched or singed	Unk	1	640373, 3933382	Heliostat	NA
2015_337_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	8/8/2015	8/8/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Tail feathers completely singed and curled. Feather on both wings mostly singed and curled. Back feathers singed. Grades 2/3 flux.	Scorched or singed	2,3	1	640373, 3933537	Power Block	NA
2015_338_ISEGS	Unknown Swallow	UNSW	Carcass Survey	8/8/2015	8/8/2015	Broken up	3-6 days	Most of carcass recovered - ventral area, left leg and left wing detached but located. Flight feathers curled, body and flight feathers singed. Grades 2/3 flux.	Scorched or singed	2,3	1	640358, 3933536	Power Block	NA
2015_339_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/8/2015	8/8/2015	Dead; fresh (eyes moist)	0-8 hours	Whole carcass. All flight feathers singed, many burned completely off. Heavy singe/char on left side of face, chest and back. Curling of contour feathers on head and back. Grades 2/3 flux.	Scorched or singed	2,3	1	640361, 3933502	Power Block	NA
2015_340_ISEGS	Hermit Warbler	HEWA	Carcass Survey	8/8/2015	8/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Wings and tail feathers singed and curled. Singe on head, breast, belly and undertail. Grades 2/3 flux.	Scorched or singed	2,3	1	640365, 3933499	Power Block	NA
2015_341_ISEGS	Western Tanager	WETA	Incidental	8/11/2015	8/11/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Not able to be retrieved due to location on tower exterior. No singe present. No sign of collision discernable from vantage point.	Unknown	NA	1	640372, 3933487	Powerblock	NA
2015_342_ISEGS	Blue-winged Teal	BWTE	Incidental	8/12/2015	8/12/2015	Alive, injured	8-24 hours	Alive. No sign of singe or collision. Bird appeared disoriented and unable to fly. Bird is being held until morning to determine most appropriate action/rehab. The bird was successfully released at 1501 in full health (13 August CJM)	Unknown	NA	3	637391, 3937882	Powerblock	'Description of Carcass/Injury', 'Injury Outcome': Bird released at 1501 in full health. Updated 08/13/2015 CJM

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2015_343_ISEGS	Wilson's Warbler	WIWA	Incidental	8/12/2015	8/12/2015	Alive, injured	0-8 hours	Observed falling from sky. Bird with singe, flux grade 1, and curling of primaries and tail feathers. Bird is being held until morning to determine most appropriate action/rehab. Bird died while being held overnight.	Scorched or singed	1,3	3	637383, 3937895	Powerblock	'Description of Carcass/Injury', 'Disposition': Freezer on site, 'Injury Outcome': Bird died while being held overnight for observation. Returned to lab for processing. Updated 08/13/2015 CJM
2015_344_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/18/2015	8/18/2015	Feather spot	3-6 days	Feather spot consisting of 18 body feathers and 1 primary. No evidence of collision or singe.	Unknown	NA	3	637770, 3937907	heliostat	NA
2015_345_ISEGS	Mourning Dove	MODO	Carcass Survey	8/18/2015	8/18/2015	Feather spot	3-6 days	Feather spot consisting of 13 secondaries, 8 primaries, 10 retrices, and 150+ body feathers. No evidence of singeing or collision.	Unknown	NA	3	637471, 3937962	ACC Building	NA
2015_346_ISEGS	Brown-headed cowbird	BHCO	Incidental	8/18/2015	8/18/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Some evidence of collision suggests possible collision. No evidence of singeing.	Unknown	NA	3	637415, 3938114	heliostat	NA
2015_347_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	8/18/2015	8/18/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of curling to primaries and secondaries on both wings and on retrices, singeing present right side of head and rump.	Scorched or singed	2	3	637512, 3937965	ACC Building	NA
2015_348_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	8/18/2015	8/18/2015	Feather Spot	2 weeks	Feather spot consisting of 3 primaries and 7 retrices. No evidence of singeing or collision.	Unknown	NA	2	639022, 3937063	Fencing	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_349_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	8/18/2015	8/18/2015	Broken up	8-24 hours	Broken up carcass consisting of head, 3 retrices, 13 primaries, 15 secondaries, and 150+ body feathers. No evidence of singeing or collision.	Unknown	NA	3	636975, 3936896	Heliostat	Updated 'Condition': Broken Up. Remainder of carcass was found on 03/24/2015 during fatality surveys in two different spots ~ 65m from initial fatality discovery location of 2015_047_ISEG S. Determined to be the same individual based on feather type, male plumage, feather wear, and corresponding anatomical parts, specifically matching set of legs (left and right) with no duplicate parts of bird found. Updated 03/25/2015 CJM
2015_350_ISEGS	Black-throated Gray Warbler	BTYW	Incidental	8/18/2015	8/18/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of curling to feathers on right side of face and upper part of head.	Scorched or singed	3	3	636848, 3937212	Heliostat	NA
2015_351_ISEGS	Yellow Warbler	YWAR	Incidental	8/18/2015	8/18/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of curling to both wings and tail, singeing to head, nape, back and rump.	Scorched or singed	2; 3	3	637510, 3937910	Auxiliary Boiler	NA
2015_352_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/19/2015	8/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. Evidence of curling to primaries and secondaries on both wings and on retrices, singeing present on top of head, nape, axillaries, and rump.	Scorched or singed	2; 3	3	637255, 3938495	heliostat	NA
2015_353_ISEGS	Tree Swallow	TRES	Carcass Survey	8/19/2015	8/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Curling to all major flight feathers in both wings and in tail, singeing to underwings, axillaries, and top of head.	Scorched or singed	2; 3	NA	638029, 3935030	Transmission Tower	NA
2015_354_ISEGS	Tree Swallow	TRES	Carcass Survey	8/19/2015	8/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Singeing to secondaries, lesser/medium coverts, and top of head.	Scorched or singed	1; 3	2	639257, 3936623	heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_355_ISEGS	Tree Swallow	TRES	Carcass Survey	8/19/2015	8/19/2015	Mummified	2 weeks	Whole carcass found. Curling to all flight feathers in both wings and tail, singeing to rump, undertail coverts, and flanks.	Scorched or singed	2; 3	1	640396, 3933500	Solar Concentrating Tower	NA
2015_356_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	8/19/2015	8/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found, Curling present in flight feathers of wings and tail, singeing to ride side of body.	Scorched or singed	2; 3	3	637453, 3937919	Steam Pipe	NA
2015_357_ISEGS	Unknown Warbler	UNWA	Carcass Survey	8/19/2015	8/19/2015	Broken up	2 weeks	Broken up carcass consisting of body and seperated head. No evidence of singeing. Possible evidence of collision with fan due to twisted position of body, deatched wings and head.	Unknown	NA	2	638498, 3935707	Heliostat	NA
2015_358_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/19/2015	8/19/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to all major flight feathers and tail, singeing to nape and rump.	Scorched or singed	2; 3	3	636681, 3939066	Heliostat	NA
2015_359_ISEGS	Horned Lark	HOLA	Carcass Survey	8/19/2015	8/19/2015	Broken up	2 weeks	Broken up carcass consisting of 2 partial wings, and a partial torso. No evidence of singeing or collision.	Unknown	NA	2	639199, 3935507	Heliostat	NA
2015_360_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	8/19/2015	8/19/2015	Broken up	3-6 days	Broken up carcass consisting of 1 primary and a partial wing. Evidence of curling on coverts of partial wing.	Scorched or singed	3	1	640544, 3933385	heliostat	NA
2015_361_ISEGS	Tree Swallow	TRES	Carcass Survey	8/19/2015	8/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling on flight feathers and tail, singeing on back and top of head.	Scorched or singed	2; 3	1	640736, 3934579	Fencing	NA
2015_362_ISEGS	Tree Swallow	TRES	Carcass Survey	8/19/2015	8/19/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling on both wings and in tail, singeing on wing coverts, head, back, and rump.	Scorched or singed	2; 3	1	640794, 3934521	heliostat	NA
2015_363_ISEGS	Yellow Warbler	YWAR	Incidental	8/20/2015	8/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. Evidence of curling on primaries, secondaries, and retrices, singeing present on belly and top of head.	Scorched or singed	2; 3	1	640073, 3933996	heliostat	NA
2015_364_ISEGS	Tree Swallow	TRES	Incidental	8/20/2015	8/20/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. No evidence of singeing or collision (checked under scope).	Unknown	NA	1	640547, 3933960	heliostat	NA

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2015_365_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	8/20/2015	8/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Curling present on flight feathers of both wings and in tail, singeing on both sides of face and upper breast.	Scorched or singed	2; 3	3	637417, 3937963	Power Block	NA
2015_366_ISEGS	Tree Swallow	TRES	Incidental	8/20/2015	8/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. No evidence of collision or singeing (checked under scope).	Unknown	NA	2	638598, 3935870	Power Block	NA
2015_367_ISEGS	Rock Wren	ROWR	Incidental	8/20/2015	8/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. No evidence of collision or singeing (checked under scope)	Unknown	NA	2	638669, 3935849	Power Block	NA
2015_368_ISEGS	Unknown Warbler	UNWA	Incidental	8/20/2015	8/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of singeing on crown, nape, back, and flanks, and all flight feathers singed.	Scorched or singed	2; 3	3	638926, 3937724	Heliostat	NA
2015_369_ISEGS	Cliff Swallow	CLSW	Incidental	8/21/2015	8/21/2015	Mummified	2 weeks	Whole carcass found. Evidence of singeing to all major flight feathers in both wings and tail as well as to head, back, rump, upper breast, and axillaries.	Scorched or singed	2; 3	3	638364, 3938987	heliostat	NA
2015_370_ISEGS	Mourning Dove	MODO	Carcass Survey	8/21/2015	8/21/2015	Broken up	3-6 days	Broken up carcass consisting of 2 partial wings with flesh, 4 retrices, 11 secondaries, and 50 + body feathers. No evidence of singeing or collision.	Unknown	NA	3	637511, 3938014	Power Block	NA
2015_371_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/21/2015	8/21/2015	Feather spot	3-6 days	Feather spot consisting of 6 primaries, 5 secondaries, 9 retrices, and 10+ body feathers. No evidence of singeing or collision.	Unknown	NA	3	637491, 3937946	ACC Building	NA
2015_372_ISEGS	Western Tanager	WETA	Incidental	8/22/2015	8/22/2015	Feather spot	0-8 hours	Feather Spot consisting of 8 primaries, 4 secondaries, 3 retrices, and 12 body feathers. Evidence of singeing on 2 primaries.	Scorched or singed	Unk	3	637463, 3937953	ACC Building	NA
2015_373_ISEGS	Blue-winged Teal	BWTE	Carcass Survey	8/25/2015	8/25/2015	Broken up	0-8 hours	Broken up consisting of partial wing with 60 body feathers. No evidence of singeing or collision.	Unknown	Unk	2	638641, 3935893	ACC Building	NA
2015_374_ISEGS	Blue-winged Teal	BWTE	Carcass Survey	8/25/2015	8/25/2015	Broken up	0-8 hours	Broken up consisting of partial carcass with attached wings and keel, part of a leg, and 200+ body feathers. No evidence of singeing or collision.	Unknown	NA	2	638654, 3935891	ACC Building	NA

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2015_375_ISEGS	Common Poorwill	COPO	Carcass Survey	8/25/2015	8/25/2015	Feather spot	2 weeks	Feather spot = Large. 5 primaries, 2 retrices, 10 secondaries, 40+ body feathers. No sign of singe or collision.	Unknown	Unk	1	639677, 3933773	heliostat	NA
2015_376_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	8/25/2015	8/25/2015	Feather spot	2 weeks	Feather spot = small. 7 primaries, 3 retrices, 6 secondaries, 10 coverts, 10 body feathers. No singe or evidence of collision.	Unknown	Unk	NA	639868, 3934843	Project Building	NA
2015_377_ISEGS	American Kestrel	AMKE	Carcass Survey	8/25/2015	8/25/2015	Feather spot	3-6 days	Feather spot, size = Large. 6 primaries, 8 secondaries, 100+ body feathers. Singe on primary and secondary feathers, but grade unknown due to lack of complete feather set.	Scorched or singed	Unk	3	636358, 3937483	heliostat	NA
2015_378_ISEGS	Mourning Dove	MODO	Carcass Survey	8/25/2015	8/25/2015	Feather spot	2 days	Feather spot = Large. 12 primaries, 10 secondaries, 25+ coverts, 25+ body feathers. No singe or collision evidence.	Unknown	NA	1	640817, 3934584	Fencing	NA
2015_379_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/25/2015	8/25/2015	Feather spot	3-6 days	Feather spot size = large. 9 primaries, 9 secondaries, 8 retrices, 50+ body feathers. Evidence of singeing on tips of primaries.	Scorched or singed	Unk	1	639509, 3934075	Heliostat	NA
2015_380_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/25/2015	8/25/2015	Feather spot	3-6 days	Feather spot consisting of 1 primary, 2 rectx, 15 secondaries, and coverts. Evidence on singeing on several secondaries and coverts.	Scorched or singed	1	3	637487, 3937970	ACC Building	NA
2015_381_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	8/25/2015	8/25/2015	Feather spot	2 weeks	Feather spot = small. 2 primaries, 2 secondaries, 3 coverts. No singe or evidence of collision.	Unknown	NA	3	637520, 3937926	Auxiliary Boiler	NA
2015_382_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/25/2015	8/25/2015	Feather spot	2 weeks	Feather spot consisting of 2 primaries. Evidence of singeing on 1 primary.	Scorched or singed	2	3	637432, 3937950	Project Building	NA
2015_383_ISEGS	Yellow Warbler	YWAR	Incidental	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Tips of primary flight feathers curled. Grade 1 flux.	Scorched or singed	1	3	637433, 3937967	Steam Pipe	NA
2015_384_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Left wing flight feathers curled, right outer primaries curled. Grade 1 flux.	Scorched or singed	1	3	637399, 3938000	Ground	NA
2015_385_ISEGS	Bullock's Oriole	BUOR	Carcass Survey	8/26/2015	8/26/2015	Mummified	2 weeks	Whole carcass. Light singe on right wing tips. Grade 1 flux.	Scorched or singed	1	3	637589, 3937951	heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_386_ISEGS	Unknown Passerine	UNPA	Incidental	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singeing to entire body.	Scorched or singed	2; 3	3	637584, 3937938	heliostat	NA
2015_387_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Retrices curled, coverts on left wing singed. Singe on head and back. Grades 1, 3 flux.	Scorched or singed	1; 3	2	638688, 3935883	ACC Building	NA
2015_388_ISEGS	Black-tailed Gnatcatcher	BTGN	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Extensive singe, no feathers left intact. Grades 2, 3 flux.	Scorched or singed	2; 3	2	638672, 3935894	ACC Building	NA
2015_389_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curled flight feathers, browned and singed body feathers. Grade 1, 3 flux.	Scorched or singed	1; 3	2	638583, 3935891	Water Tank Pipe	NA
2015_390_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling in retrices, singeing to left side of face, back, rump, and left side of breast.	Scorched or singed	1; 3	2	638583, 3935889	Water Tank Pipe	NA
2015_391_ISEGS	Mourning Dove	MODO	Carcass Survey	8/26/2015	8/26/2015	Broken up	3-6 days	Broken up carcass consisting of all features except head. No evidence of singe or collision.	Unknown	NA	1	640161, 3933428	heliostat	NA
2015_392_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. All back contour feathers singed, curling on most flight feathers. Char on wings and rump. Grades 2, 3 flux.	Scorched or singed	2; 3	1	640360, 3933534	ACC Building	NA
2015_393_ISEGS	Semipalmated Sandpiper	SESA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Retrices singed off, coverts singed. Head, nape, back and chest singed. Grade 1, 3 flux.	Scorched or singed	1; 3	2	638113, 3936980	heliostat	Updated 'How Found': found incidentally outside outer heliostat 5-acre plot after completing standard survey. 07/15/2015 CJM
2015_394_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Wings and tail singed and curled off. Singe on back; char on head, left lower flank and right wing. Grades 2, 3 flux.	Scorched or singed	2; 3	2	638113, 3936980	Heliostat	Updated 'How Found': found incidentally outside outer heliostat 5-acre plot after completing standard survey. 07/15/2015 CJM

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_395_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. All flight and tail feathers singed off. Singe/char on wings/back, rump and left side of face. Grades 2, 3 flux.	Scorched or singed	2; 3	1	639785, 3932990	heliostat	NA
2015_396_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers in wings and tail, singeing to head, back, and flanks.	Scorched or singed	2; 3	2	639642, 3935412	Heliostat	NA
2015_397_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curling of all flight feathers, singe on wings, head and back. Grades 2, 3 flux.	Scorched or singed	2; 3	3	637408, 3937879	Solar Concentrating Tower	NA
2015_398_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	8/26/2015	8/26/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curled flight feathers, singed body feathers. Grade 2, 3 flux.	Scorched or singed	2; 3	3	637408, 3937879	Project Building	NA
2015_399_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	8/28/2015	8/28/2015	Feather spot	2 weeks	Feather spot consisting of 8 rectrices. No evidence of singeing or collision.	Unknown	NA	3	637404, 3938505	heliostat	NA
2015_400_ISEGS	Yellow Warbler	YWAR	Incidental	8/29/2015	8/29/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling in rectrices, singeing to left wing coverts, secondaries of both wings.	Scorched or singed	1	3	637465, 3937982	ACC Building	NA
2015_401_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/31/2015	8/31/2015	Feather spot	2 weeks	Feather spot consisting of 2 rectrices and 12 body feathers. Evidence of singeing on 1 primary.	Scorched or singed	Unk	3	637523, 3937937	ACC Building	NA
2015_402_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/31/2015	8/31/2015	Feather spot	2 days	Feather spot size = large. 5 rectrices, 18 wing flight feathers (primaries and secondaries), 40+ body feathers. Singe evident on ends of 2 primaries.	Scorched or singed	Unk	3	637303, 3938070	heliostat	NA
2015_403_ISEGS	Bullock's Oriole	BUOR	Carcass Survey	8/31/2015	8/31/2015	Feather spot	3-6 days	Feather spot size = large. 7 primaries, 3 rectrices, 3 undertail coverts, 2 median coverts, 50 body feathers. Singed present on rectrices.	Scorched or singed	1	3	637417, 3938106	Heliostat	NA
2015_404_ISEGS	Mourning Dove	MODO	Carcass Survey	8/31/2015	8/31/2015	Feather spot	2 weeks	Feather spot consisting of 2 primaries and 8 body feathers. No evidence of singeing or collision.	Unknown	NA	3	637488, 3937857	Solar Concentrating Tower	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_405_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	8/31/2015	8/31/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Feather spot consisting of 9 primaries, 8 secondaries, 5 coverts, and ~10 body feathers. Evidence of singeing on several primaries.	Scorched or singed	Unk	2	638654, 3935865	ACC Building	NA
2015_406_ISEGS	Horned Lark	HOLA	Carcass Survey	8/31/2015	8/31/2015	Feather spot	3-6 days	Feather spot size = large. 3 retrices, 8 primaries/secondaries, 6 tertials, 20+ body feathers. No singe or evidence of collision.	Unknown	NA	2	638678, 3935902	ACC Building	NA
2015_407_ISEGS	Yellow Warbler	YWAR	Incidental	8/31/2015	8/31/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing on top of crown.	Scorched or singed	1; 3	2	638629, 3935778	Ground	NA
2015_408_ISEGS	Orange-crowned Warbler	OCWA	Incidental	8/31/2015	8/31/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to majority of flight feathers and on back contour feathers, singeing on neck, left side of face, rump, and wings.	Scorched or singed	2; 3	2	638558, 3935624	Heliostat	NA
2015_409_ISEGS	Lazuli Bunting	LAZB	Incidental	8/31/2015	8/31/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Flux grade 3, with curl and singe on crown, nape, back, rump, coverts, primaries, and secondary flight feathers.	Scorched or singed	3	2	638584, 3935817	Project Building	NA
2015_410_ISEGS	Unknown Passerine	UNPA	Carcass Survey	8/31/2015	8/31/2015	Feather spot	3-6 days	Feather spot consisting of 5 secundaries and 2 body feathers. Evidence of curling on secondaries.	Scorched or singed	Unk	1	640343, 3933464	Vehicle	Updated Species: Calliope Hummingbird; Species based on buffy flanks and white belly, partial streaked rosy gorget, rufous in tail, wing chord and bill length. Updated 04/29/2015 CJM
2015_411_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/1/2015	9/1/2015	Mummified	2 weeks	Whole carcass found. Curling to both wings and tail, singeing to top of sides of head, back, rump, axillaries, nape, and upper breast.	Scorched or singed	2; 3	2	639218, 3935769	Heliostat	NA
2015_412_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/1/2015	9/1/2015	Mummified	2 weeks	Whole carcass found. Evidence of curling to all major flight feathers in both wings and tail, singeing to rump and coverts.	Scorched or singed	2; 3	1	640306, 3933694	Heliostat	NA
2015_413_ISEGS	Nashville Warbler	NAWA	Carcass Survey	9/1/2015	9/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling to tips of primaries, tertials, and retrices, singeing to top of head, nape, and coverts.	Scorched or singed	1; 3	2	638706, 3935932	Ground	NA

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2015_414_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/1/2015	9/1/2015	Mummified	2 weeks	Whole carcass. Evidence of curling to primaries, secondaries, in both wings, and rectrices, singeing to top of head and back.	Scorched or singed	2; 3	1	640754, 3933780	Heliostat	NA
2015_415_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/1/2015	9/1/2015	Mummified	2 days	Whole carcass. Evidence of curling to all major flight feathers and tail, singeing to nape, top of head, upper breast, axillaries, and rump.	Scorched or singed	2; 3	1	640378, 3933488	Solar Concentrating Tower	NA
2015_416_ISEGS	Least Sandpiper	LESA	Carcass Survey	9/1/2015	9/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found. Evidence of curling to primaries, secondaries on both wings and in tail, singeing to head, nape, back, upper breast, and rump.	Scorched or singed	2; 3	1	639662, 3933019	Heliostat	NA
2015_417_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/1/2015	9/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singeing to top of head and rump.	Scorched or singed	3	NA	639129, 3935056	Fencing	Updated 'Suspected Cause': Collision (other) 05/13/2015 BGZ
2015_418_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/1/2015	9/1/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of singe on majority of flight feathers and ventral body and crown.	Scorched or singed	2; 3	NA	637695, 3936209	Fencing	NA
2015_419_ISEGS	American Kestrel	AMKE	Carcass Survey	9/1/2015	9/1/2015	Broken up	2 weeks	Carcass with detached head and missing tail. No evidence of singeing or collision.	Unknown	NA	2	637717, 3936233	Heliostat	NA
2015_420_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/1/2015	9/3/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of collision with street fan with both wings being broken with exposed bones.	Collision (other)	NA	2	637704, 3935470	Fencing	NA
2015_421_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/1/2015	9/3/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. No evidence of collision or singeing (checked under scope)	Unknown	Unk	2	638620, 3935899	ACC Building	NA
2015_422_ISEGS	Bank Swallow	BANS	Carcass Survey	9/1/2015	9/3/2015	Broken up	3-6 days	Carcass, with missing head (severed at neck). No singe, no collision.	Unknown	NA	2	638647, 3935883	Powerblock	NA
2015_423_ISEGS	American Kestrel	AMKE	Carcass Survey	9/1/2015	9/1/2015	Feather spot	2 weeks	Feather spot consisting of 1 primary, 2 secondaries, ~20 body feathers. Evidence of singeing on tips of secondaries, and tip of primary.	Scorched or singed	Unk	1	641334, 3933059	heliostat	NA

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2015_424_ISEGS	Greater Roadrunner	GRRO	Incidental	9/1/2015	9/1/2015	Mummified	2 weeks	Whole carcass found plus 8 rectrices and 20 body feathers. Evidence of collision by carcass being crushed in between worm drive.	Collision with solar panel/heliostat	NA	2	637950, 3935030	Overhead Lines	Updated 'Suspected Cause': Collision (other) 05/18/2015 CJM
2015_425_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/1/2015	9/1/2015	Feather spot	2 weeks	Feather spot consisting of 2 primaries and 2 body feathers. Evidence of curling on both primaries.	Scorched or singed	Unk	2	638243, 3936329	heliostat	NA
2015_426_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/1/2015	9/1/2015	Feather spot	2 weeks	Feather spot consisting of 1 rectrice, 9 body feathers. Evidence of curling and singeing on body feathers.	Scorched or singed	Unk	2	638648, 3935873	ACC Building	NA
2015_427_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/1/2015	9/1/2015	Feather spot	2 days	Feather spot consisting of 5 primaries, 10 secondaries, 4 rectrices, and 50+ body feathers. Evidence of singeing to tips of flight feathers.	Scorched or singed	Unk	2	638579, 3935886	Project Building	NA
2015_428_ISEGS	Brown-headed cowbird	BHCO	Incidental	9/1/2015	9/1/2015	Mummified	1 month +	Whole carcass found. No evidence of singeing or collision.	Unknown	NA	2	638592, 3935927	Other Machinery	NA
2015_429_ISEGS	Pacific-slope Flycatcher	PSFL	Carcass Survey	9/2/2015	9/2/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision by damage to sides on bill.	Collision with solar panel/heliostat	NA	3	636988, 3937611	Heliostat	NA
2015_430_ISEGS	Mourning Dove	MODO	Incidental	9/2/2015	9/2/2015	Feather spot	2 weeks	Feather spot consisting of 5 primaries, 6 secondaries, 2 tertials, 1 body feather. No evidence of singeing or collision.	Unknown	NA	1	640177, 3933614	heliostat	NA
2015_431_ISEGS	Ladder-backed Woodpecker	LBWO	Carcass Survey	9/2/2015	9/2/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of collision with damage to bill, specifically piece of upper mandible missing.	Collision with solar panel/heliostat	NA	1	639467, 3934046	heliostat	NA
2015_432_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	9/3/2015	9/3/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of collision by damage to upper and lower mandible being bent inwards and misaligned.	Collision (other)	NA	3	637522, 3937901	Project Building	NA
2015_433_ISEGS	Western Tanager	WETA	Incidental	9/6/2015	9/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass. No singe or evidence of collision.	Unknown	NA	1	640152, 3933449	heliostat	NA
2015_434_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/8/2015	9/8/2015	Mummified	2 weeks	Whole carcass. No singe or evidence of collision.	Unknown	NA	2	638640, 3935871	Other Machinery	NA
2015_435_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size = small. 35 body feathers. No evidence of singe of collision.	Unknown	Unk	2	637742, 3936607	heliostat	NA

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2015_436_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/8/2015	9/8/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass. Curling on primaries, secondaries of both wings. Singe on top crown, nape, coverts, axillaries, and rump.	Scorched or singed	2; 3	2	638677, 3937171	heliostat	NA
2015_437_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size = small. 12 body feathers. No singe or evidence of collision.	Unknown	Unk	3	637539, 3937866	Power Block	NA
2015_438_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	9/8/2015	9/8/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curling on all major flight feathers in both wings and tail. Singe throughout entire body.	Scorched or singed	2; 3	3	637384, 3937959	Power Block	NA
2015_439_ISEGS	Mourning Dove	MODO	Carcass Survey	9/8/2015	9/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass with heliostat imprint. Neck vertebrae appear jagged and broken to touch. Blood at bill.	Collision with solar panel/heliostat	NA	3	637370, 3937935	Power Block	NA
2015_440_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size = small. 7 primaries, 1 retrice, 30 body feathers. No singe, no collision evidence.	Unknown	Unk	3	637415, 3937948	Power Block	NA
2015_441_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	2 weeks	Feather spot size = small. 4 body feathers, 4 primaries. Body feathers and 1 primary with singe.	Scorched or singed	Unk	3	637397, 3937949	Power Block	NA
2015_442_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size small, consisting of 2 primaries, 8 secondaries, 1 tertial, coverts, and 50+ body feathers. No evidence of singe or collision.	Unknown	Unk	2	638622, 3935873	Power Block	NA
2015_443_ISEGS	Horned Lark	HOLA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	2 weeks	Feather spot size small, consisting of 2 rectrices, 1 covert, and 13 body feathers. No evidence of singe or collision.	Unknown	NA	2	638622, 3935873	Power Block	NA
2015_444_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	9/8/2015	9/8/2015	Broken up	3-6 days	Broken up. Feather spot area = small. 100 body feathers, partial left and right wing. Singe on body feathers.	Scorched or singed	Unk	2	638620, 3935879	Power Block	NA
2015_445_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	feather spot size = small. 6 body, 2 retrices, 4 secondaries, 1 primary. Secondaries, retrices, body feathers, with singe.	Scorched or singed	Unk	2	638619, 3935881	Power Block	NA
2015_446_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/8/2015	9/8/2015	Feather spot	2 days	Feather spot size = small. 25 body feathers, 5 secondaries, 3 primaries. Secondaries curled, body feathers with singe.	Scorched or singed	Unk	2	638619, 3935895	Power Block	NA

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2015_447_ISEGS	Unknown sparrow	UNSP	Carcass Survey	9/8/2015	9/8/2015	Broken up	2 weeks	Broken up with 1 rectrice, 10 primaries, partial wing, 50 body feathers. Singe on several primaries.	Scorched or singed	Unk	2	638618, 3935905	Power Block	NA
2015_448_ISEGS	Rock Pigeon	ROPI	Incidental	9/8/2015	9/8/2015	Alive, injured	0-8 hours	Whole carcass. Evidence of singeing on both wings and tail, and over top and sides of head.	Scorched or singed	2; 3	2	638647, 3935922	Power Block	NA
2015_449_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size = small. 17 body feathers, 2 primaries, 2 secondaries. Body feathers and tips of secondaries with singe.	Scorched or singed	Unk	2	638625, 3935855	Power Block	NA
2015_450_ISEGS	Yellow warbler	YWAR	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot, size = large. 4 body, 2 primary, 2 secondaries, 1 rectrice. Flight feathers with singe.	Scorched or singed	Unk	2	638642, 0	Power Block	NA
2015_451_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/8/2015	9/8/2015	Broken up	1 month +	Broken up, found in heliostat worm drive. Skull, body, 1 leg, retrices, body feathers found in worm drive. No singe.	Collision (other)	NA	2	638651, 3935860	Power Block	NA
2015_452_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size = small, consisting of 14 body feathers. No evidence of singe. Evidence of collision with heliostat imprint.	Collision with solar panel/heliostat	Unk	2	638634, 3935834	Power Block	NA
2015_453_ISEGS	American Kestrel	AMKE	Carcass Survey	9/8/2015	9/8/2015	Broken up	2 weeks	Broken up. Left wing, partial rump and tail, 20 body feathers, 3 right primaries, 3 right secondaries, and 5 right wing coverts. Imprint on heliostat found 15m from rump, matching size and shape.	Collision with solar panel/heliostat	NA	3	637453, 3937950	Power Block	NA
2015_454_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	9/8/2015	9/8/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Singe and curl on retrices, throat and upper breast.	Scorched or singed	1; 3	2	638645, 3935820	Power Block	NA
2015_455_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size large, consisting of 50 body feathers, 3 primaries, 3 retrices, and 9 secondaries. Evidence of singeing on tips of secondary flight feathers.	Scorched or singed	NA	3	637443, 3937948	Power Block	NA

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2015_456_ISEGS	American Kestrel	AMKE	Carcass Survey	9/8/2015	9/8/2015	Broken up	2 weeks	Broken up carcass and feather spot. 8 tail, 3 primary, 4 secondary, 25 body feathers. Primary and tail with flesh attached. Severed head found with feather spot. Primaries, secondaries, and body feathers with singe.	Scorched or singed	Unk	3	637437, 3937953	Power Block	NA
2015_457_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/8/2015	9/8/2015	Feather spot	3-6 days	Feather spot size large, consisting of 10 primaries, 10 retrices, 20 secondaries, and 100 body feathers. Evidence of curling to all the flight feathers.	Scorched or singed	NA	2	638562, 3935923	Power Block	NA
2015_458_ISEGS	Mourning Dove	MODO	Carcass Survey	9/8/2015	9/8/2015	Feather spot	2 weeks	Feather spot size small, consisting of 2 retrices, 2 secondaries, 2 coverts, 8 body feathers. No evidence of singe or collision.	Unknown	Unk	3	637476, 3937933	Power Block	NA
2015_459_ISEGS	Western Kingbird	WEKI	Carcass Survey	9/8/2015	9/8/2015	Broken up	2 weeks	Broken up carcass consisting of partial right wing, 12 primaries, 5 secondaries, 10 retrices, and 50 body feathers. Evidence of curling to retrices, singeing present of primaries.	Scorched or singed	3/UNK	2	638678, 3935805	Power Block	NA
2015_460_ISEGS	Mourning Dove	MODO	Carcass Survey	9/9/2015	9/9/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No singe. Imprint on nearby heliostat matches size and shape of species.	Collision with solar panel/heliostat	NA	2	638665, 3935805	Power Block	NA
2015_461_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/9/2015	9/9/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. No evidence of collision or singeing (checked under scope)	Unknown	NA	2	638678, 3935837	Power Block	NA
2015_462_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/9/2015	9/9/2015	Feather spot	2 weeks	Feather spot size= small, consisting of 2 primaries, 2 secondaries, 2 body feathers. Evidence of singeing on primaries.	Scorched or singed	Unk	3	636577, 3936902	heliostat	NA
2015_463_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size= small, consisting of 1 primary, 1 secondary, 25 body feathers. Evidence of singeing to secondary flight feather.	Scorched or singed	Unk	2	638606, 3935899	Powerblock	NA
2015_464_ISEGS	Cactus Wren	CACW	Carcass Survey	9/9/2015	9/9/2015	Broken up	2 weeks	Broken up consisting of partial wing attached by skin, 1 rectrice, and 3 primaries. No evidence of singe or collision.	Unknown	Unk	2	638595, 3935852	Powerblock	NA

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2015_465_ISEGS	Sora	SORA	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size = large. 75 body feathers, 15 primaries, 15 secondaries. No singe.	Unknown	NA	3	637566, 3937224	heliostat	NA
2015_466_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size = small. 3 primaries, 5 retrices, 25 body feathers. Singe present on 5 flight feathers and all body feathers.	Scorched or singed	Unk	NA	639074, 3935002	Fencing	NA
2015_467_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	9/9/2015	9/9/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe, grade 2 & 3, on crown, flank, both wing tips, and tail.	Scorched or singed	2; 3	2	639431, 3936733	heliostat	NA
2015_468_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/9/2015	9/9/2015	Broken up	2 weeks	Broken up consisting of detached head, left and right wings. No evidence of singeing or collision.	Unknown	NA	3	637416, 3937929	Powerblock	NA
2015_469_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size= large, consisting of 1 rectrice, 2 secondaries, 1 primary, 50+ body feathers. No evidence of singe or collision.	Unknown	NA	3	637500, 3937931	Auxiliary Boiler	NA
2015_470_ISEGS	Unknown Large Bird	UNLB	Carcass Survey	9/9/2015	9/9/2015	Feather spot	2 weeks	Feather spot size = small, consisting of 10 body feathers. No evidence of singe or collision.	Unknown	NA	2	638729, 3937008	Heliostat	NA
2015_471_ISEGS	Vesper Sparrow	VESP	Carcass Survey	9/9/2015	9/9/2015	Feather spot	2 weeks	Feather spot size = small. 1 rectrice, 6 secondaries, 2 primaries, 30-50 body feathers. No singe.	Unknown	Unk	1	640809, 3933661	Heliostat	NA
2015_472_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size small, consisting of 12 body feathers, 3 primaries, and 1 rectrice. No evidence of singe or collision.	Unknown	Unk	3	637472, 3937942	Powerblock	NA
2015_473_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	9/9/2015	9/9/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. No evidence of collision or singeing (checked under scope)	Unknown	NA	1	641084, 3933411	Heliostat	NA
2015_474_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/9/2015	9/9/2015	Feather spot	2 weeks	Feather spot size= large, consisting of 8 primaries, 8 secondaries, 1 rectrice, and 80 body feathers. No evidence of singe or collision.	Unknown	NA	2	639244, 3935397	Heliostat	NA
2015_475_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size= large, consisting of 3 primaries, 4 secondaries, 4 body feathers. Evidence of singeing on primary, secondary, 1 body feather.	Scorched or singed	Unk	2	639242, 3935406	Heliostat	NA

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2015_476_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/9/2015	9/9/2015	Feather spot	3-6 days	Feather spot size = small. 2 primaries, 1 secondary, 1 body feather. Singe present on 3 flight feathers.	Scorched or singed	Unk	1	640395, 393350	Power Block	NA
2015_477_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/9/2015	9/9/2015	Feather spot	2 weeks	Feather spot size = large. 9 body feathers, 1 secondary. No singe.	Unknown	NA	1	640366, 3933506	Power Block	NA
2015_478_ISEGS	Yellow warbler	YWAR	Carcass Survey	9/10/2015	9/16/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Carcass twisted and crushed, also with observable singe on upper breast feather tips. Singe very slight, grade 3, and bird likely survived initial singe event, as inferred from its discovery inside the ACC street area.	Scorched or singed	3	1	640409, 3933481	Power Block	NA
2015_479_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size=small, consisting of 3 primaries, 2 secondaries, 3 rectrices, and 11 body feathers. Evidence of singe on end of primaries.	Scorched or singed	Unk	2	637861, 3936219	Heliostat	NA
2015_480_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/10/2015	9/10/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Singe and curl on primaries, secondaries of wing and in tail. Singe on rump, nape, axillaries, upper breast, crown.	Scorched or singed	2; 3	2	637861, 3936198	Heliostat	NA
2015_481_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/10/2015	9/10/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe and curl on retrices, primaries, right side of face, left auricular.	Scorched or singed	1; 3	NA	638672, 3934979	Project Building	NA
2015_482_ISEGS	Mourning Dove	MODO	Carcass Survey	9/10/2015	9/10/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass found. No evidence of collision or singeing (checked under scope).	Collision with solar panel/heliostat	NA	2	639497, 3936908	Heliostat	NA
2015_483_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size large, consisting of 11 rectrices, 17 primaries/secondaries, and 100+ body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	640407, 3933480	Auxiliary Boiler	NA
2015_484_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size=small, consisting of 10 secondaries, 15 mixed flight feathers, 7 rectrices, 100 + body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	641042, 3933283	Heliostat	NA
2015_485_ISEGS	Unknown Passerine	UNPA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size = small. No singe. 15 body feathers.	Unknown	Unk	2	638646, 3935836	Powerblock	NA

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2015_486_ISEGS	Unknown Large Bird	UNLB	Carcass Survey	9/10/2015	9/10/2015	Feather spot	2 weeks	Feather spot size small, consisting of 45 body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	2	638628, 3935826	Powerblock	NA
2015_487_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	9/10/2015	9/10/2015	Broken up	3-6 days	Broken up consisting of body without head. No evidence of collision or singe (checked under microscope).	Unknown	NA	2	638675, 3935917	Powerblock	NA
2015_488_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	9/10/2015	9/10/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singe and curl on primaries, secondaries of both wings and on tail. Singe on axillaries, upper breast, both sides of face.	Scorched or singed	3	1	640608, 3934570	heliostat	NA
2015_489_ISEGS	Unknown Blackbird	UNBB	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size large, consisting of 11 primaries, 5 secondaries, 15 unknown flight feathers, 14 coverts, 25+ body feathers. Evidence of curling on 28 flight feathers.	Scorched or singed	Unk	3	638281, 3938297	heliostat	NA
2015_490_ISEGS	Horned Lark	HOLA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size large, consisting of 7 rectrices, 5 primaries, 5 secondaries, 5 tertials, and 100+ body feathers. No evidence of singe or collision.	Unknown	NA	3	637443, 3937969	ACC Building	NA
2015_491_ISEGS	Ruddy Duck	RUDU	Carcass Survey	9/10/2015	9/10/2015	Alive, injured	0-8 hours	Alive. No evidence of singe or collision. Bird disoriented and unable to fly, initially. Released successfully same day.	Unknown	NA	3	637494, 3937980	ACC Building	NA
2015_492_ISEGS	Green-winged Teal	GWTE	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size large, consisting of 9 primaries, 10 secondaries, and 75 body feathers. No evidence of singe or collision.	Unknown	NA	3	637234, 3937932	Heliostat	NA
2015_493_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size = small. 18 body feathers, 1 rectrice. No singe.	Unknown	Unk	3	637733, 3938835	Heliostat	NA
2015_494_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/10/2015	9/10/2015	Feather spot	2 days	Feather spot size large, consisting of 3 rectrices, 11 primaries, 14 secondaries, 3 undertail coverts, and 30 body feathers. Evidence of singeing on edge of secondary, curling to tip of rectrice.	Scorched or singed	Unk	3	637455, 3937943	Powerblock	NA
2015_495_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size = small. Singe on 4 flight feathers (remiges).	Scorched or singed	1	3	637458, 3937953	Powerblock	NA

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2015_496_ISEGS	Unknown Bird	UNBD	Carcass Survey	9/10/2015	9/10/2015	Broken up	2 weeks	Broken up consisting of left shoulder of bird. No evidence or collision or singe (checked under microscope).	Unknown	NA	3	637434, 3937921	Powerblock	NA
2015_497_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather size spot small, consisting of 4 primaries, 2 secondaries, 2 body feathers. No evidence or collision or singe (checked under microscope).	Unknown	NA	3	637430, 3937911	Powerblock	NA
2015_498_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/10/2015	9/10/2015	Feather spot	2 weeks	Feather spot size = small. No singe. 3 primaries.	Unknown	NA	3	637406, 3937922	Powerblock	NA
2015_499_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size small, consisting of 5 secondaries, 1 primary, 1 rectrice, 2 body feathers. Evidence of singe of 6 flight feathers.	Scorched or singed	Unk	3	638606, 3937854	heliostat	NA
2015_500_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/10/2015	9/10/2015	Feather spot	3-6 days	Feather spot size=small, consisting of 4 rectrices, 6 body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	2	638654, 3935881	ACC Building	NA
2015_501_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/10/2015	9/10/2015	Feather spot	2 weeks	Feather spot size = large. No singe. 17 primaries, 11 secondaries, 8 tail, 100+ body feathers.	Unknown	NA	2	638621, 3935896	ACC Building	NA
2015_502_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/10/2015	9/10/2015	Feather spot	1 month +	Feather spot size = small. No singe. 5 primary, 3 secondaries, 2 tail.	Unknown	NA	2	638648, 3935909	ACC Building	NA
2015_503_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/11/2015	9/11/2015	Broken up	2 weeks	Feather spot size = small. Found with skull fragments. 14 primaries, 6 secondaries, 16+ body and mixed remiges. No singe	Unknown	NA	2	638730, 3935830	Powerblock	NA
2015_504_ISEGS	American Kestrel	AMKE	Incidental	9/11/2015	9/11/2015	Mummified	3-6 days	Whole carcass. Moderately scavenged, likely insect scavenged, leading to dessication of body and head. Singe, grade 1, on right wing coverts, primaries, and rectrices.	Scorched or singed	1	3	636400, 3936790	Heliostat	NA
2015_505_ISEGS	Horned Lark	HOLA	Carcass Survey	9/11/2015	9/11/2015	Feather spot	2 weeks	Feather spot size = large. 3 tail, 10 primary, 17 secondary, 100+ body. No singe.	Unknown	NA	3	636929, 3937008	Heliostat	NA
2015_506_ISEGS	Mourning Dove	MODO	Carcass Survey	9/11/2015	9/11/2015	Feather spot	8-24 hours	Feather spot size = large. 35 mixed remiges, 9 rectrices, 200+ body feathers. No singe.	Unknown	NA	1	640304, 3933538	Powerblock	NA

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2015_507_ISEGS	Calliope Hummingbird	CAHU	Carcass Survey	9/14/2015	9/14/2015	Mummified	3-6 days	Whole carcass found. Evidence of singeing on tips of primaries on right wing.	Scorched or singed	1	2	639359, 3936782	Heliostat	NA
2015_508_ISEGS	Unknown Bird	UNBD	Carcass Survey	9/14/2015	9/14/2015	Feather spot	3-6 days	Feather spot size small, consisting of 1 tertial, 1 secondary, and 15 body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	640355, 3933511	Powerblock	NA
2015_509_ISEGS	Northern Mockingbird	NOMO	Carcass Survey	9/14/2015	9/13/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Neck appears broken, but insufficient resources to verify. No singe.	Unknown	NA	1	640370, 3933546	ACC Building	NA
2015_510_ISEGS	Verdin	VERD	Carcass Survey	9/14/2015	9/14/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass found. Evidence of singeing on head, primaries and secondaries curled in addition to tail.	Scorched or singed	2; 3	1	640183, 3933448	Heliostat	NA
2015_511_ISEGS	Horned Lark	HOLA	Carcass Survey	9/14/2015	9/14/2015	Broken up	2 weeks	Broken up carcass consisting of 2 partial wings. No evidence of collision or singe (checked under microscope).	Unknown	NA	2	639403, 3934893	Overhead Lines	NA
2015_512_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/14/2015	9/14/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass found. Evidence of singeing on upper back and head.	Scorched or singed	3	NA	640158, 3935360	Power Pole	NA
2015_513_ISEGS	American Kestrel	AMKE	Carcass Survey	9/14/2015	9/13/2015	Broken up	3-6 days	Carcass without head. Curling present on left and right wing primaries, greater coverts, median coverts, retrices.	Scorched or singed	2; 3	2	638652, 3935829	Powerblock	NA
2015_514_ISEGS	Mourning Dove	MODO	Carcass Survey	9/14/2015	9/14/2015	Feather spot	2 weeks	Feather spot size small, consisting of 1 rectrice, 1 covert, and 42 body feathers. No evidence of collision or singe (checked under scope)	Unknown	NA	2	638581, 3935892	Powerblock	NA
2015_515_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/14/2015	9/14/2015	Feather spot	3-6 days	Feather spot size small, consisting of 12 body feathers, 1 tertial. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	640352, 3933520	ACC Building	NA
2015_516_ISEGS	American Kestrel	AMKE	Carcass Survey	9/14/2015	9/13/2015	Broken up	3-6 days	Feather spot with partial carcass/bone. 2 primaries, 2 secondaries, 50 body feathers, humerus, ulna. No singe.	Unknown	NA	1	640358, 3933534	ACC Building	NA

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2015_517_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/14/2015	9/14/2015	Feather spot	3-6 days	Feather spot size large, consisting of 10 primaries, 10 secondaries, 5 rectrices and 40 body feathers. Evidence of singeing on flight feathers.	Scorched or singed	1	1	640348, 3933556	Powerblock	NA
2015_518_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/14/2015	9/14/2015	Broken up	3-6 days	Broken up carcass consisting of partial right wing, 5 primaries attached by bone. No evidence of collision or singe (checked under scope).	Unknown	NA	1	640404, 3933520	Powerblock	NA
2015_519_ISEGS	Mourning Dove	MODO	Carcass Survey	9/15/2015	9/15/2015	Broken up	3-6 days	Feather spot size = large. Left wing with bone/flesh, 5 primary, 5 secondaries, 3 rectrices, 2 undertail covert, 40 body feathers. No singe	Unknown	Unk	1	640362, 3933560	Powerblock	NA
2015_520_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/15/2015	9/15/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singe and curl on both wings, head, right side of face and right chest.	Scorched or singed	2; 3	1	640363, 3933508	Powerblock	NA
2015_521_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 17 body feathers, 1 rectrice. Singe at tip of rectrice.	Scorched or singed	Unk	1	640363, 3933357	heliostat	NA
2015_522_ISEGS	Mourning Dove	MODO	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 3 primaries, 6 secondaries, 3 coverts, 6 unknown feathers. No singe.	Unknown	Unk	1	639350, 3933643	Fencing	NA
2015_523_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 25 body feathers. No singe.	Unknown	NA	1	641221, 3932845	Fencing	NA
2015_524_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	9/15/2015	9/15/2015	Feather spot	2 days	Feather spot size = 50+ body, 5 rectrices, 10 primaries, 4 secondaries. No singe.	Unknown	NA	1	640746, 3933686	heliostat	NA
2015_525_ISEGS	Greater roadrunner	GRRO	Incidental	9/15/2015	9/15/2015	Feather spot	2 weeks	Feather spot size = small. 3 primaries, no singe.	Unknown	NA	1	640362, 3933559	Powerblock	NA
2015_526_ISEGS	Unknown Finch	UNFI	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 5 primaries, 9 secondaries, 2 tertials, 30 body feathers. No singe.	Unknown	Unk	1	640362, 3933559	Powerblock	NA
2015_527_ISEGS	Mourning Dove	MODO	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 5 rectrices, 2 coverts, 8 undertail coverts. No singe.	Unknown	Unk	NA	639665, 3934427	Power Pole	NA
2015_528_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size small, consisting of 5 rectrices, 5 primaries, 1 secondary, 25 body feathers, 1 undertail covert. Evidence of singe on tip of 1 primary.	Scorched or singed	Unk	1	640977, 3934333	heliostat	NA

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2015_529_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/15/2015	9/15/2015	Feather spot	2 weeks	Feather spot size = small. 50 body, 12 secondaries, 6 primaries, 6 retrices. No singe.	Unknown	NA	3	636689, 3938420	Heliostat	NA
2015_530_ISEGS	Mourning Dove	MODO	Incidental	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 3 retrices, 17 body feathers, 1 covert. No singe.	Unknown	Unk	2	638889, 3935982	Heliostat	NA
2015_531_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/15/2015	9/15/2015	Feather spot	2 days	Feather spot size = small. 3 primaries, 8 body feathers. No singe.	Unknown	Unk	2	638851, 3935986	Heliostat	NA
2015_532_ISEGS	Rock Pigeon	ROPI	Carcass Survey	9/15/2015	9/15/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe on entirety of dorsal and ventral body, and all flight feathers.	Scorched or singed	2; 3	2	638525, 3935785	Powerblock	NA
2015_533_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/15/2015	9/15/2015	Feather spot	1 month +	Feather spot size = small. 14 body feathers. No singe.	Unknown	NA	3	636482, 3937349	Heliostat	NA
2015_534_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/15/2015	9/15/2015	Broken up	3-6 days	Broken up carcass consisting of partial wing, 1 secondary, 1 primary, 1 tertial, 6 body feathers. Evidence of singe to inner primaries and outer secondaries.	Scorched or singed	Unk	2	638632, 3935860	Powerblock	NA
2015_535_ISEGS	Vaux's swift	VASW	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = large. 2 primaries, 2 secondaries, 1 tertial, 10 body. All feathers with singe.	Scorched or singed	Unk	2	638632, 3935860	Powerblock	NA
2015_536_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = large. 6 primaries. One primary curled, all others with singe.	Scorched or singed	Unk	2	638632, 3935860	Powerblock	NA
2015_537_ISEGS	Unknown	UNBD	Carcass Survey	9/15/2015	9/15/2015	Feather spot	3-6 days	Feather spot size = small. 2 primaries. No singe.	Unknown	NA	2	638632, 3935860	Powerblock	NA
2015_538_ISEGS	Unknown Large Bird	UNLB	Incidental	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size = small. 20 body feathers in clump, no singe.	Unknown	NA	1	640378, 3933553	ACC Building	NA
2015_539_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size large, consisting of 2 rectrices, 2 primaries, 2 secondaries, 20 body feathers. Evidence of singe in tip of primary.	Scorched or singed	Unk	1	640330, 3933658	Heliostat	NA
2015_540_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size small, consisting of 7 secondaries, 4 primaries, 50 body feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	640337, 3933303	Heliostat	NA

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2015_541_ISEGS	Unknown Bird	UNBD	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size small, consisting of 3 coverts, 19 body feathers, 2 primaries. Evidence of singe on several body feathers, and 2 curled flight feathers.	Scorched or singed	Unk	1	640300, 3933655	Heliostat	NA
2015_542_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size small, consisting of 2 primaries. Evidence of curling on both primaries.	Scorched or singed	Unk	1	640366, 3933483	Powerblock	NA
2015_543_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size large, consisting of 2 primaries, 3 rectrices, 2 secondaries, 2 tertials, 50 body feathers. No evidence of collision or singe (checked under scope).	Unknown	NA	1	640562, 3933630	Heliostat	NA
2015_544_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size large, consisting of 4 primaries, 1 rectrice, 1 tertial, 30 body feathers. Evidence of singe on tip of primary.	Scorched or singed	Unk	1	640484, 3933619	Heliostat	NA
2015_545_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size = small. 12 body feathers. Singe on 4 body feathers.	Scorched or singed	Unk	1	640441, 3933490	Powerblock	NA
2015_546_ISEGS	Yellow warbler	YWAR	Incidental	9/16/2015	9/16/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass with singe on all flight feathers, majority of dorsal and crown. Flux grade 2 and 3.	Scorched or singed	2; 3	3	637453, 3937892	Powerblock	NA
2015_547_ISEGS	Rock Pigeon	ROPI	Carcass Survey	9/16/2015	9/16/2015	Broken up	3-6 days	Broken up carcass consisting of entire body minus head and left wing. Evidence of singeing to tail, wing, and coverts.	Scorched or singed	1; 3	1	640602, 3933576	Heliostat	NA
2015_548_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size = small. 5 primaries, 4 tail, 2 secondaries, 100+ body. Singe on primaries, secondaries, and tail.	Scorched or singed	1	1	640478, 3933536	Heliostat	NA
2015_549_ISEGS	Ladder-backed Woodpecker	LBWO	Carcass Survey	9/16/2015	9/16/2015	Broken up	3-6 days	Broken up carcass (head and torso). No singe.	Unknown	Unk	1	640348, 3933553	Powerblock	NA
2015_550_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size small, consisting of 20 body feathers, 1 covert. No evidence of collision or singe (checked under microscope).	Unknown	Unk	1	640479, 3933525	Heliostat	NA
2015_551_ISEGS	Mourning Dove	MODO	Carcass Survey	9/16/2015	9/16/2015	Feather spot	3-6 days	Feather spot size large, consisting of 6 rectrices, 3 secondaries, 3 primaries, 75 body feathers, 10 coverts. No evidence of collision or singe.	Unknown	Unk	1	640474, 3933504	Heliostat	NA

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2015_552_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/16/2015	9/16/2015	Broken up	3-6 days	Broken up carcass consisting of missing head, right wing, inner half of left wing, right wing. Evidence of curling on left wing, singeing on primaries, greater and lesser coverts.	Scorched or singed	Unk	1	640359, 3933388	Heliostat	NA
2015_553_ISEGS	Unknown Duck	UNDU	Carcass Survey	9/16/2015	9/16/2015	Feather spot	8-24 hours	Feather spot size = 1 tertial, 5 tail, 100+ body. No singe.	Unknown	NA	2	638880, 3935300	Heliostat	NA
2015_554_ISEGS	Lark Sparrow	LASP	Carcass Survey	9/16/2015	9/16/2015	Feather spot	8-24 hours	Feather spot size = large. 3 retrices, 1 primary, 2 mixed remiges, 6 body feather. No singe.	Unknown	NA	1	640433, 393337	Heliostat	NA
2015_555_ISEGS	Mourning Dove	MODO	Carcass Survey	9/17/2015	9/17/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Carcass without head. No evidence of singe, collision probable due to proximity to heliostat.	Collision with solar panel/heliostat	NA	2	639388, 3935660	Heliostat	NA
2015_556_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	9/20/2015	9/20/2015	Alive, injured	0-8 hours	Alive, eyes swollen and puffy, lacking other visible external injury, no singe.	Unknown	NA	3	638031, 3938427	Heliostat	NA
2015_557_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = small. 3 primaries, 3 secondaries, 4 tail, 19 body feathers. No singe	Unknown	NA	3	637289, 3937808	Heliostat	NA
2015_558_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Broken up	3-6 days	8 body feathers attached with flesh. No singe.	Unknown	NA	3	637328, 3937771	Heliostat	NA
2015_559_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size =small. 25+ body, 6 primary, 6 retrice, 5 secondary feathers. No singe.	Unknown	NA	3	637323, 3937762	Heliostat	NA
2015_560_ISEGS	Townsend's Warbler	TOWA	Carcass Survey	9/21/2015	9/21/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass whole, with singe on majority of flight feathers, crown, flanks, dorsal body. Flux grade 2 & 3.	Scorched or singed	2; 3	3	637442, 3937896	Powerblock	NA
2015_561_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Feather spot	8-24 hours	Feather spot size = small. 2 secondaries, 3 mixed remiges. Singe on 3 remiges.	Scorched or singed	Unk	3	637429, 3937805	Heliostat	NA
2015_562_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 50+ body feathers. No singe.	Unknown	NA	3	637417, 3937810	Heliostat	NA
2015_563_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Feather spot	2 days	Feather spot size = small. 4 primaries, attached with flesh at joint. No singe.	Unknown	NA	3	637368, 3937802	Heliostat	NA
2015_564_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 100 body, 3 retrices, 13 secondaries, 9 primaries. Singe on tips of primaries, secondaries.	Scorched or singed	Unk	3	637320, 3937804	Heliostat	NA

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2015_565_ISEGS	Horned Lark	HOLA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	2 days	Feather spot size = large. 6 tail, 50 body feathers, 15 mixed. No singe.	Unknown	NA	3	636544, 3937299	Heliostat	NA
2015_566_ISEGS	Barn Swallow	BARS	Carcass Survey	9/21/2015	9/21/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass whole. Heliostat with matching imprint. No singe.	Collision with solar panel/heliostat	NA	3	636577, 3938726	Heliostat	NA
2015_567_ISEGS	Lark Sparrow	LASP	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 10 primary, 18 secondary, 10 tertial, 50 body. No singe.	Unknown	NA	3	637233, 3937973	Heliostat	NA
2015_568_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 12 retrice, 2 primary, 5 secondary, 50 body. No singe.	Unknown	NA	3	637276, 3938051	Heliostat	NA
2015_569_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	8-24 hours	Feather spot size = large. 8 retrices, 4 primaries, 22 mixed remiges. Singe on 6 flight feathers.	Scorched or singed	1	3	637548, 3937716	Heliostat	NA
2015_570_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Feather spot	8-24 hours	Feather spot size = small. 11 body feathers. No singe.	Unknown	NA	3	637261, 3938054	Heliostat	NA
2015_571_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2015	9/21/2015	Broken up	3-6 days	Partial wing with singe on primaries.	Scorched or singed	Unk	3	637302, 3938093	Heliostat	NA
2015_572_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 40 body, 6 flight (4 tail, 2 primary). No singe	Unknown	NA	3	637332, 3938046	Heliostat	NA
2015_573_ISEGS	Cactus Wren	CACW	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = small. 2 tail, 3 primary, 7 body. Singe on primaries.	Scorched or singed	Unk	3	637654, 3938002	Heliostat	NA
2015_574_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = 9 tail, 15 secondary, 9 primary, 50 body. Singe present on majority of flight feathers.	Scorched or singed	3	3	637356, 3938090	Heliostat	NA
2015_575_ISEGS	Mourning Dove	MODO	Carcass Survey	9/21/2015	9/21/2015	Feather spot	2 weeks	Feather spot size = large. 2 primaries, 5 secondaries, 7 body. No singe	Unknown	NA	3	637624, 3937873	Heliostat	NA
2015_576_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = small. 5 body, 2 primaries, 4 mixed remiges. No singe.	Unknown	NA	3	637408, 3938061	Heliostat	NA
2015_577_ISEGS	Yellow warbler	YWAR	Carcass Survey	9/21/2015	9/21/2015	Feather spot	2 days	Feather spot size = small. 3 retrices. No singe	Unknown	NA	3	637425, 3938084	Heliostat	NA
2015_578_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/21/2015	9/21/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Carcass intact. Damage to bill, suggests collision. Near heliostat.	Collision with solar panel/heliostat	NA	3	637405, 3938120	Heliostat	NA
2015_579_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = large. 10 tail, 4 secondaries, 5 primaries, 30 body. Singe on 2 tail feathers.	Scorched or singed	Unk	3	637497, 3938067	Heliostat	NA

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2015_580_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/21/2015	9/21/2015	Feather spot	3-6 days	Feather spot size = small. 25 body, 6 retrices, 7 secondaries, 4 primaries. Curling singe on 2 primaries.	Scorched or singed	1	3	637468, 3938086	Heliostat	NA
2015_581_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/22/2015	9/22/2015	Broken up	3-6 days	Part of tail with vent, coverts with skin attached, partial wings and various associated single feathers. Probable collision, imprint containing body feathers. No singe.	Collision with solar panel/heliostat	NA	2	638562, 3935612	Heliostat	NA
2015_582_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/22/2015	9/22/2015	Broken up	2 days	Feather spot size = large. 9 retrices, 5 primaries, 11 mixed remiges, 50+ body. Held together at joint by flesh. No singe.	Unknown	Unk	2	638536, 3935674	Heliostat	NA
2015_583_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	FS size= small. 6 tail, 4 secondary, 10 primary and approx. 20 body feathers. No evidence of collision or singe.	Unknown	NA	2	639636, 3936108	Heliostat	NA
2015_584_ISEGS	Lark Sparrow	LASP	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 7 primaries, 10 secondaries, 2 tertials, 1 covert. Singe on tertials.	Scorched or singed	1	2	638495, 3935721	Heliostat	NA
2015_585_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = large. 200 body feathers, 6 retrices, 9 secondaries, 6 primaries. No singe	Unknown	NA	2	638447, 3935797	Heliostat	NA
2015_586_ISEGS	Unknown Dove	UNDV	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	FS size= small. Partial flight feather and >30 body feathers.	Unknown	NA	2	639383, 3935671	Heliostat	NA
2015_587_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/22/2015	9/22/2015	Feather spot	8-24 hours	Feather spot size = large. No singe. 10 retrices, 18 mixed remiges, 40 body feathers.	Unknown	NA	2	638481, 3935989	Heliostat	NA
2015_588_ISEGS	American Kestrel	AMKE	Carcass Survey	9/22/2015	9/22/2015	Broken up	3-6 days	Feather spot size = large, with flesh. 7 primaries, 6 secondaries, 15 coverts and body feathers. Singe on primaries and secondaries.	Scorched or singed	Unk	3	637966, 3938176	Heliostat	NA
2015_589_ISEGS	White-winged Dove	WWDO	Carcass Survey	9/22/2015	9/22/2015	Mummified	3-6 days	Whole carcass. Majority dessicated. No singe. Scavenged carcass near heliostat.	Collision with solar panel/heliostat	NA	2	639287, 3936285	Heliostat	NA
2015_590_ISEGS	Mourning Dove	MODO	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = large. 5 tail, 4 tail coverts, 30 body feathers. No singe.	Unknown	NA	2	638560, 3936008	Heliostat	NA
2015_591_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = large. 50 body feathers, 3 secondaries. Singe on 3 secondaries.	Scorched or singed	Unk	2	638558, 3936006	Heliostat	NA

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2015_592_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 2 primary, 1 tail, 4 body feathers. Singe present on body and primary feathers.	Scorched or singed	3/UNK	2	638638, 3936004	Heliostat	NA
2015_593_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	9/22/2015	9/22/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Singe to most of dorsal feathers, tail curled, 3 primaries curled, singeing to left flank.	Scorched or singed	1; 3	2	638660, 3935894	ACC Building	NA
2015_594_ISEGS	Verdin	VERD	Carcass Survey	9/22/2015	9/22/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe grade 1 and 3 on right wing, retrices, left coverts, and undertail coverts. Curling on crown.	Scorched or singed	1; 3	2	638647, 3935894	ACC Building	NA
2015_595_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	9/22/2015	9/22/2015	Feather spot	2 days	Feather spot size = large. 15 primary, 14 secondary, 12 tail, 50 body feathers. No singe.	Unknown	NA	2	638195, 3935316	Heliostat	NA
2015_596_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 20 body feathers. Feathers stuck to heliostat. No singe.	Collision with solar panel/heliostat	Unk	2	639397, 3936759	Heliostat	NA
2015_597_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 9 tail, 2 body. No singe	Scorched or singed	NA	2	638550, 3936024	Heliostat	NA
2015_598_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/22/2015	9/22/2015	Broken up	3-6 days	Feather spot size = small. 4 primaries, 8 remiges, 4 body feathers and partial wing. Singe on majority of feathers.	Scorched or singed	3/UNK	2	638671, 3936055	Heliostat	NA
2015_599_ISEGS	Unknown Small Bird	UNBD	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	FS size= small. 2 flight and >20 body feathers. Singe on all feathers. Grade 3 and unknown flux grade.	Scorched or singed	3/UNK	2	638762, 3935929	Heliostat	NA
2015_600_ISEGS	Horned Lark	HOLA	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 2 tail, 3 primary, 8 remiges, 1 tertial, 1 body feather. No singe.	Unknown	NA	2	637704, 3936075	Fencing	NA
2015_601_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = small. 25 body, 2 primary, 1 secondary feather. No singe.	Unknown	NA	2	638847, 3935866	Heliostat	NA
2015_602_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/22/2015	9/22/2015	Feather spot	2 weeks	Feather spot size = small. 2 tail, 5 body, 1 primary. No singe.	Unknown	NA	2	637705, 3935754	Fencing	NA
2015_603_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/22/2015	9/22/2015	Feather spot	3-6 days	Feather spot size = large. 100+ body feathers, no singe.	Unknown	NA	2	639681, 3935689	Fencing	NA
2015_604_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 weeks	Feather spot size small, consisting of 2 primaries, 1 rectrice. Evidence of curling to 1 primary.	Scorched or singed	Unk	1	640333, 3933673	Heliostat	NA
2015_605_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 days	Feather spot size = small. 3 retrices, 3 remiges, 1 body feather. Singe on all retrices present.	Scorched or singed	Unk	1	640344, 3933684	Heliostat	NA

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2015_606_ISEGS	Unknown Large Bird	UNLB	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	FS size= Small. 2 primaries, 4 coverts, 15+ body feathers. Primaries curled.	Scorched or singed	Unk	1	640310, 3933668	Heliostat	NA
2015_607_ISEGS	Red-naped Sapsucker	RNSA	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	FS size= Large. 8 primaries, 8 secondaries, 100+ body feathers. Singe and curling on primaries and secondaries. Grade 2 and unknown flux grades.	Scorched or singed	UNK/2	1	640274, 3933663	Heliostat	NA
2015_608_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 days	Feather spot size = large. 30+ body feathers. Tips of all present feathers with singe.	Scorched or singed	3	1	640358, 3933494	Heliostat	NA
2015_609_ISEGS	House Finch	HOFI	Carcass Survey	9/23/2015	9/23/2015	Alive, injured	0-8 hours	Observed entering flux and singeing. Bird has curling and singe to majority of flight feathers and head and rump. Being held in office for care and transit to rehab.	Scorched or singed	2; 3	1	640331, 3933462	Powerblock	NA
2015_610_ISEGS	Blue-winged Teal	BWTE	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size small, consisting of 1 primary, 1 secondary, 2 tertials, 25 contour feathers. No evidence of collision or singe (checked under microscope).	Unknown	NA	1	641178, 3934145	Heliostat	NA
2015_611_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size small, evidence of singeing in body feathers and primaries.	Scorched or singed	3/UNK	1	640351, 3933499	Powerblock	NA
2015_612_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	9/23/2015	9/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass found. Evidence of collision by heliostat imprint and damage to tip of bill. No singeing.	Collision with solar panel/heliostat	NA	1	640587, 3933573	Heliostat	NA
2015_613_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size small, consisting of 2 rectrices, 2 flight feathers, 2 coverts, 35 body feathers. No evidence of collision or singe (checked under microscope).	Scorched or singed	Unk	1	640497, 3933518	Heliostat	NA
2015_614_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	9/23/2015	9/23/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. No evidence of singe (checked under scope). Evidence of collision by locality near heliostat.	Collision with solar panel/heliostat	Unk	2	638610, 3936244	Heliostat	NA

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2015_615_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size small, consisting of 12 body feathers. No evidence of collision or singe (checked under microscope).	Unknown	Unk	1	640186, 3933599	Heliostat	NA
2015_616_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/23/2015	9/23/2015	Broken up	3-6 days	Broken up carcass consisting of partial right wings, with 3 primaries, 5 secondaries, and coverts. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640364, 3933393	Heliostat	NA
2015_617_ISEGS	Uknown Gnatcatcher	UNGN	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 days	FS size= large. 4 rectrices, 2 secondaries, 2 primaries, 50+ body feathers. Body and tail feathers singed. Grade 3 flux.	Scorched or singed	3	1	640302, 3933377	Heliostat	NA
2015_618_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Broken up	2 weeks	Feather spot size = small. 1 tail feather, 1 secondary, 2 body feathers, sternum and humerous. Singe on both flight feathers.	Scorched or singed	Unk	1	640152, 3933556	Heliostat	NA
2015_619_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	FS size= small. 3 bases of flight feathers and approx 45 body feathers. Singe on base of primaries.	Scorched or singed	Unk	1	640142, 3933359	Heliostat	NA
2015_620_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 days	Feather spot size = small. 2 retrices, 1 primary. Singe on all feathers present.	Scorched or singed	Unk	1	640165, 3933532	Heliostat	NA
2015_621_ISEGS	Yellow warbler	YWAR	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size = small. 4 retrices, 9 primaries, 13 secondaries, 3 coverts, 150+ body feathers. No singe.	Unknown	NA	1	640374, 3933281	Heliostat	NA
2015_622_ISEGS	Mourning Dove	MODO	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size small, consisting of 11 body feathers. No evidence of collision or singe (checked under microscope.)	Unknown	NA	1	640512, 3933523	Heliostat	NA
2015_623_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/23/2015	9/23/2015	Broken up	3-6 days	Broken up carcass consisting of clump of 15 body feathers attached by skin, in addition to 1 secondary, 1 rectrice. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640292, 3933363	Heliostat	NA
2015_624_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 weeks	Feather spot size = small. 1 primary, 6 secondary, 5 contour. Singe on secondaries.	Scorched or singed	Unk	1	640165, 3933532	Heliostat	NA

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2015_625_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/23/2015	9/23/2015	Feather spot	2 days	Feather spot size = large. 2 retrices, 2 udnertail coverts, 9 primaries, 3 secondaries, 50 body feathers. Singe on tip of secondary.	Scorched or singed	Unk	1	640144, 3933534	Heliostat	NA
2015_626_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	9/23/2015	9/23/2015	Broken up	3-6 days	Feather spot size = 15 primaries, 9 secondaries, 2 retrices, 100+ body feathers. No singe.	Unknown	NA	1	640308, 3933324	Heliostat	NA
2015_627_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size = small. 15 body feathers. No singe.	Unknown	NA	1	640482, 3933337	Heliostat	NA
2015_628_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/23/2015	9/23/2015	Feather spot	3-6 days	Feather spot size = 2 primaries, 4 secondaries, 1 covert. No singe.	Unknown	Unk	1	640300, 3933327	Heliostat	NA
2015_629_ISEGS	Western Tanager	WETA	Carcass Survey	9/24/2015	9/24/2015	Feather spot	8-24 hours	Feather spot size large consisting of 3 primaries, 6 secondaries, 5 undertail coverts, 100+ body feathers. No evidence of collision or singe (checked under scope).	Unknown	NA	1	640269, 3933226	Heliostat	NA
2015_630_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/24/2015	9/24/2015	Broken up	2 weeks	Feather spot size = small. 1 primary plus portions of other primaries (broken shafts) and flesh connecting the feathers. No singe	Unknown	NA	1	639378, 3932818	Heliostat	NA
2015_631_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = large. 10 retrices, 27 remiges, 100 body feathers. No singe.	Unknown	NA	3	637360, 3937693	Heliostat	NA
2015_632_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/28/2015	9/28/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass whole, with singe grade 2/3 throughout body and flight feathers. Many feathers singed off and not present.	Scorched or singed	2; 3	3	637507, 3937930	Powerblock	NA
2015_633_ISEGS	Common Raven	CORA	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = 2 primaries, 3 secondaries, 8 contour, 28 body. Singe on secondary and contour feathers.	Scorched or singed	NA	3	637390, 3937909	Powerblock	NA
2015_634_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/28/2015	9/28/2015	Feather spot	8-24 hours	Feather spot size = small. Feathers attached to heliostat mirror. 26 body feathers, no singe.	Collision with solar panel/heliostat	NA	3	637346, 3937796	Heliostat	NA
2015_635_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/28/2015	9/28/2015	Broken up	2 weeks	Broken up carcass consisting of skull, body, tibia, 7 retrices, 100 matted body feathers. Evidence of collision with feathers and bones found in worm drive.	Collision with solar panel/heliostat	NA	3	638930, 3937890	Heliostat	NA

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2015_636_ISEGS	Western Tanager	WETA	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = large. 2 primaries. 3 secondaries, 2 tail, 150+ body feathers. No singe.	Unknown	NA	3	637236, 3937885	Heliostat	NA
2015_637_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/28/2015	9/28/2015	Feather spot	2 days	Feather spot size = large. 4 retrices, 5 primaries, 12 mixed remiges. No singe.	Unknown	NA	3	637245, 3937892	Heliostat	NA
2015_638_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2015	9/28/2015	Broken up	3-6 days	Partial right wing. No singe.	Unknown	NA	3	637392, 3938054	Heliostat	NA
2015_639_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size small, consisting of 4 primaries, 2 secondaries, 2 retrices, and 30 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	3	638122, 3938299	Heliostat	NA
2015_640_ISEGS	Yellow warbler	YWAR	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = large. 11 body feathers and partial wings (left and right). 2 retrices, 2 secondaries, 3 primaries. Singe on tips of primaries and secondaries.	Scorched or singed	Unk	3	637441, 3937924	Powerblock	NA
2015_641_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/28/2015	9/28/2015	Feather spot	1 month +	Feather spot size = small. 4 primaries, 12 remiges, 2 undertail coverts. No singe.	Unknown	Unk	3	637423, 3937953	Powerblock	NA
2015_642_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = large. 10 retrices, 6 primaries, 10 secondaries, 100+ body feathers. No singe.	Unknown	Unk	3	637157, 3938457	Heliostat	NA
2015_643_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2015	9/28/2015	Broken up	2 days	Feather spot size = small. Found with left wing bones. 8 tail, 9 primary, 8 mixed remiges, 2 tertials, 100 body feathers. No singe.	Unknown	NA	3	637532, 3938150	Heliostat	NA
2015_644_ISEGS	Cactus Wren	CACW	Carcass Survey	9/28/2015	9/28/2015	Feather spot	2 weeks	Feather spot size small, consisting of 3 retrices, 20 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	638657, 3938061	Heliostat	NA
2015_645_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size = small. 16+ body feathers with singe, grade 3.	Scorched or singed	3	3	637450, 3937963	Powerblock	NA
2015_646_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	9/28/2015	9/28/2015	Broken up	3-6 days	Feather spot size = small. 10+ body feathers, partial tail and 4 separated retrices. No singe.	Unknown	NA	3	637475, 3937920	Powerblock	NA
2015_647_ISEGS	Unknown Gnatcatcher	UNGN	Carcass Survey	9/28/2015	9/28/2015	Broken up	3-6 days	Broken up carcass consisting of partial left wing. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	637392, 3938054	Heliostat	NA

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2015_648_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/28/2015	9/28/2015	Broken up	2 days	Broken up carcass, consisting of partial right wing. No evidence of collision or singe (checked under scope.)	Unknown	Unk	3	637467, 3937916	Powerblock	NA
2015_649_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/28/2015	9/28/2015	Broken up	3-6 days	Broken up carcass, consisting of partial left wing, 8 remiges, 30 body feathers. No evidence of collision of singe (checked under scope).	Unknown	Unk	3	637463, 3937932	Powerblock	NA
2015_650_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2015	9/28/2015	Feather spot	2 days	Feather spot size = 1 primary, 15 body feathers. No singe.	Unknown	NA	3	637722, 3937867	Heliostat	NA
2015_651_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/28/2015	9/28/2015	Feather spot	3-6 days	Feather spot size large, consisting of 12 secondaries, 2 primaries, 5 rectrices, and 150 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	637645, 3937869	Heliostat	NA
2015_652_ISEGS	Bushtit	BUSH	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size small, consisting of 1 rectrice, 1 primary, 3 secondaries, 12 body feathers. Evidence of curling on secondary.	Scorched or singed	Unk	2	638546, 3935732	Heliostat	NA
2015_653_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size = large. 2 trailing secondaries, 10 primaries, 10 secondaries, 8 rectrices, 100 body feathers. No singe.	Unknown	NA	2	638130, 3935487	Heliostat	NA
2015_654_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	2 days	Feather spot size large, consisting of 8 rectrices, 2 tertials, 6 primaries, 7 secondaries, 30 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	2	638531, 3935745	Heliostat	NA
2015_655_ISEGS	Lark Sparrow	LASP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size large, consisting of 6 rectrices, 3 secondaries, 10 coverts, 30+ body feathers. Evidence of curling and singeing to secondaries and rectrices.	Scorched or singed	Unk	2	638518, 3935728	Heliostat	NA
2015_656_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size small, consisting of 1 covert, 10 body feathers, and 2 primaries. Evidence of curling on primary, singeing on coverts and body feathers.	Scorched or singed	3	2	638514, 3935711	Heliostat	NA

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2015_657_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	8-24 hours	Feather spot consisting of 1 trailing secondary, 150 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	2	638790, 3935502	Heliostat	NA
2015_658_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size = large. 7 tail, 26 remiges, 13 body feathers. No singe.	Unknown	Unk	2	638348, 3935720	Heliostat	NA
2015_659_ISEGS	Mourning Dove	MODO	Carcass Survey	9/29/2015	9/29/2015	Broken up	2 days	Broken up carcass consisting of portion of breast and some internal organs, both wings, 3 rectrices, and 150 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	636346, 3937126	Heliostat	NA
2015_660_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/29/2015	9/29/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass whole. Singe present on all flight feathers and tail, as well as flanks and majority of crown/head.	Scorched or singed	2; 3	2	638660, 3935882	ACC Building	NA
2015_661_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/29/2015	9/29/2015	Feather spot	2 days	Feather spot size small, consisting of 50 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	2	638304, 3935488	Heliostat	NA
2015_662_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size small, consisting of 2 primaries, 2 coverts, 1 secondary, 20 body feathers. Evidence of curling and singeing to 1 primary, 1 secondary, 1 covert, and some body feathers.	Scorched or singed	3	2	638637, 3935649	Heliostat	NA
2015_663_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size large, consisting of 5 rectrices, 5 primaries, 5 secondaries, and 35 body feathers. Evidence of curling to 3 rectrices, 2 primaries, 1 secondary.	Scorched or singed	Unk	2	638629, 3935859	Powerblock	NA
2015_664_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size small, consisting of 27 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	2	638434, 3935743	Heliostat	NA
2015_665_ISEGS	Unknown warbler	UNWA	Carcass Survey	9/29/2015	9/29/2015	Broken up	3-6 days	Portions of left wing and right wing. Feather spot size = large. 150 body feathers, 11 rectrices, 9 primaries. Singe and curl on three primaries and 5 secondaries.	Scorched or singed	Unk	2	638409, 3935778	Heliostat	NA

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2015_666_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size large, consisting of 1 tertial, 3 primaries, 2 secondaries, 2 rectrices, 15 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	2	638448, 3935795	Heliostat	NA
2015_667_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size large, consisting of 3 rectrices, 16 remiges, 30 body feathers. Evidence of singe on secondary.	Scorched or singed	Unk	2	638433, 3935832	Heliostat	NA
2015_668_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/29/2015	9/29/2015	Broken up	2 weeks	Feather spot size = large. Partial right wing, and 11 primaries, 5 retrices, 2 secondaries, 5 body feathers. No singe.	Unknown	NA	2	638435, 3935696	Heliostat	NA
2015_669_ISEGS	Western Tanager	WETA	Carcass Survey	9/29/2015	9/29/2015	Feather spot	8-24 hours	Feather spot size = small. 2 primaries, 2 secondaries, 1 undertail covert, 30+ body feathers. No singe.	Unknown	NA	3	636966, 3937408	Heliostat	NA
2015_670_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	9/29/2015	9/29/2015	Feather spot	2 days	Feather spot size large, consisting of 3 rectrices, 13 primaries, 11 secondaries, 100 body feathers. No evidence of singe or collision.	Unknown	NA	2	638745, 3935671	Heliostat	NA
2015_671_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/29/2015	9/29/2015	Feather spot	3-6 days	Feather spot size small, consisting of 4 rectrices, 21 remiges, 25 body feathers. Evidence of curling/singeing on 17 remiges.	Scorched or singed	1/UNK	2	638821, 3935807	Heliostat	NA
2015_672_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/30/2015	9/30/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to all primaries, secondaries, and rectrices, singeing to head, back, rump, face, axillaries, breast, and nape.	Scorched or singed	2; 3	1	640405, 3933520	ACC Building	NA
2015_673_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size large, consisting of 1 primary, 1 tertial, 3 coverts, and 6 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	Unk	1	640449, 3933355	Heliostat	NA
2015_674_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Broken up	3-6 days	Broken up carcass, consisting of partial right wing and 1 primary. Evidence of singeing on 1 primary.	Scorched or singed	Unk	1	640324, 3933461	Powerblock	NA

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2015_675_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size large, consisting of 1 flight feathers, 21 body feathers, 2 contour feathers. Evidence of singe on majority of feathers, curling present on flight feather.	Scorched or singed	1; 3	1	640372, 3933520	Powerblock	NA
2015_676_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/30/2015	9/30/2015	Feather spot	8-24 hours	Feather spot size = large. 9 retrices, 8 primaries, 17 remiges, 100+ body feathers. No singe.	Unknown	NA	1	640276, 3933319	Heliostat	NA
2015_677_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/30/2015	9/30/2015	Feather spot	8-24 hours	Feather spot size = small. 250 body, 20 primary, 17 secondary feathers. No singe.	Unknown	NA	1	640799, 3932661	Fencing	NA
2015_678_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size small, consisting of 9 primaries, 1 rectrice, 4 remiges, 10 body feathers. Evidence of curling on 1 primary.	Scorched or singed	1	1	640311, 3933524	Powerblock	NA
2015_679_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size small, consisting of 20 body feathers. Evidence of singe on 2 body feathers.	Scorched or singed	3	1	640300, 3933524	Powerblock	NA
2015_680_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Feather spot	2 days	Feather spot size large, consisting of 45 body feathers. Evidence of singeing on several body feathers.	Scorched or singed	Unk	1	640298, 3933531	Powerblock	NA
2015_681_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Broken up	3-6 days	Broken up carcass, consisting of partial right wing. No evidence of collision or singe (checked under scope.)	Unknown	Unk	1	640282, 3933552	Powerblock	NA
2015_682_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/30/2015	9/30/2015	Feather spot	8-24 hours	Feather spot size = small. 2 primaries, 1 rectrice, 25 body feathers. No singe.	Unknown	NA	1	640521, 3933415	Heliostat	NA
2015_683_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size small, consisting of 13 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640663, 3934585	Fencing	NA
2015_684_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size large, consisting of 2 rectrices, 3 primaries, 4 secondaries, 50 body feathers. Evidence of singe on flight and body feathers.	Scorched or singed	3/UNK	1	640494, 3933516	Heliostat	NA
2015_685_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Broken up	3-6 days	Partial right wing with flesh and primaries attached. Singe on 1 primary.	Scorched or singed	Unk	1	640490, 3933557	Heliostat	NA
2015_686_ISEGS	Unknown Dove	UNDV	Carcass Survey	9/30/2015	9/30/2015	Broken up	2 days	Feather spot size = small. 3 primaries held together by sinew. Singe present on all feathers.	Scorched or singed	Unk	1	640591, 3933619	Heliostat	NA

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2015_687_ISEGS	Red-naped Sapsucker	RNSA	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size = small. 6 flight feathers, 1 rectrice, 2 coverts. Curling and singe on 4 flight feathers.	Scorched or singed	Unk	1	640284, 3933658	Heliostat	NA
2015_688_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/30/2015	9/30/2015	Feather spot	3-6 days	Feather spot size = small. 2 secondaries, 1 rectrice, 9 body feathers. No singe.	Unknown	NA	1	640325, 3933321	Heliostat	NA
2015_689_ISEGS	Blue-winged Teal	BWTE	Carcass Survey	10/1/2015	10/1/2015	Dead, fresh (eyes moist)	0-8 hours	Carcass whole. Clear impact imprint on heliostat, carcass directly below. Lower mandible broken. No singe.	Collision with solar panel/heliostat	NA	2	639490, 3936969	Heliostat	NA
2015_690_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/1/2015	10/1/2015	Feather spot	3-6 days	Feather spot size = large. 4 secondaries, 44 body feathers. No singe.	Unknown	NA	1	640395, 3933140	Heliostat	NA
2015_691_ISEGS	Western Grebe	WEGR	Carcass Survey	10/1/2015	10/1/2015	Broken up	3-6 days	Feather spot size = large, with flesh and bone. 2 partial wings, partial tail, body feathers. No singe.	Unknown	Unk	2	639175, 3936462	Heliostat	NA
2015_692_ISEGS	American Kestrel	AMKE	Incidental	10/1/2015	10/1/2015	Broken up	3-6 days	Feather spot size = large. Found with 6 retrices held together by flesh, 4 separate retrices, 1 undertail covert, 10 body. No singe.	Unknown	Unk	1	640880, 3934258	Heliostat	NA
2015_693_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/1/2015	10/1/2015	Feather spot	2 days	Feather spot size = small. 20 body feathers. No singe.	Unknown	NA	1	639438, 3932712	Heliostat	NA
2015_694_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/1/2015	10/1/2015	Feather spot	2 days	Feather spot size = large. 5 retrices, 14 remiges, 4 coverts, 100 body. No singe.	Unknown	Unk	2	639310, 3935497	Heliostat	NA
2015_695_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/1/2015	10/1/2015	Feather spot	3-6 days	Feather spot size = large. 7 tail, 7 primary, 10 secondary, 50 body feathers. No singe.	Unknown	Unk	1	639759, 3933671	Heliostat	NA
2015_696_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	1 rect, 10 body feathers. No evidence of singe or collision.	Unknown	Unk	3	637158, 3938433	Heliostat	NA
2015_697_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/5/2015	10/5/2015	Broken up	2 days	Broken up carcass consisting of entire body minus head. Evidence of collision by carcass hanging from heliostat guide wire.	Collision with solar panel/heliostat	NA	3	637366, 3937780	Heliostat	NA
2015_698_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/5/2015	10/5/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass found. No evidence of singe (checked under scope). Evidence of collision by locality near heliostat.	Collision with solar panel/heliostat	NA	3	637524, 3938537	Heliostat	NA
2015_699_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/5/2015	10/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singeing on flight fethers and haed and coverts.	Scorched or singed	1; 3	3	637468, 3937971	ACC Building	NA

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2015_700_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	10/5/2015	10/5/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No evidence of singeing (checked under scope). No evidence of collision but fresh condition of carcass with locality to heliostat mirror suggest probable collision.	Collision with solar panel/heliostat	NA	3	637252, 3937901	Heliostat	NA
2015_701_ISEGS	Yellow Warbler	YWAR	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	Feather spot size large, consisting of 4 primaries, 10 body feathers, 1 rectrice. Evidence of singe on 2 primaries.	Scorched or singed	NA	3	637336, 3938047	Heliostat	NA
2015_702_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/5/2015	10/5/2015	Broken up	1 month +	Broken up carcass consisting of partial wing comprised of 4 primaries attached together with dried skin. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	637485, 3938055	Heliostat	NA
2015_703_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/5/2015	10/5/2015	Broken up	3-6 days	Part of right wing, 4 body feathers. No evidence of singe or collision.	Unknown	Unk	3	637470, 3937962	Powerblock	NA
2015_704_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	Feather spot size small, consisting of 2 primaries, 7 body feathers, 1 covert. No evidence of collision or singe (checked under scope.)	Unknown	Unk	3	637472, 3937988	Powerblock	NA
2015_705_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/5/2015	10/5/2015	Broken up	3-6 days	Broken up carcass consisting of 16 body feathers held together by dried skin and 5 primaries. Evidence of singeing present on primaries and body feathers.	Scorched or singed	3/UNK	3	637518, 3937930	Powerblock	NA
2015_706_ISEGS	Tree Swallow	TRES	Carcass Survey	10/5/2015	10/5/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singe on all flight feathers and in some body feathers.	Scorched or singed	2; 3	3	637528, 3937960	Powerblock	NA
2015_707_ISEGS	Bewick's Wren	BEWR	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	Feather spot size large, consisting of 30 body feathers, 2 rectrices, 7 primaries, 6 secondaries. No evidence of collision or singe (checked under scope.)	Unknown	NA	3	637946, 3938115	Heliostat	NA
2015_708_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	7 primaries, 9 secondaries, 6 rectrices, 50 body feathers. No evidence of singe or collision.	Unknown	NA	3	637700, 3937879	Heliostat	NA
2015_709_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/5/2015	10/5/2015	Feather spot	3-6 days	1 secondary, 50 body feathers. No evidence of singe or collision.	Unknown	NA	3	638239, 3937781	Heliostat	NA

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2015_710_ISEGS	House Finch	HOFI	Carcass Survey	10/6/2015	10/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found.	Scorched or singed	NA	2	638672, 3935907	ACC Building	NA
2015_711_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/6/2015	10/6/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass found, evidence of curling to all major flight feathers, singeing to head, back, rump, breast, axillaries, and flanks.	Scorched or singed	2; 3	2	638661, 3935881	ACC Building	NA
2015_712_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	10/6/2015	10/6/2015	Mummified	2 weeks	Whole carcass found. Evidence of singeing on outer rectrices.	Scorched or singed	1	2	638638, 3935868	Powerblock	NA
2015_713_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/6/2015	10/6/2015	Feather spot	3-6 days	Feather spot size small, consisting of 28 body feathers, 3 coverts, and 5 flight feathers. Evidence of singeing on 1 body feather, curling to 2 flight feathers.	Scorched or singed	Unk	2	638662, 3935851	Powerblock	NA
2015_714_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/6/2015	10/6/2015	Feather spot	3-6 days	Feather spot size small, consisting of 36 body feathers, and 1 flight feather. Evidence of singeing to flight feather.	Scorched or singed	Unk	2	638678, 3935854	Powerblock	NA
2015_715_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/6/2015	10/6/2015	Feather spot	3-6 days	Feather spot size large, consisting of 7 primaries, 4 secondaries, 3 rectrices, and 40 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	2	638657, 3935850	Powerblock	NA
2015_716_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/7/2015	10/7/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of collision by locality of carcass to heliostat.	Collision with solar panel/heliostat	NA	1	639813, 3932981	Heliostat	NA
2015_717_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	10/7/2015	10/7/2015	Alive, injured	0-8 hours	Observed entering flux and singeing. Bird has curling and singe to primaries and secondaries in both wings. Being held in office for care and transit to rehab.	Scorched or singed	2; 3	1	640500, 3933466	Heliostat	NA
2015_718_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/7/2015	10/7/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision by trauma to lower mandible and broken neck.	Collision with solar panel/heliostat	NA	2	638854, 3936532	Heliostat	NA
2015_719_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/7/2015	10/7/2015	Broken up	2 days	Whole carcass minus head in addition to 25 body feathers, 6 primaries, 2 secondaries, and 1 covert. Evidence of singe on tip of primary.	Scorched or singed	Unk	1	640304, 3933385	Heliostat	NA

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2015_720_ISEGS	House Finch	HOFI	Carcass Survey	10/7/2015	10/7/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primaries, secondaries, and rectrices, singeing to breast and axillaries.	Scorched or singed	2; 3	1	640369, 3933528	ACC Building	NA
2015_721_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/7/2015	10/7/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to all major flight feathers.	Scorched or singed	2; 3	1	640394, 3933528	ACC Building	NA
2015_722_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	10/7/2015	10/7/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing on body, neck, and cheek.	Scorched or singed	3	1	640254, 3933529	Powerblock	NA
2015_723_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/7/2015	10/7/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to primaries and secondaries in both wings, singeing to head, nape, back, and crown.	Scorched or singed	2; 3	1	640380, 3933519	ACC Building	NA
2015_724_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/7/2015	10/7/2015	Feather spot	3-6 days	Feather spot size large consisting of 9 rectrices, 25 remiges, 15 body feathers. Evidence of singeing on rectrice.	Scorched or singed	1	1	640317, 3933481	Powerblock	NA
2015_725_ISEGS	Unknown Swallow	UNSW	Carcass Survey	10/7/2015	10/7/2015	Feather spot	3-6 days	Feather spot size large, consisting of 4 primaries, 1 trailing secondary. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640305, 3933543	Powerblock	NA
2015_726_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/7/2015	10/7/2015	Feather spot	3-6 days	Feather spot size = small. 4 primaries. No singe.	Unknown	NA	1	640305, 3933543	Powerblock	NA
2015_727_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/7/2015	10/7/2015	Broken up	3-6 days	Feather spot size = small. Partial right wing, plus 20 body feathers, 4 rectrices, 6 secondaries. Singe on majority of flight and body feathers.	Scorched or singed	3	1	640550, 3933341	HelioStat	NA
2015_728_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/7/2015	10/7/2015	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe on head, and 4 rectrices.	Scorched or singed	1; 3	1	640202, 3933416	HelioStat	NA
2015_729_ISEGS	Tree Swallow	TRES	Carcass Survey	10/7/2015	10/7/2015	Broken up	3-6 days	Feather spot size = small. 2 primaries attached by dried skin, 5 secondaries, 1 covert, 1 body feather. Singe at tips of primaries.	Scorched or singed	NA	1	640393, 3933504	Powerblock	NA
2015_730_ISEGS	American Avocet	AMAV	Incidental	10/7/2015	10/7/2015	Broken up	3-6 days	Feather spot size = large. Feathers held together by flesh. 3 rectrice, 14 primary, 15 secondary, 25 body feathers. No singe	Unknown	NA	1	639690, 3934397	Fencing	NA
2015_731_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/7/2015	10/7/2015	Feather spot	2 days	Feather spot size = small. 3 primaries, 1 secondary, 3 body. 5 of 7 feathers singed and curled.	Scorched or singed	1/3/UNK	1	640398, 3933484	Powerblock	NA

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2015_732_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/7/2015	10/7/2015	Feather spot	2 weeks	Feather spot size = small. 3 primaries, 2 secondaries. No singe.	Unknown	NA	1	640419, 3933488	Powerblock	NA
2015_733_ISEGS	Unknown Kinglet	UNKL	Carcass Survey	10/7/2015	10/7/2015	Broken up	3-6 days	Partial wing (left side). Singe on all flight feathers on wing.	Scorched or singed	1	1	640398, 3933475	Powerblock	NA
2015_734_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/7/2015	10/7/2015	Broken up	2 weeks	Partial wing. No singe.	Unknown	NA	1	640393, 3933544	Powerblock	NA
2015_735_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	10/7/2015	10/7/2015	Feather spot	3-6 days	Feather spot size = small. 6 primaries, with singe on all primaries.	Scorched or singed	2	1	640405, 3933508	Powerblock	NA
2015_736_ISEGS	Mourning Dove	MODO	Carcass Survey	10/7/2015	10/7/2015	Broken up	3-6 days	Feather spot size = large. 3 primaries, 1 secondary, 5 leg bones. No singe.	Unknown	NA	1	640412, 3933478	Powerblock	NA
2015_737_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	10/8/2015	10/8/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision with locality of fatality and evidence of broken neck.	Collision with solar panel/heliostat	Unk	2	638919, 3936606	Heliostat	NA
2015_738_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/8/2015	10/8/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass found. No evidence of collision or flux. Scavenging by ants evident, location near heliostat.	Collision with solar panel/heliostat	NA	1	639841, 3933758	Heliostat	NA
2015_739_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/8/2015	10/8/2015	Broken up	3-6 days	Broken up carcass, consisting of skull fragment, unknown bone, 7 rectrices, and 30 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640411, 3933853	Heliostat	NA
2015_740_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/8/2015	10/8/2015	Broken up	8-24 hours	Partial carcass, missing left leg and head. No evidence of singe or collision.	Unknown	NA	1	640623, 3934003	Heliostat	NA
2015_741_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/8/2015	10/8/2015	Feather spot	3-6 days	2 secondaries, ~20 body feathers. Heliostat imprint matching size and shape of GRRO.	Collision with solar panel/heliostat	NA	2	637795, 3936546	Heliostat	NA
2015_742_ISEGS	American Kestrel	AMKE	Carcass Survey	10/8/2015	10/8/2015	Broken up	3-6 days	Broken up carcass consisting of rectrices, undertail coverts, and some rump feathers held together by dried skin. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640729, 3933719	Heliostat	NA
2015_743_ISEGS	Tree Swallow	TRES	Incidental	10/11/2015	10/11/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. No evidence of collision or flux.	Unknown	NA	1	640371, 3933487	Powerblock	NA
2015_744_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/12/2015	10/12/2015	Broken up	8-24 hours	Whole carcass. Found intact and close to mirror. No singe.	Collision with solar panel/heliostat	NA	3	638255, 3938040	Heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_745_ISEGS	Unknown Kinglet	UNKL	Carcass Survey	10/12/2015	10/12/2015	Feather spot	3-6 days	Feather spot size = small. 2 primaries, 14 body feathers. Singe/curl on 1 primary.	Scorched or singed	1	3	637328, 3937793	Heliostat	NA
2015_746_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/12/2015	10/12/2015	Feather spot	3-6 days	Feather spot size = large. 11 primaries, 13 secondaries, over 100 body feathers. Singe. Over half of the flight feathers singed and curled, many contour feathers with singe.	Scorched or singed	1; 3	3	637328, 3937799	Heliostat	NA
2015_747_ISEGS	Tree Swallow	TRES	Carcass Survey	10/12/2015	10/12/2015	Feather spot	3-6 days	Feather spot size = large. 11 primaries, 11 secondaries, 25 body. Singe on all primaries and 4 secondaries.	Scorched or singed	1/UNK	3	637261, 3937971	Heliostat	NA
2015_748_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/12/2015	10/12/2015	Broken up	3-6 days	Feather spot size = large. 9 secondaries, 9 primaries, 3 retrices, 25+ body feathers. Partial wings (both left/right). No singe.	Unknown	NA	3	637639, 3938093	Heliostat	NA
2015_749_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/12/2015	10/12/2015	Dead, fresh (eyes moist)	8-24 hours	Carcass. No singe, close to heliostat.	Collision with solar panel/heliostat	NA	3	637212, 3937294	Heliostat	NA
2015_750_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/12/2015	10/12/2015	Feather spot	3-6 days	Feather spot size = small. 13 body feathers. No singe.	Unknown	NA	3	637877, 3938480	Heliostat	NA
2015_751_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/12/2015	10/12/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Carcass. All flight feathers curled and singed. Head, back, rump and breast with singe.	Scorched or singed	1; 3	3	637454, 3937970	ACC Building	NA
2015_752_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/12/2015	10/12/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Carcass. Singe on majority of dorsal, flank, head, and all flight feathers. Tail singed off.	Scorched or singed	NA	3	637481, 3937969	ACC Building	NA
2015_753_ISEGS	Pine Siskin	PISI	Carcass Survey	10/12/2015	10/12/2015	Feather spot	3-6 days	Feather spot size = large. 2 secondaries, 2 primaries, 2 retrices, 50+ body feathers. Singe on all flight feathers.	Scorched or singed	1; 3	3	637695, 3937817	Heliostat	NA
2015_754_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/13/2015	10/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to secondaries and primaries, head, nape, back and rump singed, retrices singed off.	Scorched or singed	2; 3	2	638650, 3935880	ACC Building	NA
2015_755_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/13/2015	10/13/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primaries and secondaries, retrices singed off, singeing to head, nape, back and rump.	Scorched or singed	2; 3	2	638650, 3935880	ACC Building	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_756_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size small (1m), consisting of 2 primaries, 1 secondary, 20 body feathers. Evidence of singe on primary.	Scorched or singed	Unk	2	638694, 3935999	Heliostat	NA
2015_757_ISEGS	Unknown Finch	UNFI	Carcass Survey	10/13/2015	10/13/2015	Broken up	2 weeks	Broken up carcass consisting of front piece of head. No evidence of collision or singe (checked under scope.)	Scorched or singed	NA	2	638391, 3935415	Heliostat	NA
2015_758_ISEGS	Unknown Grebe	UNGR	Carcass Survey	10/13/2015	10/13/2015	Broken up	3-6 days	Broken up carcass consisting of partial right wing. No evidence of collision or singe (checked under scope.)	Unknown	NA	2	638582, 3935901	Powerblock	NA
2015_759_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size large (8m) consisting of 7 rectrices, 9 primaries, 9 secondaries, and 25 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	2	638776, 3935920	Heliostat	NA
2015_760_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size = small. 2 retrices, 9 remiges, 20+ body feathers. Singe and curl on 7 flight feathers and several body feathers.	Scorched or singed	1; 3	2	638591, 3935885	Powerblock	NA
2015_761_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size = large. 2 primaries, 5 retrices, 5 secondaries, 37 body feathers. Singe on all flight and contour feathers.	Scorched or singed	3/UNK	2	638690, 3935868	Powerblock	NA
2015_762_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/13/2015	10/13/2015	Broken up	3-6 days	Broken up carcass consisting of 3 secondaries, 1 rectrice, and 30 body feathers. Evidence of singeing on all secondaries, and several body feathers.	Scorched or singed	1/3/UNK	2	638688, 3935858	Powerblock	NA
2015_763_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size small (1m), consisting of 3 rectrices, 1 primary, 3 mixed remiges. Evidence of singeing on tail and primaries.	Scorched or singed	Unk	2	638658, 3935849	Powerblock	NA
2015_764_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size large (3m), consisting of 50 body feathers. Evidence of singeing to majority of body feathers.	Scorched or singed	3	2	638632, 3935867	Powerblock	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_765_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size large (25m), consisting of 5 primaries, 2 secondaries, 2 rectrices, 25 body feathers, 1 undertail covert. No evidence of collision or singe (checked under scope.)	Unknown	Unk	2	639289, 3936984	Fencing	NA
2015_766_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/13/2015	10/13/2015	Broken up	3-6 days	Broken up carcass consisting of 2 primaries connected by dried tissue, 4 body feathers. Evidence of singeing to primaries.	Scorched or singed	NA	2	638646, 3935853	Powerblock	NA
2015_767_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size = large. 9 tail, 20 remiges, 100+ body feathers. No singe.	Unknown	NA	1	640608, 3932659	Fencing	NA
2015_768_ISEGS	Vermilion Flycatcher	VEFL	Carcass Survey	10/13/2015	10/13/2015	Feather spot	3-6 days	Feather spot size = large. 7 primaries, 11 secondaries, 5 tail, 45 body. Singe on all flight and contour feathers.	Scorched or singed	3/UNK	3	637545, 3937849	Powerblock	NA
2015_769_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/13/2015	10/13/2015	Feather spot	0-8 hours	Feather spot size = large. 9 rectrices, 33 remiges, 500 body feathers. No singe	Unknown	NA	1	640763, 3932670	Fencing	NA
2015_770_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size large (5m), consisting of 19 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640161, 3933457	Heliostat	NA
2015_771_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size small (1.5m), consisting of 6 rectrices, 50 body feathers. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640259, 3932717	Heliostat	NA
2015_772_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size large (9m), consisting of 3 primaries, 1 secondary, and 13 body feathers. Evidence of curling to primary.	Scorched or singed	Unk	1	640414, 3933365	Heliostat	NA
2015_773_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size large (5m), consisting of 12 body feathers and 1 secondary. No evidence of collision or singe (checked under scope.)	Unknown	NA	1	640312, 3933377	Heliostat	NA
2015_774_ISEGS	House Wren	HOWR	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size small (1m), consisting of 1 rectrice, 3 secondaries, 1 tertial, 17 body feathers. Evidence of singeing on secondaries.	Scorched or singed	Unk	1	640460, 3933339	Heliostat	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_775_ISEGS	Vesper Sparrow	VESP	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size = small. 6 primaries, 13 secondaries, 10 retrices, 25+ body feathers. No singe.	Unknown	NA	1	640330, 3933287	Heliostat	NA
2015_776_ISEGS	Cactus Wren	CACW	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size = large. 11 retrices, 10 primaries, 11 secondaries, 200 body. No singe.	Unknown	NA	1	640244, 3934185	Heliostat	NA
2015_777_ISEGS	Unknown Swallow	UNSW	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size large (9m), consisting of 1 rectrice, 5 secondaries, 3 flight feathers, 45 body feathers. Evidence of curling to secondaries.	Scorched or singed	NA	1	640301, 3933261	Heliostat	NA
2015_778_ISEGS	Mourning Dove	MODO	Carcass Survey	10/14/2015	10/14/2015	Broken up	2 weeks	Two segments of rump, including 4 retrices, undertail coverts, and rachis. No singe.	Unknown	NA	2	638110, 3936162	Heliostat	NA
2015_779_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size = large (found in two clumps). Clump 1 = 1 rectrice, 1 primary, 1 secondary, 20 body feathers. Clump 2 = 50 body feathers, 1 primary, 5 secondaries. No singe.	Unknown	UNK/NA	1	640510, 3933442	Heliostat	NA
2015_780_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size = large. 3 retrices, 1 secondary, 120 body feathers, 1 covert. Singe on all retrices.	Scorched or singed	Unk	1	640608, 3933488	Heliostat	NA
2015_781_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/14/2015	10/14/2015	Feather spot	3-6 days	Feather spot size = large. 2 rectrice, 1 primary, 10 body feathers. Singe on retrices and primary feathers.	Scorched or singed	Unk	1	640489, 3933527	Heliostat	NA
2015_782_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/14/2015	10/14/2015	Feather spot	2 days	Feather spot size = large. 3 primary, 2 secondary, 25 body feathers. No singe.	Unknown	NA	1	640503, 3933588	Heliostat	NA
2015_783_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/15/2015	10/15/2015	Feather spot	3-6 days	Feather spot size large, consisting of 14 primaries, 10 secondaries, 50 body feathers. Evidence of singe on primaries.	Scorched or singed	Unk	2	637813, 3936102	Heliostat	NA
2015_784_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/15/2015	10/15/2015	Feather spot	3-6 days	Feather spot size small, consisting of 25 body feathers. No evidence of collision or singe.	Unknown	NA	1	640443, 3933800	Heliostat	NA
2015_785_ISEGS	Eared Grebe	EAGR	Incidental	10/16/2015	10/16/2015	Alive, injured	0-8 hours	Incidental bird collected alive and released same day at Primm Valley Golf Course by E. Davidson. No evidence of collision or singe.	Unknown	NA	1	640416, 3933561	Powerblock	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_786_ISEGS	Eared Grebe	EAGR	Incidental	10/16/2015	10/16/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision with damage to tip of bill.	Collision (Other)	NA	1	640433, 3933545	Powerblock	NA
2015_787_ISEGS	Eared Grebe	EAGR	Incidental	10/16/2015	10/16/2015	Alive, injured	0-8 hours	Incidental bird collected alive and released same day at Primm Valley Golf Course by E. Davidson. No evidence of collision or singe.	Unknown	NA	1	640453, 3933546	ACC Building	NA
2015_788_ISEGS	Eared Grebe	EAGR	Incidental	10/16/2015	10/16/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision with damage to bill, specifically upper and lower mandible broken, puncture wound to abdomen.	Collision (Other)	NA	1	640422, 3933549	ACC Building	NA
2015_789_ISEGS	Yellow Warbler	YWAR	Incidental	10/17/2015	10/17/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass with missing tail. No evidence of collision or singe.	Unknown	NA	3	637470, 3937900	Powerblock	NA
2015_790_ISEGS	American Kestrel	AMKE	Incidental	10/17/2015	10/17/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass found. Evidence of curling to half of primary feathers and most of rectrices, singeing to chest are and on skin.	Scorched or singed	1; 3	3	637470, 3937900	Powerblock	NA
2015_791_ISEGS	Common Raven	CORA	Incidental	10/17/2015	10/17/2015	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of electrocution with location of carcass and feathers on underwing and leg singed, skin burned along length of leg, and primaries curled.	Electrocution	1; 3	NA	638919, 3934828	CLA West	NA
2015_792_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/19/2015	10/19/2015	Feather spot	3-6 days	Feather spot size small, consisting of 3 rectrices, 2 primaries, 3 body, and 1 trailing secondary. No evidence of collision or singe.	Unknown	NA	3	637622, 3937796	Heliostat	NA
2015_793_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/19/2015	10/19/2015	Broken up	3-6 days	Broken up carcass consisting of partial left and right wing, 2 primaries, 9 secondaries, 2 rectrices, and 30 body feathers. No evidence of collision or singe.	Unknown	NA	3	637452, 3938103	Heliostat	NA
2015_794_ISEGS	Cedar Waxwing	CEWA	Incidental	10/19/2015	10/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. All flight feathers singed and curled.	Scorched or singed	2	2	638644, 3935880	Powerblock	NA

USFWS #	Common Name	Species Code	How Found	Detection Date	Collection Date	Condition	Time Since Death/Injury	Description of Carcass/Injury	Cause of Death/Injury	Burn Grade	Unit	UTM Coordinates	Nearest Project Feature	SPUT Revisions
2015_795_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/19/2015	10/19/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Singe on majority of body.	Scorched or singed	2; 3	2	638637, 3935869	Powerblock	NA
2015_796_ISEGS	Golden-crowned Kinglet	GCKI	Carcass Survey	10/20/2015	10/20/2015	Feather spot	2 days	Feather spot size small, consisting of 5 rectrices, 2 body feathers. No evidence of collision or singe.	Unknown	Unk	2	638592, 3935651	Heliostat	NA
2015_797_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/20/2015	10/20/2015	Alive, injured	0-8 hours	Bird was observed colliding with heliostat mirror where it was stunned, monitored, and released in the field.	Collision with solar panel/heliostat	NA	3	637105, 3938066	Heliostat	NA
2015_798_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/20/2015	10/20/2015	Dead, semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers in wings and tail, singeing to head, back, chest, rump, and belly.	Scorched or singed	2; 3	2	638650, 3935881	ACC Building	NA
2015_799_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/20/2015	10/20/2015	Feather spot	3-6 days	Feather spot size small, consisting of 18 body feathers, 2 coverts, 1 trailing secondary. Evidence of singe on body feather and secondary.	Scorched or singed	Unk	2	638411, 3935820	Heliostat	NA
2015_800_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/20/2015	10/20/2015	Feather spot	3-6 days	Feather spot size small, consisting of 1 rectrice, 1 secondary, 25 body feathers. Evidence of singe on tail feather, 7 body feathers.	Scorched or singed	1/3/UNK	2	638631, 3935821	Powerblock	NA
2015_801_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/20/2015	10/20/2015	Feather spot	3-6 days	Feather spot size large, consisting of 7 body feathers and 3 remiges. Evidence of singe on 4 feathers.	Scorched or singed	1/3/UNK	2	638596, 3935843	Powerblock	NA
2015_802_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/20/2015	10/20/2015	Feather spot	3-6 days	Feather spot size large, consisting of 2 primaries, 1 secondary, 20 contour feathers. Evidence of singe on primary, and secondary, and contour feathers.	Scorched or singed	3/UNK	2	638627, 3935863	Powerblock	NA
2015_803_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/20/2015	10/20/2015	Feather spot	3-6 days	Feather spot size large, consisting of 8 flight feathers, 30 body feathers. Evidence of curling and singeing on all flight feathers.	Scorched or singed	Unk	2	638645, 3935841	Powerblock	NA
2015_804_ISEGS	Unknown Kinglet	UNKL	Carcass Survey	10/20/2015	10/20/2015	Broken up	3-6 days	Broken up carcass consisting of 7 primaries and coverts held together by flesh, 1 secondary, 10 body feathers. Evidence of singe on primary feather.	Scorched or singed	Unk	2	638646, 3935844	Powerblock	NA

Appendix B. Additional Detection Data for Fatality Estimates and Documentation of Fatality Estimates in Which Each Detection Was Included.

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_663_ISEGS	YRWA	Inner HD	160	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_664_ISEGS	LENI	Inner HD	130	Small	Small Carcass	unknown	Fatality Search	22	Yes	X		X				
2014_665_ISEGS	HOLA	Inner HD	200	Small	Feather Spot	collision	Fatality Search	22	Yes	X		X				
2014_666_ISEGS	UNSP	Inner HD	220	Small	Feather Spot	unknown	Fatality Search	22	Yes	X		X				
2014_667_ISEGS	CRTH	Inner Segment	440	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2014_668_ISEGS	YRWA	Inner HD	180	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_669_ISEGS	GAQU	Inner HD	260	Large	Feather Spot	unknown	Fatality Search	22	Yes	X		X				
2014_670_ISEGS	UNPA	Power Block	140	Small	Small Carcass	unknown	Fatality Search	22	Yes	X	X					
2014_671_ISEGS	MODO	Inner Segment	660	Large	Large Carcass	unknown	Fatality Search	22	No				X			Older than Search Interval
2014_672_ISEGS	YRWA	Power Block	120	Small	Feather Spot	singeing	Fatality Search	22	Yes	X	X					
2014_673_ISEGS	CEWA	Power Block	40	Small	Small Carcass	singeing	Fatality Search	22	Yes	X	X					
2014_674_ISEGS	MODO	Inner HD	220	Large	Feather Spot	collision	Fatality Search	22	Yes	X		X				
2014_675_ISEGS	YRWA	Inner HD	240	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_676_ISEGS	UNPA	Power Block	40	Small	Small Carcass	singeing	Incidental	1(1)	No	X	X					Older than Search Interval
2014_677_ISEGS	UNHU	Power Block	40	Small	Small Carcass	singeing	Incidental	1(1)	Yes	X	X					
2014_678_ISEGS	UNSW	Power Block	45	Small	Small Carcass	singeing	Incidental	1(1)	No	X	X					Older than Search Interval
2014_679_ISEGS	WEME	Inner HD	160	Small	Feather Spot	unknown	Fatality Search	22	Yes	X		X				
2014_680_ISEGS	YRWA	Inner HD	120	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_681_ISEGS	UNPA	Inner HD	205	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_682_ISEGS	HOFI	Inner HD	140	Small	Feather Spot	singeing	Fatality Search	22	Yes	X		X				
2014_683_ISEGS	WISN	Inner HD	200	Small	Feather Spot	collision	Fatality Search	22	Yes	X		X				
2014_684_ISEGS	LOSH	Outer Segment	760	Small	Small Carcass	unknown	Fatality Search	22	No				X			Older than Search Interval
2014_685_ISEGS	LBWO	Outer Segment	780	Small	Small Carcass	collision	Fatality Search	21	No				X			Older than Search Interval
2014_686_ISEGS	BHCO	Inner Segment	545	Small	Small Carcass	unknown	Fatality Search	23	Yes				X			
2014_687_ISEGS	WCSP	Outer Segment	907	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_688_ISEGS	UNSP	Outer Segment	890	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_689_ISEGS	UNPA	Power Block	30	Small	Small Carcass	singeing	Incidental	1(1)	No	X	X					Older than Search Interval
2014_690_ISEGS	UNSP	Outer Segment	920	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_691_ISEGS	UNSP	Outer Segment	950	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_692_ISEGS	SAVS	Outer Segment	1560	Small	Small Carcass	collision	Fatality Search	23	Yes				X			
2014_693_ISEGS	AMPI	Outer Segment	800	Small	Small Carcass	collision	Fatality Search	24	Yes				X			
2014_694_ISEGS	UNPA	Inner Segment	320	Small	Feather Spot	unknown	Fatality Search	24	Yes				X			
2014_695_ISEGS	MODO	Outer Segment	1100	Large	Large Carcass	collision	Fatality Search	23	Yes				X			
2014_696_ISEGS	SAVS	Inner Segment	360	Small	Feather Spot	unknown	Fatality Search	24	Yes				X			
2014_697_ISEGS	WCSP	Inner Segment	540	Small	Small Carcass	unknown	Fatality Search	24	Yes				X			
2014_698_ISEGS	RCKI	Power Block	47	Small	Small Carcass	singeing	Incidental	2(1)	Yes	X	X					
2014_699_ISEGS	BRBL	Outer Segment	800	Small	Feather Spot	collision	Fatality Search	21	Yes				X			
2014_700_ISEGS	WCSP	Outer Segment	898	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_701_ISEGS	YRWA	Power Block	12	Small	Small Carcass	singeing	Incidental	9(1)	No	X	X					Older than Search Interval
2014_702_ISEGS	YRWA	Power Block	12	Small	Small Carcass	singeing	Incidental	9(1)	No	X	X					Older than Search Interval
2014_703_ISEGS	PISI	Power Block	72	Small	Small Carcass	singeing	Incidental	16(1)	No	X	X					Older than Search Interval
2014_704_ISEGS	UNHU	Power Block	88	Small	Small Carcass	singeing	Incidental	16(1)	No	X	X					Older than Search Interval
2014_705_ISEGS	ANHU	ACC	58	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_706_ISEGS	YRWA	ACC	50	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_707_ISEGS	YRWA	ACC	55	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_708_ISEGS	YRWA	ACC	64	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_709_ISEGS	RCKI	ACC	62	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_710_ISEGS	VGSW	ACC	45	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_711_ISEGS	WCSP	Inner HD	240	Small	Small Carcass	unknown	Fatality Search	21	Yes	X		X				
2014_712_ISEGS	YRWA	ACC	60	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_713_ISEGS	YRWA	ACC	67	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_714_ISEGS	YRWA	ACC	60	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_715_ISEGS	YRWA	ACC	58	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_716_ISEGS	SAVS	Inner HD	250	Small	Small Carcass	collision	Fatality Search	21	Yes	X		X				
2014_717_ISEGS	VGSW	Inner HD	140	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_718_ISEGS	UNKI	Power Block	12	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_719_ISEGS	YRWA	Power Block	110	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_720_ISEGS	WCSP	Inner Segment	650	Small	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2014_721_ISEGS	AMCO	Outer Segment	710	Large	Large Carcass	unknown	Fatality Search	26	Yes				X			
2014_722_ISEGS	EAGR	Inner Segment	570	Large	Large Carcass	unknown	Fatality Search	28	Yes				X			
2014_723_ISEGS	UNPA	Inner Segment	440	Small	Feather Spot	unknown	Fatality Search	28	Yes				X			
2014_724_ISEGS	AMPI	Inner Segment	470	Small	Small Carcass	collision	Fatality Search	28	Yes				X			
2014_725_ISEGS	WCSP	Inner Segment	480	Small	Feather Spot	collision	Fatality Search	28	Yes				X			
2014_726_ISEGS	HETH	Inner Segment	450	Small	Feather Spot	unknown	Fatality Search	28	Yes				X			
2014_727_ISEGS	AMPI	Inner Segment	710	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_728_ISEGS	MODO	Unit Fence	770	Large	Feather Spot	unknown	Fatality Search	22	Yes					X		
2014_729_ISEGS	HOFI	Inner Segment	570	Small	Feather Spot	unknown	Fatality Search	28	Yes				X			
2014_730_ISEGS	RWBL	Inner Segment	590	Small	Small Carcass	unknown	Fatality Search	28	Yes				X			
2014_731_ISEGS	GAQU	Inner Segment	610	Large	Feather Spot	unknown	Fatality Search	28	Yes				X			
2014_732_ISEGS	WCSP	Inner Segment	470	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_733_ISEGS	WCSP	Inner Segment	650	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_734_ISEGS	WCSP	Inner Segment	630	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_735_ISEGS	WEME	Inner Segment	590	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2014_736_ISEGS	AMPI	Inner Segment	575	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2014_737_ISEGS	LAZB	Inner Segment	560	Small	Small Carcass	unknown	Fatality Search	22	No				X			Older than Search Interval
2014_738_ISEGS	UNPA	Inner Segment	580	Small	Small Carcass	unknown	Fatality Search	22	Yes				X			
2014_739_ISEGS	SAVS	Outer Segment	670	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_740_ISEGS	GAQU	Outer Segment	910	Large	Large Carcass	unknown	Fatality Search	21	Yes				X			
2014_741_ISEGS	MODO	Inner Segment	450	Large	Large Carcass	collision	Fatality Search	23	Yes				X			
2014_742_ISEGS	VGSW	Inner Segment	430	Small	Small Carcass	singeing	Fatality Search	23	Yes				X			
2014_743_ISEGS	NOMO	Outer Segment	780	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_744_ISEGS	WCSP	Outer Segment	910	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_745_ISEGS	MODO	Inner HD	100	Large	Feather Spot	unknown	Incidental	3	No	X		X				Left in Place-Not Discovered on Next Search

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_746_ISEGS	BARS	Inner HD	230	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_747_ISEGS	UNSP	Inner HD	192	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_748_ISEGS	HOFI	ACC	70	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_749_ISEGS	MODO	Inner HD	242	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_750_ISEGS	YRWA	ACC	36	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_751_ISEGS	HOFI	Inner HD	210	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_752_ISEGS	MODO	Inner Segment	610	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_753_ISEGS	YRWA	Inner HD	130	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_754_ISEGS	LEGO	Inner HD	125	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_755_ISEGS	YRWA	Inner HD	120	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_756_ISEGS	UNSW	Power Block	50	Small	Small Carcass	unknown	Fatality Search	21	Yes	X	X					
2014_757_ISEGS	UNPA	Inner HD	140	Small	Small Carcass	singeing	Fatality Search	21	Yes	X		X				
2014_758_ISEGS	YRWA	Inner Segment	590	Small	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2014_759_ISEGS	AMPI	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_760_ISEGS	YRWA	Inner HD	140	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_761_ISEGS	HOFI	Inner HD	175	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_762_ISEGS	MODO	Outer Segment	880	Large	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_763_ISEGS	UNPA	Outer Segment	860	Small	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2014_764_ISEGS	BARS	Inner HD	130	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_765_ISEGS	UNPA	Inner HD	140	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_766_ISEGS	AMPI	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_767_ISEGS	AMPI	Outer Segment	720	Small	Small Carcass	collision	Fatality Search	19	Yes				X			
2014_768_ISEGS	GRRO	Outer Segment	1040	Large	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2014_769_ISEGS	GRRO	Outer Segment	1130	Large	Feather Spot	unknown	Fatality Search	20	Yes				X			
2014_770_ISEGS	BHCO	Inner Segment	260	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_771_ISEGS	GRRO	Unit Fence	1130	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_772_ISEGS	AMPI	Inner Segment	450	Small	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_773_ISEGS	GRRO	Unit Fence	1040	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_774_ISEGS	GRRO	Unit Fence	1070	Large	Feather Spot	unknown	Fatality Search	21	No					X		Older than Search Interval
2014_775_ISEGS	GRRO	Unit Fence	1090	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_776_ISEGS	SAVS	Offsite	NA	Small	Small Carcass	predated	Incidental	NA	No							Outside Standard Search Area
2014_777_ISEGS	GRRO	Unit Fence	1020	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_778_ISEGS	UNPA	Unit Fence	1020	Small	Small Carcass	unknown	Fatality Search	21	No					X		Older than Search Interval
2014_779_ISEGS	GRRO	Unit Fence	1030	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_780_ISEGS	MODO	Unit Fence	1060	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_781_ISEGS	UNPA	Inner Segment	310	Small	Small Carcass	unknown	Fatality Search	22	Yes				X			
2014_782_ISEGS	SAVS	Inner Segment	350	Small	Feather Spot	unknown	Fatality Search	22	No				X			Older than Search Interval
2014_783_ISEGS	UNPA	Inner Segment	370	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_784_ISEGS	UNPA	Inner Segment	640	Small	Small Carcass	unknown	Fatality Search	22	No				X			Older than Search Interval
2014_785_ISEGS	AMPI	Inner Segment	620	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2014_786_ISEGS	BHCO	Inner Segment	680	Small	Small Carcass	unknown	Fatality Search	22	Yes				X			
2014_787_ISEGS	WCSP	Inner Segment	400	Small	Small Carcass	predated	Incidental	NA	No				X			Outside Standard Search Area
2014_788_ISEGS	MODO	Outer Segment	1000	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_789_ISEGS	MODO	Inner Segment	420	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_790_ISEGS	BHCO	Outer Segment	680	Small	Small Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2014_791_ISEGS	LENI	Outer Segment	710	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_792_ISEGS	MODO	Outer Segment	715	Large	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_793_ISEGS	UNPA	Outer Segment	1025	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_794_ISEGS	MODO	Outer Segment	1050	Large	Large Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_795_ISEGS	YRWA	Power Block	0	Small	Small Carcass	singeing	Incidental	NA	No	X	X					Outside Standard Search Area
2014_796_ISEGS	UNWA	Inner HD	148	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_797_ISEGS	UNWA	Inner HD	230	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_798_ISEGS	WEME	Inner HD	198	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_799_ISEGS	DEJU	Inner Segment	270	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_800_ISEGS	YRWA	Power Block	49	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_801_ISEGS	RCKI	Power Block	49	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_802_ISEGS	UNPA	Inner HD	220	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_803_ISEGS	UNPA	Inner HD	206	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_804_ISEGS	LEGO	Power Block	45	Small	Small Carcass	unknown	Fatality Search	21	Yes	X	X					
2014_805_ISEGS	AMPI	Inner Segment	550	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_806_ISEGS	UNPA	Inner HD	200	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_807_ISEGS	BRBL	Inner HD	260	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_808_ISEGS	GRRO	Inner Segment	550	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_809_ISEGS	SAVS	Inner Segment	640	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_810_ISEGS	AMPI	Inner Segment	630	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_811_ISEGS	UNPA	Inner Segment	550	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_812_ISEGS	AMPI	Inner HD	244	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_813_ISEGS	GAQU	Inner HD	220	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_814_ISEGS	WEME	Inner Segment	600	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_815_ISEGS	AMPI	Inner HD	250	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_816_ISEGS	UNDU	Outer Segment	1190	Large	Large Carcass	collision	Fatality Search	21	Yes				X			
2014_817_ISEGS	WCSP	Inner Segment	570	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_818_ISEGS	WCSP	Outer Segment	930	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_819_ISEGS	AMCO	Unit Fence	1540	Large	Large Carcass	unknown	Incidental	21	Yes					X		
2014_820_ISEGS	WEME	Outer Segment	1080	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_821_ISEGS	WCSP	Inner Segment	400	Small	Small Carcass	collision	Fatality Search	21	Yes				X			
2014_822_ISEGS	HOFI	Power Block	31	Small	Small Carcass	unknown	Incidental	4(1)	No	X	X					Older than Search Interval
2014_823_ISEGS	WCSP	Inner Segment	530	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_824_ISEGS	AMPI	Outer Segment	760	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_825_ISEGS	AMPI	Inner Segment	420	Small	Small Carcass	collision	Fatality Search	21	Yes				X			
2014_826_ISEGS	AMPI	Inner Segment	280	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2014_827_ISEGS	ROGO	Inner HD	80	Large	Large Carcass	collision	Incidental	19	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_828_ISEGS	CEWA	Inner HD	105	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_829_ISEGS	LEGO	Inner HD	105	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_830_ISEGS	UNSB	Inner HD	130	Small	Small Carcass	unknown	Fatality Search	21	Yes	X		X				
2014_831_ISEGS	YRWA	ACC	40	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2014_832_ISEGS	MODO	Inner HD	180	Large	Feather Spot	unknown	Fatality Search	21	No	X		X				Older than Search Interval
2014_833_ISEGS	UNPA	Inner HD	210	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_834_ISEGS	AMPI	Inner HD	230	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_835_ISEGS	BRSP	Outer Segment	770	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_836_ISEGS	WCSP	Inner HD	230	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_837_ISEGS	AMPI	Inner Segment	450	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_838_ISEGS	GRRO	Outer Segment	800	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_839_ISEGS	WCSP	Inner Segment	650	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_840_ISEGS	LENI	Power Block	82	Small	Feather Spot	unknown	Incidental	15(1)	No	X	X					Older than Search Interval
2014_841_ISEGS	VGSW	Inner HD	210	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_842_ISEGS	UNSP	Outer Segment	690	Small	Feather Spot	unknown	Fatality Search	19	Yes				X			
2014_843_ISEGS	DEJU	Unit Fence	1050	Small	Small Carcass	unknown	Fatality Search	21	Yes					X		
2014_844_ISEGS	EUST	Outer Segment	1105	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_845_ISEGS	UNPA	Inner Segment	630	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_846_ISEGS	MODO	Unit Fence	920	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_847_ISEGS	CRTH	Unit Fence	1030	Small	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_848_ISEGS	MODO	Outer Segment	1640	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_849_ISEGS	WEME	Inner Segment	590	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_850_ISEGS	YRWA	Inner Segment	480	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_851_ISEGS	AMPI	Inner Segment	580	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_852_ISEGS	AMCO	Outer Segment	700	Large	Large Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2014_853_ISEGS	WCSP	Outer Segment	700	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_854_ISEGS	AMPI	Outer Segment	840	Small	Small Carcass	collision	Fatality Search	21	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_855_ISEGS	UNPA	Outer Segment	920	Small	Feather Spot	collision	Fatality Search	21	No				X			Older than Search Interval
2014_856_ISEGS	UNSP	Outer Segment	960	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_857_ISEGS	LOSH	Offsite	1160	Small	Small Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2014_858_ISEGS	YRWA	Power Block	27	Small	Small Carcass	singeing	Incidental	17(1)	Yes	X	X					
2014_859_ISEGS	MOBL	Inner HD	140	Small	Small Carcass	singeing	Fatality Search	21	Yes	X		X				
2014_860_ISEGS	AMCO	Inner HD	160	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_861_ISEGS	UNSP	Outer Segment	850	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_862_ISEGS	UNPA	Power Block	0	Small	Small Carcass	unknown	Fatality Search	21	Yes	X	X					
2014_863_ISEGS	MODO	Outer Segment	840	Large	Large Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_864_ISEGS	UNPA	Inner HD	270	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_865_ISEGS	ROPI	Outer Segment	890	Large	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_866_ISEGS	UNSP	Outer Segment	870	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_867_ISEGS	YRWA	Inner HD	280	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_868_ISEGS	GRRO	Unit Fence	1050	Large	Feather Spot	unknown	Fatality Search	20	No					X		Older than Search Interval
2014_869_ISEGS	GRRO	Unit Fence	890	Large	Feather Spot	unknown	Fatality Search	20	No					X		Older than Search Interval
2014_870_ISEGS	GRRO	Unit Fence	1105	Large	Feather Spot	unknown	Fatality Search	20	Yes					X		
2014_871_ISEGS	BTPI	Outer Segment	750	Large	Feather Spot	collision	Fatality Search	21	Yes				X			
2014_872_ISEGS	YRWA	Inner Segment	320	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_873_ISEGS	UNSP	Inner Segment	300	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_874_ISEGS	ROPI	Power Block	0	Large	Large Carcass	singeing	Incidental	20(1)	Yes	X	X					
2014_875_ISEGS	YWAR	Inner Segment	470	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_876_ISEGS	SAVS	Inner Segment	480	Small	Small Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2014_877_ISEGS	GRRO	Outer Segment	980	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_878_ISEGS	YRWA	Outer Segment	990	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_879_ISEGS	UNID	Inner Segment	320	Small	Small Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_880_ISEGS	BRBL	Inner HD	240	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_881_ISEGS	YRWA	Inner HD	220	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_882_ISEGS	MODO	Inner HD	210	Large	Feather Spot	unknown	Fatality Search	21	No	X		X				Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_883_ISEGS	AMPI	Inner Segment	300	Small	Feather Spot	singeing	Fatality Search	21	Yes				X			
2014_884_ISEGS	UNPA	Power Block	40	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_885_ISEGS	AMPI	Inner Segment	490	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_886_ISEGS	LEGO	Power Block	40	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_887_ISEGS	RCKI	Inner HD	230	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_888_ISEGS	YRWA	Inner Segment	580	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_889_ISEGS	YRWA	Inner HD	170	Small	Feather Spot	singeing	Fatality Search	21	Yes	X		X				
2014_890_ISEGS	UNPA	Inner Segment	310	Small	Feather Spot	singeing	Fatality Search	21	Yes				X			
2014_891_ISEGS	LEGO	Power Block	10	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_892_ISEGS	WEME	Inner HD	170	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_893_ISEGS	UNPA	Inner HD	180	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_894_ISEGS	UNPA	Power Block	40	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_895_ISEGS	UNPA	Power Block	20	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_896_ISEGS	HOFI	Inner HD	98	Small	Small Carcass	singeing	Fatality Search	21	Yes	X		X				
2014_897_ISEGS	AMPI	Inner Segment	510	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_898_ISEGS	UNPA	Inner Segment	640	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_899_ISEGS	YWAR	Power Block	10	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_900_ISEGS	UNPA	Inner HD	210	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_901_ISEGS	YWAR	Power Block	45	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2014_902_ISEGS	WEME	Outer Segment	670	Small	Small Carcass	unknown	Incidental	2	No				X			Left in Place-Not Discovered on Next Search
2014_903_ISEGS	UNPA	Inner Segment	598	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_904_ISEGS	GWTE	Unit Fence	1520	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_905_ISEGS	GRRO	Unit Fence	1400	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_906_ISEGS	MODO	Outer Segment	1080	Large	Feather Spot	unknown	Fatality Search	28	Yes				X			
2014_907_ISEGS	UNSP	Inner Segment	630	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_908_ISEGS	WEME	Inner Segment	340	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_909_ISEGS	UNSP	Inner Segment	280	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_910_ISEGS	AMCO	Inner Segment	420	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_911_ISEGS	AMPI	Inner HD	200	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_912_ISEGS	AMRO	Power Block	110	Small	Small Carcass	unknown	Fatality Search	21	Yes	X	X					
2014_913_ISEGS	AMPI	Inner HD	270	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_914_ISEGS	AMPI	Inner HD	180	Small	Small Carcass	collision	Fatality Search	21	Yes	X		X				
2014_915_ISEGS	UNPA	Unit Fence	1030	Small	Feather Spot	unknown	Fatality Search	20	Yes					X		
2014_916_ISEGS	AMKE	Outer Segment	800	Large	Large Carcass	singeing	Fatality Search	21	No				X			Older than Search Interval
2014_917_ISEGS	GRRO	Outer Segment	1160	Large	Large Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_918_ISEGS	UNSP	Inner Segment	560	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_919_ISEGS	WEME	Inner Segment	425	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_920_ISEGS	UNSP	Inner Segment	364	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_921_ISEGS	NOHA	Outer Segment	850	Large	Large Carcass	singeing	Fatality Search	21	Yes				X			
2014_922_ISEGS	BRBL	Outer Segment	770	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_923_ISEGS	WCSP	Outer Segment	770	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_924_ISEGS	GRRO	Outer Segment	860	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_925_ISEGS	EAGR	Inner HD	200	Large	Large Carcass	unknown	Fatality Search	21	Yes	X		X				
2014_926_ISEGS	UNSW	Inner HD	240	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2014_927_ISEGS	GRRO	Unit Fence	1200	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2014_928_ISEGS	GRRO	Outer Segment	815	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_929_ISEGS	SAGS	Outer Segment	1110	Small	Small Carcass	collision	Fatality Search	21	Yes				X			
2014_930_ISEGS	WCSP	Inner Segment	540	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2014_931_ISEGS	MODO	Outer Segment	1040	Large	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2014_932_ISEGS	AMPI	Inner Segment	620	Small	Feather Spot	unknown	Fatality Search	14	No				X			Older than Search Interval
2014_933_ISEGS	SAGS	Outer Segment	940	Small	Small Carcass	unknown	Fatality Search	14	Yes				X			
2014_934_ISEGS	YRWA	Outer Segment	940	Small	Small Carcass	unknown	Fatality Search	14	No				X			Older than Search Interval
2014_935_ISEGS	MODO	Outer Segment	943	Large	Large Carcass	unknown	Fatality Search	14	No				X			Older than Search Interval
2014_936_ISEGS	ROPI	Outer Segment	938	Large	Large Carcass	unknown	Fatality Search	14	No				X			Older than Search Interval
2014_937_ISEGS	GRRO	Outer Segment	1140	Large	Feather Spot	unknown	Fatality Search	14	No				X			Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2014_938_ISEGS	WCSP	Outer Segment	1160	Small	Feather Spot	unknown	Incidental	22	No				X			Discovered after Plot had Been Searched Earlier
2014_939_ISEGS	VATH	Inner HD	180	Small	Small Carcass	unknown	Fatality Search	16	No	X		X				Older than Search Interval
2014_940_ISEGS	WEME	Inner Segment	330	Small	Small Carcass	unknown	Fatality Search	16	No				X			Older than Search Interval
2014_941_ISEGS	MODO	Outer Segment	738	Large	Large Carcass	unknown	Fatality Search	23	Yes				X			
2014_942_ISEGS	UNPA	Outer Segment	740	Small	Small Carcass	unknown	Fatality Search	23	Yes				X			
2014_943_ISEGS	WCSP	Outer Segment	1060	Small	Feather Spot	unknown	Fatality Search	23	Yes				X			
2014_944_ISEGS	UNSP	Inner Segment	478	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_945_ISEGS	UNLB	Outer Segment	800	Large	Large Carcass	unknown	Fatality Search	18	No				X			Older than Search Interval
2014_946_ISEGS	LOSH	Outer Segment	1300	Small	Feather Spot	unknown	Fatality Search	19	Yes				X			
2014_947_ISEGS	UNWA	Inner Segment	310	Small	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2014_948_ISEGS	UNPA	Inner Segment	440	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_949_ISEGS	UNSP	Inner Segment	540	Small	Feather Spot	unknown	Fatality Search	18	No				X			Older than Search Interval
2014_950_ISEGS	SAVS	Outer Segment	1420	Small	Small Carcass	collision	Fatality Search	19	Yes				X			
2014_951_ISEGS	VATH	Outer Segment	730	Small	Small Carcass	collision	Fatality Search	18	No				X			Older than Search Interval
2014_952_ISEGS	YRWA	Inner Segment	490	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2014_953_ISEGS	WEME	Inner Segment	560	Small	Feather Spot	collision	Fatality Search	20	No				X			Older than Search Interval
2014_954_ISEGS	VGSW	Power Block	0	Small	Small Carcass	singeing	Incidental	NA	No	X	X					Outside Standard Search Area
2014_955_ISEGS	WCSP	Inner Segment	450	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2014_956_ISEGS	PBGR	Inner Segment	620	Large	Large Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_001_ISEGS	OCWA	Power Block	32	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2015_002_ISEGS	BHCO	Inner Segment	700	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_003_ISEGS	GRRO	Inner Segment	630	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_004_ISEGS	HOFI	Inner Segment	620	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_005_ISEGS	GRRO	Unit Fence	1040	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_006_ISEGS	GRRO	Unit Fence	810	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_007_ISEGS	GRRO	Unit Fence	1100	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_008_ISEGS	MODO	Outer Segment	1130	Large	Large Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2015_009_ISEGS	MODO	Outer Segment	980	Large	Feather Spot	unknown	Fatality Search	21	No				X			Older than Search Interval
2015_010_ISEGS	YRWA	Inner Segment	570	Small	Feather Spot	unknown	Fatality Search	28	Yes				X			
2015_011_ISEGS	AMRO	Inner HD	260	Small	Feather Spot	unknown	Fatality Search	26	Yes	X		X				
2015_012_ISEGS	AMPI	Inner Segment	290	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2015_013_ISEGS	UNPA	Power Block	65	Small	Feather Spot	singeing	Fatality Search	26	Yes	X	X					
2015_014_ISEGS	UNPA	Inner Segment	320	Small	Feather Spot	collision	Fatality Search	23	Yes				X			
2015_015_ISEGS	AMPI	Inner Segment	640	Small	Small Carcass	unknown	Fatality Search	25	Yes				X			
2015_016_ISEGS	AMPI	Inner Segment	625	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_017_ISEGS	SAGS	Outer Segment	1010	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2015_018_ISEGS	BGGN	ACC	75	Small	Small Carcass	singeing	Fatality Search	21	No	X	X					Older than Search Interval
2015_019_ISEGS	UNPA	Power Block	10	Small	Feather Spot	singeing	Fatality Search	21	Yes	X	X					
2015_020_ISEGS	YRWA	Outer Segment	930	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_021_ISEGS	BRSP	Outer Segment	950	Small	Small Carcass	collision	Fatality Search	21	Yes				X			
2015_022_ISEGS	UNLB	Unit Fence	1250	Large	Feather Spot	unknown	Incidental	2	No					X		Left in Place-Not Discovered on Next Search
2015_023_ISEGS	WCSP	Inner Segment	457	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_024_ISEGS	WEME	Inner Segment	575	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_025_ISEGS	SAVS	Inner Segment	620	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_026_ISEGS	ROPI	Outer Segment	1165	Large	Large Carcass	unknown	Fatality Search	21	No				X			Older than Search Interval
2015_027_ISEGS	WEME	Inner Segment	575	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_028_ISEGS	HOFI	Power Block	74	Small	Small Carcass	singeing	Fatality Search	22	Yes	X	X					
2015_029_ISEGS	COHU	Power Block	58	Small	Small Carcass	singeing	Fatality Search	22	Yes	X	X					
2015_030_ISEGS	UNPA	Power Block	0	Small	Feather Spot	unknown	Fatality Search	22	No	X	X					Older than Search Interval
2015_031_ISEGS	OCWA	Power Block	35	Small	Feather Spot	singeing	Fatality Search	22	Yes	X	X					
2015_032_ISEGS	YRWA	Power Block	58	Small	Small Carcass	singeing	Fatality Search	22	No	X	X					Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_033_ISEGS	UNPA	Power Block	20	Small	Feather Spot	singeing	Fatality Search	21	No	X	X					Older than Search Interval
2015_034_ISEGS	UNPA	Power Block	17	Small	Feather Spot	singeing	Fatality Search	21	No	X	X					Older than Search Interval
2015_035_ISEGS	CORA	Offsite	NA	Large	Large Carcass	singeing	Incidental	NA	No							Outside Standard Search Area
2015_036_ISEGS	CORA	Unit Fence	1380	Large	Large Carcass	singeing	Incidental	9	Yes					X		
2015_037_ISEGS	GWTE	Outer Segment	1030	Large	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_038_ISEGS	HOFI	ACC	44	Small	Small Carcass	singeing	Fatality Search	21	Yes	X	X					
2015_039_ISEGS	ROPI	Power Block	100	Large	Large Carcass	unknown	Incidental	14(1)	No	X	X					Older than Search Interval
2015_040_ISEGS	UNID	Power Block	NA	Small	Small Carcass	unknown	Incidental	7(1)	No	X	X					Older than Search Interval
2015_041_ISEGS	WISN	Outer Segment	1113	Small	Small Carcass	collision	Fatality Search	21	Yes				X			
2015_042_ISEGS	GRRO	Outer Segment	1270	Large	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_043_ISEGS	MODO	Power Block	70	Large	Large Carcass	unknown	Incidental	3(1)	No	X	X					Older than Search Interval
2015_044_ISEGS	TRES	Power Block	40	Small	Small Carcass	singeing	Incidental	6(1)	Yes	X	X					
2015_045_ISEGS	WCSP	Outer Segment	795	Small	Small Carcass	collision	Fatality Search	20	Yes				X			
2015_046_ISEGS	WEME	Inner Segment	531	Small	Small Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2015_047_ISEGS	GWTE	Outer Segment	1140	Large	Feather Spot	collision	Fatality Search	17	Yes				X			
2015_048_ISEGS	WCSP	Outer Segment	940	Small	Small Carcass	collision	Fatality Search	17	Yes				X			
2015_049_ISEGS	RUHU	Power Block	40	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_050_ISEGS	UNPA	Inner Segment	639	Small	Feather Spot	unknown	Fatality Search	20	No				X			Older than Search Interval
2015_051_ISEGS	BTSP	Overhead Lines	1033	Small	Small Carcass	unknown	Incidental	15	Yes						X	
2015_052_ISEGS	GRRO	Outer Segment	1028	Large	Large Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2015_053_ISEGS	EAGR	Power Block	0	Large	Large Carcass	collision	Incidental	1(1)	Yes	X	X					
2015_054_ISEGS	NRWS	Power Block	33	Small	Small Carcass	unknown	Fatality Search	5	No	X	X					Older than Search Interval
2015_055_ISEGS	VGSW	Inner HD	199	Small	Feather Spot	singed	Fatality Search	22	Yes	X		X				
2015_056_ISEGS	BTGN	Outer Segment	1411	Small	Feather Spot	unknown	Fatality Search	5	No				X			Older than Search Interval
2015_057_ISEGS	AMWI	Inner Segment	662	Large	Large Carcass	unknown	Fatality Search	21	Yes				X			
2015_058_ISEGS	MODO	Inner HD	200	Large	Feather Spot	unknown	Fatality Search	16	No	X		X				Older than Search Interval
2015_059_ISEGS	GRRO	Unit Fences	1148	Large	Feather Spot	unknown	Fatality Search	16	Yes							

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_060_ISEGS	BTSP	Outer Segment	1107	Small	Small Carcass	unknown	Fatality Search	15	Yes				X			
2015_061_ISEGS	BRSP	Inner Segment	623	Small	Small Carcass	unknown	Fatality Search	17	Yes				X			
2015_062_ISEGS	WCSP	Inner Segment	529	Small	Small Carcass	unknown	Fatality Search	17	Yes				X			
2015_063_ISEGS	NRWS	Power Block	75	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_064_ISEGS	RCKI	Power Block	67	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_065_ISEGS	LEGO	Power Block	15	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_066_ISEGS	MODO	Outer Segment	1470	Large	Feather Spot	unknown	Fatality Search	11	No				X			Older than Search Interval
2015_067_ISEGS	GWTE	Outer Segment	1395	Large	Feather Spot	unknown	Fatality Search	7	No				X			Older than Search Interval
2015_068_ISEGS	NRWS	Power Block	113	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_069_ISEGS	TRES	ACC	43	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_070_ISEGS	VERD	ACC	40	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_071_ISEGS	YRWA	ACC	61	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_072_ISEGS	YRWA	ACC	67	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_073_ISEGS	COHA	Outer Segment	723	Large	Large Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_074_ISEGS	EAGR	Outside Search - COMMONS E/HAB	1615	Large	Feather Spot	unknown	Incidental	NA	No							Outside Standard Search Area
2015_075_ISEGS	BTSP	Outer Segment	1163	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_076_ISEGS	CITE	Unit Fences	1192	Large	Feather Spot	collision	Fatality Search	23	Yes							
2015_077_ISEGS	GRRO	Outer Segment	1046	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_078_ISEGS	CLSW	ACC	61	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_079_ISEGS	UNSW	Power Block	34	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_080_ISEGS	YRWA	Power Block	65	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_081_ISEGS	YRWA	Power Block	75	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_082_ISEGS	NRWS	Power Block	124	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_083_ISEGS	YRWA	Inner HD	1340	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_084_ISEGS	YRWA	Inner HD	1230	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_085_ISEGS	UNPA	ACC	48	Small	Small Carcass	singed	Fatality Search	7	No	X	X					Older than Search Interval
2015_086_ISEGS	VGSW	ACC	50	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_087_ISEGS	COHU	Power Block	90	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_088_ISEGS	AMKE	Power Block	89	Large	Feather Spot	singed	Fatality Search	7	No	X	X					Older than Search Interval
2015_089_ISEGS	LENI	Inner HD	237	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X				
2015_090_ISEGS	RUHU	ACC	40	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_091_ISEGS	HOLA	Outer Segment	1287	Small	Small Carcass	unknown	Incidental	7	No				X			Outside Standard Search Area
2015_092_ISEGS	HOLA	Outer Segment	12860	Small	Small Carcass	unknown	Incidental	7	No				X			Outside Standard Search Area
2015_093_ISEGS	AMRO	Outer Segment	767	Small	Feather Spot	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_094_ISEGS	CACW	Outer Segment	1115	Small	Feather Spot	collision	Fatality Search	7	No				X			Older than Search Interval
2015_095_ISEGS	NRWS	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_096_ISEGS	BANS	Power Block	85	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_097_ISEGS	AMKE	Inner Segment	587	Large	Large Carcass	singed	Fatality Search	7	Yes				X			
2015_098_ISEGS	YRWA	ACC	73	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_099_ISEGS	UNHU	Power Block	61	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_100_ISEGS	BGGN	Inner HD	238	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_101_ISEGS	YRWA	Inner HD	205	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_102_ISEGS	YRWA	Power Block	49	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_103_ISEGS	YRWA	ACC	49	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_104_ISEGS	UNHU	ACC	35	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_105_ISEGS	RCKI	Power Block	87	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_106_ISEGS	YRWA	Power Block	97	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_107_ISEGS	YRWA	Inner Segment	562	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_108_ISEGS	LENI	Inner HD	242	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X				
2015_109_ISEGS	UNPA	Outer Segment	1075	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_110_ISEGS	UNHU	Power Block	38	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_111_ISEGS	HOWR	Inner HD	223	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_112_ISEGS	UNPA	Power Block	32	Small	Feather Spot	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_113_ISEGS	BRSP	Outer Segment	1194	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_114_ISEGS	BTSP	Outer Segment	1350	Small	Small Carcass	collision	Fatality Search	7	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_115_ISEGS	NRWS	Power Block	122	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_116_ISEGS	UNPA	Power Block	82	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_117_ISEGS	YRWA	Power Block	86	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_118_ISEGS	WIWA	Power Block	50	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_119_ISEGS	YRWA	Power Block	55	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_120_ISEGS	YRWA	Power Block	47	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_121_ISEGS	YRWA	Power Block	47	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_122_ISEGS	YRWA	Power Block	54	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_123_ISEGS	YRWA	Power Block	59	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_124_ISEGS	YRWA	Power Block	60	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_125_ISEGS	YRWA	Power Block	71	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_126_ISEGS	YRWA	Power Block	77	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_127_ISEGS	YRWA	Power Block	33	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_128_ISEGS	YRWA	Power Block	NA	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_129_ISEGS	YRWA	Power Block	13	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_130_ISEGS	YRWA	Power Block	22	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_131_ISEGS	RUHU	Power Block	75	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_132_ISEGS	YRWA	Power Block	24	Small	Small Carcass	unknown	Incidental	1(1)	Yes	X	X					
2015_133_ISEGS	YRWA	Power Block	30	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_134_ISEGS	CAHU	Power Block	20	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_135_ISEGS	YRWA	Power Block	120	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_136_ISEGS	COHU	Power Block	25	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_137_ISEGS	CHSP	Power Block	49	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_138_ISEGS	CHSP	Power Block	40	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_139_ISEGS	CAHU	Power Block	58	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_140_ISEGS	MODO	Outer Segment	1353	Large	Large Carcass	collision	Fatality Search	14	Yes				X			
2015_141_ISEGS	OCWA	Power Block	76	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_142_ISEGS	YRWA	Power Block	65	Small	Small Carcass	singed	Fatality Search	7	No	X	X					Older than Search Interval
2015_143_ISEGS	WEME	Outer Segment	691	Small	Feather Spot	unknown	Fatality Search	14	Yes				X			

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2015_144_ISEGS	MODO	Outside Search - ADMINISTRATIVE BUILDING FENCE	968	Large	Large Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2015_145_ISEGS	WEME	Outer Segment	1184	Small	Small Carcass	collision	Fatality Search	6	No				X			Older than Search Interval
2015_146_ISEGS	CAHU	Power Block	71	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_147_ISEGS	OCWA	Power Block	21	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_148_ISEGS	SAVS	Outer Segment	1169	Small	Feather Spot	unknown	Fatality Search	6	No				X			Older than Search Interval
2015_149_ISEGS	UNPA	Inner Segment	470	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_150_ISEGS	BCHU	Power Block	30	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_151_ISEGS	LENI	Outer Segment	714	Small	Feather Spot	unknown	Fatality Search	8	Yes				X			
2015_152_ISEGS	WWDO	Outer Segment	754	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_153_ISEGS	SAVS	Outer Segment	753	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_154_ISEGS	OCWA	ACC	30	Small	Small Carcass	singed	Fatality Search	8	Yes	X	X					
2015_155_ISEGS	UNPA	Power Block	37	Small	Feather Spot	singed	Fatality Search	8	Yes	X	X					
2015_156_ISEGS	YHBL	Power Block	27	Small	Feather Spot	unknown	Fatality Search	8	Yes	X	X					
2015_157_ISEGS	YHBL	Outer Segment	857	Small	Small Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2015_158_ISEGS	YRWA	Outer Segment	866	Small	Small Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_159_ISEGS	UNPA	Outside Search - TORTOISE PENS	945	Small	Small Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2015_160_ISEGS	HOLA	Inner Segment	283	Small	Small Carcass	unknown	Fatality Search	6	Yes				X			
2015_161_ISEGS	YRWA	ACC	118	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_162_ISEGS	ROPI	Inner HD	225	Large	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_163_ISEGS	RUHU	ACC	136	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_164_ISEGS	MODO	Unit Fences	1275	Large	Feather Spot	unknown	Incidental	7	Yes							
2015_165_ISEGS	WIWA	ACC	60	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_166_ISEGS	YRWA	Power Block	72	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_167_ISEGS	YRWA	Inner HD	242	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_168_ISEGS	BARS	Power Block	79	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_169_ISEGS	CAHU	Power Block	40	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					

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2015_170_ISEGS	LAZB	Inner Segment	600	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_171_ISEGS	UNPA	Power Block	218	Small	Feather Spot	unknown	Fatality Search	6	Yes	X	X					
2015_172_ISEGS	RUHU	Power Block	99	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_173_ISEGS	UNPA	Inner Segment	478	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_174_ISEGS	OCWA	Power Block	4	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_175_ISEGS	MODO	Outer Segment	1400	Large	Large Carcass	collision	Fatality Search	7	No				X			Older than Search Interval
2015_176_ISEGS	MODO	Power Block	38	Large	Feather Spot	unknown	Fatality Search	6	Yes	X	X					
2015_177_ISEGS	MODO	Outer Segment	707	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_178_ISEGS	YWAR	Power Block	10	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_179_ISEGS	WIWA	Power Block	37	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_180_ISEGS	CAHU	Power Block	74	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_181_ISEGS	BTSP	Outer Segment	1144	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_182_ISEGS	AMCO	Outer Segment	926	Large	Large Carcass	unknown	Incidental	NA	No				X			Outside Standard Search Area
2015_183_ISEGS	CAHU	ACC	63	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_184_ISEGS	COHU	ACC	65	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_185_ISEGS	YRWA	Inner HD	163	Small	Small Carcass	singed	Fatality Search	7	No	X		X				Older than Search Interval
2015_186_ISEGS	MODO	Outer Segment	986	Large	Large Carcass	collision	Fatality Search	7	Yes				X			
2015_187_ISEGS	CAHU	Power Block	42	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_188_ISEGS	CAHU	Power Block	49	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_189_ISEGS	UNPA	Power Block	53	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_190_ISEGS	RUHU	Power Block	57	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_191_ISEGS	UNPA	Power Block	81	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_192_ISEGS	MODO	Outer Segment	1120	Large	Large Carcass	collision	Fatality Search	7	Yes				X			
2015_193_ISEGS	CAHU	ACC	37	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_194_ISEGS	CAHU	ACC	64	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_195_ISEGS	YRWA	ACC	65	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_196_ISEGS	BCHU	Power Block	71	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_197_ISEGS	MODO	Outer Segment	1560	Large	Large Carcass	collision	Fatality Search	7	Yes				X			

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2015_198_ISEGS	UNPA	Outer Segment	1056	Small	Small Carcass	unknown	Fatality Search	7	No				X			Older than Search Interval
2015_199_ISEGS	COHU	Power Block	83	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_200_ISEGS	UNPA	Outer Segment	1206	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_201_ISEGS	UNPA	Power Block	29	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_202_ISEGS	WIWA	ACC	60	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_203_ISEGS	MODO	Inner HD	193	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_204_ISEGS	TOWA	Outer Segment	853	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_205_ISEGS	WETA	Outside Search - Colosseum Road	918	Small	Small Carcass	collision	Incidental	NA	No							Outside Standard Search Area
2015_206_ISEGS	TOWA	Overhead Lines	1030	Small	Small Carcass	unknown	Incidental	3	Yes						X	
2015_207_ISEGS	BTSP	Outer Segment	1026	Small	Small Carcass	collision	Fatality Search	8	Yes				X			
2015_208_ISEGS	WETA	Outer Segment	1025	Small	Small Carcass	unknown	Fatality Search	7	Yes				X			
2015_209_ISEGS	BTSP	ACC	68	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_210_ISEGS	CAHU	Power Block	40	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_211_ISEGS	SENG	Outer Segment	1048	Large	Large Carcass	collision	Incidental	NA	No				X			Outside Standard Search Area
2015_212_ISEGS	BHGR	Overhead Lines	1035	Small	Small Carcass	collision	Fatality Search	8	Yes						X	
2015_213_ISEGS	MODO	Inner Segment	647	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_214_ISEGS	WIWA	CLA Fence	1252	Small	Small Carcass	unknown	Fatality Search	8	Yes					X		
2015_215_ISEGS	WIWA	Outside Search - Outside Fenceline of Unit 2 to the SE	3384	Small	Small Carcass	collision	Incidental	NA	No							Outside Standard Search Area
2015_216_ISEGS	UNHU	Power Block	16	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_217_ISEGS	UNPA	Power Block	90	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_218_ISEGS	MGWA	ACC	40	Small	Small Carcass	singed	Fatality Search	12	Yes	X	X					
2015_219_ISEGS	YWAR	ACC	48	Small	Small Carcass	singed	Fatality Search	12	Yes	X	X					
2015_220_ISEGS	MODO	Power Block	73	Large	Large Carcass	unknown	Fatality Search	12	No	X	X					Older than Search Interval
2015_221_ISEGS	CAHU	Power Block	45	Small	Small Carcass	singed	Fatality Search	12	Yes	X	X					
2015_222_ISEGS	YWAR	Power Block	74	Small	Feather Spot	unknown	Fatality Search	1	No	X	X					Older than Search Interval
2015_223_ISEGS	UNPA	Power Block	22	Small	Feather Spot	singed	Fatality Search	1	No	X	X					Older than Search Interval
2015_224_ISEGS	MGWA	Inner HD	127	Small	Small Carcass	collision	Fatality Search	13	Yes	X		X				

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2015_225_ISEGS	GRRO	Unit Fences	1034	Large	Feather Spot	unknown	Fatality Search	13	Yes							
2015_226_ISEGS	GRRO	Unit Fences	1070	Large	Feather Spot	unknown	Fatality Search	13	Yes							
2015_227_ISEGS	MGWA	Inner Segment	435	Small	Feather Spot	unknown	Fatality Search	20	Yes				X			
2015_228_ISEGS	UNSW	Power Block	72	Small	Feather Spot	singed	Fatality Search	1	No	X	X					Older than Search Interval
2015_229_ISEGS	UNPA	Power Block	73	Small	Feather Spot	singed	Fatality Search	1	No	X	X					Older than Search Interval
2015_230_ISEGS	CORA	Outside Search - Commons East	1170	Large	Large Carcass	electrocution	Incidental	NA	No							Outside Standard Search Area
2015_231_ISEGS	BUOR	Outer Segment	1038	Small	Small Carcass	collision	Fatality Search	13	Yes				X			
2015_232_ISEGS	MODO	Outer Segment	1683	Large	Large Carcass	unknown	Incidental	NA	No				X			Older than Search Interval
2015_233_ISEGS	WIWA	Power Block	53	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_234_ISEGS	HOLA	Inner Segment	590	Small	Small Carcass	collision	Fatality Search	23	No				X			Older than Search Interval
2015_235_ISEGS	UNHU	Power Block	125	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_236_ISEGS	MODO	Inner Segment	643	Large	Large Carcass	unknown	Fatality Search	22	Yes				X			
2015_237_ISEGS	MODO	Outer Segment	765	Large	Feather Spot	unknown	Fatality Search	23	Yes				X			
2015_238_ISEGS	LOSH	ACC	55	Small	Small Carcass	unknown	Incidental	1	Yes	X	X					
2015_239_ISEGS	LENI	Inner Segment	678	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_240_ISEGS	BTSP	Inner Segment	669	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_241_ISEGS	GRRO	Unit Fence	1084	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_242_ISEGS	GRRO	Unit Fence	916	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_243_ISEGS	GRRO	Unit Fence	861	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_244_ISEGS	GRRO	Unit Fence	905	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_245_ISEGS	UNPA	Inner Segment	517	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_246_ISEGS	CLSW	ACC	49	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_247_ISEGS	UNPA	Outer Segment	696	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_248_ISEGS	BTSP	Outer Segment	777	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2015_249_ISEGS	WCSP	Outer Segment	837	Small	Feather Spot	collision	Fatality Search	21	Yes				X			
2015_250_ISEGS	WETA	Outer Segment	732	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_251_ISEGS	HOLA	Inner HD	219	Small	Small Carcass	unknown	Fatality Search	19	Yes	X		X				
2015_252_ISEGS	GRRO	Inner Segment	630	Large	Feather Spot	unknown	Fatality Search	19	No				X			Older than Search Interval

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2015_253_ISEGS	MODO	Outer Segment	1606	Large	Feather Spot	unknown	Fatality Search	19	No				X			Older than Search Interval
2015_254_ISEGS	UNID	Inner Segment	603	Small	Feather Spot	unknown	Fatality Search	19	Yes				X			
2015_255_ISEGS	ANHU	ACC	66	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_256_ISEGS	GRRO	Outer Segment	944	Large	Feather Spot	unknown	Fatality Search	19	No				X			Older than Search Interval
2015_257_ISEGS	CACW	Outer Segment	1167	Small	Small Carcass	collision	Fatality Search	19	Yes				X			
2015_258_ISEGS	GRRO	Outside Search - Between FO & Fence	1237	Large	Feather Spot	unknown	Incidental	NA	No							Outside Standard Search Area
2015_259_ISEGS	LUWA	Power Block	38	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_260_ISEGS	TRES	Outside Search - Solar Tower	0	Small	Small Carcass	singed	Incidental	NA	No							Outside Standard Search Area
2015_261_ISEGS	NRWS	Outside Search - Tower, 4th Level,NE	0	Small	Small Carcass	singed	Incidental	NA	No							Outside Standard Search Area
2015_262_ISEGS	VGSW	Inner HD	161	Small	Small Carcass	unknown	Fatality Search	21	Yes	X		X				
2015_263_ISEGS	HOFI	ACC	50	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_264_ISEGS	AMCO	Unit Fence	1121	Large	Large Carcass	unknown	Fatality Search	21	Yes					X		
2015_265_ISEGS	MODO	Outer Segment	1054	Large	Feather Spot	collision	Fatality Search	20	Yes				X			
2015_266_ISEGS	LOSH	Inner Segment	391	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_267_ISEGS	BTSP	Outer Segment	1032	Small	Small Carcass	collision	Fatality Search	20	Yes				X			
2015_268_ISEGS	CLSW	Outside Search - Tower, 4th Level	0	Small	Small Carcass	singed	Incidental	NA	No							Outside Standard Search Area
2015_269_ISEGS	HOLA	Inner Segment	487	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2015_270_ISEGS	LENI	Outer Segment	1180	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_271_ISEGS	MODO	Outer Segment	731	Large	Large Carcass	unknown	Incidental	NA	No				X			Older than Search Interval
2015_272_ISEGS	GRRO	Unit Fence	1039	Large	Feather Spot	unknown	Incidental	17	Yes					X		
2015_273_ISEGS	GRRO	Unit Fence	1046	Large	Feather Spot	unknown	Incidental	17	Yes					X		
2015_274_ISEGS	MODO	Unit Fence	1095	Large	Large Carcass	unknown	Incidental	17	Yes					X		
2015_275_ISEGS	RTHA	Power Block	32	Large	Large Carcass	unknown	Incidental	1(1)	Yes	X	X					
2015_276_ISEGS	UNSW	Inner Segment	261	Small	Small Carcass	singed	Fatality Search	19	Yes				X			
2015_277_ISEGS	CLSW	ACC	46	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_278_ISEGS	HOFI	ACC	66	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_279_ISEGS	AMKE	Power Block	0	Large	Feather Spot	unknown	Fatality Search	20	Yes	X	X					

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2015_280_ISEGS	AMKE	Inner HD	160	Large	Large Carcass	unknown	Fatality Search	21	Yes	X		X				
2015_281_ISEGS	MODO	Inner HD	117	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_282_ISEGS	UNSW	Power Block	12	Small	Feather Spot	singed	Fatality Search	20	Yes	X	X					
2015_283_ISEGS	BTSP	Inner Segment	300	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_284_ISEGS	CLSW	Power Block	70	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_285_ISEGS	LENI	Outside Search - Colosseum Road	1120	Small	Small Carcass	vehicle strike	Incidental	NA	No							Outside Standard Search Area
2015_286_ISEGS	MODO	Inner HD	180	Large	Feather Spot	unknown	Fatality Search	25	Yes	X		X				
2015_287_ISEGS	UNHU	ACC	48	Small	Small Carcass	singed	Fatality Search	25	Yes	X	X					
2015_288_ISEGS	RUHU	ACC	41	Small	Small Carcass	singed	Fatality Search	25	Yes	X	X					
2015_289_ISEGS	UNHU	ACC	58	Small	Small Carcass	singed	Fatality Search	25	Yes	X	X					
2015_290_ISEGS	NRWS	Outside Search - NA	0	Small	Small Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2015_291_ISEGS	VERD	Power Block	22	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_292_ISEGS	COHU	Power Block	31	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_293_ISEGS	COHU	ACC	49	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_294_ISEGS	CLSW	Power Block	64	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_295_ISEGS	BTSP	Power Block	76	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_296_ISEGS	GRRO	Unit Fence	1150	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_297_ISEGS	LENI	Outer Segment	895	Small	Small Carcass	collision	Incidental	NA	No				X			Older than Search Interval
2015_298_ISEGS	CLSW	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_299_ISEGS	PEFA	Unit Fence	1056	Large	Large Carcass	singed	Incidental	22	Yes					X		
2015_300_ISEGS	GRRO	Outer Segment	790	Large	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_301_ISEGS	YWAR	Power Block	51	Small	Feather Spot	unknown	Incidental	1(1)	Yes	X	X					
2015_302_ISEGS	RUHU	ACC	59	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_303_ISEGS	TRES	ACC	52	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_304_ISEGS	NRWS	ACC	44	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_305_ISEGS	UNHU	Power Block	25	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_306_ISEGS	CORA	Power Block	65	Large	Feather Spot	singed	Fatality Search	19	Yes	X	X					
2015_307_ISEGS	BTSP	Power Block	9	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_308_ISEGS	NRWS	Power Block	16	Small	Feather Spot	unknown	Fatality Search	19	Yes	X	X					
2015_309_ISEGS	UNID	Power Block	70	Small	Small Carcass	unknown	Fatality Search	19	Yes	X	X					
2015_310_ISEGS	HOFI	Power Block	6	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_311_ISEGS	LOSH	Inner HD	260	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_312_ISEGS	UNSW	Inner HD	153	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_313_ISEGS	GRRO	Unit Fence	1320	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_314_ISEGS	ATFL	Unit Fence	1320	Small	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_315_ISEGS	GRRO	Unit Fence	1209	Large	Feather Spot	unknown	Fatality Search	21	Yes					X		
2015_316_ISEGS	HOFI	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_317_ISEGS	LENI	Outside Search - HAB	1297	Small	Small Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2015_318_ISEGS	NRWS	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_319_ISEGS	GRRO	Outer Segment	1269	Large	Feather Spot	unknown	Fatality Search	20	Yes				X			
2015_320_ISEGS	BTSP	Outer Segment	1267	Small	Feather Spot	unknown	Fatality Search	20	Yes				X			
2015_321_ISEGS	BTGN	Power Block	8	Small	Small Carcass	collision	Incidental	1(1)	Yes	X	X					
2015_322_ISEGS	LENI	Outside Search - Inside HAB Building	1386	Small	Small Carcass	unknown	Incidental	NA	No							Outside Standard Search Area
2015_323_ISEGS	TRES	Inner HD	170	Small	Small Carcass	singed	Fatality Search	23	Yes	X		X				
2015_324_ISEGS	BTSP	Collector Line	936	Small	Small Carcass	collision	Fatality Search	23	Yes						X	
2015_325_ISEGS	UNSW	Power Block	24	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_326_ISEGS	BTSP	ACC	36	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_327_ISEGS	BTSP	ACC	51	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_328_ISEGS	TRES	ACC	65	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_329_ISEGS	ANHU	ACC	86	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_330_ISEGS	COHU	ACC	37	Small	Small Carcass	singed	Fatality Search	23	Yes	X	X					
2015_331_ISEGS	AMKE	Power Block	48	Large	Large Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_332_ISEGS	GRRO	Outer Segment	1077	Large	Feather Spot	collision	Fatality Search	24	Yes				X			
2015_333_ISEGS	AMKE	Outer Segment	1125	Large	Feather Spot	unknown	Fatality Search	23	Yes				X			
2015_334_ISEGS	HOFI	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_335_ISEGS	CORA	Outer Segment	1070	Large	Large Carcass	singed	Incidental	24	Yes				X			

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2015_336_ISEGS	BHCO	Inner HD	104	Small	Feather Spot	singed	Fatality Search	18	Yes	X		X				
2015_337_ISEGS	BTSP	ACC	48	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_338_ISEGS	UNSW	ACC	50	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_339_ISEGS	WIWA	Power Block	18	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_340_ISEGS	HEWA	Power Block	13	Small	Small Carcass	singed	Fatality Search	19	Yes	X	X					
2015_341_ISEGS	WETA	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	Yes	X	X					
2015_342_ISEGS	BWTE	Power Block	104	Large	Large Carcass	unknown	Incidental	1(1)	Yes	X	X					
2015_343_ISEGS	WIWA	Power Block	101	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_344_ISEGS	UNPA	Inner HD	121	Small	Feather Spot	unknown	Fatality Search	20	Yes	X		X				
2015_345_ISEGS	MODO	Inner HD	172	Large	Feather Spot	unknown	Fatality Search	20	Yes	X		X				
2015_346_ISEGS	BHCO	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_347_ISEGS	NRWS	Power Block	28	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_348_ISEGS	LOSH	Inner HD	226	Small	Feather Spot	unknown	Fatality Search	20	Yes	X		X				
2015_349_ISEGS	GRRO	Unit Fence	974	Large	Large Carcass	unknown	Fatality Search	20	Yes					X		
2015_350_ISEGS	BTYW	Power Block	103	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_351_ISEGS	YWAR	Power Block	92	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_352_ISEGS	YWAR	ACC	42	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_353_ISEGS	TRES	ACC	60	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_354_ISEGS	TRES	ACC	51	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_355_ISEGS	TRES	ACC	53	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_356_ISEGS	RUHU	ACC	63	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_357_ISEGS	UNWA	ACC	57	Small	Small Carcass	unknown	Fatality Search	22	Yes	X	X					
2015_358_ISEGS	WIWA	Power Block	24	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_359_ISEGS	HOLA	Power Block	24	Small	Small Carcass	unknown	Fatality Search	22	Yes	X	X					
2015_360_ISEGS	NRWS	Power Block	35	Small	Feather Spot	singed	Fatality Search	22	Yes	X	X					
2015_361_ISEGS	TRES	Power Block	33	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_362_ISEGS	TRES	Power Block	113	Small	Small Carcass	singed	Fatality Search	22	Yes	X	X					
2015_363_ISEGS	YWAR	Power Block	15	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_364_ISEGS	TRES	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	Yes	X	X					

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2015_365_ISEGS	NRWS	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_366_ISEGS	TRES	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_367_ISEGS	ROWR	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_368_ISEGS	UNWA	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_369_ISEGS	CLSW	ACC	52	Small	Small Carcass	singed	Incidental	1	No	X	X					Older than Search Interval
2015_370_ISEGS	MODO	Outer Segment	1026	Large	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_371_ISEGS	UNPA	Outer Segment	1070	Small	Feather Spot	unknown	Fatality Search	22	Yes				X			
2015_372_ISEGS	WETA	Power Block	112	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_373_ISEGS	BWTE	Inner HD	227	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_374_ISEGS	BWTE	Inner HD	232	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_375_ISEGS	COPO	Inner HD	225	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_376_ISEGS	LENI	Inner HD	249	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_377_ISEGS	AMKE	Inner Segment	472	Large	Feather Spot	singed	Fatality Search	21	Yes				X			
2015_378_ISEGS	MODO	Inner Segment	487	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_379_ISEGS	YWAR	Inner HD	110	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_380_ISEGS	UNPA	Inner HD	109	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_381_ISEGS	NRWS	Inner HD	107	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_382_ISEGS	UNPA	Inner HD	109	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_383_ISEGS	YWAR	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_384_ISEGS	CHSP	Power Block	21	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_385_ISEGS	BUOR	ACC	51	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_386_ISEGS	UNPA	Power Block	10	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_387_ISEGS	YWAR	ACC	51	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_388_ISEGS	BTGN	ACC	50	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_389_ISEGS	YWAR	ACC	55	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_390_ISEGS	RUHU	ACC	60	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_391_ISEGS	MODO	Outer Segment	1500	Large	Large Carcass	unknown	Fatality Search	19	Yes				X			
2015_392_ISEGS	WIWA	ACC	54	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_393_ISEGS	SESA	ACC	50	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					

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2015_394_ISEGS	WIWA	ACC	50	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_395_ISEGS	WIWA	ACC	55	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_396_ISEGS	MGWA	ACC	50	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_397_ISEGS	WIWA	ACC	56	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_398_ISEGS	BGGN	ACC	85	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X					
2015_399_ISEGS	GRRO	Outer Segment	728	Large	Feather Spot	unknown	Fatality Search	23	Yes				X			
2015_400_ISEGS	YWAR	Power Block	22	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_401_ISEGS	UNPA	Inner HD	99	Small	Feather Spot	singed	Fatality Search	23	Yes	X		X				
2015_402_ISEGS	UNPA	Inner HD	217	Small	Feather Spot	singed	Fatality Search	23	Yes	X		X				
2015_403_ISEGS	BUOR	Inner HD	171	Small	Feather Spot	singed	Fatality Search	23	Yes	X		X				
2015_404_ISEGS	MODO	Inner HD	234	Large	Feather Spot	unknown	Fatality Search	23	Yes	X		X				
2015_405_ISEGS	NRWS	Inner HD	164	Small	Feather Spot	singed	Fatality Search	23	Yes	X		X				
2015_406_ISEGS	HOLA	Inner HD	232	Small	Feather Spot	unknown	Fatality Search	23	Yes	X		X				
2015_407_ISEGS	YWAR	Power Block	89	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_408_ISEGS	OCWA	Power Block	184	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_409_ISEGS	LAZB	Power Block	196	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_410_ISEGS	UNPA	Inner HD	212	Small	Feather Spot	singed	Fatality Search	23	Yes	X		X				
2015_411_ISEGS	UNPA	ACC	42	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_412_ISEGS	NRWS	ACC	35	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_413_ISEGS	NAWA	ACC	34	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_414_ISEGS	BHCO	ACC	39	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_415_ISEGS	BHCO	ACC	39	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_416_ISEGS	LESA	ACC	47	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_417_ISEGS	YWAR	ACC	40	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_418_ISEGS	BHCO	ACC	47	Small	Small Carcass	singed	Fatality Search	24	Yes	X	X					
2015_419_ISEGS	AMKE	Inner Segment	444	Large	Large Carcass	unknown	Fatality Search	24	Yes				X			
2015_420_ISEGS	LENI	ACC	50	Small	Small Carcass	collision	Fatality Search	24	Yes	X	X					
2015_421_ISEGS	NRWS	ACC	52	Small	Small Carcass	unknown	Fatality Search	24	Yes	X	X					
2015_422_ISEGS	BANS	ACC	53	Small	Small Carcass	unknown	Fatality Search	24	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_423_ISEGS	AMKE	Power Block	19	Large	Feather Spot	singed	Fatality Search	24	Yes	X	X					
2015_424_ISEGS	GRRO	Outer Segment	823	Large	Feather Spot	collision	Incidental	21	Yes				X			
2015_425_ISEGS	UNPA	Power Block	3	Small	Feather Spot	singed	Fatality Search	24	Yes	X	X					
2015_426_ISEGS	YWAR	Power Block	26	Small	Feather Spot	singed	Fatality Search	24	Yes	X	X					
2015_427_ISEGS	UNPA	Power Block	78	Small	Feather Spot	singed	Fatality Search	24	Yes	X	X					
2015_428_ISEGS	BHCO	Power Block	0	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_429_ISEGS	PSFL	Outer Segment	1093	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2015_430_ISEGS	MODO	Unit Fence	953	Large	Feather Spot	unknown	Incidental	2	No					X		Older than Search Interval
2015_431_ISEGS	LBWO	Outer Segment	746	Small	Small Carcass	collision	Fatality Search	22	Yes				X			
2015_432_ISEGS	NRWS	Power Block	0	Small	Small Carcass	collision	Incidental	1(1)	No	X	X					Older than Search Interval
2015_433_ISEGS	WETA	Power Block	47	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_434_ISEGS	LENI	ACC	55	Small	Small Carcass	unknown	Fatality Search	20	Yes	X	X					
2015_435_ISEGS	UNPA	Inner HD	216	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_436_ISEGS	YWAR	ACC	68	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_437_ISEGS	UNPA	Inner HD	200	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_438_ISEGS	RUHU	ACC	42	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_439_ISEGS	MODO	Outer Segment	773	Large	Large Carcass	collision	Fatality Search	19	Yes				X			
2015_440_ISEGS	UNWA	Inner HD	204	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_441_ISEGS	UNPA	Inner HD	239	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_442_ISEGS	BHCO	Inner HD	179	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_443_ISEGS	HOLA	Inner HD	226	Small	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_444_ISEGS	UNHU	Power Block	11	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_445_ISEGS	UNWA	Inner HD	115	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_446_ISEGS	YWAR	Inner HD	122	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_447_ISEGS	UNSP	Power Block	36	Small	Feather Spot	singed	Fatality Search	20	Yes	X	X					
2015_448_ISEGS	ROPI	Power Block	14	Large	Large Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_449_ISEGS	UNPA	Inner HD	176	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_450_ISEGS	YWAR	Power Block	76	Small	Feather Spot	singed	Fatality Search	20	Yes	X	X					
2015_451_ISEGS	GRRO	Inner Segment	496	Large	Feather Spot	collision	Fatality Search	21	No				X			Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_452_ISEGS	UNPA	Inner HD	240	Small	Feather Spot	collision	Fatality Search	21	Yes	X		X				
2015_453_ISEGS	AMKE	Inner Segment	497	Large	Feather Spot	collision	Fatality Search	21	Yes				X			
2015_454_ISEGS	MGWA	Power Block	68	Small	Small Carcass	singed	Fatality Search	20	Yes	X	X					
2015_455_ISEGS	UNPA	Inner HD	234	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_456_ISEGS	AMKE	Outer Segment	1140	Large	Large Carcass	singed	Fatality Search	18	Yes				X			
2015_457_ISEGS	UNSW	Inner HD	187	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_458_ISEGS	MODO	Inner HD	221	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X				
2015_459_ISEGS	WEKI	Inner HD	242	Small	Feather Spot	singed	Fatality Search	21	Yes	X		X				
2015_460_ISEGS	MODO	Outer Segment	1208	Large	Large Carcass	collision	Fatality Search	20	Yes				X			
2015_461_ISEGS	YWAR	Inner HD	239	Small	Small Carcass	unknown	Fatality Search	15	Yes	X		X				
2015_462_ISEGS	UNPA	Inner HD	174	Small	Feather Spot	singed	Fatality Search	15	Yes	X		X				
2015_463_ISEGS	UNPA	Inner HD	166	Small	Feather Spot	singed	Fatality Search	15	Yes	X		X				
2015_464_ISEGS	CACW	Inner HD	196	Small	Feather Spot	unknown	Fatality Search	22	Yes	X		X				
2015_465_ISEGS	SORA	Inner Segment	599	Small	Feather Spot	unknown	Fatality Search	15	Yes				X			
2015_466_ISEGS	UNSW	Inner HD	156	Small	Feather Spot	singed	Fatality Search	15	Yes	X		X				
2015_467_ISEGS	WIWA	ACC	40	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X					
2015_468_ISEGS	NRWS	Outer Segment	924	Small	Small Carcass	unknown	Fatality Search	21	Yes				X			
2015_469_ISEGS	UNPA	Inner Segment	652	Small	Feather Spot	unknown	Fatality Search	15	Yes				X			
2015_470_ISEGS	UNLB	Inner Segment	647	Large	Feather Spot	unknown	Fatality Search	15	Yes				X			
2015_471_ISEGS	VESP	Inner HD	224	Small	Feather Spot	unknown	Fatality Search	15	Yes	X		X				
2015_472_ISEGS	UNWA	Inner HD	152	Small	Feather Spot	unknown	Fatality Search	22	Yes	X		X				
2015_473_ISEGS	BTSP	Unit Fence	1078	Small	Small Carcass	unknown	Fatality Search	15	Yes					X		
2015_474_ISEGS	GRRO	Unit Fence	1076	Large	Feather Spot	unknown	Fatality Search	15	Yes					X		
2015_475_ISEGS	UNSP	Inner HD	123	Small	Feather Spot	singed	Fatality Search	15	Yes	X		X				
2015_476_ISEGS	UNSW	Inner HD	174	Small	Feather Spot	singed	Fatality Search	15	Yes	X		X				
2015_477_ISEGS	GRRO	Inner Segment	55	Large	Feather Spot	unknown	Fatality Search	15	Yes				X			
2015_478_ISEGS	YWAR	ACC	66	Small	Small Carcass	singed	Fatality Search	9	Yes	X	X					
2015_479_ISEGS	UNPA	Inner HD	241	Small	Feather Spot	singed	Fatality Search	10	Yes	X		X				
2015_480_ISEGS	YWAR	ACC	42	Small	Small Carcass	singed	Fatality Search	9	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	HelioStat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_481_ISEGS	OCWA	ACC	40	Small	Small Carcass	singed	Fatality Search	9	Yes	X	X					
2015_482_ISEGS	MODO	Outer Segment	1430	Large	Large Carcass	collision	Fatality Search	14	No				X			Older than Search Interval
2015_483_ISEGS	YWAR	Inner HD	237	Small	Feather Spot	unknown	Fatality Search	10	Yes	X		X				
2015_484_ISEGS	UNSP	Outer Segment	1335	Small	Feather Spot	unknown	Fatality Search	20	Yes				X			
2015_485_ISEGS	UNPA	Power Block	18	Small	Feather Spot	unknown	Fatality Search	9	Yes	X	X					
2015_486_ISEGS	UNLB	Outer Segment	1216	Large	Feather Spot	unknown	Fatality Search	20	Yes				X			
2015_487_ISEGS	RCKI	Inner HD	172	Small	Small Carcass	unknown	Fatality Search	10	Yes	X		X				
2015_488_ISEGS	YRWA	Power Block	52	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_489_ISEGS	UNBB	Inner HD	204	Small	Feather Spot	singed	Fatality Search	10	Yes	X		X				
2015_490_ISEGS	HOLA	Inner Segment	651	Small	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_491_ISEGS	RUDU	Inner HD	240	Large	Large Carcass	unknown	Fatality Search	10	Yes	X		X				
2015_492_ISEGS	GWTE	Inner Segment	470	Large	Feather Spot	unknown	Fatality Search	13	Yes				X			
2015_493_ISEGS	GRRO	Inner Segment	643	Large	Feather Spot	unknown	Fatality Search	21	Yes				X			
2015_494_ISEGS	YWAR	Outer Segment	703	Small	Feather Spot	singed	Fatality Search	20	Yes				X			
2015_495_ISEGS	UNWA	Inner HD	257	Small	Feather Spot	singed	Fatality Search	10	Yes	X		X				
2015_496_ISEGS	UNBD	Inner HD	204	Small	Feather Spot	unknown	Fatality Search	10	No	X		X				Older than Search Interval
2015_497_ISEGS	GRRO	Unit Fence	942	Large	Feather Spot	unknown	Fatality Search	10	Yes					X		
2015_498_ISEGS	GRRO	Unit Fence	989	Large	Feather Spot	unknown	Fatality Search	10	No					X		Older than Search Interval
2015_499_ISEGS	UNWA	Inner HD	204	Small	Feather Spot	singed	Fatality Search	10	Yes	X		X				
2015_500_ISEGS	OCWA	Inner HD	204	Small	Feather Spot	unknown	Fatality Search	10	Yes	X		X				
2015_501_ISEGS	GRRO	Unit Fence	1140	Large	Feather Spot	unknown	Fatality Search	10	No					X		Older than Search Interval
2015_502_ISEGS	GRRO	Unit Fence	1140	Large	Feather Spot	unknown	Fatality Search	10	No					X		Older than Search Interval
2015_503_ISEGS	VGSW	Inner Segment	848	Small	Feather Spot	unknown	Fatality Search	8	No				X			Older than Search Interval
2015_504_ISEGS	AMKE	Inner Segment	264	Large	Large Carcass	singed	Incidental	NA	No				X			Older than Search Interval
2015_505_ISEGS	HOLA	Outer Segment	854	Small	Feather Spot	unknown	Fatality Search	11	No				X			Older than Search Interval
2015_506_ISEGS	MODO	Outer Segment	853	Large	Feather Spot	unknown	Fatality Search	10	Yes				X			
2015_507_ISEGS	CAHU	Inner HD	207	Small	Small Carcass	singed	Fatality Search	5	Yes	X		X				
2015_508_ISEGS	UNBD	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	5	Yes	X		X				
2015_509_ISEGS	NOMO	Power Block	26	Small	Small Carcass	unknown	Fatality Search	6	Yes	X	X					

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_510_ISEGS	VERD	ACC	49	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_511_ISEGS	HOLA	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	5	No	X		X				Older than Search Interval
2015_512_ISEGS	OCWA	ACC	57	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_513_ISEGS	AMKE	Inner HD	251	Large	Large Carcass	singed	Fatality Search	5	Yes	X		X				
2015_514_ISEGS	MODO	Inner Segment	681	Large	Feather Spot	unknown	Fatality Search	6	No				X			Older than Search Interval
2015_515_ISEGS	GRRO	Inner Segment	551	Large	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_516_ISEGS	AMKE	Inner Segment	500	Large	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_517_ISEGS	YWAR	Inner HD	196	Small	Feather Spot	singed	Fatality Search	5	Yes	X		X				
2015_518_ISEGS	UNID	Inner HD	183	Small	Feather Spot	unknown	Fatality Search	5	Yes	X		X				
2015_519_ISEGS	MODO	Inner HD	208	Large	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_520_ISEGS	OCWA	ACC	63	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_521_ISEGS	UNID	Inner HD	148	Small	Feather Spot	singed	Fatality Search	6	Yes	X		X				
2015_522_ISEGS	MODO	Outer Segment	1240	Large	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_523_ISEGS	UNID	Power Block	47	Small	Feather Spot	unknown	Fatality Search	6	Yes	X	X					
2015_524_ISEGS	MGWA	Inner HD	169	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_525_ISEGS	GRRO	Inner Segment	413	Large	Feather Spot	unknown	Incidental	NA	No				X			Older than Search Interval
2015_526_ISEGS	UNFI	Outer Segment	722	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_527_ISEGS	MODO	Inner Segment	496	Large	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_528_ISEGS	YWAR	Power Block	31	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X					
2015_529_ISEGS	LENI	Outer Segment	933	Small	Feather Spot	unknown	Fatality Search	6	No				X			Older than Search Interval
2015_530_ISEGS	MODO	Inner Segment	268	Large	Feather Spot	unknown	Incidental	NA	No				X			Older than Search Interval
2015_531_ISEGS	UNID	Inner HD	238	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_532_ISEGS	ROPI	Power Block	147	Large	Large Carcass	singed	Fatality Search	6	Yes	X	X					
2015_533_ISEGS	GRRO	Outer Segment	1102	Large	Feather Spot	unknown	Fatality Search	6	No				X			Older than Search Interval
2015_534_ISEGS	UNWA	Power Block	31	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X					
2015_535_ISEGS	VASW	Power Block	31	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X					
2015_536_ISEGS	UNWA	Power Block	31	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X					
2015_537_ISEGS	UNBD	Power Block	31	Small	Feather Spot	unknown	Fatality Search	6	Yes	X	X					
2015_538_ISEGS	UNLB	ACC	66	Large	Feather Spot	unknown	Incidental	1	No	X	X					Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_539_ISEGS	UNWA	Inner HD	174	Small	Feather Spot	singed	Fatality Search	6	Yes	X		X				
2015_540_ISEGS	WIWA	Inner HD	189	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_541_ISEGS	UNBD	Inner HD	182	Small	Feather Spot	singed	Fatality Search	6	Yes	X		X				
2015_542_ISEGS	UNID	Power Block	8	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X					
2015_543_ISEGS	SAVS	Inner HD	239	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_544_ISEGS	YWAR	Inner HD	171	Small	Feather Spot	singed	Fatality Search	6	Yes	X		X				
2015_545_ISEGS	UNID	Power Block	69	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X					
2015_546_ISEGS	YWAR	Power Block	23	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X					
2015_547_ISEGS	ROPI	Inner HD	246	Large	Large Carcass	singed	Fatality Search	6	Yes	X		X				
2015_548_ISEGS	UNWA	Inner HD	117	Small	Feather Spot	singed	Fatality Search	6	Yes	X		X				
2015_549_ISEGS	LBWO	Power Block	69	Small	Small Carcass	unknown	Fatality Search	6	Yes	X	X					
2015_550_ISEGS	UNID	Inner HD	113	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_551_ISEGS	MODO	Inner HD	103	Large	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_552_ISEGS	NRWS	Inner HD	101	Small	Small Carcass	singed	Fatality Search	6	Yes	X		X				
2015_553_ISEGS	UNDU	Inner Segment	587	Large	Feather Spot	unknown	Fatality Search	5	Yes				X			
2015_554_ISEGS	LASP	Inner HD	163	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X				
2015_555_ISEGS	MODO	Outer Segment	760	Large	Large Carcass	collision	Fatality Search	7	Yes				X			
2015_556_ISEGS	MGWA	Outer Segment	756	Small	Small Carcass	unknown	Fatality Search	6	Yes				X			
2015_557_ISEGS	MGWA	Inner HD	204	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_558_ISEGS	UNID	Inner HD	194	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_559_ISEGS	UNWA	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_560_ISEGS	TOWA	Power Block	32	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_561_ISEGS	UNID	Inner HD	110	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_562_ISEGS	UNID	Inner HD	111	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_563_ISEGS	UNID	Inner HD	145	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_564_ISEGS	UNWA	Inner HD	182	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_565_ISEGS	HOLA	Outer Segment	1114	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_566_ISEGS	BARS	Outer Segment	1207	Small	Small Carcass	collision	Fatality Search	6	Yes				X			
2015_567_ISEGS	LASP	Inner HD	247	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_568_ISEGS	BGGN	Inner HD	240	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_569_ISEGS	YRWA	Inner HD	211	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_570_ISEGS	UNID	Inner HD	254	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_571_ISEGS	UNID	Inner HD	251	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_572_ISEGS	UNSP	Inner HD	197	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_573_ISEGS	CACW	Inner HD	207	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_574_ISEGS	BGGN	Inner HD	214	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_575_ISEGS	MODO	Inner HD	158	Large	Feather Spot	unknown	Fatality Search	7	No	X		X				Older than Search Interval
2015_576_ISEGS	UNWA	Inner HD	166	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_577_ISEGS	YWAR	Inner HD	189	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_578_ISEGS	WCSP	Inner HD	224	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_579_ISEGS	UNWA	Inner HD	161	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_580_ISEGS	UNWA	Inner HD	178	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_581_ISEGS	WCSP	Inner HD	251	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X				
2015_582_ISEGS	YRWA	Inner HD	209	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_583_ISEGS	LENI	Outer Segment	1030	Small	Feather Spot	unknown	Fatality Search	5	Yes				X			
2015_584_ISEGS	LASP	Inner HD	201	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_585_ISEGS	UNSP	Inner HD	215	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_586_ISEGS	UNDV	Outer Segment	742	Large	Feather Spot	unknown	Fatality Search	5	Yes				X			
2015_587_ISEGS	YRWA	Inner HD	224	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_588_ISEGS	AMKE	Inner HD	564	Large	Feather Spot	singed	Incidental	8	Yes	X		X				
2015_589_ISEGS	WWDO	Outer Segment	791	Large	Large Carcass	collision	Fatality Search	5	Yes				X			
2015_590_ISEGS	MODO	Inner HD	188	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_591_ISEGS	UNSP	Inner HD	188	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_592_ISEGS	UNWA	Inner HD	160	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_593_ISEGS	ANHU	ACC	48	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_594_ISEGS	VERD	ACC	50	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_595_ISEGS	CHSP	Outer Segment	683	Small	Feather Spot	unknown	Fatality Search	5	Yes				X			
2015_596_ISEGS	UNID	Outer Segment	1172	Small	Feather Spot	collision	Fatality Search	5	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_597_ISEGS	UNID	Inner HD	209	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_598_ISEGS	UNSW	Inner HD	217	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_599_ISEGS	UNBD	Inner HD	135	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_600_ISEGS	HOLA	Unit Fence	977	Small	Feather Spot	unknown	Fatality Search	7	Yes					X		
2015_601_ISEGS	UNID	Inner HD	188	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_602_ISEGS	GRRO	Unit Fence	867	Large	Feather Spot	unknown	Fatality Search	7	No					X		Older than Search Interval
2015_603_ISEGS	UNSP	Unit Fence	1045	Small	Feather Spot	unknown	Fatality Search	7	Yes					X		
2015_604_ISEGS	UNSW	Inner HD	192	Small	Feather Spot	singed	Fatality Search	7	No	X		X				Older than Search Interval
2015_605_ISEGS	UNID	Inner HD	197	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_606_ISEGS	UNLB	Inner HD	192	Large	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_607_ISEGS	RNSA	Inner HD	202	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_608_ISEGS	UNID	Power Block	14	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_609_ISEGS	HOFI	Power Block	50	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_610_ISEGS	BWTE	Outer Segment	1030	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_611_ISEGS	UNID	Power Block	24	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_612_ISEGS	LISP	Inner HD	234	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_613_ISEGS	UNWA	Inner HD	130	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_614_ISEGS	BTYW	Inner Segment	400	Small	Small Carcass	collision	Fatality Search	8	Yes				X			
2015_615_ISEGS	UNID	Inner HD	215	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_616_ISEGS	NRWS	Inner HD	174	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X				
2015_617_ISEGS	UNGN	Inner HD	206	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_618_ISEGS	UNID	Inner HD	233	Small	Small Carcass	singed	Fatality Search	7	No	X		X				Older than Search Interval
2015_619_ISEGS	UNID	Inner HD	258	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_620_ISEGS	UNID	Inner HD	216	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_621_ISEGS	YWAR	Inner HD	185	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_622_ISEGS	MODO	Inner HD	146	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_623_ISEGS	UNWA	Inner HD	165	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_624_ISEGS	UNID	Inner HD	216	Small	Feather Spot	singed	Fatality Search	7	No	X		X				Older than Search Interval
2015_625_ISEGS	UNWA	Inner HD	238	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_626_ISEGS	MGWA	Inner HD	149	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_627_ISEGS	UNID	Inner HD	187	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_628_ISEGS	BHCO	Inner HD	156	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_629_ISEGS	WETA	Inner Segment	280	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_630_ISEGS	UNSW	Outer Segment	1196	Small	Feather Spot	unknown	Fatality Search	7	No				X			Older than Search Interval
2015_631_ISEGS	UNSP	Inner HD	237	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_632_ISEGS	UNWA	Power Block	43	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_633_ISEGS	CORA	Power Block	80	Large	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_634_ISEGS	UNID	Inner HD	164	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X				
2015_635_ISEGS	GRRO	Outer Segment	1463	Large	Large Carcass	collision	Fatality Search	8	No				X			Older than Search Interval
2015_636_ISEGS	WETA	Inner HD	231	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_637_ISEGS	UNWA	Inner HD	222	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_638_ISEGS	UNSP	Inner HD	163	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_639_ISEGS	SAVS	Outer Segment	769	Small	Feather Spot	unknown	Fatality Search	8	Yes				X			
2015_640_ISEGS	YWAR	Power Block	33	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_641_ISEGS	UNID	Power Block	66	Small	Feather Spot	unknown	Fatality Search	7	No	X	X					Older than Search Interval
2015_642_ISEGS	GRRO	Inner Segment	638	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_643_ISEGS	UNSP	Inner HD	251	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X				
2015_644_ISEGS	CACW	Outer Segment	1169	Small	Small Carcass	unknown	Fatality Search	8	No				X			Older than Search Interval
2015_645_ISEGS	UNID	Power Block	59	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_646_ISEGS	UNHU	Power Block	11	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_647_ISEGS	UNGN	Inner HD	163	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_648_ISEGS	UNSW	Power Block	8	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_649_ISEGS	VGSW	Power Block	24	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_650_ISEGS	UNSP	Inner HD	254	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_651_ISEGS	WCSP	Inner HD	179	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_652_ISEGS	BUSH	Inner HD	156	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_653_ISEGS	UNSP	Inner Segment	644	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_654_ISEGS	UNSP	Inner HD	167	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_655_ISEGS	LASP	Inner HD	174	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_656_ISEGS	UNWA	Inner HD	197	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_657_ISEGS	WCSP	Inner Segment	362	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_658_ISEGS	LEGO	Inner HD	122	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_659_ISEGS	MODO	Outer Segment	1358	Large	Feather Spot	unknown	Fatality Search	8	Yes				X			
2015_660_ISEGS	OCWA	ACC	40	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_661_ISEGS	UNID	Inner Segment	494	Small	Feather Spot	unknown	Fatality Search	6	Yes				X			
2015_662_ISEGS	UNSW	Inner HD	189	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_663_ISEGS	BTYW	Power Block	33	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_664_ISEGS	UNID	Inner HD	239	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_665_ISEGS	UNWA	Inner HD	260	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_666_ISEGS	WCSP	Inner HD	225	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_667_ISEGS	UNWA	Inner HD	228	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_668_ISEGS	UNID	Inner HD	257	Small	Feather Spot	unknown	Fatality Search	7	No	X		X				Older than Search Interval
2015_669_ISEGS	WETA	Outer Segment	697	Small	Feather Spot	unknown	Fatality Search	8	Yes				X			
2015_670_ISEGS	WCSP	Inner HD	199	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_671_ISEGS	UNWA	Inner HD	165	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_672_ISEGS	VGSW	ACC	46	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_673_ISEGS	UNSP	Inner HD	153	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_674_ISEGS	UNID	Power Block	54	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_675_ISEGS	UNID	Power Block	33	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_676_ISEGS	YRWA	Inner HD	195	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_677_ISEGS	GRRO	Unit Fence	925	Large	Feather Spot	unknown	Fatality Search	7	Yes					X		
2015_678_ISEGS	VGSW	Power Block	71	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_679_ISEGS	UNID	Power Block	81	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_680_ISEGS	UNID	Power Block	87	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_681_ISEGS	UNID	Power Block	110	Small	Small Carcass	unknown	Fatality Search	7	Yes	X	X					
2015_682_ISEGS	UNSP	Inner HD	160	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_683_ISEGS	GRRO	Unit Fence	1139	Large	Feather Spot	unknown	Fatality Search	7	Yes					X		

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_684_ISEGS	YRWA	Inner HD	124	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_685_ISEGS	UNID	Inner HD	136	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_686_ISEGS	UNDV	Inner HD	254	Large	Large Carcass	singed	Fatality Search	7	Yes	X		X				
2015_687_ISEGS	RNSA	Inner HD	192	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_688_ISEGS	UNID	Inner HD	174	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_689_ISEGS	BWTE	Outer Segment	1401	Large	Large Carcass	collision	Fatality Search	9	Yes				X			
2015_690_ISEGS	UNWA	Inner Segment	344	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_691_ISEGS	WEGR	Outer Segment	801	Large	Feather Spot	unknown	Fatality Search	9	Yes				X			
2015_692_ISEGS	AMKE	Outer Segment	926	Large	Feather Spot	unknown	Incidental	NA	No				X			Older than Search Interval
2015_693_ISEGS	GRRO	Outer Segment	1202	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_694_ISEGS	UNSP	Outer Segment	735	Small	Feather Spot	unknown	Fatality Search	9	Yes				X			
2015_695_ISEGS	UNSP	Inner Segment	640	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_696_ISEGS	GRRO	Inner Segment	612	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_697_ISEGS	WCSP	Inner HD	165	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_698_ISEGS	WCSP	Inner Segment	630	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_699_ISEGS	UNID	ACC	63	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_700_ISEGS	LISP	Inner HD	219	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X				
2015_701_ISEGS	YWAR	Inner HD	193	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_702_ISEGS	UNID	Inner HD	149	Small	Feather Spot	unknown	Fatality Search	7	No	X		X				Older than Search Interval
2015_703_ISEGS	UNWA	Power Block	54	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_704_ISEGS	UNWA	Power Block	70	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_705_ISEGS	UNID	Power Block	52	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_706_ISEGS	TRES	Power Block	76	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_707_ISEGS	BEWR	Inner Segment	518	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_708_ISEGS	UNSP	Inner HD	232	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_709_ISEGS	UNID	Outer Segment	775	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_710_ISEGS	HOFI	ACC	63	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_711_ISEGS	UNWA	ACC	37	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_712_ISEGS	RUHU	Power Block	36	Small	Small Carcass	singed	Fatality Search	7	No	X	X					Older than Search Interval

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_713_ISEGS	UNID	Power Block	6	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_714_ISEGS	UNID	Power Block	19	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_715_ISEGS	UNID	Power Block	7	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_716_ISEGS	YRWA	Outer Segment	757	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_717_ISEGS	OCWA	Inner HD	129	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_718_ISEGS	WCSP	Outer Segment	718	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_719_ISEGS	RCKI	Inner HD	123	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_720_ISEGS	HOFI	ACC	41	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_721_ISEGS	YRWA	ACC	45	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_722_ISEGS	LEGO	Power Block	125	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_723_ISEGS	RCKI	ACC	33	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_724_ISEGS	UNSP	Power Block	58	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_725_ISEGS	UNSW	Power Block	88	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_726_ISEGS	RCKI	Power Block	88	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_727_ISEGS	YRWA	Inner HD	229	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_728_ISEGS	RCKI	Inner HD	185	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X				
2015_729_ISEGS	TRES	Power Block	26	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_730_ISEGS	AMAV	Unit Fence	1136	Large	Feather Spot	unknown	Incidental	7	Yes					X		
2015_731_ISEGS	UNID	Power Block	25	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_732_ISEGS	UNID	Power Block	46	Small	Feather Spot	unknown	Fatality Search	7	No	X	X					Older than Search Interval
2015_733_ISEGS	UNKL	Power Block	28	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_734_ISEGS	UNID	Power Block	60	Small	Small Carcass	unknown	Fatality Search	7	No	X	X					Older than Search Interval
2015_735_ISEGS	WIWA	Power Block	38	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_736_ISEGS	MODO	Power Block	40	Large	Large Carcass	unknown	Fatality Search	7	Yes	X	X					
2015_737_ISEGS	SAGS	Outer Segment	806	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_738_ISEGS	WCSP	Inner Segment	593	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_739_ISEGS	YRWA	Inner Segment	367	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_740_ISEGS	SAVS	Inner Segment	578	Small	Small Carcass	unknown	Fatality Search	7	Yes				X			
2015_741_ISEGS	GRRO	Outer Segment	1118	Large	Feather Spot	collision	Fatality Search	9	Yes				X			

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_742_ISEGS	AMKE	Inner Segment	426	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_743_ISEGS	TRES	Power Block	2	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_744_ISEGS	WCSP	Outer Segment	796	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_745_ISEGS	UNKL	Inner HD	184	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_746_ISEGS	VGSW	Inner HD	178	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_747_ISEGS	TRES	Inner HD	218	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_748_ISEGS	UNID	Inner HD	251	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_749_ISEGS	WEME	Inner Segment	667	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_750_ISEGS	UNID	Inner Segment	637	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_751_ISEGS	VGSW	ACC	63	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_752_ISEGS	RCKI	ACC	61	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_753_ISEGS	PISI	Inner HD	242	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_754_ISEGS	YRWA	ACC	37	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_755_ISEGS	YRWA	ACC	37	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_756_ISEGS	UNID	Inner HD	163	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_757_ISEGS	UNFI	Inner Segment	495	Small	Small Carcass	singed	Fatality Search	7	No				X			Older than Search Interval
2015_758_ISEGS	UNGR	Power Block	95	Large	Feather Spot	unknown	Fatality Search	7	Yes	X	X					
2015_759_ISEGS	UNSP	Inner HD	145	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_760_ISEGS	YRWA	Power Block	80	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_761_ISEGS	YRWA	Power Block	37	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_762_ISEGS	YRWA	Power Block	29	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_763_ISEGS	UNID	Power Block	0	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_764_ISEGS	UNID	Power Block	35	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_765_ISEGS	GRRO	Unit Fence	1307	Large	Feather Spot	unknown	Fatality Search	7	Yes					X		
2015_766_ISEGS	UNID	Power Block	0	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_767_ISEGS	GRRO	Unit Fence	850	Large	Feather Spot	unknown	Fatality Search	6	Yes					X		
2015_768_ISEGS	VEFL	Power Block	94	Small	Feather Spot	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_769_ISEGS	GRRO	Unit Fence	894	Large	Feather Spot	unknown	Fatality Search	6	Yes					X		
2015_770_ISEGS	UNID	Inner HD	214	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_771_ISEGS	GRRO	Outer Segment	763	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_772_ISEGS	UNWA	Inner HD	128	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_773_ISEGS	UNID	Inner HD	125	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_774_ISEGS	HOWR	Inner HD	173	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_775_ISEGS	VESP	Inner HD	206	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_776_ISEGS	CACW	Outer Segment	707	Small	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_777_ISEGS	UNSW	Inner HD	236	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_778_ISEGS	MODO	Inner Segment	6327	Large	Large Carcass	unknown	Fatality Search	7	No				X			Older than Search Interval
2015_779_ISEGS	UNSP	Inner HD	143	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_780_ISEGS	UNID	Inner HD	241	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_781_ISEGS	UNID	Inner HD	127	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				
2015_782_ISEGS	UNSP	Inner HD	167	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_783_ISEGS	UNSP	Outer Segment	885	Small	Feather Spot	singed	Fatality Search	7	Yes				X			
2015_784_ISEGS	GRRO	Inner Segment	349	Large	Feather Spot	unknown	Fatality Search	7	Yes				X			
2015_785_ISEGS	EAGR	Power Block	86	Large	Large Carcass	unknown	Incidental	1(1)	Yes	X	X					
2015_786_ISEGS	EAGR	Power Block	83	Large	Large Carcass	collision	Incidental	1(1)	Yes	X	X					
2015_787_ISEGS	EAGR	ACC	99	Large	Large Carcass	unknown	Incidental	1	Yes	X	X					
2015_788_ISEGS	EAGR	ACC	100	Large	Large Carcass	collision	Incidental	1	Yes	X	X					
2015_789_ISEGS	YWAR	Power Block	8	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X					Older than Search Interval
2015_790_ISEGS	AMKE	Power Block	8	Large	Large Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_791_ISEGS	CORA	CLA Fence	1049	Large	Large Carcass	electrocution	Incidental	3	Yes					X		
2015_792_ISEGS	UNSP	Inner HD	252	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_793_ISEGS	WEME	Inner HD	214	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_794_ISEGS	CEWA	Power Block	39	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_795_ISEGS	YRWA	Power Block	33	Small	Small Carcass	singed	Incidental	1(1)	No	X	X					Older than Search Interval
2015_796_ISEGS	GCKI	Inner HD	207	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X				
2015_797_ISEGS	RCKI	Inner Segment	401	Small	Small Carcass	collision	Fatality Search	7	Yes				X			
2015_798_ISEGS	RCKI	ACC	37	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					
2015_799_ISEGS	UNID	Inner HD	250	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X				

USFWS #	Species Code	Location	Distance from Tower (m)	Bird Size	Model Size	Cause of Death	How Found	Time Since Last Survey (days)	Used in Estimator	Tower Area	Power Block	Inner HD	Heliostat Area	Unit Fence	Overhead Lines	Estimator Notes
2015_800_ISEGS	UNID	Power Block	38	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_801_ISEGS	UNID	Power Block	64	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_802_ISEGS	UNID	Power Block	37	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_803_ISEGS	UNID	Power Block	17	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X					
2015_804_ISEGS	UNKL	Power Block	14	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X					

Appendix C. Fatality Estimates by Size and Season, 2014 – 2015 Monitoring Year

	Tower Area	Heliostat Area	Collector Line	Total
Winter	179 (128, 225)	445 (271, 705)	0	624 (414, 904)
Spring	180 (157, 217)	193 (91, 346)	n <=5	378 (258, 544)
Summer	129 (103, 169)	n <=5	n <=5	426 (232, 711)
Fall	491 (421, 598)	349 (192, 545)	0	840 (654, 1094)
Annual	979 (873, 1123)	1269 (914, 1810)	n <=5	2268 (1880, 2849)

Fatality Estimates for large birds, by season, by location, known cause

	Tower Area	Heliostat Area	Fenceline	Total
Winter	n <=5	n <=5	n <=5	42 (17, 74)
Spring	n <=5	45 (18, 79)	n <=5	51 (21, 81)
Summer	n <=5	n <=5	n <=5	n <=5
Fall	14 (13, 15)	92 (49, 144)	n <=5	108 (65, 159)
Annual	22 (21, 23)	203 (137, 286)	n <=5	234 (164, 312)

Fatality Estimates for small birds, by season, by location, unknown cause

	Tower Area	Heliostat Area	Fenceline	Collector Line	Total
Winter	107 (82, 148)	1028 (696, 1566)	n <=5	0	1153 (807, 1729)
Spring	17 (14, 21)	309 (151, 535)	n <=5	n <=5	341 (173, 560)
Summer	49 (38, 66)	621 (305, 1134)	n <=5	0	684 (355, 1211)
Fall	276 (232, 341)	590 (364, 887)	n <=5	0	883 (646, 1217)
Annual	449 (396, 539)	2548 (1993, 3440)	54 (45, 68)	n <=5	3061 (2468, 3980)

Fatality Estimates for large birds, by season, by location, unknown cause

	Tower Area	Heliostat Area	Fenceline	Total
Winter	n <=5	99 (56, 147)	43 (36, 52)	149 (103, 200)
Spring	n <=5	n <=5	n <=5	65 (21, 93)
Summer	8 (7, 9)	n <=5	28 (24, 34)	88 (52, 137)
Fall	19 (18, 21)	280 (187, 305)	23 (19, 28)	322 (227, 452)
Annual	37 (34, 41)	482 (348, 658)	105 (79, 114)	624 (467, 808)

Fatality Estimates for raptors, by season, by location, known cause

	Tower Area	Heliostat Area	Fenceline	Total
Winter	0	n <=5	0	n <=5
Spring	0	n <=5	0	n <=5
Summer	0	0	n <=5	n <=5
Fall	n <=5	n <=5	0	40 (12, 74)
Annual	n <=5	49 (18, 87)	n <=5	55 (24, 93)

Fatality Estimates for raptors, by season, by location, unknown cause

	Tower Area	Heliostat Area	Total
Summer	n <=5	n <=5	n <=5
Fall	0	n <=5	n <=5
Annual	n <=5	n <=5	44 (4, 91)

* N ≤ 5 indicates 5 or fewer detections and no fatality estimate is provided

Appendix D. Status Classification of Bird Species Found as Detections at Ivanpah, 2013 – 2015.

Species	Code*	Resident	Spring	Summer	Fall	Winter
American coot	1	Yes	x	x	x	x
American kestrel	1	Yes	x	x	x	x
Anna's hummingbird	1	Yes	x	x	x	x
Bewick's wren	1	Yes	x	x	x	x
black-tailed gnatcatcher	1	Yes	x	x	x	x
black-throated sparrow	1	Yes	x	x	x	x
brewer's sparrow	1	Yes	x	x	x	x
bushtit	1	Yes	x	x	x	x
cactus wren	1	Yes	x	x	x	x
common raven	1	Yes	x	x	x	x
cooper's hawk	1	Yes	x	x	x	x
crissal thrasher	1	Yes	x	x	x	x
Eurasian collared-dove	1	Yes	x	x	x	x
European starling	1	Yes	x	x	x	x
Gambel's quail	1	Yes	x	x	x	x
great-tailed grackle	1	Yes	x	x	x	x
greater roadrunner	1	Yes	x	x	x	x
house finch	1	Yes	x	x	x	x
house sparrow	1	Yes	x	x	x	x
ladder-backed woodpecker	1	Yes	x	x	x	x
lesser goldfinch	1	Yes	x	x	x	x
loggerhead shrike	1	Yes	x	x	x	x
mourning dove	1	Yes	x	x	x	x
northern flicker	1	Yes	x	x	x	x
northern mockingbird	1	Yes	x	x	x	x
phainopepla	1	Yes	x	x	x	x
pied-billed grebe	1	Yes	x	x	x	x
red-tailed hawk	1	Yes	x	x	x	x
red-winged blackbird	1	Yes	x	x	x	x
rock pigeon	1	Yes	x	x	x	x
rock wren	1	Yes	x	x	x	x
ruddy duck	1	Yes	x	x	x	x
sagebrush sparrow	1	Yes	x	x	x	x
say's phoebe	1	Yes	x	x	x	x
verdin	1	Yes	x	x	x	x
western meadowlark	1	Yes	x	x	x	x
brown-headed cowbird	1	Yes	x	x	x	x
horned lark	1	Yes	x	x	x	x
cinnamon teal	1	Yes	x	x	x	x
common gallinule	1	Yes	x	x	x	x
peregrine falcon	1	Yes	x	x	x	x
white-winged dove	2	No	x	x	x	
ash-throated flycatcher	2	No	x	x	x	
black-chinned hummingbird	2	No	x	x	x	
blue-gray gnatcatcher	2	No	x		x	x
bullock's oriole	2	No	x	x	x	
common poorwill	2	No	x	x	x	
common yellowthroat	2	No	x	x	x	
costa's hummingbird	2	No	x	x	x	
green-tailed towhee	2	No	x		x	x
house wren	2	No	x	x	x	
lark sparrow	2	No	x		x	x
lesser nighthawk	2	No	x	x	x	
northern harrier	2	No	x		x	x
Scott's oriole	2	No	x	x	x	
vermillion flycatcher	2	No	x	x	x	
western kingbird	2	No	x	x	x	
yellow-breasted chat	2	No	x	x	x	
yellow-headed blackbird	2	No	x	x	x	x
yellow warbler	2	No	x	x	x	
American pipit	2	No	x		x	x
brewer's blackbird	2	No	x		x	x
cedar waxwing	2	No	x		x	x
chipping sparrow	2	No	x		x	x
dark-eyed junco	2	No	x		x	x
eared grebe	2	No	x		x	x
green-winged teal	2	No	x		x	x
Lincoln's sparrow	2	No	x		x	x
sage thrasher	2	No	x		x	x

Species	Code*	Resident	Spring	Summer	Fall	Winter
savannah sparrow	2	No	x		x	x
white-crowned sparrow	2	No	x		x	x
lazuli bunting	3	No	x		x	
American avocet	3	No	x		x	
American robin	3	No	x		x	
American wigeon	3	No	x		x	
band-tailed pigeon	3	No	x		x	
bank swallow	3	No	x		x	
barn swallow	3	No	x		x	
black-and-white warbler	3	No	x		x	
black-headed grosbeak	3	No	x		x	
black-throated gray warbler	3	No	x		x	
blue-winged teal	3	No	x		x	
broad-tailed hummingbird	3	No	x		x	
calliope hummingbird	3	No	x		x	
cliff swallow	3	No	x		x	
double-crested cormorant	3	No	x		x	
golden-crowned kinglet	3	No	x		x	
hermit thrush	3	No	x		x	
hermit warbler	3	No	x		x	
Lapland longspur	3	No	x		x	
least sandpiper	3	No	x		x	
Lucy's warbler	3	No	x		x	
McGillivray's warbler	3	No	x		x	
mountain bluebird	3	No	x		x	
Nashville warbler	3	No	x		x	
northern rough-winged swallow	3	No	x		x	
olive-sided flycatcher	3	No	x		x	
orange-crowned warbler	3	No	x		x	
pacific-slope flycatcher	3	No	x		x	
pine siskin	3	No	x		x	
red-naped sapsucker	3	No	x		x	
Ross' goose	3	No	x		x	
ruby-crowned kinglet	3	No	x		x	
rufous hummingbird	3	No	x		x	
semipalmated sandpiper	3	No	x		x	
snowy egret	3	No	x		x	
sora	3	No	x		x	
spotted sandpiper	3	No	x		x	
Swainson's thrush	3	No	x		x	
Townsend's warbler	3	No	x		x	
tree swallow	3	No	x		x	
varied thrush	3	No	x		x	
Vaux's swift	3	No	x		x	
vesper sparrow	3	No	x		x	x
violet-green swallow	3	No	x		x	
Virginia rail	3	No	x		x	
western grebe	3	No	x		x	
western tanager	3	No	x		x	
white-throated swift	3	No	x		x	
Wilson's snipe	3	No	x		x	
Wilson's warbler	3	No	x		x	
yellow-rumped warbler	3	No	x		x	

*1 = year-round resident, 2 = seasonal (breeding or winter), 3 = passage migrant. Code 2 and 3 are considered non-resident.