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IVANPAH SOLAR ELECTRIC GENERATING SYSTEM
AVIAN & BAT MONITORING PLAN

2016 FALL REPORT

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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415 W. 17th Street, Suite 200, Cheyenne, WY 82001 ◆ Ph: 307-634-1756 ◆ F: 307-637-6981

Executive Summary

Avian and bat monitoring surveys were conducted from 18 August 2016 – 20 October 2016 (the fall season) 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) as revised November 2015.

Per the revised Plan, potential flux effects are investigated by surveying 100 percent of the tower area in all three units, and collisions with facility structures (towers and heliostats) are evaluated by systematic sampling of 100% of the tower areas (154 acres) in each of the three units, and 20% of Unit 2 heliostat field (240 acres) as representative of the facility. The "tower area" consists of the power block and inner high-density (HD) heliostats surrounding each power block on approximately 154 acres; and 2) the "heliostat area" consists of the inner and outer heliostat segments outside of the inner HD heliostats on approximately 2,991 acres. Searches were conducted within the 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 period 18 August – 20 October 2016, 11 bat detections and 361 avian detections (including 9 injured birds) were found.

According to the specifications of the revised Plan, the number of avian detections was categorized by facility structure and cause. These avian fatality search results, along with searcher efficiency and carcass removal 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, during the period 18 August – 20 October 2016, there were an estimated 1112 fatalities (35.0%) from known causes and 2051 fatalities (65.0%) from unknown causes. Of the known causes, 781 fatalities (70.2%) were estimated for the 154-acre tower area; an estimate is not provided for the 2,991-acre heliostat area as five or fewer detections were suitable for inclusion in the fatality model for the Unit 2 heliostat area. Of the unknown causes, 170 fatalities (8.2%) were estimated for the tower area, and 1881 (91.8%) were estimated for the 2,991 acre heliostat area. The unknown fatality estimate in the heliostat area was high and had low precision (1112-2930 90% CI) due to the fact that (i) a smaller overall percentage of the heliostats are search under the Revision 13 of the Plan and (ii) the estimate is being driven by small bird feather spots. Thus, the unknown cause estimate is likely an overestimate and is not an accurate representation of project impact on birds. Overall, based on the monitoring results and estimates for known causes for the 2016 fall season, the effect of the Project on birds is "low" as defined in the Plan.

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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 (Plan) was prepared by the Project proponent in collaboration with the Technical Advisory Committee (TAC) made up of 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. Revision 12 of the Plan (2013) was accepted by the TAC in November 2013 and required two years of monitoring, which were completed at the end of October 20, 2015. As determined by the TAC, the goals of the Plan (2013) were met, and in November 2015, the TAC-approved Revision 13 to the Plan (2015) to require a third year of monitoring to provide collision and flux mortality estimates. Revision 13 of the Plan (2015) reflects reduced monitoring requirements as informed by the first two years of intensive monitoring. Specifically, the Plan (2015) 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 provides the following goals and objectives as excerpted from the Plan (2015):

Plan Goals

1. Provide Collision Mortality Estimates: Estimates of avian mortality from collision will be calculated from data obtained by monitoring and identifying avian mortality and injury associated with facility structure collisions.
2. Provide Solar Flux Mortality Estimates: Estimates of avian mortality from flux effects will be calculated from data obtained by monitoring and identifying avian mortality and injury associated with solar flux generated by the facility.
3. Provide a Framework for Management and Response to Risks**:** The designation and description of the functioning of the TAC provides a management and decision framework for the identification and implementation of potential adaptive management measures.

Plan Objectives

The first two years of monitoring documented that the mortality associated with the perimeter fences, transmission lines, and offsite transects was generally less than 5 detections per season. Additionally, the patterns associated with avian use have been consistent over the seasons and documented in the annual reports. Therefore, as revised, this Plan has the following goals:

1. Estimate collision-related avian mortality and injury with the following facility structures (Figure 2), using empirical data to calculate facility-wide mortality and injury rates:

   a. Power towers
   b. Heliostats

2. Estimate flux-related avian mortality and injury using empirical data to calculate facility-wide mortality and injury rates.
3. Document patterns of collision or flux-related mortality and injury associated with species, age/sex, season, weather, and visibility.
4. Document spatial patterns associated with collision- or flux-related mortality and injury.
5. Provide quantitative information for developing and implementing adaptive management responses commensurate with identified impacts.

The revised Plan (2015) continues 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).

1.3 Purpose of This Report

This report represents the third "quarterly" (i.e., seasonal) report for the third year of monitoring (or, the eleventh quarterly report) 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 fall 2016 season, which includes the period from 18 August – 20 October 2016.

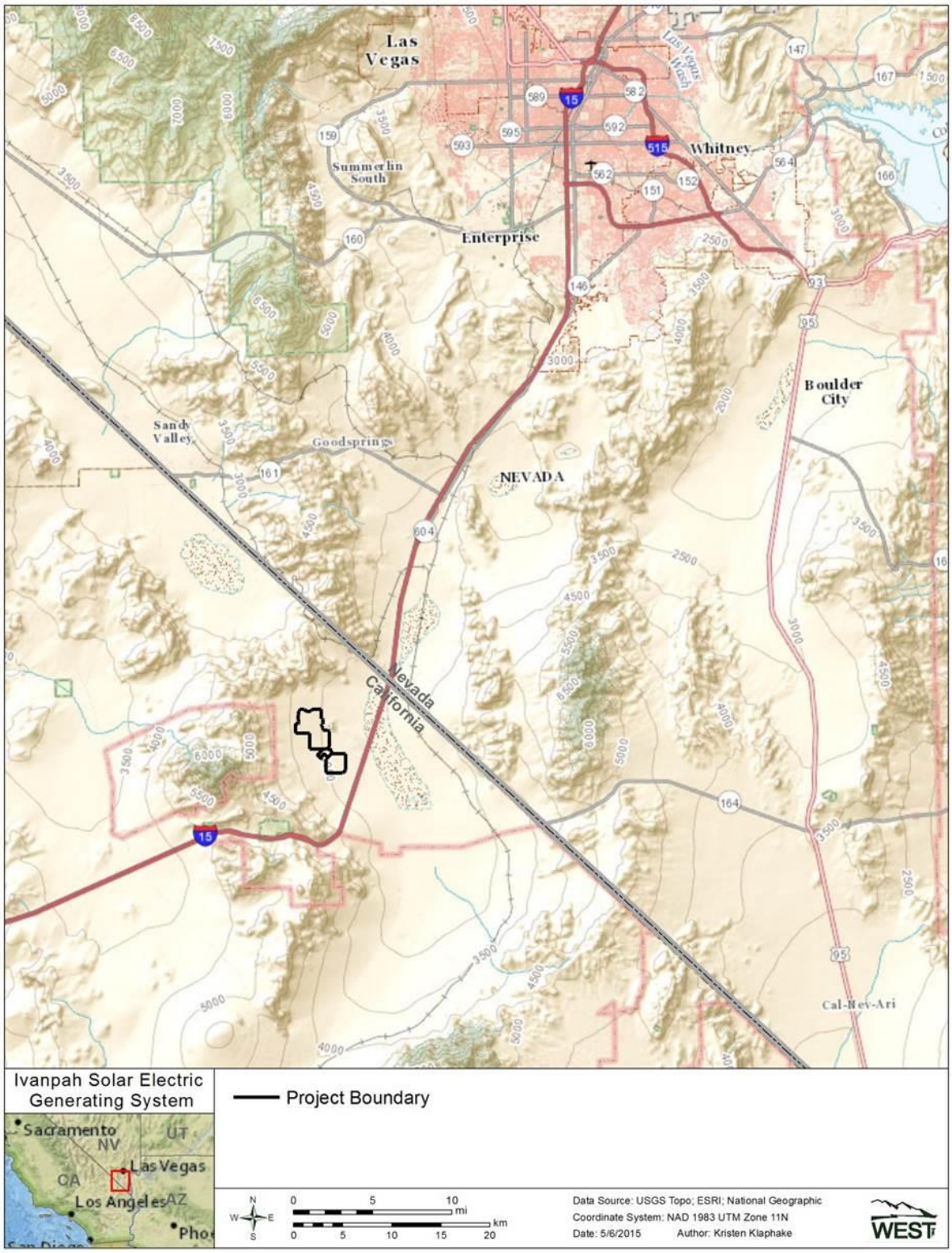

Figure 1. Ivanpah Vicinity Map.

Section 2.0 Methods

The Plan (2015) describes the methods by which monitoring and certain analyses, including compilation of the overall fatality estimate, will occur. Below is an abridged description (see Plan (2015) for detailed methods), with greater detail provided when methods differ from original Plan (2013).

2.1 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 removal and searcher efficiency trials; how data were reported and analyzed for incidental detections; and the methods for producing fatality estimates for the Project.

2.1.1 Standardized Searches

2.1.1.1 Areas Surveyed

Per the Plan (2015), monitoring was conducted in the "tower area" and a sample of the "heliostat area". The tower area is 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. . The heliostat area is defined as the inner and outer heliostat segments outside of the inner HD heliostats. For year 3, 100% of the tower area at each unit was surveyed and 20% of the Unit 2 heliostat area (8% of the total heliostat area) was surveyed. Table 1a provides the acreage searched within each of the survey areas, as well as the percent of the facility comprised by these search areas. Overall, approximately 12.9% of the Project was searched (Figure 2).

To ensure a balanced distribution of heliostat field survey plots, Unit 2 was divided into inner and outer heliostat fields, and approximately 20% of each sub-area was randomly selected for monitoring. Arc plots used for monitoring in Unit 2 were the same as previous years. This stratified random sampling design ensures that survey plots will not be clustered or biased in any distance or direction from the tower.

Table 1a. Monitoring Areas, 2016 Spring Season.

Area	Facility Locations Included	Acreage Searched	Percent of Facility
Tower Area	ACC, Power Block, Inner HD	154	4.80%
Heliostat Area	Unit 2 Inner and Outer Heliostat Segments	240	8.09%
Total		394	12.89%

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

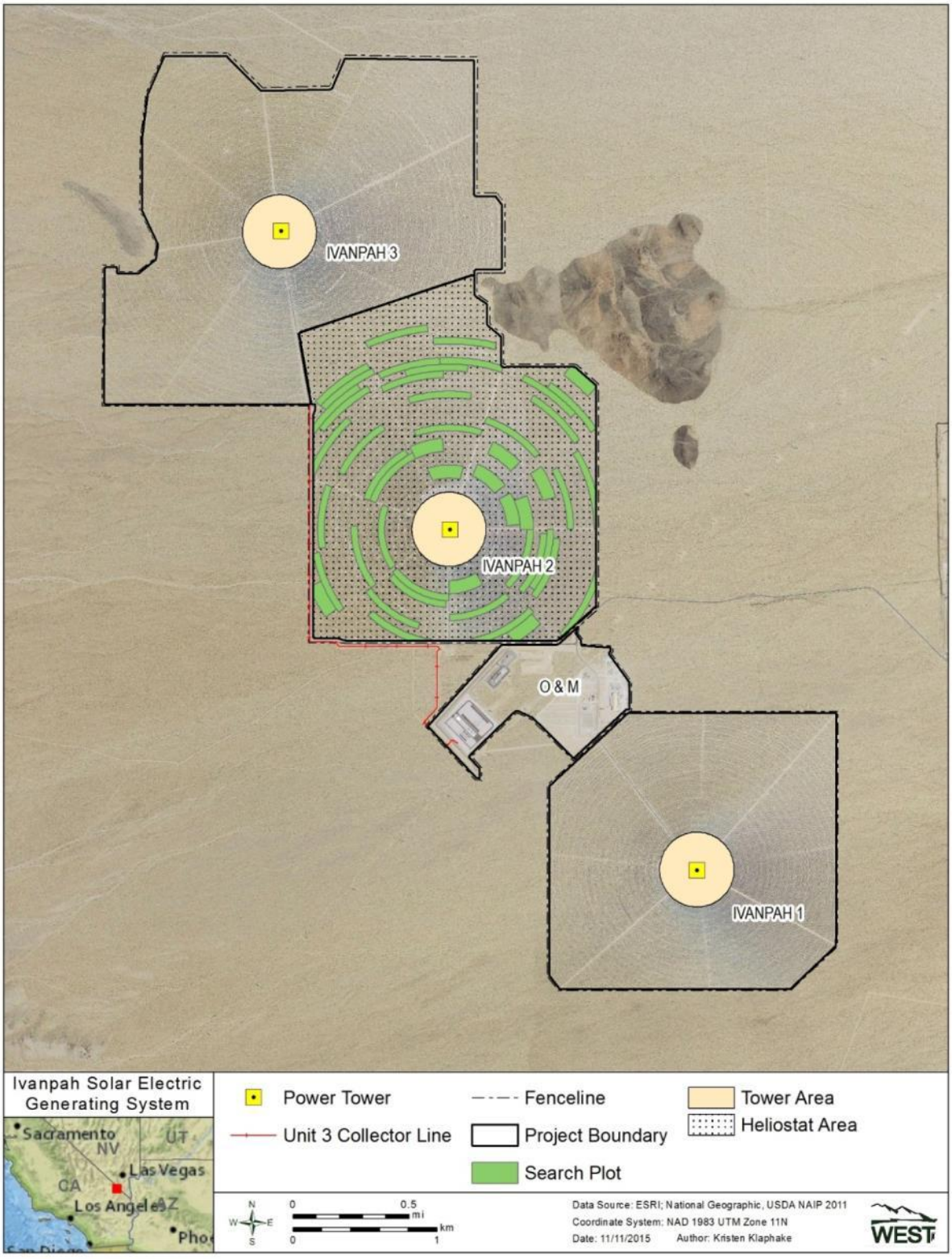

Figure 2. Ivanpah Search Areas.

2.1.1.2 Search Frequency and Timing

Consistent with the first two years of monitoring, standardized searches occurred at each unit on a nominal 7-day interval through the 2016 fall season. Variation in search interval and number of visits to each unit was anticipated to occur due to the transition between 21-day search and 7-day search intervals between seasons of differing length. The tower areas of Units 1, 2 and 3 were visited a total of eight times, and the inner and outer heliostat segments of Unit 2 were visited eight times.

2.1.1.3 Search Methods

Biologists performed surveys in the tower area, and plots in the heliostat area. Standardized walking surveys for fatalities were performed by biologists approved by CEC and BLM, in accordance with the methods outlined in the Plan (2015). 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 3). 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.

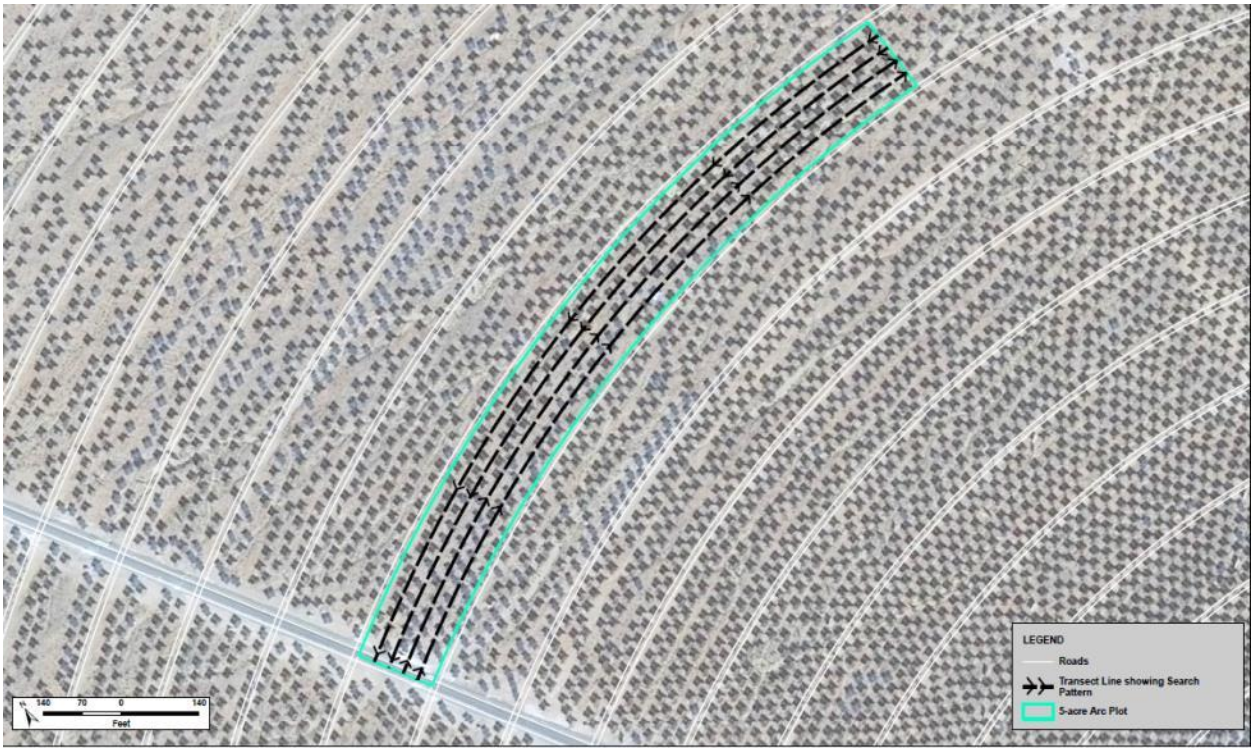

Figure 3. Monitoring Search Pattern for Arc Plots.

Carcass and Feather Spot Examination. Every carcass and feather spot was examined visually by a biologist approved by the CEC and BLM 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 definition:

> 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-m^2 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.

2.1.2 Carcass Persistence Trials

Carcass persistence trials were performed throughout the 2016 fall monitoring season. A total of 20 small bird carcass trials were conducted. The TAC approved discontinuing large bird carcass trials at the conclusion of the 2015 summer season due to the consistency of large bird persistence times collected over the previous seasons. In response to the previous TAC request of increased sample size, the number of small bird trials was increased relative to the 2013 summer monitoring season.

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 10 carcasses placed in the unvegetated tower area, and 10 carcasses placed in the vegetated heliostat arrays. Non-native house sparrows (*Passer domesticus*) were used for small carcass trials conducted during the 2016 fall monitoring season. A camera was placed at each carcass to record the time of scavenging and the scavenging species.

2.1.3 Searcher Efficiency Trials

A total of 83 searcher efficiency trials (40 small birds, 24 large birds, and 19 feather spots) were conducted during the 2016 fall monitoring season. Carcasses and feather spots were placed in various vegetation heights and in areas that had different soil and vegetation colors and values to represent the range of conditions under which searches occur. Trials were placed in the tower areas of all three units and in the heliostat area of Unit 2; however, no trials were placed in the ACC building since detection probability is assumed to be 100% in this area of the power block. Each trial carcass was placed by a designated biologist prior to a scheduled search without knowledge of the searchers. For trial carcasses that were not detected by searchers, the designated biologist returned to the trial location to determine if the trial carcass was still available to be found. If the trial carcass was absent, it was assumed to have been removed prior to the search, and thus not available to be detected.

Overall, 33 trial carcasses/feather spots were placed in the tower area and 50 trial carcasses were placed in vegetated areas in the inner/outer segments of the heliostat area. Of the 83 trial carcasses placed, 65 (27 small carcasses, 19 large carcasses, and 19 feather spots) were available to be found; 18 carcasses (13 small carcasses, 5 large carcasses, and 0 feather spot) were removed (scavenged) from the trial location before searchers had an opportunity to find them.

2.1.4 Incidental Reporting

Some detections were made outside standardized search areas, or were within search areas but not during standardized searches. Detections at locations not searched under the Plan (2015) such as the fenceline and heliostat areas of Unit 1 and Unit 3, are considered incidental detections for this report. 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 heliostat area of Unit 2). Incidental detections from outside the survey areas were not included in the fatality estimates as discussed in Section 2.2.5; however, all detections regardless of the method or source of detection are reported in the SPUT permit database.

2.1.5 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 written 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 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. Measurement of carcass persistence time is 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 removal trials, the majority of scavenging times can be known precisely, and data are not censored. However, when cameras fail to record the moment of scavenging, trials are treated as interval censored between the last time the carcass was visible on the camera, and the earliest time at which it was known to be removed.

Survival regressions models are well-suited to accommodate censored carcass persistence data and are typically used to generate the average probability of persistence for fatality estimation (Huso et. al 2012). 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 removal 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 the variation of *r* for the observed detection data.

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

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

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 fields), 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 for all combinations of year, season, carcass size, Project area, and compared to the null model (Table 8). The data for this analysis included all human searcher efficiency trials of carcasses from the beginning of trials in the winter 2013 – 2014 season through the 2016 fall season.

Fatality Estimates. Estimates for the number of detections in the tower area components (i.e., the power block and inner HD heliostats) are reported combined, because 100% of these areas were searched. A separate estimate was produced for the heliostat area of all three Units (the inner and outer heliostat segments combined), in which 8% of the total area was searched. Fatality estimates reported in the inner/outer heliostat areas were adjusted to account for the unsearched area in the inner/outer heliostat areas (i.e., divided by 0.08).

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 tower area. All detections within the ACC buildings are considered facility related, whether or not

they showed evidence of singeing or collision; if there was no evidence of singeing or collision on a detection found in the ACC, the cause was assumed to be entrapment in some portion of the ACC unit.

Within the power block, during the 2016 fall season, incidental detections accounted for 13.3% of the detections recorded. Thus, as previously modeled, incidentals found within the power block were included in estimates, but treated differently from other fatalities. To reflect the high 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 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 fall 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 fall season, 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 fewer than five, regardless of survey effort, estimates and confidence intervals can be unstable 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 five or fewer 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 older than the search interval (Huso et. al 2016). Each detection made during the 2016 fall season 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 determined to have been on the ground for > 1 month was made in the inner HD of Unit 2, which had been searched seven days earlier, that carcass would be excluded from analysis.

Determining the age of a carcass was 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 biologists approved by the CEC and BLM, 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 onsite 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.

2.2 Deterrence Measures

2.2.1 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 at Ivanpah. 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, and a sonic deterrence measure commercially known as BirdGard, was deployed on 13 March 2015 at Unit 1. Bird Buffer was installed at Unit 2 and Unit 3 on 29 September 2015; BirdGard was installed at Unit 2 on 25 August 2015 and Unit 3 on 31 August 2015. 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. Enhancements to BirdBuffer were designed in fall and include replacing the single output device at each Unit tower with two double output device at each Unit tower. Enhancements to BirdGard were designed in fall and include upgrading each speaker device containing 20 speakers to 3 speaker devices containing 20 speakers. Each speaker device has 7 hyper-directional speakers, for a total of 21 directional speakers targeted towards a specific path. The four independent three-speaker-devices will remain positioned on the north, east, south, and west side of each tower area.

2.2.2 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 and in November 2015, an ultrasonic testing protocol was implemented to ensure proper function of all deterrence units. Bat deterrence was tested in August and October during the 2016 Fall season, and all systems were operating correctly.

Section 3.0 Monitoring Results

3.1 Summary of Avian Detections

Within the 2016 fall season, the average search interval was 7.09 and the median was 7 days. Variation in search interval was anticipated to occur due to the transition between 7-day and 21-day search intervals associated with switching seasons during the fall season.

During the 2016 fall season, a total of 361 avian detections (including injured birds and incidentals) of 62 identified species (Table 2) were recorded. Approximately 66% of detections were songbirds, with 31% being other types of bird; 3% could not be identified to at least a species group. The most numerous detection of an identified species was yellow warbler followed by mourning dove and yellow-rumped warbler. Most detections occurred in the tower area (Figures 4, 5, 6, and 7), where approximately 154 acres were surveyed, representing 100% of the total tower area.

Table 2. Number of Individual Bird Detections, by Species, 2016 Fall Season.

Species	Scientific Name	Injuries	Fatalities	Songbird?
yellow warbler	*Setophaga petechia*	2	59	Yes
unidentified bird (small)	*unidentified*	0	45	No
mourning dove	*Zenaida macroura*	1	17	No
unidentified sparrow	*unidentified*	0	14	Yes
yellow-rumped warbler	*Setophaga coronata*	0	14	Yes
northern rough-winged swallow	*Stelgidopteryx serripennis*	0	10	Yes
black-throated gray warbler	*Setophaga nigrescens*	0	8	Yes
blue-gray gnatcatcher	*Polioptila caerulea*	0	8	Yes
Wilson's warbler	*Cardellina pusilla*	0	8	Yes
Vaux's swift	*Chaetura vauxi*	0	8	No
orange-crowned warbler	*Oreothlypis celata*	0	7	Yes
white-crowned sparrow	*Zonotrichia leucophrys*	0	7	Yes
Lincoln's sparrow	*Melospiza lincolnii*	0	6	Yes
unidentified swallow	*unidentified*	0	6	Yes
violet-green swallow	*Tachycineta thalassina*	1	6	Yes
brown-headed cowbird	*Molothrus ater*	1	5	Yes
lazuli bunting	*Passerina amoena*	1	5	Yes
Anna's hummingbird	*Calypte anna*	0	5	No
greater roadrunner	*Geococcyx californianus*	0	4	No
unidentified grebe	*unidentified*	0	4	No
chipping sparrow	*Spizella passerina*	0	4	Yes
cliff swallow	*Petrochelidon pyrrhonota*	0	4	Yes
lesser goldfinch	*Spinus psaltria*	0	4	Yes
loggerhead shrike	*Lanius ludovicianus*	0	4	Yes
unidentified warbler	*unidentified*	0	4	Yes

Species	Scientific Name	Injuries	Fatalities	Songbird?
western tanager	*Piranga ludoviciana*	2	4	Yes
lesser nighthawk	*Chordeiles acutipennis*	0	3	No
American pipit	*Anthus rubescens*	0	3	Yes
black-throated sparrow	*Amphispiza bilineata*	0	3	Yes
brewer's sparrow	*Spizella breweri*	0	3	Yes
hermit warbler	*Setophaga occidentalis*	0	3	Yes
western kingbird	*Tyrannus verticalis*	0	3	Yes
western meadowlark	*Sturnella neglecta*	0	3	Yes
unidentified hummingbird	*unidentified*	0	3	No
unidentified teal	*Anas spp*	0	3	No
rock pigeon	*Columba livia*	0	2	No
unidentified dove	*Columbina spp*	0	2	No
horned lark	*Eremophila alpestris*	0	2	Yes
sagebrush sparrow	*Artemisiospiza nevadensis*	0	2	Yes
say's phoebe	*Sayornis saya*	0	2	Yes
tree swallow	*Tachycineta bicolor*	0	2	Yes
American avocet	*Recurvirostra americana*	0	2	No
unidentified bird (unknown size)	*unidentified*	0	2	No
cinnamon teal	*Anas cyanoptera*	0	2	No
unidentified waterfowl	*unidentified*	0	2	No
unidentified sapsucker	*Sphyrapicus spp*	0	2	No
ring-necked pheasant	*Phasianus colchicus*	0	1	No
barn swallow	*Hirundo rustica*	0	1	Yes
black-headed grosbeak	*Pheucticus melanocephalus*	0	1	Yes
black-tailed gnatcatcher	*Polioptila melanura*	0	1	Yes
Brewer's blackbird	*Euphagus cyanocephalus*	0	1	Yes
cactus wren	*Campylorhynchus brunneicapillus*	0	1	Yes
Cassin’s kingbird	*Tyrannus vociferans*	0	1	Yes
chestnut-sided warbler	*Setophaga pensylvanica*	0	1	Yes
green-tailed towhee	*Pipilo chlorurus*	0	1	Yes
house finch	*Haemorhous mexicanus*	0	1	Yes
house wren	*Troglodytes aedon*	0	1	Yes
Lucy’s warbler	*Oreothlypis luciae*	0	1	Yes
Macgillivray's warbler	*Geothlypis tolmiei*	0	1	Yes
Nashville warbler	*Oreothlypis ruficapilla*	0	1	Yes
rock wren	*Salpinctes obsoletus*	0	1	Yes
ruby-crowned kinglet	*Regulus calendula*	0	1	Yes
rusty blackbird	*Euphagus carolinus*	0	1	Yes
savannah sparrow	*Passerculus sandwichensis*	0	1	Yes
swamp sparrow	*Melospiza georgiana*	0	1	Yes
Townsend’s warbler	*Setophaga townsendi*	0	1	Yes
unidentified flycatcher	*unidentified*	0	1	Yes
unidentified gnatcatcher	*unidentified*	0	1	Yes

Species	Scientific Name	Injuries	Fatalities	Songbird?
unidentified oriole	*unidentified*	0	1	Yes
verdin	*Auriparus flaviceps*	0	1	Yes
unidentified buteo	*Buteo spp*	0	1	No
long-billed curlew	*Numenius americanus*	0	1	No
semipalmated sandpiper	*Calidris pusilla*	0	1	No
unidentified sandpiper	*unidentified*	0	1	No
unidentified shorebird	*unidentified*	0	1	No
black-chinned hummingbird	*Archilochus alexandri*	0	1	No
rufous hummingbird	*Selasphorus rufus*	0	1	No
unidentified swift	*unidentified*	0	1	No
green-winged teal	*Anas crecca*	0	1	No
peregrine falcon	*Falco peregrinus*	1	0	No
Total		9	352	NA

*NA – Not Applicable

Nine injured birds were detected during the 2016 fall season, and five were taken to a rehab facility (Table 3).

Table 3. Avian Injuries Detected 18 August – 20 October 2016.

Date	Species	Age	Sex	Cause of Injury	Flux Grade	Status
8/29/2016	mourning dove	Immature	Unknown	unknown	NA	Released on-site
8/31/2016	western tanager	NA	NA	singed	2,3	Released at rehab
9/5/2016	brown-headed cowbird	NA	NA	singed	2,3	Released at rehab
9/5/2016	western tanager	NA	NA	singed	2,3	Released at rehab
9/5/2016	yellow warbler	Immature	Unknown	singed	2,3b	Died on-site
9/5/2016	yellow warbler	NA	NA	singed	2,3	Released at rehab
9/6/2016	lazuli bunting	Immature	Female	singed	1,3	Died on-site
9/13/2016	peregrine falcon	Immature	Male	singed	2,3	Died on route to rehab
9/19/2016	violet-green swallow	Adult	Male	singed	2,3	Died at rehab

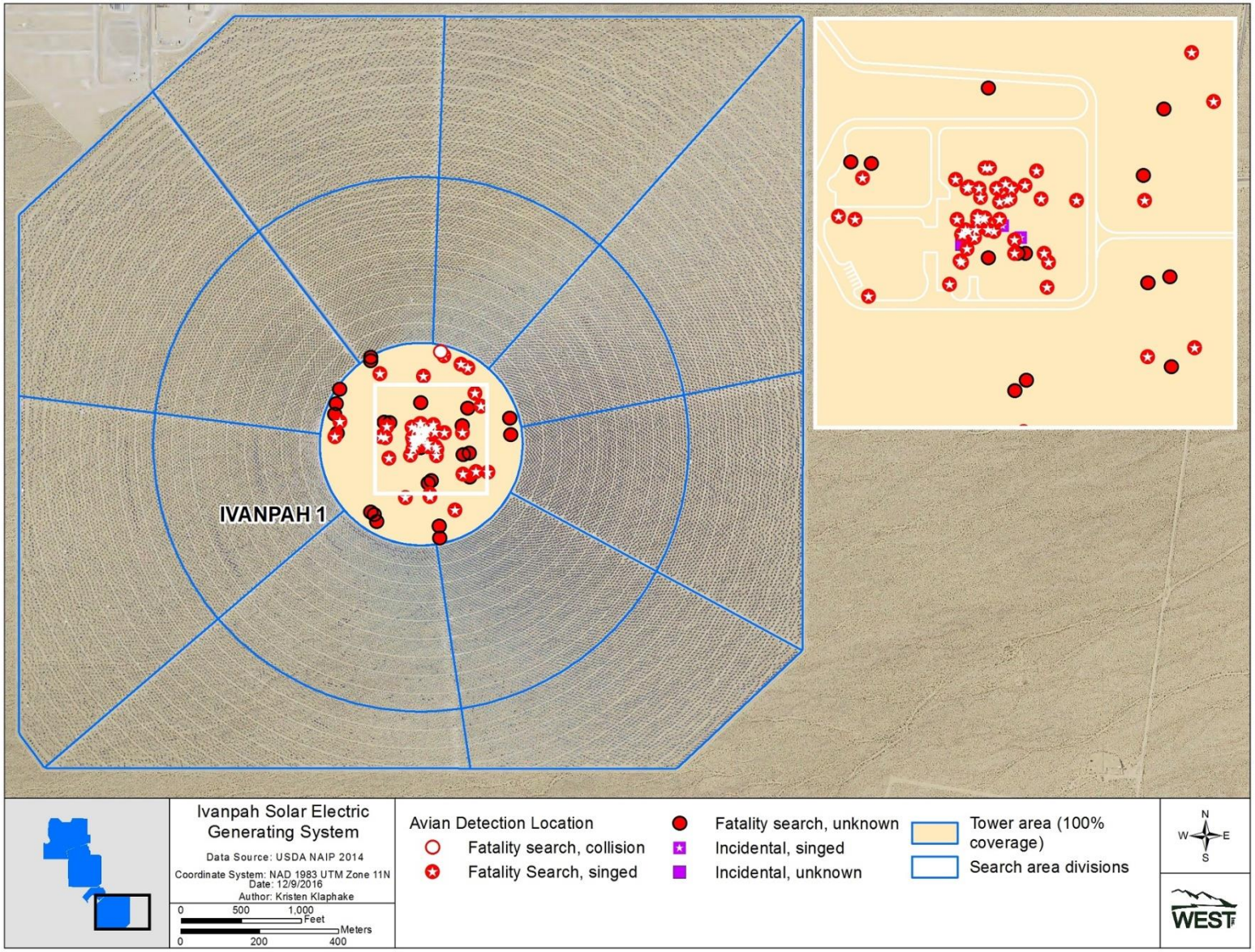

Figure 4. Ivanpah 1 Detections.

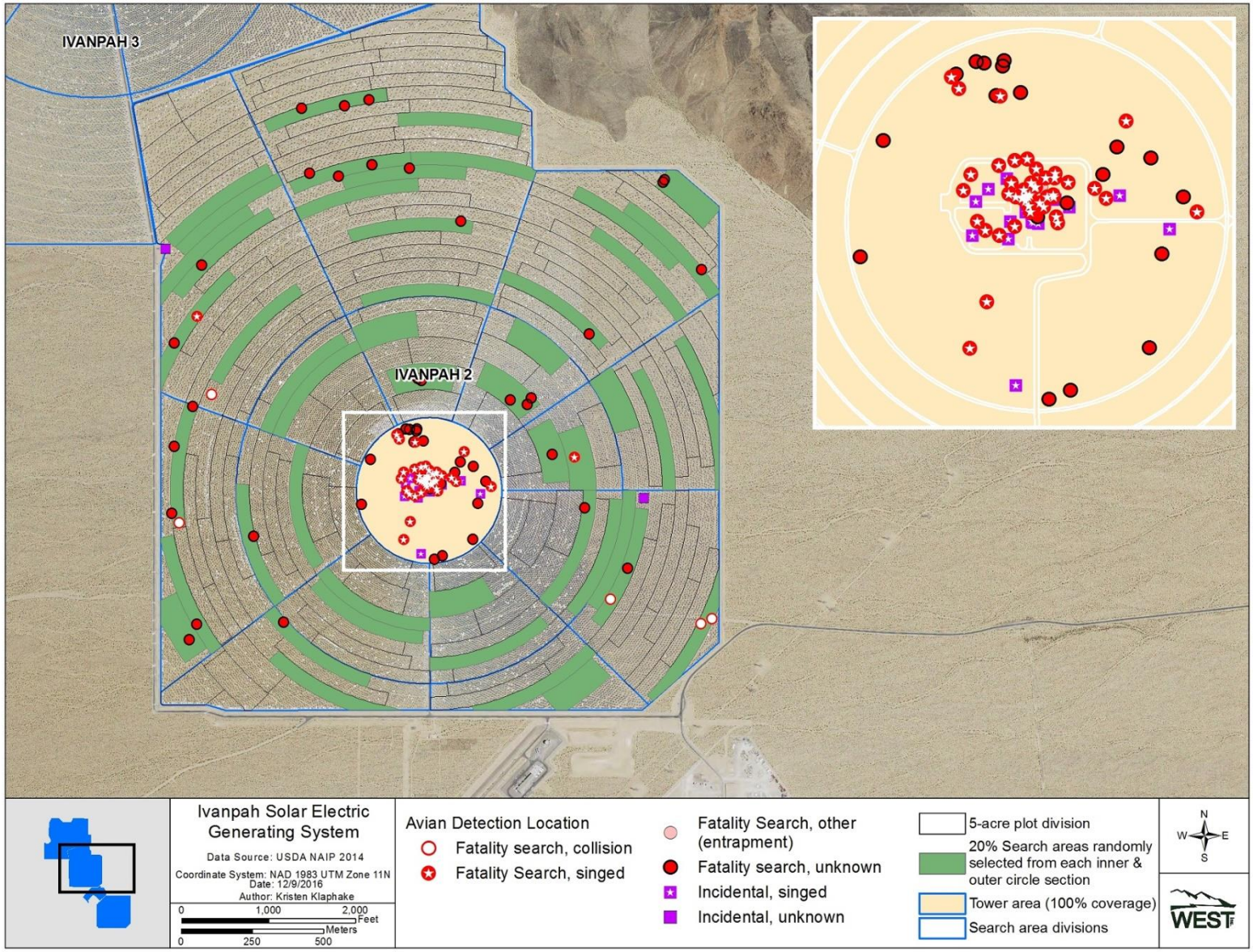

Figure 5. Ivanpah 2 Detections.

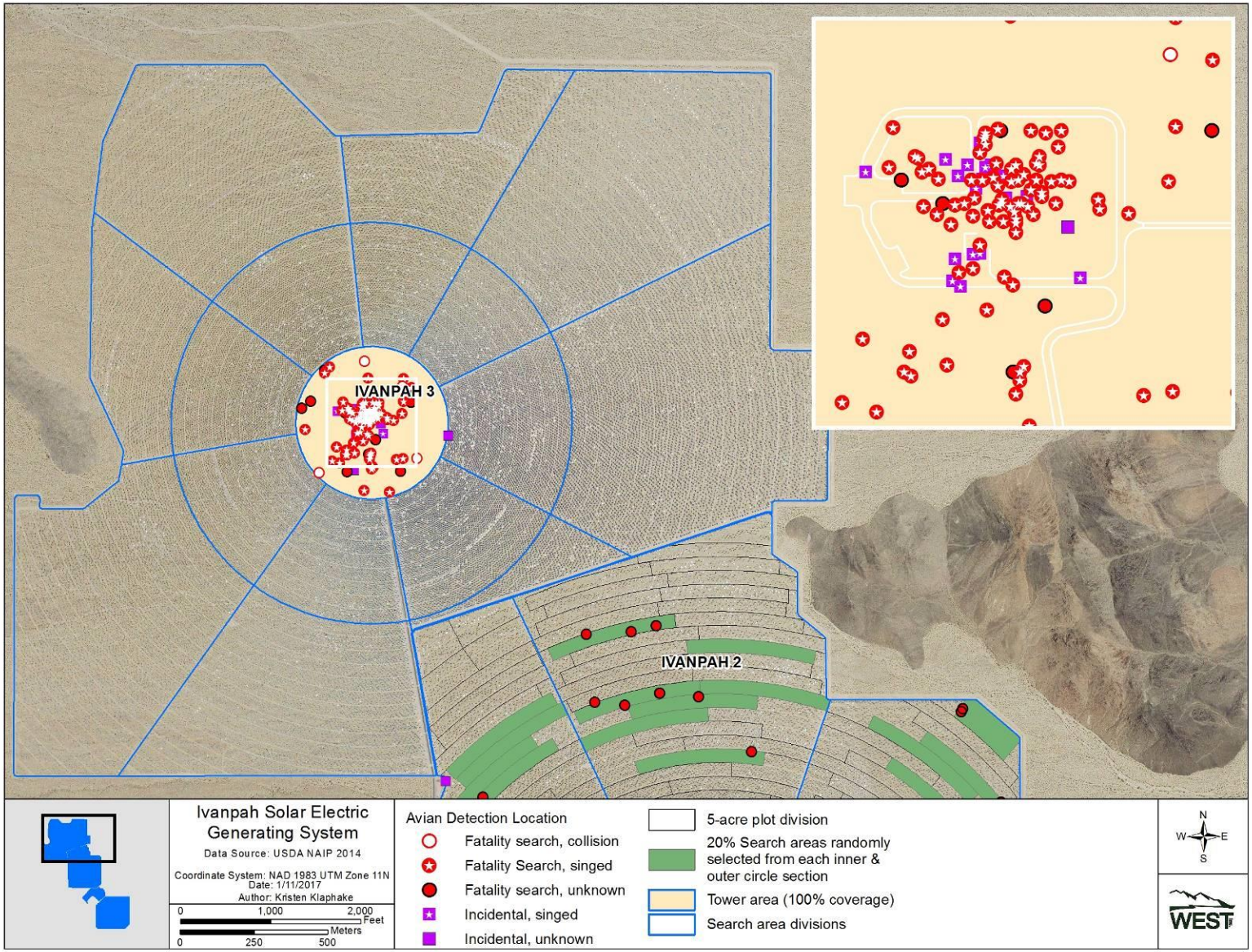

Figure 6. Ivanpah 3 Detections.

3.1.1 Temporal Patterns of Avian Detections

The number of detections reported per day varied throughout the 18 August 2016 – 20 October 2016 fall season (Figure 7). 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 7). Peaks in the number of detections per day were associated with tower area searches beginning 27 August. There was no obvious temporal clumping of detections recorded during the fall season; 10 survey days resulted in greater than 10 detections, and the number of detections began to decrease consistently after 7 October.

Data from BirdCast suggests that the 2016 fall season captured the entire period of fall migration. The BirdCast West regional migration summaries were available from 26 August – 21 October 2015. During the 2016 fall season, movements were described as light to moderate in California and Desert Southwest each week with locally moderate movements in the Central Valley of California noted on October 7 – 8. Detections per day had begun to decrease, and did not show a peak after October 7.

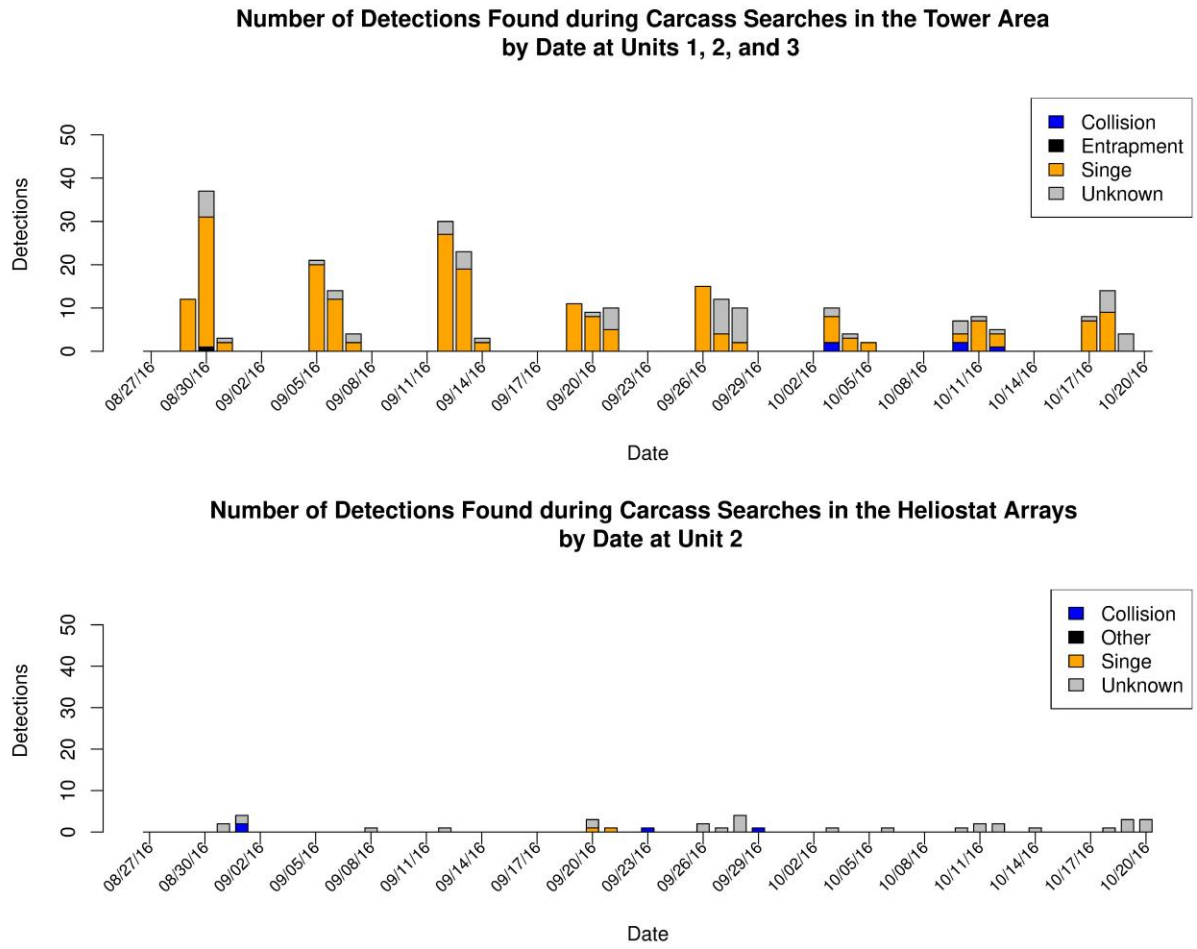

Figure 7. Number of Detections on Each Survey Date, 18 August – 20 October 2016.

3.1.3 Summary of Bat Detections

Eleven bats representing four species and one unidentified species were detected during the 2016 fall season. Two unidentified bats were located in the Unit 1 ACC building; one California myotis, two canyon bats, one Mexican free-tailed bat, and two unidentified bats were located in the Unit 2 ACC building, one unidentified bats was located in the Unit 2 powerblock; one Yuma myotis and one unidentified bat was located in the Unit 3 powerblock. Given the few detections of bats, they are not discussed further.

3.2 Locations of Avian Detections

3.2.1 Detections by Project Area

During fall 2016, of the 361 total detections, 322 detections (89.2%) were recorded at the tower area and 39 detections (10.8%) were recorded over the heliostat area (Table 4). Of the 361 avian detections, 96 (27%) were detected in Unit 1, 126 (35%) in Unit 2, and 139 (38%) in Unit 3.

Table 4. Locations of Avian Detections, 18 August – 20 October 2016.

Location	Carcasses	Injuries	Percent of Total
Tower Area	313	9	89.2%
Heliostat Array	39	0	10.8%
Total	352	9	100.0%

3.3 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. Figure 8 shows the distribution of detections by cause. Percent composition results should not be compared between years because of changes to the study design between the Plan Revision 12 (2012-2014) and Revision 13 (2015-2016).

3.3.1 Singeing Effects

Of the 361 avian detections during the 2016 fall season, 253 detections (71%) showed signs of singed feather damage, and 251 (99%) of singed detections were recorded in the tower area (Table 5).

3.3.2 Collisions

Of the 361 avian detections, evidence of collision was observed in the case of 10 (2.8%). Five detections (1.4%) with evidence of collision with heliostats were located in the tower area and five detections (1.8%) were located in the heliostat area. As described in Section 2.2.1.3, the evidence that was used to classify these detections as collisions was obvious physical trauma, proximity to heliostats that had smudge marks, body imprints, and/or feathers on or near the surface of the mirror (although birds that collide with structures do not always leave visible evidence).

3.3.2 Other Cause

Of the 361 avian detections, one (0.3%) was found within the ACC with no evidence of singeing or collision. Thus, consistent with previous cause assignments, these birds were determined to have been entrapped in the ACC, which resulted in fatality.

3.3.4 Detections of Unknown Cause

Of the 361 avian detections, evidence of singeing, collision, or other cause could not be assigned for 97 detections (26.9%; Table 5). Per the Plan section 2.1, these detections cannot be presumed with or presumed without a reasonable doubt to be caused by the facility; see Section 6.2 of this report for further discussion. Of the unknown cause detections, 32 (33.0%) were recorded in the heliostat area, and 65 (67.0%) were recorded in the tower area.

Table 5. Locations of Bird Detections, 18 August – 20 October 2016.

Location	Singeing	Collision	Other	Unknown	Total
Tower Area	251	5	1*	65	322
Heliostat Area	2	5	0	32	39
Total	253	10	1	97	361

*These carcasses were found in the ACC unit with no sign of collision or singe and are attributed to entrapment.

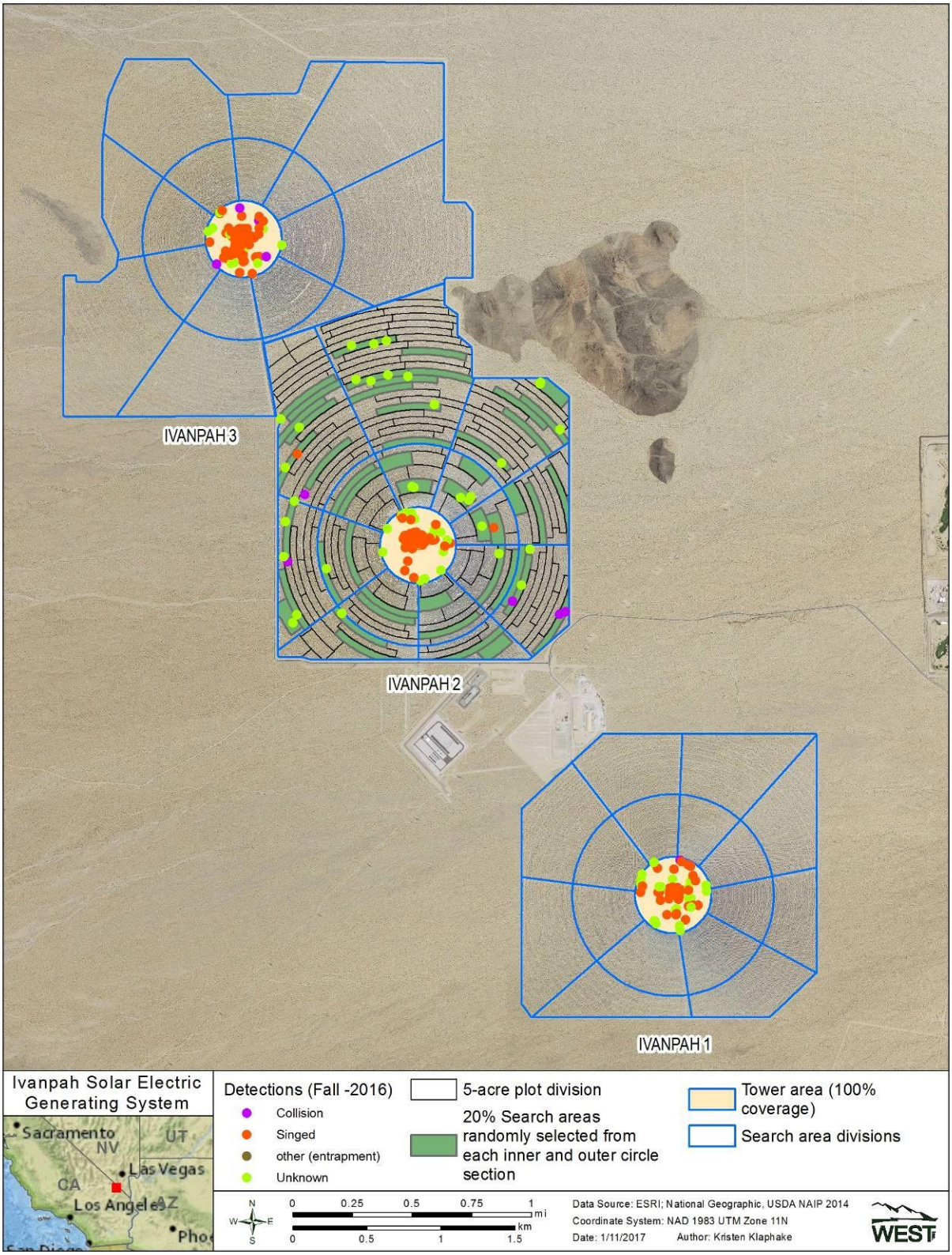

Figure 8. Locations of Singed and Unsinged Detections within Solar Units.

3.4 Types of Detections

One hundred fifty-six (43.2%) of the 361 detections consisted only of feather spots (Table 6a). Feather spots accounted for 74.4% of detections in the heliostats area, and 39.4% of detections in the tower area. Evidence of singeing was noted through direct and microscopic examination on 75 of these 156 feather spots; evidence of collision (i.e., an impact imprint on a nearby mirror) was noted in the case of six feather spots. Otherwise, the causes of the feather spots for the other 76 detections are unknown (Table 6b).

Table 6a. Percent Composition Feather Spots to Carcasses Relative to Site Locations.

Location	Carcasses	Feather Spot	Total	Percent Feather Spot
Tower Area	195	127	322	39.4%
Heliostat Area	10	29	39	74.4%
Total	205	156	361	43.2%

Table 6b. Percent Composition Feather Spots to Carcasses Relative to Cause.

Cause	Carcasses	Feather Spots	Total	Percent Feather Spot
Singed	178	75	253	29.6%
Collision	4	6	10	60%
Other	1*	0	1	<1%
Unknown	22	75	97	77.3%
Total	205	156	361	43.2%

*These carcasses were found in the ACC unit with no sign of collision or singe and are attributed to entrapment.

Section 4.0 Fatality Estimation

This section utilizes the detection data as described in Section 3 to develop an overall fatality estimate in accordance with the Plan (2015). The total estimate for the entire facility is presented separately for fatalities with evidence of singeing or collision effects, or for detections in the ACC buildings, and fatalities of unknown cause. Following presentation of the total fatality estimates, estimates are provided separately for the tower area, and heliostat area.

4.1 Estimating Model Parameters

4.1.1 Carcass persistence Trials

A total of 20 small bird carcass persistence trials were conducted during the 2016 fall monitoring season. Trials were distributed throughout the facility. Consistent with previous seasons, scavengers included common raven (*Corvus corax*, N=3), desert kit fox (*Vulpes macrotis*; N=11), and white-tailed antelope squirrel (*Ammospermophilus leucurus*; N=2). In four instances the scavenger could not be identified. Small bird carcass persistence ranged from less than one day in the case of 10 carcasses to 36 days in the case of one carcass (Figure 9). Large bird carcass persistence trials were discontinued beginning fall 2015 per TAC approval because no seasonal effects were found in previous large bird models and most trial carcasses persisted at least 42 days (Figure 10).

In addition to the 2016 fall trials described above, carcass persistence trials from the first two years of monitoring, and prior seasons (winter, spring, and summer) of year 3 were also used in the model. Carcass persistence data from 20 small bird trials conducted during the 2016 summer season, 21 small bird trials conducted during the 2016 spring season, 30 small bird trials conducted during the 2015-2016 winter season, 127 carcass persistence trials conducted during the 2014 - 2015 monitoring year (97 small birds and 30 large birds distributed throughout the facility) and data from 87 trials (57 small birds and 30 large birds distributed throughout the facility) performed during the 2013-2104 monitoring year were used to model carcass persistence time. Details on carcass persistence times can be found in each respective seasonal report.

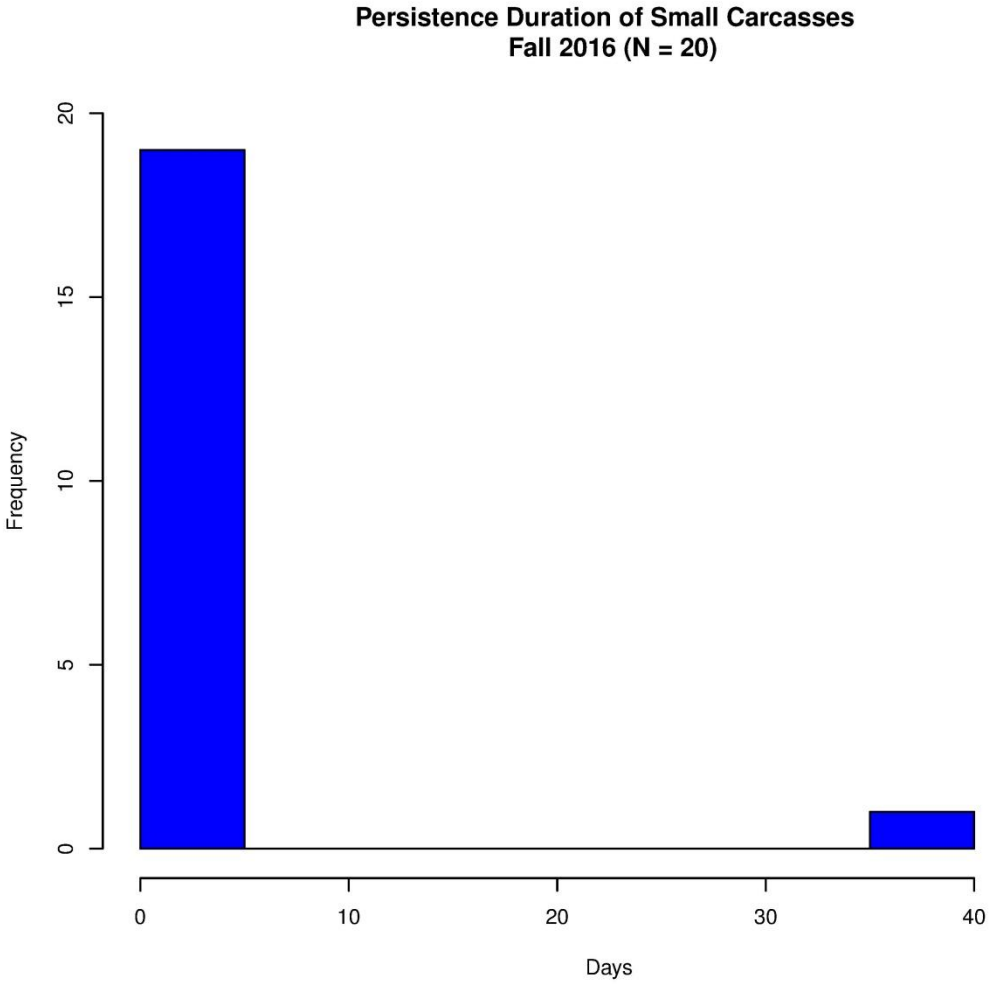

Figure 9. Persistence Durations for Small Carcasses Placed for 2016 Fall Carcass Persistence Trials (N = 20).

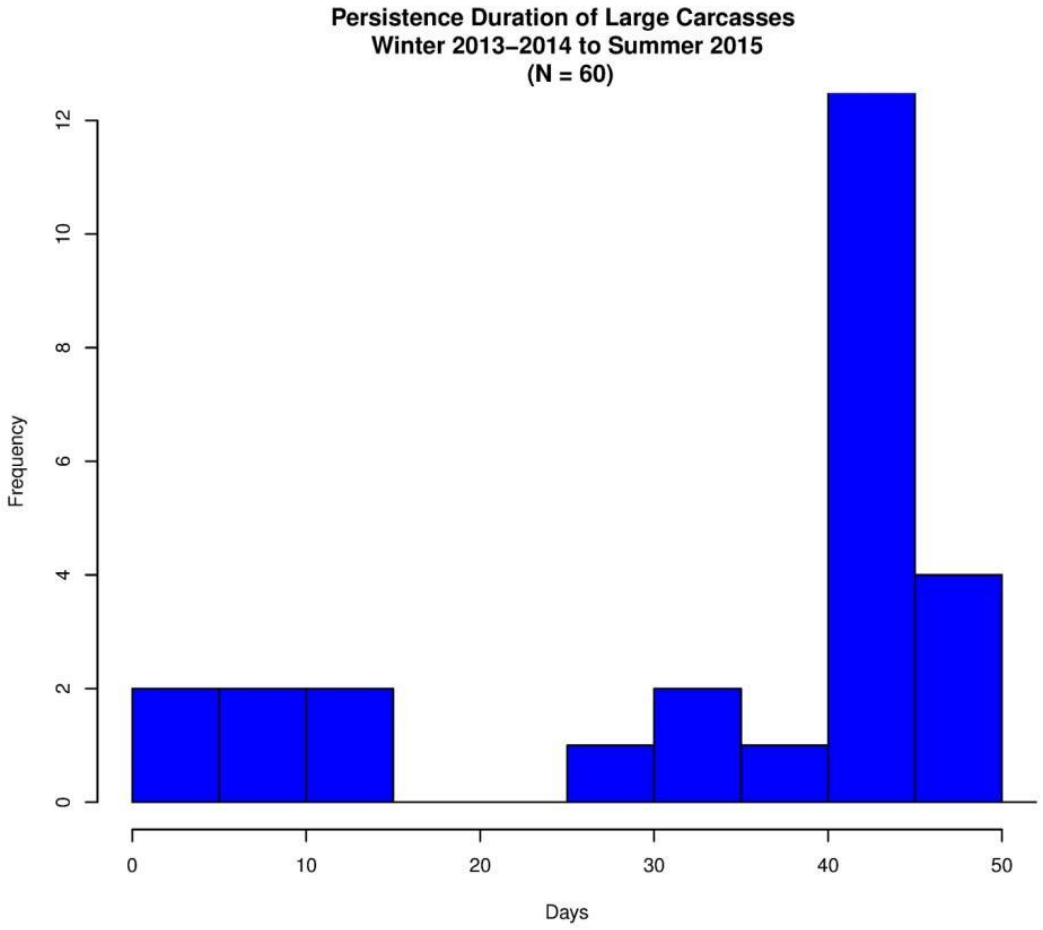

Figure 10. Persistence Durations for Large Carcasses Placed for All Carcass Persistence Trials.

4.1.2 Model Selection for Carcass Persistence Distribution

Consistent with the second year of monitoring and the findings that the removal process for small birds and large birds has been markedly different, 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, 24 and 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 potential covariate to assess whether respective seasons could be pooled across years (i.e. does persistence time vary by season *and* year, just year, just season, or neither). Finally, location (unvegetated

tower area or the vegetated heliostat area) was considered a potential covariate to understand if carcass persistence in the tower area and heliostat area was different.

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 7a and 7b). Ultimately, a loglogistic model with season and year covariates was chosen for small birds, and an exponential 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 and year. 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 98.8% of large carcasses persisted for the nominal search interval (7 days), and 34.0% of small bird carcasses persisted for the nominal search interval of during the 2016 fall monitoring season.

Table 7a. AICc Values for the Top 10 Small Bird Carcass Persistence Models

Small Bird Trials

Covariates	Distribution	AICc	Δ AICc
Year + Season + Year*Season	loglogistic	1222.84	0
Year + Season	loglogistic	1223.47	0.63
Season + Year + Project Area	loglogistic	1225.49	2.65
Year + Season	lognormal	1225.97	3.13
Season	loglogistic	1226.60	3.76
Season	lognormal	1227.30	4.46
Year + Season + Year*Season	lognormal	1227.41	4.57
Season + Year + Project Area	lognormal	1227.90	5.06
Season + Project Area	loglogistic	1228.70	5.86
Season + Project Area	lognormal	1229.38	6.54

Table 7b. AICc Values for All 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
Season	Exponential	98.34	1.34
Season	Weibull	99.62	2.62
Year + Season	Exponential	99.64	2.64
Season	Loglogistic	99.75	2.75
Season	Lognormal	99.87	2.87
Year + Season	Lognormal	100.68	3.68
Year + Season	Loglogistic	100.98	3.98
Year + Season	Weibull	101.08	4.08
Year + Season + Year*Season	Exponential	107.36	10.36
Year + Season + Year*Season	Lognormal	108.69	11.69
Year + Season + Year*Season	Loglogistic	109.00	12.00
Year + Season + Year*Season	Weibull	109.09	12.09

4.1.3 Searcher Efficiency Trials

During the 2016 fall season, a total of 83 searcher efficiency trials (40 small birds, 24 large birds, and 19 feather spots) were placed. Trials were placed in locations with various vegetation heights and with a range of contrast between the soil and vegetation to represent the various conditions under which searches occur. Carcasses were placed in most areas where searches occurred (tower area and heliostat area). Thirteen small bird trials, 5 large bird trials, and 0 feather spot trial, were removed (scavenged) prior to a searcher having the opportunity to detect the carcass.

A total of 71 searcher efficiency trials (25 small birds, 24 large birds, and 22 feather spots) from the summer 2016 season, 69 searcher efficiency trials (26 small birds, 21 large birds, and 21 feather spots from the spring 2016 season, and 83 searcher efficiency trials (33 small birds, 24 large birds, 26 feather spots) from the 2015-2016 winter monitoring seasons were included in the dataset used to fit a searcher efficiency model for the 2016 fall season. An additional 320 human searcher efficiency trials (129 small birds, 96 large birds, and 95 feather spots) from the 2014 - 2015 monitoring year used to fit a searcher efficiency model for the 2016 fall season. Of the 320 trial carcasses placed, 268 (129 small birds, 96 large birds, and 95 feather spots) were available to be found; 52 carcasses (42 small birds, 8 large birds, and 2 feather spots) were removed from the trial location before searchers had an opportunity to detect the carcass. Finally, 154 searcher efficiency trials (52 small birds, 44 large birds, 57 feather spots) from the first year of study were also included in searcher efficiency model building. Of 154 trials from the first year of monitoring, 144 (48 small birds, 39 large birds, and 57 feather spots) were not removed and thus

available to be found by a searcher. Details about searcher efficiency trials performed prior to the 2016 fall season can be found in the respective quarterly reports.

Searcher efficiency rates were generally higher in the unvegetated areas in the tower area. During the 2016 fall season, in unvegetated areas, human searcher efficiency was 92% for small birds, 100% for large birds, and 63% for feather spots. In the vegetated areas in the heliostat arrays, searcher efficiency was 33% for small birds, 55% for large birds, and 45% for feather spots.

Table 8. Covariates, AICc Values, and ΔAICc values for the top ten searcher efficiency models. Data consist of all human searcher efficiency trials for carcasses from the initiation of trials through October 20, 2016.

Covariates	AICc	Δ AICc
Size + Project Area + Year + Size*Project Area	807.76	0.00
Size + Project Area + Year	808.01	0.25
Size + Project Area + Size*Project Area	809.36	1.60
Size + Project Area	809.42	1.66
Size + Project Area + Year + Size*Project Area + Project Area*Year	810.23	2.47
Size + Project Area + Year + Project Area*Year	810.30	2.53
Size + Project Area + Season + Year + Size*Project Area	810.35	2.58
Size + Project Area + Season + Year	810.68	2.91
Size + Project Area + Year + Size*Project Area + Size*Year	811.09	3.33
Size + Project Area + Season + Year + Size*Project Area + Size*Year + Season*Year	811.99	4.23

The model selected for searcher efficiency included carcass size and project area, with an AICc value within 1.66 AICc points of the model with lowest AICc score (Table 8). The selected model produces searcher efficiency estimates based on carcass size and project area (unvegetated tower area and vegetated heliostat area). Searcher efficiency values used to adjust detections to calculate a fatality estimate are provided in Table 9 and are based on all searcher efficiency data collected.

Table 9. Human Searcher Efficiency Sample Sizes Used for Modeling, and Model Predictions for Size and Project Area Categories Winter Year 1 – Fall Year 3.

Size	Location	Found	Available	Placed	Predicted Searcher Efficiency (90% CI)
Feather spot	Tower area (Unvegetated)	80	114	118	0.75 (0.69-0.8)
Small bird	Tower area (Unvegetated)	89	115	153	0.73 (0.67-0.78)
Large bird	Tower area (Unvegetated)	90	103	113	0.87 (0.83-0.91)
Feather spot	Heliostat area (Vegetated)	56	121	123	0.42 (0.36-0.49)
Small bird	Heliostat area (Vegetated)	68	107	120	0.40 (0.34-0.47)
Large bird	Heliostat area (Vegetated)	41	115	153	0.63 (0.57-0.7)

4.2 Fatality Estimates of Known Causes for 2016 Fall Monitoring

Fatality estimates were calculated separately for the tower area (power block and inner HD heliostats) and heliostat area. 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).

4.3.1 Total Fatality Estimates for Known Causes

There were 264 bird detections where the cause of death or injury could be determined and were facility related, of which 230 were included in the fatality estimate model (Tables 10a and 10b); of these 230 detections, 48 were from the ACC that were added unadjusted to the estimator output, to produce the total fatality estimate of known cause (Tables 11 and 12). There were 34 detections showing evidence of singeing or collision outside the ACC buildings that were not included in the fatality estimates; two were excluded because they were outside the standardized survey areas and 32 were excluded because they were determined to be older than the search interval.

Table 10a. Number of Bird Detections Based on Known Causes in Each Project Element Included or Excluded from Fatality Estimates, by Cause.

	Included			Excluded			
Location	Collision	Singed	Other	Collision	Singed	Other	Total
Tower Area	5	219	1*	0	32	0	257
Heliostat Area	3	2	0	2	0	0	7
Total	8	221	1	2	32	0	264

*These carcasses were found in the ACC unit with no sign of collision or singe and are attributed to entrapment.

Table 10b. Number of Bird Detections Based on Known Causes in Each Project Element Included or Excluded from Fatality Estimates, by Carcass Size.

	Included			Excluded			
Location	Large Birds	Small Birds	Raptors*	Large Birds	Small Birds	Raptors*	Total
Tower Area	11	214	2	3	29	0	257
Heliostat Area	2	3	0	1	1	0	7
Total	13	217	2	4	30	0	264

* All raptors are considered "Large Birds", therefore the number of raptor detections in a row or column is not added to the total.

Table 11. 2016 Fall Season Avian Fatality Estimates by Cause and Project Element (with Lower and Upper 90% Confidence Intervals) Based on Detections of Known Causes Included in the Model.

Location	Collision	Singed	Other*	Total Known Cause
Tower Area	N ≤ 5	760 (611-975)	1	781 (628-1002)
Heliostat Area	N ≤ 5	N ≤ 5	0	N ≤ 5
Total	163 (20-369)	948 (687-1327)	1	1112 (792-1548)

*These carcasses were found in the ACC unit with no sign of collision or singe and are attributed to entrapment.

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

Table 12. 2016 Fall Season Avian Fatality Estimates by Carcass Size and Project Element (with Lower and Upper 90% Confidence Intervals) Based on Detections of Known Causes Included in the Model.

Location	Large Birds	Small Birds	Raptors	Total
Tower Area	14 (13-15)	766 (602-966)	N ≤ 5	781 (628-1002)
Heliostat Area	N ≤ 5	N ≤ 5	0	N ≤ 5
Total	64 (14-164)	1047 (741-1477)	N ≤ 5	1112 (792-1548)

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

4.3.2 Fatality Estimate for Tower Area and Heliostat Area

Tables 11 and 12 present the fatality estimates for known causes within the tower area, broken down by cause or carcass size, respectively. A subset of the incidental detections in the power block were included within the tower area total estimate, due to the assumption of a daily search interval; those incidental detections in the power block which were determined to be older than 24 hours were not included in the fatality estimator. Estimates from the tower area should be interpreted with caution due to the inclusion of numerous incidental discoveries in the power block.

During the period 18 August – 20 October 2016 (64 days of monitoring), there were an estimated 1112 fatalities (90% confidence interval 792-1548) based on detections from known causes (i.e., singeing, collision; Table 11). An estimated 781 (90% confidence interval 628-1002) were in the tower area. There were only 5 detections of known cause in the heliostat area included in the model, therefore no estimate is presented; however, the contribution of fatalities is included in the overall known cause estimate since there were greater than 5 detections of known cause, overall. There were 1047 estimated small bird fatalities (90% confidence interval 741-1477; Table 12).

4.4 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. The methods for determining fatality estimates for these unknown detections are the same as those described in Section 5.2 for detections with direct evidence of the cause of the fatality (i.e., singeing, collision, or other).

There were 97 detections where the cause of death could not be determined, of which 78 were included in the fatality estimator (Tables 13a and 13b). Of the 23 detections of unknown cause excluded from the fatality estimator, all detections were determined to be older than the search interval.

Table 13a Number of Detections from Unknown Causes in Each Project Element, and Number Included in Fatality Estimates, by Cause.

Location	Included	Excluded	Total
Tower Area	49	16	65
Heliostat Area	25	7	32
Total	74	23	97

Table 13b. Number of Detections from Unknown Causes in Each Project Element, and Number Included in Fatality Estimates, by Carcass Size.

	Included			Excluded			
Location	Large Birds	Small Birds	Raptors*	Large Birds	Small Birds	Raptors*	Total
Tower Area	11	38	0	5	11	0	65
Heliostat Area	8	17	0	5	2	0	32
Total	19	55	0	10	13	0	97

* All raptors are considered "Large Birds", therefore the number of raptor detections in a row or column is not added to the total.

4.4.1 Total Fatality Estimates from Unknown Causes

During the period of 18 August– 20 October 2016, the total estimate of fatalities from unknown cause was 2051 (90% confidence interval 1270-3140; Table 14). An estimated 170 (90% confidence interval 136-216) were in the tower area, and an estimated 1881 (90% confidence interval 1112-2930) were in the heliostat area. Of the estimated unknown cause fatalities, small birds accounted for 91% of the estimated fatalities (Table 15). As shown in Table 15, the unknown fatality estimate in the heliostat area had low precision. This is due to the fact that (i) a smaller overall percentage of the heliostats are search under the Revision 13 of the Plan and (ii) the estimate is being driven by small bird feather spots. Thus, the unknown cause estimate is likely an overestimate and is not an accurate representation of project impact on birds.

Table 14. Site-Wide Fatality Estimates from Unknown Causes by Location, 18 August – 20 October 2016.

Project Area	Estimate (90% CI)
Tower Area	170 (136-216)
Heliostat Area	1881 (1112-2930)
Total	2051 (1270-3140)

Table 15. Site-Wide Fatality Estimates from Unknown Causes by Size and Location, 18 August – 20 October 2016.

Location	Large Birds	Small Birds	Raptors	Total
Tower Area	15 (14-16)	155 (122-201)	0	170 (136-216)
Heliostat Area	219 (91-358)	1662 (905-2690)	0	1881 (1112-2930)
Total	234 (105-373)	1817 (1075-2887)	0	2067 (1270-3140)

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

4.6 Regional Awareness Monitoring

During the 2016 Fall season, five injured birds were taken to rehab. During transfer of the injured bird, the biologist delivering the bird was not informed of other instances of an injured birds showing signs of singe being admitted to rehab. Further, neither the facility nor its designated biologist were contacted by any veterinarian or rehab center about singed birds brought in by non-project staff. In addition, Dr. Craig Himmelwright, who performs periodic raven surveys across the Ivanpah Valley has not reported signed detections occurring outside of the Project.

Section 5.0 Discussion

The 2016 fall season represented the continuation of standardized monitoring of avian and bat detections and avian use of the Ivanpah site as revised per the Avian & Bat Monitoring and Management Plan (2015).

5.1 Temporal Patterns in Detections

The number of detections reported per day was varied throughout the 2016 fall season with a higher number of detections per day recorded earlier in the fall migration season before October 7. The decrease in the number of detections per day towards the end of the 2016 fall season corresponded to a decrease in migrant activity according to BirdCast. A tower area search during the 2016 fall season is a look back over approximately 7 days, so it would be expected that the tower searches would reflect the accumulation of carcasses over that time span.

5.2 Spatial Patterns in Detections and Fatality Estimates

The distribution of known cause detections varied by facility area; over 99% of signed detections were found in the tower area, and collision detections were found in the tower area and heliostat area. Unknown cause detections accounted for approximately 26.9% of all detections during the 2016 fall season. Of the unknown cause detections, 77.3% were feather spots or partial carcasses that showed signs of scavenging. As noted above, the unknown fatality estimate in the heliostat area had low precision due largely to the fact that (i) a smaller overall percentage of the heliostats are search under the Revision 13 of the Plan and (ii) the estimate is being driven by small bird feather spots. Determining a cause of mortality from a feather spot or partial carcass is challenging because sources of mortality such as collision or predation would rarely leave visible evidence on the feathers as would flux effects. Thus, feather spots with an unknown cause of mortality could be encountered anywhere birds occur, and an unknown cause of mortality is not unique to the Project. Further, the large proportion of feather spots among the detections for the Project as a whole may inflate the fatality estimate when unknown cause detections are included based on the potential for multiple feather spots resulting from one fatality, feather spots resulting from predation not associated with the facility, or other causes. Thus, the fatality estimate for unknown cause detections in the heliostat area is driven by small birdsfeather spots, and is not an accurate representation of the Project impacts on birds.

Section 6.0 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."

Only limited conclusions can be drawn from the 2016 fall season fatality data owing to the low numbers of detections within "a particular species or group of species"; however, the results indicate that the potential migratory bird mortality by species or groups of species from this project would be categorized as low. A more complete analysis will be conducted for the annual report. Approximately 66% of the detections were songbirds, and in general songbirds 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 songbird species is expected to have negligible effects on population dynamics.

None of the 28 identifiable species represented by more than three detections is particularly rare locally, regionally, or nationally. Rather, all 28 species are relatively abundant and widespread. Special-status species recorded as detections were 61 yellow warbler (California species of special concern for nesting individuals) and four loggerhead shrike, (California species of special concern for nesting individuals), and one peregrine falcon (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 and thus, there is no local population for evaluation. An estimated 600,000 yellow warblers occur regionally within California and an estimated 34,000,000 occur nationally in the United States (Partners in Flight Science Committee 2013). The 61 yellow warblers detected represented a very small proportion of these populations; thus, the estimated yellow warbler fatalities during the 2016 fall season does not rise above the "low" category, as loss of this magnitude would have a minimal effect on populations at all geographic scales (regional or national).

The loggerhead shrike is common in desert habitats of California, despite its declines in other regions. The southeastern deserts represent one of the areas of highest abundance in the state (Humple 2008), and Breeding Bird Survey data indicate no significant population trends in the Sonoran and Mojave

Deserts between 2003 – 2013 (Sauer et al. 2014). The North American population of this species is estimated at 4,900,000 birds (Partners in Flight Science Committee 2013), and the California population is estimates at 400,000. The Project occurs within bird conservation region (BCR) 33 (Sonoran and Mojave Deserts), and there are an estimated 150,000 birds within BCR 33 in California, which best represents the regional population. No local population estimates are available for the Ivanpah Valley. The four loggerhead shrikes detected represented a very small proportion of these populations; thus, the estimated loggerhead shrike fatalities during the 2016 fall season does not rise above the "low" category, as loss of this magnitude would have a minimal effect on populations at all geographic scales (regional or national).

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 or national population and does not rise above the "low" category.

Section 7.0 Literature Cited

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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	Nearest Project Feature	UTM Coordinates	SPUT Revisions
2016_301_ISEGS	Cliff Swallow	CLSW	Incidental	8/19/2016	8/19/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to all flight feathers; singeing to head, nape, and back.	Scorched or singed	2~3	2	Powerblock	638642, 3935880	NA
2016_302_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	8/20/2016	8/20/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singeing to tail feathers and in right wing.	Scorched or singed	1	2	Powerblock	638640, 3935861	NA
2016_303_ISEGS	Northern Rough-winged Swallow	NRWS	Incidental	8/20/2016	8/20/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. No evidence of collision or singe.	Unknown		2	Powerblock	638646, 3935862	NA
2016_304_ISEGS	Unknown Small Bird	UNID	Incidental	8/24/2016	8/24/2016	Broken up	2 weeks	Broken up carcass consisting of partial left wing. Evidence of curling and singeing to all flight feathers.	Scorched or singed	Unk	3	Powerblock	637476, 3937931	NA
2016_305_ISEGS	Wilson's Warbler	WIWA	Incidental	8/26/2016	8/26/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Tail and tip of some primaries and secondaries curled. Nape, rump, and flanks singed.	Scorched or singed	1~3	3	Powerblock	637442, 3937890	NA
2016_306_ISEGS	Yellow Warbler	YWAR	Incidental	8/26/2016	8/26/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe on al primaries on right wing, left wing. Curling of secondaries on left wing, singe and curl on tail feathers, crown feathers, and contour feathers.	Scorched or singed	2	3	Powerblock	637428, 3937866	NA
2016_307_ISEGS	Yellow Warbler	YWAR	Incidental	8/26/2016	8/26/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Singe behind left eye, on nape. Rump with singe. Left wing with singe.	Scorched or singed	1~3	3	Powerblock	637433, 3937954	NA
2016_308_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries, secondaries, and tail, singeing to head, nape.	Scorched or singed	2~3	3	ACC Building	637465, 3937942	NA
2016_309_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Broken up	3-6 days	Broken up carcass consisting of 2 feet and legs, partial wings, 2 partial retrices, and 70 body feathers. Evidence of singe of flight feathers of partial wings.	Scorched or singed	Unk	3	Powerblock	637460, 3937873	NA
2016_310_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	8/29/2016	8/29/2016	Dead, Semi-fresh (eyes desiccated, rigor	3-6 days	Whole carcass. Singe to tips of primaries in left wing.	Scorched or singed	1	3	Powerblock	637442, 3937896	NA

						mortis)								
2016_311_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers in wings with tail being singed off, singeing to contour feathers.	Scorched or singed	2~3	3	Powerblock	637449, 3937913	NA
2016_312_ISEGS	Unknown Warbler	UNWA	Carcass Survey	8/29/2016	8/29/2016	Broken up	3-6 days	Broken up carcass consisting of body with detached head. Evidence of all flight feathers being singed off, singeing to majority of body feathers.	Scorched or singed	2~3	3	Powerblock	637448, 3937921	NA
2016_313_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/29/2016	8/26/2016	Broken up	2 weeks	Partial carcass, with partial skull, right leg, wings attached to sternum with partial ribs. Singe and curling present on all remaining feathers.	Scorched or singed	2~3	3	Powerblock	637436, 3937943	NA
2016_314_ISEGS	Rufous Hummingbird	RUHU	Carcass Survey	8/29/2016	8/29/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Tail singed off, curling in flight feathers in both wings. Singe on right and left side of face, on throat, back, and entire underside of body/	Scorched or singed	2~3	3	Powerblock	637401, 3937924	NA
2016_315_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/29/2016	8/29/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primary feathers.	Scorched or singed	1	3	Powerblock	637455, 3937939	NA
2016_316_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Broken up	2 days	Broken up carcass consisting of skull, both legs, part of lower torso, 95 body feathers, ten retrices, partial left and right wing. Evidence of singeing to head, flight feathers in left and right wing, and retrices.	Scorched or singed	2~3	3	Powerblock	637528, 3937929	NA
2016_317_ISEGS	Mourning Dove	MODO	Incidental	8/29/2016	8/29/2016	alive, injured	0-8 hours	Alive. Bird was found unable to fly, and was brought back to office for observation and rehab. No apparent injuries, possible fatigue and stress.	Unknown		3	Heliostat	637735, 3937868	CJM updated outcome and notes on 31 August 2016
2016_318_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. All flight feathers curled or singed off. Singe on all upperparts.	Scorched or singed	2~3	3	Powerblock	637550, 3937919	NA
2016_319_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/29/2016	8/29/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Curling on tips of primaries and secondaries. Singe on nape and back.	Scorched or singed	1~3	3	Powerblock	637442, 3937963	NA
2016_320_ISEGS	Wilson's	WIWA	Carcass	8/29/2016	8/29/2016	Dead, fresh	0-8 hours	Whole carcass. Head feathers singed.	Scorched or	1~3	3	Berm	637357,	NA

	Warbler		Survey			(eyes moist)		Some singe to flight feathers observed through microscope.	singed				3937828	
2016_321_ISEGS	Unknown Swallow	UNSW	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Feather spot size small, consisting of 5 primaries, and 1 secondary. Evidence of curling to 3 primaries, singeing to other 2.	Scorched or singed	Unk	1	Powerblock	640291, 3933455	NA
2016_322_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to all major flight feathers in both wings and in tail, singeing to top of head and in left axillary.	Scorched or singed	2~3	1	ACC Building	640385, 3933520	NA
2016_323_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of singeing to throat, top of head, both sides of face, both axillaries, left flank, and all feathers in both wings and in tail singed off.	Scorched or singed	2~3	1	ACC Building	640380, 3933519	NA
2016_324_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to both wings, singe to head and body.	Scorched or singed	3	2	Powerblock	638635, 3935879	NA
2016_325_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	8/30/2016	8/30/2016	Mummified	2 weeks	Whole carcass. Evidence of curling to tail feathers and left primaries, singe to right primaries.	Scorched or singed	2~3	2	Powerblock	638683, 3935846	NA
2016_326_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to primaries, secondaries in both wings and in central rects, singeing to top of head and left side of face, left upper breast.	Scorched or singed	2~3	1	ACC Building	640378, 3933528	NA
2016_327_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries, secondaries, and in rectrices; singe on back and head, and in wing coverts.	Scorched or singed	2~3	1	ACC Building	640384, 3933531	NA
2016_328_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to flight feathers in right wing and several rects, singeing to greater/median coverts in left wing.	Scorched or singed	1	1	ACC Building	640358, 3933528	NA
2016_329_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/30/2016	8/30/2016	Broken up	3-6 days	Feather spot size = small. Two left wing primaries and greater coverts intact with flesh. Singe present on primaries.	Scorched or singed	1	2	Powerblock	638681, 3935854	NA
2016_330_ISEGS	MacGillivray's Warbler	MGWA	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh	2 days	Whole carcass. Evidence of curling to all flight feathers in wings and tail,	Scorched or singed	2~3	1	ACC Building	640350, 3933534	NA

						(eyes desiccated, rigor mortis)		singe to right side of face.						
2016_331_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	9/6/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singeing to primaries in left wing.	Scorched or singed	1	1	ACC Building	640405, 3933540	NA
2016_332_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to primaries and secondaries on right wing, tertials of left wing, and chin.	Scorched or singed	2~3	2	Heliostat	638539, 3936044	NA
2016_333_ISEGS	Mourning Dove	MODO	Carcass Survey	8/30/2016	8/30/2016	Broken up	3-6 days	Feather spot size = small. Left wing with 3 primaries, 2 coverts, right wing with 6 primaries, 4 coverts. 8 body feathers, 2 primaries, 5 rectrices. Singe on rectrices, secondaries, body feathers.	Scorched or singed	Unk	2	Powerblock	638645, 3935884	NA
2016_334_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Entire carcass singed with curling on wings and tail.	Scorched or singed	2~3	1	Powerblock	640372, 3933500	NA
2016_335_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	8/30/2016	8/30/2016	Mummified	3-6 days	Whole carcass, head missing. Singe on all primaries, retrices curled.	Scorched or singed	2~3	2	Powerblock	638639, 3935876	NA
2016_336_ISEGS	Verdin	VERD	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers and rects with some particular feathers singed off, singe to wing coverts.	Scorched or singed	2~3	1	Powerblock	640376, 3933499	NA
2016_337_ISEGS	Unknown Grebe	UNGR	Carcass Survey	8/30/2016	8/30/2016	Feather spot	2 weeks	Feather spot size = large. 1000-2000 contour feathers. No singe.	Unknown		1	Powerblock	640369, 3933503	NA
2016_338_ISEGS	House Wren	HOWR	Carcass Survey	8/30/2016	8/30/2016	Broken up	1 month +	Broken up carcass consisting of partial left wing, 1 detached leg, exposed rib cage, skull, sternum, right wing, 50 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638610, 3936066	NA
2016_339_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to secondaries and coverts in right wing.	Scorched or singed	1	2	ACC Building	638680, 3935913	NA
2016_340_ISEGS	Cliff Swallow	CLSW	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to flight feathers in wings and tail; singe to head and face.	Scorched or singed	2~3	2	ACC Building	638669, 3935881	NA

2016_341_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/30/2016	8/30/2016	Feather spot	3-6 days	Feather spot size small, consisting of 100+ body feathers. No evidence of collision or singe.	Unknown		1	Powerblock	640392, 3933484	NA
2016_342_ISEGS	Mourning Dove	MODO	Carcass Survey	8/30/2016	8/30/2016	Feather spot	3-6 days	Feather spot size small, consisting of 3 retrices, 1 body feather, 3 primaries, and 1 secondary. Evidence of singe to 1 of the primaries.	Scorched or singed	1	1	Powerblock	640390, 3933484	NA
2016_343_ISEGS	Black-Headed Grosbeak	BHGR	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Curling to flight feathers, with singeing to contour feathers.	Scorched or singed	2~3	2	ACC Building	638667, 3935907	NA
2016_344_ISEGS	Lucy's Warbler	LUWA	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. No evidence of collision or singe.	Unknown		2	ACC Building	638661, 3935895	NA
2016_345_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers and tips of retrices, singe to head and back.	Scorched or singed	2~3	2	ACC Building	638653, 3935895	NA
2016_346_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singe to nape, back, and belly.	Scorched or singed	2~3	2	ACC Building	638637, 3935891	NA
2016_347_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to flight feathers in left wing with right wing and tail singed off, singeing to breast and rump.	Scorched or singed	2~3	2	ACC Building	638678, 3935881	NA
2016_348_ISEGS	Black-chinned Hummingbird	BCHU	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to tail feathers, singe to left side of face and right breast.	Scorched or singed	1~3	1	Powerblock	640287, 3933535	NA
2016_349_ISEGS	Yellow Warbler	YWAR	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singe and curl on all flight feathers, and majority of head/dorsal area.	Scorched or singed	2~3	2	Powerblock	638617, 3935885	NA
2016_350_ISEGS	Mourning Dove	MODO	Carcass Survey	8/30/2016	8/30/2016	Feather spot	2 weeks	Feather spot size small, consisting of 2 primaries, 4 secondaries, 1 retrix, and 30 body feathers. No evidence of collision or singe.	Unknown		1	Powerblock	640361, 3933498	NA

2016_351_ISEGS	Unknown Swallow	UNSW	Carcass Survey	8/30/2016	8/30/2016	Broken up	2 days	Right wing, separated from carcass (not found). Singe and curl present on underwing primaries.	Scorched or singed	Unk	2	Powerblock	638565, 3935912	NA
2016_352_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	8/30/2016	8/30/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, singed on tips of retrices.	Scorched or singed	1	1	Powerblock	640364, 3933500	NA
2016_353_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/30/2016	8/30/2016	Feather spot	2 days	Feather spot size small consisting of 2 primaries. Evidence of singe on both primaries.	Scorched or singed	Unk	1	Powerblock	640355, 3933497	NA
2016_354_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/30/2016	8/30/2016	Feather spot	2 days	Feather spot size = small. 1 secondary, 15 body feathers, 1 trailing secondary. Singe on secondary, visible under scope.	Scorched or singed	1	1	Powerblock	640354, 3933497	NA
2016_355_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	8/30/2016	8/30/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primary and secondary covert feathers.	Scorched or singed	1	1	Powerblock	640271, 3933509	NA
2016_356_ISEGS	Cinnamon Teal	CITE	Carcass Survey	8/30/2016	8/30/2016	Feather spot	3-6 days	Feather spot size large consisting of 8 secondaries, 5 tail feathers, and 50 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638583, 3936063	NA
2016_357_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/30/2016	8/30/2016	Broken up	2 weeks	Broken up carcass consisting of partial wing composed of 4 primaries and 4 coverts. No evidence of collision or singe.	Unknown		2	Heliostat	638853, 3935881	NA
2016_358_ISEGS	Unknown Teal	TEAL	Carcass Survey	8/31/2016	8/31/2016	Broken up	8-24 hours	Broken up carcass consisting of wing and part of breast, 9 retrices, and 25 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638233, 3936964	NA
2016_359_ISEGS	Unknown Small Bird	UNID	Carcass Survey	8/31/2016	8/31/2016	Broken up	3-6 days	Feather spot size = small. Secondary feather with coverts and attached flesh. Singe on tip of secondary.	Scorched or singed	Unk	1	Heliostat	640334, 3933355	NA
2016_360_ISEGS	Tree Swallow	TRES	Carcass Survey	8/31/2016	8/31/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass with singe present on entirety of body. Witnessed passing through flux by surveyors.	Scorched or singed	Unk	2	Powerblock	638680, 3935878	NA
2016_361_ISEGS	Western Tanager	WETA	Incidental	8/31/2016	8/31/2016	alive, injured	0-8 hours	Alive. Singe on majority of body, flight feathers, tail.	Scorched or singed	2~3	2	Heliostat	638835, 3935838	NA
2016_362_ISEGS	Mourning Dove	MODO	Carcass Survey	8/31/2016	8/31/2016	Feather spot	3-6 days	Feather spot size = large. Six secondaries, 100+ body feathers. No singe.	Unknown		1	Heliostat	640600, 3933515	NA
2016_363_ISEGS	Rock Pigeon	ROPI	Carcass Survey	8/31/2016	8/31/2016	Feather spot	2 weeks	Feather spot size = large. 2 primaries, 10 secondary, 100+ body. Singe on tips of secondaries and majority of body feathers.	Scorched or singed	Unk	1	Heliostat	640525, 3933587	NA

2016_364_ISEGS	Unknown Teal	TEAL	Carcass Survey	8/31/2016	8/31/2016	Broken up	3-6 days	Broken up carcass consisting of right wing, partial left wing, 11 trailing secondaries, 20 secondaries, 23 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638334, 3936954	NA
2016_365_ISEGS	Cinnamon Teal	CITE	Carcass Survey	9/1/2016	9/1/2016	Broken up	3-6 days	Broken up carcass consisting of head only. Evidence of collision by beak being cracked and bent.	Collision with solar panel/heliostat	2	Heliostat	639647, 3935399	NA	
2016_366_ISEGS	Western Tanager	WETA	Carcass Survey	9/1/2016	9/1/2016	Broken up	2 days	Broken up carcass consisting of entire body with exception of head, 109 body feathers. No evidence of collision of singe.	Unknown		2	Heliostat	639351, 3935576	NA
2016_367_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/1/2016	9/1/2016	Feather spot	1 month +	Feather spot consisting of 6 retrices, 40 body feathers. Evidence of collision with broken shafts on feathers all pinned at one point in the heliostat worm drive.	Collision with solar panel/heliostat	2	Heliostat	637774, 3935735	NA	
2016_368_ISEGS	Mourning Dove	MODO	Carcass Survey	9/1/2016	9/1/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. No evidence of collision or singe.	Unknown		2	Heliostat	637810, 3935325	NA
2016_369_ISEGS	Unknown Small Bird	UNID	Incidental	9/1/2016	9/1/2016	Broken up	2 weeks	Broken up carcass consisting of a partial left wing. No evidence of collision or singe.	Unknown		2	Heliostat	639409, 3935821	NA
2016_370_ISEGS	Semipalmated Sandpiper	SESA	Incidental	9/4/2016	9/4/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass, Singeing present on crown, nape, scapulars, and back	Scorched or singed	2~3	2	Powerblock	638635, 3935888	NA
2016_371_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	alive, injured	NA	NA	Scorched or singed	2~3	3	Heliostat	637483, 3937771	NA
2016_372_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	9/5/2016	9/5/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass, Primaries, secondaries and retricies show curling with some singed off. All body feathers show some singeing.	Scorched or singed	2~3	3	ACC Building	637483, 3937955	NA
2016_373_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass, 70% of primaries and secondaries curled. Retricies curled at tip. Top of head singed.	Scorched or singed	2~3	3	ACC Building	637501, 3937979	NA
2016_374_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass, singe on head, neck and flight feathers.	Scorched or singed	1~3	3	ACC Building	637479, 3937979	NA
2016_375_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	8-24 hours	Whole Carcass, Singeing on tips of all primaries and on 6 retricies.	Scorched or singed	2	3	ACC Building	637455, 3937980	NA
2016_376_ISEGS	Western	WETA	Carcass	9/5/2016	9/5/2016	alive,	NA	NA	Scorched or	2~3	3	Powerblock	637477,	NA

	Tanager		Survey			injured			singed				3937848	
2016_377_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass, All flight feathers curled/singed. Singeing to nape, crown, back.	Scorched or singed	2~3	3	Heliostat	637418, 3937809	NA
2016_378_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	9/5/2016	9/5/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole Carcass, Curling on tertial feathers. Singeing on inner retricies.	Scorched or singed	1	3	Heliostat	637250, 3937888	NA
2016_379_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Broken up	0-8 hours	Broken up, 2 legs, 35 body feathers, partial left wing with 5 primaries a cluster of connected body feathers, Nine primaries from right wing, 8 retricies, 18 secondaries and 7 coverts. Singeing to primaries.	Scorched or singed	1~3	3	Heliostat	637391, 3937819	NA
2016_380_ISEGS	Western Tanager	WETA	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass, all primaries, secondaries and tail feathers singed off. Most of upper and underparts singed.	Scorched or singed	2~3	3	Powerblock	637479, 3937936	NA
2016_381_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/5/2016	9/5/2016	alive, injured	NA	NA	Scorched or singed	2~3	3	Powerblock	637520, 3937932	NA
2016_382_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass, Curling of Primaries, secondaries and retricies. Singed contour feathers on head and breast	Scorched or singed	2~3	3	Powerblock	637529, 3937922	NA
2016_383_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass, curling and singe of flight feathers and body feathers.	Scorched or singed	2~3	3	Powerblock	637487, 3937934	NA
2016_384_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	alive, injured	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, singeing to crown, nape, and flanks.	Scorched or singed	2~3	3	Powerblock	637477, 3937924	NA
2016_385_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass, all primaries and secondaries curled. Tail singed off. Head, back and rump is singed.	Scorched or singed	2~3	3	Powerblock	637427, 3937876	NA
2016_386_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Primaries, secondaries and retricies singed off. Singed on majority of upperparts and underparts.	Scorched or singed	2~3	3	Powerblock	637437, 3937879	NA
2016_387_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Primaries, secondaries and retricies singed off. Singed on all of upperparts. Head and Face singed.	Scorched or singed	2~3	3	Powerblock	637466, 3937867	NA
2016_388_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Right wing primaries and secondaries singed. 6th and 7th secondary curled. One tail feather singed.	Scorched or singed	1	3	Heliostat	637584, 3937982	NA

2016_389_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass. All primaries, secondaries and retricies curled. Rump, back, and nape singed.	Scorched or singed	2~3	3	Heliostat	637579, 3937942	NA
2016_390_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/5/2016	9/5/2016	Feather spot	3-6 days	Featherspot, 35 body feathers with no singe present.	Unknown		3	Powerblock	637385, 3937943	NA
2016_391_ISEGS	Lazuli Bunting	LAZB	Carcass Survey	9/5/2016	9/5/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass, singeing present on nape.	Scorched or singed	1~3	3	Berm	637464, 3938062	NA
2016_392_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to tertials with tail singed off and flight feathers in wings nearly singed off, singeing to all dorsal contour feathers and face.	Scorched or singed	2~3	2	ACC Building	638679, 3935907	NA
2016_393_ISEGS	Tree Swallow	TRES	Carcass Survey	9/6/2016	9/6/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers in wings with tail singed off, singeing present on back, face, cap, and gape.	Scorched or singed	2~3	2	ACC Building	638677, 3935884	NA
2016_394_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/6/2016	9/6/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singeing to head and breast with all flight feathers in wings and tail singed off.	Scorched or singed	2~3	2	ACC Building	638641, 3935883	NA
2016_395_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/6/2016	9/6/2016	Broken up	1 month +	Broken up carcass consisting of right side of rib cage, vertebrae, skin and contour feathers. No evidence of collision or singe.	Unknown		2	Powerblock	638695, 3935873	NA
2016_396_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/6/2016	9/6/2016	Feather spot	3-6 days	Feather spot size large, consisting of 3 primaries, 6 secondaries, and a cluster of body feathers and 1 wing covert. Evidence of singeing to primary in right wing.	Scorched or singed	Unk	1	Powerblock	640354, 3933478	NA
2016_397_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to head, nape, back, and rump, with majority of flight feathers singed off.	Scorched or singed	2~3	2	Powerblock	638664, 3935868	NA
2016_398_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/6/2016	9/6/2016	Feather spot	2 days	Feather spot size small, consisting of 3 primaries, 1 outer rect, 10 contour feathers. Evidence of singe on primaries, curling to retrice.	Scorched or singed	Unk	1	Powerblock	640353, 3933479	NA
2016_399_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries and retrices, singeing to wing coverts, breast and head.	Scorched or singed	2~3	2	Powerblock	638626, 3935881	NA
2016_400_ISEGS	Mourning Dove	MODO	Carcass Survey	9/6/2016	9/6/2016	Feather spot	3-6 days	Feather spot size large consisting of 3 primaries, 1 secondary, 11 retrices, 2	Scorched or singed	Unk	1	Powerblock	640358, 3933487	NA

								clumps of body feathers. Evidence of singeing to retrices.						
2016_401_ISEGS	Nashville Warbler	NAWA	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, singeing to nape.	Scorched or singed	2~3	2	Powerblock	638603, 3935924	NA
2016_402_ISEGS	Lazuli Bunting	LAZB	Carcass Survey	9/6/2016	9/6/2016	alive, injured	0-8 hours	Whole carcass. Evidence of curling to retrices, singeing to breast, neck, and head.	Scorched or singed	1~3	1	Powerblock	640282, 3933507	NA
2016_403_ISEGS	Unknown Bunting	UNBU	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to majority of flight feathers, singeing to head, belly, nape, rump, and chest.	Scorched or singed	2~3	2	Powerblock	638659, 3935873	NA
2016_404_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/6/2016	9/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass in addition to 4 retrices. Evidence of curling to tail feathers, singeing to primary and secondary flight feathers, crown, nape, and wing coverts.	Scorched or singed	2~3	2	Powerblock	638574, 3935848	NA
2016_405_ISEGS	Cactus Wren	CACW	Carcass Survey	9/6/2016	9/6/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing, 7 individual primaries, 10 secondaries, 2 retrices, and 5 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638824, 3935804	NA
2016_406_ISEGS	Mourning Dove	MODO	Carcass Survey	9/7/2016	9/7/2016	Feather spot	3-6 days	Feather spot size large consisting of 7 primaries, 3 secondaries, a wing covert, 110 body feathers. No evidence of singe or collision.	Unknown		1	Heliostat	640166, 3933630	NA
2016_407_ISEGS	Unknown Oriole	UNOR	Carcass Survey	9/7/2016	9/7/2016	Feather spot	2 weeks	Feather spot size small, consisting of 6 retrices, 2 primaries, 1 secondary, and 40 contour feathers. Evidence of singe on 1 secondary feather.	Scorched or singed	Unk	1	Heliostat	640459, 3933323	NA
2016_408_ISEGS	Chipping Sparrow	CHSP	Incidental	9/7/2016	9/7/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to all flight feathers in wings and tail, singeing to back, head, and chest.	Scorched or singed	2~3	3	Powerblock	637439, 3937937	NA
2016_409_ISEGS	Orange-crowned Warbler	OCWA	Incidental	9/7/2016	9/7/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to tail, singeing to secondaries, primaries, left upper breast and face.	Scorched or singed	2~3	3	Powerblock	637444, 3937944	NA
2016_410_ISEGS	Black-throated Gray Warbler	BTYW	Incidental	9/7/2016	9/7/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to flight feathers in wings and tail, singeing to crown, cheek, throat, and breast.	Scorched or singed	2~3	3	Powerblock	637446, 3937952	NA
2016_411_ISEGS	Lazuli Bunting	LAZB	Incidental	9/7/2016	9/7/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, head and breast singed.	Scorched or singed	2~3	2	Powerblock	638767, 3935883	NA
2016_412_ISEGS	Unknown Dove	UNDV	Carcass Survey	9/7/2016	9/7/2016	Broken up	2 weeks	Broken up carcass consisting of 3 covert feathers, 20 contour feathers, and humerus bone. Evidence of singe on 2 body feathers.	Scorched or singed	Unk	1	Heliostat	640543, 3933419	NA

2016_413_ISEGS	Unknown Waterfowl	UNWF	Carcass Survey	9/7/2016	9/7/2016	Broken up	2 days	Feather spot size large, consisting of 50 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640480, 3933464	NA
2016_414_ISEGS	Lazuli Bunting	LAZB	Incidental	9/7/2016	9/7/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to tail feathers, singeing to top of head and rump.	Scorched or singed	Unk	2	Powerblock	638676, 3935883	NA
2016_415_ISEGS	American Avocet	AMAV	Carcass Survey	9/8/2016	9/8/2016	Broken up	2 weeks	Broken up carcass consisting of partial wing, 5 primaries, 10 secondaries, and 75 contour feathers. No evidence of collision or singe.	Unknown		2	Heliostat	639481, 3936942	NA
2016_416_ISEGS	Yellow Warbler	YWAR	Incidental	9/8/2016	9/8/2016	Broken up	2 days	Broken up carcass consisting of partial left wing. Evidence of slight singeing to edge of inner webs of secondaries.	Scorched or singed	Unk	3	Powerblock	638626, 3935626	NA
2016_417_ISEGS	Yellow Warbler	YWAR	Incidental	9/8/2016	9/8/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to right side or rectrices, singeing to tips of primaries and right flank.	Scorched or singed	1~3	3	Powerblock	638567, 3935829	NA
2016_418_ISEGS	Hermit Warbler	HEWA	Incidental	9/8/2016	9/8/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all major flight feathers, singeing to all parts of body except abdomen and flanks.	Scorched or singed	2~3	3	Powerblock	638589, 3935892	NA
2016_419_ISEGS	Brown-headed cowbird	BHCO	Incidental	9/9/2016	9/9/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 weeks	Whole carcass. Evidence of curling to rectrices, secondaries, and rectrices, singeing to head and body.	Scorched or singed	2~3	2	Powerblock	638656, 3935854	NA
2016_420_ISEGS	Blue-Gray Gnatcatcher	BGGN	Incidental	9/9/2016	9/9/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singe on 1 primary in right wing.	Scorched or singed	Unk	1	Powerblock	640382, 3933503	NA
2016_421_ISEGS	Black-Throated Sparrow	BTSP	Incidental	9/9/2016	9/9/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. No evidence of singe or collision.	Unknown		1	Powerblock	640354, 3933490	NA
2016_422_ISEGS	Orange-crowned Warbler	OCWA	Incidental	9/10/2016	9/10/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries, secondaries, and rectrices. Singeing to back, head, and left flank.	Scorched or singed	2~3	2	Powerblock	638619, 3935848	NA
2016_423_ISEGS	Cliff Swallow	CLSW	Incidental	9/11/2016	9/11/2016	Mummified	2 weeks	Whole carcass. Evidence of singe on most flight feathers.	Scorched or singed	2	3	Powerblock	637417, 3937958	NA

2016_424_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to primaries and secondaries, retrices singed off, singeing to head, back, and on wings.	Scorched or singed	2~3	3	ACC Building	637470, 3937943	NA
2016_425_ISEGS	Say's Phoebe	SAPH	Carcass Survey	9/12/2016	9/12/2016	Mummified	3-6 days	Whole carcass. Evidence of singeing to retrices and upper chest area.	Scorched or singed	1	3	ACC Building	637454, 3937955	NA
2016_426_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singe to head nape, and right side of face.	Scorched or singed	1	3	ACC Building	637490, 3937977	NA
2016_427_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/12/2016	9/12/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to retrices.	Scorched or singed	1	3	Powerblock	637485, 3937960	NA
2016_428_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 days	Broken up carcass consisting of partial left wing comprised of 9 primaries and coverts. Evidence of singe on primaries.	Scorched or singed	Unk	3	Powerblock	637431, 3937926	NA
2016_429_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of 2 wings, 15 primaries, and 6 secondaries. Evidence of curling to seven primaries.	Scorched or singed	Unk	3	Powerblock	637437, 3937917	NA
2016_430_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	9/12/2016	9/12/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. No evidence of singe or collision.	Unknown		3	Heliostat	637269, 3937982	NA
2016_431_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of 3 different portions of a wing. Curling to all flight feathers.	Scorched or singed	Unk	3	Powerblock	637411, 3937918	NA
2016_432_ISEGS	Mourning Dove	MODO	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing. No evidence of collision or singe.	Unknown		3	Powerblock	637489, 3937852	NA
2016_433_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries in left wing with right wing and tail singed off, singeing to crown, breast, legs, flanks, belly, and face.	Scorched or singed	2~3	3	Powerblock	637447, 3937849	NA
2016_434_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers, singeing to body and rump.	Scorched or singed	2	3	Powerblock	637421, 3937911	NA
2016_435_ISEGS	Horned Lark	HOLA	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 weeks	Broken up carcass consisting of partial left wing comprised of seven primaries, four secondaries, and	Unknown		3	Powerblock	637415, 3937926	NA

								wing coverts. No evidence of singe or collision.						
2016_436_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 days	Broken up carcass consisting of partial wing portion and 1 primary. Evidence of singe on 3 primaries.	Scorched or singed	Unk	3	Powerblock	637438, 3937930	NA
2016_437_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 weeks	Broken up carcass consisting of base of 2 flight feathers still attached to underwing coverts by dried skin, 3 primaries, 2 retrices, 2 contour feathers. No evidence of singe or collision.	Unknown		2	Heliostat	639012, 3936175	NA
2016_438_ISEGS	Lazuli Bunting	LAZB	Carcass Survey	9/12/2016	9/12/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to all flight feathers, extensive singeing on head, back, and rump.	Scorched or singed	2	3	Powerblock	637458, 3937926	NA
2016_439_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/12/2016	9/12/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to tips of tail feathers and right side of face.	Scorched or singed	1	3	Heliostat	637316, 3938079	NA
2016_440_ISEGS	Chestnut-sided Warbler	CSWA	Carcass Survey	9/12/2016	9/12/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to all flight feathers in wings, singeing to crown, nape, back, and rump.	Scorched or singed	2~3	3	Powerblock	637458, 3937929	NA
2016_441_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primaries and retrices, secondaries on right wing curled, singeing to back.	Scorched or singed	2~3	3	Powerblock	637470, 3937926	NA
2016_442_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 days	Broken up carcass consisting of base of right wing. Evidence of curling to secondaries, singeing to coverts.	Scorched or singed	Unk	3	Powerblock	637472, 3937926	NA
2016_443_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of body and head together, left wing, and right wing detached from each other. Evidence of curling to flight feathers and wing coverts, singeing to head and back.	Scorched or singed	3	3	Powerblock	637481, 3937918	NA
2016_444_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of head, 2 detached wings. Evidence of curling to primaries in left wing, singeing to crown, and in flight feathers.	Scorched or singed	2~3	3	Powerblock	637467, 3937920	NA
2016_445_ISEGS	Unknown Dove	UNDV	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of right tarsus, 15 body feathers. Evidence of singe on 3 contour feathers.	Scorched or singed	Unk	3	Powerblock	637468, 3937912	NA
2016_446_ISEGS	Black-	BTYW	Carcass	9/12/2016	9/12/2016	Dead, fresh	8-24 hours	Whole carcass. Evidence of singeing	Scorched or	2~3	3	Powerblock	637459,	NA

	throated Gray Warbler		Survey			(eyes moist)		to crown, face, back, and rump, with all flight feathers singed off.	singed				3937913	
2016_447_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of body with tail but without head and wings, partial detached left wing consisting of 5 primaries. Evidence of singe on 2 retrices.	Scorched or singed	1	3	Powerblock	637393, 3037884	NA
2016_448_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/12/2016	9/12/2016	Broken up	2 weeks	Broken up carcass consisting of left side of torso with leg and tail. Evidence of curling to edges of rects and singeing to back.	Scorched or singed	3	3	Heliostat	637561, 3937787	NA
2016_449_ISEGS	Say's Phoebe	SAPH	Carcass Survey	9/12/2016	9/12/2016	Mummified	1 month +	Whole carcass. Evidence of singeing to tips of all primaries.	Scorched or singed	1	3	Powerblock	637400, 3937949	NA
2016_450_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Mummified	2 weeks	Whole carcass. Evidence of singe with both wings and tail singed off, and singeing to body.	Scorched or singed	2~3	3	Powerblock	637405, 3937951	NA
2016_451_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of both wings, 6 retrices, two legs, and a partial skeleton. Evidence of curling to primaries in both wings, singeing to tail.	Scorched or singed	2~3	3	Powerblock	637395, 3937960	NA
2016_452_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/12/2016	9/12/2016	Feather spot	3-6 days	Feather spot size small consisting of 25 body feathers. Evidence of singeing to body feathers.	Scorched or singed	3	3	Powerblock	637397, 3937959	NA
2016_453_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/12/2016	9/12/2016	Broken up	3-6 days	Broken up carcass consisting of head and body cavity with right wing and both legs attached, left wing. Evidence of singe to crown above bill on head.	Scorched or singed	3	3	Powerblock	637379, 3937981	NA
2016_454_ISEGS	Unknown Gnatcatcher	UNGN	Carcass Survey	9/12/2016	9/12/2016	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, breast, and wings.	Scorched or singed	2~3	3	Powerblock	637452, 3937945	NA
2016_455_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass. Singeing on left wing and extensive singeing on the tail.	Scorched or singed	1	2	Powerblock	638625, 3935841	NA
2016_456_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Curling to left wing with right wing and tail singed off. Singe on all ventral plumage, left axillary, right and left side of face.	Scorched or singed	2~3	1	ACC Building	640408, 3933521	NA

2016_457_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. Evidence of curling to retrices and primaries in both wings, singe to side of face.	Scorched or singed	1~3	2	Powerblock	638555, 3935890	NA
2016_458_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to right wing, rects and left wing singed off, singe to left face, nape, left and right flanks, back, and rump.	Scorched or singed	2~3	1	ACC Building	640387, 3933521	NA
2016_459_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to remaining of retrices, singe to tips of primaries and in both flanks and axillaries.	Scorched or singed	1~3	2	Powerblock	638642, 3935933	NA
2016_460_ISEGS	Hermit Warbler	HEWA	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to tail feathers, primaries, and secondaries, singeing to head, rump, and breast.	Scorched or singed	2~3	1	ACC Building	640397, 3933530	NA
2016_461_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling on tips of tail feathers and primaries. breast and head singed.	Scorched or singed	2~3	1	ACC Building	640366, 3933528	NA
2016_462_ISEGS	Brewer's Sparrow	BRSP	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole Carcass. Breast, throat, and head singed. Retricies curled.	Scorched or singed	1~3	1	ACC Building	640373, 3933542	NA
2016_463_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole Carcass. All primaries and secondaries show some curling. Retricies singed off. Rump Singed.	Scorched or singed	2~3	2	ACC Building	638643, 3935881	NA
2016_464_ISEGS	Wilson's Warbler	WIWA	Carcass Survey	9/13/2016	9/13/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Evidence of singeing to all flight feathers including primaries, secondaries, and tail feathers, back, and rump.	Scorched or singed	2~3	2	ACC Building	638635, 3935881	NA
2016_465_ISEGS	Peregrine Falcon	PEFA	Carcass Survey	9/13/2016	9/13/2016	alive, injured	0-8 hours	Whole carcass. Bird was brought in as an injury and later processed as a SPUT. Evidence of curling to primaries, secondaries, and rects, singeing to left side of breast, face, and eye.	Scorched or singed	2~3	1	Powerblock	640410, 3933484	NA

2016_466_ISEGS	Unknown Flycatcher	UNFL	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	8-24 hours	Whole Carcass. All primaries on right wing and part of left wing curled. Tip of tail singed. Left flank and breast singed.	Scorched or singed	2~3	2	Powerblock	638620, 3935900	NA
2016_467_ISEGS	House Finch	HOFI	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to retrices and secondaries, and primaries, singeing to head, back, rump, and breast.	Scorched or singed	2~3	2	Powerblock	638625, 3935931	NA
2016_468_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singe to right side of breast.	Scorched or singed	1~3	2	Powerblock	638733, 3935893	NA
2016_469_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/13/2016	9/13/2016	Broken up	8-24 hours	Broken up. Partial right wing with two primaries. 6 unattached primaries, 4 greater coverts, 20 body feathers and 2 secondaries. No evidence of collision or flux effect.	Unknown		2	Heliostat	638700, 3935619	NA
2016_470_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Feather spot	2 days	Feather spot. 5 secondaries from left wing, 2 secondaries from right wing, 3 retricies and 3 contour feathers. Contour feathers singed. Secondaries and retricies curled.	Scorched or singed	Unk	1	Powerblock	640351, 3933507	NA
2016_471_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/13/2016	9/13/2016	Feather spot	3-6 days	Feather Spot size small consisting of 1 secondary, 10 contour feathers. Evidence of singe on some contour feathers.	Scorched or singed	Unk	1	Powerblock	640365, 3933509	NA
2016_472_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/13/2016	9/13/2016	Broken up	3-6 days	Broken up. 20 body feathers held together by a piece of flesh. Tips of body feathers singed.	Scorched or singed	3	1	Powerblock	640365, 3933506	NA
2016_473_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/13/2016	9/13/2016	Feather spot	3-6 days	Feather spot size small, consisting of 2 flight feathers, 10 contour feathers. Evidence of curling to both flight feathers, singeing to contour feathers.	Scorched or singed	3	1	Powerblock	640380, 3933507	NA
2016_474_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/13/2016	9/13/2016	Feather spot	2 days	Featherspot. 9 primaries, 7 retricies, 8 secondaries and 12 contour feathers. No evidence of collision or flux.	Unknown		1	Powerblock	640397, 3933484	NA
2016_475_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	9/13/2016	9/13/2016	Feather spot	2 weeks	Feather spot size small consisting of 3 primaries. No evidence of collision or singe.	Unknown		1	Powerblock	640372, 3933481	NA
2016_476_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/13/2016	9/13/2016	Feather spot	3-6 days	Feather spot, cluster of 15 contour feathers. No evidence of collision or flux.	Unknown		3	Powerblock	637457, 3937979	NA
2016_477_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Broken up	2 weeks	Broken up carcass consisting of head, wings, and ribcage. Evidence of curling to left wing, singe to top of head.	Scorched or singed	Unk	2	Heliostat	638776, 3935984	NA

2016_478_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/13/2016	9/13/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Primaries, secondaries and retricies curled. Head, face, back and left flank singed.	Scorched or singed	2~3	1	Powerblock	640394, 3933495	NA
2016_479_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/14/2016	9/14/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to retrices, singeing to flight feathers in left wing, crown, face, breast, and belly.	Scorched or singed	2~3	1	Heliostat	640269, 3933669	NA
2016_480_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/14/2016	9/14/2016	Feather spot	0-8 hours	Feather spot size small consisting of 1 secondary, 70 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640398, 3933398	NA
2016_481_ISEGS	Western Kingbird	WEKI	Carcass Survey	9/14/2016	9/14/2016	Feather spot	2 days	Feather spot size small, consisting of 7 secondaries, 23 contour feathers, 3 retrices. Evidence of curling to 1 secondary, singeing to secondaries, and rects.	Scorched or singed	3	1	Heliostat	640154, 3933509	NA
2016_482_ISEGS	Orange-crowned Warbler	OCWA	Incidental	9/14/2016	9/14/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries and secondaries and to retrices, singeing to head, flanks, rump.	Scorched or singed	2~3	2	Powerblock	638616, 3935824	NA
2016_483_ISEGS	Brewer's Sparrow	BRSP	Incidental	9/14/2016	9/14/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, singeing to head, and breast.	Scorched or singed	2~3	3	Powerblock	637422, 3937870	NA
2016_484_ISEGS	Cassin's Kingbird	CAKI	Incidental	9/15/2016	9/15/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass. Secondaries and retricies curled. Primaries, back, head and breast singed.	Scorched or singed	1~3	2	Powerblock	638657, 3935845	NA
2016_485_ISEGS	Lesser Goldfinch	LEGO	Incidental	9/15/2016	9/15/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass. No evidence of singe of collision.	Unknown		3	Powerblock	637506, 3937909	NA
2016_486_ISEGS	Yellow Warbler	YWAR	Incidental	9/15/2016	9/15/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to left axillary, nape, both sides of head, crown, wing coverts, with all major flight feathers singed off.	Scorched or singed	2~3	3	Powerblock	637424, 3937886	NA
2016_487_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	9/16/2016	9/16/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to flight feathers in left wing and tail and tertial in right wing, singe to top of head.	Scorched or singed	1~2	3	Powerblock	637437, 3937889	NA
2016_488_ISEGS	Townsend's Warbler	TOWA	Incidental	9/16/2016	9/16/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. No evidence of collision or singe.	Unknown		3	Heliostat	637414, 3937750	NA
2016_489_ISEGS	Violet-green	VGSW	Carcass	9/19/2016	9/19/2016	Dead, fresh	0-8 hours	Whole carcass. Evidence of curling to	Scorched or	1~3	3	ACC	637501,	NA

	Swallow		Survey			(eyes moist)		primaries, secondaries in left wing and in tail. Singeing to head and left side of face, nape, upper back, and upper tail coverts.	singed			Building	3937943	
2016_490_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/19/2016	9/19/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to all flight feathers, singe to rump, shoulders and crown.	Scorched or singed	2~3	3	ACC Building	637494, 3937942	NA
2016_491_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/19/2016	9/19/2016	Feather spot	3-6 days	Feather spot size large consisting of 5 retrices, 5 primaries, 3 secondaries, 3 coverts, and 8 contour feathers. Evidence of curling to retrices.	Scorched or singed	Unk	3	Heliostat	637468, 3937788	NA
2016_492_ISEGS	Black-throated Gray Warbler	BTYW	Carcass Survey	9/19/2016	9/19/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to all major flight feathers, singe to rump, head, and coverts in both wings.	Scorched or singed	1~2	3	ACC Building	637468, 3937954	NA
2016_493_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/19/2016	9/19/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, singeing to head, face, and back.	Scorched or singed	2~3	3	ACC Building	637485, 3937954	NA
2016_494_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/19/2016	9/19/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to majority of flight feathers, singe to head, back, and rump.	Scorched or singed	2~3	3	ACC Building	637499, 3937967	NA
2016_495_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	9/19/2016	9/19/2016	alive, injured	0-8 hours	Alive bird. Evidence of curling to primaries, secondaries, and retrices, singeing to crown and nape.	Scorched or singed	2~3	3	Powerblock	637497, 3937926	NA
2016_496_ISEGS	Red-necked Phalarope	RNPH	Carcass Survey	9/19/2016	9/19/2016	Broken up	3-6 days	Broken up carcass consisting of partial right wing comprised of primaries, and head with exposed neck. Evidence of curling to primaries.	Scorched or singed	3	3	Powerblock	637415, 3937842	NA
2016_497_ISEGS	Black-tailed Gnatcatcher	BTGN	Carcass Survey	9/19/2016	9/19/2016	Broken up	3-6 days	Broken up carcass consisting of skeleton, 30 body feathers, 18 primaries, 6 secondaries, 3 retrices. Evidence of curling to 4 primaries.	Scorched or singed	Unk	3	Powerblock	637507, 3937942	NA
2016_498_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/19/2016	9/19/2016	Broken up	3-6 days	Broken up carcass consisting of partial wing portion with 9 additional primaries. Evidence of singe on tips of 2 primaries.	Scorched or singed	Unk	3	Powerblock	637446, 3937977	NA
2016_499_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/19/2016	9/19/2016	Broken up	2 days	Broken up carcass consisting of partial wing piece comprised of 2 flight feathers, 3 coverts, and 3 body feathers held together by skin. Evidence of singe to both flight feathers.	Scorched or singed	Unk	3	Powerblock	637445, 3937973	NA
2016_500_ISEGS	Western Tanager	WETA	Carcass Survey	9/20/2016	9/20/2016	Dead, Semi-fresh (eyes desiccated,	8-24 hours	Whole carcass. Evidence of curling to majority of flight feathers.	Scorched or singed	2	2	Heliostat	639165, 3935966	NA

						rigor mortis)								
2016_501_ISEGS	Orange-crowned Warbler	OCWA	Carcass Survey	9/20/2016	9/20/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to all major flight feathers, singeing to head, back, rump and belly.	Scorched or singed	2~3	1	ACC Building	640359, 3933529	NA
2016_502_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/20/2016	9/20/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singeing to rects, left wing coverts, breast and crown.	Scorched or singed	1~3	2	ACC Building	638654, 3935919	NA
2016_503_ISEGS	Vaux's swift	VASW	Carcass Survey	9/20/2016	9/20/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to flight feathers in left wing, singeing to primary and secondaries in right wing, neck, back, rump, and crown.	Scorched or singed	2~3	2	ACC Building	638647, 3935900	NA
2016_504_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/20/2016	9/20/2016	Feather spot	3-6 days	Feather spot size large consisting of 6 primaries, 1 secondary, 3 body feathers/ Evidence of singeing to flight feathers and body feathers.	Scorched or singed	1	1	Powerblock	640412, 3933461	NA
2016_505_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	9/20/2016	9/20/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	2 days	Whole carcass. No evidence of collision or singe.	Unknown		2	Powerblock	638648, 3935869	NA
2016_506_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/20/2016	9/20/2016	Feather spot	1 month +	Feather spot size large consisting of 6 primaries, 3 secondaries, 1 wing coverts, 3 retrices. No evidence of collision or singe.	Unknown		2	Heliostat	638998, 3936151	NA
2016_507_ISEGS	Mourning Dove	MODO	Carcass Survey	9/20/2016	9/20/2016	Feather spot	3-6 days	Feather spot size large consisting of 3 secondaries, 2 flight feathers, 20 wing coverts, and 20 contour feathers. Evidence of curling to secondary, singeing to coverts and flight feathers.	Scorched or singed	Unk	1	Powerblock	640357, 3933500	NA
2016_508_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/20/2016	9/20/2016	Feather spot	3-6 days	Feather spot size large consisting of 1 primary, 7 flight feathers. Evidence of curling to all flight feathers.	Scorched or singed	Unk	1	Powerblock	640359, 3933499	NA
2016_509_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	9/20/2016	9/20/2016	Broken up	3-6 days	Broken up carcass consisting of partial carcass with missing head and abdomen. Evidence of curling to primaries and secondaries and retrices, singeing to wing coverts.	Scorched or singed	2~3	2	Powerblock	638604, 3935829	NA
2016_510_ISEGS	Yellow Warbler	YWAR	Incidental	9/20/2016	9/20/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries, secondaries, and retrices, singeing to head and left flank.	Scorched or singed	2~3	3	ACC Building	637450, 3937954	NA
2016_511_ISEGS	Horned Lark	HOLA	Carcass Survey	9/20/2016	9/20/2016	Feather spot	3-6 days	Feather spot size small, consisting of 8 primaries, 11 secondaries, 4 rects, 1 wing coverts and 1 contour feather. Evidence of singeing to edge	Scorched or singed	Unk	1	Powerblock	640432, 3933520	NA

								of rects and secondaries.						
2016_512_ISEGS	Violet-green Swallow	VGSW	Incidental	9/20/2016	9/20/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries and secondaries, retrices singed off, head and back singed.	Scorched or singed	2~3	3	Powerblock	637461, 3937930	NA
2016_513_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	9/20/2016	9/20/2016	Feather spot	3-6 days	Feather spot size large consisting of 9 retrices, 6 primaries, 12 secondaries, 100 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638614, 3936242	NA
2016_514_ISEGS	Green-winged Teal	GWTE	Incidental	9/21/2016	9/21/2016	Feather spot	3-6 days	Feather spot size small, consisting of 5 secondaries, 1 trailing secondaries, 3 wing coverts, 1 underwing covert. No evidence of collision or singe.	Unknown		2	Heliostat	637727, 3936698	NA
2016_515_ISEGS	Rock Pigeon	ROPI	Carcass Survey	9/21/2016	9/21/2016	Feather spot	3-6 days	Feather spot size large consisting of 20 secondaries, 12 primaries, 6 retrices, and 200 body feathers. Evidence of curling to retrices and some secondaries.	Scorched or singed	1	1	Heliostat	640492, 3933684	NA
2016_516_ISEGS	Vaux's swift	VASW	Carcass Survey	9/21/2016	9/21/2016	Feather spot	2 days	Feather spot size large consisting of 3 left primaries, 1 left secondary, 1 rect, 5 flight feathers, and 20 contour feathers. Evidence of curling to flight feathers, singeing to retrice and wing coverts.	Scorched or singed	Unk	1	Heliostat	640480, 3933414	NA
2016_517_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/21/2016	9/21/2016	Feather spot	1 month +	Feather spot size small consisting of 2 primaries. No evidence of collision or singe.	Unknown		1	Heliostat	640491, 3933582	NA
2016_518_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	9/21/2016	9/21/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singe on edge of rects and primaries.	Scorched or singed	1	2	Heliostat	637838, 3936460	NA
2016_519_ISEGS	Unknown Waterfowl	UNWF	Carcass Survey	9/21/2016	9/21/2016	Feather spot	3-6 days	Feather spot size large consisting of 100 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640495, 3933468	NA
2016_520_ISEGS	Vaux's swift	VASW	Carcass Survey	9/21/2016	9/21/2016	Broken up	3-6 days	Broken up carcass consisting of right wing, tip of left wing, 18 contour feathers. Evidence of singeing to flight feathers, wing coverts, and some contour feathers.	Scorched or singed	1~3	1	Heliostat	640512, 3933420	NA
2016_521_ISEGS	Vaux's swift	VASW	Carcass Survey	9/21/2016	9/21/2016	Broken up	3-6 days	Broken up carcass consisting of 2 partial wings. No evidence of collision or singe.	Unknown		1	Heliostat	640480, 3933464	NA
2016_522_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/21/2016	9/21/2016	Feather spot	3-6 days	Feather spot size small consisting of 2 primaries, 3 secondaries, and 50 body feathers. Evidence of curling to primaries, singeing to secondaries and contour feathers.	Scorched or singed	Unk	1	Heliostat	640396, 3933363	NA

2016_523_ISEGS	Unknown Grebe	UNGR	Carcass Survey	9/21/2016	9/21/2016	Feather spot	2 days	Feather spot size large, consisting of 3 primaries, 2 secondaries, and 200 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640254, 3933311	NA
2016_524_ISEGS	Wilson's Warbler	WIWA	Incidental	9/21/2016	9/21/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of singe to tips of primaries and secondaries.	Scorched or singed	1	3	Powerblock	637459, 3937946	NA
2016_525_ISEGS	Green-Tailed Towhee	GTTO	Carcass Survey	9/21/2016	9/21/2016	Feather spot	0-8 hours	Feather spot size large consisting of 5 primaries, 13 secondaries, 5 rectrices, 210 contort feathers, 5 crown feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640160, 3933518	NA
2016_526_ISEGS	Western Kingbird	WEKI	Carcass Survey	9/21/2016	9/21/2016	Feather spot	2 days	Feather spot size small consisting of 3 primaries, 2 secondaries, and 1 unknown feather. Evidence of curling to secondaries, singe to primaries.	Scorched or singed	1	1	Heliostat	640167, 3933548	NA
2016_527_ISEGS	Western Tanager	WETA	Carcass Survey	9/23/2016	9/23/2016	Broken up	3-6 days	Broken up carcass consisting of head, scapulars, body feathers. Evidence of collision by cracked and bent bill.	Collision with solar panel/heliostat	2	Heliostat	639291, 3935467	NA	
2016_528_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/26/2016	9/26/2016	Mummified	2 weeks	Whole carcass. Evidence of curling to all contour feathers with flight feathers singed off.	Scorched or singed	2~3	3	ACC Building	637483, 3937943	NA
2016_529_ISEGS	Unknown Teal	TEAL	Carcass Survey	9/26/2016	9/26/2016	Feather spot	3-6 days	Feather spot size small consisting of 1 primary. 6 secondaries, 4 trailing edge secondaries, 47 contour feathers. No evidence of collision or singe.	Unknown		2	Heliostat	637748, 3935768	NA
2016_530_ISEGS	Hermit Warbler	HEWA	Carcass Survey	9/26/2016	9/26/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primaries and retrices, singe to head and rump.	Scorched or singed	1~3	3	ACC Building	637446, 3937969	NA
2016_531_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/26/2016	9/26/2016	Broken up	3-6 days	Broken up carcass consisting of body without head. Evidence of curling to primaries and secondaries, singeing to wing coverts.	Scorched or singed	2~3	3	Powerblock	637424, 3937925	NA
2016_532_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/26/2016	9/26/2016	Feather spot	3-6 days	Feather spot size small consisting of 4 primaries, 3 secondaries, 7 retrices, 2 tertials, 40 contour feathers. Evidence of curling to retrices, singeing to primaries and secondaries.	Scorched or singed	Unk	3	Heliostat	637342, 3937782	NA
2016_533_ISEGS	Unknown	SWIF	Carcass	9/26/2016	9/26/2016	Feather	3-6 days	Feather spot size large consisting of 2	Scorched or	Unk	3	Heliostat	637367,	NA

	Swift		Survey			spot		primaries, 1 retrix, 2 contour feathers. Evidence of singe to all feathers present.	singed				3937775	
2016_534_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/26/2016	9/26/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of curling to primaries, secondaries, and tail feathers, singeing to right side of head and left flank.	Scorched or singed	2~3	3	Heliostat	637471, 3937798	NA
2016_535_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/26/2016	9/26/2016	Feather spot	3-6 days	Feather spot size small consisting of 2 secondaries, 2 primaries, and 15 contour feathers. Evidence of singe to primaries.	Scorched or singed	Unk	3	Heliostat	637471, 3937804	NA
2016_536_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/26/2016	9/26/2016	Broken up	3-6 days	Broken up carcass consisting of 5 primaries, partial wing consisting of secondaries, 1 tertials, and 1 uppertail covert. Evidence of singeing to secondaries.	Scorched or singed	1	3	Powerblock	637468, 3937905	NA
2016_537_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/26/2016	9/26/2016	Feather spot	3-6 days	Feather spot size small consisting of 1 primary and 30 contour feathers. Evidence of curling to primary, singeing to contour feathers.	Scorched or singed	Unk	3	Powerblock	637468, 3937915	NA
2016_538_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/26/2016	9/26/2016	Broken up	3-6 days	Broken up carcass consisting of detached wings, head, and rump. Evidence of singe to tips of primaries.	Scorched or singed	1	3	Powerblock	637487, 3937931	NA
2016_539_ISEGS	Unknown Warbler	UNWA	Carcass Survey	9/26/2016	9/26/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Evidence of curling to all contour feathers with flight feathers singed off.	Scorched or singed	2~3	3	Powerblock	637464, 3937924	NA
2016_540_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/26/2016	9/26/2016	Feather spot	3-6 days	Feather spot size small consisting of base of 5 retrices, 3 pieces of secondaries, 2 pieces of flight feathers. Evidence of curling to flight feathers and secondaries.	Scorched or singed	Unk	3	Powerblock	637412, 3937944	NA
2016_541_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	9/26/2016	9/26/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No evidence of collision or singe.	Unknown		2	Heliostat	639611, 3936625	NA
2016_542_ISEGS	Mourning Dove	MODO	Carcass Survey	9/26/2016	9/26/2016	Broken up	3-6 days	Broken up carcass consisting of 2 wings, 10 retrices, 50 body feathers, sternum, and bone piece. Evidence of singe to retrices.	Scorched or singed	1	3	Powerblock	637376, 3937952	NA
2016_543_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/26/2016	9/26/2016	Broken up	1 month +	Broken up carcass consisting of partial left wing, 1 rect, 2 contour feathers. Evidence of curling to primaries and secondaries in partial wing, retrices.	Scorched or singed	Unk	3	Heliostat	637611, 3938030	NA
2016_544_ISEGS	Anna's	ANHU	Incidental	9/26/2016	9/26/2016	Dead, fresh	0-8 hours	Whole carcass. Evidence of curling to	Scorched or	2~3	3	Powerblock	637359,	NA

	Hummingbird					(eyes moist)		retrices, singeing to tips of primaries in both wings, ventral contour feathers.	singed				3937949	
2016_545_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/26/2016	9/26/2016	Broken up	1 month +	Broken up carcass consisting of partial right wing. Evidence of singe to tailing edge in primaries.	Scorched or singed	1	3	Heliostat	637536, 3937676	NA
2016_546_ISEGS	Orange-crowned Warbler	OCWA	Incidental	9/26/2016	9/26/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to retrices with tail singed off, singeing to primaries and secondaries, head, and breast.	Scorched or singed	2~3	2	Powerblock	638572, 3935875	NA
2016_547_ISEGS	Loggerhead Shrike	LOSH	Carcass Survey	9/27/2016	9/27/2016	Feather spot	2 days	Feather spot size large consisting of 1 retrice, 6 secondaries, 2 wing coverts, 185 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638625, 3936235	NA
2016_548_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/27/2016	9/27/2016	Feather spot	3-6 days	Feather spot size small consisting of 12 primaries, 6 secondaries, 6 retrices, 100 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638415, 3935800	NA
2016_549_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/27/2016	9/27/2016	Broken up	2 weeks	Broken up carcass consisting of partial right wing, 4 primaries and 2 secondaries. Primaries and secondaries are singed.	Scorched or singed	Unk	2	Powerblock	638585, 3935836	NA
2016_550_ISEGS	Unknown Small Bird	UNID	Carcass Survey	9/27/2016	9/27/2016	Feather spot	3-6 days	Feather spot size consisting of 10 body feathers and 3 flight feathers. No evidence of collision or singe.	Unknown		2	Powerblock	638655, 3935854	NA
2016_551_ISEGS	Brown-headed cowbird	BHCO	Carcass Survey	9/27/2016	9/27/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing, partial right wing,2 primaries, 5 secondaries, and 6 retrices. No evidence of collision or singe.	Unknown		2	Heliostat	638632, 3936023	NA
2016_552_ISEGS	Unknown Swallow	UNSW	Carcass Survey	9/27/2016	9/27/2016	Feather spot	2 weeks	Feather spot size small consisting of 12 primaries, 10 secondaries, 10 coverts, and 12 contour feathers. Curling to primaries and singeing to secondaries.	Scorched or singed	Unk	2	Heliostat	638605, 3936018	NA
2016_553_ISEGS	Chipping Sparrow	CHSP	Carcass Survey	9/27/2016	9/27/2016	Dead, fresh (eyes moist)	0-8 hours	Whole Carcass. Singed on crown, cheek, nape, back and underparts. Retricies curled and the primaries and secondaries are singed with secondaries of the right wing curled.	Scorched or singed	2~3	1	Powerblock	640346, 3933463	NA
2016_554_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	9/27/2016	9/27/2016	Broken up	2 weeks	Broken up carcass consisting of partial left wing. No evidence of collision or flux.	Unknown		2	Heliostat	638599, 3936019	NA
2016_555_ISEGS	Vaux's swift	VASW	Carcass Survey	9/27/2016	9/27/2016	Feather spot	3-6 days	Feather spot size small consisting of 4 primaries. Evidence of curling to 1 primary.	Scorched or singed	Unk	2	Powerblock	638646, 3935861	NA

2016_556_ISEGS	Western Kingbird	WEKI	Carcass Survey	9/27/2016	9/27/2016	Feather spot	2 weeks	Feather spot size large consisting of 1 primary, 1 retrice, 6 secondaries, 20 body feathers. No evidence of collision of singe.	Unknown		2	Heliostat	638807, 3935677	NA
2016_557_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/27/2016	9/27/2016	Feather spot	2 days	Feather spot size small consisting of 6 retrices, 3 undertail coverts, 6 contour feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638608, 3936059	NA
2016_558_ISEGS	Yellow Warbler	YWAR	Carcass Survey	9/27/2016	9/27/2016	Feather spot	3-6 days	Featherspot size small consisting of of 50+ body feathers, 2 primaries and several broken retricies.	Unknown		2	Heliostat	638809, 3935934	NA
2016_559_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/27/2016	9/27/2016	Feather spot	3-6 days	Feather spot size large consisting of 100 body feathers, 3 secondaries, 2 primaries. No evidence of collision or singe.	Unknown		2	Heliostat	638671, 3935607	NA
2016_560_ISEGS	Mourning Dove	MODO	Carcass Survey	9/28/2016	9/28/2016	Feather spot	2 weeks	Feather spot size large consisting of 1 tertial and 42 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640157, 3933593	NA
2016_561_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2016	9/28/2016	Feather spot	2 days	Feather spot consisting of 1 primary, 4 coverts, 50 body feathers. Evidence of singeing to tips of body feathers.	Scorched or singed	Unk	1	Heliostat	640181, 3033465	NA
2016_562_ISEGS	American Pipit	AMPI	Carcass Survey	9/28/2016	9/28/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing, 71 contour feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638452, 3936994	NA
2016_563_ISEGS	Lesser Nighthawk	LENI	Carcass Survey	9/28/2016	NA	Feather spot	3-6 days	Feather spot size small consisting of 14 contour feathers, 1 tertial. No evidence of collision or singe.	Unknown		1	Heliostat	640390, 3933391	NA
2016_564_ISEGS	Unknown Grebe	UNGR	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size large consisting of 1 undertail covert and 34 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640244, 3933317	NA
2016_565_ISEGS	Western Meadowlark	WEME	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size large consisting of 4 primaries, 2 secondaries, 2 retrices, 50 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638441, 3937223	NA
2016_566_ISEGS	Mourning Dove	MODO	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size large consisting 1 primary, 2 secondaries, 2 retrices, 10 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638204, 3937193	NA
2016_567_ISEGS	Unknown Grebe	UNGR	Carcass Survey	9/28/2016	9/28/2016	Broken up	1 month +	Feather spot size = small. Right wing portion. No singe.	Unknown		1	Heliostat	640420, 3933252	NA
2016_568_ISEGS	Vaux's swift	VASW	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot = small. 2 primaries, 1 secondary, 1 retrix. No singe.	Unknown		1	Heliostat	640496, 3933407	NA
2016_569_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size large consisting of 5 primaries, 4 secondaries, 2 rectrices, 50 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640477, 3933537	NA

2016_570_ISEGS	Vaux's swift	VASW	Carcass Survey	9/28/2016	9/28/2016	Broken up	3-6 days	Feather spot = small. 3 primaries, 1 covert. Singe on all feathers.	Scorched or singed	Unk	1	Heliostat	640379, 3933663	NA
2016_571_ISEGS	Rock Wren	ROWR	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size large consisting of 1 retrice feather, 4 primaries, 4 secondaries, 50 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640244, 3933711	NA
2016_572_ISEGS	Mourning Dove	MODO	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size small consisting of 1 secondary, 1 trailing secondary, tip of flight feather, and 40 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640244, 3933703	NA
2016_573_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	9/28/2016	9/28/2016	Feather spot	3-6 days	Feather spot size small consisting of 12 rects, 13 damaged feathers, 19 contour feathers, and 3 secondaries. No evidence of collision or singe.	Unknown		2	Heliostat	638452, 3936994	NA
2016_574_ISEGS	Lazuli Bunting	LAZB	Carcass Survey	9/28/2016	9/28/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass Primaries and secondaries on both wings curled. Retricies curled. Singed on face, crown and nape	Scorched or singed	2~3	2	Powerblock	638657, 3935864	NA
2016_575_ISEGS	Northern Rough-winged Swallow	NRWS	Carcass Survey	9/29/2016	9/29/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole Carcass. Primaries and secondaries curled on right wing. Left wing singed. Retricies curled. Head, nape, back and rump singed.	Scorched or singed	2~3	2	Powerblock	638650, 3935847	NA
2016_576_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	9/29/2016	9/29/2016	Feather spot	3-6 days	Feather spot size large consisting of 100+ body feathers. Feathers found stuck and wedged in piston of worm drive.	Collision with solar panel/heliostat	2	Heliostat	639609, 3935381	NA	
2016_577_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/3/2016	10/3/2016	Feather spot	3-6 days	Feather spot size small consisting of 2 primaries. Evidence of singe to 1 primary.	Scorched or singed	Unk	3	Heliostat	637475, 3937755	NA
2016_578_ISEGS	Unknown Sandpiper	UNSA	Carcass Survey	10/3/2016	10/3/2016	Broken up	3-6 days	Broken up carcass consisting of partial right and left wing, 1 primary, 2 wing coverts, 1 flight feather. Evidence of curling and singeing to primaries in partial wing.	Scorched or singed	Unk	3	Heliostat	637481, 3937760	NA
2016_579_ISEGS	Unknown Hummingbird	UNHU	Carcass Survey	10/3/2016	10/3/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass. Evidence of curling to primaries and secondaries, rectrices singed off, singeing to head, nape, back, rump, throat, and breast.	Scorched or singed	Unk	3	ACC Building	637474, 3937947	NA
2016_580_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/3/2016	10/3/2016	Feather spot	3-6 days	Feather spot size small consisting of 4 retrices, 5 secondaries, 1 primary,	Unknown		2	Heliostat	639199, 3935788	NA

								and 91 contour feathers. No evidence of collision or singe.							
2016_581_ISEGS	Unknown Warbler	UNWA	Carcass Survey	10/3/2016	10/3/2016	Feather spot	3-6 days	Feather spot size small consisting of 8 retrices, 16 primaries, 3 secondaries, 50 body feathers. Evidence of curling to 3 primaries.	Scorched or singed	Unk	3	Heliostat	637392, 3937801	NA	
2016_582_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/3/2016	10/3/2016	Broken up	3-6 days	Broken up carcass consisting of clump of primaries held together by flesh, 6 primaries, 4 retrices, 2-4 tertials, 1 covert, and 50 body feathers. Evidence of curling to flight feathers, singeing to contour feathers.	Scorched or singed	Unk	3	Heliostat	637387, 3937804	NA	
2016_583_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/3/2016	10/3/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, Evidence of curling to all major flight feathers in both wings and tail, singe to top of head and upper back.	Scorched or singed	2~3	3	Powerblock	637446, 3937975	NA	
2016_584_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	10/3/2016	10/3/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision of 3 crown feathers stuck on heliostat mirror.	Collision with solar panel/heliostat	3	Heliostat	637580, 3938034	NA		
2016_585_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	10/3/2016	10/3/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. No evidence of collision or singe.	Unknown	3	Heliostat	637610, 3937979	NA		
2016_586_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/3/2016	10/3/2016	Feather spot	3-6 days	Feather spot size large, consisting of 11 primaries, 3 tail feathers, 9 secondaries, 10 trailing secondaries, 50 body feathers. Evidence of collision with heliostat impression comprised of feathers, blood, and excrement.	Collision with solar panel/heliostat	3	Heliostat	637629, 3937789	NA		
2016_587_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/3/2016	10/3/2016	Broken up	3-6 days	Broken up carcass consisting of 4 retrices, 4 primaries, 5 secondaries, and 75 contour feathers. No evidence of singe or collision.	Unknown	3	Heliostat	637574, 3937745	NA		
2016_588_ISEGS	Ruby-crowned Kinglet	RCKI	Carcass Survey	10/4/2016	10/4/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Curling on rects, singe to top of head, upper breast, and secondaries and throat.	Scorched or singed	1~3	1	ACC Building	640388, 3933528	NA	
2016_589_ISEGS	Unknown Swallow	UNSW	Carcass Survey	10/4/2016	10/4/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	3-6 days	Whole carcass, Evidence of curling to flight feathers, singeing to body feathers.	Scorched or singed	2~3	1	ACC Building	640370, 3933542	NA	
2016_590_ISEGS	Cliff Swallow	CLSW	Carcass Survey	10/4/2016	10/4/2016	Broken up	3-6 days	Broken up carcass consisting of left with attached to partial torso.	Scorched or singed	1~3	2	Powerblock	638697, 3935901	NA	

								Evidence of singe of primaries and body feathers.						
2016_591_ISEGS	Unknown Bird	UNBD	Carcass Survey	10/4/2016	10/4/2016	Feather spot	3-6 days	Feather spot size = small. 12 body feathers. No singe.	Unknown		1	Powerblock	640293, 3933545	NA
2016_592_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/5/2016	10/5/2016	Feather spot	8-24 hours	Feather spot size large consisting 3 retrices, 1 primary, 4 secondaries, 100 body feathers. Evidence of singe on 1 primary.	Scorched or singed	Unk	1	Heliostat	640474, 3933693	NA
2016_593_ISEGS	Mourning Dove	MODO	Carcass Survey	10/5/2016	10/5/2016	Feather spot	2 days	Feather spot size large consisting of 1 secondary, 20 body feathers. Evidence of singe on body feathers.	Scorched or singed	Unk	1	Heliostat	640431, 3933715	NA
2016_594_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/6/2016	10/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to wing coverts and retrices, primaries.	Scorched or singed	2	3	Powerblock	637515, 3937872	NA
2016_595_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/6/2016	10/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to flight feathers in both wings, singe to back, nape, and crown.	Scorched or singed	2~3	3	Powerblock	637426, 3937946	NA
2016_596_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/6/2016	10/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of curling to tail, singeing to primaries in both wings and nape.	Scorched or singed	2~3	3	Powerblock	637442, 3937970	NA
2016_597_ISEGS	Lesser Goldfinch	LEGO	Incidental	10/6/2016	10/6/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of singeing to primaries, secondaries, and retrices, nape, back, and rump.	Scorched or singed	2~3	2	Powerblock	638614, 3935906	NA
2016_598_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/6/2016	10/6/2016	Feather spot	2 days	Feather spot size large consisting of 3 primaries, 3 secondaries, 1 trailing secondary, 100 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	637836, 3935379	NA
2016_599_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	10/10/2016	10/10/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Evidence of collision with 1 contour feathers stuck to heliostat mirror and imprint of bird in addition to close proximity to heliostat.	Collision with solar panel/heliostat	3	Heliostat	637297, 3937740	NA	
2016_600_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/10/2016	10/10/2016	Broken up	3-6 days	Broken up carcass consisting of 16 body feathers held together by a piece of dried flesh. No evidence of collision or singe.	Unknown		3	Heliostat	637393, 3937744	NA
2016_601_ISEGS	Lincoln's Sparrow	LISP	Carcass Survey	10/10/2016	10/10/2016	Feather spot	2 days	Feather spot size large consisting of 13 primaries, 10 secondaries, 7 retrices, and 200 body feathers. No evidence of collision or singe.	Unknown		3	Heliostat	637239, 3937959	NA
2016_602_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/10/2016	10/10/2016	Broken up	3-6 days	Broken up carcass consisting of partial right wing. Evidence of singe to primaries and secondaries.	Scorched or singed	1	3	Heliostat	637584, 3938061	NA
2016_603_ISEGS	Mourning Dove	MODO	Carcass Survey	10/10/2016	10/10/2016	Feather spot	3-6 days	Feather spot size large consisting of 5 primaries, 8 secondaries, 3 tail feathers, and 100 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	637757, 3936004	NA

2016_604_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/10/2016	10/10/2016	Broken up	3-6 days	Broken up carcass consisting of partial left and right wing, 12 rects, 6 primaries, 3 secondaries, 200 contour feathers. No evidence of collision or singe.	Unknown		3	Heliostat	637317, 3938088	NA
2016_605_ISEGS	Yellow Warbler	YWAR	Carcass Survey	10/10/2016	10/10/2016	Feather spot	3-6 days	Feather spot size large consisting of 6 retrices, 5 contour feathers. Evidence of singe to tips of rects.	Scorched or singed	Unk	3	Heliostat	637334, 3938100	NA
2016_606_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/10/2016	10/10/2016	Feather spot	3-6 days	Feather spot size small consisting of 18 body feathers. Evidence of collision with clump of feathers stuck to heliostat mirror.	Collision with solar panel/heliostat	3	Heliostat	637452, 3938118	NA	
2016_607_ISEGS	Rusty Blackbird	RUBL	Carcass Survey	10/11/2016	10/11/2016	Broken up	8-24 hours	Broken up carcass consisting of 1 detached leg, 3 primaries, 14 secondaries, 6 retrices, and 200 contour feathers. Evidence of singeing on barbs at tips of flight feathers.	Scorched or singed	Unk	2	Heliostat	638564, 3935676	NA
2016_608_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/11/2016	10/11/2016	Feather spot	3-6 days	Feather spot size small consisting of 2 clumps of mantle feathers, I tail feather. Evidence of curling to tail feather.	Scorched or singed	Unk	2	Heliostat	638587, 3935739	NA
2016_609_ISEGS	Mourning Dove	MODO	Carcass Survey	10/11/2016	10/11/2016	Broken up	3-6 days	Broken up carcass consisting of several contour feathers held together by skin, 6 primaries, 7 rectrices, 8 secondaries, and 200 contour feathers. No evidence of singe or collision.	Unknown		2	Heliostat	638938, 3936167	NA
2016_610_ISEGS	Blue-Gray Gnatcatcher	BGGN	Carcass Survey	10/11/2016	10/11/2016	Dead, Semi-fresh (eyes desiccated, rigor mortis)	8-24 hours	Whole carcass. Evidence of curling to tail. Singeing on contour feathers of neck and edges of primaries.	Scorched or singed	1~3	2	ACC Building	638652, 3935894	NA
2016_611_ISEGS	Yellow Warbler	YWAR	Carcass Survey	10/11/2016	10/11/2016	Feather spot	3-6 days	Feather spot size small consisting of 5 primaries. Evidence of singe on 3 primaries.	Scorched or singed	Unk	2	Powerblock	638644, 3935869	NA
2016_612_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/11/2016	10/11/2016	Broken up	3-6 days	Broken up carcass missing the tail and left wing. No evidence of singe or collision.	Unknown		2	Heliostat	638763, 3935949	NA
2016_613_ISEGS	Mourning Dove	MODO	Carcass Survey	10/11/2016	10/11/2016	Feather spot	2 weeks	Feather spot size small consisting of 1 secondary and 4 retricies. Curling to tail feathers.	Scorched or singed	Unk	2	Powerblock	638644, 3935869	NA
2016_614_ISEGS	Unknown Sapsucker	UNSS	Carcass Survey	10/11/2016	10/11/2016	Broken up	3-6 days	Broken up, primaries attached by skin. 1 primary, 6 flight feathers and 13 contour feathers. Singe on majority of flight feathers.	Scorched or singed	Unk	1	Powerblock	640363, 3933495	NA

2016_615_ISEGS	Greater Roadrunner	GRRO	Carcass Survey	10/11/2016	10/11/2016	Feather spot	3-6 days	Feather spot size large consisting of 5 primaries, 1 secondary and 30 body feathers	Unknown		2	Heliostat	639086, 3935976	NA
2016_616_ISEGS	Unknown Swallow	UNSW	Carcass Survey	10/11/2016	10/11/2016	Feather spot	2 weeks	Feather spot consisting of 2 primaries and 3 secondaries. Primaries and secondaries are singed.	Scorched or singed	Unk	2	Powerblock	638644, 3935869	NA
2016_617_ISEGS	Brewer's Blackbird	BRBL	Carcass Survey	10/12/2016	10/12/2016	Feather spot	8-24 hours	Feather spot size large consisting of 12 primaries, 14 secondaries, and 320 body feathers. Evidence of collision by heliostat imprint matching size of species near feather spot location.	Collision with solar panel/heliostat	1	Heliostat	640422, 3933725	NA	
2016_618_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/12/2016	10/12/2016	Broken up	8-24 hours	Broken up carcass consisting of intact rump and rects, tips of both wings, 4 primaries, 8 secondaries, 100 contour feathers. No evidence pf collision or singe.	Unknown		2	Heliostat	638765, 3936795	NA
2016_619_ISEGS	Vaux's swift	VASW	Carcass Survey	10/12/2016	10/12/2016	Feather spot	3-6 days	Feather spot small consisting of 3 primaries, 4 pieces of unidentified flight feathers, 1 rectrice, and 1 contour feather. Evidence of curling to the primary and 2 other flight feathers, singeing to rest of feather spot.	Scorched or singed	Unk	1	Heliostat	640510, 3933620	NA
2016_620_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/12/2016	10/12/2016	Broken up	3-6 days	Broken up. Lower mandible with 9 primaries, 6 secondaries, 1 retrix and 30 body feathers. Evidence of singe on 11 flight feathers. 30% of body feathers singed.	Scorched or singed	Unk	1	Heliostat	640478, 3933520	NA
2016_621_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/12/2016	10/12/2016	Feather spot	3-6 days	Feather spot consisting of 2 primaries, 3 secondaries and 2 retricies. No evidence of singe or collision	Unknown		2	Heliostat	637757, 3936368	NA
2016_622_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/12/2016	10/12/2016	Feather spot	3-6 days	Feather spot size large consisting of 1 secondary, 2 flight feathers, and 40 contour feathers. Evidence of curling on all flight feathers and some singeing to contour feathers.	Scorched or singed	Unk	1	Heliostat	640395, 3933357	NA
2016_623_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	10/12/2016	10/12/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Impact imprint on Heliostat. Neck very limp.	Collision with solar panel/heliostat	2	Heliostat	637889, 3936187	NA	
2016_624_ISEGS	Savannah Sparrow	SAVS	Carcass Survey	10/12/2016	10/12/2016	Feather spot	2 days	Feather spot size large consisting of 8 primaries, 7 secondaries, 3 coverts, and 30 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640260, 3933294	NA
2016_625_ISEGS	Loggerhead	LOSH	Carcass	10/14/2016	10/14/2016	Broken up	3-6 days	Broken up carcass consisting of 5	Unknown		2	Heliostat	638036,	NA

	Shrike		Survey					retricies, 2 primaries, 50+ contour feathers. 2 of retricies and undertail coverts held together by flesh.					3935688	
2016_626_ISEGS	Yellow-rumped Warbler	YRWA	Incidental	10/15/2016	10/15/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Evidence of singeing to crown and left side of face.	Scorched or singed	3	2	Powerblock	638699, 3935868	NA
2016_627_ISEGS	Barn Swallow	BARS	Carcass Survey	10/17/2016	10/17/2016	Broken up	3-6 days	Broken up carcass consisting of partial wing with 2 primaries and coverts held together, 2 contour feathers. Evidence of singe on inner web of primaries and on contour feathers.	Scorched or singed	Unk	3	Heliostat	637450, 3937681	NA
2016_628_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/17/2016	10/17/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. With evidence of singeing on rump and breast.	Scorched or singed	3	3	ACC Building	637465, 3937951	NA
2016_629_ISEGS	Unknown Shorebird	UNSB	Carcass Survey	10/17/2016	10/17/2016	Broken up	2 days	Broken up carcass consisting of piece of partial wing and carpometacarpal. Evidence of singeing to primaries and coverts.	Scorched or singed	Unk	3	Heliostat	637478, 3937765	NA
2016_630_ISEGS	Unknown Bird	UNBD	Carcass Survey	10/17/2016	10/17/2016	Broken up	2 weeks	Broken up carcass consisting of 7 coverts connected by dried flesh. No evidence of collision or singe.	Unknown		3	Heliostat	637466, 3937804	NA
2016_631_ISEGS	Lesser Goldfinch	LEGO	Carcass Survey	10/17/2016	10/17/2017	Broken up	3-6 days	Broken up carcass consisting of clumps of tail feathers, primaries and coverts held together by skin. 50+body feathers. Body feathers and flight feathers singed.	Scorched or singed	Unk	3	Heliostat	637474, 3937808	NA
2016_632_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/17/2016	10/17/2016	Feather spot	3-6 days	Feather spot size small consisting of 50 body feathers. Evidence of singe on several body feathers.	Scorched or singed	3	3	Powerblock	637456, 3937925	NA
2016_633_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/17/2016	10/17/2016	Broken up	3-6 days	Broken up carcass consisting of a chunk of 10 contour feathers held together by skin. Singe present on covert feathers.	Scorched or singed	3	3	Heliostat	637582, 3937790	NA
2016_634_ISEGS	Yellow-rumped Warbler	YRWA	Carcass Survey	10/17/2016	10/17/2016	Dead, fresh (eyes moist)	8-24 hours	Whole carcass. Primaries, secondaries and retricies curled. Left flank, left side of face, back and rump singed.	Scorched or singed	2~3	3	ACC Building	637444, 3937943	NA
2016_635_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/18/2016	10/18/2016	Feather spot	8-24 hours	Feather spot size large consisting of 2 primaries, 10 secondaries, 7 retricies and 300+ body feathers.	Unknown		2	Heliostat	637821, 3936145	NA
2016_636_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 weeks	Feather spot size large consisting of 20 body feathers. Curling on 50% of body feathers.	Scorched or singed	3	1	Powerblock	640390, 3933493	NA
2016_637_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Feather spot	3-6 days	Feather spot size small consisting of 50 body feathers, 4 primaries and 1 secondary. No evidence of singe or	Unknown		2	Heliostat	638446, 3935958	NA

								collision.						
2016_638_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 weeks	Feather spot size large consisting of 9 primaries, 2 secondaries, and 3 body feathers. Tips of secondary feather is singed.	Scorched or singed	Unk	1	Powerblock	640413, 3933478	NA
2016_639_ISEGS	Violet-green Swallow	VGSW	Carcass Survey	10/18/2016	10/18/2016	Dead, fresh (eyes moist)	0-8 hours	Whole carcass. Singeing to nape, rump and greater wing coverts. Primaries, secondaries and tail curled and singed.	Scorched or singed	2~3	1	ACC Building	640367, 3933522	NA
2016_640_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/18/2016	10/18/2016	Feather spot	3-6 days	Feather spot size large consisting of 100 body feathers, 8 primaries, 4 secondaries and 2 tail feathers. No evidence of singe or collision	Unknown		2	Heliostat	638545, 3936048	NA
2016_641_ISEGS	Unknown Sapsucker	UNSS	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 days	Feather spot size large consisting of 2 secondaries, 2 retricies and 175 body feathers. Flight feathers singed with some body feathers curled.	Scorched or singed	3	1	Powerblock	640372, 3933596	NA
2016_642_ISEGS	Yellow Warbler	YWAR	Carcass Survey	10/18/2016	10/18/2016	Feather spot	3-6 days	Feather spot size small consisting of 3 primaries, 2 retricies, 2 rumps and 2 mantle feathers. Primaries and retricies singed on edges and tips of barbs.	Scorched or singed	Unk	2	Heliostat	638549, 3936028	NA
2016_643_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 weeks	Feather spot size large consisting of 1 primary, 4 secondaries, 1 retrix and 2 body feathers. All feather are singed.	Scorched or singed	3	1	Powerblock	640369, 3933507	NA
2016_644_ISEGS	American Pipit	AMPI	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 days	Feather spot size small consisting of 100+ body feathers, 3 retricies and 4 secondaries. No evidence of singe or collision.	Unknown		2	Heliostat	638572, 3936065	NA
2016_645_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing with 5 secondaries and 4 coverts. One retrix. Presence of singeing on tip of retrix.	Scorched or singed	Unk	1	Powerblock	640370, 3933508	NA
2016_646_ISEGS	White-Crowned Sparrow	WCSP	Carcass Survey	10/18/2016	10/18/2016	Feather spot	3-6 days	Feather spot size large consisting of 2 retricies, 2 primaries, 1 trailing secondary and 25+ body feathers. No evidence of collision or singe.	Unknown		1	Powerblock	640279, 3933546	NA
2016_647_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/18/2016	10/18/2016	Feather spot	3-6 days	Feather spot size small consisting of 2 primaries, 1 secondary, 1 retricies, 1 trailing secondary and 8 contour feathers. No evidence of singe or collision.	Unknown		2	Heliostat	638744, 3935912	NA
2016_648_ISEGS	American Pipit	AMPI	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 days	Feather spot size large consisting of 2 primaries, 5 secondaries and 75 body feathers. Singeing on tip of primary.	Scorched or singed	1	2	Heliostat	638749, 3935879	NA
2016_649_ISEGS	Swamp Sparrow	SWSP	Carcass Survey	10/18/2016	10/18/2016	Feather spot	2 days	Feather spot size large consisting of 11 retricies, 3 tertials, 9 secondaries,	Scorched or singed	Unk	2	Heliostat	638872, 3935861	NA

								10 primaries and 50+ body feathers. Singeing on barbules of flight feathers.						
2016_650_ISEGS	Yellow Warbler	YWAR	Carcass Survey	10/18/2016	10/18/2016	Mummified	2 weeks	Whole carcass. Tail partially singed off. Wings curled with singeing on rump feathers and crown.	Scorched or singed	2~3	2	Powerblock	638648, 3935858	NA
2016_651_ISEGS	Anna's Hummingbird	ANHU	Carcass Survey	10/18/2016	10/18/2016	Mummified	1 month +	Whole carcass. All flight feathers singed or singed off. Back and breast singed.	Scorched or singed	2~3	2	Powerblock	638648, 3935848	NA
2016_652_ISEGS	Unknown Small Bird	UNID	Carcass Survey	10/19/2016	10/19/2016	Feather spot	2 weeks	Feather spot size small consisting of 12 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640153, 3933566	NA
2016_653_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/19/2016	10/19/2016	Feather spot	3-6 days	Feather spot large consisting of 6 primaries, 1 retrice, 51 body feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640418, 3933282	NA
2016_654_ISEGS	Black-Throated Sparrow	BTSP	Carcass Survey	10/19/2016	10/19/2016	Feather spot	3-6 days	Feather spot size small consisting of 4 primaries, 1 retrice, and 20 body feathers. No evidence of singe or collision.	Unknown		2	Heliostat	637854, 3936641	NA
2016_655_ISEGS	American Avocet	AMAV	Carcass Survey	10/19/2016	10/19/2016	Broken up	2 weeks	Broken up carcass consisting of partial wing piece with secondaries and coverts, 6 secondaries, 7 tertials, and 50 body feathers. No evidence of collision or singe.	Unknown		2	Heliostat	639475, 3936932	NA
2016_656_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/19/2016	10/19/2016	Feather spot	3-6 days	Feather spot size large consisting of 4 primaries, 11 secondaries, 10 rects, and 50 contour feathers. No evidence of collision or singe.	Unknown		1	Heliostat	640598, 3933556	NA
2016_657_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/19/2016	10/19/2016	Broken up	3-6 days	Broken up carcass consisting of 6 body feathers held together by dried flesh. No evidence of collision or singe.	Unknown		2	Heliostat	639216, 3936399	NA
2016_658_ISEGS	Unknown Sparrow	UNSP	Carcass Survey	10/19/2016	10/19/2016	Feather spot	2 days	Feather spot size small consisting of 5 primaries, 8 secondaries, and 7 retrices. No evidence of collision or singe.	Unknown		1	Heliostat	640598, 3933556	NA
2016_659_ISEGS	Long-billed Curlew	LBCU	Carcass Survey	10/20/2016	10/20/2016	Feather spot	1 month +	Feather spot size small consisting of 2 primary flight feathers. No evidence of singe or collision.	Unknown		2	Heliostat	638141, 3935386	NA
2016_660_ISEGS	Sagebrush Sparrow	SAGS	Carcass Survey	10/20/2016	10/20/2016	Broken up	3-6 days	Broken up carcass consisting of partial left wing, 8 primaries, 3 secondaries, 4 trailing secondaries, 9 retricies and 20 contour feathers. No evidence of collision or singe.	Unknown		2	Heliostat	638584, 3936982	NA
2016_661_ISEGS	Western Meadowlark	WEME	Carcass Survey	10/20/2016	10/20/2016	Feather spot	3-6 days	Feather spot size large consisting of 190 contour feathers and one	Unknown		2	Heliostat	638356, 3937202	NA

	primary. No evidence of singe or collision.

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	Estimator Notes
2016_301_ISEGS	CLSW	Power Block	48	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_302_ISEGS	NRWS	Power Block	15	Small	Small Carcass	singed	Incidental	1(1)	No	X	X			Older than Search Interval
2016_303_ISEGS	NRWS	Power Block	15	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X			Older than Search Interval
2016_304_ISEGS	UNID	Power Block	25	Small	Small Carcass	singed	Incidental	1(1)	No	X	X			Older than Search Interval
2016_305_ISEGS	WIWA	Power Block	31	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_306_ISEGS	YWAR	Power Block	57	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_307_ISEGS	YWAR	Power Block	62	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_308_ISEGS	YWAR	ACC	38	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_309_ISEGS	YWAR	Power Block	33	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_310_ISEGS	ANHU	Power Block	29	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_311_ISEGS	YWAR	Power Block	23	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_312_ISEGS	UNWA	Power Block	28	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_313_ISEGS	UNID	Power Block	53	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_314_ISEGS	RUHU	Power Block	72	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_315_ISEGS	WIWA	Power Block	37	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_316_ISEGS	YWAR	Power Block	62	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_317_ISEGS	MODO	Inner HD	269	Large	Large Carcass	unknown	Incidental	27	Yes	X		X		
2016_318_ISEGS	YWAR	Power Block	81	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			
2016_319_ISEGS	YWAR	Power Block	64	Small	Small Carcass	singed	Fatality Search	28	Yes	X	X			

2016_320_ISEGS	WIWA	Inner HD	136	Small	Small Carcass	singed	Fatality Search	27	Yes	X		X		
2016_321_ISEGS	UNSW	Power Block	86	Small	Feather Spot	singed	Fatality Search	14	Yes	X	X			
2016_322_ISEGS	YWAR	ACC	37	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_323_ISEGS	BTYW	ACC	35	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_324_ISEGS	BTYW	Power Block	41	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X			
2016_325_ISEGS	BHCO	Power Block	41	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X			
2016_326_ISEGS	YWAR	ACC	44	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_327_ISEGS	YWAR	ACC	47	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_328_ISEGS	BTYW	ACC	48	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_329_ISEGS	UNID	Power Block	47	Small	Feather Spot	singed	Fatality Search	21	Yes	X	X			
2016_330_ISEGS	MGWA	ACC	54	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_331_ISEGS	YWAR	ACC	65	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_332_ISEGS	BTYW	Inner HD	216	Small	Small Carcass	singed	Fatality Search	21	Yes	X		X		
2016_333_ISEGS	MODO	Power Block	55	Large	Feather Spot	singed	Fatality Search	21	Yes	X	X			
2016_334_ISEGS	BGGN	Power Block	13	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_335_ISEGS	BTSP	Power Block	45	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X			
2016_336_ISEGS	VERD	Power Block	16	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X			
2016_337_ISEGS	UNGR	Power Block	15	Large	Feather Spot	unknown	Fatality Search	14	No	X	X			Older than Search Interval
2016_338_ISEGS	HOWR	Inner HD	231	Small	Small Carcass	unknown	Fatality Search	21	No	X		X		Older than Search Interval
2016_339_ISEGS	WIWA	ACC	90	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X			
2016_340_ISEGS	CLSW	Power Block	60	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X			
2016_341_ISEGS	UNID	Power Block	22	Small	Feather Spot	unknown	Fatality Search	14	Yes	X	X			
2016_342_ISEGS	MODO	Power Block	20	Large	Feather	singed	Fatality	14	Yes	X	X			

					Spot		Search						
2016_343_ISEGS	BHGR	ACC	80	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_344_ISEGS	LUWA	ACC	68	Small	Small Carcass	other (entrapment)	Fatality Search	21	Yes	X	X		
2016_345_ISEGS	YWAR	ACC	72	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_346_ISEGS	WIWA	ACC	64	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_347_ISEGS	BHCO	ACC	62	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_348_ISEGS	BCHU	Power Block	97	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X		
2016_349_ISEGS	YWAR	Power Block	60	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_350_ISEGS	MODO	Power Block	13	Large	Feather Spot	unknown	Fatality Search	14	No	X	X		Older than Search Interval
2016_351_ISEGS	UNSW	Power Block	113	Small	Small Carcass	singed	Fatality Search	21	Yes	X	X		
2016_352_ISEGS	BTYW	Power Block	15	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X		
2016_353_ISEGS	UNID	Power Block	14	Small	Feather Spot	singed	Fatality Search	14	Yes	X	X		
2016_354_ISEGS	UNID	Power Block	15	Small	Feather Spot	singed	Fatality Search	14	Yes	X	X		
2016_355_ISEGS	NRWS	Power Block	100	Small	Small Carcass	singed	Fatality Search	14	Yes	X	X		
2016_356_ISEGS	CITE	Inner HD	236	Large	Feather Spot	unknown	Fatality Search	21	Yes	X		X	
2016_357_ISEGS	UNID	Inner HD	272	Small	Small Carcass	unknown	Fatality Search	21	Yes	X		X	
2016_358_ISEGS	TEAL	Outer Segment	1190	Large	Large Carcass	unknown	Fatality Search	19	Yes				X
2016_359_ISEGS	UNID	Inner HD	138	Small	Feather Spot	singed	Fatality Search	14	Yes	X		X	
2016_360_ISEGS	TRES	Power Block	41	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X		
2016_361_ISEGS	WETA	Inner HD	NA	Small	Small Carcass	singed	Incidental	22	Yes	X		X	
2016_362_ISEGS	MODO	Inner HD	230	Large	Feather Spot	unknown	Fatality Search	14	Yes	X		X	
2016_363_ISEGS	ROPI	Inner HD	180	Large	Feather Spot	singed	Fatality Search	14	No	X		X	Older than Search Interval
2016_364_ISEGS	TEAL	Outer Segment	1151	Large	Feather Spot	unknown	Fatality Search	20	Yes				X

2016_365_ISEGS	CITE	Outer Segment	1087	Large	Large Carcass	collision	Fatality Search		29	Yes			X	
2016_366_ISEGS	WETA	Outer Segment	742	Small	Small Carcass	unknown	Fatality Search		29	Yes			X	
2016_367_ISEGS	GRRO	Outer Segment	891	Large	Feather Spot	collision	Fatality Search		18	No			X	Older than Search Interval
2016_368_ISEGS	MODO	Outer Segment	999	Large	Large Carcass	unknown	Fatality Search		18	Yes			X	
2016_369_ISEGS	UNID	Outer Segment	747	Small	Small Carcass	unknown	Incidental	NA		No			X	Older than Search Interval
2016_370_ISEGS	SESA	Power Block	49	Small	Small Carcass	singed	Incidental	1(1)		No	X	X		Older than Search Interval
2016_371_ISEGS	YWAR	Inner HD	144	Small	Small Carcass	singed	Fatality Search		6	Yes	X		X	
2016_372_ISEGS	UNHU	ACC	38	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_373_ISEGS	YWAR	ACC	65	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_374_ISEGS	YWAR	ACC	65	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_375_ISEGS	YWAR	ACC	72	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_376_ISEGS	WETA	Power Block	68	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_377_ISEGS	YWAR	Inner HD	127	Small	Small Carcass	singed	Fatality Search		7	Yes	X		X	
2016_378_ISEGS	LEGO	Inner HD	239	Small	Small Carcass	singed	Fatality Search		7	Yes	X		X	
2016_379_ISEGS	YWAR	Inner HD	136	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X	
2016_380_ISEGS	WETA	Power Block	21	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_381_ISEGS	BHCO	Power Block	54	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_382_ISEGS	YWAR	Power Block	41	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_383_ISEGS	YWAR	Power Block	17	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_384_ISEGS	YWAR	Power Block	NA	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_385_ISEGS	YWAR	Power Block	71	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_386_ISEGS	YWAR	Power Block	61	Small	Small	singed	Fatality		7	Yes	X	X		

					Carcass		Search							
2016_387_ISEGS	YWAR	Power Block	52	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_388_ISEGS	YWAR	Inner HD	118	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X		
2016_389_ISEGS	WIWA	Inner HD	97	Small	Small Carcass	singed	Fatality Search	6	Yes	X		X		
2016_390_ISEGS	UNID	Power Block	105	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X			
2016_391_ISEGS	LAZB	Inner HD	121	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X		
2016_392_ISEGS	YWAR	ACC	66	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_393_ISEGS	TRES	ACC	43	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_394_ISEGS	YWAR	ACC	42	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_395_ISEGS	UNID	Power Block	44	Small	Small Carcass	unknown	Fatality Search	6	No	X	X			Older than Search Interval
2016_396_ISEGS	UNID	Power Block	21	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_397_ISEGS	YWAR	Power Block	23	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_398_ISEGS	YWAR	Power Block	21	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_399_ISEGS	BHCO	Power Block	50	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_400_ISEGS	MODO	Power Block	15	Large	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_401_ISEGS	NAWA	Power Block	99	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_402_ISEGS	LAZB	Power Block	93	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_403_ISEGS	UNBU	Power Block	27	Large	Large Carcass	singed	Fatality Search	6	Yes	X	X			
2016_404_ISEGS	BGGN	Power Block	86	Small	Small Carcass	singed	Fatality Search	6	Yes	X	X			
2016_405_ISEGS	CACW	Inner HD	169	Small	Feather Spot	unknown	Fatality Search	6	Yes	X		X		
2016_406_ISEGS	MODO	Inner HD	251	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_407_ISEGS	UNOR	Inner HD	190	Small	Feather Spot	singed	Fatality Search	7	No	X		X		Older than Search Interval
2016_408_ISEGS	CHSP	Power Block	53	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			

2016_409_ISEGS	OCWA	Power Block	52	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_410_ISEGS	BTYW	Power Block	56	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_411_ISEGS	LAZB	Power Block	31	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_412_ISEGS	UNDV	Inner HD	185	Large	Feather Spot	singed	Fatality Search		7	No	X		X		Older than Search Interval
2016_413_ISEGS	UNWF	Inner HD	110	Large	Feather Spot	unknown	Fatality Search		7	Yes	X		X		
2016_414_ISEGS	LAZB	Power Block	31	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_415_ISEGS	AMAV	Outer Segment	1368	Large	Large Carcass	unknown	Fatality Search		7	No				X	Older than Search Interval
2016_416_ISEGS	YWAR	Power Block	83	Small	Feather Spot	singed	Incidental	1(1)		No	X	X			Older than Search Interval
2016_417_ISEGS	YWAR	Power Block	93	Small	Small Carcass	singed	Incidental	1(1)		No	X	X			Older than Search Interval
2016_418_ISEGS	HEWA	Power Block	84	Small	Small Carcass	singed	Incidental	1(1)		No	X	X			Older than Search Interval
2016_419_ISEGS	BHCO	Outside Search - Outside Search - Tower	0	Small	Small Carcass	singed	Incidental	NA		No					Outside Standard Search Area
2016_420_ISEGS	BGGN	Outside Search - Outside Search - Tower	0	Small	Small Carcass	singed	Incidental	NA		No					Outside Standard Search Area
2016_421_ISEGS	BTSP	Power Block	18	Small	Small Carcass	unknown	Incidental	1(1)		No	X	X			Older than Search Interval
2016_422_ISEGS	OCWA	Power Block	41	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_423_ISEGS	CLSW	Power Block	83	Small	Small Carcass	singed	Incidental	1(1)		No	X	X			Older than Search Interval
2016_424_ISEGS	YWAR	ACC	33	Small	Small	singed	Fatality		7	Yes	X	X			

					Carcass		Search							
2016_425_ISEGS	SAPH	ACC	51	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_426_ISEGS	YWAR	ACC	63	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_427_ISEGS	NRWS	ACC	45	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_428_ISEGS	YWAR	Power Block	57	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_429_ISEGS	UNWA	Power Block	73	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_430_ISEGS	LISP	Inner HD	227	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X		
2016_431_ISEGS	UNID	Power Block	75	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_432_ISEGS	MODO	Power Block	62	Large	Large Carcass	unknown	Fatality Search	7	Yes	X	X			
2016_433_ISEGS	YWAR	Power Block	76	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_434_ISEGS	YWAR	Power Block	66	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_435_ISEGS	HOLA	Power Block	72	Small	Small Carcass	unknown	Fatality Search	7	No	X	X			Older than Search Interval
2016_436_ISEGS	YWAR	Power Block	51	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_437_ISEGS	UNID	Inner Segment	479	Small	Feather Spot	unknown	Fatality Search	6	No				X	Older than Search Interval
2016_438_ISEGS	LAZB	Power Block	31	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_439_ISEGS	OCWA	Inner HD	236	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X		
2016_440_ISEGS	CSWA	Power Block	31	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_441_ISEGS	YWAR	Power Block	20	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_442_ISEGS	UNID	Power Block	18	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_443_ISEGS	YWAR	Power Block	7	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_444_ISEGS	YWAR	Power Block	20	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_445_ISEGS	UNDV	Power Block	18	Large	Large Carcass	singed	Fatality Search	7	Yes	X	X			
2016_446_ISEGS	BTYW	Power Block	28	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			

2016_447_ISEGS	YWAR	Power Block	99	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_448_ISEGS	UNID	Inner HD	147	Small	Small Carcass	singed	Fatality Search	7	No	X		X	Older than Search Interval
2016_449_ISEGS	SAPH	Power Block	93	Small	Small Carcass	singed	Fatality Search	7	No	X	X		Older than Search Interval
2016_450_ISEGS	YWAR	Power Block	89	Small	Small Carcass	singed	Fatality Search	7	No	X	X		Older than Search Interval
2016_451_ISEGS	YWAR	Power Block	103	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_452_ISEGS	UNID	Power Block	101	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X		
2016_453_ISEGS	BGGN	Power Block	126	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_454_ISEGS	UNGN	Power Block	46	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_455_ISEGS	BGGN	Power Block	22	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_456_ISEGS	YWAR	ACC	47	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_457_ISEGS	BRSP	Power Block	97	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_458_ISEGS	YWAR	ACC	34	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_459_ISEGS	ANHU	Power Block	75	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_460_ISEGS	HEWA	ACC	47	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_461_ISEGS	CHSP	ACC	40	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_462_ISEGS	BRSP	ACC	54	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_463_ISEGS	NRWS	ACC	35	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_464_ISEGS	WIWA	ACC	35	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_465_ISEGS	PEFA	Power Block	37	Large	Large Carcass	singed	Fatality Search	7	Yes	X	X		
2016_466_ISEGS	UNFL	Power Block	66	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_467_ISEGS	HOFI	Power Block	87	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X		
2016_468_ISEGS	YWAR	Inner HD	82	Small	Small	singed	Fatality	7	Yes	X		X	

					Carcass		Search							
2016_469_ISEGS	UNSP	Inner HD	233	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_470_ISEGS	YWAR	Power Block	23	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_471_ISEGS	UNID	Power Block	23	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_472_ISEGS	UNID	Power Block	20	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_473_ISEGS	UNID	Power Block	20	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_474_ISEGS	LENI	Power Block	25	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X			
2016_475_ISEGS	LOSH	Power Block	6	Small	Feather Spot	unknown	Fatality Search	7	No	X	X			Older than Search Interval
2016_476_ISEGS	UNID	Power Block	71	Small	Feather Spot	unknown	Fatality Search	8	Yes	X	X			
2016_477_ISEGS	YWAR	Inner HD	185	Small	Small Carcass	singed	Fatality Search	7	No	X		X		Older than Search Interval
2016_478_ISEGS	YWAR	Power Block	23	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_479_ISEGS	OCWA	Inner HD	207	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X		
2016_480_ISEGS	LENI	Inner HD	90	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_481_ISEGS	WEKI	Inner HD	222	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_482_ISEGS	OCWA	Power Block	40	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_483_ISEGS	BRSP	Power Block	55	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_484_ISEGS	CAKI	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X			Older than Search Interval
2016_485_ISEGS	LEGO	Power Block	19	Small	Small Carcass	unknown	Incidental	1(1)	No	X	X			Older than Search Interval
2016_486_ISEGS	YWAR	Power Block	69	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_487_ISEGS	YRWA	Power Block	55	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_488_ISEGS	TOWA	Inner HD	NA	Small	Small Carcass	unknown	Incidental	4	Yes	X		X		

2016_489_ISEGS	VGSW	ACC	30	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_490_ISEGS	VGSW	ACC	28	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_491_ISEGS	UNID	Inner HD	110	Small	Feather Spot	singed		Fatality Search	7	Yes	X		X		
2016_492_ISEGS	BTYW	ACC	42	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_493_ISEGS	VGSW	ACC	38	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_494_ISEGS	VGSW	ACC	53	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_495_ISEGS	VGSW	Power Block	15	Small	Small Carcass	singed		Fatality Search	6	Yes	X	X			
2016_496_ISEGS	RNPH	Power Block	102	Large	Large Carcass	singed		Fatality Search	6	Yes	X	X			
2016_497_ISEGS	BTGN	Power Block	33	Small	Feather Spot	singed		Fatality Search	6	Yes	X	X			
2016_498_ISEGS	YWAR	Power Block	33	Small	Feather Spot	singed		Fatality Search	6	Yes	X	X			
2016_499_ISEGS	UNID	Power Block	72	Small	Feather Spot	singed		Fatality Search	6	Yes	X	X			
2016_500_ISEGS	WETA	Inner Segment	589	Small	Small Carcass	singed		Fatality Search	8	Yes				X	
2016_501_ISEGS	OCWA	ACC	44	Small	Small Carcass	singed		Fatality Search	7	Yes	X	X			
2016_502_ISEGS	BGGN	ACC	78	Small	Small Carcass	singed		Fatality Search	7	Yes	X	X			
2016_503_ISEGS	VASW	ACC	57	Small	Small Carcass	singed		Fatality Search	7	Yes	X	X			
2016_504_ISEGS	UNID	Power Block	47	Small	Feather Spot	singed		Fatality Search	7	Yes	X	X			
2016_505_ISEGS	CHSP	Power Block	26	Small	Small Carcass	unknown		Fatality Search	7	Yes	X	X			
2016_506_ISEGS	GRRO	Inner Segment	497	Large	Feather Spot	unknown		Fatality Search	8	No				X	Older than Search Interval
2016_507_ISEGS	MODO	Power Block	19	Large	Feather Spot	singed		Fatality Search	7	Yes	X	X			
2016_508_ISEGS	YWAR	Power Block	17	Small	Feather Spot	singed		Fatality Search	7	Yes	X	X			
2016_509_ISEGS	BGGN	Power Block	58	Small	Small Carcass	singed		Fatality Search	7	Yes	X	X			
2016_510_ISEGS	YWAR	ACC	52	Small	Small Carcass	singed		Incidental	1	Yes	X	X			
2016_511_ISEGS	HOLA	Power Block	67	Small	Feather Spot	singed		Fatality Search	7	Yes	X	X			
2016_512_ISEGS	VGSW	Power Block	30	Small	Small	singed		Incidental	1(1)	Yes	X	X			

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2016_513_ISEGS	LOSH	Inner Segment	404	Small	Feather Spot	unknown	Fatality Search		8	Yes			X	
2016_514_ISEGS	GWTE	Outer Segment	1260	Large	Feather Spot	unknown	Incidental	NA		No			X	Older than Search Interval
2016_515_ISEGS	ROPI	Inner HD	237	Large	Feather Spot	singed	Fatality Search		7	Yes	X	X		
2016_516_ISEGS	VASW	Inner HD	133	Small	Feather Spot	singed	Fatality Search		7	Yes	X	X		
2016_517_ISEGS	NRWS	Inner HD	158	Small	Feather Spot	unknown	Fatality Search		7	No	X	X		Older than Search Interval
2016_518_ISEGS	LISP	Outer Segment	1019	Small	Small Carcass	singed	Fatality Search		7	Yes			X	
2016_519_ISEGS	UNWF	Inner HD	120	Large	Feather Spot	unknown	Fatality Search		7	Yes	X	X		
2016_520_ISEGS	VASW	Inner HD	156	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_521_ISEGS	VASW	Inner HD	131	Small	Feather Spot	unknown	Fatality Search		7	Yes	X	X		
2016_522_ISEGS	UNID	Inner HD	123	Small	Feather Spot	singed	Fatality Search		7	Yes	X	X		
2016_523_ISEGS	UNGR	Inner HD	215	Large	Feather Spot	unknown	Fatality Search		7	Yes	X	X		
2016_524_ISEGS	WIWA	Power Block	42	Small	Small Carcass	singed	Incidental	1(1)		No	X	X		Older than Search Interval
2016_525_ISEGS	GTTO	Inner HD	218	Small	Feather Spot	unknown	Fatality Search		7	Yes	X	X		
2016_526_ISEGS	WEKI	Inner HD	216	Small	Feather Spot	singed	Fatality Search		7	Yes	X	X		
2016_527_ISEGS	WETA	Outer Segment	784	Small	Feather Spot	collision	Fatality Search		8	Yes			X	
2016_528_ISEGS	UNID	ACC	28	Small	Small Carcass	singed	Fatality Search		7	No	X	X		Older than Search Interval
2016_529_ISEGS	TEAL	Outer Segment	852	Large	Feather Spot	unknown	Fatality Search		11	Yes			X	
2016_530_ISEGS	HEWA	ACC	68	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_531_ISEGS	NRWS	Power Block	64	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X		
2016_532_ISEGS	YRWA	Inner HD	155	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X	

2016_533_ISEGS	SWIF	Inner HD	150	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_534_ISEGS	YRWA	Inner HD	115	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X			
2016_535_ISEGS	UNID	Inner HD	100	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_536_ISEGS	UNID	Power Block	21	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X				
2016_537_ISEGS	UNID	Power Block	17	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X				
2016_538_ISEGS	YWAR	Power Block	17	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X				
2016_539_ISEGS	UNWA	Power Block	25	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X				
2016_540_ISEGS	UNID	Power Block	80	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X				
2016_541_ISEGS	LISP	Outer Segment	1228	Small	Small Carcass	unknown	Fatality Search	11	Yes				X		
2016_542_ISEGS	MODO	Power Block	118	Large	Feather Spot	singed	Fatality Search	7	Yes	X	X				
2016_543_ISEGS	NRWS	Inner HD	196	Small	Feather Spot	singed	Fatality Search	7	No	X		X			Older than Search Interval
2016_544_ISEGS	ANHU	Power Block	133	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X				
2016_545_ISEGS	NRWS	Inner HD	255	Small	Feather Spot	singed	Fatality Search	7	No	X		X			Older than Search Interval
2016_546_ISEGS	OCWA	Power Block	86	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X				
2016_547_ISEGS	LOSH	Inner Segment	410	Small	Feather Spot	unknown	Fatality Search	7	Yes				X		
2016_548_ISEGS	YRWA	Inner HD	249	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X			
2016_549_ISEGS	UNSW	Power Block	76	Small	Small Carcass	singed	Fatality Search	7	No	X	X				Older than Search Interval
2016_550_ISEGS	UNID	Power Block	10	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X				
2016_551_ISEGS	BHCO	Inner HD	179	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X			
2016_552_ISEGS	UNSW	Inner HD	183	Small	Feather Spot	singed	Fatality Search	7	No	X		X			Older than Search Interval
2016_553_ISEGS	CHSP	Power Block	19	Small	Small	singed	Fatality	7	Yes	X	X				

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2016_554_ISEGS	UNHU	Inner HD	182	Small	Small Carcass	unknown	Fatality Search	7	No	X		X	Older than Search Interval
2016_555_ISEGS	VASW	Power Block	21	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X		
2016_556_ISEGS	WEKI	Inner HD	236	Small	Feather Spot	unknown	Fatality Search	7	No	X		X	Older than Search Interval
2016_557_ISEGS	UNSP	Inner HD	221	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_558_ISEGS	YWAR	Inner HD	244	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_559_ISEGS	UNSP	Inner HD	232	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_560_ISEGS	MODO	Inner HD	239	Large	Feather Spot	unknown	Fatality Search	7	No	X		X	Older than Search Interval
2016_561_ISEGS	UNSP	Inner HD	194	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X	
2016_562_ISEGS	AMPI	Outer Segment	1172	Small	Feather Spot	unknown	Fatality Search	7	Yes				X
2016_563_ISEGS	LENI	Inner HD	99	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_564_ISEGS	UNGR	Inner HD	NA	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_565_ISEGS	WEME	Outer Segment	1396	Small	Feather Spot	unknown	Fatality Search	7	Yes				X
2016_566_ISEGS	MODO	Outer Segment	1423	Large	Feather Spot	unknown	Fatality Search	7	Yes				X
2016_567_ISEGS	UNGR	Inner HD	241	Large	Large Carcass	unknown	Fatality Search	7	No	X		X	Older than Search Interval
2016_568_ISEGS	VASW	Inner HD	149	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_569_ISEGS	YRWA	Inner HD	114	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_570_ISEGS	VASW	Inner HD	174	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X	
2016_571_ISEGS	ROWR	Inner HD	255	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_572_ISEGS	MODO	Inner HD	244	Large	Feather Spot	unknown	Fatality Search	7	Yes	X		X	
2016_573_ISEGS	UNSP	Outer Segment	1172	Small	Feather Spot	unknown	Fatality Search	7	Yes				X

2016_574_ISEGS	LAZB	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X				Older than Search Interval
2016_575_ISEGS	NRWS	Power Block	0	Small	Small Carcass	singed	Incidental	1(1)	No	X	X				Older than Search Interval
2016_576_ISEGS	GRRO	Outer Segment	1060	Large	Feather Spot	collision	Fatality Search	6	Yes				X		
2016_577_ISEGS	UNID	Inner HD	160	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_578_ISEGS	UNSA	Inner HD	154	Small	Small Carcass	singed	Fatality Search	7	Yes	X		X			
2016_579_ISEGS	UNHU	ACC	33	Small	Small Carcass	singed	Fatality Search	8	Yes	X	X				
2016_580_ISEGS	UNSP	Inner Segment	544	Small	Feather Spot	unknown	Fatality Search	6	Yes				X		
2016_581_ISEGS	UNWA	Inner HD	144	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_582_ISEGS	UNSP	Inner HD	148	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_583_ISEGS	YRWA	Power Block	71	Small	Small Carcass	singed	Fatality Search	8	Yes	X	X				
2016_584_ISEGS	LISP	Inner HD	150	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X			
2016_585_ISEGS	ANHU	Inner HD	141	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X			
2016_586_ISEGS	WEME	Inner HD	190	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X			
2016_587_ISEGS	UNSP	Inner HD	191	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X			
2016_588_ISEGS	RCKI	ACC	42	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X				
2016_589_ISEGS	UNSW	ACC	55	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X				
2016_590_ISEGS	CLSW	Power Block	67	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X				
2016_591_ISEGS	UNBD	Power Block	98	Large	Feather Spot	unknown	Fatality Search	7	Yes	X	X				
2016_592_ISEGS	WCSP	Inner HD	229	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_593_ISEGS	MODO	Inner HD	236	Large	Feather Spot	singed	Fatality Search	7	Yes	X		X			
2016_594_ISEGS	YRWA	Power Block	52	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X				
2016_595_ISEGS	YRWA	Power Block	68	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X				
2016_596_ISEGS	YRWA	Power Block	71	Small	Small	singed	Incidental	1(1)	Yes	X	X				

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2016_597_ISEGS	LEGO	Power Block	75	Small	Small Carcass	singed	Incidental	1(1)	Yes	X	X			
2016_598_ISEGS	UNSP	Outer Segment	948	Small	Feather Spot	unknown	Fatality Search	7	Yes				X	
2016_599_ISEGS	LISP	Inner HD	260	Small	Small Carcass	collision	Fatality Search	7	Yes	X		X		
2016_600_ISEGS	UNID	Inner HD	196	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_601_ISEGS	LISP	Inner HD	253	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_602_ISEGS	YRWA	Inner HD	175	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_603_ISEGS	MODO	Outer Segment	888	Large	Feather Spot	unknown	Fatality Search	4	Yes				X	
2016_604_ISEGS	WCSP	Inner HD	242	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_605_ISEGS	YWAR	Inner HD	240	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_606_ISEGS	UNID	Inner HD	206	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X		
2016_607_ISEGS	RUBL	Inner HD	195	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_608_ISEGS	YRWA	Inner HD	128	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_609_ISEGS	MODO	Inner Segment	425	Large	Feather Spot	unknown	Fatality Search	7	Yes				X	
2016_610_ISEGS	BGGN	ACC	49	Small	Small Carcass	singed	Fatality Search	7	Yes	X	X			
2016_611_ISEGS	YWAR	Power Block	28	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_612_ISEGS	UNID	Inner HD	146	Small	Small Carcass	unknown	Fatality Search	7	Yes	X		X		
2016_613_ISEGS	MODO	Power Block	28	Large	Feather Spot	singed	Fatality Search	7	No	X	X			Older than Search Interval
2016_614_ISEGS	UNSS	Power Block	11	Small	Feather Spot	singed	Fatality Search	6	Yes	X	X			
2016_615_ISEGS	GRRO	Inner Segment	447	Large	Feather Spot	unknown	Fatality Search	7	Yes				X	
2016_616_ISEGS	UNSW	Power Block	28	Small	Feather Spot	singed	Fatality Search	7	No	X	X			Older than Search Interval
2016_617_ISEGS	BRBL	Inner HD	242	Small	Feather Spot	collision	Fatality Search	7	Yes	X		X		
2016_618_ISEGS	WCSP	Outer Segment	952	Small	Feather Spot	unknown	Fatality Search	7	Yes				X	

2016_619_ISEGS	VASW	Inner HD	193	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_620_ISEGS	YRWA	Inner HD	111	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_621_ISEGS	UNID	Outer Segment	991	Small	Feather Spot	unknown	Fatality Search		7	Yes				X	
2016_622_ISEGS	UNSP	Inner HD	135	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_623_ISEGS	SAGS	Outer Segment	819	Small	Small Carcass	collision	Incidental	NA		No				X	Older than Search Interval
2016_624_ISEGS	SAVS	Inner HD	224	Small	Feather Spot	unknown	Fatality Search		7	Yes	X		X		
2016_625_ISEGS	LOSH	Inner Segment	645	Small	Feather Spot	unknown	Fatality Search		11	Yes				X	
2016_626_ISEGS	YRWA	Power Block	45	Small	Small Carcass	singed	Incidental	1(1)		Yes	X	X			
2016_627_ISEGS	BARS	Inner HD	235	Small	Small Carcass	singed	Fatality Search		7	Yes	X		X		
2016_628_ISEGS	WCSP	Power Block	42	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X			
2016_629_ISEGS	UNSB	Inner HD	151	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_630_ISEGS	UNBD	Inner HD	111	Large	Feather Spot	unknown	Fatality Search		7	No	X		X		Older than Search Interval
2016_631_ISEGS	LEGO	Inner HD	108	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_632_ISEGS	UNID	Power Block	33	Small	Feather Spot	singed	Fatality Search		7	Yes	X	X			
2016_633_ISEGS	UNID	Inner HD	222	Small	Feather Spot	singed	Fatality Search		7	Yes	X		X		
2016_634_ISEGS	YRWA	ACC	51	Small	Small Carcass	singed	Fatality Search		7	Yes	X	X			
2016_635_ISEGS	WCSP	Outer Segment	890	Small	Feather Spot	unknown	Fatality Search		8	Yes				X	
2016_636_ISEGS	UNID	Power Block	16	Small	Feather Spot	singed	Fatality Search		7	No	X	X			Older than Search Interval
2016_637_ISEGS	UNID	Inner HD	187	Small	Feather Spot	unknown	Fatality Search		7	Yes	X		X		
2016_638_ISEGS	UNID	Power Block	34	Small	Feather Spot	singed	Fatality Search		7	No	X	X			Older than Search Interval
2016_639_ISEGS	VGSW	ACC	36	Small	Small	singed	Fatality		7	Yes	X	X			

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2016_640_ISEGS	WCSP	Inner HD	215	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_641_ISEGS	UNSS	Power Block	20	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_642_ISEGS	YWAR	Inner HD	186	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_643_ISEGS	UNID	Power Block	20	Small	Feather Spot	singed	Fatality Search	7	No	X	X			Older than Search Interval
2016_644_ISEGS	AMPI	Inner HD	234	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_645_ISEGS	UNID	Power Block	18	Small	Feather Spot	singed	Fatality Search	7	Yes	X	X			
2016_646_ISEGS	WCSP	Power Block	110	Small	Feather Spot	unknown	Fatality Search	7	Yes	X	X			
2016_647_ISEGS	UNID	Inner HD	160	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_648_ISEGS	AMPI	Inner HD	161	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_649_ISEGS	SWSP	Inner HD	NA	Small	Feather Spot	singed	Fatality Search	7	Yes	X		X		
2016_650_ISEGS	YWAR	Power Block	17	Small	Small Carcass	singed	Incidental	1(1)	No	X	X			Older than Search Interval
2016_651_ISEGS	ANHU	Power Block	12	Small	Small Carcass	singed	Incidental	1(1)	No	X	X			Older than Search Interval
2016_652_ISEGS	UNID	Inner HD	232	Small	Feather Spot	unknown	Fatality Search	7	No	X		X		Older than Search Interval
2016_653_ISEGS	UNSP	Inner HD	211	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_654_ISEGS	BTSP	Outer Segment	1128	Small	Feather Spot	unknown	Fatality Search	7	Yes				X	
2016_655_ISEGS	AMAV	Outer Segment	1364	Large	Feather Spot	unknown	Fatality Search	6	No				X	Older than Search Interval
2016_656_ISEGS	UNSP	Inner HD	235	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		
2016_657_ISEGS	UNSP	Outer Segment	776	Small	Feather Spot	unknown	Fatality Search	6	Yes				X	
2016_658_ISEGS	UNSP	Inner HD	235	Small	Feather Spot	unknown	Fatality Search	7	Yes	X		X		

2016_659_ISEGS	LBCU	Outer Segment	695	Large	Feather Spot	unknown	Fatality Search	7	No	X	Older than Search Interval
2016_660_ISEGS	SAGS	Outer Segment	1129	Small	Feather Spot	unknown	Fatality Search	8	Yes	X	
2016_661_ISEGS	WEME	Outer Segment	1381	Small	Feather Spot	unknown	Fatality Search	8	Yes	X	