PROVO RIVER DELTA RESTORATION PROJECT

Bird-Aircraft Strike Risk Technical Memorandum

Prepared for the Final Environmental Impact Statement

April 2015

UTAH RECLAMATION MITIGATION AND CONSERVATION COMMISSION

U.S. DEPARTMENT OF THE INTERIOR · MARCH 3, 1849

CENTRAL UTAH WATER CONSERVANCY DISTRICT

JUNE SUCKER RECOVERY IMPLEMENTATION PROGRAM

TABLE OF CONTENTS

1.0 INTRODUCTION AND RELEVANT BACKGROUND 1

Description of Project Alternatives 6

2.0 METHODS 7

Describing Existing Bird Communities 7
Study Area Bird Surveys 7
Internet and Other Data Sources 9

Assessment of Bird-Aircraft Strike Risk 11
Quantitative Approach 11
Habitat-Based Quasi-Quantitative Approach 12

3.0 RESULTS 17

Existing Bird Communities based on Project Area Surveys, Provo's Wildlife Hazard Assessment, and Bird Strike Reports 17
Project Area Surveys 17
Study Area Bird Mass 32
Provo Bay Bird Mass 32
Description of Bird Communities from eBird Data 35
Provo Airport's Wildlife Hazard Assessment (WHA) 44
Utah Valley University's Bird Strike Data 46
National Wildlife Strike Database 47

Potential Bird-Aircraft Strike Risk 51
Quantitative Analysis 51
Bird Aircraft Strike Risk Based on Bird Abundance 54
No-Action Alternative 54
Alternative A 54
Alternative B 54
Alternative C 57
Alternative A: Bird Mass 57
Alternative B: Bird Mass 60
Alternative C: Bird Mass 60

4.0 DISCUSSION 63

Bird Community Survey Results 63

Avian Biomass Comparisons Using the Modified Bird Avoidance Model (BAM) 64
Airport Hazard Impact Evaluation 70

Temporary, Indirect, and Cumulative Effects 83
Temporary Impacts during Construction 83
Indirect Effects 83
Cumulative Effects 83

Mitigation Measures 85

5.0 REFERENCES 87

APPENDIX A: RAW DATA

List of Tables

Table 1. Predicted change in wildlife habitat acreage by alternative. 6

Table 2. Estimated proportions of predicted habitat that would become more like comparable surrounding areas under each action alternative. 14

Table 3. Total bird observations (abundance) in 2012–2013 spring surveys. 18

Table 4. Total bird observations (abundance) in 2012–2013 summer surveys. 21

Table 5. Total bird observations (abundance) in 2012–2013 fall surveys. 23

Table 6. Total bird observations (abundance) in 2012–2013 winter surveys. 25

Table 7. High counts (peak abundance) for FAA-listed hazardous species and for species not listed as hazardous but where high counts exceeded 100 birds. 28

Table 8. Study area seasonal and total bird mass (grams) of avian species identified as hazardous to aircraft, April 2012 through October 2013. 33

Table 9. Provo Bay seasonal and total bird mass (g) of avian species identified as hazardous to aircraft, April 2012 through October 2013. 34

Table 10. Total birds detected at sixteen locations on Utah Lake, based on data extracted from eBird database for the period January 2007–December 2011, ranked in descending order of total percentage. 36

Table 11. eBird data for six sites surrounding the Salt Lake City International Airport (2007–2011). 43

Table 12. Bird strikes at Provo Airport reported by Utah Valley University's Aviation Sciences Program, 2012–2013. 46

Table 13. Bird-aircraft strikes reported for the Salt Lake City International Airport for the period from 1990 to 2013. 48

Table 14. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in spring and fall 2012. 51

Table 15. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in spring 2012. 52

Table 16. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in fall 2012. 52

Table 17. Wildlife species/groups identified as hazardous by the FAA (FAA advisory circular 150/5200-33) and their documented occurrence in the project area during 2012 and 2013 spring and fall surveys. 53

Table 18. Predicted increase or decrease in seasonal abundance, Alternative A. 55

Table 19. Predicted increase or decrease in seasonal abundance, Alternative B. 56

Table 20. Predicted increase or decrease in seasonal abundance, Alternative C. 58

Table 21. Predicted increase or decrease in seasonal bird mass under Alternative A. 59

Table 22. Predicted increase or decrease in seasonal bird mass under Alternative B. 61

Table 23. Predicted increase or decrease in seasonal bird mass under Alternative C. 62

List of Figures

Figure 1. Vicinity map. 2

Figure 2. Study area wildlife habitat types. 4

Figure 3. Location and extent of the four areas where BIO-WEST conducted surveys of existing bird communities. 8

Figure 4. Areas used to evaluate existing bird communities along the eastern shoreline of Utah Lake. 10

Figure 5. Airspace surfaces surrounding an airport (typically used to identify existing or planned ground-based obstructions to navigation near airports under federal regulation 49 CFR Part 77). 17

Figure 6. A sandhill crane using habitat next to a Provo Airport runway. 66

Figure 7. Canada geese using habitat adjacent to a Provo Municipal Airport runway.

Figure 8. Provo Airport traffic pattern layout. 72

Figure 9. Three-dimensional airspace model for Provo Airport. 73

Figure 10. Potential bird flight paths from the study area in relation to airport airspace and runway (not to scale). 74

1.0 INTRODUCTION AND RELEVANT BACKGROUND

The Provo Airport is positioned less than 0.5 mile south of Provo River on the eastern shore of Utah Lake (Figure 1). The Provo Airport is currently surrounded to the northwest, west, southwest, south, and southeast by a combination of emergent marsh and open water; to the north, northeast, and east it is surrounded by intermittently flooded agricultural land and the Provo River. The mouth of the Provo River is approximately 2,000 feet northwest of the runway that was expanded in the 1990s. The airport was built in the center of the historic Provo River delta. Older channel alignments can still be seen on aerial photographs showing river channels under the existing airport. Utah Lake is immediately west of the Provo Airport and Provo Bay is immediately to the south. The airport is surrounded by a levee and drain system to keep it from being flooded by Utah Lake. Utah Lake elevations vary seasonally and annually depending on climatic conditions. A variety of deep water, emergent marsh, wet meadow, and upland habitats currently occur within the airport property.

The Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission), Central Utah Water Conservancy District, and the U.S. Department of the Interior – Central Utah Project Completion Act Office (Interior) are Joint Lead Agencies in preparing an Environmental Impact Statement (EIS) for the Provo River Delta Restoration Project (75 FR 12562, March 16, 2010). The EIS is being prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the Council on Environmental Quality Regulations at 40 CFR 1501.7, and authorities under the Endangered Species Act (15 U.S.C.1536, et seq.).

The Provo River Delta Restoration Project (PRDRP) is needed to facilitate recovery of June sucker in Utah Lake by restoring habitat conditions essential for spawning, hatching, larval transport, survival, rearing, and recruitment of June sucker on a self-sustaining basis. The June sucker (*Chasmistes liorus*) is an endangered fish species that exists naturally only in Utah Lake and spawns naturally in the lower Provo River, a Utah Lake tributary. June sucker was listed as an endangered species on April 30, 1986 (51 FR 10857). The lower 4.9 miles of the Provo River, from Utah Lake upstream to the Tanner Race Diversion Dam, is designated as critical habitat for the June sucker. Under the Endangered Species Act (ESA), critical habitat is an area essential to the species' conservation that requires special management and protection.

Monitoring indicates young June sucker hatching in the lower Provo River do not survive to the adult stage. It is believed that first-year fish do not survive due to habitat inadequacies in the lower Provo River and its interface with Utah Lake related to water depths, flow, food supply and shelter in the existing channel. A compounding factor is likely predation by nonnative fishes. Dredging and channelization for flood control has eliminated the shallow, warm, complex wetland habitat at the mouth of the Provo River where it enters Utah Lake. The conceptual restoration, as described in the Notice of Intent for preparing an EIS (75 FR 12562, March 16, 2010), is to relocate the lower Provo River onto public and acquired private fee lands, connecting the river to a former bay of Utah Lake that will be restored to provide habitat conditions necessary for survival and recruitment of June sucker.

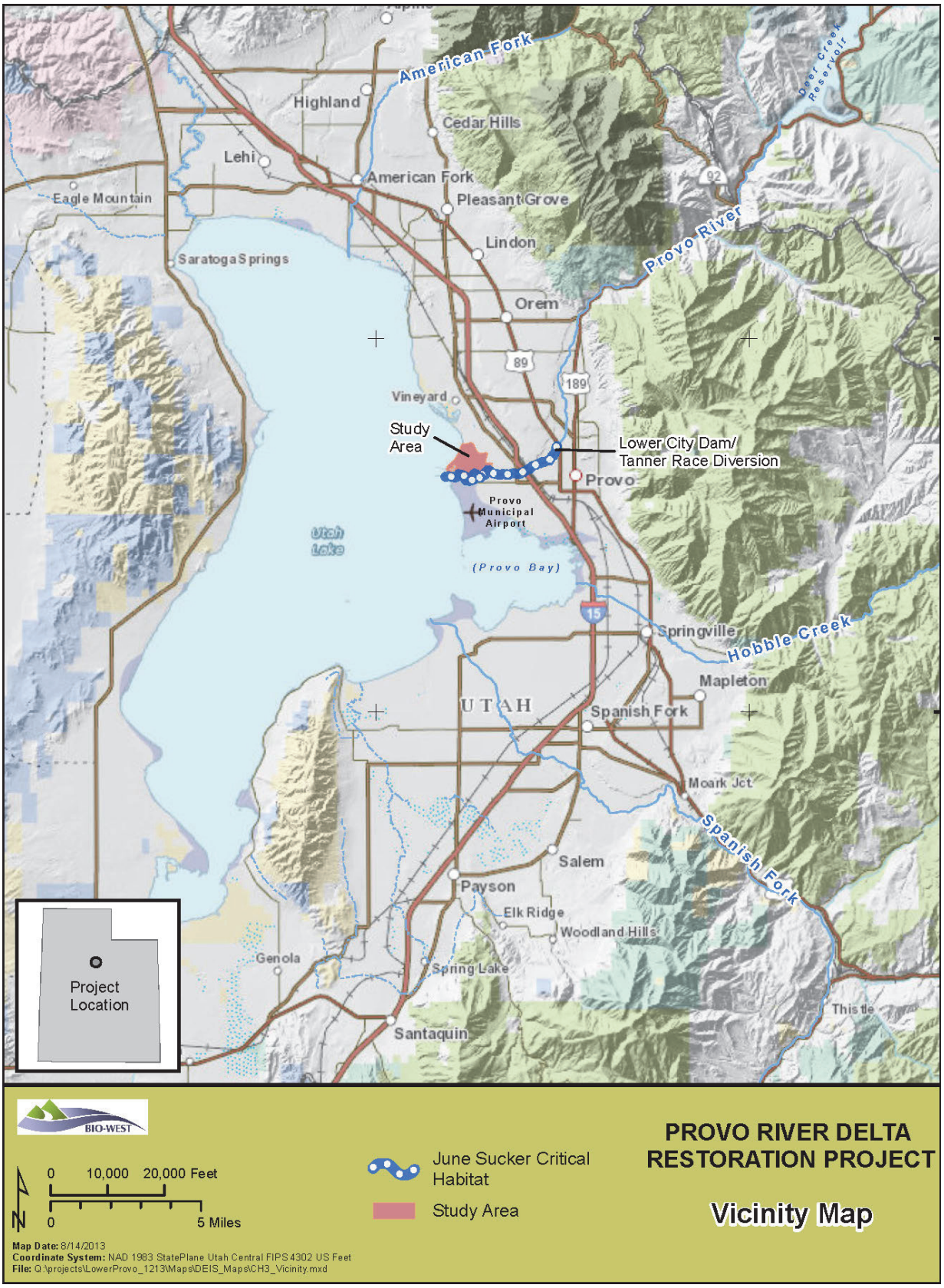

Figure 1. Vicinity map.

The commitment of the JLAs to the proposed project is predicated on environmental commitments for water development projects in Utah, as well as the participation of the JLAs in the June Sucker Recovery Implementation Program (JSRIP). The Final Supplement to the Diamond Fork System Final Environmental Impact Statement committed the Joint Lead Agencies to ". . . participate in the development of a Recovery Implementation Program for June sucker." Moreover, ". . .[a]ny future development of the Bonneville Unit of CUP [Central Utah Project] will be contingent on the RIP [Recovery Implementation Program] making 'sufficient progress' towards recovery of June sucker" (CUWCD 1999). The JSRIP was established in 2002, and the Joint Lead Agencies are participants. The goals of the JSRIP are to recover June sucker so that it no longer requires protection under the Endangered Species Act; and allow continued operation of existing water facilities and future development of water resources for human uses within the Utah Lake basin in Utah.

The study area for the proposed project is illustrated in Figure 1. Each of the alternatives that were selected for detailed analysis in the EIS would involve the partial removal of Skipper Bay dike and rerouting the lower Provo River from its present location to a more northerly route. Skipper Bay dike currently keeps Skipper Bay semidisconnected from Utah Lake. The project study area is bounded on the south by the south levee of the existing Provo River channel, to the west by Utah Lake, to the north by existing marshlands along Utah Lake, and to the northeast and east by higher ground and existing residential developments, respectively.

Under the proposed action, delta restoration would occur north of Boat Harbor Drive and west of Lakeshore Drive. This portion of the study area currently consists of a mixture of intermittently flooded agricultural land and emergent wetlands (Figure 2). As a large complex groundwater discharge zone, springs and peat soils are present in the eastern and northeastern portions of the study area. Restoration of the Provo River/Utah Lake interface into a naturally functioning delta would generally increase flooding frequency and water depths in portions of the study area, either from the re-routed portion of the Provo River and/or by seasonal inundation from Utah Lake resulting from the partial removal of Skipper Bay dike. Vegetation community alterations would vary spatially depending on specific details associated with each alternative.

This technical memorandum addresses a specific concern identified during initial scoping and reaffirmed in consultations with Provo City, the potential for increased bird–aircraft strike risk following implementation of the project. Bird-aircraft collisions can be costly, and potentially result in injury or death (Sodhi 2002). Additionally, airports that receive federal funding through the Federal Aviation Administration (FAA) are required to complete wildlife hazard assessments and develop a hazard mitigation plan if hazards exist (Title 14 Code of Federal Regulations, Pt. 139.337. 2012 ed.). In consultations with Provo City, the JLAs learned that the Provo Airport was completing a wildlife hazard assessment concurrently to preparation of the EIS for the PRDRP. Provo City and the JLAs agreed to share information from their respective wildlife observations and hazard assessments. This technical memorandum was completed by BIO-WEST, Inc. to provide the JLAs with an assessment of existing bird communities in the study area and in habitats surrounding the Provo Airport. The technical memorandum supports the assessment of bird-aircraft strike risk included in the EIS.

Figure 2. Study area wildlife habitat types.

According to a recent FAA report (2013), from 1990 to 2011, 462 species of birds and 38 species of terrestrial mammals were identified as struck by aircraft; deer and coyotes are the terrestrial mammals that are most frequently involved with damaging strikes; these two species are included in the FAA list, but have not been evaluated for the study area. The FAA strongly recommends wildlife strikes be reported and maintains a national database. Reports of strike incidents at Provo Airport since 1993 indicate one strike resulting in substantial damage involving a deer. In total, there have been fourteen incidents reported at Provo Airport, five involving deer, all of which occurred prior to 2007, and nine involving small- to medium-sized birds, all of which occurred since 2007 and none indicating damage to the aircraft (FAA 2015).

On the global scale, while bird strike incidents occur frequently—one estimate is three "significant hits" per week (Telegraph 2013)—it can also be said that they are quite rare; for airliners, regional jets, and business jets, globally there had been only 1 fatality per 1 billion flying hours from the beginning of public aviation (1912) through 1995 (Thorpe 2003). However, incidents have increased in frequency in more recent years, in the U.S. at least, because both numbers of birds and numbers of flights have shown increasing trends (FAA 2012). The largest number of fatalities that has ever occurred in a single incident (62 fatalities) occurred in Boston in 1960 when a Lockheed L188 Electra collided with a flock of starlings a few seconds after takeoff (Thorpe 2003). Since that time improvements have been made in aircraft design as well as in wildlife avoidance and mitigation efforts.

The seriousness of incidents varies by type of aircraft. The analysis by Thorpe (2003) for the International Bird Strike Committee summarized trends associated with fatal bird strike incidents, identifying differences between incidents involving jets, general aviation aircraft, and helicopters. Birds involved in 10 fatal jet crashes up to 1995 ranged from collisions with single, large-bodied raptors to collisions with large flocks of small-bodied perching birds. General aviation aircraft had more total incidents involving fatalities, likely because these aircraft fly at lower elevations and are more vulnerable, particularly to windshield penetration. The most common birds struck by general aviation aircraft resulting in fatalities were raptors, accounting for half of the global incidents. Helicopters were also found to be vulnerable to windshield penetration, but had few incidents globally; a greater proportion of helicopter incidents occurred in the United States, likely because helicopters are used more frequently in the U.S., according to Thorpe's analysis.

Incidents that occur during takeoff are often the most serious, partly because of the speed that aircraft are flying; however serious incidents do not necessarily occur within the immediate vicinity of the airport. For commercial and general aviation aircraft, 72-75 percent of strikes have occurred below 500 feet above ground level, but strikes occurring above 500 feet were more likely to cause serious damage to the aircraft (FAA 2012). A recent and well-known incident is the successful ditching of US Airways flight 1549 (Airbus A320-214) in the Hudson River on January 15, 2009 following a collision with a flock of Canada geese. The collision occurred at an altitude of 2,818 feet above ground level at a distance of about 4.5 miles from the approach end of the runway at LaGuardia Airport (NTSB 2010). On March 4, 2008, an executive jet (Cessna 500) collided with one or more pelicans after takeoff from Wiley Post Airport in Oklahoma City, resulting in a fatal crash killing all five persons on board (NTSB 2009). Based on analysis contained in the incident report, the collision was estimated to have occurred at an elevation of

3,050 feet at a distance of approximately 3 miles from the runway. In 2011, another incident involving pelicans occurred 20 miles from an Arkansas airport at 5,000 feet above ground level; fortunately, this aircraft, a regional jet (CRJ 200), was able to land safely (FAA 2012).

Description of Project Alternatives

Three action alternatives were advanced for detailed analysis; these are labeled Alternatives A, B, and C in Chapter 2 of the EIS. A No-Action Alternative is also evaluated. The proposed action would involve restoring a more natural river/lake interface in the lower Provo River and reestablishing essential rearing habitat for June sucker. This rearing habitat would support juvenile June sucker until they are capable of surviving in the larger Utah Lake environment. The alternative preferred by the joint lead agencies is Alternative B, which minimizes the amount of private agricultural lands that would be acquired while still providing adequate width of river-lake interface (e.g., delta) to serve as habitat enhancement for achieving the project purpose. A detailed alternatives development technical memorandum was prepared describing the habitat enhancement criteria and alternatives screening process (URMCC 2011). Maps illustrating design features of the action alternatives are included in Appendix A of the EIS.

In terms of wildlife use, the action alternatives differ primarily by acreage and types of wildlife habitat that would be modified. Table 1 provides a summary comparison of wildlife habitat changes predicted for each alternative. Section 3.8 of the EIS provides a detailed discussion of existing as well as predicted habitats. Existing wildlife habitat types for the study area are illustrated in Figure 2.

Table 1. Predicted change in wildlife habitat acreage by alternative.

WILDLIFE HABITAT TYPES	BASELINE (EXISTING) CONDITIONS, ACRES	ALTERNATIVE A		ALTERNATIVE B		ALTERNATIVE C	
		Acres	Change (Acres)	Acres	Change (Acres)	Acres	Change (Acres)
open water	29.1	75.0	+45.9	67.0	+37.9	59.9	+30.8
wetland	300.0	438.9	+138.9	298.0	-1.9	432.7	+132.7
woodland	23.3	65.7	+42.3	49.0	+25.6	58.7	+35.4
upland grassland	88.4	76.1	-12.3	56.9	-31.5	86.6	-1.8
agricultural	261.4	44.5	-216.9	223.6	-37.8	55.2	-206.2
roads, parking, and berm/trail	5.8	7.9	+2.1	13.8	+8.0	15.0	+9.2
total[a]	708.0	708.0	–	708.0	–	708.0	–

[a] Predicted acres under each alternative may not total exactly to 708.0 acres due to rounding to the nearest tenth of an acre.

2.0 METHODS

The purpose of this technical memorandum is to inform the NEPA process by providing information of sufficient detail to support the analysis presented in the EIS. This is accomplished by providing a description of existing bird communities in and around the study area and along the eastern shore of Utah Lake based on two years of avian monitoring and by providing a detailed explanation of the analysis that was used to predict avian abundances and subsequently, bird-aircraft strike risk under each of the action alternatives.

Describing Existing Bird Communities

To describe existing bird communities in the study area, BIO-WEST assembled two types of data. First, bird surveys were performed during the spring and fall migration seasons in 2012, and then monthly surveys were performed in 2013. Second, existing bird data at several locations along the eastern shore of Utah Lake and Provo Bay collected by numerous sources over several years was compiled from internet sites including the Cornell University Lab of Ornithology's eBird Database (http://ebird.org/content/ebird/).

Study Area Bird Surveys

The study area was delineated in major habitat types for bird surveys. Field survey locations (Figure 3) were as follows: (1) North Wetlands, this area is dominated by emergent and wet meadow wetlands bounded by Skipper Bay dike and Utah Lake on the west, a water drain and marshlands to the north and northeast, uplands and wet meadow/emergent marsh complex on the east, and by an east-west oriented fence line and upland agricultural fields on the south; (2) the South Agricultural Fields, bounded by Skipper Bay dike and Utah Lake on the west, the North Wetlands on the north, wet meadow/emergent marsh complex on the east, and North Boat Harbor Drive and the existing channel and riparian corridor on the south; (3) along the riparian corridor of the existing channel (Provo River Parkway) between Lake Shore Drive on the east and the Utah Lake State Park on the west; and (4) Provo Bay and dike, along the southern edge of the Provo Airport, including the emergent marsh and open water in Provo Bay south of the Airport dike.

The Provo Bay survey area is outside of the proposed delta restoration area, but it was surveyed to describe an existing bird community associated with habitat that is likely similar to habitat that would become present in the northern/western portion of the study area following the project implementation. Because this existing bird community is expected to be similar to the bird community that would occur following project implementation, it can facilitate evaluation and assessment of both the current bird-aircraft strike risk at the Provo Airport and an assessment of the potential bird-aircraft strike risk following project implementation. The analysis of bird-aircraft strike risk will be addressed for each of the proposed alternatives as part of the EIS.

Both the North Wetlands and the South Agricultural Fields were surveyed four times during spring 2012, on April 9, 16, 18, and 20. The Provo Airport Dike was surveyed three times, on April 9, 18, and 20; the Provo River Parkway was surveyed three times, on April 16, 18, and 20.

Figure 3. Location and extent of the four areas where BIO-WEST conducted surveys of existing bird communities.

All four locations were surveyed four times during fall 2012, on September 27, October 17, November 8, and December 10. In 2013 each of the four survey areas were surveyed monthly beginning in January and ending in October for a total of 10 surveys. On average, the survey effort was two hours per survey location for a total of eight hours per survey day resulting in 112 total survey hours spent to document existing bird communities within the project area and along Provo Bay and Airport Dike.

Bird surveys were conducted with the objective of providing a complete inventory of bird communities occurring within each of the designated survey areas. By treating the surveys as complete inventories and recording not only species but also the number of individuals of each species present, an assessment of the potential risk of bird-aircraft strikes was possible.

For each survey, BIO-WEST biologists recorded start and end times, the date, area covered, all species detected, and the number of individuals associated with each species (Appendix A). In cases where many individuals of a particular species were present, biologists used a spotting scope to locate and count individuals. Biologists identified and counted all species present, whether they were actively using the habitat (i.e., on the ground, landing, taking off, hunting/foraging, or circling) or flying over the survey area. Because BIO-WEST did not have permission to access the portion of the project area owned by Despain Ranch for seven of the eight surveys in 2012, a spotting scope (77 millimeter objective lens; 20x–60x millimeter zoom lens) was used to scan, locate, and identify distant birds in that portion of the project area for those seven surveys. Access was gained at the end of 2012 and the next 11 surveys were performed without access constraints.

Internet and Other Data Sources

To provide context for data collected on bird surveys, BIO-WEST described existing bird communities for 16 locations on the eastern shore of Utah Lake (Figure 4) using species and abundance data extracted from eBird, a citizen-science, peer-reviewed database (eBird 2012). These 16 locations, all of which are within 6.0 miles of the Provo Airport (measured from the center of their locations as plotted in the eBird database), were selected based on their broad habitat similarities to existing or predicted future study area habitat. Describing these bird communities provides spatial and temporal context for assessment of existing and post-implementation bird communities for the study area.

To describe the existing bird community along the eastern shore of Utah Lake, all available species and abundance data were extracted from eBird for each of the 16 locations for the period 2007–2011. A 5-year sampling period was selected to account for annual variation in bird populations, which can occur because of annual variation in precipitation and water levels in Utah Lake and its tributary rivers and creeks, such as the Spanish Fork River, Hobble Creek, and the Provo River. Species-specific total abundance was summed across all locations and years.

Similarly, BIO-WEST queried the eBird database for bird data at six locations surrounding the Salt Lake City International Airport (SLCIA) for the period 2007-2011. BIO-WEST also queried the FAA Wildlife Strike Database for all reported wildlife strikes at the Provo Municipal Airport and the SLCIA. Because habitat surrounding the SLCIA is similar to habitat surrounding the

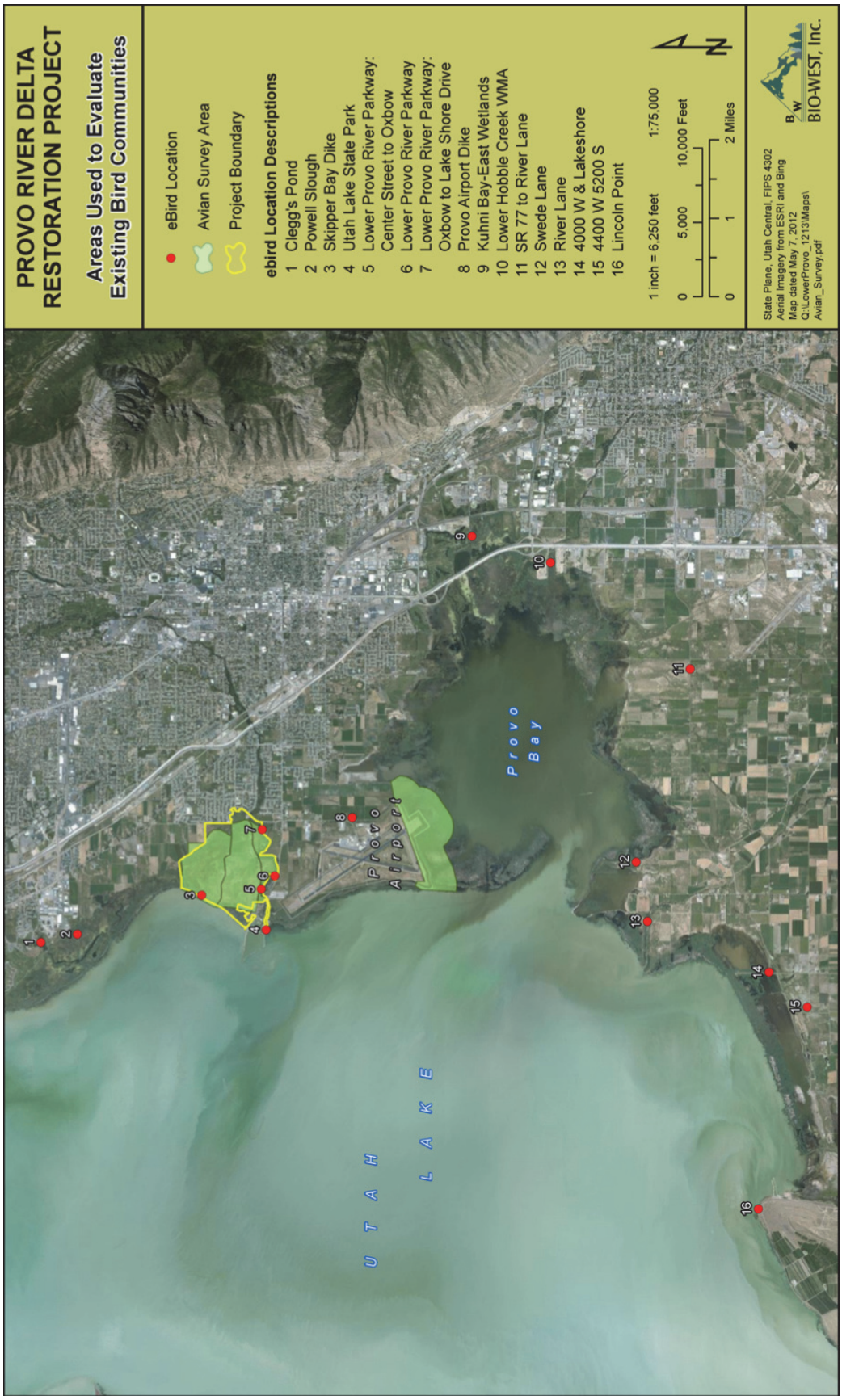

Figure 4. Areas used to evaluate existing bird communities along the eastern shoreline of Utah Lake.

Provo Airport, information gained from both eBird and the FAA Wildlife Strike Database can help provide context for assessing existing bird-aircraft strike risk at the Provo Airport.

BIO-WEST also contacted the Utah Division of Wildlife Resources to determine if any bird survey data were available for the study area. No data were available (K. Hershey 2012, pers. comm.; D. Liechty 2012, pers. comm.).

Assessment of Bird-Aircraft Strike Risk

BIO-WEST considered two tools to assess potential bird-aircraft strike risk under existing conditions.

Quantitative Approach

To attempt to quantify the potential risk associated with bird-aircraft strikes, BIO-WEST considered using the U.S. Air Force Bird Avoidance Model (BAM), which was developed to predict the risk of bird-aircraft collisions based on existing data (NAS 2012, USAF 2012, USGS 2012). The BAM was designed to use bird abundance data from the Christmas Bird Count (CBC) and the Breeding Bird Survey (BBS) to model and predict bird-aircraft strike risk (NAS 2012, USGS 2012). While both the CBC and NAS databases provide excellent long-term data sources, there are two inherent limitations that precluded their use as a source of bird abundance data for this evaluation. First, the CBC and BBS databases collect data during narrow annual sampling periods, and any given survey site is sampled only once a year (NAS 2012, USGS 2012). For the CBC, the survey date for a given site (such as the Provo CBC) occurs during one 24-hour period in a 3-week window between mid-December and early January (NAS 2012). The BBS data are also collected once annually for any given survey route, in a 4-week period between June 10 and early July. For both the CBC and BBS databases, the narrow sampling periods and lack of data for the remaining 364 days of the year mean that data has limited application for assessing meaningful bird-aircraft strike risk, particularly since neither database collects data during migration periods when the risk of bird-aircraft strikes is greater because large numbers of migrant birds may be present (Dolbeer 2006).

The CBC and BBS databases used by BAM also had little real value for this evaluation because of their locations and associated habitats. None of the four BBS survey routes in Utah County is less than10 miles from the project area, and all are located in upland habitats that do not occur in the project area. Although the area contained within the 7.5-mile-radius of the Provo CBC contains the project area, Provo Bay, and the eastern shore of Utah Lake, it also extends east to the ridgeline of the Wasatch Mountains and, therefore, includes montane habitats. Because the project area contains neither urban nor montane habitats, both the bird communities occurring with these habitats and the risk assessments based on these bird communities will differ.

Because of inherent limitations in the BAM model, and to provide a more meaningful basis for evaluating bird-aircraft strike risk, BIO-WEST used a “Modified BAM” model. The first modification was to use bird survey data collected within and adjacent to the project area under existing conditions (the four survey sites). The BAM ranks the risk of bird-aircraft collisions as “low,” “moderate,” or “severe.” Each risk class is assessed by dividing the total avian mass (ounces) per square kilometer for the area being assessed. Risk levels are evaluated on a

logarithmic scale, on the basis of the ratio of the risk level for a particular area relative to the risk level for the low risk class. An area is considered to be at moderate risk when the avian mass per square kilometer is between 57 and 708 times greater than that for the low risk class. The severe risk class is assigned to an area when avian mass per square kilometer is between 2,503 and 38,647 times greater than avian mass per square kilometer for the low risk class. The low-risk class is defined as being less than the range described for the moderate risk class.

For this analysis, a risk class was assigned for each of four survey areas by calculating total bird mass present within each survey area. First, for each surveyed area, average number of all individuals detected from each species was calculated across the number of surveys conducted within each area. Next, for each survey area, the relative mass contribution (ounces) of each species was determined by multiplying each species' average mass, obtained from currently available life-history data (Cornell Lab of Ornithology 2012) by the average number of all individuals detected from each species. For birds that could only be identified to genera or a broad taxonomic group, the average mass for all other species in that group or genera that were detected during surveys was used.

To determine the total area surveyed for each of the four locations, the approximate boundary of the surveyed area was digitized in ArcGIS. Next, the area for each survey area was calculated, based on these digitized boundaries. Using these calculated areas, the total mass for each bird species or taxonomic group was divided by the area calculated for each survey area. This calculation provided a relative total avian mass (ounces per square kilometer) across all species for each survey area. Finally, the relative risk of a bird-aircraft strike was assessed by dividing the total avian mass of each survey area by the total avian mass of the survey area with the smallest total avian mass. Risk was, therefore, assessed on a relative basis between survey areas.

Habitat-Based Quasi-Quantitative Approach

Qualitative assessment included a species-specific analysis and discussion of the birds that are commonly the most concerning for air traffic. Species of greatest concern were taken from FAA advisory circular 150/5200-33. High priority species were also identified by Provo City, FAA, and U.S. Department of Agriculture (USDA) Wildlife Services. Additionally, species specifically identified by airport officials were also considered (S. Gleason 2012, pers. comm.). High priority species are presented in Table 13 below. Species documented during surveys as well as species identified from online data sources to describe existing conditions were compared against the list of priority species as described by the FAA.

To assess likely changes resulting from action alternatives, post project implementation bird abundance estimates were made by species based on predicted habitat. The 2012 and 2013 avian surveys that were conducted throughout the study area and Provo Bay determined existing bird use within the following five habitat types:

1. Riparian forest
2. Emergent wetland
3. Open water
4. Upland grassland
5. Agricultural

The existing riparian forest habitat type is primarily limited to a narrow corridor of riparian vegetation adjacent to the existing channel. The Provo River Parkway survey area was used to determine bird use for the riparian forest habitat type. Existing emergent wetlands currently occur throughout the North Wetlands survey area and on the eastern portion of the South Agriculture survey area. The North Wetlands and South Agricultural survey areas were used to determine bird use for the emergent wetland habitat type. Open water is currently limited to the existing channel and Provo Bay, with some open water seasonally occurring in the North Wetlands. The Provo Bay and Provo River Parkway survey areas were used to determine bird use in open water. Upland grassland habitat type is found in the highest elevations of the North Wetlands survey area and on the eastern side of the South Agricultural survey area. The North Wetlands and South Agricultural survey areas were used to determine existing bird use in upland grassland habitat type. The existing agricultural habitat type is limited to the South Agricultural survey area, and therefore it was used to determine bird use in the agricultural habitat type.

Although all habitat types and associated bird use currently occur in the study area, implementation of the various action alternatives would increase the quantity and quality of certain habitat types (riparian forest, emergent wetland, and open water) and decrease the quantity of other habitat types (upland grassland and agricultural). There is a seasonal component that would affect the amount of open water and emergent wetland habitats on lands lower than 4,489 feet. In the spring, water levels are at their annual highs (as described in the hydrology section of the EIS) and the emergent vegetation such as bulrush, cattails, and reeds are either lying down from the effects of snow cover or have been sheared off by ice. Therefore open water is predicted to occur in the spring and become more like Provo Bay on the portion of the project area lower than 4,489 feet. In the summer, water elevations would recede in the project area from 4,489 feet in the spring to 4,487 feet in late summer (the proposed height of the channel bottom on the west side of Skipper Bay). Emergent vegetation would grow to a mature height (greater than 3 feet) late spring/early summer. Therefore, the amount of open water and area like Provo Bay would decrease rapidly late spring with vegetation growth, and would continue to decrease throughout summer and until fall as the lake draws down. Emergent wetland vegetation is at its highest and water levels are at their lowest during the fall. Open water during the late summer and fall would be limited in the project area to excavated channels, oxbows, and the low elevation lands mapped in the wetlands section as lacustrine aquatic bed. Water levels increase early winter and continue to increase throughout winter and early spring. Ice forms during the winter. It is expected that the project area would freeze over during the winter much like Provo Bay but ribbons of open water would likely persist throughout most of the winter along the main channels.

Predicted bird habitat was determined based on predicted wildlife habitats under each alternative (Table 1) and the seasonal fluctuation of open water as evaluated in the hydrology impact assessment (EIS Section 3.2). Wildlife habitat predictions were particularly helpful for summer, fall, and winter habitat predictions, while the water inundation depths during the spring at 4,489 feet shown in alternatives overview maps (EIS, Appendix A, Figures A-1 through A-5) were helpful for the spring predictions. Table 2 provides the estimated proportions of predicted habitat by season that would become more like existing survey areas under each action alternative.

Table 2. Estimated proportions of predicted habitat that would become more like comparable surrounding areas under each action alternative.

ALTERNATIVE	PROPORTIONS OF PREDICTED HABITAT (WEIGHTING PERCENTAGES USED TO MODEL PREDICTED BIRD ABUNDANCES)		
	Provo River Parkway	Southern Agricultural Lands	North Wetlands
Alternative A Spring	No Change	25% Provo River Parkway 75% Provo Bay	25% No Change 75% Provo Bay
Alternative A Summer	No Change	25% Provo River Parkway 60% North Wetlands 15% Provo Bay	75% No Change 25% Provo Bay
Alternative A Fall	No Change	25% Provo River Parkway 65% North Wetlands 10% Provo Bay	85% No Change 15% Provo Bay
Alternative A Winter	No Change	25% Provo River Parkway 60% North Wetlands 15% Provo Bay	75% No Change 25% Provo Bay
Alternative B Spring	No Change	80% No Change 20% Provo River Parkway	25% No Change 75% Provo Bay
Alternative B Summer	No Change	80% No Change 20% Provo River Parkway	75% No Change 25% Provo Bay
Alternative B Fall	No Change	80% No Change 20% Provo River Parkway	80% No Change 20% Provo Bay
Alternative B Winter	No Change	80% No Change 20% Provo River Parkway	75% No Change 25% Provo Bay
Alternative C Spring	No Change	25% Provo River Parkway 75% Provo Bay	67% No Change 33% Provo Bay
Alternative C Summer	No Change	25% Provo River Parkway 65% North Wetlands 10% Provo Bay	95% No Change 5% Provo Bay
Alternative C Fall	No Change	25% Provo River Parkway 65% North Wetlands 10% Provo Bay	95% No Change 5% Provo Bay
Alternative C Winter	No Change	25% Provo River Parkway 65% North Wetlands 10% Provo Bay	95% No Change 5% Provo Bay

The predicted proportions were then applied to existing bird abundance estimates[1] by survey area to determine predicted bird abundances for each alternative, assuming that there is a linear relationship between amount of bird habitat and bird abundance. The resulting predicted abundances were then subtracted from those calculated for existing conditions, which resulted in a predicted change in abundance for each species.

In performing and reporting this analysis, a first-level assumption was made that an increase in abundance would equate to an increase in potential strike risk and, conversely, that a decrease in abundance would equate to a decrease in potential strike risk (i.e., a direct correlation).

[1] The analysis used bird survey results (count data) to estimate abundance for each bird species in each habitat type. For several reasons (sampling limitations, study design bias, imperfect detection), using count data from limited observations introduces a range of estimation error that could not be quantified for this analysis.

Therefore, this first-level analysis presents a worst-case conclusion; that is, by assuming a direct and positive relationship between increasing bird abundance and increasing potential risk, the analysis attributes maximum adverse effect (increased potential strike risk) to an increase in bird abundance. In fact, the increased abundance would create increased risk only if those birds were to occur within the flight path of aircraft using the Provo Airport, especially during landing and takeoff when the planes are at low altitude and low speed. In addition, no adjustments were made for geographic scale; in particular, portions of the study area that would become more like Provo Bay would be smaller in geographic size compared to the surveyed portion of Provo Bay. This linear method likely results in conservative predictions, meaning predictions are likely representative of the maximum numbers that would be observed given the relatively small size of the study area (approximately 700 acres) compared to Provo Bay (approximately 7,000 acres). Also it is important to remember that reported bird numbers, both for the existing conditions tables and predicted change tables, are seasonal survey totals rather than numbers of birds that would be observed or predicted at a single point in time.

It is important to note that the acreage estimates of predicted wetlands and associated bird habitats, and estimated bird abundances associated with the various project alternatives are best estimates based on a hard look at all available information. Actual habitat changes could be influenced by unknown factors such as unanticipated seasonal and annual variability in lake levels and/or flow rates as a result of unforeseen droughts and/or floods. There are many factors on a regional scale that could influence future bird abundance and species composition in this migratory flyway. Furthermore, anticipated proportions of predicted habitat within the study area that would become more like comparable surrounding habitats where bird surveys were performed (Table 2) is not intended to indicate highly precise proportions. The proportions described in Table 2 are simply estimated seasonal averages over highly variable climatic conditions with temperatures ranging from less than 0 to greater than 100 degrees Fahrenheit annually. The predictions made in this analysis are based on best professional estimates by a team of biologists, hydrologists, environmental analysts, and a GIS specialist using GIS tools, knowledge of the study area, and mapping products specifically developed for this project. It is acknowledged that this analysis is cumulative, i.e., the predicted wetlands and bird habitats are based on anticipated lake elevations and incoming streamflows over time. The proportions of predicted habitat that would become more like surrounding areas are dependent on the amount and depth of open water and the quality and quantity of wetlands. Ultimately, predicted bird abundances reported in this document are dependent on not only the quality of existing bird data but also the "best professional judgment" proportion estimates of predicted habitats (Table 1). Therefore, predicted bird abundances described in this document should be considered more as estimates of relative differences to be expected from the project alternatives rather than predictions of exact numbers.

It must also be considered that in many cases, relatively large predicted changes in abundance do not represent actual population level changes of the same magnitude at a regional level for that species. Most often, the change in abundance is due to a change in distribution of the animals throughout the local or regional area. For example, in interagency discussions leading up to this analysis, there was concern expressed regarding pelicans and their potential use of the project implementation area. Pelicans breed in very select, discrete locations. Currently, there is only one known colony of breeding pelicans in Utah. It can be found on Gunnison Island in the North

Arm of the Great Salt Lake and represents one of the largest breeding populations in North America (Aldrich and Paul 2002). Gunnison Island pelican population numbers can be highly variable from one year to the next. According to the Great Salt Lake Ecosystem Project of the Utah Division of Wildlife Resources, an average of 6,119 pelicans have been documented on Gunnison Island from 1980 to 2006 (UDWR unpublished data). Gunnison Island pelicans are known to disperse over an extremely large area to feed and have been documented as far north as American Falls Reservoir in Idaho and as far south as Utah Lake (Aldrich and Paul 2002). Recent increases in Gunnison Island pelican abundances may be attributed to an abundance of carp in Wasatch Front fisheries; studies at pelican foraging areas confirm the pelican's reliance on carp as an important component of their diets (Flannery 1988). Given the small size of the proposed project area relative to the amount of available pelican habitat regionally, the pelicans' tendency to disperse across an extremely large geographic area to feed, and current carp-control projects across Utah Lake, it is highly unlikely that a small change through addition of a relatively few acres of usable foraging habitats in the Utah Lake ecosystem would have a measurable effect on breeding success of pelicans at Gunnison Island. Therefore, any increase in abundance of pelican in the project area would likely be accompanied by a similar decrease in abundance somewhere else in the nearby Utah Lake ecosystem (R. Norvell 2014, pers. comm.). This similar effect would occur for some other species such as waterfowl (B. Stringham 2014, pers. comm.), whereas there are other species that could be directly affected locally in abundance by changes brought about by the proposed project. Results of this modeling exercise are presented for each alternative in separate tables with accompanying text in the subsections below, followed by a summary discussion.

Obviously there are numerous factors that create or influence the risk of a bird-aircraft strike. In simple terms, the aircraft and the bird must come to occupy the same space at the same time. So the presence of a bird or even a flock of birds, in the study area within 1.5 miles of Provo Airport does not constitute a hazard to aircraft. The bird(s) only become a *potential* hazard (risk) if/when it takes flight over/across/through the airspace utilized by aircraft as they approach or depart the Provo Airport.

Integrating the potential movement patterns of birds into an assessment of a potential future project is difficult and much more speculative to perform than the quantitative bird abundance exercise described above. It typically involves definition of some three-dimensional airspace model around the airport being analyzed (Figure 5). The specifics of the 3-D airspace are determined by a number of factors specific to the location and orientation of the airport, types of aircraft utilizing the airport, type of air traffic control system in use, etc. Finally, the timing, type and schedule of aircraft using the airport can affect strike risk.

The assessment would require predicting whether a bird (individual or flock) is likely to fly through the airspace defined by that model and how frequently or under what conditions. Because it has not been possible to observe either the species/numbers of birds predicted under proposed project alternatives, and/or their movement patterns under proposed future conditions only general discussion of species tendencies is possible.

Resulting strike risk also depends on response to and effectiveness of mitigation measures. Several mitigation measures are presented later (Section 4.0).

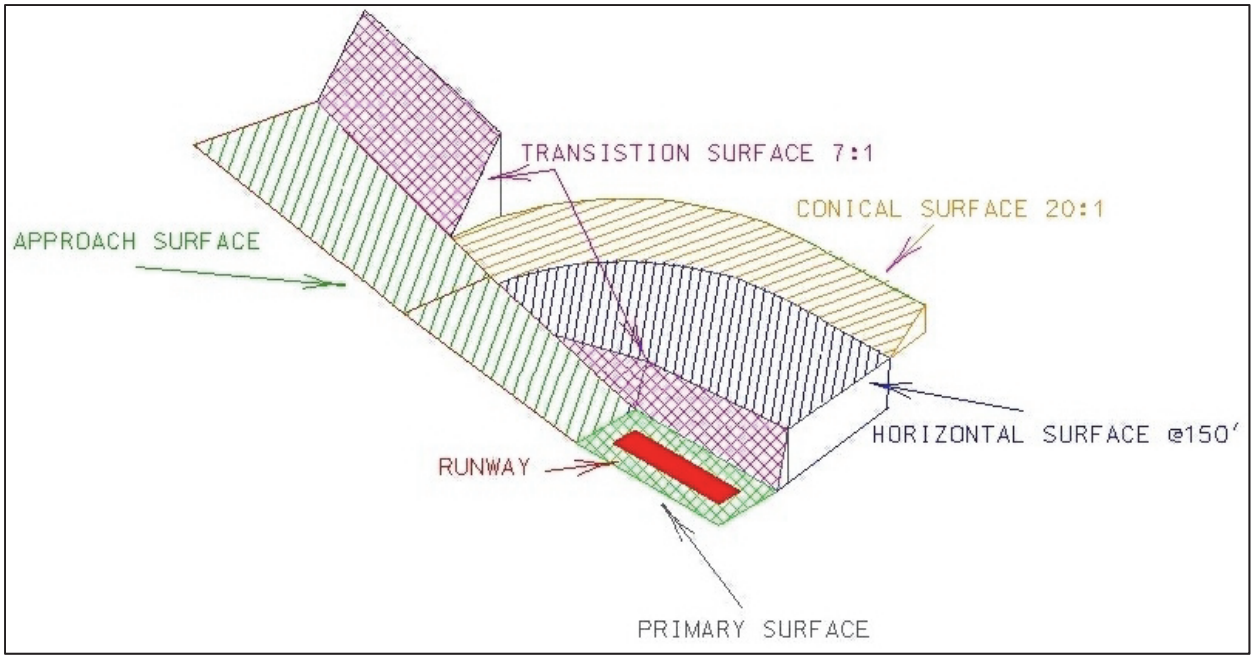

Figure 5. Airspace surfaces surrounding an airport (typically used to identify existing or planned ground-based obstructions to navigation near airports under federal regulation 49 CFR Part 77).

3.0 RESULTS

Existing Bird Communities based on Project Area Surveys, Provo's Wildlife Hazard Assessment, and Bird Strike Reports

Project Area Surveys

In total, 145 species and 37,154 individuals were recorded during BIO-WEST surveys in 2012 and 2013. Of those, 96 species and 10,012 individuals were recorded during spring surveys (Table 3), 79 species and 3,908 individuals (Table 4) were recorded during summer surveys, 98 species and 11,649 individuals (Table 5) were recorded during fall surveys, and 11,585 individuals across 56 species (Table 6) were recorded during winter surveys.

Seventy-five species and 6,713 individuals were recorded on the North Wetlands during spring surveys. During summer surveys, 52 species and 1,286 individuals were recorded at this location. During fall surveys, 61 species and 2,090 individuals were recorded. In the winter, 40 species and 9,086 individuals were recorded. Waterfowl were a major component of the bird community at this location; 19 species of waterfowl were present, and they comprised 40 percent of all birds detected. American coot (*Fulica americana*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*), and red-winged blackbird (*Agelaius phoeniceus*) were also commonly detected species. Ten species of shorebirds were recorded, and sandhill cranes (*Grus canadensis*) and a

Table 3. Total bird observations (abundance) in 2012–2013 spring surveys.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
American avocet	---	48	---	---
American coot	42	1355	312	47
American goldfinch	1	1	1	10
American kestrel	1	2	1	2
American pipit	---	24	---	---
American robin	111	82	9	123
American white pelican	---	1	39	---
American wigeon	4	508	---	---
Audubon's warbler	1	5	3	1
bank swallow	---	9	12	8
barn swallow	3	36	6	---
belted kingfisher	1	---	---	---
black-billed magpie	36	46	1	26
black-capped chickadee	4	2	9	33
black-crowned night heron	---	---	1	---
black-necked stilt	---	79	---	---
blue-winged teal	---	1	---	---
Brewer's blackbird	1	---	---	---
brown-headed cowbird	---	1	---	---
bufflehead	---	10	1	---
California quail	8	---	---	5
Canada goose	70	477	115	---
Caspian tern	---	2	---	---
chipping sparrow	---	---	1	---
cinnamon teal	46	299	18	---
Clark's grebe	---	---	3	---
cliff swallow	---	---	6	---
common goldeneye	---	4	---	1
common raven	---	2	---	---
dark-eyed junco	---	---	---	3
domestic duck	---	3	---	29
double-crested cormorant	---	---	6	---
downy woodpecker	3	---	---	2
eared grebe	---	12	---	---
European starling	176	194	12	33
Forster's tern	---	---	2	---
Franklin's gull	---	18	---	---
gadwall	31	160	25	---
great blue heron	---	3	4	---
great egret	---	---	1	---
greater scaup	---	10	---	---
greater yellowlegs	---	22	---	---
great-tailed grackle	---	4	---	---

Table 3. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
green-winged teal	37	1115	103	---
horned grebe	---	1	---	---
house finch	---	1	---	2
house sparrow	---	30	---	2
killdeer	8	63	6	8
lesser yellowlegs	---	11	---	---
long-billed curlew	---	1	---	---
mallard	162	313	24	63
marbled godwit	---	64	---	---
marsh wren	3	6	115	1
mountain chickadee	---	---	---	2
mourning dove	2	3	1	5
northern flicker	6	2	---	---
northern harrier	2	---	5	1
northern pintail	263	125	6	
northern rough-winged swallow	---	22	15	170
northern shoveler	2	827	18	1
osprey	1	13	1	---
pied-billed grebe	---	2	11	---
redhead	---	14	1	---
red-tailed hawk	5	5	2	1
red-winged blackbird	88	165	53	194
ring-billed gull	---	4	---	---
ring-necked duck	---	7	---	---
ring-necked pheasant	10	8	2	4
rock pigeon	---	13	---	---
ruby-crowned kinglet	2	7	---	3
ruddy duck	---	1	---	---
sandhill crane	1	17	10	---
savannah sparrow	---	1	1	---
snow goose	---	---	1	---
snowy egret	---	1	---	---
song sparrow	27	42	18	14
sora	1	---	---	---
spotted towhee	1	---	---	---
Swainson's hawk	3	2	1	---
tree swallow	---	6	---	5
tundra swan	---	3	---	---
turkey vulture	---	1	---	---
violet-green swallow	---	5	26	2
Virginia rail	3	---	---	---

Table 3. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
western grebe	---	3	5	---
western kingbird	2	---	---	---
western meadowlark	12	3	2	---
western/Clark's grebe	---	---	28	---
white-crowned sparrow	10	31	14	23
white-faced ibis	---	27	---	---
willet	---	4	---	---
Wilson's phalarope	---	2	---	---
Wilson's snipe	---	20	---	---
wood duck	---	1	---	4
yellow-headed blackbird	97	301	116	1
yellow-rumped warbler	1	---	1	8
Total Species	**42**	**75**	**50**	**35**
Total Individuals	**1288**	**6713**	**1174**	**837**

This space intentionally left blank.

Table 4. Total bird observations (abundance) in 2012–2013 summer surveys.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
American avocet	---	1	118	---
American coot	---	---	18	---
American goldfinch	---	19	---	1
American kestrel	2	4	---	2
American robin	22	15	5	97
American white pelican	1	---	42	---
bank swallow	---	5	---	---
barn swallow	21	81	2	4
black-billed magpie	46	26	1	9
black-capped chickadee	8	---	---	57
black-chinned hummingbird	---	1	---	1
black-crowned night heron	---	---	2	---
black-necked stilt	---	1	23	---
blue grosbeak	---	1	---	---
brown-headed cowbird	5	4	2	2
Bullock's oriole	15	15	---	11
California gull	---	---	9	---
California quail	7	---		9
Canada goose	---	4	8	20
Caspian tern	25	---	8	---
cedar waxwing	---	---	---	10
cinnamon teal	---	13	30	---
Clark's grebe	---	---	8	1
cliff swallow	---	5	---	---
common grackle	1	1	---	---
common yellowthroat	4	16	---	---
Cooper's hawk	---	---	---	1
domestic duck	---	3	---	1
domestic goose	---	---	---	1
double-crested cormorant	---	---	9	---
downy woodpecker	1		---	1
eastern kingbird	1	9	9	---
Eurasian collared-dove	---	1	---	---
European starling	574	266	43	58
Forster's tern	---	---	1	---
Franklin's gull	---	---	1	---
great blue heron	---	2	5	---
greater yellowlegs	---	1	---	---
house finch	6	6	---	---
house sparrow	7	6	---	1
killdeer	5	30	44	---

Table 4. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
lazuli bunting	2	---	---	---
lesser yellowlegs	---	---	1	---
mallard	9	22	38	124
marsh wren	3	73	21	---
mourning dove	10	31	15	9
northern harrier	---	1	1	---
northern mockingbird	---	---	1	---
northern rough-winged swallow	---	23	---	22
osprey	---	6	1	---
peep	---	16	---	---
pied-billed grebe	---	---	1	---
red-tailed hawk	3	2	---	---
red-winged blackbird	67	345	67	17
ring-necked pheasant	8	10	4	---
rock pigeon	---	7	---	---
ruby-crowned kinglet	1	---	---	1
sandhill crane	---	13	1	---
savannah sparrow	5	15	---	---
snowy egret	---	3	16	---
song sparrow	9	39	6	25
sora	---	2	---	---
spotted sandpiper	---	6	1	---
Swainson's hawk	2	1	---	---
tree swallow	---	1	150	---
turkey vulture	1	2	---	---
violet-green swallow	---	14	---	---
warbling vireo	---	1	---	---
western kingbird	27	35	7	---
western meadowlark	21	3	---	1
Western tanager		---	---	3
white-crowned sparrow	1	---	---	---
white-faced ibis	---	---	240	---
willow flycatcher	---	---	---	4
Wilson's phalarope	---	---	130	---
Wilson's warbler	---	---	---	1
wood duck	---	---	---	10
yellow warbler	13	23	10	34
yellow-headed blackbird	12	56	40	---
Total Species	**35**	**52**	**41**	**31**
Total Individuals	**945**	**1286**	**1139**	**538**

Table 5. Total bird observations (abundance) in 2012–2013 fall surveys.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
American avocet	---	3	5	---
American coot	---	50	2128	13
American crow	1	---	---	---
American goldfinch	5	13	76	4
American kestrel	5	8	4	5
American pipit	1	5	8	---
American robin	55	159	11	227
American white pelican	---	---	149	---
American wigeon	---	25	---	---
American/lesser goldfinch	---	---	4	---
Audubon's warbler	9	18	33	12
bank swallow	---	3	---	---
barn swallow	15	6	---	1
belted kingfisher	---	2	---	3
black-billed magpie	77	51	11	42
black-capped chickadee	16	20	12	76
black-necked stilt	---	---	4	---
black-throated gray warbler	---	1	---	---
Brewer's blackbird	1	---	---	---
brown creeper	---	---	---	7
bufflehead	---	---	1	---
California gull	---	1	---	---
California quail	10	---	---	1
Caspian tern	31	---	10	---
Cassin's finch	---	---	---	2
Cassin's vireo	---	1	---	---
cedar waxwing	---	3	---	1
chipping sparrow	---	12	1	4
cinnamon teal	---	---	1	---
Clark's grebe	10	2	---	---
common merganser	---	---	4	30
common raven	---	---	1	---
Cooper's hawk	---	1	---	---
dark-eyed junco	2	21	---	20
domestic duck	---	---	---	29
double-crested cormorant	---	---	5	---
downy woodpecker	4	2	1	---
eared grebe	---	---	14	---
Eurasian collared-dove	---	2	17	---
European starling	1987	282	6	1764
Franklin's gull	1	---	---	---

Table 5. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
gadwall	---	---	10	---
golden-crowned kinglet	---	---	---	1
great blue heron	---	1	9	---
great egret	---	---	2	---
great horned owl	---	---	---	1
greater yellowlegs	---	---	4	---
green-winged teal	---	3	6	---
hermit thrush	---	---	1	---
house finch	21	101	1	9
house sparrow	10	11	---	---
house wren	---	1	---	---
killdeer	2	67	17	---
Lincoln's sparrow	1	7	---	1
long-billed dowitcher	---	---	95	---
MacGillivray's warbler	---	1	---	---
mallard	---	16	10	175
marsh wren	4	24	48	---
mourning dove	22	38	1	---
northern flicker	16	31	18	32
northern harrier	1	2	12	---
northern shoveler	6	6	9	---
orange-crowned warbler	1	3	2	7
osprey	---	1	---	---
pied-billed grebe	---	---	61	1
red-breasted nuthatch	---	1	---	---
red-necked grebe	---	---	1	---
red-tailed hawk	4	8	8	7
red-winged blackbird	1,023	816	507	---
ring-billed gull	---	---	15	---
ring-necked pheasant	13	5	---	---
rock pigeon	---	2	---	6
ruby-crowned kinglet	5	10	1	10
ruddy duck	---	---	41	---
sandhill crane	2	7	1	---
savannah sparrow	3	5	---	---
Say's phoebe	---	1	---	---
sharp-shinned hawk	---	1	---	1
snowy egret	---	---	6	---
song sparrow	11	48	11	14
spotted sandpiper	---	1	---	---

Table 5. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
spotted towhee	1	2	---	1
tree swallow	7	91	---	---
turkey vulture	---	2	---	---
vesper sparrow	---	1	---	---
violet-green swallow	1	2	---	---
Virginia rail	---	---	1	---
western grebe	---	---	3	---
western meadowlark	3	8	17	---
western/Clark's grebe	1	---	20	---
white-crowned sparrow	94	58	59	22
white-faced ibis	---	---	8	---
white-throated sparrow	---	---	---	1
Wilson's snipe	---	---	4	---
Wilson's warbler	1	4	---	3
wood duck	---	---	---	10
yellow warbler	1	---	---	1
yellow-rumped warbler	11	13	---	5
Total Species	**43**	**61**	**56**	**38**
Total Individuals	**3,495**	**2,090**	**3,515**	**2,549**

Table 6. Total bird observations (abundance) in 2012–2013 winter surveys.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
American coot	---	---	12	55
American goldfinch	---	16	4	---
American kestrel	6	9	5	2
American pipit		1	---	---
American robin	2	11	401	52
American wigeon	---	2	---	---
bald eagle	---	2	---	---
black-billed magpie	23	22	4	23
black-capped chickadee	10	6	4	32
Brewer's blackbird	---	---	46	---
brown creeper	---	---	---	4
California quail	12	---	---	3
Canada goose	---	26	49	---
canvasback	---	2	---	11
cinnamon teal	---	11	---	1

Table 6. Continued.

COMMON NAME	SURVEY LOCATION			
	South Agricultural Fields	North Wetlands	Provo Bay	Provo River Parkway
common goldeneye	---	---	---	24
common grackle	---	---	1	---
common merganser	---	---	---	1
dark-eyed junco	---	14	---	36
domestic duck	---	---	---	65
downy woodpecker	2	3	---	3
European starling	5	3,910	202	19
evening grosbeak	---	2	---	---
gadwall	2	5	---	1
great blue heron	---	1	3	---
great horned owl	---	1	---	---
green-winged teal	202	1,463	---	---
hairy woodpecker	---	1		1
hermit thrush	---	---	---	1
horned lark	2	---	---	---
house finch	---	---	9	9
house sparrow	---	1	---	---
killdeer	---	2	---	---
lesser scaup	---	---	---	2
mallard	150	1,137	---	90
marsh wren	---	---	1	---
mourning dove	---	18	1	4
northern flicker	11	14	6	8
northern harrier	4	6	10	1
northern pintail	306	1,062	---	---
osprey	---	1	---	---
peregrine falcon	---	1	---	---
pied-billed grebe	---		1	5
red-tailed hawk	5	4	4	2
red-winged blackbird	400	1,265	2	34
ring-necked pheasant	3	15	2	---
rock pigeon	---	25	---	---
rough-legged hawk	1	1	3	1
ruby-crowned kinglet	---	---	---	3
sandhill crane	---	2	---	---
Say's phoebe	---	1	---	---
song sparrow	19	19	5	19
spotted towhee	1	---	---	2
tundra swan	---	1	2	---
white-crowned sparrow	20	2	21	1
Wilson's snipe	---	1	---	---
Total Species	**21**	**40**	**24**	**32**
Total Individuals	**1,186**	**9,086**	**798**	**515**

nesting osprey (*Pandion haliaetus*) pair were present on every visit. A flock of American white pelicans (*Pelecanus erythrocephalus*) was observed flying over this section of the study area on one visit, but the flock was not observed using wetlands in this section of the study area. The flock of pelicans, however, was flying in the direction of the north end of the airport through Provo Airport airspace.

Forty-two species and 1,288 individuals were recorded in the South Agricultural Fields during spring surveys. During summer surveys, 35 species and 945 individuals were recorded at this location. Fall surveys documented 3,495 individuals across 43 species. Winter surveys documented 1,186 individuals across 21 species. The bird community at this location was dominated by four species—European starling, American robin, yellow-headed blackbird, and red-winged blackbird. The European starling and red-winged blackbird accounted for over half (62.5percent) of all detections. Other commonly detected species at the South Agricultural Fields included black-billed magpie (*Pica hudsonia*), Franklin's gull, mallard (*Anas platyrhynchos*), song sparrow (*Melospiza melodia*), and western meadowlark (*Sturnella neglecta*).

In total, 71 species and 4,439 individuals were detected during surveys along the Provo River Parkway. During spring surveys, 35 species and 837 individuals were documented at this location and 538 individuals across 31 species were documented during summer surveys. Fall surveys documented 38 species and 2,549 individuals. Winter surveys identified 32 species 515 individuals. European starlings accounted for over 42 percent of all detections along the Provo River Parkway. Other commonly detected species included the American robin and mallard (*Anas platyrhynchos*). Passerines, which include European starlings, red-winged blackbirds, and American robins, accounted for over half (79.8percent) of all detections. Waterfowl, which include mallards and domestic ducks, accounted for nearly 16 percent (15.6percent) of all detections.

Table 7 provides high counts (peak abundance) of bird species that are listed in the FAA Advisory Circular 150/5200-33B as hazardous to aircraft.[2] For clarification, it is worth noting that the FAA list is not a scientific list of species names but rather a list of classes of species that are most frequently involved in bird-aircraft collisions. For simplicity of discussion, types of birds included in the FAA list are referred to in this technical memorandum as the "FAA-listed species" or simply "species" when referring to the FAA classes. As indicated in Table 7, nearly all FAA-listed hazardous bird species are present within the areas surveyed and occur in large numbers where high counts (peak abundance) exceed 100 birds during at least one season.

[2] Note that Table 7 lists individual species while the FAA list includes groups of species (hawks, ducks, shorebirds, etc.). The grouped FAA list is used later in this technical memorandum, while Table 7 provides greater detail of the species observations made during field surveys.

Table 7. High counts (peak abundance) for FAA-listed hazardous species and for species not listed as hazardous but where high counts exceeded 100 birds.

SPECIES	SOUTH AGRICULTURAL FIELDS				NORTH WETLANDS				PROVO BAY AND AIRPORT DIKE				PROVO RIVER PARKWAY			
	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft																
American avocet	0	0	0	0	3	19	1	0	4	0	75	0	0	0	0	0
American crow	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
American kestrel	2	1	1	4	4	1	2	5	1	1	0	3	5	1	2	2
American white pelican	0	0	1	0	0	1	0	0	129	20	36	0	0	0	0	0
American wigeon	4	0	0	0	25	377	0	2	0	0	0	0	0	0	0	0
bald eagle	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
bank swallow	0	0	0	0	3	9	5	0	0	12	0	0	0	5	0	0
barn swallow	15	1	13	0	6	33	48	0	0	4	2	0	1	2	0	0
blackbird sp.	5	12	0	0	585	0	0	0	198	0	0	150	12	0	0	0
black-crowned night heron	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
black-necked stilt	0	0	0	0	0	41	1	0	4	0	10	0	0	0	0	0
blue-winged teal	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Brewer's blackbird	1	1	0	0	0	0	0	0	0	0	0	46	0	0	0	0
bufflehead	0	8	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Buteo sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Calidris sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
California gull	0	0	0	0	1	0	0	0	0	0	8	0	0	0	0	0
Canada goose	0	54	0	0	0	123	4	26	0	57	8	49	0	0	20	0
canvasback	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	11
chipping sparrow	0	0	0	0	11	0	0	0	1	1	0	0	4	0	0	0
cinnamon teal	0	38	0	0	0	133	7	11	1	7	11	0	0	0	0	1
cliff swallow	0	0	5	0	0	0	0	0	0	6	0	0	0	0	0	0
common goldeneye	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	18
common merganser	0	0	0	0	0	0	0	0	4	0	0	0	30	0	0	1
common raven	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
dabbling duck sp.	0	0	0	0	5	0	0	0	129	0	0	0	0	0	0	0
domestic duck	0	0	0	0	3	0	3	0	0	0	0	0	19	22	1	65
domestic goose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
double-crested cormorant	0	0	0	0	0	0	0	0	3	5	6	0	0	0	0	0

Table 7. Continued.

SPECIES	SOUTH AGRICULTURAL FIELDS				NORTH WETLANDS				PROVO BAY AND AIRPORT DIKE				PROVO RIVER PARKWAY			
	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft																
dowitcher sp.	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
duck sp.	10	0	0	0	98	100	13	0	55	0	50	75	0	0	3	2
European starling	1,700	72	404	5	137	100	136	3,510	3	12	25	200	1,710	16	28	19
Franklin's gull	0	0	0	0	0	18	0	0	0	0	1	0	0	0	0	0
gadwall	0	31	0	2	0	50	0	5	10	12	0	0	0	0	0	1
great blue heron	0	0	0	0	1	3	2	1	6	3	4	1	0	0	0	0
great horned owl	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
greater scaup	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0
greater yellowlegs	0	0	0	0	0	20	1	0	4	0	0	0	0	0	0	0
green-winged teal	0	37	0	202	3	704	0	1,459	3	97	0	0	0	0	0	0
gull sp.	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0
horned lark	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
house sparrow	6	0	4	0	10	30	5	1	0	0	0	0	0	2	1	0
killdeer	1	2	3	0	51	22	12	2	12	4	35	0	0	4	0	0
Larus sp.	75	12	0	0	44	1	0	27	45	2	2	31	1	0	0	0
lesser scaup	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
lesser yellowlegs	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0
Lincoln's sparrow	1	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0
long-billed curlew	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
long-billed dowitcher	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	0
mallard	0	129	6	143	14	126	12	1,129	7	8	35	0	102	26	53	55
marbled godwit	0	0	0	0	0	64	0	0	0	0	0	0	0	0	0	0
mourning dove	22	1	6	0	18	2	11	17	1	1	9	1	0	3	4	4
northern pintail	0	263	0	306	0	104	0	1,062	0	6	0	0	0	0	0	0
northern rough-winged swallow	0	0	0	0	0	22	22	0	0	15	0	0	0	165	22	0
northern shoveler	6	2	0	0	6	340	0	0	5	10	0	0	0	1	0	0
osprey	0	1	0	0	1	4	2	1	0	1	1	0	0	0	0	0
peep	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0
redhead	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0
red-tailed hawk	2	2	2	3	2	2	1	3	4	2	0	3	6	1	0	1

Table 7. Continued.

SPECIES	SOUTH AGRICULTURAL FIELDS				NORTH WETLANDS				PROVO BAY AND AIRPORT DIKE				PROVO RIVER PARKWAY			
	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft																
red-winged blackbird	1,020	42	50	400	259	52	275	600	370	30	35	2	0	160	17	28
ring-billed gull	0	0	0	0	0	2	0	0	15	0	0	0	0	0	0	0
ring-necked duck	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
ring-necked pheasant	10	3	5	2	2	3	5	15	0	1	4	2	0	2	0	0
rock pigeon	0	0	0	0	2	13	3	25	0	0	0	0	6	0	0	0
rough-legged hawk	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	1
ruddy duck	0	0	0	0	0	1	0	0	41	0	0	0	0	0	0	0
sandhill crane	2	1	0	0	3	9	4	2	1	4	1	0	0	0	0	0
savannah sparrow	3	0	3	0	4	1	7	0	0	1	0	0	0	0	0	0
shorebird sp.	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
snow goose	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
song sparrow	4	7	5	11	21	13	13	12	7	7	2	3	7	5	13	12
sparrow sp.	1	1	0	0	5	6	1	1	2	0	0	0	2	0	0	0
spotted sandpiper	0	0	0	0	1	0	3	0	0	0	1	0	0	0	0	0
Swainson's hawk	0	2	1	0	0	1	1	0	0	1	0	0	0	0	0	0
swallow sp.	60	6	20	0	219	1	132	0	200	100	230	0	3	15	27	0
tree swallow	7	0	0	0	91	4	1	0	0	0	150	0	0	5	0	0
turkey vulture	0	0	1	0	2	1	2	0	0	0	0	0	0	0	0	0
vesper sparrow	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
violet-green swallow	1	0	0	0	2	5	14	0	0	26	0	0	0	2	0	0
western meadowlark	2	5	13	0	6	2	1	0	17	2	0	0	0	0	1	0
white-crowned sparrow	54	7	1	20	46	20	0	2	25	7	0	21	13	22	0	1
white-throated sparrow	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
willet	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
Wilson's phalarope	0	0	0	0	0	2	0	0	0	0	120	0	0	0	0	0
Wilson's snipe	0	0	0	0	0	11	0	1	4	0	0	0	0	0	0	0
wood duck	0	0	0	0	0	1	0	0	0	0	0	0	7	4	7	0

Table 7. Continued.

SPECIES	SOUTH AGRICULTURAL FIELDS				NORTH WETLANDS				PROVO BAY AND AIRPORT DIKE				PROVO RIVER PARKWAY			
	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter	Fall	Spring	Summer	Winter
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft																
yellow-headed blackbird	0	62	10	0	0	153	18	0	0	55	23	0	0	1	0	0
yellowlegs sp.	0	0	0	0	0	2	0	0	0	0	4	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds																
American coot	0	31	0	0	50	915	0	0	2,030	125	10	12	9	15	0	40
American robin	19	34	16	1	140	31	6	11	10	5	3	400	97	50	64	23
waterbird sp.	0	0	0	0	0	0	0	0	2,010	2	0	0	0	0	0	0
white-faced ibis	0	0	0	0	0	11	0	0	7	0	102	0	0	0	0	0

Species of greatest concern such as the American white pelican are most abundant during the fall (peak abundance of 129 individuals). Blackbird species (red-winged and yellow-headed blackbirds) peak abundance occurs during the fall in the North wetlands while peak abundance at Provo Bay and along the Airport dike is greatest during the fall and winter months. The peak abundance of European starlings exceeds 1,000 individuals across all study areas except Provo Bay and the Airport Dike. Starling peak abundance exceeds 100 birds across all study areas during at least one season except the North Wetlands where peak abundance of the species exceeds 100 individuals across all four seasons. Generally, ducks are abundant throughout the year across all study areas except Provo Bay and the Airport dike. Peak abundances for duck species including green-winged teal, mallard, and northern pintail exceed 1,000 individuals per species during the winter in the North Wetlands. Peak abundance of other species of high concern such as gulls does not exceed 100 birds at any of the study areas. However, swallow species occur in peak numbers that exceed 100 individuals during the fall, spring, and summer at the North Wetlands and Provo Bay and Airport dike.

Species not identified as hazardous by the FAA but with peak numbers exceeding 100 individuals include American coot, American robin, various waterbird species, and white-faced ibis. Waterbird species exceed 2,000 individuals at the Provo Bay and Airport dike location during the fall. Similarly, American coot abundance peaks at over 2,000 individuals during the fall at Provo Bay and Airport dike. However, coot peak abundances are also high (over 900 individuals) during the spring in the North Wetlands.

Using the bird abundance data acquired from surveys conducted within the study area and at Provo Bay, seasonal and total bird mass for FAA-listed hazardous species was calculated by multiplying the mean mass of a single bird by the seasonal and total abundances for each species. The mean mass of a single bird was taken from species accounts available from the Cornell University Lab or Ornithology's Birds of North America On-line database (available at: http://bna.birds.cornell.edu/bna/).

As described in the analysis of bird abundances, BIO-WEST bird surveys did not document the presence of geese in the study area or at Provo Bay during the fall (September through November). However, BIO-WEST surveys were only conducted once per month over the course of nearly 2 years. The total survey effort during the fall was approximately 41 hours or 28 percent of the total effort (146 hours) across all seasons during 2012 and 2013. As a consequence, it is likely that not all geese were documented during fall surveys, , especially when considering that surveys accounted for only a small portion of Provo Bay. A review of eBird data for hot spots located on the Provo Airport Dike confirmed that BIO-WEST surveys did not account for all geese during fall. In total, only 68 geese were documented from the Provo Airport Dike and submitted to eBird. Because BIO-WEST did not document any geese during fall surveys, fall abundance under existing conditions is reported as zero. Consequently, predicted changes in abundance and predicted changes in mass are also zero during the fall.

Study Area Bird Mass

The mass of birds detected during the project-specific surveys conducted in 2012 and 2013 within the study area is variable across species and seasons (Table 8). The species that account for the greatest mass in the study area include geese, ducks, starlings, blackbirds, and American coots. Geese, which are most abundant during the spring, account for the greatest bird mass during the spring and the least amount during the fall when they are largely absent from the study area under existing conditions. Duck mass is highest during the spring and winter, while starling and blackbird mass is highest during the summer and fall. Although the total abundance of birds was highest during the winter, many of the birds were small bodied and the total mass of birds detected was highest during the spring. This difference might be best explained by the fact that geese, which accounted for 6 percent of the birds detected during the spring, are nearly absent from the study area during the winter. Other species such as shorebirds, swallows, and sparrows are also more abundant during the spring than the winter and, therefore, contribute more to the total bird mass calculated for spring than winter.

Provo Bay Bird Mass

Generally, birds are more abundant within the study area (three survey sites combined) than in the Provo Bay and Provo Airport Dike site. However Provo Bay accounts for higher total bird mass during the fall than the study area (Table 9) because the birds using Provo Bay during the fall tend to be larger bodied than those present in the study area. Pelicans, which are largely absent from the study area during the fall, are quite abundant in Provo Bay. The presence of large-bodied pelicans in Provo Bay during the fall is likely enough to compensate for the higher abundances of smaller-bodied species at the other survey locations. As described for the study area, the total mass of ducks in Provo Bay is high across all seasons. However, the seasonal mass of ducks documented within the study area is considerably higher than the seasonal duck masses documented for Provo Bay. Furthermore, in Provo Bay, total duck mass is lowest during the winter while duck mass in the study area is lowest during the summer. This difference is likely due to the fact that open water habitat in the study area is greatly reduced during the summer, whereas open water habitat is always abundant in Provo Bay. Other species with high seasonal mass in Provo Bay include geese, cormorants, and shorebirds.

Table 8. Study area seasonal and total bird mass (grams) of avian species identified as hazardous to aircraft, April 2012 through October 2013.

FEDERAL AVIATION ADMINISTRATION CLASS	MEAN MASS (g)[a]	BIRD MASS (g)[b]				
		Spring	Summer	Fall	Winter	Total Mass
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft						
vulture	1,918	1,918	5,754	3,836	0	11,508
geese	4,280	2,341,160	102,720	0	111,280	2,555,160
pelican	9,000	9,000	9,000	0	0	18,000
cormorant	2,453	0	0	0	0	0
crane	3,460	62,280	44,980	31,140	6,920	145,320
eagle	4,913	0	0	0	9,826	9,826
duck	1,301	5,508,434	260,200	454,049	5,818,072	12,040,755
osprey	2,000	28,000	12,000	2,000	2,000	44,000
pheasant	1,263	27,786	22,734	22,734	22,734	95,988
turkey	8,500	0	0	0	0	0
heron	2,500	7,500	5,000	2,500	2,500	17,500
hawk (*Buteos*)	1,224	20,808	11,016	28,152	17,136	77,112
gull	657	15,111	7,884	120,231	17,739	160,965
rock pigeon	350	4,550	2,450	2,800	8,750	18,550
owl	1,706	0	0	1,706	1,706	3,412
snow bunting	35	0	0	0	0	0
horned lark	38	0	0	0	76	76
raven	811	1,622	0	0	0	1,622
crow	538	0	0	538	0	538
mourning dove	123	1,230	6,150	7,380	2,706	17,466
shorebird	336	110,511	20,154	24,521	1,008	156,194
starling	88	35,303	78,665	353,291	344,618	811,877
blackbird	71	60,560	35,039	172,655	119,780	388,032
American kestrel	120	600	960	2,160	2,040	5,760
meadowlark	106	1,590	2,650	1,166	0	5,406
swallow	19	5,530	8,410	7,910	0	21,850
sparrow	28	5,198	2,998	8,773	2,255	19,223
nighthawk	79	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds						
American coot	692	999,248	0	43,596	38,060	1,080,904
American robin	84.8	26,796.8	11,363.2	37,396.8	5,512	8,1068.8
waterbird species	692	15,224	17,992	29,064	0	62,280
white-faced ibis	679	18,333	0	0	0	18,333
Total		**9,308,291**	**668,118**	**1,357,598**	**6,534,718**	**17,868,724**

[a] Mean mass (g) is the mean mass of a single bird as reported in species accounts available from Birds of North America Online (available at: http://bna.birds.cornell.edu/bna/).
[b] Bird mass (g) represents the total bird mass, which was calculated by multiplying the mean mass for a single individual by the seasonal and total abundance of each species.

Table 9. Provo Bay seasonal and total bird mass (g) of avian species identified as hazardous to aircraft, April 2012 through October 2013.

FEDERAL AVIATION ADMINISTRATION CLASS	MEAN MASS (grams)[a]	BIRD MASS (grams)[b]				
		Spring	Summer	Fall	Winter	Total Mass
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft						
vulture	1,918	0	0	0	0	0
geese	4,280	496,480	34,240	0	209,720	740,440
cormorant	9,000	54,000	81,000	45,000	0	180,000
pelican	2,453	95,667	103,026	365,497	983,653	1,547,843
crane	3,460	34,600	0	3,460	3,460	41,520
eagle	4,913	0	0	0	0	0
duck	1,301	222,471	153,518	221,170	97,575	694,734
osprey	2,000	2,000	2,000	0	0	4,000
turkey	1,263	0	0	0	0	0
pheasant	8,500	17,000	34,000	0	17,000	68,000
heron	2,500	12,500	17,500	22,500	7,500	60,000
hawk (*Buteos*)	1,224	3,672	0	11,016	8,568	23,256
gull	657	1,314	7,884	63,072	20,367	92,637
rock pigeon	350	0	0	0	0	0
owl	1,706	0	0	0	0	0
horned lark	35	0	0	0	0	0
snow bunting	38	0	0	0	0	0
crow	811	0	0	0	0	0
raven	538	0	0	538	0	538
mourning dove	123	123	1,845	2,214	123	4,305
shorebird	336	2,015	64,493	47,362	0	113,870
blackbird	88	14,804	9,373	77,263	17,345	118,786
starling	71	846	3,032	423	14,241	18,542
American kestrel	120	120	0	480	600	1,200
meadowlark	106	212	0	1,272	0	1,484
swallow	19	4,224	11,597	4,128	0	19,949
sparrow	28	935	165	2,008	715	3,823
nighthawk	79	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds						
American coot	692	215,904	12,456	1,472,576	8,304	1,709,240
American robin	84.8	763	424	933	34,005	36,125
waterbird species	692	35,292	102,416	1,521,016	692	1,659,416
white-faced ibis	679	0	0	5,432	162,960	168,392
Totals		**1,214,943**	**638,968**	**3,867,359**	**1,586,828**	**7,308,098**

[a] Mean mass (g) is the mean mass of a single bird as reported in species accounts available from Birds of North America On-line (available at: http://bna.birds.cornell.edu/bna/).
[b] Bird Mass (g) represents the total bird mass, which was calculated by multiplying the mean mass for a single individual by the seasonal and total abundance for each species.

Description of Bird Communities from eBird Data

Searches of the eBird database for the period 2007–2011 resulted in records for 75 species and 5,077 individuals that were documented along the Skipper Bay trail. The Skipper Bay trail is an eBird hotspot that is adjacent to the North Wetlands site. No data are available for April 2007 or 2008 because no checklists were submitted for those periods. The bird community at this location was dominated by Canada goose, European starling, American coot, American wigeon (*Anas americana*), American robin, northern shoveler (*Anas clypeata*), tree swallow, mallard, cinnamon teal (*Anas cyanoptera*), yellow-headed blackbird, and green-winged teal (*Anas crecca*). These 11 species comprised over 78 percent of all birds recorded at this location.

For the period January 2007–December 2011, 248 species and 518,787 individuals were recorded at the 16 eBird locations that were selected to describe existing bird communities on the eastern shore of Utah Lake (Table 10) (eBird 2012). Eighteen species [red-winged blackbird, European starling, Canada goose, white-faced ibis (*Plegadis chihi*), tree swallow, American coot, mallard, northern rough-winged swallow, yellow-headed blackbird, ring-billed gull (*Larus delawarensis*), bank swallow (*Riparia riparia*), northern pintail (*Anas acuta*), barn swallow (*Hirundo rustica*), American robin, green-winged teal, American wigeon, white-crowned sparrow (*Zonotrichia leucophrys*), and yellow-rumped warbler (*Setophaga coronata*)] composed 63.4 percent of the total birds detected. When species were considered within broader taxonomic groups, more than 75 percent of all birds recorded were those classified within 13 groups (swallows, blackbirds, waterfowl, ibises, gulls, coots and rails, shorebirds, grebes, pelicans, terns, herons and egrets, cormorants, and cranes), which are broadly associated with wetlands, lakes, and other aquatic habitats. In total, 3,174 pelicans (0.6percent of all individual bird sightings) were observed over the 5-year period along the eastern shore of Utah Lake. Two-hundred twenty-seven species and 221,879 individuals were detected at Provo Bay and the Provo Airport dike from 2007– 2011 (eBird 2012). Based on total abundance data extracted from eBird for the period 2007–2011, the bird community at Provo Bay and the Provo Airport dike is dominated by many species associated with emergent marshes, such as red-winged blackbird, American coot, yellow-headed blackbird, Canada goose, white-faced ibis, northern pintail, mallard, marsh wren, and green-winged teal. These nine species composed nearly 34 percent of the total birds detected at Provo Bay and the Provo Airport dike. A total of 1,928 pelicans (0.9 percent of all bird species) were observed over the five-year period at Provo Bay and the Provo Airport dike. The number of pelicans documented at Provo Bay over the 5-year period seems relatively consistent with the number of pelicans documented at the other 16 eBird sites along the eastern shore of Utah Lake. In total, 3,174 (0.6 percent of all bird species) American white pelicans were documented across all sites.

Table 10. Total birds detected at sixteen locations on Utah Lake, based on data extracted from eBird database for the period January 2007–December 2011, ranked in descending order of total percentage.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
red-winged blackbird	*Agelaius phoeniceus*	59,379	11.5
European starling	*Sturnus vulgaris*	58,705	11.3
swallow species	various species	57,084	11.0
Canada goose	*Branta canadensis*	28,244	5.4
white-faced ibis	*Plegadis chihi*	23,120	4.5
tree swallow	*Tachycineta bicolor*	20,916	4.0
American coot	*Fulica americana*	17,909	3.5
blackbird species	various species	16,430	3.2
mallard	*Anas platyrhynchos*	15,998	3.1
northern rough-winged swallow	*Stelgidopteryx serripennis*	13,775	2.7
yellow-headed blackbird	*Xanthocephalus xanthocephalus*	13,587	2.6
ring-billed gull	*Larus delawarensis*	12,291	2.4
bank swallow	*Riparia riparia*	12,001	2.3
northern pintail	*Anas acuta*	11,549	2.2
barn swallow	*Hirundo rustica*	10,601	2.0
American robin	*Turdus migratorius*	7,373	1.4
green-winged teal	*Anas crecca*	6,807	1.3
duck species	various species	6,782	1.3
American wigeon	*Anas americana*	5,767	1.1
white-crowned sparrow	*Zonotrichia leucophrys*	5,591	1.1
yellow-rumped warbler	*Setophaga coronata*	5,529	1.1
gull species	*Larus* species	4,798	0.9
California gull	*Larus californicus*	4,427	0.9
western tanager	*Piranga ludoviciana*	4,380	0.8
killdeer	*Charadrius vociferus*	4,240	0.8
marsh wren	*Cistothorus palustris*	3,879	0.7
Brewer's blackbird	*Euphagus cyanocephalus*	3,359	0.6
American white pelican	*Pelecanus erythrocephalus*	3,174	0.6
northern shoveler	*Anas clypeata*	3,108	0.6
song sparrow	*Melospiza melodia*	2,948	0.6
cinnamon teal	*Anas cyanoptera*	2,769	0.5
American avocet	*Recurvirostra americana*	2,761	0.5
long-billed dowitcher	*Limnodromus scolopaceus*	2,547	0.5
black-billed magpie	*Pica hudsonia*	2,439	0.5
violet-green swallow	*Tachycineta thalassina*	2,255	0.4
house sparrow	*Passer domesticus*	2,211	0.4
mourning dove	*Zenaida macroura*	2,177	0.4
cliff swallow	*Petrochelidon pyrrhonota*	2,082	0.4
house finch	*Carpodacus mexicanus*	2,068	0.4
yellow warbler	*Setophaga petechia*	2,043	0.4

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
rock pigeon	*Columba livia*	1,568	0.3
western kingbird	*Tyrannus verticalis*	1,565	0.3
Gadwall	*Anas strepera*	1,532	0.3
western/Clark's grebe	*Aechmophorus* species	1,436	0.3
black-capped chickadee	*Poecile atricapillus*	1,428	0.3
double-crested cormorant	*Phalacrocorax auritus*	1,423	0.3
American goldfinch	*Spinus tristis*	1,414	0.3
Caspian tern	*Hydroprogne caspia*	1,398	0.3
sandhill crane	*Grus canadensis*	1,319	0.3
western meadowlark	*Sturnella neglecta*	1,204	0.2
California quail	*Callipepla californica*	1,165	0.2
mallard (domestic type)	–	1,164	0.2
brown-headed cowbird	*Molothrus ater*	1,102	0.2
Eurasian collared-dove	*Streptopelia decaocto*	1,090	0.2
northern flicker	*Colaptes auratus*	1,041	0.2
Bullock's oriole	*Icterus bullockii*	1,017	0.2
Clark's grebe	*Aechmophorus clarkii*	1,011	0.2
northern harrier	*Circus cyaneus*	1,003	0.2
ring-necked pheasant	*Phasianus colchicus*	993	0.2
American kestrel	*Falco sparverius*	951	0.2
common goldeneye	*Bucephala clangula*	906	0.2
dark-eyed junco	*Junco hyemalis*	856	0.2
American pipit	*Anthus rubescens*	839	0.2
black-necked stilt	*Himantopus mexicanus*	837	0.2
chipping sparrow	*Spizella passerina*	829	0.2
pied-billed grebe	*Podilymbus podiceps*	809	0.2
red-tailed hawk	*Buteo jamaicensis*	764	0.1
western grebe	*Aechmophorus occidentalis*	746	0.1
great blue heron	*Ardea herodias*	676	0.1
Larus species	various species	661	0.1
Franklin's gull	*Leucophaeus pipixcan*	642	0.1
bufflehead	*Bucephala albeola*	626	0.1
orange-crowned warbler	*Oreothlypis celata*	558	0.1
eastern kingbird	*Tyrannus tyrannus*	554	0.1
redhead	*Aythya americana*	531	0.1
ring-necked duck	*Aythya collaris*	467	0.1
common raven	*Corvus corax*	434	0.1
horned lark	*Eremophila alpestris*	409	0.1
common merganser	*Mergus merganser*	403	0.1
snowy egret	*Egretta thula*	399	0.1
Wilson's phalarope	*Phalaropus tricolor*	374	0.1
ruby-crowned kinglet	*Regulus calendula*	374	0.1

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
bald eagle	*Haliaeetus leucocephalus*	371	0.1
common yellowthroat	*Geothlypis trichas*	369	0.1
marbled godwit	*Limosa fedoa*	349	0.1
blue-gray gnatcatcher	*Polioptila caerulea*	333	0.1
turkey vulture	*Cathartes aura*	332	0.1
American crow	*Corvus brachyrhynchos*	328	0.1
olive-sided flycatcher	*Contopus cooperi*	323	0.1
downy woodpecker	*Picoides pubescens*	313	0.1
cedar waxwing	*Bombycilla cedrorum*	304	0.1
Swainson's hawk	*Buteo swainsoni*	293	0.1
western sandpiper	*Calidris mauri*	278	0.1
peep species	*Calidris* species	272	0.1
common nighthawk	*Chordeiles minor*	268	0.1
spotted sandpiper	*Actitis macularius*	267	0.1
lesser scaup	*Aythya affinis*	266	0.1
Brewer's sparrow	*Spizella breweri*	256	0.0
western wood-pewee	*Contopus sordidulus*	256	0.0
greater yellowlegs	*Tringa melanoleuca*	250	0.0
Virginia rail	*Rallus limicola*	240	0.0
lesser yellowlegs	*Tringa flavipes*	236	0.0
osprey	*Pandion haliaetus*	224	0.0
spotted towhee	*Pipilo maculatus*	220	0.0
Wilson's warbler	*Cardellina pusilla*	210	0.0
Forster's tern	*Sterna forsteri*	204	0.0
black-crowned night-heron	*Nycticorax nycticorax*	194	0.0
vesper sparrow	*Pooecetes gramineus*	189	0.0
cattle egret	*Bubulcus ibis*	188	0.0
snow goose	*Chen caerulescens*	174	0.0
willet	*Tringa semipalmata*	161	0.0
sparrow species	various species	152	0.0
Wilson's snipe	*Gallinago delicata*	151	0.0
mountain bluebird	*Sialia currucoides*	150	0.0
Empidonax species	*Empidonax* species	144	0.0
black-chinned hummingbird	*Archilochus alexandri*	132	0.0
lark sparrow	*Chondestes grammacus*	120	0.0
lazuli bunting	*Passerina amoena*	120	0.0
warbling vireo	*Vireo gilvus*	119	0.0
ruddy duck	*Oxyura jamaicensis*	114	0.0
canvasback	*Aythya valisineria*	113	0.0
sora	*Porzana carolina*	111	0.0
MacGillivray's warbler	*Geothlypis tolmiei*	109	0.0
shorebird species	various species	103	0.0

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
belted kingfisher	*Megaceryle alcyon*	103	0.0
dowitcher species	*Limnodromus* species	101	0.0
tundra swan	*Cygnus columbianus*	99	0.0
herring gull	*Larus argentatus*	94	0.0
Lincoln's sparrow	*Melospiza lincolnii*	92	0.0
green-tailed towhee	*Pipilo chlorurus*	89	0.0
hermit thrush	*Catharus guttatus*	88	0.0
American tree sparrow	*Spizella arborea*	86	0.0
blue grosbeak	*Passerina caerulea*	81	0.0
gray catbird	*Dumetella carolinensis*	79	0.0
hummingbird species	various species	78	0.0
Nashville warbler	*Oreothlypis ruficapilla*	77	0.0
pine siskin	*Spinus pinus*	76	0.0
eared grebe	*Podiceps nigricollis*	71	0.0
wood duck	*Aix sponsa*	71	0.0
white-throated swift	*Aeronautes saxatalis*	69	0.0
Virginia's warbler	*Oreothlypis virginiae*	69	0.0
Savannah sparrow	*Passerculus sandwichensis*	68	0.0
red-necked phalarope	*Phalaropus lobatus*	66	0.0
black-headed grosbeak	*Pheucticus melanocephalus*	64	0.0
least sandpiper	*Calidris minutilla*	59	0.0
dusky flycatcher	*Empidonax oberholseri*	56	0.0
sharp-shinned hawk	*Accipiter striatus*	55	0.0
willow flycatcher	*Empidonax traillii*	54	0.0
pectoral sandpiper	*Calidris melanotos*	52	0.0
Buteo species	*Buteo* species	50	0.0
sage sparrow	*Amphispiza belli*	46	0.0
sage thrasher	*Oreoscoptes montanus*	46	0.0
lesser goldfinch	*Spinus psaltria*	46	0.0
great horned owl	*Bubo virginianus*	46	0.0
red-breasted merganser	*Mergus serrator*	43	0.0
purple martin	*Progne subis*	42	0.0
broad-tailed hummingbird	*Selasphorus platycercus*	42	0.0
house wren	*Troglodytes aedon*	41	0.0
semipalmated plover	*Charadrius semipalmatus*	40	0.0
loggerhead shrike	*Lanius ludovicianus*	40	0.0
merlin	*Falco columbarius*	40	0.0
plumbeous vireo	*Vireo plumbeus*	40	0.0
northern shrike	*Lanius excubitor*	39	0.0
brown creeper	*Certhia americana*	38	0.0
Cooper's hawk	*Accipiter cooperii*	38	0.0
snowy plover	*Charadrius nivosus*	37	0.0

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
Say's phoebe	*Sayornis saya*	36	0.0
peregrine falcon	*Falco peregrinus*	34	0.0
graylag goose (domestic type)	–	32	0.0
greater scaup	*Aythya marila*	32	0.0
common grackle	*Quiscalus quiscula*	32	0.0
snow bunting	*Plectrophenax nivalis*	32	0.0
yellow-breasted chat	*Icteria virens*	32	0.0
Baird's sandpiper	*Calidris bairdii*	32	0.0
black-throated gray warbler	*Setophaga nigrescens*	32	0.0
great egret	*Ardea alba*	30	0.0
great-tailed grackle	*Quiscalus mexicanus*	29	0.0
long-eared owl	*Asio otus*	26	0.0
Ross's goose	*Chen rossii*	26	0.0
barn owl	*Tyto alba*	26	0.0
rough-legged hawk	*Buteo lagopus*	26	0.0
northern mockingbird	*Mimus polyglottos*	25	0.0
solitary sandpiper	*Tringa solitaria*	25	0.0
chukar	*Alectoris chukar*	25	0.0
blue-winged teal	*Anas discors*	24	0.0
hooded merganser	*Lophodytes cucullatus*	24	0.0
mountain chickadee	*Poecile gambeli*	24	0.0
prairie falcon	*Falco mexicanus*	24	0.0
cackling goose	*Branta hutchinsii*	23	0.0
gray flycatcher	*Empidonax wrightii*	23	0.0
white-breasted nuthatch	*Sitta carolinensis*	22	0.0
evening grosbeak	*Coccothraustes vespertinus*	21	0.0
greater white-fronted goose	*Anser albifrons*	21	0.0
cordilleran flycatcher	*Empidonax occidentalis*	19	0.0
ferruginous hawk	*Buteo regalis*	19	0.0
Cassin's vireo	*Vireo cassinii*	19	0.0
dabbling duck species	various species	17	0.0
horned grebe	*Podiceps auritus*	17	0.0
western screech-owl	*Megascops kennicottii*	17	0.0
western scrub-jay	*Aphelocoma californica*	16	0.0
golden eagle	*Aquila chrysaetos*	14	0.0
long-billed curlew	*Numenius americanus*	13	0.0
Swainson's thrush	*Catharus ustulatus*	13	0.0
white egret species	various species	13	0.0
red-breasted nuthatch	*Sitta canadensis*	12	0.0
Accipiter species	*Accipiter* species	12	0.0
Bewick's wren	*Thryomanes bewickii*	12	0.0
American redstart	*Setophaga ruticilla*	11	0.0

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
Townsend's warbler	*Setophaga townsendi*	11	0.0
thrush species	*Catharus* species	10	0.0
scissor-tailed flycatcher	*Tyrannus forficatus*	10	0.0
goldfinch species	*Spinus* species	10	0.0
Cassin's finch	*Carpodacus cassinii*	10	0.0
neotropic cormorant	*Phalacrocorax brasilianus*	9	0.0
pinyon jay	*Gymnorhinus cyanocephalus*	9	0.0
Harris's sparrow	*Zonotrichia querula*	8	0.0
Bonaparte's gull	*Chroicocephalus philadelphia*	8	0.0
rock wren	*Salpinctes obsoletus*	7	0.0
Steller's jay	*Cyanocitta stelleri*	7	0.0
trumpeter/tundra swan	*Cygnus* species	7	0.0
Hammond's flycatcher	*Empidonax hammondii*	7	0.0
solitary vireo species	*Vireo* species	7	0.0
bushtit	*Psaltriparus minimus*	6	0.0
grasshopper sparrow	*Ammodramus savannarum*	6	0.0
red-necked grebe	*Podiceps grisegena*	6	0.0
Townsend's solitaire	*Myadestes townsendi*	6	0.0
ash-throated flycatcher	*Myiarchus cinerascens*	6	0.0
hairy woodpecker	*Picoides villosus*	6	0.0
lark bunting	*Calamospiza melanocorys*	5	0.0
northern waterthrush	*Parkesia noveboracensis*	5	0.0
white-throated sparrow	*Zonotrichia albicollis*	5	0.0
eastern phoebe	*Sayornis phoebe*	4	0.0
glossy ibis	*Plegadis falcinellus*	4	0.0
large shorebird species	various species	4	0.0
sanderling	*Calidris alba*	4	0.0
surf scoter	*Melanitta perspicillata*	4	0.0
black-bellied plover	*Pluvialis squatarola*	4	0.0
semipalmated sandpiper	*Calidris pusilla*	4	0.0
black scoter	*Melanitta americana*	3	0.0
cormorant species	*Phalacrocorax* species	3	0.0
dunlin	*Calidris alpina*	3	0.0
greater/lesser scaup	*Aythya* species	3	0.0
hawk species	various species	3	0.0
northern parula	*Setophaga americana*	3	0.0
Barrow's goldeneye	*Bucephala islandica*	3	0.0
common tern	*Sterna hirundo*	3	0.0
Lewis's woodpecker	*Melanerpes lewis*	3	0.0
red-eyed vireo	*Vireo olivaceus*	3	0.0
red-naped sapsucker	*Sphyrapicus nuchalis*	3	0.0
stilt sandpiper	*Calidris himantopus*	3	0.0

Table 10. Continued.

COMMON NAME	SCIENTIFIC NAME	TOTAL BIRDS	PERCENTAGE OF TOTAL BIRDS DETECTED
chickadee species	*Poecile* species	2	0.0
common poorwill	*Phalaenoptilus nuttallii*	2	0.0
common/red-breasted merganser	*Mergus species*	2	0.0
eagle species	various species	2	0.0
fox sparrow	*Passerella iliaca*	2	0.0
green heron	*Butorides virescens*	2	0.0
large falcon species	*Falco* species	2	0.0
oriole species	*Icterus* species	2	0.0
rail species	various species	2	0.0
rufous hummingbird	*Selasphorus rufus*	2	0.0
scarlet tanager	*Piranga olivacea*	2	0.0
Vaux's swift	*Chaetura vauxi*	2	0.0
white-winged scoter	*Melanitta fusca*	2	0.0
greater/lesser yellowlegs	*Tringa* species	2	0.0
indigo bunting	*Passerina cyanea*	2	0.0
short-eared owl	*Asio flammeus*	2	0.0
Baird's sparrow	*Ammodramus bairdii*	1	0.0
blackpoll warbler	*Setophaga striata*	1	0.0
black-throated sparrow	*Amphispiza bilineata*	1	0.0
clay-colored sparrow	*Spizella pallida*	1	0.0
common loon	*Gavia immer*	1	0.0
falcon species	*Falco* species	1	0.0
glossy x white-faced ibis (hybrid)	*Plegadis* species	1	0.0
horned/eared grebe	*Podiceps* species	1	0.0
Hudsonian godwit	*Limosa haemastica*	1	0.0
lesser black-backed gull	*Larus fuscus*	1	0.0
northern saw-whet owl	*Aegolius acadicus*	1	0.0
owl species	various species	1	0.0
Pacific wren	*Troglodytes pacificus*	1	0.0
passerine species	passerine species	1	0.0
ibis species	*Plegadis* species	1	0.0
shrike species	*Lanius* species	1	0.0
small falcon species	*Falco* species	1	0.0
tern species	*Sterna* species	1	0.0
Tennessee warbler	*Oreothlypis peregrina*	1	0.0
wild turkey	*Meleagris gallopavo*	1	0.0
bohemian waxwing	*Bombycilla garrulus*	0	0.0
diurnal raptor species	various species	0	0.0
dusky grouse	*Dendragapus obscurus*	0	0.0
GRAND TOTAL		**518,787**	–

Searches of six eBird sites surrounding SLCIA for the period from 2007 to 2011 were also conducted to determine similarities and differences in bird use surrounding an airport with a more robust bird-aircraft strike dataset. The eBird sites around SLCIA revealed that European starlings accounted for over 23 percent of the 28,017 birds detected across all six sites. Along the eastern shore of Utah Lake, starlings accounted for over 11 percent of all detections and over 26 percent of all detections made during BIO-WEST surveys (Table 11). Gulls, which accounted for a large number of observations near SLCIA (> 9 percent of total observations) only accounted for 4.2 percent of all observations made at eBird hotspots along the eastern shore of Utah Lake and only 1.3 percent of all observations made during BIO-WEST surveys.

Table 11. eBird data for six sites surrounding the Salt Lake City International Airport (2007–2011).

SPECIES	TOTAL	PERCENTAGE
starlings	6,585	23.5
gulls	2,673	9.5
ducks	2,238	8.0
sparrows	1,843	6.6
geese	1,571	5.6
doves	1,213	4.3
blackbirds	1,121	4.0
swallows	1,050	3.7
pelicans	649	2.3
shorebirds	210	0.7
kestrel	102	0.3
hawks	91	0.3
horned larks	75	0.3
ravens	53	0.2
meadowlarks	52	0.2
owls	34	0.1
vultures	23	0.1
nighthawks	18	0.1
buntings	17	0.1
herons	16	0.1
cormorants	14	0.0
crows	10	0.0
pheasant	6	0.0
eagles	5	0.0
cranes	2	0.0
all other species	8,348	29.8
Total	**28,017**	

Provo Airport's Wildlife Hazard Assessment (WHA)

Under federal regulations (14 CFR 139), the FAA has required Provo Municipal Airport to complete a WHA, which is a study of factors contributing to wildlife hazards at and within a 5-mile radius of an airport. The WHA final report (Airport Wildlife Consultants 2014) became available following release of the Draft EIS for the current proposed project; therefore, the following discussion regarding the airport's WHA has been added to the Final EIS.

The need to complete a WHA was based on the presence of wildlife attractants within five miles of the airport; the presence of wildlife species known to be hazardous to aviation; and the occurrence of an FAA-defined Triggering Event. The National Wildlife Strike Database maintained by FAA includes reports of 9 wildlife strikes at the Provo Airport between 1990 and 2012 (Airport Wildlife Consultants 2014). Five of these strikes involved mule deer, the other four involved unknown bird species. Two of the incidents involved multiple wildlife strikes, and one of the mule deer strikes resulted in $8,400 in aircraft repair costs. These incidents met the requirements of a "triggering event" under the federal regulations (Airport Wildlife Consultants 2014).

As part of a WHA, the FAA Advisory Circular 150/5200-33B defines habitat types that are considered wildlife attractants. The WHA for Provo Airport identified four wildlife attractant habitat types within the 5-mile radius of Provo Airport. These were: a landfill, a wastewater treatment facility, wetlands in various locations, and agricultural areas. The study area for the PRDRP was evaluated as agricultural [although 304 acres of the 708-acre study area are classified wetlands under existing baseline conditions, Section 3.5 of the FEIS)]. The WHA involved surveying for abundance of bird species at representative locations for each of the identified wildlife attractant habitat types as well as on the airport property (Aircraft Operations Area, or AOA) and on lands adjacent to the airport property. In the study design developed by Airport Wildlife Consultants, a total of 43 survey points were surveyed twice per month for 12 consecutive months, January – December, 2013.

The most abundant bird species on the airport, adjacent to the airport, and in the study area for the PRDRP according to the WHA were small birds, either various species of "ground birds" or various species of "blackbirds." In the WHA, the "ground birds" category included meadowlarks, horned larks, sparrows, robins, and swallows, among other species of song birds/perching birds. The "blackbird" category included grackles, red-winged blackbirds, Brewer's blackbirds, European starlings, and brown-headed cowbirds. The WHA (Airport Wildlife Consultants 2014) and the BIO-WEST surveys reported herein were consistent in finding that species within these categories were most abundant in the late summer and fall.

Recommendations provided in the WHA distinguish primary hazards and secondary hazards. The report states the following:

> AWC's hazard analysis is separated into primary and secondary hazards. The separation is based on limitations in fiscal resources and environmental regulations. Primary hazards are located on airport property thereby providing personnel with immediate and unrestricted access for wildlife control and monitoring. Mitigation of primary hazards can be accomplished with existing financial resources and within existing regulatory frameworks. Secondary hazards require long term financial commitments, exorbitant mitigation fees, and involve compliance with extensive environmental regulations. This separation of hazards facilitates a common sense approach that airport managers can use to prioritize limited funds and man power for accomplishment of the recommendations and mitigations.

Thus the distinction appears to be based on feasibility of successfully implementing proposed mitigation measures rather than the level of risk created by a given hazard.

Primary Hazards

On-airport hazards are specified as primary hazards. The WHA recommends that the moat be filled to eliminate hazards created by this available habitat within the airport property, and that the airport continue its existing wildlife management program, using a combination of lethal and nonlethal control techniques to reduce hazards created by wildlife found on the airport property.

Though not an existing condition, the PRDRP is specifically discussed in the WHA. The project is categorized as a "primary hazard" in the WHA, because the project has potential "to create a new wildlife hazard and increase the numbers of hazardous wildlife species adjacent to the airport, and the potential for these birds to cause damage after collisions with airplanes." Recommended mitigation provided in the WHA is for the Provo Airport and FAA to participate in the planning process for the project and to negotiate design changes to reduce or eliminate the wildlife hazard. Through consultation with the parties, the Joint Lead Agencies have included this recommendation in the Draft EIS and also in the Final EIS by inviting the USDA Wildlife Services, FAA, and Provo Airport to participate in the final design if an action alternative is selected.

Secondary Hazards

The WHA also reports and acknowledges extensive use of Utah Lake adjacent to airport property by waterfowl, shorebirds, and fish-eating birds (pelicans, cormorants, and herons). However, Utah Lake is categorized as a "secondary hazard" in the WHA because of limited ability to address this hazard (e.g., based on the large size of the lake and logistical problems associated with wildlife management). Recommended mitigation is to haze hazardous species further away from the airport.

Overall Mitigation Measures in Provo Airport's Wildlife Hazard Assessment

The overall recommendations of the WHA (Airport Wildlife Consultants 2014) are for Provo Airport to:

1. Develop a Wildlife Hazard Management Plan (WHMP). The plan would provide overall guidance for the airport's hazard management program by: identifying key personnel; providing background information on known hazards; identifying management techniques; prioritizing management measures; recommending necessary permits, equipment, and supplies; and specifying training requirements for personnel.

2. Continue annual monitoring and management. Once the airport has a WHMP, the airport is required to update the plan every 12 months, which is to include: reviewing the effectiveness of the WHMP following any triggering events; identifying any changes in wildlife attractants (habitat); and determining if the species composition has changed over time.

3. Develop a Wildlife Hazard Training Program, to familiarize personnel involved with wildlife hazard management with wildlife identification and dispersal techniques.

Utah Valley University's Bird Strike Data

Utah Valley University's Aviation Sciences program reported eight bird strikes during 2012–2013 at Provo Airport (Table 12). Five of the eight involved swallows and two involved unknown small birds that were struck on the airport. Only one of the swallow strikes occurred during takeoff, the rest were during landing or on the ground. Most strikes involved a single bird; only one involved hitting a flock of swallows at runway level (within 10 feet of landing). All of the swallow strikes occurred in the August–October time period, which is consistent with the time of year these species were most abundant, both at the WHA report (Airport Wildlife Consultants 2014) and the proposed project avian survey sites. Finally, only one of the eight reported strikes occurred away from the airport; this strike occurred in July 2013 at 11:00 PM, 1,000 feet above ground level on approach. The species of bird struck was not identified.

Table 12. Bird strikes at Provo Airport reported by Utah Valley University's Aviation Sciences Program, 2012–2013.

DATE	TIME	SPECIES	PHASE OF FLIGHT	HEIGHT ABOVE GROUND LEVEL
8/6/2012	N/A[a]	bank swallow	N/A	N/A
8/14/2012	8:00 AM	bank swallow	N/A	N/A
10/29/2012	2:00 PM	unknown, small, single bird	approach	5 feet
3/14/2013	9:00 AM	unknown, small, single bird	parked	N/A
7/8/2013	11:00 PM	unknown, single bird	approach	1,000 feet
8/5/2013	11:30 AM	bank swallow	approach	50 feet
9/25/2013	8:30 AM	tree swallow (flock)	touchdown	10 feet
10/14/2013	4:00 PM	barn swallow	climb	400 feet

Source: R. Hopkinson, pers. comm. 2014.

[a] N/A = information not available or not recorded.

National Wildlife Strike Database

The FAA strongly recommends wildlife strikes be reported and maintains a national database. Reports of strike incidents at Provo Airport since 1993 indicate one strike resulting in substantial damage involving a deer. In total, there have been fourteen incidents reported at Provo Airport, five involving deer, all of which occurred prior to 2007, and nine involving small- to medium-sized birds, all of which occurred since 2007 and none indicating damage to the aircraft (FAA 2015). [3]

Salt Lake City International Airport, which is surrounded by habitat that is similar to habitat found in the vicinity of the Provo Airport, has experienced a total of 1,793 reported wildlife strikes between 1990 and 2013 (Table 13).[4] Of that total, 1,029 strikes or 57.3 percent of all strikes resulted in no damage to aircraft while only 55 strikes or 3 percent of all strikes resulted in substantial damage to aircraft. Damage was not reported in 30 percent of all strikes (537 strikes). Birds of small and medium size and unspecified species are responsible for the greatest number of strikes (35 percent). Of the known species, horned larks are responsible for 218 bird-aircraft strikes or 12 percent of all strikes. Other species frequently struck by aircraft include American kestrel (*Falco sparverius*) (79 strikes or 4.4 percent), cliff swallows (82 strikes or 4.6 percent), gulls (54 strikes or 3 percent), mallards (36 strikes or 2 percent), and western meadowlarks (40 strikes or 2.2 percent). Given similarities of habitat, it would be expected that bird-aircraft strikes at Provo Airport might be caused by the same or similar species.

When considering the 5-year eBird data set for six sites surrounding SLCIA and results of FAA Wildlife Strike Database queries, it is apparent that the presence of birds of various species surrounding the airport does not determine that a bird-aircraft strike is imminent. Furthermore, species identified as being of greatest concern by Provo City and USDA Wildlife Services (e.g., pelicans, gulls, and waterfowl) accounted for some of the fewest strikes that were reported to the FAA in Salt Lake. Small to medium sized birds of unknown species accounted for the greatest number of strikes reported to the FAA for SLCIA.

Project-specific surveys and eBird data in the Provo Airport vicinity suggest that large numbers of small- to medium-sized birds are present under existing conditions. Small to medium sized birds observed during project-specific surveys include but are not limited to red-winged and yellow-headed blackbirds, European starlings, certain gull species, swallows, and sparrows. As indicated by the abundances of birds in the surveys and eBird data, the abundance of hazardous bird species under existing conditions is noteworthy within the study area and along the eastern shore of Utah Lake. The low number of reported bird-aircraft strike incidents to date at Provo Airport could be attributed in part to incidents with private planes going unreported because no damage occurred.

[3] These numbers were updated between the Draft EIS and the Final EIS, and it was determined that the national database included five of the eight bird strikes reported by UVU.

[4] The national database was queried again between the Draft and Final EIS. The number of reported wildlife strikes at Salt Lake City International had increased to 2,057 with reporting dates through August 30, 2014 (FAA 2015).

Table 13. Bird-aircraft strikes reported for the Salt Lake City International Airport for the period from 1990 to 2013.

SPECIES	TOTAL STRIKES	PERCENT OF TOTAL STRIKES
unknown bird–medium	318	17.7
unknown bird–small	308	17.2
horned lark	218	12.2
cliff swallow	82	4.6
American kestrel	79	4.4
gulls	54	3.0
barn swallow	46	2.6
western meadowlark	40	2.2
unknown bird–large	39	2.2
California gull	37	2.1
mallard	36	2.0
European starling	33	1.8
barn owl	28	1.6
western kingbird	28	1.6
ducks	27	1.5
Swainson's hawk	24	1.3
American coot	20	1.1
sparrows	18	1.0
red-tailed hawk	14	0.8
swallows	14	0.8
bank swallow	12	0.7
northern shoveler	12	0.7
Canada goose	11	0.6
house sparrow	11	0.6
red fox	10	0.6
gadwall	9	0.5
mourning dove	9	0.5
northern pintail	9	0.5
unknown bird	9	0.5
green-winged teal	8	0.4
killdeer	8	0.4
perching birds (y)	8	0.4
white-faced ibis	8	0.4
hawks	7	0.4
American robin	6	0.3
American white pelican	6	0.3
American wigeon	6	0.3
Brazilian free-tailed bat	6	0.3
microbats	6	0.3
northern harrier	6	0.3
rough-legged hawk	6	0.3
Franklin's gull	5	0.3
geese	5	0.3
great blue heron	5	0.3

Table 13. Continued.

SPECIES	TOTAL STRIKES	PERCENT OF TOTAL STRIKES
short-eared owl	5	0.3
Wilson's phalarope	5	0.3
American crow	4	0.2
blue-winged teal	4	0.2
mountain bluebird	4	0.2
tree swallow	4	0.2
unknown bird or bat	4	0.2
blackbirds	3	0.2
canvasback	3	0.2
common nighthawk	3	0.2
ducks, geese, swans	3	0.2
ferruginous hawk	3	0.2
rock pigeon	3	0.2
ruddy duck	3	0.2
skunks	3	0.2
American pipit	2	0.1
big brown bat	2	0.1
black-billed magpie	2	0.1
Brewer's blackbird	2	0.1
burrowing owl	2	0.1
cinnamon teal	2	0.1
double-crested cormorant	2	0.1
greater scaup	2	0.1
hermit thrush	2	0.1
lesser scaup	2	0.1
marsh wren	2	0.1
owls	2	0.1
rails	2	0.1
ring-necked duck	2	0.1
savannah sparrow	2	0.1
silver-haired bat	2	0.1
snow goose	2	0.1
turkey vulture	2	0.1
Virginia rail	2	0.1
American avocet	1	0.1
bald eagle	1	0.1
black-crowned night-heron	1	0.1
black-throated sparrow	1	0.1
cedar waxwing	1	0.1
common goldeneye	1	0.1
common poorwill	1	0.1
common raven	1	0.1
Cooper's hawk	1	0.1
eagles	1	0.1
Eurasian wigeon	1	0.1

Table 13. Continued.

SPECIES	TOTAL STRIKES	PERCENT OF TOTAL STRIKES
foxes	1	0.1
free-tailed bats	1	0.1
golden eagle	1	0.1
gray-crowned rosy-finch	1	0.1
gull-billed tern	1	0.1
horned grebe	1	0.1
house finch	1	0.1
little brown bat	1	0.1
northern flicker	1	0.1
northern rough-winged swallow	1	0.1
perching birds (z)	1	0.1
pied-billed grebe	1	0.1
pine siskin	1	0.1
prairie falcon	1	0.1
raccoon	1	0.1
red knot	1	0.1
redhead	1	0.1
red-naped sapsucker	1	0.1
sage sparrow	1	0.1
snowy egret	1	0.1
solitary sandpiper	1	0.1
sora	1	0.1
striped skunk	1	0.1
Townsend's warbler	1	0.1
tyrant flycatchers	1	0.1
unknown terrestrial mammal	1	0.1
violet-green swallow	1	0.1
western screech-owl	1	0.1
western tanager	1	0.1
whip-poor-will	1	0.1
white-crowned sparrow	1	0.1
white-throated sparrow	1	0.1
white-throated swift	1	0.1
Wilson's warbler	1	0.1
wood warblers	1	0.1
woodpeckers	1	0.1
yellow warbler	1	0.1
yellow-headed blackbird	1	0.1
yellow-rumped warbler	1	0.1
Total	**1,793**	**100**

Potential Bird-Aircraft Strike Risk

Quantitative Analysis

Applying the Modified BAM approach, across all surveys and seasons, the total bird mass was similar at the Provo Bay/Airport dike and North Wetlands survey locations, but lower in the South Agricultural Fields. Total bird mass was standardized to square kilometers as a measure of bird density within a given habitat type. Then the relative risk of a bird strike associated with the avian populations at these locations was defined by comparing each density total to the lowest density total for the four survey sites (i.e., comparison to the South Agricultural Fields). Collectively, considering the spring and fall surveys (combined), the relative risk of a bird-aircraft strike was greatest in the Provo River Parkway and lowest in the South Agricultural Fields (Table 14). The relative risk of a bird-aircraft strike decreased incrementally from the Provo River Parkway to the South Agricultural Fields.

Table 14. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in spring and fall 2012.

SURVEY AREA	AREA (Acres)	AREA (Square Kilometers)	TOTAL BIRD MASS PRESENT (Ounces)[a]	SCALED BIRD MASS (Ounces Per Square Kilometers)	RELATIVE RISK OF BIRD-AIRCRAFT STRIKE
South Agricultural Fields	284	1.15	3,759	3,270	NA
Provo Bay/Airport Dike	458	1.85	21,546	11,625	3.6
North Wetlands	272	1.10	21,704	19,718	6.0
Provo River Parkway	91	0.37	9,291	25,234	7.0

[a] Total bird mass in ounces, based on species-specific masses obtained from the literature and average number of individuals per species.

During the spring, both total bird mass and the relative risk of a bird-aircraft strike were greatest at the North Wetlands (Table 15). Although total bird mass at the Provo Bay and Airport dike site was second greatest at 6,398 ounces, when total mass was standardized to square kilometer, the relative risk of a bird-aircraft strike at that location was essentially equal to bird-aircraft strike risk at the Provo River Parkway site (Table 15).

During the fall, total bird mass was greatest at the Provo Bay and Airport dike site and second greatest at the Provo River Parkway (Table 16). Although the total bird mass at the Provo Bay and Airport dike site was the greatest, when total mass was standardized to square kilometers, the relative risk of a bird-aircraft strike at the Provo River Parkway was much greater than the relative bird-aircraft strike risk at any other location (Table 16). Total bird mass and relative risk of bird-aircraft strike between spring and fall increased in all survey areas except for the Northern Wetlands, which decreased.

Table 15. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in spring 2012.

SURVEY AREA	AREA (Acres)	AREA (Square Kilometers)	TOTAL BIRD MASS PRESENT (Ounces)[a]	SCALED BIRD MASS (Ounces Per Square Kilometers)	RELATIVE RISK OF BIRD-AIRCRAFT STRIKE
South Agricultural Fields	284	1.15	1,665	1,449	NA
Provo Bay/Airport Dike	458	1.85	6,398	3,452	2.4
Provo River Parkway	91	0.37	1,338	3,633	2.5
North Wetlands	272	1.10	19,261	17,449	12.1

[a] Total bird mass in ounces, based on species-specific masses obtained from the literature and average number of individuals per species.

Table 16. Total bird mass and relative bird-aircraft strike risk for bird survey areas based on survey data collected in fall 2012.

SURVEY AREA	AREA (Acres)	AREA (Square Kilometers)	TOTAL BIRD MASS PRESENT (Ounces)[a]	SCALED BIRD MASS (Ounces Per Square Kilometers)	RELATIVE RISK OF BIRD-AIRCRAFT STRIKE
South Agricultural Fields	284	1.15	2,093	1,822	NA
North Wetlands	272	1.10	2,443	2,219	1.2
Provo Bay/Airport Dike	458	1.85	15,148	8,173	4.5
Provo River Parkway	91	0.37	7,953	21,601	11.9

[a] Total bird mass in ounces, based on species-specific masses obtained from the literature and average number of individuals per species. FAA Listed Wildlife Species/Groups Identified as Hazardous to Aviation (FAA advisory circular 150/5200-33)

As presented in Table 17 below, 12 of the 23 avian species (52.2 percent) identified as most hazardous to aircraft by the FAA were observed during fall surveys of the South Agricultural Fields while 16 of 23 species (69.6 percent) were observed during spring surveys. Surveys of North Wetlands during the fall identified 16 of the 23 (69.6 percent) avian species using existing habitat while 18 of the 23 species (78.3 percent) were documented using habitat during the spring. During the fall, habitat located at Provo Bay and Airport Dike was used by 16 of the 23 avian species (69.6 percent) known to be hazardous to aircraft while 15 of the 23 avian species (65.2 percent) were observed using available habitat during the spring. During fall surveys habitat along the Provo River Parkway was used by 13 of the species (56.5 percent) listed in Table 17 while only 9 (39.1 percent) of the species were found during spring surveys. Additionally, 100 percent of the avian species identified as hazardous to aircraft by the FAA were documented at the 16 eBird locations previously discussed. These results suggest that habitat within the project area under existing conditions is at least suitable for all avian species of concern. Based on the size of the project area as compared to the amount of area surrounding the Provo Airport, implementation of the proposed project will not likely change conditions for these avian communities significantly, which present risk to incoming and outgoing aircraft under current conditions.

Table 17. Wildlife species/groups identified as hazardous by the FAA (FAA advisory circular 150/5200-33) and their documented occurrence in the project area during 2012 and 2013 spring and fall surveys.

FEDERAL AVIATION ADMINISTRATION CLASS	SOUTH FIELDS		NORTH WETLANDS		PROVO AIRPORT DIKE		PROVO RIVER PARKWAY	
	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
deer (not surveyed)	–	–	–	–	–	–	–	–
vultures	–	–	–	X	–	–	–	–
geese	–	X	–	X	–	X	–	–
pelicans	–	X	–	X	X	X	–	–
cormorants	--	--	--	--	X	X	--	--
cranes	X	X	X	X	X	X	X	–
eagles	–	–	–	–	–	–	–	X
ducks	–	X	X	X	X	X	X	X
osprey	–	X	X	X	–	X	–	–
turkeys/pheasants	X	X	X	X	–	X	X	X
herons	–	–	–	X	X	X	–	–
hawks (Buteos)	X	X	X	X	X	X	X	–
gulls	X	X	X	X	X	X	X	–
rock pigeon	–	–	X	–	X	–	X	–
owls	–	–	–	–	–	–	X	–
horned lark/snow bunting	X	–	X	–	X	–	X	–
crows/ravens	X	X	X	X	X	X	X	X
coyote (not surveyed)	–	–	–	–	–	–	–	–
mourning dove	–	X	X	X	X	–	–	X
shorebirds	X	X	X	X	X	X	–	X
blackbirds	X	X	X	X	X	X	X	X
starlings	X	X	X	X	X	X	X	X
American kestrel	X	X	X	X	X	--	X	X
meadowlarks	X	X	X	X	X	X		–
swallows	X	X	X	X	X	X	X	X
sparrows	X	X	X	X	X	X	X	X
nighthawks	–	–	–	–	–	–	–	–

Provo City, the FAA, and USDA Wildlife Services have identified species of greatest concern for risk to aircraft at the Provo Airport. These include waterfowl (ducks and geese), gulls, and pelicans. As indicated in Table 13 , mallards only account for 2 percent of all strikes at SLCIA since 1990, California gulls only account for 2.1 percent of all strikes, and American white pelicans only account for 0.3 percent of all strikes. Species such as swallows and kestrels, which account for over 4 percent of all strikes at the Salt Lake Airport occur in very large numbers within the project area and along the eastern shore of Utah Lake under existing conditions. Small to medium size birds, which collectively account for over 35 percent of strikes at SLCIA, would likely include species such as European starlings, doves, American robin, black-billed magpies, red-winged and yellow-headed blackbirds. As indicated by the abundances of birds derived from BIO-WEST surveys and from five years of eBird data, the abundance of these species under existing conditions is very high within the study area and along the eastern shore of Utah Lake.

Bird Aircraft Strike Risk Based on Bird Abundance

As described in the methods section above, the analysis of bird aircraft strike risk for each of the action alternatives is based on an assumption that an increase in bird abundance or bird density (by mass) would equate to an increase in strike risk and conversely that a decrease in abundance would equate to a decrease in strike risk. Results of this modeling exercise are presented for each alternative in separate tables with accompanying text in the subsections below, followed by a summary discussion.

No-Action Alternative

Under the No Action Alternative, the condition of avian habitat within the study area would remain as described for existing conditions. Bird strike risk within the study area would also remain unchanged from existing conditions if the same land use practices are continued.

Alternative A

The existing bird habitat and bird-aircraft strike risk surrounding the Provo Airport outside of the study area would remain the same as described in the No-action Alternative. Within the study area under Alternative A, 8 of the FAA listed hazardous species are predicted to increase (based on annual totals), 14 species are predicted to decrease, and 6 are predicted to not change (Table 18). All 4 of the non-FAA listed species included in Table 18 are predicted to increase. Based on the annual summaries, implementation of Alternative A is predicted to decrease overall abundance throughout the study area by a relative total of 1,617 birds (a 5.3 percent decrease).

Although Alternative A would create habitat conditions during the spring that are very attractive for certain open water species, it replaces habitat that has higher bird usage and therefore this alternative results in a predicted decrease in overall abundance of birds that appear on the FAA list of hazardous species primarily because of the predicted reductions during the spring. Summer and winter abundances are predicted to increase but by a lesser amount than the spring decreases. Because Alternative A is predicted to result in a net decrease in overall abundance, it is expected that the overall risk of bird strikes within the study area would also decrease.

Alternative B

The existing bird habitat and bird-aircraft strike risk surrounding the Provo Airport outside of the study area would remain the same as described in the No-action Alternative. Within the study area under Alternative B, 4 of the FAA listed hazardous species are predicted to increase (based on annual totals), 18 species are predicted to decrease, and 6 are predicted to not change (Table 19). Three of the 4 non-FAA listed species included in Table 19 are predicted to increase. Based on the annual summaries, implementation of Alternative B is predicted to decrease overall abundance throughout the study area by a relative change of just over 6,000 birds (a 20.7 percent overall decrease).

The largest declines under Alternative B are for ducks, which are predicted to decrease substantially during the spring and winter. Ducks, which breed in upland communities close to water such as those found in the study area under existing conditions, would experience a decline in overall abundance during the spring and winter. Many species (i.e., starlings, turkey/pheasant, and mourning doves) that utilize agricultural habitat types under existing conditions would experience no change in abundance under this alternative.

Table 18. Predicted increase or decrease in seasonal abundance, Alternative A.

FEDERAL AVIATION ADMINISTRATION CLASS	PREDICTED CHANGE IN ABUNDANCE OF BIRDS				TOTAL PREDICTED CHANGE
	Spring	Summer	Fall	Winter	
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft					
vultures	-1	0	+1	0	0
geese	-254	+10	0	+29	-215
pelicans	+58	+16	+37	0	+111
cormorants	+9	+4	+1	0	+14
cranes	+1	+5	+2	+1	+9
eagles	0	0	0	+1	+1
ducks	-2,949	+91	+187	+691	-1,980
osprey	-9	+3	+1	0	-5
pheasants	-12	-3	-11	+3	-23
turkey	0	0	0	0	0
herons	+5	+4	+3	+2	+14
hawks (Buteos)	-13	-3	+4	-2	-14
gulls	-14	-7	-68	+22	-67
rock pigeon	-10	+2	+3	+9	+4
owls	0	0	0	0	0
snow bunting	0	0	0	0	0
horned lark	0	0	0	-2	-2
ravens	-2	0	0	0	-2
crows	0	0	-1	0	-1
mourning dove	-2	+9	+2	+8	+17
shorebirds	-232	+89	+68	+1	-74
starlings	-295	-449	-1,404	+1,449	-699
blackbirds	-245	+108	-102	+130	-109
American Kestrel	-1	0	+1	0	0
meadowlarks	-11	-20	+5	0	-26
swallows	+273	+329	+134	0	+736
sparrows	-61	+8	-15	-16	-84
nighthawks	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds					
American Coot	-579	+7	+560	+19	+7
American Robin	-128	+10	+84	+175	+141
waterbird sp.	+15	+34	+503	0	+552
white-faced ibis	-20	0	+2	+96	+78
Net Change **Percent Change**	**-4,475** **-50.8%**	**245** **+9.6%**	**-3** **-0.04%**	**2,616** **+25.0%**	**-1,617** **-5.3%**

Table 19. Predicted increase or decrease in seasonal abundance, Alternative B.

FEDERAL AVIATION ADMINISTRATION CLASS	PREDICTED CHANGE IN ABUNDANCE OF BIRDS				TOTAL PREDICTED CHANGE
	Spring	Summer	Fall	Winter	
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft					
vultures	-1	-1	0	0	-2
geese	-285	+5	0	+6	-274
pelicans	+29	+10	+22	0	+61
cormorants	+5	+2	+1	0	+8
cranes	-5	-3	-1	-1	-10
eagles	0	0	0	-1	-1
ducks	-2,663	+42	+61	-1,008	-3,568
osprey	-9	-1	0	0	-10
pheasants	-6	-3	-3	-4	-16
turkey	0	0	0	0	0
herons	+2	+1	+1	+1	+5
hawks (Buteos)	-6	-1	-1	-1	-9
gulls	-16	+1	-19	+1	-33
rock pigeon	-10	-2	+1	-6	-17
owls	0	0	0	0	0
snow bunting	0	0	0	0	0
horned lark	0	0	0	0	0
ravens	-2	0	0	0	-2
crows	0	0	0	0	0
mourning dove	-1	-4	-7	-3	-15
shorebirds	-230	+32	+10	-1	-189
starlings	-165	-159	-86	-924	-1,334
blackbirds	-223	-86	-282	-340	-931
American Kestrel	-1	-1	-1	-2	-5
meadowlarks	-3	-5	+1	0	-7
swallows	+124	+68	-32	0	+160
sparrows	-58	-13	-27	-3	-101
nighthawks	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds					
American Coot	-781	+5	+314	+14	-448
American Robin	-52	+13	+12	+108	+81
waterbird sp.	-1	+32	+318	0	+349
white-faced ibis	-20	0	+1	+60	+41
Net Change **Percent Change**	**-4,378** **-49.7%**	**-68** **-2.7%**	**283** **+3.3%**	**-2,104** **-20.1%**	**-6,267** **-20.7%**

Under Alternative B, the overall abundance of birds is predicted to decrease during the spring, summer, and winter. During the fall, the overall abundance of birds is predicted to increase by nearly 300 birds. As such, it is expected that the project would have seasonal effects to the risk of bird aircraft strikes. Although, risk would increase during the fall, Alternative B is predicted to result in a net decrease in overall abundance, and therefore it is expected that the overall risk of bird strikes within the study area would also decrease.

Alternative C

The existing bird habitat and bird-aircraft strike risk surrounding the Provo Airport outside of the study area would remain the same as described in the No-action Alternative. Within the study area under Alternative C, 17 of the FAA listed hazardous species are predicted to increase (based on annual totals), 8 species are predicted to decrease, and 3 are predicted to not change (Table 20). All 4 the non-FAA listed species included in Table 20 are predicted to increase. Based on the annual summaries, implementation of Alternative C is predicted to increase overall abundance throughout the study area by nearly 4,000 birds (a 12.9 percent increase).

Under Alternative C, most species listed in Table 20 would experience increases in overall abundance across all seasons except for spring when breeding habitat (emergent marsh) would be under water. Species predicted to increase the most in total abundance are ducks (winter) and starlings (winter). The largest decreases are for ducks during the spring and starlings during the fall. Yellow-headed and red-winged blackbirds would experience increases in overall abundance during the summer, fall, and winter because of the creation of wetland habitat while European starlings would likely decrease in overall abundance during the spring, summer, and fall because of the conversion of agricultural lands to other habitat types.

Under Alternative C, net change in the predicted abundance of bird is variable across seasons and would decrease in the spring while increases are predicted during the summer, fall, and winter. Under Alternative C, the total abundance of birds is predicted to increase, as a consequence, the risk of bird-aircraft strikes would be increased as well.

Alternative A: Bird Mass

Under Alternative A, the total mass of birds in the study area across all species and seasons would decrease substantially from existing conditions (Table 21). This would be largely due to declines in goose and duck abundances during the spring. Among species that would see increases in mass, the predicted changes in pelican abundance under Alternative A would produce the greatest increase in bird mass despite larger predicted increases in abundance for other species including swallows and other waterbird species. Understandably, this is due to extremely large differences in body mass. Pelican mass averages approximately 9,000 g (9 kg) while swallows average only 19 g (0.019 kg).

Table 20. Predicted increase or decrease in seasonal abundance, Alternative C.

FEDERAL AVIATION ADMINISTRATION CLASS	PREDICTED CHANGE IN ABUNDANCE OF BIRDS				TOTAL PREDICTED CHANGE
	Spring	Summer	Fall	Winter	
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft					
vultures	0	0	+2	0	+2
geese	-102	+9	0	+23	-70
pelicans	+42	+5	+22	0	+69
cormorants	+6	+1	+1	0	+8
cranes	+4	+8	+5	+1	+18
eagles	0	0	0	+1	+1
ducks	-1,511	+75	+210	+1,593	+367
osprey	-4	+4	+1	+1	+2
pheasants	-9	-1	-6	+6	-10
turkey	0	0	0	0	0
herons	+4	+2	+2	+1	+9
hawks (Buteos)	-10	-3	+8	-2	-7
gulls	-5	-10	-26	+21	-20
rock pigeon	-4	+4	+3	+15	+18
owls	0	0	0	+1	+1
snow bunting	0	0	0	0	0
horned lark	0	0	0	-2	-2
ravens	-1	0	0	0	-1
crows	0	0	-1	0	-1
mourning dove	-1	+13	+19	+12	+43
shorebirds	-103	+56	+79	+2	+34
starlings	-219	-393	-809	+2,376	+955
blackbirds	-121	+182	+560	+397	+1,018
American Kestrel	0	+1	+5	+1	+7
meadowlarks	-11	-19	+7	0	-23
swallows	+224	+263	+247	0	+734
sparrows	-28	+22	+61	-16	+39
nighthawks	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds					
American Coot	-140	+3	+365	+16	+244
American Robin	-98	+12	+152	+78	+144
waterbird sp.	+15	-3	+295	0	+307
white-faced ibis	-9	0	+1	+36	+28
Net Change **Percent Change**	**-2,081** **-23.6%**	**+231** **+9.1%**	**+1,203** **+14.1%**	**+4,561** **+43.6%**	**+3,914** **+12.9%**

Table 21. Predicted increase or decrease in seasonal bird mass under Alternative A.

FEDERAL AVIATION ADMINISTRATION CLASS	MEAN MASS (grams)[a]	PREDICTED CHANGE IN BIRD MASS (grams)[b]				
		Spring	Summer	Fall	Winter	Total Predicted Change
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft						
vulture	1,918	-1,918	0	1,918	0	0
geese	4,280	-1,087,120	42,800	0	124,120	-920,200
pelican	9,000	522,000	144,000	333,000	0	999,000
cormorant	2,453	22,077	9,812	2,453	0	34,342
crane	3,460	3,460	17,300	6,920	3,460	31,140
eagle	4,913	0	0	0	4,913	4,913
duck	1,301	-3,836,649	118,391	243,287	898,991	-2,575,980
osprey	2,000	-18,000	6,000	2,000	0	-10,000
pheasant	1,263	-15,156	-3,789	-13,893	3,789	-29,049
turkey	8,500	0	0	0	0	0
herons	2,500	12,500	10,000	7,500	5,000	35,000
hawk (Buteos)	1,224	-15,912	-3,672	4,896	-2,448	-17,136
gull	657	-9,198	-4,599	-44,676	14,454	-44,019
rock pigeon	350	-3,500	700	1,050	3,150	1,400
owl	1,706	0	0	0	0	0
snow bunting	35	0	0	0	0	0
horned lark	38	0	0	0	-76	-76
raven	811	-1,622	0	0	0	-1,622
crow	538	0	0	-538	0	-538
mourning dove	123	-246	1,107	246	984	2,091
shorebird	336	-77,929	29,895	22,841	336	-24,857
starling	88	-25,842	-39,332	-122,990	126,932	-61,232
blackbird	71	-17,273	7,614	-7,191	9,165	-7,685
American kestrel	120	-120	0	120	0	0
meadowlark	106	-1,166	-2,120	530	0	-2,756
swallow	19	5,242	6,317	2,573	0	14,131
sparrow	28	-1,678	220	-413	-440	-2,310
nighthawk	79	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds						
American coot	692	-400,668	4,844	387,520	13,148	4,844
American robin	84.8	-10,854	848	7,123	14,840	11,957
waterbird species	692	10,380	23,528	348,076	0	381,984
white-faced ibis	679	-13,580	0	1,358	65,184	52,962
Net Change		-4,962,772	369,864	1,183,710	1,285,502	-2,123,696 (-11.9%)

[a] Mean mass (g) is the mean mass of a single bird as reported in species accounts available from Birds of North America Online (available at: http://bna.birds.cornell.edu/bna/).
[b] Predicted change in bird mass (g) represents the total change in bird mass, which was calculated by multiplying the mean mass of a single individual by the seasonal and total change in abundance for each species.

The mass of waterfowl (ducks and geese) in the study area would be predicted to decrease the most under Alternative A compared with all other species combined. Both ducks and geese would be predicted to experience declines in total mass during the spring. The project would flood prime nesting habitat during the spring. Because these species are currently most abundant in the spring, this results in overall decreases in duck and goose abundance and, consequently, also mass, even though their numbers and mass in other seasons would be predicted to increase slightly over existing conditions.

Alternative B: Bird Mass

Under Alternative B, the total predicted mass of birds across all species and seasons would decrease substantially (-31.6 percent)from existing conditions (Table 22). Individual species such as pelicans, however, would be predicted to experience an increase in total mass despite relatively small changes in predicted abundance when compared against other species such as swallows and waterbirds. Swallow abundances would be predicted to change by 160 individuals while pelicans would be predicted to change by 61 individuals. However, differences in body size more than compensate for differences in predicted abundance. A small increase in predicted abundance of pelicans yields higher change in total mass than the change in mass of many smaller species (swallows) with higher predicted changes in total abundance. Ducks would be predicted to experience the greatest decreases in mass with the highest declines experienced during the spring and summer. Similarly, geese would be predicted to experience high declines in total mass; however, goose mass would be predicted to decrease in the spring and increase throughout the remainder of the year. The project would flood prime nesting habitat during the spring. Because these species are currently most abundant in the spring, this results in overall decreases in duck and goose abundance and consequently also mass, even though their numbers and mass in other seasons would be predicted to increase slightly over existing conditions.

Alternative C: Bird Mass

Under Alternative C, the total mass of birds across all species and seasons would increase (8.3 percent) from existing conditions (Table 23). Pelicans would account for the greatest amount of change in total mass. In total, pelicans would account for nearly 42 percent of the predicted change in mass across all seasons and species despite a small increase in total abundance relative to other species. Pelicans would be predicted to increase by 69 individuals under Alternative C while ducks would be predicted to increase by 367 individuals. In total, ducks would only account for 32 percent of the predicted change in total mass. Total bird mass would be predicted to increase during the summer, fall, and winter while predicted changes in mass would decrease substantially from existing conditions during the spring.

Table 22. Predicted increase or decrease in seasonal bird mass under Alternative B.

FEDERAL AVIATION ADMINISTRATION CLASS	MEAN MASS (grams)[a]	PREDICTED CHANGE IN BIRD MASS (grams)[b]				
		Spring	Summer	Fall	Winter	Total Predicted Change
Species Listed by the Federal Aviation Administration as Hazardous to Aircraft						
vulture	1,918	-1,918	-1,918	0	0	-3,836
geese	4,280	-1,219,800	21,400	0	25,680	-1,172,720
pelican	9,000	261,000	90,000	198,000	0	549,000
cormorant	2,453	12,265	4,906	2,453	0	19,624
crane	3,460	-17,300	-10,380	-3,460	-3,460	-34,600
eagle	4,913	0	0	0	-4,913	-4,913
duck	1,301	-3,464,563	54,642	79,361	-1,311,408	-4,641,968
osprey	2,000	-18,000	-2,000	0	0	-20,000
pheasant	1,263	-7,578	-3,789	-3,789	-5,052	-20,208
turkey	8,500	0	0	0	0	0
heron	2,500	5,000	2,500	2,500	2,500	12,500
hawk (*Buteos*)	1,224	-7,344	-1,224	-1,224	-1,224	-11,016
gull	657	-10,512	657	-12,483	657	-21,681
rock pigeon	350	-3,500	-700	350	-2,100	-5,950
owl	1,706	0	0	0	0	0
snow bunting	35	0	0	0	0	0
horned lark	38	0	0	0	0	0
raven	811	-1,622	0	0	0	-1,622
crows	538	0	0	0	0	0
mourning dove	123	-123	-492	-861	-369	-1,845
shorebird	336	-77,257	10,749	3,359	-336	-63,485
starling	88	-14,454	-13,928	-7,534	-80,942	-116,858
blackbird	71	-15,722	-6,063	-19,881	-23,970	-65,636
American kestrel	120	-120	-120	-120	-240	-600
meadowlark	106	-318	-530	106	0	-742
swallow	19	2,381	1,306	-614	0	3,072
sparrow	28	-1,595	-358	-743	-83	-2,778
nighthawk	79	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds						
American coot	692	-540,452	3,460	217,288	9,688	-310,016
American robin	84.8	-4,410	1,102	1,018	9,158	6,869
waterbird species	692	-692	22,144	220,056	0	241,508
white-faced ibis	679	-13,580	0	679	40,740	27,839
Net Change		-5,140,213	171,364	674,461	-1,345,673	-5,640,062 (-31.6%)

[a] Mean mass (g) is the mean mass of a single bird as reported in species accounts available from Birds of North America Online (available at: http://bna.birds.cornell.edu/bna/).
[b] Predicted change in bird mass (g) represents the total change in bird mass, which was calculated by multiplying the mean mass of a single individual by the seasonal and total change in abundance for each species.

Table 23. Predicted increase or decrease in seasonal bird mass under Alternative C.

FEDERAL AVIATION ADMINISTRATION CLASS	MEAN MASS (grams)[a]	PREDICTED CHANGE IN BIRD MASS (grams)[b]				
		Spring	Summer	Fall	Winter	Total Predicted Change
Species Listed by the Federal Aviation Administration (FAA) as Hazardous to Aircraft						
vulture	1,918	0	0	3,836	0	3,836
geese	4,280	-436,560	38,520	0	98,440	-299,600
pelican	9,000	378,000	45,000	198,000	0	621,000
cormorant	2,453	14,718	2,453	2,453	0	19,624
crane	3,460	13,840	27,680	17,300	3,460	62,280
eagle	4,913	0	0	0	4,913	4,913
duck	1,301	-1,965,811	97,575	273,210	2,072,493	477,467
osprey	2,000	-8,000	8,000	2,000	2,000	4,000
pheasant	1,263	-11,367	-1,263	-7,578	7,578	-12,630
turkey	8,500	0	0	0	0	0
heron	2,500	10,000	5,000	5,000	2,500	22,500
hawk (Buteos)	1,224	-12,240	-3,672	9,792	-2,448	-8,568
gull	657	-3,285	-6,570	-17,082	13,797	-13,140
rock pigeon	350	-1,400	1,400	1,050	5,250	6,300
owl	1,706	0	0	0	1,706	1,706
snow bunting	35	0	0	0	0	0
horned lark	38	0	0	0	-76	-76
raven	811	-811	0	0	0	-811
crow	538	0	0	-538	0	-538
mourning dove	123	-123	1,599	2,337	1,476	5,289
shorebird	336	-34,598	18,810	26,536	672	11,421
starling	88	-19,184	-34,427	-70,868	208,138	83,658
blackbird	71	-8,531	12,831	39,480	27,989	71,769
American kestrel	120	0	120	600	120	840
meadowlark	106	-1,166	-2,014	742	0	-2,438
swallow	19	4,301	5,050	4,742	0	14,093
sparrow	28	-770	605	1,678	-440	1,073
nighthawk	79	0	0	0	0	0
Species Not Listed by the Federal Aviation Administration but with Daily High Counts Exceeding 100 Birds						
American coot	692	-96,880	2,076	252,580	11,072	168,848
American robin	84.8	-8,310	1,018	12,890	6,614	12,211
waterbird species	692	10,380	-2,076	204,140	0	212,444
white-faced ibis	679	-6,111	0	679	24,444	19,012
Net Change		-2,183,908	217,715	962,978	2,489,697	1,486,482 (+8.3)

[a] Mean mass (g) is the mean mass of a single bird as reported in species accounts available from Birds of North America Online (available at: http://bna.birds.cornell.edu/bna/).
[b] Predicted change in bird mass (g) represents the total change in bird mass, which was calculated by multiplying the mean mass of a single individual by the seasonal and total change in abundance for each species.

4.0 DISCUSSION

Bird Community Survey Results

Bird communities described by eBird data for the 16 sites along the eastern shore of Utah Lake were similar to bird communities described by BIO-WEST's bird survey data that was collected within the study area. Fifteen species observed during spring surveys, 8 species observed during summer surveys, 8 species observed during fall surveys, and 10 species observed during winter surveys were among the 20 most abundant species for bird communities along the eastern shore of Utah Lake, based on eBird data, and also among the top 20 most abundant species within the study area, as based on BIO-WEST survey data. All species present in the study area bird community were also present in bird communities along the eastern shore of Utah Lake.

Existing bird communities within the study area differed among the four survey areas, but they were relatively similar for the North Wetlands and the Provo Bay and Airport dike. The bird community associated with study area North Wetlands was dominated by species normally associated with wetlands habitats, including the 18 species of waterfowl detected during the spring, 4 species detected during the summer, 4 species detected during the fall, and 9 species of waterfowl detected during the winter, which collectively comprised 40 percent of all birds detected, as well as American coot, yellow-headed blackbird, red-winged blackbird, and Franklin's gull, six species of shorebirds, a nesting osprey pair, and sandhill cranes. The bird community associated with Provo Bay and Airport dike was most similar to the bird community associated with the North Wetlands; it was composed primarily of species associated with emergent marsh and open water habitats including green-winged teal, Canada goose, northern shoveler, cinnamon teal, mallard, gadwall (*Anas strepera*), American coot, yellow-headed blackbird, red-winged blackbird, Franklin's gull, and American white pelican. All of these species except American white pelicans were both present and abundant at the North Wetlands. One species, marsh wren, was the second most abundant species at Provo Bay and Airport dike, but it was scarce at the North Wetlands.

The bird community associated with the South Agricultural Fields of the study area was dominated by species associated with either anthropogenically modified habitats, such as black-billed magpie, European starling, and American robin, or species associated with grasslands or agricultural lands, such as western meadowlark and ring-necked pheasant (*Phasianus colchicus*). The bird community along the Provo River Parkway was dominated by species associated with forested areas, but as with the bird community associated with the South Agricultural Fields, it also tended to be dominated by species often associated with anthropogenically disturbed or modified habitats, such as American robin, red-winged blackbird, and one form of domestic duck, which is not considered a species.

The existing bird community within the study area is relatively similar to the bird community on the Skipper Bay trail based on eBird data. Ten of the 12 most abundant species (American coot, yellow-headed blackbird, European starling, Canada goose, green-winged teal, American robin, northern shoveler, cinnamon teal, mallard, and red-winged blackbird) reported through eBird for the Skipper Bay trail were documented within the study area during BIO-WEST's surveys. As in the study area, the bird community along the Skipper Bay trail was dominated by waterfowl,

which composed 40 percent of the birds detected for that location, and by species often associated with anthropogenic habitats, such as European starling and American robin.

It is important to note, in summary, that the North Wetlands site under baseline (existing conditions) accounted for more than 50 percent of total bird observations for the four surveyed areas (19,175 out of 37,154 total bird observations). This partly explains why fewer numbers of birds are predicted under Alternatives A and B because, under those alternatives, the North Wetlands area would be altered from existing conditions and the habitat alterations would be expected to decrease in the abundance of birds overall within that portion of the project area.

Avian Biomass Comparisons Using the Modified Bird Avoidance Model (BAM)

Calculations of bird mass scaled to surveyed areas of the project area are based on data collected over eight surveys, four each during spring and fall 2012. These relative measures of avian mass and the assessment of the relative risk of bird-aircraft strike under existing conditions are meaningful because they are based on survey data and known masses for the species detected during these surveys. However, because bird surveys used for calculation of bird mass were conducted only during spring and fall, and both species composition and abundance of bird communities change seasonally, this assessment of existing bird communities and associated bird-aircraft strike risk may differ from risk during summer and winter.

Across all surveys and seasons, total bird mass was similar at Provo Bay and Airport dike and the North Wetlands and lowest in the South Agricultural Fields. When total bird mass was standardized to square kilometers, the relative risk of a bird-aircraft strike (determined by comparing bird mass density at each site with the lowest bird mass density observed at any site during that same season) was greatest at the Provo River Parkway and lowest in the South Agricultural Fields.

During the spring, both total bird mass and the current relative risk of a bird-aircraft strike were greatest at the North Wetlands. Although the total bird mass at Provo Bay and Airport dike was second greatest at 6,398 ounces, when total mass was standardized to square kilometers the relative risk of a bird-aircraft strike at that location was essentially equal to bird-aircraft strike risk at the Provo River Parkway, which had the lowest total bird mass.

During the fall, total bird mass was greatest at Provo Bay and Airport dike and second greatest at the Provo River Parkway. Although the total bird mass at the Provo Bay and Airport dike was the greatest, when total mass was standardized to square kilometers, the relative risk of a bird-aircraft strike at the Provo River Parkway was much greater than the relative bird-aircraft strike risk at any other location.

These analyses have their limitations. First, all species, including those likely small enough (<0.11 ounces) to cause little or no damage to an aircraft in the event of a collision, were included in mass calculations. Second, species that are large enough to cause significant damage but whose behavior and habitat associations likely preclude (or greatly reduce) the risks of bird-aircraft strikes also are included. For example, the California quail (*Callipepla californica*),

which occurs on the Provo River Parkway and in the South Agricultural Fields, generally walks or runs rather than flies. When it does fly, it generally remains close to the ground and usually travels for short distances. Domestic ducks, which occur on the Provo River Parkway and are abundant and heavy enough to compose a significant amount of mass, also generally do not fly, or they likely fly only at low altitudes.

Data extracted from the eBird database were useful for describing bird communities near and in the study area but not for assessing bird-aircraft strike risk for a given area (ounces per square kilometer). Because eBird is based on citizen science rather than a standardized sampling effort, there is considerable variation in sampling effort associated with the data. For example, checklists submitted by observers for each eBird location vary considerably in both duration (i.e., sampling time) and distance (i.e., how far did the observer travel while collecting data). Therefore, assigning a known, standardized sampling area for each eBird location was not possible, and scaling bird abundance to provide a relative measure of bird mass for a given area (ounces per square kilometer), as was done for BIO-WEST survey data, was not reliable.

Given the broadly defined risk categories used in the BAM model and the small differences in bird mass developed by BIO-WEST for each of the survey areas, BIO-WEST's assessment of the bird-aircraft strike risk for the study area under existing conditions assigned the same risk category as did the BAM data. Based on BAM data over a large area, the risk for the study area is moderate, and results of the BIO-WEST risk assessment did not show large enough differences in bird mass per unit area to justify assigning a different risk category to the project area despite the use of site-specific avian survey data.

Despite the categorization of all four survey areas as being of moderate risk for bird-aircraft strikes under existing conditions, the abundance of medium- to large-bodied birds in existing bird communities in the study area and on Provo Bay and Utah Lake and, despite the presence of a Canada geese and sandhill crane loafing area next to active runways at the Provo Airport, reported bird strikes at the Provo Airport appear to generally involve smaller species (swallows) (FAA 2015). Under existing conditions, large concentrations of geese and cranes and other broad taxonomic groups of larger-bodied species (e.g., ducks and gulls) known to be frequently involved in bird-aircraft strikes nationwide (Dolbeer 2006) occur adjacent to the Provo Airport in Provo Bay.

BIO-WEST surveys recorded multiple instances of birds either using Provo Airport property or flying through known landing and take-off airspace corridors north of the Provo Airport. Pied-billed grebes (*Podilymbus podiceps*), American coots, ducks, common mergansers (*Mergus merganser*), and Caspian terns (*Hydroprogne caspia*) were observed either swimming in or flying low over the canal that surrounds Provo Airport. At least three species, Canada goose, sandhill crane, and northern harrier (*Circus cyaneus*), all of which are large enough to cause a bird-aircraft strike that could result in serious injury and property damage, were observed within the fenced area surrounding the Provo Airport. These species were either loafing or foraging adjacent to one of the two runways (sandhill crane, Figure 6; Canada goose, Figure 7) or, in the case of the northern harrier, were perched or actively hunting adjacent to or over one of the two runways.

Figure 6. A sandhill crane using habitat next to a Provo Airport runway. Photographed on 9 April 2012 using a spotting scope and an attached camera.

Additionally, BIO-WEST biologists made multiple observations of large species flying through known landing and take-off airspace corridors north of the Provo Airport. For example, during the 10 December 2012 survey, an adult bald eagle (*Haliaeetus leucocephalus*) was observed flying low and north along the Utah Lake shoreline, immediately north of Provo Airport and within a known airspace corridor. During that same afternoon, an adult bald eagle was observed flying west-southwest over the Provo River Parkway, about 100 feet above the trees, headed towards Utah Lake State Park and a known airspace corridor north of the Provo Airport. Likewise, during the 8 November 2012 survey, two red-tailed hawks flying above North Boat Harbor Drive had to take evasive action (i.e., dive and roll) to get out of the way of a small civilian plane starting its landing approach on the easternmost runway of the Provo Airport.

Birds observed on airport property (e.g., the sandhill crane and Canada geese loafing near both runways) during BIO-WEST surveys may be habituated to active runways, which may reduce the likelihood of bird-aircraft strikes for those individuals. More than 60 percent of all bird-aircraft strikes in the United States occur within airport boundaries, because airports provide ideal nesting and foraging habitat for many disturbance-tolerant species (Sodhi 2002, Klope et al.

Figure 7. Canada geese using habitat adjacent to a Provo Municipal Airport runway. Photographed on 18 April 2012.

2009). Airport managers can reduce the likelihood of strikes by making habitat within airport boundaries unattractive to birds (Klope et al. 2009).

Although the emergent marsh habitat in Provo Bay along the Provo Airport dike is similar to habitat expected to be created by the proposed project, the amount of available habitat in Provo Bay is much greater than habitat that would be created under any of the action alternatives. Despite differences in amount of available habitat, it is expected that the bird community resulting from implementation of any action alternative would likely be at least somewhat similar in composition to the bird community south of the Provo Airport dike. Although many of the species detected at the Provo Bay and Airport dike were also detected during BIO-WEST surveys of the study area, particularly in the North Wetlands, there are differences in community composition. For example, while waterfowl species occur at both Provo Bay and Airport dike and in the study area, they compose a smaller fraction of the bird community at the Provo Bay and Airport dike (19,554 individuals; 8.8 percent) than in the study area, most likely because of differences in habitat. Under existing conditions, habitat within the North Wetlands survey boundaries is dominated by emergent marsh and wet meadow, both of which provide nesting and brood-rearing habitat for several duck species (green-winged teal [Johnson 1995], cinnamon teal

[Gammonley 1996], and northern shoveler [Dubowy 1996]) detected during BIO-WEST surveys of that area. In contrast, open water composes a significant portion of habitat at the Provo Bay and Airport dike site and may provide less-suitable nesting habitat for some duck species. This suggests that ducks may be less abundant during spring and summer in the study area after implementation.

Some species, such as Caspian tern, which were detected primarily along the Provo Airport dike and over Provo Bay, may occur in the study area after implementation because the new river delta will likely create "some" or "a small amount of" suitable habitat. Such expected differences in species occurrence and abundance will likely change the composition of bird communities associated with the study area after implementation.

Canada geese, various gulls, and American white pelicans, all of which have been identified as being of particular concern (see Introduction) to the Provo Airport, currently occur in the study area under existing conditions and have been detected on both North Wetlands and the Provo Bay and Airport dike. However, American white pelicans did not actively use habitat in the North Wetlands. Rather, they were documented as flying over the survey area.

The American white pelican forages regularly on Provo Bay, just south of the Provo Airport, is known to forage on Provo Airport property, and occurs in significant numbers on Provo Bay, Utah Lake, and within the Utah Lake eastside bird community as a whole. Therefore, this species presents a potential strike risk to aircraft using the Provo Airport. The American white pelican was detected during both fall and spring surveys, and although it was most frequently recorded and most abundant on surveys of Provo Bay and Airport dike, where it was observed foraging in Provo Bay, it also was observed flying over, or just adjacent to, the project area and the Provo Airport. This species may have responded to habitat restoration at Lower Hobble Creek Wildlife Management Area, which created shallow water habitat, by foraging there more frequently. The American white pelican, which forages in water up to 8 feet deep (Knopf and Evans 2004), may become more abundant within the study area after implementation, because the creation of a new river delta will likely increase the amount of shallow water available for this species.

The Canada goose is also present and relatively abundant in the study area. Although this species was not detected during fall surveys, it was detected during all other surveys. More important, of all four areas surveyed this species was most abundant in the North Wetlands, where a total of 507 individuals were recorded. Canada goose was also twice observed on Provo Airport property during spring surveys. On the 18 April 2012 survey of the Provo Bay and Airport dike, eight Canada geese were recorded–all on Provo Airport property. Of these, five were observed in the grass adjacent to one runway, and the remaining three were in the grass adjacent to the other runway. During the 20 April 2012 survey of the Provo Bay and Airport dike three Canada geese were recorded, all adjacent to one runway and on Provo Airport property.

Gull species (including California gull, Franklin's gull, ring-billed gull [*Larus delawarensis*], and Caspian tern, which is not a gull but is similar in size and shape, and is classified within the gull family Laridae) also occur within and adjacent to the project area under existing conditions. Gulls were recorded in all survey areas and were relatively similar in abundance in three of the survey areas (North Wetlands, South Agricultural Fields, and Provo Bay) during spring and fall

seasons. Gulls were generally absent on surveys of the Provo River Parkway. Most gull and tern observations were of birds flying over the survey area, rather on the ground using the habitat. However, on two occasions in the fall, Caspian tern was recorded foraging in the canal (i.e., flying up and down the canal while looking down at the water) surrounding the Provo Airport. At 23 ounces, the Caspian tern has a mass (Cuthbert and Wires 1999) similar to that of the largest gull recorded in the project area, the California gull (24.4 ounces; average range for males and females is 19.6–29.6 ounces) (Winkler 1996). Although the Caspian tern generally does not occur in large flocks, it does occur in small groups and could pose a strike risk to aircraft.

While there are likely to be small-scale changes in bird communities associated with implementation of the proposed project, including possible changes in species abundance, habitat restoration will occur on less than 600 acres, which is but a fraction of the habitat available on Utah Lake (95,000 acres), Provo Bay, and their associated wetlands. Because the amount of habitat likely to be restored is so small (<10 percent of 6,528 acres found in Provo Bay) relative to the surrounding ecosystem, project implementation is unlikely to cause either large-scale increases in bird abundance or increase the risk of bird-aircraft strikes as a result of changes in bird communities. First, under existing conditions when the North Wetlands are inundated, the bird community associated with that area already poses a substantial strike risk to aircraft. Second, under existing conditions, Utah Lake, Provo Bay, and their associated wetlands already provide habitat for many species identified as hazardous to aircraft by the FAA. Project implementation is more likely to cause small-scale changes in abundance of some species known to occur within existing bird communities in the study area. Species not associated with shallow-water habitats are likely to decrease, while those associated with shallow open-water habitats are likely to increase.

When considering the 5-year eBird data set for six sites surrounding SLCIA and results of FAA Wildlife Strike Database Queries for the period 1990 to present, it is apparent that the presence of birds of various species does not suggest that a bird-aircraft strike is imminent. Furthermore, species identified as being of greatest concern by Provo City and USDA Wildlife Services (i.e. pelicans, gulls, waterfowl) accounted for some of the fewest strikes that were reported to the FAA in Salt Lake. Small to medium sized birds of unknown species accounted for the greatest number of strikes reported to the FAA for SLCIA. BIO-WEST surveys of the study area, Provo Bay, and the Airport dike in addition to eBird data for the eastern shore of Utah Lake suggest that large numbers of small to medium sized birds are present in the vicinity of the airport under existing conditions. Small to medium sized birds observed during BIO-WEST surveys include but are not limited to red-winged and yellow-headed blackbirds, European starlings, certain gull species, swallows, and sparrows. Of these species, the population of European starlings is expected to decrease with implementation of Alternatives A and C because of conversion of habitat from upland agricultural lands to more mesic communities such as wet meadows and emergent marsh. Of the known species responsible for bird-aircraft strikes at SLCIA, horned larks accounted for over 12 percent of all strikes reported since 1990. Based on BIO-WEST surveys, the horned lark peaked at just two birds within the study area. The lack of horned larks within the study area is attributed to the absence of suitable habitat. However, suitable habitat is currently present within Provo Airport boundaries. Furthermore, the proposed project will not create habitat for the horned lark so, horned lark abundances will not change from current conditions. It is reasonable to suggest that any bird-strikes resulting from encounters with horned

larks are the product of currently available habitat within Provo Airport boundaries. Similarly, Canada geese and sandhill cranes, both of which have been documented as using habitat provided by the airport, could also be responsible for aircraft strikes.

As indicated in the results of avian surveys presented above, the existing avian community within the study area is rich and extremely abundant. Although habitat isn't of the best quality, particularly in the South Agricultural Fields, it does support extremely large numbers of birds. Under existing conditions, the South Agricultural Fields are temporarily inundated with water during the spring, which makes this location extremely attractive to species including waterfowl and shorebirds. Livestock grazing reduces the overall height of vegetation in areas that are inundated, which creates large areas of open water that are rich in plant material and insects that serve as food for species such as waterfowl and shorebirds. Agricultural activity in this area attracts large numbers of extremely ubiquitous species including European starlings, sparrow species, and swallow species.

Habitats in the North Wetlands are generally comprised of sedges (*Carex* sp., bulrushes (*Schoenoplectus* sp.), cattails (*Typha* sp.), and other wetland obligate species. Saturated soils and bodies of open water are generally present year-round. Although present, non-native vegetation such as salt cedar (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolia*), and common reed (*Phragmites australis*) are not abundant. During the summer and fall, emergent habitat is generally very tall and dense, which provides ideal habitat for ubiquitous species such as red-winged blackbirds, yellow-headed blackbirds, and marsh wrens. The tall and dense vegetation is also ideal for more secretive marsh birds such as sora because of the cover it provides. Habitat found in the North Wetlands is generally ideal for birds because of the food (plant material, mollusks, and insects), cover, and water it provides. As a consequence, it is extremely attractive to wetland associated birds.

Airport Hazard Impact Evaluation

As evaluated in Section 3.0 of this report, changes to avian community abundances within the study area as a result of action alternative implementation would either increase, decrease, or remain unchanged for certain species/groups depending upon season. Generally, ducks and starlings would experience the greatest changes in overall abundance with blackbirds and swallows also showing pronounced changes, depending upon the selected alternative. Other FAA listed hazardous species would also experience changes in relative abundance but in much smaller amounts. Changes for many of the species likely result from the conversion of agricultural lands to other habitat types.

Habitat, as defined by Anderson and Gutzwiller (1994), is comprised of a variety of variables including but not limited to size of area, availability of food, cover, and vertical and horizontal structures. If one or more of these factors is absent, the abundance and diversity of birds may be affected. The analysis of changes to bird strike risk assumes that habitat resulting from the implementation of any of the action alternatives is of optimum condition and that all variables required to define optimum habitat condition are present. The assessment of bird strike risk is generally dependent upon factors including bird abundance and flight patterns. Predicted changes in avian abundance are the result of changes in the types and amounts of habitat available under each of the action alternatives. The greatest changes in abundance of birds would be due to the

conversion of agricultural lands to other habitat types including open water, emergent marsh, and wet meadow.

Across all species, bird abundances are predicted to decrease during the spring regardless of alternative. During the summer, bird abundance is expected to increase for Alternatives A and C while summer abundances for Alternative B would generally decrease. Abundances would increase for Alternatives B and C in the fall while abundances would decrease for Alternative A. Winter abundances would increase under Alternatives A and C, and decrease under Alternative B. Overall, based on predicted abundance, bird-aircraft strike risk would be reduced significantly under Alternative B, slightly reduced under Alternative A, and predicted to substantially increase under Alternative C.

Overall, based solely on predicted changes in bird abundance and mass (without considering behavior or flight patterns), bird-aircraft potential strike risk would be reduced significantly under Alternative B (-20.7 percent and -31.6 percent, respectively), slightly reduced under Alternative A (-5.4 percent and -11.9 percent, respectively), and predicted to moderately increase under Alternative C (+12.9 percent and +8.3 percent, respectively).

It was already mentioned that in most cases, predicted changes in abundance represent a change in distribution of the animals throughout the local or regional area. A predicted increase in abundance in the proposed project area would likely result in a similar magnitude decrease in abundance somewhere else nearby, particularly during spring and fall migration periods, and vice versa (R. Norvell 2014, pers. comm.; B. Stringham 2014, pers. comm.). This is because the myriad factors affecting abundance of the migrating population of ducks, geese, or other waterbirds are so diverse and often so remote from the local area that the relatively small changes in habitat abundance caused by the delta restoration project would have no or very little effect on flyway population levels of those migratory species. There are some species that could be directly affected locally in abundance by changes brought about by the project. So it is important to consider the results on a species-by-species basis, if possible.

Impacts Due to Predicted Changes in Bird Movement Patterns

A key aspect of the hazard assessment is attempting to determine whether the predicted change in abundance of birds in the proposed project area, regardless of whether it represents a local change in abundance due to distributional shifts or actual population changes, causes a change in the frequency of occurrence of birds flying over/across/through the 3-D airspace defined for the Provo Airport. Bird movement patterns have not been possible to observe under proposed future conditions and therefore predicting whether a bird (individual or flock) is likely to fly through that airspace under proposed project alternatives is not possible. However discussion of specifics of the Provo Municipal Airport 3-D airspace and general discussion of species tendencies allows some analysis of likely future conditions.

Provo Airport Airspace and Local Bird Movements

The traffic pattern (Figure 8) and airport airspace plan (Figure 9 for the Provo Airport encompass a fairly sizable portion of the eastern Utah Lake shoreline. The Provo Airport has two runways, with plans for a possible third runway. Runway 13-31 (oriented NW to SE) handles the majority of the air traffic, including commercial jet traffic. The specifics of the 3-D airspace are

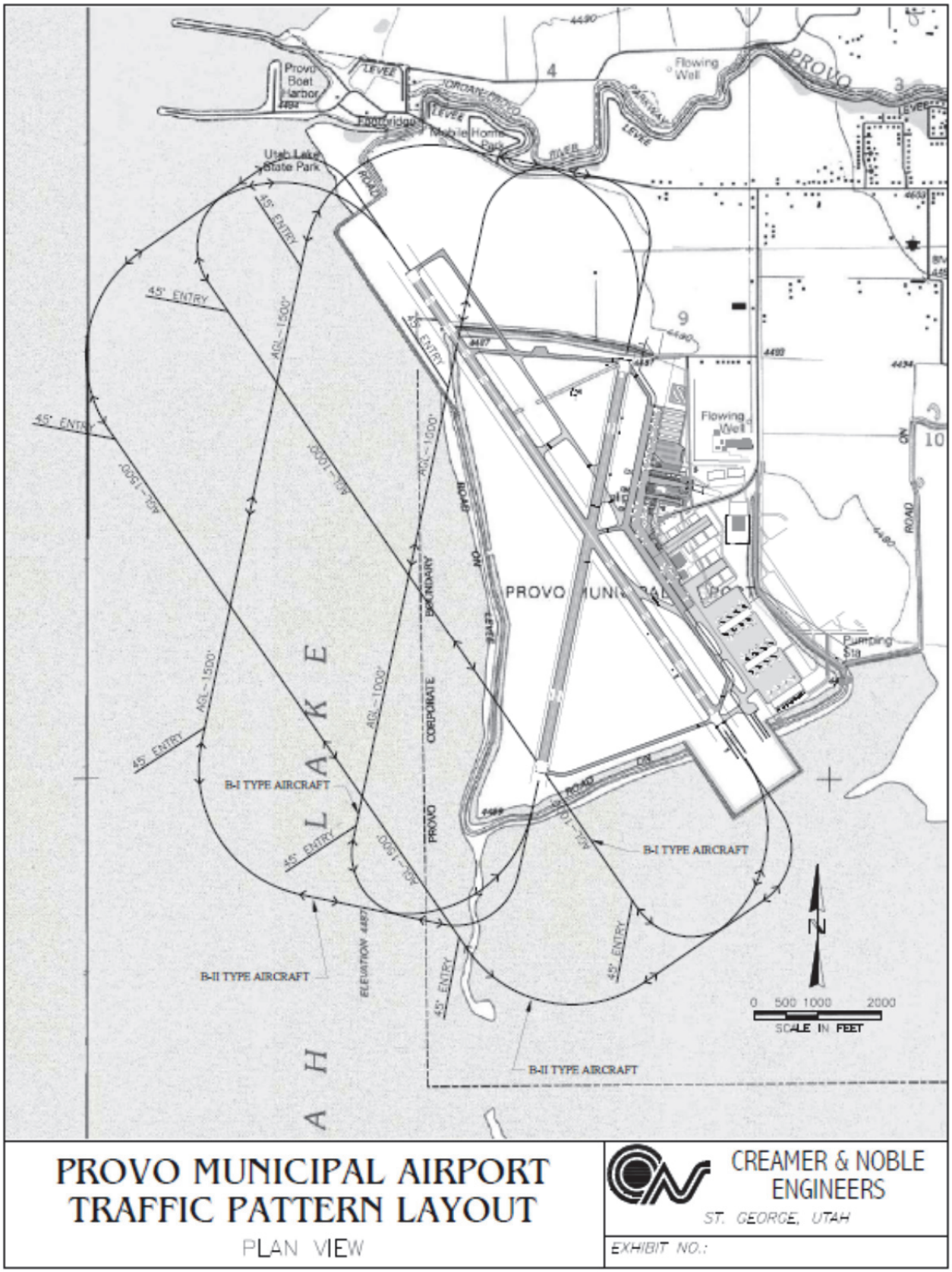

Figure 8. Provo Airport traffic pattern layout.

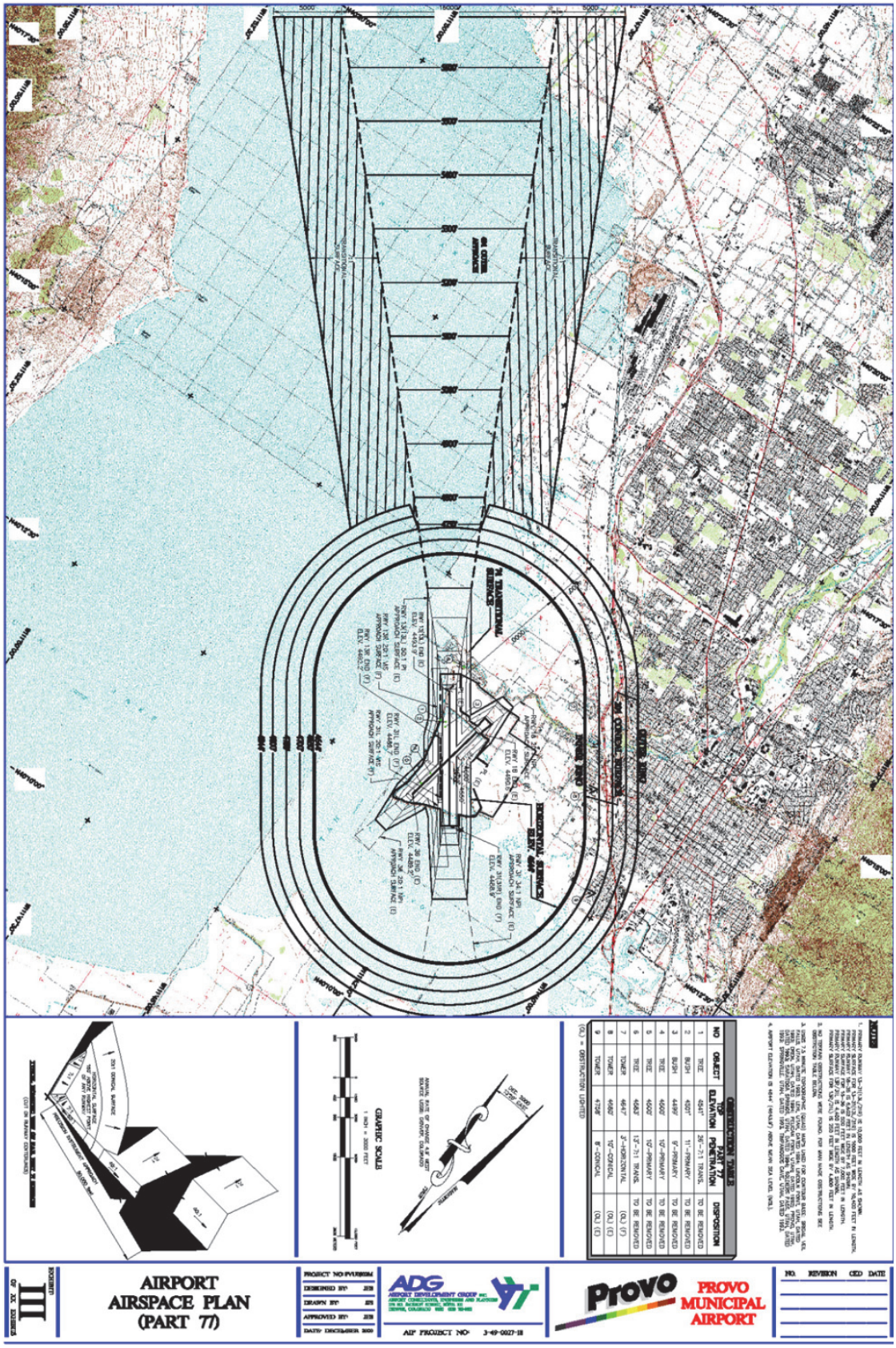

Figure 9. Three-dimensional airspace model for Provo Airport.

determined by a number of factors specific to the location and orientation of the airport, types of aircraft utilizing the airport, type of air traffic control system in use, etc. The PRDRP study area is located north of the airport There are several direct paths that a bird could take to or from the proposed delta restoration area that would generally cross over or around the Provo Airport airspace which might, because of the 3-D aspect of the airspace, not create a hazard to aviation safety (Figure 10). This hypothetical figure shows potential flight paths which, depending on height of the bird as it crosses the 3-D airspace zone, would either create a hazard if it is within the strike zone (red arrow), or would not be a hazard (green arrow) if it is not within the strike zone (i.e., above or below the strike elevation).

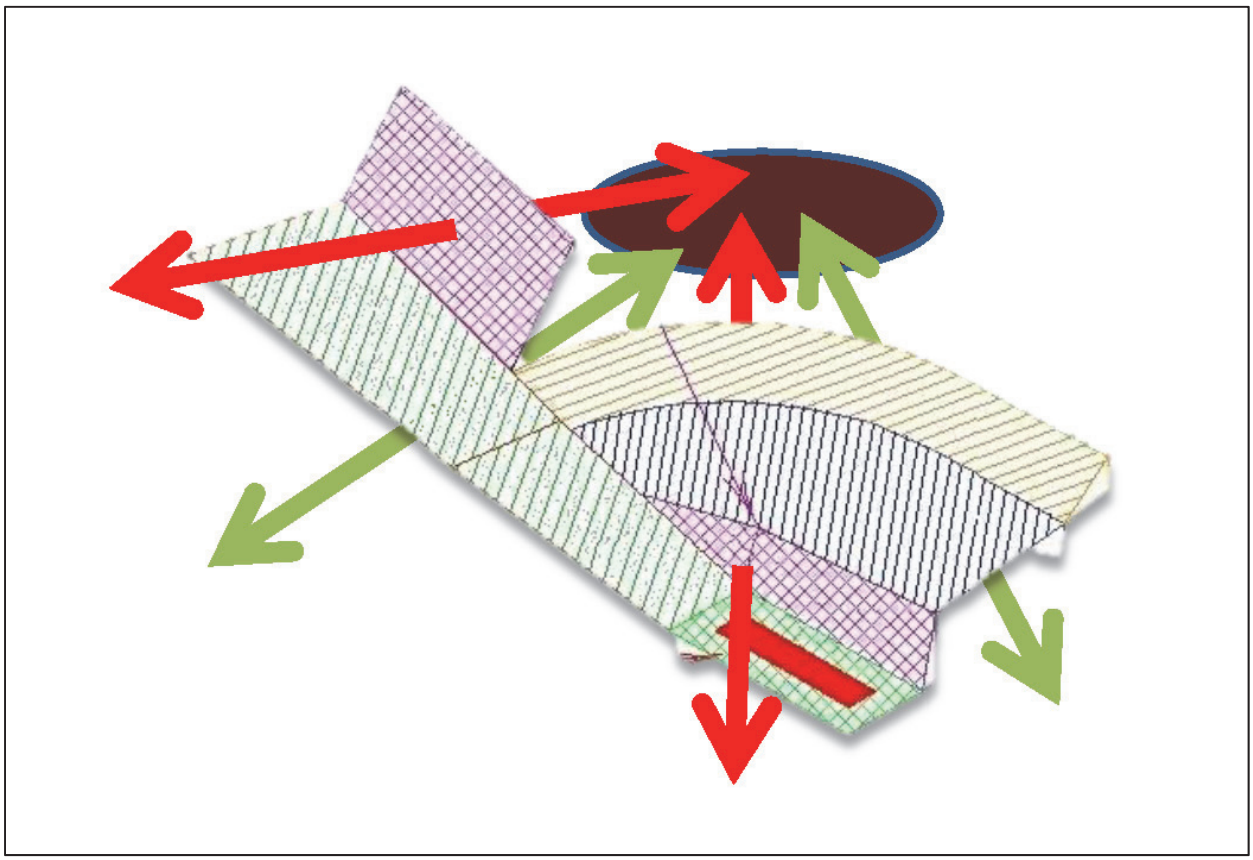

Figure 10. Potential bird flight paths from the study area in relation to airport airspace and runway (not to scale).

Performing a thorough bird movement assessment of this type is only possible if/when the proposed project is in place. Not having that option available, we examined the flyover data collected at each of the survey sites during the seasonal (in 2012) and monthly (in 2013) bird surveys (URMCC 2014). During the survey site visits, 3,662 birds were observed flying over the study area, but not actively using the habitat. The majority of the birds observed were traveling in a north-to-south direction. The greatest number and proportion of the flyover observations (2,689; about 73 percent) were made during winter. By far the most commonly observed bird species engaged in flyover behavior was red-winged blackbird (2,178) followed by Franklin's

gull (*Leucophaeus pipixcan*) (201) and white-faced ibis (137). More than 2,200 of the observed flyovers occurred at the Provo River Parkway monitoring site, closest to the north end of the Provo Airport, and almost all of them were red-winged blackbirds. Red-winged blackbirds are most often associated with wetlands, so the shift to flying over habitats of the riparian forest along the Provo River Parkway is likely the result of wetland habitat not being available during the winter. Because of predominately diurnal movement patterns, strike risk from blackbirds is likely minimal. Regarding American white pelican, another species of particular potential concern, they were observed as flyover species at each of the three survey sites in the study area, most commonly in spring, indicating that although they do not use the proposed delta restoration area habitat currently under baseline, they do use the airspace over the study area.

Species-by-Species Discussion and Summary

Geese

Geese, primarily Canada geese, are common in the project area currently on a year-round basis except not particularly prevalent during fall in either Provo Bay or the study area. Being large-bodied and tending to fly in formation, they are a concern for aviation safety. Data from SLCIA eBird sites indicate 5.6 percent of the recorded observations are Canada geese, whereas the FAA bird-strike database for the airport reports Canada geese as responsible for only 1 percent of reported airstrikes (Table 13). It should be considered however that SLCIA employs a very active wildlife hazard mitigation program, and the FAA airstrike data no doubt reflect the positive results of those efforts. It may also suggest that Canada geese may be responsive to various mitigation measures such as hazing. According to Blair Stringham (UDWR Waterfowl Coordinator), waterfowl in general and geese in particular are not as abundant at Utah Lake and in the vicinity of the airport as they are on and around Great Salt Lake (Personal Communication 16 January, 2014). Although habitat in the vicinity of the Provo Airport is attractive to geese and other waterfowl, it may be of lower quality than available habitat at Great Salt Lake. As a consequence, a less active waterfowl mitigation program may be required for the Provo Airport. Under Alternative A, the only significant change in abundance was determined to be a decrease during spring due to loss of upland nesting/foraging habitat. Predicted increases during summer and winter involved relatively small numbers of animals. The very same seasonal pattern is predicted for geese under Alternatives B and C. Therefore predicted changes in abundance of geese do not represent substantial increased aircraft strike risk under any alternative, and represent decreased strike risk under each alternative during spring. No significant change in flight movement pattern or frequency by geese through the AOA is anticipated. Geese are relatively abundant in the project area under baseline conditions and no strikes involving geese have been reported to the FAA database for Provo Airport.

American White Pelican (Pelican)

Pelican are a concern to aviation safety wherever they are found. They are currently common in and around Provo Airport, accounting for 0.6 percent of all eBird occurrences reported for 16 sites associated with the east shore of Utah Lake and 0.9 percent of all occurrences associated with Provo Airport. Our survey data indicated they accounted for <1 percent of all sightings in the project study area and 6 percent of all observations at the Provo Bay observation site. Based on BIO-WEST field observations, pelicans documented as flying over the project area seem to travel as individuals or as pairs and at high altitudes. Generally, pelican flyovers have been documented flying from north to south over the project area. At SLCIA eBird sites, pelican

accounted for 2.3 percent of the recorded observations but only 0.3 percent of the FAA bird-strike database reports (Table 13), again suggesting that pelicans may be responsive to various mitigation measures such as hazing. The predicted increased abundance in pelicans under alternatives A, B, and C may represent a potential adverse effect. However, as pointed out earlier, it is highly unlikely the increased abundance estimates represent increases in true population size. Rather, pelicans that might otherwise forage elsewhere in the Utah Lake ecosystem might be drawn to the restored Provo River delta area instead (Russ Norvell Personal Communication 14 January, 2014). Regional increases in pelican abundance may be attributed to increases in the abundance of carp in Wasatch fisheries, which includes Utah Lake (Flannery 1988). With a carp management program currently being implemented in Utah Lake, it is possible that the abundance of pelicans on Utah Lake could decrease as the availability of carp as a primary food source is reduced over time. The determination of "effect" would be dependent on whether the pelicans would respond to the presence of this "new" habitat in such a way that it significantly increases their occurrence within the 3-D airspace of Provo Airport. That can only really be determined by a monitoring program followed by a responsive mitigation program if it is found that a response is warranted. Based on the analysis, Alternative A would result in the greatest increase in use of the project area by pelicans followed by Alternative C with Alternative B causing the least increase in abundance. Pelicans would be expected to use the restored delta in the project area to some extent under any of the action alternatives. There is potential for increase in flight movement pattern and frequency by American white pelican within the AOA under Alternative A without mitigation (hazing) measures, with decreasing risk under Alternatives C and B, respectively.

Ducks

We have included both dabbling ducks and diving ducks in the same category. When lumped together, data from the SLCIA indicate that ducks occur in the FAA airstrike database at about the same frequency (7.5 percent) as they occur in the eBird dataset (8 percent) (Table 13), perhaps suggesting that their behavior is not as influenced by air hazard mitigation measures as some other groups of birds (e.g., geese and pelicans). The proposed project would have an overall annual decrease in abundance of ducks for each alternative, with largest relative change in abundance predicted to occur during spring (negative change in abundance due to inundation of upland/agricultural lands used for nesting). Positive changes in abundance are predicted for every other season, but of lesser magnitudes. Because ducks are highly migratory, it would be anticipated that much of the response predicted in spring and fall would be due to shifts in local distribution, although there could also be local population effects due to loss of nesting habitat during spring. The predicted magnitude of abundance increase in summer and fall is minor for each alternative. The predicted increase in winter abundance represents a fairly large increase in bird numbers under Alternatives A and C (+691 and +1,593 respectively), but proportionately a relatively minor increase over existing numbers for Alternative A (+15.5 percent). Under Alternative B, there would be a significant predicted decrease (-22.5 percent) in abundance of ducks during winter. The only alternative that might cause an increased strike risk due to ducks prior to mitigation would be Alternative C, during winter.

Cranes

Cranes are anticipated to respond differently to each alternative. Under Alternative A, cranes are predicted to increase by 21.4 percent overall. However, cranes are not abundant in the project area to begin with. Under Alternative B, cranes are predicted to decrease by 23.8 percent overall, with at least some level of decrease predicted for each season. The greatest change is predicted under Alternative C, with a 42.9 percent increase in abundance overall. Cranes are migratory, but their numbers peak in the spring in the project area and Provo Bay, suggesting there may be some breeding/nesting activity in the vicinity also. Cranes are reported <0.1 percent for the SLCIA eBird datasets and the FAA bird-strike datasets, so comparisons are difficult to make to that locale. Cranes are present in the project area, although not extremely abundant; Utah Lake is not a major stop-over area as are some other locations in the intermountain west such as Gray's Lake Idaho, Bosque del Apache NWR, etc. and the proposed delta restoration project would not create a habitat type that is unique or singular such that it would cause the area to become any more of an attraction to cranes than current conditions.

Gulls

Several gull species occur in the project area and Provo Bay environs, however never accounting for more than 1 percent of total survey observations in any season in either location under baseline, nor would their predicted abundances change substantially under the proposed delta restoration project. The greatest predicted increase (+22 birds) would occur during winter under Alternative A; with a similar increase (+21 birds) predicted for Alternative C. Under Alternative B, gull abundance is predicted to increase by 1 bird in summer and winter, and decrease by 16 and 19 birds in spring and fall, respectively. Therefore Alternative B would have no effect on aircraft strike risk due to changes in gull abundance. Gull abundance is predicted to decrease during spring, summer and fall under Alternatives A and C. At SLCIA, gulls were detected in 5.3 percent of FAA-reported airstrikes, but accounted for 9.5 percent of eBird dataset occurrences. Based on this limited analysis, gulls would not appear to be a guild that is particularly susceptible to aircraft strikes although, they have been identified as being of particular concern by the FAA. This data may be confounded by the fact that over 35 percent of the reported airstrikes at SLCIA were caused by "unknown" bird species – 17.2 percent classified as "small", 17.8 percent classified as "medium" and 2.7 percent classified as "large". Gulls are regarded generally as serious flight risk species. Gulls would not appear to present an increased strike risk to aircraft at Provo Airport due to the proposed project, particularly under Alternative B.

Hawks (Buteos), Eagles, and American Kestrels

Hawks and kestrels are fairly common in the project area, while eagles, although rare, do occur. Together, these raptors can present a strike risk to aircraft especially because of their hunting behavior, which is to hover or circle over open expanses of meadow or other prey habitat; or to perch on tall objects surrounding suitable prey habitat, and strike their prey. Based on examination of the SLCIA data, it suggests that raptors may be a guild of birds that warrant a lot of concern. Hawks and kestrels accounted for 3.3 percent and 4.4 percent, respectively, of the FAA-reported bird-strikes at SLCIA, while accounting for only 0.3 percent each of the eBird dataset reports, suggesting those two species occur in airstrikes 10 to 14 times more frequently than their proportion in the bird community. There are a number of valid reasons why this statistic may not be hard and fast, but nonetheless it does suggest that hawks and kestrels account for more than their fair share of aircraft bird-strikes.

The delta restoration project would reduce the cumulative abundance of hawks, eagles and kestrels overall, under each alternative. The greatest overall decline in abundance would occur under Alternative A (-13 hawks in spring, -3 in summer, and -2 in winter) but there would be a predicted increase of 4 hawks during fall. Under Alternative C, there would be an overall increase of 7 kestrels; although there would be a net decrease of 7 hawks annually, there would be an increase of 8 hawks during fall; and an increase of 1 eagle during winter. Under Alternative B, the abundance of hawks (-9), eagles (-1), and kestrels (-5) would all decrease with no seasonal upswings. Under Alternative C, potentially increased strike risk could occur from a minor increase in numbers of kestrels and hawks (5 and 8, respectively) especially during fall. However, the likelihood of a hawk or kestrel engaged in hunting behavior over the delta restoration area straying into the Provo Airport 3-D airspace, over 1.5 miles away, is remote. The proposed delta restoration project would not create any perching habitat (i.e. trees, towers) any closer to the Provo Airport than currently exists. So the effect of the minor increase in abundance under Alternatives A and C is likely not significant. Alternative B would decrease the strike risk due to hawks, eagles and kestrels.

Shorebirds

Shorebirds as a group contain many species and include members of the order Charadriiformes, which includes the families Charadriidae (plovers), Recurvirostridae (avocets and stilts), and Scolopacidae (sandpipers, snipe, curlews, and phalaropes). Species identified during BIO-WEST surveys of the project area and Provo Bay include American avocet, black-necked stilt, greater and lesser yellowlegs, spotted sandpiper, willet, and Wilson's snipe. Shorebirds, which generally have a tendency to congregate in large groups, are not overly abundant within the project area and only account for 2 percent of all birds documented during BIO-WEST surveys. As indicated in Tables 3, 4, 5, and 6, project area shorebird abundances peak during the spring (329 individuals) and again during the fall (73) while summer abundances remain relatively low (60 individuals) and winter shorebird abundance are extremely low (3 individuals). Shorebird peak abundances during the spring and fall are likely the result of an influx of migrating birds or birds that are staging for migration. Shorebird numbers under all three alternatives are predicted to decrease during the spring with the greatest decreases predicted for Alternatives A and B (>200 decrease). Summer and fall shorebird abundances are predicted to increase across all alternatives; however, Alternative B is predicted increase the number of shorebirds the least (+32 and +10 individuals respectively). Winter shorebird numbers are predicted to change minimally. Given the results of the alternatives analysis, Alternative B is expected to result in the lowest effect to aircraft strike risk. Based on the examination of strike data reported for SLCIA, shorebirds do not appear to present substantial risk to aircraft. Of the 1,793 strikes reported for SLCIA, shorebirds accounted for less than 1 percent of all strikes. However, eBird data for sites surrounding SLCIA report only 210 individual shorebirds or 0.7 percent of all reported observations, which suggests that shorebirds are not very abundant around SLCIA and as a consequence, do not present very high risk to aircraft. Similarly, predicted shorebird abundances for the project area are not high, especially under Alternative B, and would not be expected to present increased risk to air traffic flying into and out of the Provo Airport.

Starlings

Starlings are the most abundant species in the project area. Only ducks, in the aggregate, are comparable in abundance. Their presence is largely influenced by the agricultural landscape and activity. Because of their tendency to fly in large, dense flocks, starlings are a big concern for aircraft safety, especially for smaller aircraft. However, when observed flying in the project area, starlings showed a tendency to stay very close to the ground. At SLCIA, starlings accounted for 23.5 percent of eBird occurrences, but were listed as occurring in only 1.8 percent of reported bird strikes. Again, it is likely this data may be confounded by the fact that over 17 percent of the reported airstrikes at SLCIA were caused by "unknown – small" bird species. Alternative A, the largest delta restoration alternative, would affect (reduce) starling abundances the most of any alternative, but despite decreasing the abundance by relatively large numbers (-295, -449, -1404 in spring, summer and fall, respectively) predicted abundance would increase substantially (+1,449) in winter for an annual change of -699 (-7.5 percent). So although Alternative A would lead to decreased risk during three seasons, there could be an increased strike risk during winter under Alternative A due to the predicted increase in abundance. Alternative B would lead to reduced abundance of starlings in every season of the year (-165, -159, -86, -924 for spring through winter, respectively) and therefore reduce the strike risk (based on abundance only) compared to existing conditions. Alternative C would follow a similar pattern as Alternative A, except the magnitude of the abundance increase in winter would be greater, with an increase of 2,376 birds predicted (+ 60.4 percent). Starlings in the project area have been observed roosting near Provo River Parkway during winter. This location would not likely change under the project, so there would be little reason for starlings from the project area to fly through the Provo Airport airspace. A monitoring program could verify this once the project was in place.

Blackbirds

Blackbirds are the third most abundant group of birds in the project area after starlings and ducks and are often associated with emergent wetland habitats. Where they do occur, they are often the most abundant birds, especially during the breeding season (Orians 1980). Generally, blackbirds are highly social and nest on grouped territories. During the nonbreeding season, these birds will often form large flocks that forage in uplands and roost in wetlands. Despite having been identified as a species of concern by the FAA, blackbirds rarely collide with moving objects such as aircraft because of diurnal movement patterns (Twedt and Crawford 1995). Blackbirds are predicted to respond uniquely to the action alternatives. Under Alternative A, abundance would increase in summer and winter but decrease in spring and fall, for an overall minor annual decrease of 2 percent. Under Alternative B, abundance would decrease during every season for an overall annual decline of about 17 percent. Under Alternative C, blackbird abundance would increase every season for an overall annual increase of about 18 percent. Therefore, Alternative C is the only alternative under which there is likely any real possibility of increased risk. However, the risk is likely minimal because of diurnal movement patterns. Data from near SLCIA is not conclusive due to the high proportion of small birds of unknown species in the FAA birdstrike database, but eBird data showed 4.0 percent abundance of blackbirds compared to 0.2 percent confirmed bird-strike reports.

Swallows

Swallows and related species (martins, swifts) can be a concern for airport operators because of their feeding behavior which causes them to dart back and forth through swarms of insects to gather prey. Data from the SLCIA indicate swallows were identified in 8.9 percent of the FAA reported bird strikes. They were represented by 3.7 percent of eBird reports from the six eBird sites surveyed for this analysis. Considering the high proportion of unidentified or unknown small birds in the FAA dataset, it is conceivable that swallows could account for approximately 10 percent or so of all strikes at the SLCIA. Under baseline conditions in the project area, swallows are low to moderate in abundance (Tables 3, 4, 5, and 6). However, five of the eight bird strikes at Provo Airport reported by UVU during 2012–2013 involved swallows. Most strikes involved a single bird; only one involved hitting a flock of swallows, at runway level (within 10 feet of landing). All of the swallow strikes occurred in the August–October time period, which is consistent with the time of year these species were observed to be most abundant, both in the WHA report and during the BIO-WEST surveys.

Alternatives A and C would have almost the same effect on swallow abundance, causing an increase of 736 and 734 birds, respectively (+65 percent), spread across the spring through fall seasons. Swallow abundance would increase under Alternative B by about 14 percent overall, with the increase occurring during spring (+124) and summer (+68) and a decline (-32) occurring during fall. Most swallow species tend to nest in trees and communally roost on power lines or other similar structures (Ehrlich et al. 1988). Any trees or structures created by the project would be further from the airport than other suitable roosting sites already in existence that are closer to the airport. Therefore, Alternatives A and C would potentially have a moderate impact due to increases in abundance of swallows, and Alternative B would likely present a minor or no increase in strike risk to aircraft due to increases in abundance (small increase in summer, small decrease in fall).

American Coot

The American coot is not a species listed by the FAA among the “top 25” hazardous wildlife. However it is ubiquitous and was moderately (fourth most) abundant in the project area under baseline. The proposed delta restoration project would have seasonal effects on coot abundance. The abundance in spring is predicted to decrease under each alternative (-579, -781, -140 for Alternatives A, B, and C, respectively) and increase in fall (+560, +314, +365, respectively). Abundances in summer and winter would remain essentially unchanged (very minor positive increases). Over the entire year, abundance would stay about the same (+7) for Alternative A, decrease for Alternative B (-448) and increase for Alternative C (+244). The coot is not typically a significant hazard to aircraft primarily because it is not a strong flyer. Although migratory, once in a location it tends to stay on the water, and tends to fly only short distances, commonly attaining a height of only a few feet above the water surface, and attempting to head into dense vegetation to seek cover. The relatively minor increase in abundance predicted under Alternative C overall or by Alternative B or C during fall would not be likely to increase the strike risk at Provo Airport. The relatively long distance of approximately 2 miles between the Provo Airport and the project area generally exceeds the distance that coots fly if/when disturbed. The only other likely flight into or out of the area would be a migratory flight.

American Robin

The American robin is also a common species in the project area and is moderate in abundance under baseline conditions. Although loosely gregarious during the breeding season, the species is more tightly gregarious in the nonbreeding season and flocks together during the winter months to increase foraging success. Flock sizes can be large and will often exceed 250 individuals. Roosting flocks are known be much larger in size. Generally, robins take short, low flights over areas of suitable habitat (Sallabanks and James 1999). Within the project area, suitable roosting trees are present primarily along the existing Provo River and not near the Provo Airport. Although riparian forest habitat would be created under each of the action alternatives, none would be located in the vicinity of the airport. The absence of suitable roosting trees near the airport and the fact that robins are known to take short, low flights would suggest that the species is not likely to present any appreciable increased risk to aircraft.

Waterbirds

The term "waterbird" is defined and used differently by different organizations, but in general it includes a diverse variety of birds that are ecologically tied to bodies of water for some part of their lives. In the context of habitat use, waterbirds will refer to the families Podicipedidae (grebes), Gaviidae (loons), Phalacrocoracidae (cormorants), and Rallidae (rails). At Utah Lake, waterbirds occur on open water, shoreline, wet meadows, and emergent marshes. Generally, grebes, loons, and cormorants use deeper water than shorebirds and wading birds, typically deeper than 10 inches (Hatch and Weselow 1999, Knopf and Evans 2004). Under existing conditions, waterbirds are not very abundant and nearly equally distributed across the project area. The majority of BIO-WEST waterbird observations have occurred at Provo Bay and along the airport dike. When considering each of the three alternatives, waterbird abundances would increase the most under Alternative A (net increase of 552 individuals) while under Alternative C, waterbird abundances would increase the least (net increase of 307 individuals). Regardless of Alternative, waterbirds are predicted to be the most abundant in the project area during the fall. Of the birds identified as responsible for aircraft strikes at SLCIA, only three waterbird species have been reported in the FAA Wildlife Strike Database (double-crested cormorant, Virginia rail, horned grebe), each responsible for 0.1 percent of reported strikes since records were first kept. These results suggest that waterbirds do not pose a substantial risk to aircraft at SLCIA and would not likely present a substantial hazard to aircraft at the Provo Airport post implementation of the project.

White-faced Ibis

White-faced ibis are a wading bird that is frequently associated with open water, shoreline, wet meadow, and emergent marsh habitat (Paul and Manning 2002). This wading bird is a highly gregarious colonial nester that typically forages in flocks, often with other wading bird species. Ibis habitat, as is the case with other wading birds, is generally characterized as including shallow water (<12 inches deep), such as emergent marsh, shallow ponds, flooded pastures and agricultural fields, and wet meadows. Under existing conditions, ibis have only been documented utilizing habitat in the North Wetlands and in small numbers (only 27 individuals). However, a total of 74 individuals have been documented as flying over the project area without actually using available habitat. BIO-WEST surveys of Provo Bay documented 248 individuals across all seasons, which suggests that preferred habitat is located in Provo Bay. Additionally, individuals identified as flyovers during project area surveys, may actually be flying to Provo Bay through the airports airspace to occupy available habitat. When considering each of the action

alternatives, Alternative C is predicted to result in lowest increase in overall abundance of white-faced ibis (net increase of 28 individuals) while Alternative A is predicted to result in the highest net increase in abundance of the species (+78 individuals). Regardless of alternative, the abundance of ibis is predicted to increase the most during the winter. Of the 1,793 bird strikes reported by SLCIA in the FAA Wildlife Strike Database, only 8 (0.4 percent) have been attributed to encounters with white-faced ibis suggesting that white-faced ibis is not a species of high concern for aircraft strike risk.

Airport Hazard Conclusions

Our survey data and eBird datasets verify that many migratory birds and species which move over large areas throughout the breeding season are present within 2 miles of Provo Airport, and along the eastern shore of Utah Lake, under existing conditions. Overall bird abundances and movements within this broad space especially during migration are not expected to be significantly affected by relatively small habitat changes in the study area (relative to habitats throughout the Utah Lake, Great Salt Lake, and broader northern Utah context that migratory birds are known to utilize). However, the discrete changes in abundance and mass predicted for certain species and groups of species known to be a concern to aviation safety were nonetheless examined using bird survey count data because local abundances and movement patterns can change and therefore can affect wildlife (bird) strike risk by aircraft at Provo Airport. With only very few exceptions noted previously for Alternatives A and C, we conclude based on predicted changes in overall bird abundance and overall bird mass there would be no net adverse effect on aviation safety from the proposed project. Alternative B would have no increased risk of bird-strikes based on anticipated changes in bird abundance due to the proposed project with the possible exception only of increasing the abundance of pelicans. However, pelicans are utilizing the area under baseline (flyovers), and eBird datasets verify their distribution all along the eastern Utah Lake shoreline (0.6 percent) and Provo Bay sites (0.9 percent). Under Alternative B the abundances of many other species known to be hazardous to aircraft are predicted to decrease, leading to overall net decreased potential strike risk based on abundance and mass alone.

Overall the proposed project would have minor effects on distribution, abundance, and total mass of migratory waterfowl, shorebirds, other water birds, and neotropical migrants in the Pacific Flyway of which Utah Lake and its associated wetlands are a very small part. At a local level the preferred alternative (Alternative B) would result in a predicted net increase of about 25 acres of wetlands (about +8 percent) compared with existing conditions in the proposed project area.

However, if an action alternative is implemented, the potential for altered flight movement patterns by some birds utilizing the project area exists. Changes in flight frequency through the Provo Airport AOA could increase bird-aircraft potential strike risk above baseline levels. For most species, based on known life history information, there is little or no predicted overall change or increase in flight frequency through the Provo Airport AOA as a result of implementing the proposed project, especially under Alternative B, the preferred alternative. Under the project the establishment of a functional river/lake interface habitat and expanded open water (lacustrine aquatic bed) habitat would be expected to attract pelicans, whereas currently they do not (often) use the wetlands located north of Boat Harbor Drive and east of Skipper Bay dike. Their flight patterns to and from the project area, therefore, are not known and

would need to be monitored. Those pelicans could traverse the Provo Airport AOA; however, such occurrence or the frequency of it cannot be accurately predicted. Hazard mitigation (hazing, lethal control, etc.) might be required. Similarly, some other species could alter their current habitat use and flight patterns in the project area, thus affecting flight patterns or frequency through the Provo Airport AOA and affecting bird-aircraft strike risk.

Temporary, Indirect, and Cumulative Effects

Temporary Impacts during Construction

The assessment of impacts to aviation safety has assumed that habitat within the study area would be of the highest quality (i.e., supporting the highest number of birds). However, during implementation of the project, habitat quality and the disturbance caused by construction activities are expected to temporarily reduce bird use substantially. The risk of bird-aircraft strike during construction is anticipated to be less than under completed project conditions. Construction activities are likely to keep most birds of most species away from the immediate construction zone, which would reduce the local abundance compared with baseline conditions. Movement of birds that might be displaced by construction activities would be monitored. The resultant habitat changes expected from the proposed project would not be expected to occur during construction or even incrementally during construction; the critical element of providing a water supply to the restored habitats of the delta area by routing Provo River into, and allowing Utah Lake to enter into the area, would not occur until the very end of the construction period (expected to be at least three to five years from date of beginning). From that date forward, vegetation would progressively grow and therefore habitat conditions would change over time.

Indirect Effects

Regarding indirect effects to avian wildlife and bird-aircraft strike risk, it is expected that indirect effects would be minor and temporary in nature and result from activities related to construction of berms, dikes, and the redirection of the river channel (noise and vibration). The value of habitat in portions of the study area would likely be temporarily reduced until the disturbed ground becomes revegetated. Habitat quality, however, would improve over time once construction has concluded. In particular, the trees and associated structures in new riparian areas would take the longest to reestablish. Other areas, such as wet meadow and emergent marsh, would reestablish relatively quickly. As a consequence, the risk of bird strikes may be temporarily reduced.

Other indirect effects are not expected as a result of project implementation.

Cumulative Effects

In terms of cumulative effects, there are a number of past and reasonably foreseeable future wetland mitigation projects that would affect avian abundance and habitat quality and, therefore, potentially aviation hazard risk near Provo Airport. It is not clear how these many and varied factors associated with avian habitat quality and bird occurrence have affected and would affect bird strike risk. However, the size of the study area relative to the amount of prime avian habitat within a 5-mile radius of the airport is relatively small. As such, it is expected that cumulative

effects on bird strike risk would be proportionate to the size of the particular affected area and the amount of habitat the project would convert from one type to another.

From December 2001 to 2004, the Utah Division of Forestry, Fire, and State Lands, and Provo City, with local support from Utah County and the City of Orem, purchased a conservation easement to establish the K. Dale and Sonja Despain Cattle Ranch and Bird Refuge. Although several benefits of the project are described, the project is intended to benefit wildlife by protecting habitat that attracts waterfowl, shorebirds, and other wildlife species. The Despain Cattle Ranch and Bird Refuge is a 333-acre parcel located within the boundaries of the study area. The associated conservation easement helps ensure that this area will not be developed in the future, thus preserving its value for wildlife and agriculture.

Within the vicinity of the study area, there are a number of past and future wetland mitigation projects that affect avian habitat quality and, potentially, bird abundance and aviation hazard risk near the Provo Airport. Within the study area, two sites, the Provo City wetland mitigation site (16.7 acres) and the BLB Drywall wetland mitigation site (3.7 acres), have provided enhancements to existing study area wetlands. A recently issued Individual Permit from the Corps for the Provo Westside Connector arterial road in southwest Provo requires 26.4 acres of wetland establishment and 48.6 acres of habitat enhancement in Provo Bay within a 1–2 mile range of the Provo Airport. In the broader Utah Lake environment, the Hobble Creek restoration project in Provo Bay (22 acres) and the Utah Lake Wetlands Preserve (up to 21,750 acres) also provide habitat enhancements supporting wildlife including avian species. The proposed action, depending on the alternative implemented, would incrementally add somewhere between 300 to 510 acres of enhanced habitat to lakewide habitat restoration efforts.

Since 2008 the Utah Division of Forestry, Fire, and State Lands, the Utah County Weed Control Division, and the Utah Lake Commission have been treating sections of the Utah Lake shoreline to remove phragmites, tamarisk, and Russian olive. By 2012, 25 miles of shoreline had been treated, with the goal of clearing the whole shoreline (approximately 75 miles) in 10 years (Utah Lake Commission 2013). In particular, large stands of phragmites surrounding the Provo Airport have been treated in recent years and additional treatments are ongoing. This lakewide habitat enhancement will have many benefits for avian species, particularly waterbirds such as pelicans and cormorants, ducks, and shorebirds.

As a component of the June Sucker Recovery Implementation Program, carp are being commercially harvested from Utah Lake. Large quantities of fish are off-loaded at two locations, both near the Provo Airport. This important habitat improvement effort also inadvertently creates a bird attraction, particularly for gulls and other avians included in the FAA-listed species.

The National Audubon Society, in partnership with Birdlife International, administers the Important Bird Areas (IBAs) program throughout the United States. As of 2008 the National Audubon Society reported that over 2,100 state, 9 continental, and 151 global IBAs had been established for the purposes of identifying, monitoring, and conserving a network of sites to help maintain naturally occurring bird populations for which a site-based approach is appropriate. To date, 21 IBAs covering 2.12 million acres have been established in the State of Utah. Included on the list of Utah IBAs is Provo Bay, which is located adjacent to the Provo Airport. The Provo

Bay IBA is described as one of the most important freshwater wetland systems in Utah. The importance of Provo Bay to birds is largely dependent on Utah Lake water elevations. When water elevations are high, birds congregate elsewhere on the lake; however, when lake water elevations are low, habitat in Provo Bay is of considerable importance because it provides birds with flat, shallow foraging areas. It has been suggested that the Provo Bay IBA could eventually include approximately 6,400 acres with an average lake elevation of 4,489 feet (Evans and Martinson 2008). The current status of Provo Bay, relative to other portions of Utah Lake and other birding hotspots in the State, further illustrates the fact that the Provo Airport is located in an area that is widely recognized as being of great significance to both resident and migratory bird communities. As such, the current risk to aircraft from birds associated with wetlands and other attractive habitat that surrounds the airport will remain, independent of proposed project implementation.

Mitigation Measures

If the proposed project is implemented, the abundance of various bird species is expected to increase or decrease in various seasons and localities. Under certain circumstances, increases, together with altered movement patterns, could pose implications for public and aviation safety within the AOA of the Provo Airport.

If the JLAs select to implement one of the action alternatives in the Record of Decision, the following mitigation measures would be taken:

1. The JLAs will invite USDA Wildlife Services, Provo Airport, and FAA to participate in design of the selected alternative to help identify any wildlife hazard reduction measures (e.g., plant species, design features) that might be compatible with the delta restoration project.

2. The JLAs commit to a monitoring and movement study and to mitigation for any increased bird-aircraft strike risk caused by the proposed project. The Mitigation Commission would execute an agreement or contract to conduct the baseline monitoring/movement study and mitigation.

3. The JLAs will endeavor to execute a Memorandum of Agreement among Provo City/Provo Airport, USDA Wildlife Services, and the FAA to establish cooperation and coordination among the parties for implementing the monitoring and mitigation efforts.

If there is an increase in bird abundance and movement by species that create increased bird strike risk at the Provo Airport, mitigation measures would be implemented. The mitigation measures would be appropriate to the species causing the risk and would be coordinated with FAA, the Provo Airport, Provo City, USDA Wildlife Services and others. The measures could include temporary closures of the delta restoration area to public access in order to be able to safely and effectively harass or remove problem birds; bird detection and warning systems; research; or other measures yet to be determined.

Typical mitigation strategies include measures to manage wildlife or measures to manage their resources (habitat). Wildlife management measures include use of deterrents (visual, chemical, tactile, and auditory) to haze birds away from an area, exclusion methods (e.g., fencing, wire netting), translocation strategies, and population management (which may include lethal control). For example, SLCIA and USDA Wildlife Services translocated more than 900 raptors from the vicinity of the SLCIA in 2014 (M. Linnell 2015, pers. comm.). Other measures may be aimed at managing the resources used by wildlife to reduce the attractiveness of areas near the airport to wildlife (birds) in general or to target certain species. The JLAs would cooperate with Provo Airport, the FAA, and others to attempt to reduce the attractiveness of the project area to wildlife hazardous to aircraft while still meeting the purpose and need of the proposed project, which involves restoring, creating, and enhancing habitat for June sucker. The measures could include temporarily closing the project area to public access to be able to safely and effectively haze or remove problem birds, installing and implementing bird detection and warning systems, conducting research, or other measures yet to be determined to ensure an effective mitigation program.

According to the U.S. Department of Agriculture Animal and Plant Health Inspection Service, current approaches to reducing wildlife strikes with aircraft primarily fall under one or more of the following four research areas: (1) habitat management; (2) wildlife dispersal, removal, and exclusion; (3) detection/prediction of wildlife movements and behaviors so that aircraft can avoid high-risk activities, both temporally and spatially; and (4) manipulating visual stimuli such as aircraft landing lights to enhance the detection and avoidance of aircraft by birds (http://www.aphis.usda.gov/wildlife_damage/nwrc/research/aviation/).

5.0 REFERENCES

Airport Wildlife Consultants. 2014. Wildlife hazard assessment for the Provo Municipal Airport. Cave Creek, AZ: Airport Wildlife Consultants, LLC. 44 p.

Aldrich, T.W., and D.S. Paul. 2002. Avian ecology of Great Salt Lake. In: Gwynn, J.W. editor. Great Salt Lake: an overview of change. Salt Lake City (UT): Utah Department of Natural Resources, Utah Geological Survey. p. 343-374.

Anderson, S.H. and K.J. Gutzwiller. 1994. Habitat evaluation methods. Pages 592-606 in T.A. Bookhout, ed. Research and management techniques for wildlife and habitats. Fifth ed. The Wildlife Society, Bethesda, Md.

Cornell Lab of Ornithology. 2012. The Birds of North America Online. http://bna.birds.cornell.edu/bna/ [Accessed 4/26/12].

Cuthbert, F.J. and L.R. Wires. 1999. Caspian tern (*Hydroprogne caspia*), The Birds of North America Online (A. Poole, Ed.). Ithaca (NY): Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/403.

[CUWCD] Central Utah Water Conservancy District. 1999. Final supplement to the final environmental impact statement for the Diamond Fork system. Orem (UT): Central Utah Water Conservancy District.

Dolbeer, R.A. 2006. Height distribution of birds recorded by collisions with civil aircraft. The Journal of Wildlife Management 70:1345–1350.

Dubowy, P. J. 1996. Northern Shoveler (*Anas clypeata*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/217.

eBird. 2012. Cornell Laboratory of Ornithology and National Audubon Society. 2012. eBird: An online database of bird distribution and abundance. Ithaca, New York. <www.avianknowledge.net>. Data accessed: 4/10/2012.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. The birder's handbook: a field guide to the natural history of North American birds. Simon & Schuster, Inc. New York.

Evans, K. and W. Martinson. 2008. Utah's featured birds and viewing sites: a conservation platform for IBAs and BHCAs. Salt Lake City: Sun Litho.

[FAA] U.S. Department of Transportation, Federal Aviation Administration. 2/2/2015. Wildlife strike database and reporting system. Location: http://wildlife.faa.gov

Flannery, A.W. 1988. Foraging habitat of white pelicans on Great Salt Lake marshes. Master's thesis, Utah State University.

Gammonley, J.H. 1996. Cinnamon teal (*Anas cyanoptera*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/209.

Gleason, S. 2012. Provo Airport Manager. Personal communication with D. Olsen of BIO-WEST, Inc., Logan, Utah, USA, regarding bird species that are of particular concern as sources of bird-aircraft strike risk to aircraft using the Provo Airport. 12/3/2012.

Hatch, J.J. and D. V. Weseloh. 1999. Double-crested Cormorant (*Phalacrocorax auritus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/441.

Hershey, K. 2012. Nongame biologist, Utah Division of Wildlife Resources. Personal communication with C. Fosdick of BIO-WEST, Inc., Logan, Utah, USA, regarding availability of bird survey data for the Provo River Delta Restoration Project. 5/8/2012.

Hopkinson, R., Director of Safety, Aviation Sciences, Utah Valley University. 6/13/2014. Personal communication with Darren Olsen of BIO-WEST, Inc. regarding Utah Valley University bird strike reports at Provo Municipal Airport.

Johnson, K. 1995. Green-winged teal (*Anas crecca*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/193.

Klope, M.W., R.C. Beason, T.J. Nohara, and M.J. Begier. 2009. Role of near-miss bird strikes in assessing hazards. Human-Wildlife Conflicts 3:208–215.

Knopf, F.L. and R.M. Evans. 2004. American white pelican (*Pelecanus erythrorhynchos*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/057 [Accessed 5/1/12].

Liechty, D. 2012. Biologist, Utah Division of Wildlife Resources. Personal communication with C. Fosdick of BIO-WEST, Inc., Logan, Utah, USA, regarding availability of bird survey data for the Provo River Delta Restoration Project. 5/8/2012.

Linnell, M.A. 2015. Utah State Director, U.S. Department of Agriculture – Wildlife Services. Personal communication with Mark Holden of the Utah Reclamation Mitigation and Conservation Commission, regarding potential involvement of USDA Wildlife Services in monitoring bird abundance and movement following implementation of the Provo River Delta Restoration Project. 1/7/2015.

[NAS] National Audubon Society. 2012. The Christmas Bird Count. http://web4.audubon.org/BIRD/CBC/hr/index.html [Accessed 4/26/12].

Norvell, R. 2014. Nongame Avian Ecologist, Utah Division of Wildlife Resources. Personal communication with Mike Sipos of BIO-WEST, Inc., Logan, Utah, regarding pelican abundance in northern Utah and likely project effects. 01/14/2014.

Orians, G.H. 1980. Some adaptations of marsh-nesting blackbirds. Princeton University Press, Princeton, New Jersey.

Paul, D.S., and A.E. Manning. 2002. Great Salt Lake waterbird survey five-year report (1997-2001). Salt Lake City (UT): Utah Division of Wildlife Resources. Publication number 08-38. 56 p.

Sallabanks, R. and F.C. James. 1999. American Robin (*Turdus migratorius*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/462.

Sodhi, N.J. 2002. Competition in the air: birds versus aircraft. The Auk 119:587–595.

Stringham, B. 2014. Waterfowl Program Coordinator, Utah Division of Wildlife Resources. Personal communication with Mike Sipos of BIO-WEST, Inc., Logan, Utah, regarding waterfowl abundance in northern Utah and likely project effects. 01/16/2014.

Twedt, D.J. and R.D. Crawford. 1995. Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/192

[URMCC] Utah Reclamation Mitigation and Conservation Commission. 2011. Provo River Delta Restoration Project alternatives development Technical Memorandum. Report prepared by BIO-WEST, Inc., Logan, Utah. 183 p.

[USAF] U.S. Air Force. 2012. United States avian hazard advisory system. http://www.usahas.com/home/ [Accessed 4/26/12].

[USGS] U.S. Geological Survey North American Breeding Bird Survey. 2012. http://www.pwrc.usgs.gov/bbs/ [Accessed 4/26/12].

Utah Lake Commission. 6/15/2013. Vile weed! Restoring shoreline with controlled reed removal. Location: http://utahlake.gov/vile-weed-restoring-shoreline-with-controlled-reed-removal/.

Winkler, D.W. 1996. California gull (*Larus californicus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/259.

APPENDIX A: RAW DATA

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	50-99	Passerine	American robin	21	no	
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	100-499	Passerine	black-billed magpie	4	no	
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	50-99	Passerine	European starling	65	no	
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	50-99	Shorebirds	killdeer	2	no	
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	100-499	Passerine	northern flicker	2	no	
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	1,000-3,000	Grouse	ring-necked pheasant	1	no	Male.
4/9/12	SPRING	PRDRP South End	South end	14:06	14:44	50-99	Passerine	western meadowlark	4	no	Includes one singing male.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	500-999	Rails & coots	American coot	4	no	
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	100-499	Raptors	American kestrel	1	no	
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	50-99	Passerine	American robin	5	no	
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	100-499	Passerine	black-billed magpie	4	no	Two presumed pairs
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	50-99	Passerine	blackbird sp.	12	no	
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	>3,000	Waterfowl	Canada goose	6	no	Four of these are west of dike.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	100-499	Waterfowl	cinnamon teal	4	no	2 pairs.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	0-49	Passerine	downy woodpecker	2	no	Includes one drumming male.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	500-999	Waterfowl	duck sp.	2	yes	Flyover.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	1,000-3,000	Waterfowl	mallard	10	no	Includes three pairs
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	0-49	Passerine	marsh wren	1	no	Singing male.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	50-99	Passerine	red-winged blackbird	2	no	Singing males.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	>3,000	Cranes	sandhill crane	2	yes	Pair; flyover
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	0-49	Passerine	song sparrow	7	no	Includes six singing males.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	0-49	Passerine	sparrow sp.	1	no	Probable VESP; not seen well.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	50-99	Passerine	western meadowlark	1	no	Singing male.
4/9/12	SPRING	PRDRP South End	South end	10:58	11:41	50-99	Passerine	yellow-headed blackbird	3	no	Singing males.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	American avocet	4	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	American avocet	2	no	Shallow pools at north end of property, in middle.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Rails & coots	American coot	8	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Raptors	American kestrel	1	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Passerine	American robin	4	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Passerine	American robin	2	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	American wigeon	40	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	American wigeon	2	no	1 pair. Water along east side of dike.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Passerine	black-billed magpie	1	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	black-capped chickadee	2	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	black-necked stilt	12	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	black-necked stilt	1	no	Shallow pools at north end of property, in middle.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	>3,000	Waterfowl	Canada goose	42	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	>3,000	Waterfowl	Canada goose	10	no	Shallow pools at north end of property, in middle.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	>3,000	Waterfowl	Canada goose	10	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Waterfowl	cinnamon teal	40	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Waterfowl	cinnamon teal	2	no	1 pair. Water along east side of dike.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	dowitcher sp.	1	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	duck sp.	30	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	duck sp.	5	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Gulls	Franklin's gull	1	yes	Flyover.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	gadwall	10	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Shorebirds	greater yellowlegs	2	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Waterfowl	green-winged teal	70	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Shorebirds	killdeer	10	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	100-499	Gulls	Larus sp.	1	yes	Flyover.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Shorebirds	lesser yellowlegs	4	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Shorebirds	long-billed curlew	1	no	Calling male; called once; standing in shallow pool just north of e-w fence line with other
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	1,000-3,000	Waterfowl	mallard	4	no	1 pair, two singles males. Water along east side of dike.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	marsh wren	2	no	Singing males.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	1,000-3,000	Waterfowl	northern shoveler	70	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	1,000-3,000	Waterfowl	northern shoveler	5	no	Shallow pools at north end of property, in middle.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Raptors	osprey	3	no	Pair on platform, 3rd bird flyover.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waterfowl	redhead	1	no	Shallow pools at north end of property, in middle.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Passerine	red-winged blackbird	1	no	1 singing male.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Gulls	ring-billed gull	2	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	ruby-crowned kinglet	1	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	>3,000	Cranes	sandhill crane	3	no	On ground, foraging at north end, about 100-m east of dike.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	song sparrow	2	no	Singing males.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	song sparrow	2	no	1 singing male.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	0-49	Passerine	sparrow sp.	2	no	
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	1,000-3,000	Grebe	western grebe	2	no	On Utah Lake
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Passerine	western meadowlark	1	no	Singing male.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	500-999	Waders	white-faced ibis	1	no	Shallow pools just north of E-W fence line.
4/9/12	SPRING	PRDRP Wetlands	North end	11:41	13:32	50-99	Passerine	yellow-headed blackbird	2	no	Singing males.
4/9/12	SPRING	Provo River Parkway	Provo R. Parkway	13:44	14:04	500-999	Rails & coots	American coot	8	no	
4/9/12	SPRING	Provo River Parkway	Provo R. Parkway	13:44	14:04	100-499	Passerine	black-billed magpie	3	no	At least one pair.
4/9/12	SPRING	Provo River Parkway	Provo R. Parkway	13:44	14:04	1,000-3,000	Waterfowl	domestic duck	4	no	
4/9/12	SPRING	Provo River Parkway	Provo R. Parkway	13:44	14:04	0-49	Passerine	house finch	2	no	
4/9/12	SPRING	Provo River Parkway	Provo R. Parkway	13:44	14:04	1,000-3,000	Waterfowl	mallard	2	no	Pair.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	500-999	Rails & coots	American coot	1	no	
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	100-499	Passerine	belted kingfisher	1	no	
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	100-499	Passerine	black-billed magpie	2	no	
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	0-49	Passerine	black-capped chickadee	1	no	Carrying puff of cottonwood fluff into nest cavity; one of the pair seen on northern end of

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	100-499	Waterfowl	cinnamon teal	2	no	Adult males.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	50-99	Passerine	European starling	1	no	
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	1,000-3,000	Waterfowl	mallard	1	no	Adult male.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	50-99	Passerine	red-winged blackbird	11	no	Singing males.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	0-49	Passerine	song sparrow	2	no	Singing males.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	50-99	Rails & coots	Virginia rail	2	no	In wetlands along lakeshore, giving "ticket" calls.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	50-99	Passerine	western meadowlark	1	no	Singing males.
4/16/12	SPRING	PRDRP South End	South end	13:53	14:10	50-99	Passerine	yellow-headed blackbird	5	no	Singing males.
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Passerine	American robin	8	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	0-49	Passerine	barn swallow	1	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	100-499	Passerine	black-billed magpie	4	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	100-499	Grouse	California quail	5	no	2 pairs, 1 single male
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Passerine	European starling	62	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Shorebirds	killdeer	2	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	100-499	Passerine	northern flicker	1	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	500-999	Raptors	osprey	1	yes	Flyover, headed north.
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	500-999	Raptors	red-tailed hawk	1	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Passerine	red-winged blackbird	1	no	Male
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	0-49	Passerine	song sparrow	3	no	Singing males.
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	0-49	Passerine	tree swallow	10	yes	Flyover
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Passerine	western meadowlark	1	no	Singing male
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	0-49	Passerine	white-crowned sparrow	2	no	White lores
4/16/12	SPRING	PRDRP South End	South end	11:22	12:01	50-99	Passerine	yellow-headed blackbird	3	no	Males
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	0-49	Passerine	American goldfinch	1	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	50-99	Passerine	American robin	11	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	0-49	Passerine	Audubon's warbler	1	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	100-499	Passerine	black-billed magpie	2	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	100-499	Grouse	California quail	1	no	Pair
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	50-99	Passerine	European starling	9	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	>3,000	Cranes	sandhill crane	1	no	Distant, heard only
4/16/12	SPRING	PRDRP South End	South end	12:01	12:26	0-49	Passerine	song sparrow	1	no	Singing male.
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	500-999	Rails & coots	American coot	10	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	50-99	Passerine	American robin	15	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	0-49	Passerine	barn swallow	1	yes	Flyover.
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	100-499	Passerine	black-billed magpie	4	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	>3,000	Waterfowl	Canada goose	6	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	500-999	Waterfowl	duck sp.	38	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	50-99	Passerine	European starling	80	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	100-499	Gulls	Franklin's gull	18	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	500-999	Waterfowl	gadwall	10	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	100-499	Waterfowl	green-winged teal	2	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	0-49	Passerine	house sparrow	30	no	At locked gate on Lake Shore Dr.
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	1,000-3,000	Waterfowl	mallard	12	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	1,000-3,000	Waterfowl	northern shoveler	2	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	100-499	Grebe	pied-billed grebe	1	no	"Owhoop calls"; heard not seen from wetlands and pond on northern edge of property
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	500-999	Raptors	red-tailed hawk	1	no	Incubating; digiscoped photos; nest in tall deciduous tree along se corner of Despaine
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	50-99	Passerine	red-winged blackbird	11	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	1,000-3,000	Grouse	ring-necked pheasant	2	no	One crowing male, one female flushed from grass on north side of access rd near locked
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	>3,000	Cranes	sandhill crane	1	no	on the ground, alone, in center of property
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	>3,000	Cranes	sandhill crane	6	yes	Six flying to northwest, low over the property
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	0-49	Passerine	song sparrow	4	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	0-49	Passerine	swallow sp.	1	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	50-99	Passerine	western meadowlark	1	no	
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	0-49	Passerine	white-crowned sparrow	20	no	At locked gate on Lake Shore Dr.
4/16/12	SPRING	PRDRP Wetlands	East side	14:57	16:40	50-99	Passerine	yellow-headed blackbird	41	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Shorebirds	American avocet	11	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Rails & coots	American coot	165	no	Includes 27 on Utah Lake
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	50-99	Passerine	American robin	2	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Waterfowl	American wigeon	14	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Passerine	black-billed magpie	4	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Waterfowl	bufflehead	1	no	Adult male in wetlands in middle of property.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	>3,000	Waterfowl	Canada goose	51	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Waterfowl	cinnamon teal	24	no	Includes one pair.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Waterfowl	duck sp.	30	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Waterfowl	green-winged teal	98	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	50-99	Shorebirds	killdeer	13	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	50-99	Shorebirds	lesser yellowlegs	5	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	1,000-3,000	Waterfowl	mallard	15	no	Includes three pairs.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	0-49	Passerine	marsh wren	3	no	Singing males.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	1,000-3,000	Waterfowl	northern shoveler	30	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Raptors	osprey	2	no	Pair; one perched on first platform west of occupied nesting platform; female appears to be incubating on nesting platform.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Waterfowl	redhead	1	no	Adult male in wetlands in middle of property.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Gulls	ring-billed gull	2	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	>3,000	Cranes	sandhill crane	8	no	All in one loose group, on ground, using wetlands in middle of property.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	0-49	Passerine	song sparrow	3	no	Singing males.
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	1,000-3,000	Grebe	western grebe	1	no	Heard only, on Utah Lake

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	50-99	Passerine	western meadowlark	1	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	500-999	Waders	white-faced ibis	2	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	100-499	Shorebirds	willet	1	no	
4/16/12	SPRING	PRDRP Wetlands	North end	12:55	13:53	50-99	Passerine	yellow-headed blackbird	15	no	9 along lakeshore, six using wetlands in middle of property.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	500-999	Rails & coots	American coot	125	no	27 of these birds were swimming in canal surrounding airport.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	0-49	Passerine	American goldfinch	1	no	
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	50-99	Passerine	American robin	1	no	
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	0-49	Passerine	Audubon's warbler	1	no	
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	>3,000	Waterfowl	Canada goose	3	no	Includes one pair.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	100-499	Waterfowl	cinnamon teal	3	no	Adult male plus one pair.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	1,000-3,000	Grebe	Clark's grebe	1	no	
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	500-999	Waterfowl	gadwall	12	no	Including at least one pair.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	1,000-3,000	Waders	great blue heron	1	no	Flew directly across end of N-S runway at approximate height that a plane taking off
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	100-499	Waterfowl	green-winged teal	6	no	
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	50-99	Shorebirds	killdeer	1	no	
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	0-49	Passerine	marsh wren	20	no	Singing males.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	1,000-3,000	Waterfowl	northern shoveler	10	no	Including at least one pair.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	100-499	Grebe	pied-billed grebe	3	no	Two swimming in canal surrounding airport; one bird in marshes south of airport.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	50-99	Passerine	red-winged blackbird	5	no	Singing males.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	>3,000	Cranes	sandhill crane	1	no	Adult standing on ground 50-m west of south end of N-S runway.
4/16/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	17:05	18:36	0-49	Passerine	song sparrow	3	no	Singing males.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	1,000-3,000	Grebe	western grebe	2	no	Pair
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	50-99	Passerine	western meadowlark	2	no	Singing males.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	0-49	Passerine	white-crowned sparrow	5	no	Two with white lores.
4/16/12	SPRING	Provo Airport Dike	Provo Bay	17:05	18:36	50-99	Passerine	yellow-headed blackbird	55	no	Singing males.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	500-999	Rails & coots	American coot	3	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Passerine	American robin	9	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	0-49	Passerine	barn swallow	1	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	100-499	Passerine	black-billed magpie	6	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	0-49	Passerine	black-capped chickadee	2	no	Pair.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	>3,000	Waterfowl	Canada goose	2	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Passerine	European starling	2	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	100-499	Gulls	Franklin's gull	25	yes	Flyover; nb flock.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	1,000-3,000	Waterfowl	mallard	3	no	Includes one pair
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	0-49	Passerine	marsh wren	1	no	Singing male in marsh along Utah Lake.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Passerine	red-winged blackbird	5	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	0-49	Passerine	song sparrow	2	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Rails & coots	sora	1	no	heard only; "Perwheep" calls; in marsh along Utah Lake.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	0-49	Passerine	swallow sp.	6	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Rails & coots	Virginia rail	1	no	heard only; "ticket" calls; in marsh along Utah Lake.
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Passerine	western meadowlark	1	no	
4/18/12	SPRING	PRDRP South End	South end	14:55	15:15	50-99	Passerine	yellow-headed blackbird	22	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	American robin	11	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	>3,000	Pelicans & Cormorants	American white pelican	3	yes	Flyovers, southbound along lakeshore
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	Brewer's blackbird	1	no	Singing male
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	100-499	Grouse	California quail	2	no	Pair
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	>3,000	Waterfowl	Canada goose	3	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	European starling	15	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	100-499	Gulls	Franklin's gull	2	yes	Flyovers
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Shorebirds	killdeer	1	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	1,000-3,000	Waterfowl	mallard	2	yes	Pair, flyover.
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	100-499	Doves	mourning dove	1	no	Singing
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	100-499	Passerine	northern flicker	1	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	100-499	Raptors	northern harrier	1	no	Perched adult male.
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	500-999	Raptors	osprey	1	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	red-winged blackbird	37	no	Includes flock of 35 males.
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	1,000-3,000	Grouse	ring-necked pheasant	2	no	Counter-crowing males
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	500-999	Raptors	Swainson's hawk	1	no	Dark adult; same bird as seen on Skipper Bay Trail earlier in day?
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	western meadowlark	1	no	Singing male
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	0-49	Passerine	white-crowned sparrow	1	no	
4/18/12	SPRING	PRDRP South End	South end	17:45	18:15	50-99	Passerine	yellow-headed blackbird	40	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Rails & coots	American coot	24	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	50-99	Passerine	American robin	12	no	Flushed one female from nest; not sure if already incubating, or just getting ready to lay,
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	0-49	Passerine	Audubon's warbler	3	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Passerine	black-billed magpie	5	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Shorebirds	black-necked stilt	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	>3,000	Waterfowl	Canada goose	25	no	three pairs
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Waders	Cattle/snowy egret sp.	1	no	Too distant to identify.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Waterfowl	cinnamon teal	5	no	One pair.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	1,000-3,000	Waterfowl	domestic duck	3	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Waterfowl	duck sp.	22	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	50-99	Passerine	European starling	90	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Gulls	Franklin's gull	32	yes	Flyovers, nb.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Waterfowl	gadwall	30	no	Includes two pairs.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Waterfowl	green-winged teal	6	no	Includes two pairs.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	50-99	Shorebirds	killdeer	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	1,000-3,000	Waterfowl	mallard	10	no	three pairs

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	1,000-3,000	Waterfowl	northern shoveler	15	no	Two pairs.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Raptors	osprey	2	no	Pair on platform.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Grebe	pied-billed grebe	1	no	Heard only; "owhoop" calls.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Waterfowl	redhead	2	no	Pair.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Raptors	red-tailed hawk	2	no	Nesting pair; female incubates, male perched nearby.
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	50-99	Passerine	red-winged blackbird	7	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	0-49	Passerine	ruby-crowned kinglet	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	>3,000	Cranes	sandhill crane	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	0-49	Passerine	song sparrow	9	no	Mostly singing males
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	1,000-3,000	Raptors	turkey vulture	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	0-49	Passerine	white-crowned sparrow	2	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	500-999	Waders	white-faced ibis	2	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	100-499	Shorebirds	Wilson's snipe	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	13:05	14:37	50-99	Passerine	yellow-headed blackbird	117	no	Includes one flock of 85 birds, plus territorial males.
4/18/12	SPRING	PRDRP Wetlands	East side	14:45	14:49	>3,000	Waterfowl	Canada goose	2	no	
4/18/12	SPRING	PRDRP Wetlands	East side	14:45	14:49	50-99	Shorebirds	killdeer	1	no	
4/18/12	SPRING	PRDRP Wetlands	East side	14:45	14:49	0-49	Passerine	white-crowned sparrow	6	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Shorebirds	American avocet	7	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Rails & coots	American coot	20	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Rails & coots	American coot	49	no	4 on Utah Lake, 45 in wetlands
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	50-99	Passerine	American robin	5	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Waterfowl	American wigeon	21	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	0-49	Passerine	barn swallow	3	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Passerine	black-billed magpie	7	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Shorebirds	black-necked stilt	15	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Waterfowl	blue-winged teal	1	no	Adult male.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Waterfowl	bufflehead	1	no	Female; in wetland in center of Despain property.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	>3,000	Waterfowl	Canada goose	70	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Waterfowl	cinnamon teal	35	no	Includes at least five pairs
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Shorebirds	dowitcher sp.	3	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	50-99	Passerine	European starling	10	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Gulls	Franklin's gull	12	yes	Flyovers, nb.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Waterfowl	gadwall	3	no	Includes one pair.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Passerine	great-tailed grackle	1	no	Adult male, in wetland in center of Despain property.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Waterfowl	green-winged teal	69	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Grebe	horned grebe	1	no	Alternate plumage, in wetland in center of Despain property.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	50-99	Shorebirds	killdeer	5	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	1,000-3,000	Waterfowl	mallard	14	no	Includes at least two pairs
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	1,000-3,000	Waterfowl	northern shoveler	36	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Raptors	osprey	2	no	One eating fish on post near nest platform, second on nest.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Waterfowl	redhead	2	no	Pair.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	50-99	Passerine	red-winged blackbird	4	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Waterfowl	ring-necked duck	7	no	Includes one pair; in wetland in center of Despain property.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	0-49	Passerine	song sparrow	1	no	Singing male.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Raptors	Swainson's hawk	1	no	Dark adult.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	0-49	Passerine	tree swallow	4	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	500-999	Waders	white-faced ibis	6	no	
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	50-99	Passerine	yellow-headed blackbird	36	no	Majority are males on territory.
4/18/12	SPRING	PRDRP Wetlands	North end	15:15	16:36	100-499	Shorebirds	Yellowlegs sp.	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	500-999	Rails & coots	American coot	22	no	
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	500-999	Rails & coots	American coot	21	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	50-99	Passerine	American robin	3	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	>3,000	Pelicans & Cormorants	American white pelican	1	yes	flying south along Utah Lake at 1153 am.
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	>3,000	Pelicans & Cormorants	American white pelican	10	no	10 over Provo Bay at 1145 am
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	Audubon's warbler	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	barn swallow	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	100-499	Passerine	black-billed magpie	1	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	>3,000	Waterfowl	Canada goose	7	no	
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	>3,000	Waterfowl	Canada goose	8	no	3 sitting/standing off end of N-S runway; 5 sitting/standing off end of SW-NE runway
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	100-499	Waterfowl	cinnamon teal	3	no	Includes one pair.
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	100-499	Waterfowl	cinnamon teal	2	no	pair
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	cliff swallow	1	yes	Flyover
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	In canal
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	100-499	Gulls	Franklin's gull	25	yes	Flyover
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	500-999	Waterfowl	gadwall	4	no	Includes one pair.
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	500-999	Waterfowl	gadwall	1	no	
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Waders	great blue heron	2	yes	Flyover end of SW-NE runway.
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Waterfowl	mallard	6	no	three pairs
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Waterfowl	mallard	1	no	One pair
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	marsh wren	38	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	100-499	Raptors	northern harrier	2	no	Female, male; seen separately.
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	500-999	Raptors	osprey	2	yes	Northbound flyovers, possibly migrants or the pair from Skipper Bay
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	100-499	Grebe	pied-billed grebe	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	500-999	Raptors	red-tailed hawk	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	50-99	Passerine	red-winged blackbird	26	no	Includes flock of 20 females
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	50-99	Passerine	red-winged blackbird	4	no	
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Grouse	ring-necked pheasant	1	no	Adult male
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	>3,000	Cranes	sandhill crane	1	no	On ground, estimated at 60-80 meters from end of N-S runway, inside fence
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	0-49	Passerine	savannah sparrow	1	no	Singing male.

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	song sparrow	6	no	Singing males.
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	0-49	Passerine	song sparrow	1	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	500-999	Raptors	Swainson's hawk	1	no	Adult light morph
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	swallow sp.	55	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	tree swallow	45	yes	Flyover
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	NA	NA	waterbird sp.	2	no	
4/18/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	10:45	12:38	1,000-3,000	Grebe	western grebe	1	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	1,000-3,000	Grebe	western/Clark's grebe	10	no	Aechmophorus grebes; distant in Provo Bay
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	0-49	Passerine	white-crowned sparrow	2	no	
4/18/12	SPRING	Provo Airport Dike	Provo Bay	10:45	12:38	50-99	Passerine	yellow-headed blackbird	21	no	Singing males.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	500-999	Rails & coots	American coot	15	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	American goldfinch	6	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	50-99	Passerine	American robin	30	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	Audubon's warbler	1	no	Singing male.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	bank swallow	5	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	100-499	Passerine	black-billed magpie	5	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	black-capped chickadee	3	no	1 pair, one singing male.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	100-499	Grouse	California quail	1	no	Male
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	1,000-3,000	Waterfowl	domestic duck	22	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	50-99	Passerine	European starling	16	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	house sparrow	2	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	50-99	Shorebirds	killdeer	1	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	1,000-3,000	Waterfowl	mallard	9	no	Includes one pair.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	northern rough-winged swallow	165	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	50-99	Passerine	red-winged blackbird	30	no	Flock of 30 females.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	1,000-3,000	Grouse	ring-necked pheasant	1	no	Crowing male.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	song sparrow	5	no	Singing males.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	swallow sp.	15	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	tree swallow	5	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	violet-green swallow	2	no	
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	0-49	Passerine	white-crowned sparrow	22	no	Flock of 20, white lores (Taiga), many singing.
4/18/12	SPRING	Provo River Parkway	Provo R. Parkway	16:50	17:45	50-99	Passerine	yellow-headed blackbird	1	no	Singing male.
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	500-999	Rails & coots	American coot	3	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	50-99	Passerine	American robin	3	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	100-499	Passerine	black-billed magpie	3	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	1,000-3,000	Waterfowl	mallard	2	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	100-499	Raptors	northern harrier	1	no	Adult male.
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	50-99	Passerine	red-winged blackbird	10	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	>3,000	Cranes	sandhill crane	1	yes	Flyover
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	0-49	Passerine	song sparrow	4	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	50-99	Passerine	western meadowlark	2	no	
4/20/12	SPRING	PRDRP South End	South end	9:10	10:55	50-99	Passerine	yellow-headed blackbird	15	no	13 males west of dike.
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	50-99	Passerine	American robin	31	no	
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	100-499	Passerine	black-billed magpie	4	yes	Soaring over Parkway.
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	50-99	Passerine	European starling	21	no	
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	50-99	Shorebirds	killdeer	1	no	
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	1,000-3,000	Waterfowl	mallard	6	no	Includes one pair
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	100-499	Doves	mourning dove	1	no	
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	500-999	Raptors	red-tailed hawk	2	no	
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	1,000-3,000	Grouse	ring-necked pheasant	2	no	Males fighting in field.
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	0-49	Passerine	song sparrow	2	no	Singing males.
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	500-999	Raptors	Swainson's hawk	2	no	Seen simultaneously as SWHA
4/20/12	SPRING	PRDRP South End	South end	11:24	11:50	50-99	Passerine	western meadowlark	1	no	Singing male.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Shorebirds	American avocet	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Rails & coots	American coot	22	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	American goldfinch	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	50-99	Passerine	American robin	28	no	Female carrying nesting material
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	>3,000	Pelicans & Cormorants	American white pelican	15	yes	Soaring over east side of property.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	Audubon's warbler	2	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Passerine	black-billed magpie	9	no	Flushed one from nest.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Shorebirds	black-necked stilt	4	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	brown-headed cowbird	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	>3,000	Waterfowl	Canada goose	27	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Waterfowl	cinnamon teal	4	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	50-99	Passerine	European starling	7	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Waterfowl	gadwall	19	no	Includes six pairs.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Passerine	great-tailed grackle	1	no	Adult male in wetlands in middle of property.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Waterfowl	green-winged teal	9	no	Two pairs.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	house finch	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	1,000-3,000	Waterfowl	mallard	7	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	100-499	Doves	mourning dove	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Waterfowl	northern pintail	2	no	Pair.
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	1,000-3,000	Waterfowl	northern shoveler	12	no	Pair
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Waterfowl	redhead	3	no	Pair plus second female
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Raptors	red-tailed hawk	2	no	Female incubating; nest is in top of deciduous tree on se corner of Despain property, in
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	50-99	Passerine	red-winged blackbird	28	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	1,000-3,000	Grouse	ring-necked pheasant	3	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	>3,000	Cranes	sandhill crane	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	song sparrow	12	no	Majority are singing males.

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	tree swallow	2	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	0-49	Passerine	white-crowned sparrow	3	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Waders	white-faced ibis	4	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	500-999	Waterfowl	wood duck	1	no	
4/20/12	SPRING	PRDRP Wetlands	East side	9:03	11:05	50-99	Passerine	yellow-headed blackbird	81	no	Includes flock of 45
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	100-499	Shorebirds	American avocet	4	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Rails & coots	American coot	41	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	50-99	Passerine	American robin	3	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Waterfowl	American wigeon	35	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	100-499	Shorebirds	black-necked stilt	5	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	>3,000	Waterfowl	Canada goose	2	yes	fly over
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	>3,000	Waterfowl	Canada goose	13	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	100-499	Waterfowl	cinnamon teal	36	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Waterfowl	gadwall	8	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	100-499	Waterfowl	green-winged teal	35	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	50-99	Shorebirds	killdeer	3	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	1,000-3,000	Waterfowl	mallard	31	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	100-499	Doves	mourning dove	1	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Waterfowl	northern pintail	1	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	1,000-3,000	Waterfowl	northern shoveler	46	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Raptors	osprey	2	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	50-99	Passerine	red-winged blackbird	14	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	0-49	Passerine	ruby-crowned kinglet	1	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	0-49	Passerine	song sparrow	1	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	500-999	Waders	white-faced ibis	1	no	
4/20/12	SPRING	PRDRP Wetlands	North end	9:10	10:55	50-99	Passerine	yellow-headed blackbird	3	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	500-999	Rails & coots	American coot	43	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	500-999	Rails & coots	American coot	17	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	>3,000	Pelicans & Cormorants	American white pelican	9	no	Eight in Provo Bay, one flew low over marsh immediately adjacent to airport.
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	>3,000	Waterfowl	Canada goose	2	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	>3,000	Waterfowl	Canada goose	11	no	Three near end of runway, rest in canal.
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	0-49	Passerine	chipping sparrow	1	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	100-499	Waterfowl	cinnamon teal	7	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	1,000-3,000	Grebe	Clark's grebe	2	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	500-999	Waterfowl	gadwall	8	no	In canal
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	1,000-3,000	Waterfowl	mallard	2	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	0-49	Passerine	marsh wren	43	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	1,000-3,000	Waterfowl	northern shoveler	2	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	100-499	Grebe	pied-billed grebe	2	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	50-99	Passerine	red-winged blackbird	3	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	>3,000	Cranes	sandhill crane	4	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	0-49	Passerine	song sparrow	3	no	Singing males.
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	0-49	Passerine	song sparrow	1	no	
4/20/12	SPRING	Provo Airport Dike	Airport, Runway and Canal	12:45	14:00	1,000-3,000	Grebe	western grebe	1	no	
4/20/12	SPRING	Provo Airport Dike	Provo Bay	12:45	14:00	50-99	Passerine	yellow-headed blackbird	17	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	500-999	Rails & coots	American coot	10	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	0-49	Passerine	American goldfinch	4	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	50-99	Passerine	American robin	24	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	100-499	Passerine	black-billed magpie	1	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	100-499	Grouse	California quail	1	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	1,000-3,000	Waterfowl	domestic duck	3	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	500-999	Waterfowl	duck sp.	4	yes	Flyover
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	50-99	Passerine	European starling	2	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	1,000-3,000	Waterfowl	mallard	13	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	0-49	Passerine	mountain chickadee	2	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	100-499	Doves	mourning dove	3	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	50-99	Passerine	red-winged blackbird	10	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	0-49	Passerine	song sparrow	2	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:30	11:50	0-49	Passerine	white-crowned sparrow	1	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	100-499	Raptors	American kestrel	1	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	50-99	Passerine	American robin	15	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	100-499	Passerine	black-billed magpie	1	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	50-99	Shorebirds	killdeer	2	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	50-99	Passerine	red-winged blackbird	150	no	
4/20/12	SPRING	Provo River Parkway	Provo R. Parkway	11:50	12:15	1,000-3,000	Grouse	ring-necked pheasant	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Raptors	American kestrel	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	American pipit	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	50-99	Passerine	American robin	110	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	Audubon's warbler	14	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	barn swallow	5	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Passerine	belted kingfisher	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Passerine	black-billed magpie	5	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	50-99	Passerine	blackbird sp.	585	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	black-capped chickadee	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	black-throated gray warbler	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	Cassin's vireo	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	cedar waxwing	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	chipping sparrow	6	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	chipping sparrow	5	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Raptors	Cooper's hawk	1	no	HY; perched
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	500-999	Waterfowl	dabbling duck sp.	4	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	dark-eyed junco	4	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Doves	Eurasian collared-dove	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	50-99	Passerine	European starling	75	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Gulls	Larus sp.	10	yes	Flyovers
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	house finch	17	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	house sparrow	10	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	house wren	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	50-99	Shorebirds	killdeer	3	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	Lincoln's sparrow	6	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	MacGillivray's warbler	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	1,000-3,000	Waterfowl	mallard	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	marsh wren	2	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Doves	mourning dove	18	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	100-499	Passerine	northern flicker	6	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	orange-crowned warbler	3	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	red-breasted nuthatch	1	no	Adult male
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	500-999	Raptors	red-tailed hawk	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	50-99	Passerine	red-winged blackbird	257	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	1,000-3,000	Grouse	ring-necked pheasant	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	ruby-crowned kinglet	5	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	>3,000	Cranes	sandhill crane	3	no	About ~500-m to north.
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	savannah sparrow	3	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	song sparrow	7	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	sparrow sp.	5	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	swallow sp.	1	no	Probable BARS
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	tree swallow	91	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	vesper sparrow	1	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	white-crowned sparrow	40	no	
9/27/12	FALL	PRDRP Wetlands	East side	7:42	9:55	0-49	Passerine	Wilson's warbler	4	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	American goldfinch	5	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	50-99	Passerine	American robin	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	Audubon's warbler	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	barn swallow	15	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	100-499	Passerine	black-billed magpie	38	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	500-999	Raptors	Buteo sp.	1	yes	Flyover northbound.
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	100-499	Gulls	Larus sp.	75	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	house finch	6	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	house sparrow	6	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	50-99	Shorebirds	killdeer	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	Lincoln's sparrow	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	orange-crowned warbler	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	500-999	Raptors	red-tailed hawk	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	>3,000	Cranes	sandhill crane	2	no	Soaring low over southern boundary of Despain Ranch and adjacent landowners.
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	swallow sp.	60	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	tree swallow	7	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	violet-green swallow	1	no	
9/27/12	FALL	PRDRP South End	South end	11:22	12:00	0-49	Passerine	white-crowned sparrow	36	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	50-99	Passerine	American robin	10	no	Feeding on Russian olive fruit.
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	0-49	Passerine	Audubon's warbler	3	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	100-499	Passerine	black-billed magpie	2	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	100-499	Grouse	California quail	10	no	Roosting quietly (and almost completely hidden by vegetation) in willows.
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	50-99	Passerine	European starling	3	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	100-499	Passerine	northern flicker	2	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	100-499	Raptors	northern harrier	2	yes	Fly southbound along lakeshore; both females.
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	0-49	Passerine	ruby-crowned kinglet	1	no	
9/27/12	FALL	PRDRP South End	South end	15:20	15:45	0-49	Passerine	white-crowned sparrow	5	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	50-99	Passerine	American robin	2	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	0-49	Passerine	Audubon's warbler	4	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	100-499	Passerine	black-billed magpie	2	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	0-49	Passerine	black-capped chickadee	4	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	50-99	Passerine	European starling	45	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	0-49	Passerine	house finch	1	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	0-49	Passerine	marsh wren	1	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	100-499	Passerine	northern flicker	2	no	
9/27/12	FALL	PRDRP South End	South end	15:51	16:15	0-49	Passerine	white-crowned sparrow	13	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	American goldfinch	5	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	50-99	Passerine	American robin	30	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	Audubon's warbler	4	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	barn swallow	1	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	100-499	Passerine	black-billed magpie	2	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	500-999	Terns	Caspian tern	1	yes	Flying north along lakeshore.
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	Lincoln's sparrow	1	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	marsh wren	2	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	100-499	Passerine	northern flicker	2	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	100-499	Raptors	northern harrier	1	yes	Adult female; Flying north along lakeshore.
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	500-999	Raptors	osprey	1	no	Eating fish on nest platform.
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	ruby-crowned kinglet	3	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	savannah sparrow	1	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	NA	Shorebirds	small shorebird sp.	2	yes	Flyover; from center of Despain Ranch.
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	song sparrow	3	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	swallow sp.	3	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	0-49	Passerine	white-crowned sparrow	6	no	
9/27/12	FALL	PRDRP Wetlands	North end	16:15	16:55	100-499	Shorebirds	Wilson's snipe	1	yes	Flyover; from center of Despain Ranch.
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Shorebirds	American avocet	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Rails & coots	American coot	11	no	
9/27/12	FALL	Provo Airport Dike	Airport, Runway and Canal	12:25	14:15	500-999	Rails & coots	American coot	11	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Raptors	American kestrel	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	50-99	Passerine	American robin	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	>3,000	Pelicans & Cormorants	American white pelican	20	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	Audubon's warbler	16	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Passerine	black-billed magpie	2	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	black-capped chickadee	4	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Raptors	Buteo sp.	1	no	Dark morph; possibly FEHA.
9/27/12	FALL	Provo Airport Dike	Airport, Runway and Canal	12:25	14:15	500-999	Terns	Caspian tern	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	chipping sparrow	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Waterfowl	cinnamon teal	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Waterfowl	dabbling duck sp.	18	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	downy woodpecker	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	50-99	Passerine	European starling	3	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	1,000-3,000	Waders	great blue heron	6	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Waders	great egret	2	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Waterfowl	green-winged teal	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	hermit thrush	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Gulls	Larus sp.	1	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	marsh wren	8	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Passerine	northern flicker	2	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	1,000-3,000	Waterfowl	northern shoveler	5	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	orange-crowned warbler	2	no	
9/27/12	FALL	Provo Airport Dike	Airport, Runway and Canal	12:25	14:15	100-499	Grebe	pied-billed grebe	10	no	Includes two HY birds.
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Gulls	ring-billed gull	15	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	>3,000	Cranes	sandhill crane	1	no	Heard only; f/o?
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	100-499	Waders	snowy egret	5	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	swallow sp.	15	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	NA	NA	waterbird sp.	75	no	Very distant in Provo Bay; excessive heat distortion.
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	1,000-3,000	Grebe	western/Clark's grebe	4	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	0-49	Passerine	white-crowned sparrow	25	no	
9/27/12	FALL	Provo Airport Dike	Provo Bay	12:25	14:15	500-999	Waders	white-faced ibis	7	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	American goldfinch	2	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	50-99	Passerine	American robin	23	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	Audubon's warbler	6	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	100-499	Passerine	belted kingfisher	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	100-499	Passerine	black-billed magpie	4	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	50-99	Passerine	blackbird sp.	12	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	black-capped chickadee	4	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	brown creeper	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	cedar waxwing	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	chipping sparrow	4	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	50-99	Passerine	European starling	2	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	Lincoln's sparrow	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	100-499	Passerine	northern flicker	6	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	orange-crowned warbler	6	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	ruby-crowned kinglet	3	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	song sparrow	4	no	
				10:15	11:17	0-49		warbler sp.			One of these birds is 85-90% likely to be Tennessee Warbler, looked superficially like an OCWA, but smaller than the OCWA I saw today, perhaps 5" or less; relatively short tail; dark line through eye, uniformly drab greenish-gray above; relatively small bill, but too far to see fine structural details, i.e., how sharp and pointed it was; pale undertail
9/27/12	FALL	Provo River Parkway	Provo R. Parkway				Passerine		2	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	white-crowned sparrow	13	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	10:15	11:17	0-49	Passerine	Wilson's warbler	3	no	
				10:15	11:17	0-49		yellow warbler			Record late bird (for my personal observation history; most of these are gone by early September; pale muted yellow above, pale muted gray streaks, pink legs; silent; no eye-ring, no eystripe, back and upperparts muted yellow; undertail pale yellow with dark
9/27/12	FALL	Provo River Parkway	Provo R. Parkway				Passerine		1	no	Feeding on Russian olive fruits.
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	50-99	Passerine	American robin	73	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	0-49	Passerine	Audubon's warbler	6	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	0-49	Passerine	barn swallow	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	100-499	Passerine	black-billed magpie	3	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	0-49	Passerine	black-capped chickadee	6	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	1,000-3,000	Waterfowl	domestic duck	19	no	Includes one domestic goose; Begging; walked up from river bank towards me when I
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	50-99	Passerine	European starling	12	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	100-499	Passerine	northern flicker	2	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	0-49	Passerine	orange-crowned warbler	1	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	500-999	Raptors	red-tailed hawk	1	no	Adult dark morph.
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	0-49	Passerine	ruby-crowned kinglet	3	no	
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	>3,000	Cranes	sandhill crane	1	yes	Flyover; low.
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	100-499	Raptors	sharp-shinned hawk	2	yes	Hatch-years; soaring together.

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/27/12	FALL	Provo River Parkway	Provo R. Parkway	14:35	15:19	500-999	Waterfowl	wood duck	2	no	Male was probably/possibly domestic mix; begging, behaved as did domestic goose and domestic mallards; male may have been non-pure hybrid with domestic mallard?; paired
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	American goldfinch	4	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Raptors	American kestrel	3	no	Includes two males
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	American pipit	4	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	50-99	Passerine	American robin	3	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Passerine	black-billed magpie	5	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	50-99	Passerine	blackbird sp.	7	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	cedar waxwing	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	chipping sparrow	1	no	Heard "tset" call note only, could not find/did not see.
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	500-999	Waterfowl	dabbling duck sp.	5	no	Flushed from canal.
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	dark-eyed junco	15	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Doves	dove sp.	2	no	Mean of mourning dove and EUCD mass.
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Doves	Eurasian collared-dove	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	50-99	Passerine	European starling	137	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	house finch	70	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	50-99	Shorebirds	killdeer	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	marsh wren	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Doves	mourning dove	12	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	100-499	Passerine	northern flicker	6	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	500-999	Raptors	red-tailed hawk	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	1,000-3,000	Grouse	ring-necked pheasant	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	>3,000	Cranes	sandhill crane	2	no	Flushed from Bunnell Farms field, first property north of City of Provo fields.
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	song sparrow	3	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	sparrow sp.	2	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	50-99	Passerine	western meadowlark	1	no	
10/17/12	FALL	PRDRP Wetlands	East side	10:36	11:36	0-49	Passerine	white-crowned sparrow	7	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Raptors	American kestrel	1	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Passerine	black-billed magpie	8	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	0-49	Passerine	black-capped chickadee	6	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	0-49	Passerine	house finch	3	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Gulls	Larus sp.	1	yes	F/O. Utah Lake.
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	0-49	Passerine	marsh wren	4	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Passerine	northern flicker	3	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Raptors	northern harrier	1	no	Brown.
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	500-999	Raptors	red-tailed hawk	1	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	50-99	Passerine	red-winged blackbird	105	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	100-499	Raptors	sharp-shinned hawk	1	no	HY, probably female. Attended by BBMA.
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	0-49	Passerine	song sparrow	2	no	
10/17/12	FALL	PRDRP Wetlands	North end	15:02	15:45	0-49	Passerine	white-crowned sparrow	3	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	500-999	Passerine	American crow	1	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	100-499	Raptors	American kestrel	1	no	Female
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	50-99	Passerine	American robin	1	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	100-499	Passerine	black-billed magpie	11	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	50-99	Passerine	blackbird sp.	5	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	0-49	Passerine	dark-eyed junco	1	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	50-99	Passerine	European starling	13	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	100-499	Raptors	northern harrier	1	no	Adult male. Hunting fields north and south of North Boat Harbor Drive.
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	50-99	Passerine	western meadowlark	1	no	
10/17/12	FALL	PRDRP South End	South end	12:37	13:03	0-49	Passerine	white-crowned sparrow	23	no	
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	100-499	Raptors	American kestrel	1	no	Eating unknown prey. Possibly the bird seen from North Boat Harbor Dr.
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	50-99	Passerine	American robin	3	no	
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	50-99	Passerine	European starling	10	no	
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	0-49	Passerine	ruby-crowned kinglet	1	no	
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	0-49	Passerine	song sparrow	3	no	
10/17/12	FALL	PRDRP South End	South end	14:02	14:24	0-49	Passerine	sparrow sp.	1	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	50-99	Passerine	American robin	15	no	Feeding in Russian Olives.
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	Audubon's warbler	1	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	100-499	Passerine	black-billed magpie	8	no	Harassing female American kestrel that was counted on previous segment.
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	black-capped chickadee	2	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	500-999	Terns	Caspian tern	2	yes	F/O Utah Lake.
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	dark-eyed junco	1	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	downy woodpecker	1	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	50-99	Passerine	European starling	170	no	Flock of 50 feeding in Russian Olives.
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	house finch	2	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	marsh wren	3	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	100-499	Passerine	northern flicker	2	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	500-999	Raptors	red-tailed hawk	2	no	Includes one dark morph adult.
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	song sparrow	1	no	
10/17/12	FALL	PRDRP South End	South end	14:38	15:02	0-49	Passerine	white-crowned sparrow	4	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Grebe	western/Clark's grebe	12	no	Birds visible in Provo Bay that can only be detected and identified through a spotting
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Rails & coots	American coot	21	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	American goldfinch	1	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	American pipit	3	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Passerine	American robin	10	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Passerine	American robin	50	yes	F/O headed west-northwest across Provo Bay to undetermined location? Flying at airplane
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	>3,000	Pelicans & Cormorants	American white pelican	1	yes	F/O headed south-southwest from Utah Lake across marshes to Provo Bay
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	>3,000	Pelicans & Cormorants	American white pelican	129	no	foraging in Provo Bay.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	Audubon's warbler	11	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Passerine	black-billed magpie	3	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Passerine	blackbird sp.	198	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	black-capped chickadee	6	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Terns	Caspian tern	7	yes	Five headed south-southeast towards Provo Bay; 3 close enough to see "Frosted" caps, coming off Utah Lake, two flying over airport.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Waterfowl	dabbling duck sp.	5	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Waterfowl	dabbling duck sp.	30	yes	flock F/O low over marsh.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	3	no	Includes 2 birds visible in Provo Bay that can only be detected and identified through a
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Waterfowl	duck sp.	55	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Grebe	eared grebe	9	no	Includes 6 birds in Provo Bay that can only be detected and identified through a spotting
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Doves	Eurasian collared-dove	3	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Passerine	European starling	2	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Waders	great blue heron	1	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Waterfowl	green-winged teal	3	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	house finch	1	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Shorebirds	killdeer	5	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Gulls	Larus sp.	8	yes	All F/O.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Shorebirds	long-billed dowitcher	50	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Waterfowl	mallard	7	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	marsh wren	30	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Doves	mourning dove	1	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Passerine	northern flicker	7	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Raptors	northern harrier	1	no	Brown.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Waterfowl	northern shoveler	2	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Grebe	red-necked grebe	1	no	Adult non-breeding. Larger than PBGR, not as large as WEGR/CLGR; darkish crown, pale reddish neck, overall pale but not white. Bill gray, larger than PBGR, not as long or upturned as in WEGR/CLGR. Face pale (tannish?) darker above and behind eye.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Raptors	red-tailed hawk	4	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Passerine	red-winged blackbird	130	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	500-999	Waterfowl	ruddy duck	41	no	Birds visible in Provo Bay that can only be detected and identified through a spotting
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	NA	Shorebirds	shorebird sp.	15	yes	F/O. Medium-sized, probably more LBDO.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Raptors	small falcon sp.	1	no	Mass is mean of Sibley mass for Merlin & kestrel.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Waders	snowy egret	1	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	song sparrow	7	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	sparrow sp.	2	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	50-99	Rails & coots	Virginia rail	1	no	heard only.
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	NA	NA	American coot	2000	no	Large raft far out in Provo Bay
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	NA	NA	waterbird sp.	2010	no	Birds visible in Provo Bay that can only be detected and identified through a spotting
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	1,000-3,000	Grebe	western grebe	2	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	0-49	Passerine	white-crowned sparrow	22	no	
10/17/12	FALL	Provo Airport Dike	Provo Bay	7:46	10:16	100-499	Shorebirds	Wilson's snipe	4	no	
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	500-999	Rails & coots	American coot	9	no	
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	100-499	Raptors	American kestrel	1	no	Male.
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	500-999	Terns	Caspian tern	4	no	Includes two actively fishing in airport canal.
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	100-499	Grebe	pied-billed grebe	18	no	
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	1,000-3,000	Grebe	western grebe	1	no	
10/17/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:46	10:16	50-99	Passerine	western meadowlark	17	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	American goldfinch	2	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	50-99	Passerine	American robin	82	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	100-499	Passerine	belted kingfisher	2	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	100-499	Passerine	black-billed magpie	5	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	black-capped chickadee	13	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	brown creeper	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	Cassin's finch	2	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	dark-eyed junco	6	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	golden-crowned kinglet	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	house finch	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	1,000-3,000	Waterfowl	mallard	26	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	100-499	Passerine	northern flicker	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	NA	Passerine	passerine sp.	20	yes	F/O.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	ruby-crowned kinglet	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	song sparrow	7	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	sparrow sp.	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	spotted towhee	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	warbler sp.	1	no	Tiny, silhouetted, probably an OCWA. Mass is mean of AUWA/OCWA.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	11:46	12:37	0-49	Passerine	white-crowned sparrow	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	500-999	Rails & coots	American coot	4	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	American pipit	1	yes	F/O.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	50-99	Passerine	American robin	15	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	100-499	Passerine	black-billed magpie	8	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	black-capped chickadee	8	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	brown creeper	2	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	dark-eyed junco	2	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	1,000-3,000	Waterfowl	domestic duck	3	no	Mallards.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	1,000-3,000	Waterfowl	mallard	10	no	Includes 8 at west end parking area that do not appear to be domestic.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	100-499	Passerine	northern flicker	5	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	100-499	Grebe	pied-billed grebe	1	no	Seen. In Provo River.
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	ruby-crowned kinglet	1	no	
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	0-49	Passerine	warbler sp.	1	no	H/O. Probably AUWA. Mass is mean of AUWA/OCWA.

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
10/17/12	FALL	Provo River Parkway	Provo R. Parkway	13:13	14:00	500-999	Waterfowl	wood duck	1	no	Molting into adult.
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	100-499	Raptors	American kestrel	2	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	0-49	Passerine	American pipit	1	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	100-499	Passerine	black-billed magpie	3	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	0-49	Passerine	downy woodpecker	1	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	50-99	Passerine	European starling	1700	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	100-499	Passerine	northern flicker	3	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	1,000-3,000	Grouse	ring-necked pheasant	2	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	0-49	Passerine	song sparrow	1	no	
11/8/12	FALL	PRDRP South End	Skipper Bay Dike south end	9:53	10:28	0-49	Passerine	white-crowned sparrow	3	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	American goldfinch	3	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	100-499	Raptors	American kestrel	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	100-499	Passerine	black-billed magpie	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	black-capped chickadee	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	500-999	Gulls	California gull	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	downy woodpecker	2	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	50-99	Passerine	European starling	10	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	house finch	8	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	marsh wren	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	100-499	Passerine	northern flicker	2	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	NA	Raptors	Raptor sp.	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	500-999	Raptors	red-tailed hawk	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	1,000-3,000	Grouse	ring-necked pheasant	1	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	song sparrow	3	no	
11/8/12	FALL	PRDRP Wetlands	Skipper Bay Dike north end	10:28	11:13	0-49	Passerine	sparrow sp.	1	no	
11/8/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:24	9:24	500-999	Rails & coots	American coot	12	no	
11/8/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:24	9:24	500-999	Terns	Caspian tern	1	no	Includes one actively fishing in airport canal.
11/8/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:24	9:24	1,000-3,000	Waterfowl	common merganser	4	no	
11/8/12	FALL	Provo Airport Dike	Airport, Runway and Canal	7:24	9:24	100-499	Grebe	pied-billed grebe	18	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	500-999	Rails & coots	American coot	35	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	American goldfinch	15	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Raptors	American kestrel	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	American pipit	5	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	American/lesser goldfinch	4	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Passerine	black-billed magpie	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	black-capped chickadee	2	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	50-99	Passerine	blackbird sp.	177	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Waterfowl	bufflehead	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	500-999	Terns	Caspian tern	4	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	1,000-3,000	Passerine	common raven	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	500-999	Waterfowl	dabbling duck sp.	129	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Doves	Eurasian collared-dove	14	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	50-99	Passerine	European starling	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	500-999	Waterfowl	gadwall	10	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	1,000-3,000	Waders	great blue heron	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Waterfowl	green-winged teal	2	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Gulls	Larus sp.	45	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Shorebirds	long-billed dowitcher	45	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	1,000-3,000	Waterfowl	mallard	2	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	marsh wren	5	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Passerine	northern flicker	6	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	100-499	Raptors	northern harrier	8	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	1,000-3,000	Waterfowl	northern shoveler	2	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	500-999	Raptors	red-tailed hawk	3	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	50-99	Passerine	red-winged blackbird	370	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	ruby-crowned kinglet	1	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	song sparrow	4	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	1,000-3,000	Grebe	western/Clark's grebe	3	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	white-crowned sparrow	12	no	
11/8/12	FALL	Provo Airport Dike	Provo Bay	7:24	9:24	0-49	Passerine	Audubon's warbler	6	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	100-499	Raptors	Accipiter sp.	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	100-499	Raptors	American kestrel	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	100-499	Passerine	black-billed magpie	7	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	1,000-3,000	Waterfowl	common merganser	30	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	50-99	Passerine	European starling	906	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	100-499	Passerine	northern flicker	5	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	500-999	Raptors	red-tailed hawk	3	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	100-499	Doves	rock pigeon	6	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	0-49	Passerine	song sparrow	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:15	13:47	0-49	Passerine	white-crowned sparrow	6	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	500-999	Rails & coots	American coot	3	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	100-499	Raptors	American kestrel	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	50-99	Passerine	American robin	3	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	0-49	Passerine	black-capped chickadee	10	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	100-499	Grouse	California quail	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	0-49	Passerine	dark-eyed junco	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	50-99	Passerine	European starling	4	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	1,000-3,000	Owls	great horned owl	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	0-49	Passerine	house finch	8	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	100-499	Gulls	Larus sp.	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	1,000-3,000	Waterfowl	mallard	68	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	100-499	Passerine	northern flicker	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	500-999	Raptors	red-tailed hawk	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	0-49	Passerine	white-crowned sparrow	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	13:49	14:40	0-49	Passerine	white-throated sparrow	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	500-999	Rails & coots	American coot	6	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	100-499	Raptors	American kestrel	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	50-99	Passerine	American robin	30	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	100-499	Passerine	black-billed magpie	4	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	black-capped chickadee	10	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	brown creeper	3	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	dark-eyed junco	11	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	1,000-3,000	Waterfowl	mallard	34	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	1,000-3,000	Waterfowl	domestic duck	5	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	100-499	Passerine	northern flicker	4	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	ruby-crowned kinglet	2	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	song sparrow	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	0-49	Passerine	white-crowned sparrow	1	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	500-999	Waterfowl	wood duck	7	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	11:39	12:43	NA	Passerine	woodpecker sp.	2	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	100-499	Raptors	American kestrel	2	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	100-499	Passerine	black-billed magpie	11	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	50-99	Passerine	European starling	800	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	100-499	Passerine	northern flicker	2	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	500-999	Raptors	red-tailed hawk	2	no	
11/8/12	FALL	Provo River Parkway	Provo R. Parkway	12:45	13:10	100-499	Raptors	sharp-shinned hawk	1	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	100-499	Passerine	black-billed magpie	6	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	100-499	Raptors	American kestrel	3	no	Seen simultaneously
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	100-499	Grouse	California quail	12	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	0-49	Passerine	song sparrow	3	no	Singing male
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	100-499	Passerine	northern flicker	5	no	Four near Russian Olive patch; incl. one bird eating Russian Olives.
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	50-99	Passerine	American robin	1	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	0-49	Passerine	black-capped chickadee	7	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	0-49	Passerine	downy woodpecker	1	no	
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	>3,000	Raptors	bald eagle	1	yes	Adult flying north along Utah Lake shore
12/10/12	WINTER	PRDRP South End	Skipper Bay Dike south end	8:13	8:37	100-499	Raptors	northern harrier	1	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	500-999	Raptors	red-tailed hawk	2	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	0-49	Passerine	sparrow sp.	1	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	0-49	Passerine	song sparrow	6	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	0-49	Passerine	black-capped chickadee	4	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	100-499	Passerine	northern flicker	2	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	100-499	Passerine	black-billed magpie	1	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	100-499	Raptors	American kestrel	1	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	100-499	Gulls	Larus sp.	3	yes	Flyovers along lakeshore
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	1,000-3,000	Owls	great horned owl	1	no	Very gray; roosting
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	0-49	Passerine	American pipit	1	no	
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	100-499	Raptors	northern harrier	3	no	brown
12/10/12	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:37	9:24	0-49	Passerine	American goldfinch	16	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Doves	rock pigeon	8	yes	flying over sb on east edge of property.
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Doves	rock pigeon	25	no	Includes 25 racing pigeons (free-flying)
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Raptors	American kestrel	4	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Doves	mourning dove	1	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	>3,000	Raptors	bald eagle	1	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	500-999	Raptors	red-tailed hawk	1	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	50-99	Passerine	European starling	400	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	50-99	Passerine	red-winged blackbird	600	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	0-49	Passerine	dark-eyed junco	12	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	0-49	Passerine	house sparrow	1	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Passerine	northern flicker	5	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	100-499	Passerine	black-billed magpie	2	no	
12/10/12	WINTER	PRDRP Wetlands	Despain ranch	10:30	11:35	1,000-3,000	Waterfowl	mallard	2	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	100-499	Passerine	black-billed magpie	5	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	100-499	Raptors	northern harrier	1	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	0-49	Passerine	horned lark	2	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	NA	Passerine	passerine sp.	5	no	AMRO-sized
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	500-999	Raptors	red-tailed hawk	3	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	50-99	Passerine	red-winged blackbird	400	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	100-499	Passerine	northern flicker	1	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	0-49	Passerine	spotted towhee	1	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	0-49	Passerine	song sparrow	8	no	Includes cell of five feeding in weed patch.
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	0-49	Passerine	white-crowned sparrow	20	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	1,000-3,000	Waterfowl	mallard	7	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	500-999	Raptors	rough-legged hawk	1	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	0-49	Passerine	black-capped chickadee	3	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	100-499	Raptors	American kestrel	1	no	
12/10/12	WINTER	PRDRP South End	South end	11:35	12:34	1,000-3,000	Grouse	ring-necked pheasant	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	500-999	Rails & coots	American coot	29	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	1,000-3,000	Waterfowl	mallard	26	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	100-499	Passerine	black-billed magpie	4	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	American pipit	1	yes	flyover
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	50-99	Passerine	American robin	2	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	100-499	Raptors	American kestrel	2	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	dark-eyed junco	4	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	>3,000	Raptors	bald eagle	1	yes	Low flyover.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	>3,000	Waterfowl	Canada goose	45	yes	Adult; low flyover, 100' above cottonwood canopy, headed WSW.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	100-499	Grouse	California quail	3	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	hermit thrush	1	no	Having meltdown in Russian Olive patch; owl?
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	song sparrow	5	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	50-99	Passerine	hairy woodpecker	1	no	Male
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	downy woodpecker	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	brown creeper	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	0-49	Passerine	ruby-crowned kinglet	2	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	100-499	Doves	mourning dove	5	yes	Flyovers
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	NA	Passerine	passerine sp.	25	yes	Flock; flyover; small.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	1,000-3,000	Waterfowl	domestic duck	65	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	12:35	14:01	100-499	Raptors	northern harrier	1	yes	Female; flyover, low 50' over cottonwoods.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	100-499	Passerine	northern flicker	4	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	500-999	Rails & coots	American coot	11	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	1,000-3,000	Waterfowl	mallard	29	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	50-99	Passerine	American robin	7	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	brown creeper	2	no	Together in one tree; 6 ft apart.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	song sparrow	2	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	black-capped chickadee	6	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	ruby-crowned kinglet	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	100-499	Raptors	northern harrier	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	50-99	Passerine	red-winged blackbird	2,125	yes	Five flocks all flying NORTH.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	downy woodpecker	1	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	100-499	Doves	mourning dove	4	no	
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	0-49	Passerine	dark-eyed junco	15	no	Moving south-southwest through the treetops.
12/10/12	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:01	14:45	500-999	Raptors	red-tailed hawk	1	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Raptors	American kestrel	3	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	500-999	Raptors	rough-legged hawk	1	no	
12/10/12	WINTER	Provo Airport Dike	Airport, Runway and Canal	15:04	16:48	100-499	Raptors	northern harrier	3	no	All observed simultaneously within Provo Airport fence; 2 (male, female) hunting; 1 female perched; presumably same male later observed hunting near east N-S taxiway in Distant; Provo Bay
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Gulls	Larus sp.	31	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Raptors	northern harrier	4	no	All observed simultaneously over Provo Bay.
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	American goldfinch	4	no	
12/10/12	WINTER	Provo Airport Dike	Airport, Runway and Canal	15:04	16:48	500-999	Rails & coots	American coot	12	no	Eleven in one small open (ice-free) patch of water in canal.
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	50-99	Passerine	American robin	400	no	Most feeding and rummaging under leaf litter (under snow) in trees along PAD.
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	American pipit	1	yes	Flyover
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	500-999	Waterfowl	duck sp.	75	no	Distant; Provo Bay
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Passerine	northern flicker	5	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	black-capped chickadee	4	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	marsh wren	1	no	
12/10/12	WINTER	Provo Airport Dike	Airport, Runway and Canal	15:04	16:48	100-499	Grebe	pied-billed grebe	1	no	Hole in ice in Airport Canal
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	white-crowned sparrow	21	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	0-49	Passerine	song sparrow	3	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Raptors	northern harrier	1	no	Adult male flushed from Phragmites (roosting for night?)
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	1,000-3,000	Waders	great blue heron	1	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Passerine	black-billed magpie	4	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Gulls	Larus sp.	3	yes	Flyover
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	50-99	Passerine	Brewer's blackbird	46	no	
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	100-499	Passerine	common grackle	1	no	Adult male
12/10/12	WINTER	Provo Airport Dike	Provo Bay	15:04	16:48	50-99	Passerine	blackbird sp.	150	no	Moving south at dusk
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	50-99	Passerine	European starling	5	no	in trees along Boat Harbor Dr.
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Passerine	black-billed magpie	3	no	flying around fields and trees, calling
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Raptors	American kestrel	1	no	sitting in tree
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	500-999	Raptors	red-tailed hawk	1	no	perched on fencepost
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	0-49	Passerine	song sparrow	1	no	in phragmites along trail
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Passerine	black-billed magpie	1	no	
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	50-99	Passerine	American robin	1	no	
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Passerine	black-billed magpie	3	no	
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Passerine	northern flicker	1	no	foraging on the ground
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Raptors	northern harrier	1	no	male, flying over walkway, looking at the ground
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	0-49	Passerine	song sparrow	1	no	
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	100-499	Passerine	black-billed magpie	3	no	
1/25/13	WINTER	PRDRP South End	Skipper Bay Dike south end	8:15	9:50	0-49	Passerine	downy woodpecker	1	no	female, no red on head
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	European starling	2000	no	in middle of fields
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	American robin	1	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	500-999	Raptors	red-tailed hawk	1	no	on powerpole
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	European starling	200	no	in flight
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	100-499	Passerine	black-billed magpie	2	no	noisy
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	100-499	Passerine	northern flicker	1	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	European starling	200	no	in tree
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	European starling	50	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	50-99	Passerine	European starling	60	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	100-499	Raptors	northern harrier	1	no	brown

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	100-499	Passerine	northern flicker	1	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	100-499	Passerine	black-billed magpie	3	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	0-49	Passerine	downy woodpecker	2	no	
1/25/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	8:15	9:50	0-49	Passerine	black-capped chickadee	2	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	downy woodpecker	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Rails & coots	American coot	1	no	in river
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	American robin	3	no	flushed
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Rails & coots	American coot	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	black-billed magpie	2	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	northern flicker	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	American robin	8	yes	Flyover
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Raptors	red-tailed hawk	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Gulls	Larus sp.	1	yes	Flyover
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	brown creeper	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	black-capped chickadee	7	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	NA	Waterfowl	duck sp.	2	yes	Flyover
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Waterfowl	common goldeneye	3	no	in river, one male, two females
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	northern flicker	2	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	black-capped chickadee	4	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	American robin	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	European starling	10	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	black-billed magpie	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Raptors	rough-legged hawk	1	no	across road in pasture
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	1,000-3,000	Waterfowl	mallard	2	no	male and female
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	500-999	Waterfowl	common goldeneye	2	no	male and female
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Grebe	pied-billed grebe	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	northern flicker	1	yes	Flyover
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	NA	Waterfowl	duck sp.	2	no	mallard hybrids, sleeping on river
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	100-499	Passerine	black-billed magpie	8	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	white-crowned sparrow	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	red-winged blackbird	6	no	foraging in road
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	0-49	Passerine	song sparrow	12	no	large flock
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:15	11:30	50-99	Passerine	American robin	1	no	
1/25/13	WINTER	PRDRP South End	South end	12:10	14:15	100-499	Raptors	northern harrier	1	no	brown
1/25/13	WINTER	PRDRP South End	South end	12:10	14:15	100-499	Passerine	northern flicker	3	no	
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	500-999	Raptors	rough-legged hawk	1	no	
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Waterfowl	mallard	4	no	in flight
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Waterfowl	mallard	2	no	in flight
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	NA	Passerine	passerine sp.	5	no	in flight
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	50-99	Passerine	European starling	150	yes	Flyover
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	0-49	Passerine	song sparrow	1	no	drinking from canal
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	female, flushed
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	100-499	Waterfowl	green-winged teal	4	no	flushed from canal
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	female, flushed
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	0-49	Passerine	song sparrow	1	no	
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Waterfowl	mallard	2	yes	male and female, flyover
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Waterfowl	mallard	30	yes	flyover
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	100-499	Passerine	black-billed magpie	1	no	
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	50-99	Passerine	American robin	3	no	in trees
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	0-49	Passerine	song sparrow	2	no	along canal
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	100-499	Passerine	northern flicker	2	no	
1/25/13	WINTER	PRDRP Wetlands	North end	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	2	no	males, flushed
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Doves	mourning dove	17	no	hysterical
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	3	no	males, flushed
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	1,000-3,000	Waders	great blue heron	1	no	in canal
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	American robin	3	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	7	no	males, flushed
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	>3,000	Cranes	sandhill crane	2	no	heard, did not see
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	male
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	song sparrow	3	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Passerine	black-billed magpie	2	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	European starling	1000	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	American robin	3	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	song sparrow	1	no	in little patch of marsh in canal
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	red-winged blackbird	110	no	in tree with starlings
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Raptors	northern harrier	1	no	gray
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Passerine	black-billed magpie	4	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	song sparrow	1	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	evening grosbeak	2	no	male and female in tree, male calling
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Passerine	northern flicker	1	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	50-99	Passerine	American robin	1	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	dark-eyed junco	2	no	Oregon
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	white-crowned sparrow	1	no	hanging out with juncos
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Shorebirds	Wilson's snipe	1	no	flushed, calling in flight
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	100-499	Raptors	American kestrel	1	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	song sparrow	3	no	
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	downy woodpecker	1	no	in tree, calling, near kestrel
1/25/13	WINTER	PRDRP Wetlands	East side	12:10	14:15	0-49	Passerine	white-crowned sparrow	1	no	
1/25/13	WINTER	PRDRP South End	South end	12:10	14:15	1,000-3,000	Waterfowl	mallard	4	yes	Flyover

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
1/25/13	WINTER	PRDRP South End	South end	12:10	14:15	500-999	Raptors	red-tailed hawk	1	no	dark
1/25/13	WINTER	PRDRP South End	South end	12:10	14:15	1,000-3,000	Waterfowl	mallard	1	yes	male, flyover
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Rails & coots	American coot	1	no	foraging in riffle on river
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	0-49	Passerine	black-capped chickadee	7	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Rails & coots	American coot	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Waterfowl	common goldeneye	1	no	male
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	1,000-3,000	Waterfowl	mallard	2	no	male and female
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Rails & coots	American coot	1	no	diving in river
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	100-499	Passerine	black-billed magpie	5	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	1,000-3,000	Waterfowl	mallard	10	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	100-499	Grebe	pied-billed grebe	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	1,000-3,000	Waterfowl	common merganser	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Raptors	rough-legged hawk	1	yes	light, flying from south
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	50-99	Passerine	American robin	15	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	50-99	Passerine	European starling	9	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	500-999	Rails & coots	American coot	1	no	
1/25/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:15	14:35	0-49	Passerine	house finch	3	no	
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	500-999	Raptors	red-tailed hawk	1	no	perched in tree by entrance
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	100-499	Raptors	American kestrel	1	no	in tree
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	50-99	Passerine	European starling	3	yes	flyover
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	50-99	Passerine	European starling	150	no	flock foraging in ag field east of dike
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	0-49	Passerine	house finch	4	no	
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	100-499	Passerine	northern flicker	1	yes	flyover
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	1,000-3,000	Waterfowl	mallard	1	yes	flyover
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	50-99	Passerine	European starling	50	no	end of the north-south runway on fence
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	50-99	Passerine	American robin	1	no	end of the north-south runway
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	100-499	Passerine	northern flicker	1	no	end of the north-south runway
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	1,000-3,000	Grouse	ring-necked pheasant	2	no	crossing dike on foot
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	100-499	Doves	mourning dove	1	no	on dike road
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	100-499	Raptors	American kestrel	1	no	
1/25/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	14:55	16:00	1,000-3,000	Waders	great blue heron	1	no	flying low over runway, landed on frozen canal
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	0-49	Passerine	house finch	5	no	airport side
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	50-99	Passerine	red-winged blackbird	2	no	heard only, did not see
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	500-999	Raptors	red-tailed hawk	2	no	in ag field east of airport
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	0-49	Passerine	song sparrow	1	no	airport side
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	500-999	Raptors	rough-legged hawk	1	no	in cottonwood on east side of dike road
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	>3,000	Waterfowl	Canada goose	27	no	on airport property, near the old school bus
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	100-499	Raptors	northern harrier	1	no	initially on the ground near the east taxi runway, then flying around over the runways
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	1,000-3,000	Waders	great blue heron	1	no	flying west over airport, landed and stayed on same field as the geese
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	500-999	Raptors	rough-legged hawk	1	no	circling in air over southern end of airport, then perched in a tree on airport property at the southern end of runway 31, then stayed on the ground next to the runway
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	50-99	Passerine	American robin	1	yes	fly over
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	50-99	Passerine	European starling	2	no	in tree at south end of runway
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	0-49	Passerine	song sparrow	1	no	in tree in Provo Bay side next to dike
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	100-499	Raptors	northern harrier	1	no	gray, different from the brown one seen earlier, flying low over grass adjacent to the
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	>3,000	Waterfowl	Canada goose	8	yes	fly over, south end of runway
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	500-999	Raptors	red-tailed hawk	1	no	in tree next to dike on Provo Bay side, flushed
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	>3,000	Waterfowl	Canada goose	8	no	in field next to runway
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	8:30	9:30	>3,000	Waterfowl	Canada goose	1	yes	fly over on airport property, south end of airport
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	50-99	Passerine	American robin	2	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	0-49	Passerine	black-capped chickadee	7	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	0-49	Passerine	dark-eyed junco	15	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	1,000-3,000	Waterfowl	mallard	4	no	in river
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	500-999	Waterfowl	common goldeneye	6	no	in river
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	1,000-3,000	Waterfowl	canvasback	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	50-99	Passerine	red-winged blackbird	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	500-999	Waterfowl	common goldeneye	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	1,000-3,000	Waterfowl	mallard	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	100-499	Passerine	northern flicker	1	no	on pathway
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	100-499	Passerine	black-billed magpie	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	0-49	Passerine	spotted towhee	2	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	1,000-3,000	Waterfowl	mallard	7	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	100-499	Grebe	pied-billed grebe	2	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	50-99	Passerine	red-winged blackbird	50	yes	fly over
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	50-99	Passerine	American robin	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	500-999	Rails & coots	American coot	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	50-99	Passerine	red-winged blackbird	20	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-East	10:20	11:00	0-49	Passerine	house finch	6	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Raptors	American kestrel	1	no	carrying something
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	5	no	in cottonwoods
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	20	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	25	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	8	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Raptors	bald eagle	1	no	adult chasing a GWTE
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	500-999	Raptors	peregrine falcon	1	no	chasing the BAEG
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	green-winged teal	30	no	flying around in tight circles, scared of BAEG and PEFA
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	50	no	in trees by ranch
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Gulls	Larus sp.	2	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Gulls	Larus sp.	16	yes	fly over

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Raptors	northern harrier	1	no	bugging PEFA near osprey platform
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	yes	flying with NOPI
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	1	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Gulls	Larus sp.	14	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	NA	Passerine	passerine sp.	20	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	10	no	making courting gestures on the ground
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	NA	Waterfowl	duck sp.	10	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Raptors	American kestrel	1	no	eating a mouse on a fencepost
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	27	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	3	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	2	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	300	no	along the canal on the northern end of property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	northern flicker	1	no	in tree on northern end
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	1	no	joined group of 10 in marsh
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	flushed from creek
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	500-999	Raptors	peregrine falcon	1	yes	pair flew over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	1	no	in canal
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	green-winged teal	4	no	in canal
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	40	no	in canal at north end of property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	500-999	Waterfowl	northern pintail	12	no	in canal at north end of property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	green-winged teal	20	no	in canal at north end of property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	canvasback	2	no	in canal at north end of property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	green-winged teal	25	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	on canal bank
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	4	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	5	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	Say's phoebe	1	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Gulls	Larus sp.	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	black-billed magpie	1	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	500-999	Waterfowl	American wigeon	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	200	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	2	no	
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	green-winged teal	1400	no	huge flock in marshy area on west side of Despain property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	500-999	Waterfowl	northern pintail	1050	no	huge flock in marshy area on west side of Despain property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	1050	no	huge flock in marshy area on west side of Despain property
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	tundra swan	1	no	with waterfowl group
2/28/13	WINTER	PRDRP Wetlands	North end	11:00	14:00	100-499	Gulls	Larus sp.	25	no	with waterfowl group
2/28/13	WINTER	PRDRP South End	South end	14:00	14:00	100-499	Waterfowl	green-winged teal	200	no	middle of Walker/Horton property in standing water
2/28/13	WINTER	PRDRP South End	South end	14:00	14:00	500-999	Waterfowl	northern pintail	300	no	middle of Walker/Horton property in standing water
2/28/13	WINTER	PRDRP South End	South end	14:00	14:00	1,000-3,000	Waterfowl	mallard	100	no	middle of Walker/Horton property in standing water
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Passerine	black-billed magpie	3	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	0-49	Passerine	song sparrow	1	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	500-999	Raptors	osprey	1	no	on platform
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Passerine	black-billed magpie	2	no	on fence
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Passerine	black-billed magpie	1	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	50-99	Shorebirds	killdeer	1	no	heard only
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Passerine	northern flicker	1	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	50-99	Passerine	hairy woodpecker	1	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	500-999	Waterfowl	northern pintail	6	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	1,000-3,000	Waterfowl	mallard	4	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	1,000-3,000	Waterfowl	mallard	4	no	
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Waterfowl	cinnamon teal	11	no	in canal at north end
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Waterfowl	green-winged teal	1	no	in canal at north end
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	500-999	Waterfowl	gadwall	5	no	in canal at north end
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Waterfowl	green-winged teal	4	no	in canal at north end, on Provo Bay side
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	1,000-3,000	Passerine	common raven	2	yes	fly over
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	100-499	Raptors	American kestrel	1	no	flushed from cottonwoods
2/28/13	WINTER	PRDRP Wetlands	Skipper Bay Dike north end	14:20	15:20	1,000-3,000	Waterfowl	mallard	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	50-99	Passerine	American robin	15	no	flushed from cottonwoods
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Rails & coots	American coot	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	1,000-3,000	Waterfowl	mallard	4	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	lesser scaup	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	0-49	Passerine	dark-eyed junco	2	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	50-99	Passerine	American robin	5	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	0-49	Passerine	black-capped chickadee	1	no	heard
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	gadwall	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	100-499	Grebe	pied-billed grebe	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Rails & coots	American coot	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	common goldeneye	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	northern pintail	3	yes	fly over
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	50-99	Passerine	American robin	9	yes	fly over
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	common goldeneye	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	1,000-3,000	Waterfowl	canvasback	5	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	northern pintail	8	yes	fly over
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Rails & coots	American coot	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	50-99	Passerine	red-winged blackbird	5	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	lesser scaup	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	1,000-3,000	Waterfowl	canvasback	3	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Rails & coots	American coot	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	500-999	Waterfowl	common goldeneye	7	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	100-499	Waterfowl	cinnamon teal	1	no	
2/28/13	WINTER	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:40	16:40	1,000-3,000	Waterfowl	mallard	5	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	1,000-3,000	Waterfowl	mallard	35	no	foraging in field
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	500-999	Waterfowl	northern pintail	4	no	foraging in field
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	500-999	Waterfowl	northern pintail	2	no	foraging in field
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	100-499	Waterfowl	green-winged teal	2	no	foraging in field
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	500-999	Waterfowl	gadwall	2	no	foraging in field
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	1,000-3,000	Waterfowl	mallard	2	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	1,000-3,000	Grouse	ring-necked pheasant	2	no	both male
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	1,000-3,000	Waterfowl	mallard	6	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	0-49	Passerine	song sparrow	6	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	>3,000	Waterfowl	Canada goose	19	yes	fly over
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	100-499	Raptors	American kestrel	1	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	100-499	Passerine	northern flicker	1	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	100-499	Passerine	black-billed magpie	2	no	
2/28/13	WINTER	PRDRP South End	South end	16:30	16:40	500-999	Waterfowl	northern pintail	5	yes	fly over
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	17:00	17:05	>3,000	Waterfowl	tundra swan	2	no	in field near tower
2/28/13	WINTER	Provo Airport Dike	Airport, Runway and Canal	17:00	17:05	>3,000	Waterfowl	Canada goose	14	no	in field near tower
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	3	no	in open water near parking lot, observed from car
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	2	no	in open water near parking lot, observed from car
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	mallard	2	no	in open water near parking lot, observed from car
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	20	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	4	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	33	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	3	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	10	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	42	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waders	great blue heron	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	2	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Raptors	red-tailed hawk	2	no	in tree on other side of creek
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	5	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	song sparrow	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	European starling	30	no	in marsh in phragmites
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	2	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	European starling	4	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Gulls	Larus sp.	7	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	5	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	American robin	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	song sparrow	5	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	5	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	>3,000	Waterfowl	Canada goose	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	American robin	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	6	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	4	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	17	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	4	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	2	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	1	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	American robin	3	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	15	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	6	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	mallard	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	60	no	chattering; flushed farther back into Bay
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	4	no	flew in
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	black-capped chickadee	4	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	song sparrow	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	75	no	flew in, settled farther back
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	5	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Waterfowl	American wigeon	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Shorebirds	killdeer	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	30	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	1000	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	20	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Rails & coots	American coot	70	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	>3,000	Raptors	bald eagle	1	no	subadult, chasing ducks around
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	3	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	mallard	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Waterfowl	gadwall	1	no	male
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	northern shoveler	6	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	northern shoveler	2	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	mallard	2	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	song sparrow	3	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	3	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Gulls	Larus sp.	1	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	>3,000	Waterfowl	Canada goose	3	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Waterfowl	American wigeon	3	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	northern shoveler	3	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Waterfowl	northern pintail	7	no	flushed
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	1,000-3,000	Waterfowl	northern shoveler	5	yes	fly over
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	0-49	Passerine	song sparrow	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	50-99	Passerine	red-winged blackbird	1	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	500-999	Rails & coots	American coot	20	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	green-winged teal	1500	no	
3/19/13	SPRING	Hobble Creek	Hobble Creek	7:30	8:45	100-499	Waterfowl	cinnamon teal	50	no	
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	song sparrow	2	no	singing
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Waterfowl	cinnamon teal	2	no	in canal east of trail
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	northern pintail	100	no	in field east of trail, about 150 m from trail
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	55	no	in field right next to canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	northern pintail	10	no	in field right next to canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	northern flicker	1	no	field side
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	northern pintail	150	no	in field farther east
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	50	no	in field farther east
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	red-winged blackbird	1	no	pasture
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	>3,000	Waterfowl	Canada goose	2	no	pasture
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	1	no	in canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	northern flicker	1	no	
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	marsh wren	1	no	in phrag on side of canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	20	no	in pasture within 30 m of canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Waterfowl	green-winged teal	2	no	in pasture within 30 m of canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	red-winged blackbird	2	no	in trees
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	northern pintail	3	no	circling south end group, landed
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	European starling	1	no	cottonwood
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	2	yes	fly over
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	song sparrow	1	no	Bay side
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	red-winged blackbird	1	no	in trees by canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	spotted towhee	1	no	in trees by canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	American robin	1	no	in trees by canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	black-billed magpie	1	no	on bank of canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Gulls	Larus sp.	1	yes	fly over Bay side
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	>3,000	Waterfowl	Canada goose	33	no	in middle pasture directly south of Despain pasture with cows
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	>3,000	Waterfowl	Canada goose	17	no	flew in and landed during Wetlands/north end survey
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	red-winged blackbird	1	no	trees
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	song sparrow	1	no	Bay side
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	black-billed magpie	1	no	on trail
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Passerine	black-billed magpie	1	no	in tree
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	1	no	male, in canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Shorebirds	killdeer	1	no	on hummock in canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	1,000-3,000	Waterfowl	mallard	1	no	female, in canal
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	gadwall	31	no	in flooded area of pasture next to trail and just south of Despain; about 200 m E of trail
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	500-999	Waterfowl	American wigeon	4	no	in flooded area of pasture next to trail and just south of Despain; about 200 m E of trail
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	0-49	Passerine	song sparrow	1	no	in tree on Bay side
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	100-499	Waterfowl	green-winged teal	35	no	fly over; probably came from pasture
3/19/13	SPRING	PRDRP South End	Skipper Bay Dike south end	9:00	10:30	50-99	Passerine	American robin	1	no	tree
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	6	no	in Despain field; pretty flooded, hardly any birds
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Waterfowl	gadwall	40	no	in Despain field; pretty flooded, hardly any birds
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Waterfowl	American wigeon	2	no	in Despain field; pretty flooded, hardly any birds
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	northern shoveler	4	no	in Despain field; pretty flooded, hardly any birds
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	100-499	Waterfowl	green-winged teal	3	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	4	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	9	no	in Despain field; pretty flooded, hardly any birds
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	2	no	on open water in Bay
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	100-499	Gulls	Larus sp.	1	no	on open water in Bay
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	50-99	Shorebirds	killdeer	1	no	next to canal
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	3	no	in canal
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Rails & coots	American coot	20	no	in canal along fence on north side of Despain cattle pasture
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	2	no	in canal
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	7	no	in pasture in a dry area
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	2	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	100-499	Waterfowl	green-winged teal	12	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	0-49	Passerine	song sparrow	1	no	Bay side
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	7	no	in pasture
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	2	no	pasture
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Waterfowl	American wigeon	320	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Waterfowl	northern pintail	12	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	4	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	100-499	Waterfowl	green-winged teal	10	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	northern shoveler	5	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	1	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	4	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	northern shoveler	20	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	>3,000	Waterfowl	Canada goose	3	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	500-999	Waterfowl	gadwall	10	no	in flooded area south of cottonwood stand on N end, in pasture adjacent to trail
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	50-99	Passerine	red-winged blackbird	12	no	flushed from vegetation
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	50-99	Passerine	red-winged blackbird	1	no	
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	0-49	Passerine	song sparrow	3	no	
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	1,000-3,000	Waterfowl	mallard	2	no	in canal on north end, Bay side
3/19/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	9:00	10:30	50-99	Shorebirds	killdeer	1	no	circling and calling over flooded pasture
3/19/13	SPRING	PRDRP South End	South end	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	in pasture west of road near gate; flushed north
3/19/13	SPRING	PRDRP South End	South end	10:30	13:30	NA	Raptors	raptor sp.	1	no	circling high over south end of pasture east of Despain road; buteo
3/19/13	SPRING	PRDRP South End	South end	10:30	13:30	500-999	Raptors	red-tailed hawk	2	no	circling over southeast Despain/Fisher properties
3/19/13	SPRING	PRDRP South End	South end	10:30	13:30	NA	Waterfowl	duck sp.	20	yes	fly over
3/19/13	SPRING	PRDRP South End	South end	10:30	13:30	1,000-3,000	Waterfowl	mallard	1	no	in flooded area under cottonwoods at bend in the road
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	in field by road bend
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	north in PRDRP wetlands, east side
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	6	no	in pasture east of house north of road and west of bend
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	mallard	3	no	in pasture east of house north of road and west of bend
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Passerine	American robin	1	no	on the fence
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	100-499	Doves	rock pigeon	13	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Passerine	European starling	2	no	in trees by house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Passerine	red-winged blackbird	20	no	in trees by house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	100-499	Waterfowl	cinnamon teal	10	no	in pasture east of cows, north of house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	mallard	9	no	in pasture east of cows, north of house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	in pasture east of cows, north of house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	2	no	in pasture east of cows, north of house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Passerine	red-winged blackbird	1	no	in pasture east of cows, north of house
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Rails & coots	American coot	50	no	in middle, near fence confluence
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	American wigeon	1	no	on open water in middle
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	northern pintail	2	no	on open water in middle
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	redhead	1	no	on open water in middle
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	18	no	on edge of open water in marsh veg
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	tundra swan	3	no	on open water in middle
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	7	no	in northern marsh
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	ruddy duck	1	no	landed in water
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waders	great blue heron	1	no	flushed from north marsh
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	50	no	flushed from north marsh
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Rails & coots	American coot	30	no	in north marsh
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	American wigeon	20	no	flew in, settled
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	100-499	Waterfowl	cinnamon teal	2	no	flushed from north canal
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	1	no	flushed from north canal
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	mallard	6	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	mallard	2	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	2	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	American wigeon	2	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Shorebirds	killdeer	2	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	American wigeon	5	no	flushed
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Cranes	sandhill crane	1	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	50-99	Passerine	red-winged blackbird	2	no	in north end canal
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	150	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	4	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	0-49	Passerine	song sparrow	2	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	American wigeon	20	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	100-499	Waterfowl	green-winged teal	30	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	mallard	4	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	4	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	10	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	500-999	Waterfowl	northern pintail	2	no	flushed off north marsh; went south
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	100-499	Passerine	northern flicker	1	no	
3/19/13	SPRING	PRDRP Wetlands	North end	10:30	13:30	>3,000	Waterfowl	Canada goose	4	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Passerine	black-billed magpie	1	no	in tree on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	50-99	Passerine	red-winged blackbird	11	no	in tree on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	cinnamon teal	4	no	flew in and settled in fenced area
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Waterfowl	Canada goose	13	no	east side middle
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	17	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	1	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	500-999	Rails & coots	American coot	1	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	28	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Doves	mourning dove	1	no	in tree on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Passerine	black-billed magpie	5	no	in tree on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	10	no	middle east side in water
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	10	no	middle east side in water
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	middle east side in water
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	500-999	Waterfowl	American wigeon	5	no	middle east side in water
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waders	great blue heron	2	no	middle east side in water
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	500-999	Waterfowl	northern pintail	2	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	10	no	flushed; east side middle
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	4	no	pasture just north of house; south end of Wetlands area; all flooded on east side

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	4	no	pasture just north of house; south end of Wetlands area; all flooded on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	cinnamon teal	2	no	pasture just north of house; south end of Wetlands area; all flooded on east side
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	15	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	20	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	600	no	flushed from flooded area on east side, resettled mostly on project area to the west
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	northern shoveler	50	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	20	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Waterfowl	Canada goose	6	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	male, flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Cranes	sandhill crane	2	no	flushed from flooded area on east side, resettled on project area to the west
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	13	yes	fly over
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	6	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	50-99	Passerine	European starling	3	no	in tree
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	50-99	Shorebirds	killdeer	2	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	5	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	cinnamon teal	2	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	500-999	Waterfowl	American wigeon	2	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Waterfowl	green-winged teal	10	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Shorebirds	Wilson's snipe	11	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	50-99	Shorebirds	killdeer	2	no	flushed
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Waterfowl	Canada goose	2	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	50-99	Passerine	red-winged blackbird	1	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	0-49	Passerine	sparrow sp.	6	no	
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Waterfowl	mallard	30	no	flushed from flooded cottonwoods area
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	>3,000	Waterfowl	Canada goose	1	no	flushed from flooded cottonwoods area
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	male
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	500-999	Waterfowl	common goldeneye	1	no	male, in canal on east side by himself
3/19/13	SPRING	PRDRP Wetlands	East side	10:30	13:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	4	no	in river
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	black-capped chickadee	6	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	500-999	Waterfowl	common goldeneye	1	no	in river with mallard
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	northern shoveler	1	no	female, in river with mallards
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	2	no	river
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	song sparrow	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	black-capped chickadee	6	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	100-499	Passerine	black-billed magpie	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	50-99	Passerine	American robin	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	1	no	backwater
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	American robin	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	red-winged blackbird	2	no	in tree on south end
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	black-capped chickadee	10	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	marsh wren	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	1,000-3,000	Waterfowl	mallard	2	no	in river
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	song sparrow	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	100-499	Passerine	black-billed magpie	5	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	1,000-3,000	Waterfowl	mallard	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Shorebirds	killdeer	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	100-499	Passerine	black-billed magpie	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	100-499	Gulls	Larus sp.	1	yes	fly over
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	song sparrow	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Shorebirds	killdeer	2	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	song sparrow	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	American robin	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	European starling	1	no	
3/19/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	500-999	Raptors	red-tailed hawk	1	no	in tree along road
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	4	no	loafing on airport field near old school bus
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Waterfowl	green-winged teal	90	no	in the Bay on the far side of the open water
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Waterfowl	northern pintail	6	no	in the Bay on the far side of the open water
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Gulls	Larus sp.	2	no	in the Bay on the far side of the open water
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	0-49	Passerine	black-capped chickadee	3	no	in trees on dike road
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	12	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	0-49	Passerine	black-capped chickadee	2	no	along the dike in the phrag
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	9	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	2	no	on airport, closer to runway but in same general area as the other 4 geese
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	100-499	Raptors	northern harrier	1	no	on ground in airport field, sitting in grass
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	37	no	on airport field at south end of the runway
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Cranes	sandhill crane	2	no	on airport field at south end of the runway
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	23	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	1,000-3,000	Waterfowl	mallard	2	no	in airport canal on south end of runway
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	100-499	Waterfowl	cinnamon teal	2	no	in airport canal on south end of runway
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Waterfowl	bufflehead	1	no	in Bay, at the south end of the runway
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	2	no	
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Grebe	pied-billed grebe	1	no	
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	50-99	Shorebirds	killdeer	1	no	in airport field near geese
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	0-49	Passerine	marsh wren	1	no	
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Raptors	northern harrier	1	no	
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	4	no	in Bay

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	1,000-3,000	Waterfowl	mallard	2	no	in wet area at south end of runway
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	2	no	flew in, settled with other geese
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	1	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	NA	Passerine	passerine sp.	5	yes	fly over
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	2	no	airport, adjacent to runway
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	1,000-3,000	Waterfowl	mallard	2	no	flushed from canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	100-499	Grebe	pied-billed grebe	1	no	canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	100-499	Waterfowl	green-winged teal	1	no	canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	500-999	Rails & coots	American coot	1	no	canal
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	1	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Gulls	Larus sp.	1	yes	fly over over Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	3	no	in airport canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	1,000-3,000	Waterfowl	snow goose	1	no	in airport canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	1,000-3,000	Waterfowl	mallard	1	no	in airport canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	500-999	Rails & coots	American coot	1	no	in airport canal
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	1	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	500-999	Waterfowl	redhead	1	no	in airport canal
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	>3,000	Waterfowl	Canada goose	7	no	on airport field in southwest corner
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	500-999	Rails & coots	American coot	1	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Waterfowl	cinnamon teal	1	no	in Bay
3/19/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	15:40	16:40	500-999	Rails & coots	American coot	5	no	airport canal
3/19/13	SPRING	Provo Airport Dike	Provo Bay	15:40	16:40	100-499	Waterfowl	green-winged teal	6	no	in Bay next to lake
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	>3,000	Waterfowl	Canada goose	2	no	on south dike
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Raptors	osprey	1	no	gathering nesting material
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Waterfowl	mallard	3	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	song sparrow	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	red-winged blackbird	49	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	white-crowned sparrow	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Raptors	red-tailed hawk	1	no	flushed from tree on south side
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	American robin	3	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Doves	mourning dove	1	no	flushed
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Waterfowl	mallard	2	no	both male
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	song sparrow	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Gulls	Larus sp.	1	yes	flyover
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Rails & coots	American coot	56	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	>3,000	Waterfowl	Canada goose	11	yes	flyover, honking
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Waterfowl	mallard	1	yes	flyover
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	song sparrow	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Raptors	red-tailed hawk	1	yes	coming from Bay
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Shorebirds	black-necked stilt	2	yes	flyover
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Waders	great blue heron	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Waterfowl	American wigeon	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Rails & coots	American coot	56	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Waterfowl	blue-winged teal	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Waterfowl	cinnamon teal	4	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Shorebirds	American avocet	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Waterfowl	gadwall	17	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	song sparrow	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	European starling	8	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	>3,000	Waterfowl	Canada goose	6	yes	flyover
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	downy woodpecker	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Waterfowl	green-winged teal	11	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Waterfowl	blue-winged teal	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	American robin	5	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	red-winged blackbird	10	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	0-49	Passerine	marsh wren	8	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	500-999	Waterfowl	gadwall	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Passerine	yellow-headed blackbird	2	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	1,000-3,000	Waterfowl	mallard	4	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	100-499	Passerine	northern flicker	1	no	
4/24/13	SPRING	Hobble Creek	Hobble Creek	6:30	7:30	50-99	Shorebirds	killdeer	2	no	
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	2	yes	flyover
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Waders	black-crowned night heron	1	no	in vegetation along canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	American robin	1	no	on the dike
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	4	no	in canal, just at southeast corner of airport near school bus
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	violet-green swallow	20	no	on airport fence, in veg along canal, and flying around; minimum number listed
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	bank swallow	6	no	on airport fence, in veg along canal, and flying around; minimum number listed
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	barn swallow	4	no	on airport fence, in veg along canal, and flying around; minimum number listed
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	northern rough-winged swallow	15	no	on airport fence, in veg along canal, and flying around; minimum number listed
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	cliff swallow	6	no	on airport fence, in veg along canal, and flying around; minimum number listed
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	1,000-3,000	Waders	great blue heron	2	no	hanging out with each other and a great egret on the airport side of the canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Waders	great egret	1	no	hanging out with the great blue herons on the airport side of the canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	100-499	Grebe	pied-billed grebe	1	no	in canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	song sparrow	1	no	in vegetation along canal
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	1	no	in Provo Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Grebe	western/Clark's grebe	1	no	in Provo Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Rails & coots	American coot	2	no	in canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	2	no	in canal; swimming

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waders	great blue heron	1	no	in vegetation in Bay; may be nesting
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	3	no	loafing in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	mallard	4	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	yellow-headed blackbird	7	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	100-499	Raptors	American kestrel	1	no	on airport fence
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Waterfowl	Canada goose	2	no	airport, on school bus field
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	song sparrow	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Grebe	western/Clark's grebe	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	1	no	fence along dike
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	American robin	1	no	tree in canal
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	song sparrow	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	white-crowned sparrow	4	no	on dike road
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	100-499	Raptors	northern harrier	1	no	on school bus field, foraging
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	northern shoveler	2	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	yellow-headed blackbird	3	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Waterfowl	Canada goose	3	no	on airport, at the end of the main runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	yellow-rumped warbler	1	no	in tree on dike, airport side
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Waterfowl	Canada goose	4	no	on airport, at the end of the main runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Shorebirds	killdeer	3	no	on airport, at the end of the main runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	European starling	12	no	on airport, at the end of the main runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	yellow-headed blackbird	7	no	on airport, at the end of the main runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	1	no	in tree on dike, airport side
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	100-499	Doves	mourning dove	1	no	on dike fence
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	2	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	marsh wren	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	4	no	way out in the Bay in the open water south of the airport
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Grebe	western grebe	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	marsh wren	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	yellow-headed blackbird	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	yes	flyover, Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	1	yes	flyover, Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	100-499	Grebe	pied-billed grebe	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	2	yes	flyover, Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	American robin	1	no	airport
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	marsh wren	2	no	Bay side
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	11	no	way out in the Bay in the open water south of the airport
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	bank swallow	6	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	violet-green swallow	6	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	red-winged blackbird	2	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	marsh wren	3	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	yellow-headed blackbird	4	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	swallow sp.	50	no	flying around Bay and airport
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	swallow sp.	50	no	flying around Bay and airport
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	northern shoveler	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	American robin	1	no	on dike road
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Shorebirds	killdeer	1	no	on dike road
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	2	no	in dike trees
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	2	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	2	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	mallard	4	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	northern shoveler	3	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	marsh wren	6	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	100-499	Terns	Forster's tern	2	no	flying over airport fence, low and slow
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	6	no	in trees in airport
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Grebe	western/Clark's grebe	4	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	8	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Rails & coots	American coot	5	no	in canal
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Pelicans & Cormorants	American white pelican	2	yes	flyover, Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	50-99	Passerine	yellow-headed blackbird	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	1	no	in canal veg
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	song sparrow	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Waterfowl	mallard	2	yes	flyover, Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Waterfowl	Canada goose	1	no	in airport field, west side
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Cranes	sandhill crane	2	no	in airport field, west side, next to runway
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Raptors	osprey	1	no	sitting on edge of runway, west side, eating something
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	0-49	Passerine	white-crowned sparrow	3	no	trees on airport side
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Rails & coots	American coot	1	no	in canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	1	no	canal
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	500-999	Rails & coots	American coot	5	no	in canal
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	3	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	>3,000	Waterfowl	Canada goose	2	no	on airport field, west side
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	>3,000	Waterfowl	Canada goose	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	red-winged blackbird	1	no	in canal

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/24/13	SPRING	Provo Airport Dike	Airport, Runway and Canal	8:00	9:45	50-99	Passerine	American robin	1	no	airport side
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	0-49	Passerine	black-capped chickadee	4	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	500-999	Rails & coots	American coot	1	no	in Bay
4/24/13	SPRING	Provo Airport Dike	Provo Bay	8:00	9:45	1,000-3,000	Grebe	western/Clark's grebe	12	no	in Utah Lake
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	0-49	Passerine	western kingbird	1	no	on fence by Despain road
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	male, on Despain road
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	100-499	Passerine	black-billed magpie	2	no	on fence line in South End
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	50-99	Passerine	American robin	2	no	south end
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	0-49	Passerine	white-crowned sparrow	2	no	in trees on Despain road
4/24/13	SPRING	PRDRP South End	South end	10:20	14:00	0-49	Passerine	song sparrow	1	no	in trees on Despain road
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	12	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	2	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	2	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	2	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Rails & coots	American coot	2	no	in wet shallow area in bend of Despain road, north of fence
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Passerine	black-billed magpie	2	no	on fence near Despain house
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	red-winged blackbird	30	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	2	no	in trees by house
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	yellow-headed blackbird	1	no	in trees on west side
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	European starling	2	no	in trees on west side
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	yellow-headed blackbird	3	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	2	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	2	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	5	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	NA	Shorebirds	Calidris sp.	2	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	willet	1	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	bank swallow	6	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	red-winged blackbird	8	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	4	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	5	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	24	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	American wigeon	4	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	yellow-headed blackbird	1	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	4	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	violet-green swallow	5	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	2	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	1	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	4	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	song sparrow	1	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	northern rough-winged swallow	6	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Raptors	osprey	2	no	on nesting platform
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	American pipit	24	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	savannah sparrow	1	no	cow pasture
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	greater yellowlegs	3	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	1	no	flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	willet	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	American avocet	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	greater yellowlegs	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	lesser yellowlegs	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	yellow-headed blackbird	3	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	marbled godwit	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Passerine	great-tailed grackle	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Gulls	Franklin's gull	7	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Terns	Caspian tern	2	no	on the ground
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Pelicans & Cormorants	American white pelican	1	no	circling overhead
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	14	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	10	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	20	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	7	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	greater yellowlegs	16	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	marbled godwit	60	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	50	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Rails & coots	American coot	9	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	American wigeon	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	Wilson's phalarope	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	14	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Rails & coots	American coot	78	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	northern rough-winged swallow	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	barn swallow	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	2	no	middle wet area

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	greater yellowlegs	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	6	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	American wigeon	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	1	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	81	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	northern pintail	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	40	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	American wigeon	10	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	46	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	bufflehead	8	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	American avocet	17	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Rails & coots	American coot	600	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	9	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	50	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	20	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	greater scaup	10	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Grebe	eared grebe	12	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waders	white-faced ibis	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	common goldeneye	3	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	redhead	4	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	2	no	middle wet area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	42	no	flushed from north end marsh
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	10	no	flushed from north end marsh
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Rails & coots	American coot	213	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	4	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waders	white-faced ibis	4	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waterfowl	gadwall	3	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	2	no	flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	4	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	green-winged teal	6	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	4	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	barn swallow	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waders	snowy egret	1	no	flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	2	no	near fenced in area
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	3	no	flushed from near canal
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	500-999	Waders	white-faced ibis	1	no	flushed from near canal
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	1	no	near canal
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	song sparrow	1	no	near canal
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	1	no	in canal on bank
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Cranes	sandhill crane	1	no	near canal, flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Cranes	sandhill crane	1	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	>3,000	Waterfowl	Canada goose	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	barn swallow	21	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	5	no	flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Waterfowl	cinnamon teal	2	no	flushed
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	Wilson's snipe	1	no	flushed from north end
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	0-49	Passerine	northern rough-winged swallow	15	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	black-necked stilt	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	100-499	Shorebirds	willet	1	no	flushed from north end
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	50-99	Passerine	American robin	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	2	no	
4/24/13	SPRING	PRDRP Wetlands	North end	10:20	14:00	1,000-3,000	Waterfowl	mallard	1	no	bank of canal on east side
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	4	no	in grove of trees in fenced area
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	2	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Waders	white-faced ibis	3	no	east side middle
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	5	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	150	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Waterfowl	northern pintail	100	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	NA	Waterfowl	duck sp.	100	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	6	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	100-499	Shorebirds	black-necked stilt	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	5	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	4	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Waders	white-faced ibis	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	100-499	Shorebirds	Wilson's snipe	7	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	100-499	Waterfowl	green-winged teal	2	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	2	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	100-499	Waterfowl	cinnamon teal	3	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Rails & coots	American coot	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	9	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Waterfowl	American wigeon	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	northern shoveler	2	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	500-999	Waders	white-faced ibis	2	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	0-49	Passerine	barn swallow	7	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	1	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	1	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	50-99	Passerine	red-winged blackbird	22	no	in trees on south side of cocklebur field
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	100-499	Waterfowl	green-winged teal	2	no	flushed
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	1,000-3,000	Waterfowl	mallard	9	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	>3,000	Waterfowl	Canada goose	2	no	
4/24/13	SPRING	PRDRP Wetlands	East side	10:20	14:00	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	black-capped chickadee	1	no	in trees
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	>3,000	Waterfowl	Canada goose	1	no	field
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	American robin	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	white-crowned sparrow	5	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	yellow-rumped warbler	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	red-winged blackbird	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	on fence
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	>3,000	Waterfowl	Canada goose	4	no	in field
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	4	yes	flyover
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	barn swallow	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	red-winged blackbird	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	mallard	1	no	in canal
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	American robin	3	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	western kingbird	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	yellow-headed blackbird	8	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	downy woodpecker	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	12	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	500-999	Rails & coots	American coot	17	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	mallard	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	mallard	3	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	500-999	Rails & coots	American coot	10	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	3	yes	flyover
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	0-49	Passerine	ruby-crowned kinglet	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	4	no	flushed from canal
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	red-winged blackbird	15	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	50-99	Passerine	yellow-headed blackbird	1	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	mallard	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	100-499	Waterfowl	cinnamon teal	20	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	500-999	Rails & coots	American coot	4	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	northern shoveler	2	no	
4/24/13	SPRING	PRDRP South End	Skipper Bay Dike south end	14:00	15:30	1,000-3,000	Waterfowl	mallard	3	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	0-49	Passerine	barn swallow	2	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	50-99	Passerine	yellow-headed blackbird	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	1,000-3,000	Passerine	common raven	2	no	in tree together
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Waterfowl	cinnamon teal	5	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Waterfowl	cinnamon teal	4	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	0-49	Passerine	marsh wren	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	1,000-3,000	Waterfowl	mallard	1	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	>3,000	Waterfowl	Canada goose	11	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	>3,000	Waterfowl	Canada goose	25	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	>3,000	Waterfowl	Canada goose	17	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	0-49	Passerine	ruby-crowned kinglet	2	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Passerine	black-billed magpie	2	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	500-999	Rails & coots	American coot	9	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	>3,000	Waterfowl	Canada goose	2	yes	flyover
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	1,000-3,000	Waterfowl	northern shoveler	12	no	in open water of lake
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Passerine	northern flicker	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	0-49	Passerine	ruby-crowned kinglet	2	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	0-49	Passerine	bank swallow	3	no	
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	500-999	Rails & coots	American coot	3	no	on lake
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	500-999	Raptors	Swainson's hawk	1	no	on Harbor Drive
4/24/13	SPRING	PRDRP Wetlands	Skipper Bay Dike north end	14:00	15:30	100-499	Raptors	American kestrel	1	no	on Harbor Drive

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Rails & coots	American coot	1	no	on riverbank
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Rails & coots	American coot	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	ruby-crowned kinglet	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	yellow-rumped warbler	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Passerine	black-billed magpie	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	European starling	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	downy woodpecker	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	yellow-rumped warbler	6	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	black-capped chickadee	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	1	yes	flyover
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	European starling	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Passerine	black-billed magpie	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	ruby-crowned kinglet	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Rails & coots	American coot	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	black-capped chickadee	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Doves	mourning dove	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Raptors	northern harrier	1	yes	flying over field by Parkway
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	red-winged blackbird	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Grouse	California quail	2	no	in field just north of Parkway
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	European starling	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Rails & coots	American coot	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	1,000-3,000	Grouse	ring-necked pheasant	1	no	in field
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	black-capped chickadee	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Doves	mourning dove	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	9	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Waterfowl	wood duck	4	no	two pairs, in river
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	dark-eyed junco	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	European starling	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	500-999	Rails & coots	American coot	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	100-499	Grouse	California quail	1	no	in tree on Harbor Drive
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	>3,000	Pelicans & Cormorants	American white pelican	1	yes	flyover
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	European starling	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	0-49	Passerine	song sparrow	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Shorebirds	killdeer	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	red-winged blackbird	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-West	15:45	16:45	50-99	Passerine	American robin	7	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	50-99	Passerine	American robin	7	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	500-999	Rails & coots	American coot	4	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	0-49	Passerine	black-capped chickadee	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	0-49	Passerine	bank swallow	3	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	0-49	Passerine	northern rough-winged swallow	5	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	13	no	one female with 12 ducklings
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	7	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	500-999	Waders	white-faced ibis	20	yes	flyover
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	50-99	Passerine	American robin	9	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	0-49	Passerine	dark-eyed junco	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	50-99	Passerine	American robin	7	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	100-499	Raptors	northern harrier	1	no	sitting on the ground in a field south of Harbor Drive
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	100-499	Passerine	black-billed magpie	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	50-99	Passerine	European starling	2	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	50-99	Passerine	European starling	2	yes	flyover
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	1,000-3,000	Waterfowl	mallard	1	yes	flyover
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	100-499	Raptors	American kestrel	1	no	
4/24/13	SPRING	Provo River Parkway	Provo R. Parkway: Oxbow-East	16:45	17:15	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	American robin	2	no	landed on fencepost
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	barn swallow	10	no	flying around by bridge
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	Bullock's oriole	2	no	in tree near parking lot
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	1,000-3,000	Waders	great blue heron	1	no	flushed from mid-creek, flew north
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	common yellowthroat	1	no	singing
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	swallow sp.	5	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	1,000-3,000	Waterfowl	mallard	1	no	male
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	red-winged blackbird	6	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Passerine	black-billed magpie	3	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Shorebirds	killdeer	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	1,000-3,000	Waterfowl	mallard	2	no	flushed
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	3	no	singing
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	European starling	6	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	American goldfinch	1	no	female
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	western kingbird	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	American robin	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	1,000-3,000	Waterfowl	mallard	1	yes	flyover
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Waterfowl	green-winged teal	6	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Waterfowl	cinnamon teal	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Shorebirds	American avocet	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Shorebirds	killdeer	3	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Shorebirds	spotted sandpiper	5	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	>3,000	Waterfowl	Canada goose	11	no	2 adults, 9 goslings
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Gulls	Larus sp.	2	yes	flyover
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	cedar waxwing	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	willow flycatcher	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	red-winged blackbird	3	no	in tree
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	red-winged blackbird	2	no	in marsh
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	3	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	50-99	Passerine	European starling	5	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Waterfowl	blue-winged teal	2	no	pair
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Doves	mourning dove	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	swallow sp.	30	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Terns	Forster's tern	2	no	foraging aerially
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Shorebirds	black-necked stilt	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	100-499	Passerine	common grackle	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	brown-headed cowbird	2	no	pair in tree in marsh
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	500-999	Rails & coots	American coot	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	yellow warbler	1	no	flying between marsh and trees
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	2	no	one chasing the other
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	marsh wren	2	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	0-49	Passerine	yellow warbler	1	no	singing from snag
5/30/13	SUMMER	Hobble Creek	Hobble Creek	6:15	8:15	>3,000	Loons	common loon	1	no	hanging out alone in a wide spot on the creek
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	8	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Grouse	California quail	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	European starling	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	yellow warbler	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	2	no	in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Bullock's oriole	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Wilson's warbler	1	no	male
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Empidonax sp.	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	European starling	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Western tanager	1	no	male
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	1	no	carrying nest material
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	hummingbird sp.	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	9	no	one adult female with 8 ducklings
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	NA	Waterfowl	duck sp.	1	no	white; probably domestic
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	1	no	male in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Raptors	Cooper's hawk	1	no	juvenile; being mobbed by robins and magpie, trying to catch one
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	4	no	mobbing Cooper's hawk
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Passerine	black-billed magpie	1	no	mobbing Cooper's hawk
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	1	no	flushed
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	1	no	male in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Passerine	black-billed magpie	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	European starling	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	9	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	yellow warbler	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	black-capped chickadee	5	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	7	no	one adult and six pretty old kids
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	European starling	7	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Western tanager	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	1	no	male in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	willow flycatcher	2	no	calling to each other across the river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	black-capped chickadee	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	8	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	1	no	male in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	2	no	pair, flushed from near trail into the river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	4	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	500-999	Waterfowl	wood duck	2	no	pair
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	yellow warbler	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	2	no	pair, in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	willow flycatcher	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	song sparrow	4	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	1	no	male, sleeping in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	5	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	1,000-3,000	Waterfowl	mallard	10	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	500-999	Waterfowl	wood duck	2	no	pair
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	black-capped chickadee	6	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	yellow warbler	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Bullock's oriole	1	no	male, foraging in tree
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	NA	Waterfowl	duck sp.	2	no	in river, probably domestic
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Western tanager	1	no	female
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	red-winged blackbird	4	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	5	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Empidonax sp.	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Bullock's oriole	2	no	male and female
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	American robin	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	50-99	Passerine	European starling	11	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	yellow warbler	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	hummingbird sp.	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	0-49	Passerine	Bullock's oriole	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	8:30	10:30	100-499	Raptors	American kestrel	2	no	sitting on top of Russian olive in pasture south of Harbor Road
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	western kingbird	1	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	savannah sparrow	2	no	on fence
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	red-winged blackbird	4	no	in tree
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	western meadowlark	1	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	female; on Despain road
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	500-999	Raptors	red-tailed hawk	1	no	circling above pasture on southern end
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	Empidonax sp.	1	no	in cottonwood on south side of road near bend
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	American robin	1	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	red-winged blackbird	3	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	western kingbird	2	no	in cottonwood on south side
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	red-winged blackbird	5	no	in cottonwood on south side
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	yellow warbler	1	no	in cottonwood on south side
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	Bullock's oriole	2	no	in cottonwood on south side
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	Bullock's oriole	1	no	singing from nest in cottonwood
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	red-winged blackbird	1	no	south side
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	Bullock's oriole	2	no	females
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	south side, next to barn
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	south side south of cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	western meadowlark	1	no	north side of road in field
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Raptors	American kestrel	1	no	north side
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	500-999	Waders	white-faced ibis	20	yes	flyover, north side
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	American robin	1	no	north side pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	ranch parking lot
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	American robin	1	no	ranch parking lot
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	2	no	ranch parking lot
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	European starling	1	no	ranch parking lot
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	mourning dove	2	no	corrals
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	black-billed magpie	1	no	cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Waterfowl	Canada goose	4	no	flushed from cow pasture by dog
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	2	no	in cottonwoods along south edge of cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	Empidonax sp.	1	no	in cottonwoods along south edge of cow pasture; sitting on high bare branch
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	sparrow sp.	1	no	on fence, clean breast
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	Eurasian collared-dove	1	no	in tree on south side of cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	European starling	4	yes	flyover, cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	black-billed magpie	2	no	on fence
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	common grackle	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	500-999	Raptors	osprey	2	no	on nest platform
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	savannah sparrow	2	no	cow pasture
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	3	no	middle area
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	swallow sp.	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	in northeast section of middle area, still a tiny bit flooded
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	cinnamon teal	1	no	in northeast section of middle area, still a tiny bit flooded
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	in northeast section of middle area, still a tiny bit flooded
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Shorebirds	American avocet	1	no	in northeast section of middle area, still a tiny bit flooded
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	2	no	in northeast section of middle area, still a tiny bit flooded
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	violet-green swallow	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	in northwest section, dry except for a little standing water in ditch
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	cliff swallow	5	no	foraging over northeast section
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	barn swallow	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	swallow sp.	20	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	1	no	north end, on fence of enclosed area
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	3	no	flushed from grass

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	American robin	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Shorebirds	black-necked stilt	1	no	lurking in wet meadow, probably more but can't see them
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	2	no	flushed from wet meadow
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	flushed from wet meadow
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Cranes	sandhill crane	3	no	in marsh on north end, just south of canal, on west side of fence
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	1	no	mobbing SACR
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	4	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	4	no	in enclosure
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	NA	Waterfowl	duck sp.	2	yes	flyover, north end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	2	no	north end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	3	no	flushed from marsh
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Raptors	turkey vulture	2	no	circling above north end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	3	no	along canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	mourning dove	3	no	along canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waders	snowy egret	3	no	in canal on north end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	song sparrow	2	no	in marsh north of canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	European starling	4	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	cinnamon teal	2	no	flushed near canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	common yellowthroat	2	no	one north of canal, one south; singing
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	4	no	little flooded area on north end between canal and enclosure
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	may be on a nest
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	1	no	flushed
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	cinnamon teal	2	no	pair, flushed from canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	NA	Waterfowl	duck sp.	13	no	female, with 12 ducklings, probably mallard
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Shorebirds	killdeer	2	no	flushed from canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Shorebirds	spotted sandpiper	1	no	in canal along bank
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	heard, north end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Raptors	turkey vulture	1	yes	flyover
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	American robin	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	2	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	yellow warbler	2	no	trees on east side
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	warbling vireo	1	no	in trees on east side
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	Empidonax sp.	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	Bullock's oriole	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	yellow warbler	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	4	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	mourning dove	3	no	flushed
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	swallow sp.	5	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	violet-green swallow	12	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	barn swallow	5	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	song sparrow	1	no	canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	mourning dove	1	no	in Russian olive on canal
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Passerine	black-billed magpie	3	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	3	yes	flyover
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	western kingbird	3	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	yellow-headed blackbird	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	>3,000	Pelicans & Cormorants	American white pelican	1	yes	flyover, south end
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	50-99	Passerine	red-winged blackbird	4	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	eastern kingbird	2	no	middle, east side
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	swallow sp.	10	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	100-499	Waterfowl	cinnamon teal	2	no	in wet area under cottonwoods east side - still standing water
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	1,000-3,000	Waterfowl	mallard	2	no	in wet area under cottonwoods east side - still standing water
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	PRDRP Wetlands	North end	11:00	14:00	0-49	Passerine	tree swallow	1	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	100-499	Passerine	black-billed magpie	3	no	in tree
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	50-99	Passerine	American robin	3	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	1,000-3,000	Grouse	ring-necked pheasant	3	no	
5/30/13	SUMMER	PRDRP South End	South end	11:00	14:00	0-49	Passerine	western kingbird	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	50-99	Passerine	American robin	9	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	yellow warbler	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	Empidonax sp.	3	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	1,000-3,000	Waterfowl	mallard	3	no	all male
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	500-999	Waterfowl	wood duck	2	no	pair, in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	50-99	Passerine	European starling	5	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	song sparrow	7	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	barn swallow	2	no	perched in willow by river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	willow flycatcher	1	no	in willow on bank
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	1,000-3,000	Waterfowl	mallard	2	no	in river

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	Bullock's oriole	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	yellow warbler	4	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	brown-headed cowbird	2	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	1,000-3,000	Waterfowl	mallard	2	no	in river
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	500-999	Waterfowl	wood duck	1	no	male
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	0-49	Passerine	ruby-crowned kinglet	1	no	
5/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:20	15:10	50-99	Passerine	American robin	6	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	100-499	Passerine	black-billed magpie	1	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	American robin	1	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	red-winged blackbird	1	no	in canal
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	0-49	Passerine	white-crowned sparrow	1	no	on pathway
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	1,000-3,000	Waterfowl	mallard	1	no	female, flushed
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	yellow-headed blackbird	6	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	100-499	Passerine	common grackle	1	no	roof of bathroom in campground
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	0-49	Passerine	brown-headed cowbird	2	no	chain-link fence
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	0-49	Passerine	western kingbird	3	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	red-winged blackbird	2	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	European starling	5	no	lawn of campground
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	50-99	Passerine	yellow-headed blackbird	4	no	
5/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:30	15:45	1,000-3,000	Waterfowl	mallard	2	no	pair, flew into canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	western kingbird	1	no	foraging in school bus field
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	swallow sp.	2	no	foraging in school bus field
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	red-winged blackbird	1	no	foraging in school bus field
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	eastern kingbird	2	no	
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	yellow-headed blackbird	2	no	
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Doves	mourning dove	3	no	on fence
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	500-999	Rails & coots	American coot	1	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Terns	Forster's tern	1	yes	flying over canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	yellow warbler	1	no	brush along canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Grebe	pied-billed grebe	1	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	brown-headed cowbird	2	no	tree along canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Passerine	black-billed magpie	1	no	on fence
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Waterfowl	cinnamon teal	2	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	>3,000	Waterfowl	Canada goose	8	no	two adults, 6 kids, in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Doves	mourning dove	2	no	trees on dike
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Shorebirds	killdeer	1	no	on dike
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Doves	mourning dove	2	no	on dike
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Waterfowl	cinnamon teal	3	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	yellow-headed blackbird	1	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	1,000-3,000	Waterfowl	mallard	2	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Waterfowl	cinnamon teal	3	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	red-winged blackbird	1	no	veg on canal bank
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Waterfowl	cinnamon teal	1	no	in canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	American robin	2	no	on runway
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	NA	Raptors	raptor sp.	1	no	sitting on field near runway
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	yes	flyover
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	100-499	Terns	Forster's tern	1	yes	flying over canal
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	0-49	Passerine	swallow sp.	1	no	
5/30/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	16:00	17:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	100-499	Waders	snowy egret	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	swallow sp.	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	11	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Rails & coots	American coot	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Terns	Caspian tern	1	no	foraging over Bay
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	1,000-3,000	Waterfowl	mallard	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	marsh wren	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Waders	white-faced ibis	35	no	flushed from marsh, flew northward over airport
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	song sparrow	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	marsh wren	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	6	yes	flyover
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	red-winged blackbird	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Waders	black-crowned night heron	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	3	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	100-499	Terns	Forster's tern	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Rails & coots	American coot	2	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	flushed from marsh
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Raptors	Swainson's hawk	1	yes	flying north over Bay and then airport
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	3	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	American robin	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	yellow warbler	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	>3,000	Pelicans & Cormorants	American white pelican	1	no	in Bay
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	yellow-headed blackbird	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	50-99	Passerine	red-winged blackbird	3	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	1,000-3,000	Grebe	Clark's grebe	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	0-49	Passerine	marsh wren	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	100-499	Doves	mourning dove	1	no	
5/30/13	SUMMER	Provo Airport Dike	Provo Bay	16:00	17:00	500-999	Rails & coots	American coot	1	no	in lake
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	100-499	Grouse	California quail	3	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	American robin	2	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	red-winged blackbird	8	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	western meadowlark	3	no	in mown lawn by road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	marsh wren	1	no	cattails by road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	common yellowthroat	1	no	cattails by road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	1,000-3,000	Grouse	ring-necked pheasant	2	no	mown lawn by road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	savannah sparrow	1	no	on dirt road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	western meadowlark	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	western kingbird	1	no	flew into cottonwoods along road
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	song sparrow	1	no	on fence
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	red-winged blackbird	30	no	foraging in mown area of field on south side
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	savannah sparrow	2	no	on irrigation pipe
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	western meadowlark	1	no	on irrigation pipe
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	Bullock's oriole	2	no	cottonwoods
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	1	yes	flyover
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	house finch	2	no	cottonwoods
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	American robin	2	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	Bullock's oriole	1	no	cottonwoods
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	yellow warbler	1	no	Russian olive
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	1	yes	flyover
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	PRDRP South End	South end	7:00	10:00	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	3	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	blue grosbeak	1	no	along road
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	rock pigeon	1	no	in yard
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	house sparrow	5	no	on ground
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	3	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	Bullock's oriole	1	no	female, chattering angrily from nest in cottonwood in cow pasture
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Passerine	black-billed magpie	5	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	savannah sparrow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	1,000-3,000	Grouse	ring-necked pheasant	2	no	cow pasture
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	6	no	juveniles
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	Bullock's oriole	1	yes	flyover
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	500-999	Raptors	osprey	2	no	one on platform in nest, one on fencepost near nest
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	western meadowlark	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	savannah sparrow	4	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	European starling	5	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	song sparrow	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	savannah sparrow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	>3,000	Cranes	sandhill crane	3	no	east side
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	common yellowthroat	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	1,000-3,000	Grouse	ring-necked pheasant	2	no	female, flushed, east side
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	song sparrow	3	no	trees on east side
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	American robin	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	11	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	brown-headed cowbird	4	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	Bullock's oriole	6	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	yellow warbler	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Passerine	black-billed magpie	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Shorebirds	greater yellowlegs	1	no	north end, flushed
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	yellow warbler	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Shorebirds	killdeer	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Shorebirds	killdeer	5	no	3 adults, 2 babies
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	marsh wren	3	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	barn swallow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	yellow-headed blackbird	4	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Waterfowl	cinnamon teal	4	no	north end
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Waterfowl	cinnamon teal	2	no	canal, flushed
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	northern rough-winged swallow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	3	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Shorebirds	spotted sandpiper	1	no	canal bank
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	song sparrow	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Shorebirds	killdeer	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	eastern kingbird	1	no	fence line
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	100-499	Doves	mourning dove	2	no	flushed, east side
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Shorebirds	spotted sandpiper	1	no	in dry mud area east side middle
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	Bullock's oriole	1	no	trees on east side
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	10	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	Bullock's oriole	1	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	0-49	Passerine	western kingbird	2	no	
6/21/13	SUMMER	PRDRP Wetlands	North end	7:00	10:00	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	cliff swallow	12	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	song sparrow	3	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	western kingbird	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	Bullock's oriole	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	100-499	Shorebirds	American avocet	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	100-499	Passerine	black-billed magpie	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Shorebirds	killdeer	3	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	song sparrow	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	red-winged blackbird	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Shorebirds	spotted sandpiper	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	Brewer's blackbird	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	1,000-3,000	Grouse	ring-necked pheasant	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	western meadowlark	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	barn swallow	10	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	brown-headed cowbird	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	common yellowthroat	1	no	out in Bay
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	swallow sp.	115	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	100-499	Shorebirds	black-necked stilt	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Shorebirds	killdeer	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	100-499	Passerine	northern flicker	2	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	0-49	Shorebirds	spotted sandpiper	1	no	
6/21/13	SUMMER	Hobble Creek	Hobble Creek	10:40	11:40	50-99	Passerine	European starling	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	500-999	Waders	white-faced ibis	20	yes	flyover, flying south over airport to Bay
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	500-999	Terns	Caspian tern	1	no	flying/foraging over canal
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Passerine	red-winged blackbird	3	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	eastern kingbird	4	no	fence line
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	1,000-3,000	Grebe	Clark's grebe	1	no	canal
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Passerine	red-winged blackbird	2	no	fence line
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	canal
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Shorebirds	killdeer	1	no	on dike
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Passerine	red-winged blackbird	3	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	western kingbird	3	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	100-499	Doves	mourning dove	1	no	on fence
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	western kingbird	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	50-99	Passerine	yellow-headed blackbird	1	no	
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	2	no	in canal
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	500-999	Terns	Caspian tern	1	no	plunged into canal
6/21/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:20	13:40	0-49	Passerine	eastern kingbird	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Waders	snowy egret	1	no	far side of Bay at corner, edge of marsh
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	red-winged blackbird	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Waders	white-faced ibis	30	no	may be same ones that flew over airport
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Waders	snowy egret	1	no	on far side of marsh
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Waders	snowy egret	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Shorebirds	American avocet	1	no	with ibis
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	yellow-headed blackbird	4	no	marsh
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	>3,000	Pelicans & Cormorants	American white pelican	1	no	flyover, circling lazily over Bay vegetation
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Terns	Caspian tern	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Raptors	northern harrier	1	no	circling above marsh
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Rails & coots	American coot	1	no	in water
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Waders	great blue heron	1	no	in cattails
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	yellow-headed blackbird	3	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Waders	great blue heron	1	no	also in cattails
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Grebe	Clark's grebe	1	no	in Bay
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	yellow-headed blackbird	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Terns	Caspian tern	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Waders	great blue heron	1	no	sitting on top of dead bulrush
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	red-winged blackbird	8	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	yellow-headed blackbird	4	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	10	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	>3,000	Pelicans & Cormorants	American white pelican	2	no	sitting on mounds of dead bulrush, separately
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	3	no	sitting on mounds of dead bulrush, together
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Rails & coots	American coot	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Grebe	Clark's grebe	4	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Waders	great blue heron	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	500-999	Raptors	osprey	1	yes	flying over Bay
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	yellow warbler	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	American robin	2	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	0-49	Passerine	marsh wren	1	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	50-99	Passerine	European starling	8	no	
6/21/13	SUMMER	Provo Airport Dike	Provo Bay	12:20	13:40	1,000-3,000	Grebe	Clark's grebe	1	no	in Bay
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	>3,000	Waterfowl	Canada goose	7	no	on bank of river
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	NA	Waterfowl	domestic goose	1	no	hanging out with CAGO
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	50-99	Passerine	American robin	7	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	2	no	in river
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	8	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	yellow warbler	9	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	50-99	Passerine	western meadowlark	1	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	song sparrow	7	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	>3,000	Waterfowl	Canada goose	13	no	loafing on riverbank, some juveniles
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	cedar waxwing	4	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	50-99	Passerine	American robin	5	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	2	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	100-499	Doves	mourning dove	2	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	1,000-3,000	Waterfowl	mallard	11	no	10 ducklings and one adult
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:40	0-49	Passerine	song sparrow	2	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	100-499	Passerine	black-billed magpie	1	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	50-99	Passerine	American robin	2	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	barn swallow	2	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	western kingbird	2	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	house sparrow	4	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	1,000-3,000	Waterfowl	mallard	3	no	in flooded pasture area next to road
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	Bullock's oriole	3	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	western kingbird	2	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	50-99	Passerine	red-winged blackbird	1	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	0-49	Passerine	yellow warbler	1	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	50-99	Passerine	American robin	1	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	50-99	Passerine	European starling	1	no	
6/21/13	SUMMER	PRDRP South End	South end	14:00	14:40	50-99	Passerine	western meadowlark	1	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	1,000-3,000	Waterfowl	mallard	8	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	yellow warbler	2	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	1,000-3,000	Grebe	Clark's grebe	1	no	river
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	American robin	11	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	100-499	Doves	mourning dove	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	Bullock's oriole	1	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	1,000-3,000	Waterfowl	mallard	22	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	European starling	5	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	black-capped chickadee	8	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	yellow warbler	6	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	song sparrow	1	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	50-99	Passerine	American robin	7	no	
6/21/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:40	15:30	0-49	Passerine	house sparrow	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	50-99	Passerine	American robin	7	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	100-499	Grouse	California quail	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	100-499	Passerine	black-billed magpie	3	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	50-99	Passerine	European starling	18	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	Bullock's oriole	4	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	50-99	Passerine	red-winged blackbird	11	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	50-99	Shorebirds	killdeer	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	yellow warbler	4	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	brown-headed cowbird	3	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	song sparrow	3	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	50-99	Passerine	yellow-headed blackbird	2	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	1,000-3,000	Waterfowl	mallard	3	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	0-49	Passerine	eastern kingbird	1	no	
6/21/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	15:50	16:50	100-499	Passerine	black-billed magpie	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	50-99	Passerine	European starling	40	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	barn swallow	5	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	savannah sparrow	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	western kingbird	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	Bullock's oriole	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	yellow warbler	3	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	50-99	Passerine	red-winged blackbird	5	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	Bullock's oriole	4	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	common yellowthroat	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	100-499	Doves	mourning dove	1	no	
6/21/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	15:50	16:50	0-49	Passerine	song sparrow	1	no	
7/29/13	SUMMER	Hobble Creek	Hobble Creek	17:45	17:45	500-999	Raptors	Swainson's hawk	1	no	in dirt road by creek
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	500-999	Raptors	osprey	1	no	hovering/flying over dike, canal and airport
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	swallow sp.	3	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	50-99	Passerine	European starling	1	no	airport fence
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	swallow sp.	25	no	in tree, along canal side of dike
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	50-99	Shorebirds	killdeer	7	no	on school bus field
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	500-999	Terns	Caspian tern	1	no	flying/foraging over canal
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	eastern kingbird	1	no	flushed from tree
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	NA	Passerine	passerine sp.	1	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	swallow sp.	2	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	song sparrow	1	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	100-499	Gulls	Larus sp.	1	yes	flyover
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	western kingbird	2	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	100-499	Doves	mourning dove	1	yes	flyover
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	yellow warbler	1	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	100-499	Doves	mourning dove	1	no	
7/29/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	19:15	20:40	0-49	Passerine	eastern kingbird	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Passerine	barn swallow	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	5	no	on mudflat in Bay, foraging
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Gulls	California gull	3	no	on mudflat in Bay, foraging
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Passerine	song sparrow	1	no	tree along dike
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	American avocet	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Gulls	California gull	5	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Gulls	Franklin's gull	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	1,000-3,000	Waterfowl	mallard	1	no	female
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Passerine	hummingbird sp.	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	black-necked stilt	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	3	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Waterfowl	cinnamon teal	10	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Waders	snowy egret	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Gulls	Larus sp.	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	7	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Waders	white-faced ibis	11	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	yellow-headed blackbird	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	American avocet	23	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	black-necked stilt	4	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Waders	white-faced ibis	10	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	killdeer	9	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	1,000-3,000	Waterfowl	mallard	10	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Terns	Caspian tern	1	no	eating on mudflat
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	Wilson's phalarope	10	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Shorebirds	spotted sandpiper	1	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	European starling	9	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Shorebirds	lesser yellowlegs	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Waterfowl	cinnamon teal	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	yellow-headed blackbird	3	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Passerine	barn swallow	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Waders	white-faced ibis	15	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Waders	white-faced ibis	41	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	black-necked stilt	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	1,000-3,000	Waterfowl	mallard	14	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Gulls	Larus sp.	2	yes	flyover
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Shorebirds	American avocet	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	0-49	Passerine	swallow sp.	200	no	flying/foraging over Bay
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Rails & coots	American coot	1	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	red-winged blackbird	3	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	1,000-3,000	Waterfowl	mallard	8	no	2 adults and 4 juveniles
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	>3,000	Pelicans & Cormorants	American white pelican	2	no	on a clump of veg in Bay
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Waders	snowy egret	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	100-499	Gulls	Larus sp.	1	yes	flyover
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	1,000-3,000	Waterfowl	mallard	2	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	500-999	Waders	white-faced ibis	25	no	
7/29/13	SUMMER	Provo Airport Dike	Provo Bay	19:15	20:40	50-99	Passerine	red-winged blackbird	2	no	
7/29/13	SUMMER	PRDRP South End	South end	20:45	20:45	500-999	Raptors	Swainson's hawk	1	no	on powerpole on road
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	500-999	Waders	white-faced ibis	1	yes	flyover
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	50-99	Passerine	European starling	1	yes	flyover
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	0-49	Passerine	barn swallow	4	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	100-499	Passerine	black-billed magpie	13	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	0-49	Passerine	song sparrow	1	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	0-49	Passerine	western kingbird	3	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	50-99	Passerine	European starling	8	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	50-99	Passerine	European starling	45	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	50-99	Passerine	European starling	150	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	50-99	Passerine	western meadowlark	1	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	100-499	Raptors	American kestrel	1	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	100-499	Grouse	California quail	1	no	
7/30/13	SUMMER	PRDRP South End	South end	6:30	9:30	500-999	Raptors	red-tailed hawk	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	>3,000	Cranes	sandhill crane	3	no	middle, east side
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	western kingbird	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	9	yes	flyover
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	30	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Passerine	black-billed magpie	4	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Doves	rock pigeon	3	no	on roof
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	12	no	flushed from yard
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	22	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Passerine	black-billed magpie	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	house sparrow	1	no	on shed
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	50	no	flushed from cottonwoods
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	western kingbird	5	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	western meadowlark	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	500-999	Raptors	osprey	2	no	in nest
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	European starling	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	barn swallow	14	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	barn swallow	25	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	yellow-headed blackbird	12	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Raptors	American kestrel	2	no	on pole
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	marsh wren	16	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	common yellowthroat	7	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	song sparrow	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	1,000-3,000	Waders	great blue heron	1	yes	flyover
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	red-winged blackbird	5	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	common yellowthroat	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	marsh wren	11	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	50-99	Passerine	yellow-headed blackbird	5	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	western kingbird	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	song sparrow	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	1,000-3,000	Waterfowl	mallard	1	no	female, in canal
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	barn swallow	5	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	500-999	Raptors	red-tailed hawk	1	no	north of canal, just within project area boundary
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	1,000-3,000	Waders	great blue heron	2	no	north of canal, just within project area boundary
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	song sparrow	8	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Passerine	black-billed magpie	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	yellow warbler	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Doves	mourning dove	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Passerine	black-billed magpie	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	500-999	Waders	white-faced ibis	2	yes	flyover
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	100-499	Raptors	northern harrier	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	common yellowthroat	2	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	barn swallow	4	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	black-chinned hummingbird	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	0-49	Passerine	western kingbird	1	no	
7/30/13	SUMMER	PRDRP Wetlands	North end	6:30	9:30	500-999	Raptors	Swainson's hawk	1	no	in cottonwoods
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	1,000-3,000	Waterfowl	mallard	5	no	on riverbank
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	0-49	Passerine	black-capped chickadee	6	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	500-999	Waterfowl	wood duck	3	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	100-499	Doves	mourning dove	3	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	100-499	Grouse	California quail	7	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	0-49	Passerine	yellow warbler	4	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	1,000-3,000	Waterfowl	mallard	4	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	1,000-3,000	Waterfowl	domestic duck	1	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	0-49	Passerine	song sparrow	2	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	0-49	Passerine	American goldfinch	1	no	drinking out of river
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	0-49	Passerine	black-chinned hummingbird	1	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	9:50	10:30	50-99	Passerine	American robin	1	no	
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	0-49	Passerine	lazuli bunting	2	no	
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	0-49	Passerine	house finch	4	no	
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	0-49	Passerine	western kingbird	1	no	
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	0-49	Passerine	house sparrow	3	no	
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	>3,000	Pelicans & Cormorants	American white pelican	1	no	flyover, circling over west end of Parkway trail
7/30/13	SUMMER	PRDRP South End	South end	9:50	10:30	1,000-3,000	Raptors	turkey vulture	1	no	flyover, circling over west end of Parkway trail
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	100-499	Passerine	black-billed magpie	2	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	0-49	Passerine	black-capped chickadee	2	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	100-499	Passerine	black-billed magpie	5	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	100-499	Doves	mourning dove	3	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	0-49	Passerine	western kingbird	1	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	50-99	Passerine	European starling	200	no	
7/30/13	SUMMER	PRDRP South End	South end	10:30	11:15	100-499	Doves	mourning dove	3	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:30	11:15	1,000-3,000	Waterfowl	mallard	10	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:30	11:15	100-499	Passerine	black-billed magpie	3	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:30	11:15	0-49	Passerine	black-capped chickadee	8	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:30	11:15	0-49	Passerine	cedar waxwing	6	no	
7/30/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	10:30	11:15	50-99	Passerine	American robin	2	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	100-499	Passerine	black-billed magpie	2	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	0-49	Passerine	barn swallow	2	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	0-49	Passerine	song sparrow	2	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	0-49	Passerine	western kingbird	5	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	50-99	Passerine	American robin	1	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	0-49	Passerine	swallow sp.	20	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	0-49	Passerine	yellow warbler	2	no	
7/30/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	11:30	12:30	50-99	Passerine	European starling	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	swallow sp.	17	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	swallow sp.	25	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	western kingbird	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	Empidonax sp.	3	no	may be western wood peewee
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	yellow warbler	4	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	100-499	Doves	mourning dove	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	eastern kingbird	3	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	50-99	Passerine	American robin	2	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	100-499	Doves	mourning dove	3	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	eastern kingbird	3	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	50-99	Passerine	American robin	2	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	100-499	Doves	mourning dove	3	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	song sparrow	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	common yellowthroat	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	0-49	Passerine	house finch	1	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	50-99	Passerine	European starling	20	no	
7/30/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	11:30	12:30	1,000-3,000	Waterfowl	mallard	3	no	in lake in open water
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	barn swallow	10	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	American goldfinch	4	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	100-499	Passerine	belted kingfisher	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	Empidonax sp.	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	blue grosbeak	2	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	swallow sp.	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	500-999	Raptors	red-tailed hawk	1	no	flew into cottonwood on north side of creek
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	swallow sp.	4	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	50-99	Shorebirds	killdeer	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	common yellowthroat	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	1,000-3,000	Waterfowl	mallard	1	no	in water at west end
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	barn swallow	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	song sparrow	1	no	
8/27/13	SUMMER	Hobble Creek	Hobble Creek	17:55	18:35	0-49	Passerine	swallow sp.	6	no	
8/27/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	18:50	19:30	0-49	Passerine	swallow sp.	12	no	circling about 30-40 ft high
8/27/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	18:50	19:30	50-99	Passerine	red-winged blackbird	1	no	in phrag on bank
8/27/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	18:50	19:30	50-99	Passerine	red-winged blackbird	4	no	
8/27/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	18:50	19:30	0-49	Passerine	northern mockingbird	1	no	foraging on dike road
8/27/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	18:50	19:30	1,000-3,000	Grouse	ring-necked pheasant	4	no	on dike
8/28/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:45	13:30	500-999	Waders	white-faced ibis	65	yes	flying south over airport, about 100 m high
8/28/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:45	13:30	1,000-3,000	Waders	great blue heron	1	no	flushed from canal

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
8/28/13	SUMMER	Provo Airport Dike	Airport, Runway and Canal	12:45	13:30	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	flushed from canal
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	50-99	Shorebirds	killdeer	1	no	mudflat
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	>3,000	Cranes	sandhill crane	1	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	0-49	Passerine	swallow sp.	5	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Doves	mourning dove	1	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	50-99	Passerine	red-winged blackbird	30	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Waders	snowy egret	2	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Shorebirds	black-necked stilt	3	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Waterfowl	cinnamon teal	10	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	500-999	Waders	white-faced ibis	21	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Waders	snowy egret	5	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Shorebirds	black-necked stilt	3	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	NA	Waterfowl	duck sp.	50	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	500-999	Rails & coots	American coot	10	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	0-49	Passerine	tree swallow	150	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	500-999	Gulls	California gull	1	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	500-999	Waders	black-crowned night heron	1	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	>3,000	Pelicans & Cormorants	American white pelican	2	yes	coasting over marsh
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	>3,000	Pelicans & Cormorants	American white pelican	36	no	flushed out of marsh by wind
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Shorebirds	American avocet	16	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	100-499	Shorebirds	Yellowlegs sp.	1	no	
8/27/13	SUMMER	Provo Airport Dike	Provo Bay	18:50	19:30	0-49	Passerine	swallow sp.	200	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	500-999	Waders	white-faced ibis	52	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	100-499	Shorebirds	American avocet	75	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	100-499	Shorebirds	black-necked stilt	10	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	50-99	Passerine	Wilson's phalarope	120	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	50-99	Shorebirds	killdeer	6	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	50-99	Passerine	European starling	25	no	
8/28/13	SUMMER	Provo Airport Dike	Provo Bay	12:45	13:30	100-499	Shorebirds	Yellowlegs sp.	4	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Grouse	California quail	2	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	1,000-3,000	Waterfowl	mallard	3	yes	flying over south end of property, going south, maybe 50 feet high
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	barn swallow	2	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	50-99	Shorebirds	killdeer	1	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	500-999	Waders	white-faced ibis	25	yes	flying over north and south end, heading southwest, maybe 100 m high
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	barn swallow	5	yes	flying
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Passerine	black-billed magpie	2	no	cottonwoods
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	50-99	Passerine	European starling	9	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	ruby-crowned kinglet	1	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Passerine	black-billed magpie	2	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	common yellowthroat	2	no	in Russian olive
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	50-99	Passerine	western meadowlark	13	no	flock lined up on irrigation pipe on south end
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Passerine	black-billed magpie	1	no	cottonwoods
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	common yellowthroat	1	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	50-99	Passerine	European starling	100	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	100-499	Doves	rock pigeon	3	no	on shed in yard
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Passerine	black-billed magpie	4	no	in cottonwoods
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	50-99	Passerine	European starling	37	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	0-49	Passerine	yellow warbler	2	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Doves	mourning dove	1	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Raptors	American kestrel	1	no	
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	500-999	Waders	white-faced ibis	1	yes	fly over, going south
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	500-999	Terns	Caspian tern	2	yes	fly over, going southeast
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Doves	rock pigeon	6	yes	fly over, going southeast
8/28/13	SUMMER	PRDRP South End	South end	7:00	9:30	100-499	Passerine	black-billed magpie	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	100-499	Raptors	American kestrel	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	savannah sparrow	3	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Shorebirds	killdeer	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	savannah sparrow	3	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	song sparrow	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	barn swallow	2	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	northern rough-winged swallow	10	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	bank swallow	5	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	swallow sp.	40	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	marsh wren	7	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	1,000-3,000	Grouse	ring-necked pheasant	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	>3,000	Cranes	sandhill crane	2	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	1,000-3,000	Waterfowl	mallard	1	yes	fly over
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	red-winged blackbird	2	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	marsh wren	7	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	swallow sp.	10	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	red-winged blackbird	18	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	barn swallow	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	song sparrow	2	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	marsh wren	9	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	red-winged blackbird	47	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	song sparrow	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	European starling	80	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	yellow-headed blackbird	14	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	red-winged blackbird	7	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	swallow sp.	35	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Rails & coots	sora	1	no	flushed from sedges
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	marsh wren	9	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	1,000-3,000	Waterfowl	mallard	3	no	in canal on north end
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Rails & coots	sora	1	no	calling
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	barn swallow	15	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	50-99	Passerine	red-winged blackbird	200	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	song sparrow	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	house finch	5	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	American goldfinch	5	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	marsh wren	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	yellow warbler	3	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	swallow sp.	17	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	500-999	Raptors	red-tailed hawk	1	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	100-499	Passerine	black-billed magpie	3	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	barn swallow	2	no	
8/28/13	SUMMER	PRDRP Wetlands	North end	7:00	9:30	0-49	Passerine	song sparrow	2	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	barn swallow	11	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	50-99	Shorebirds	killdeer	2	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	500-999	Waders	white-faced ibis	1	yes	fly over
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	500-999	Raptors	Swainson's hawk	1	no	in cottonwood
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	100-499	Passerine	black-billed magpie	4	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	black-capped chickadee	6	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	downy woodpecker	1	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	500-999	Terns	Caspian tern	25	no	on shore of Bay, hysterical
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	100-499	Gulls	Larus sp.	12	no	on shore
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	yellow warbler	1	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	marsh wren	2	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	0-49	Passerine	swallow sp.	4	no	
8/28/13	SUMMER	PRDRP South End	Skipper Bay Dike south end	9:35	11:00	100-499	Doves	mourning dove	2	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	1,000-3,000	Grouse	ring-necked pheasant	1	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Shorebirds	killdeer	1	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Passerine	red-winged blackbird	1	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	marsh wren	4	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	swallow sp.	5	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	song sparrow	3	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	1,000-3,000	Waterfowl	mallard	1	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Shorebirds	killdeer	3	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Shorebirds	spotted sandpiper	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	1,000-3,000	Waterfowl	domestic duck	3	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	NA	Waterfowl	duck sp.	6	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	NA	Shorebirds	peep	15	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Shorebirds	killdeer	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	>3,000	Cranes	sandhill crane	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Shorebirds	killdeer	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Shorebirds	spotted sandpiper	1	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	swallow sp.	10	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	marsh wren	3	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	50-99	Shorebirds	killdeer	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	NA	Shorebirds	peep	1	no	on lake shore, flushed
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	northern rough-winged swallow	12	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	1,000-3,000	Waterfowl	mallard	2	no	on lake shore
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	marsh wren	3	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	yellow warbler	4	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	American goldfinch	14	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	hummingbird sp.	1	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	100-499	Doves	mourning dove	2	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	song sparrow	1	no	
8/28/13	SUMMER	PRDRP Wetlands	Skipper Bay Dike north end	9:35	11:00	0-49	Passerine	swallow sp.	15	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	500-999	Raptors	red-tailed hawk	1	yes	soaring lazily over river
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	1,000-3,000	Waterfowl	mallard	4	no	in river
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	0-49	Passerine	black-capped chickadee	18	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	0-49	Passerine	downy woodpecker	1	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	1,000-3,000	Waterfowl	mallard	4	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	0-49	Passerine	northern rough-winged swallow	22	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	0-49	Passerine	barn swallow	2	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	0-49	Passerine	swallow sp.	25	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	500-999	Waders	white-faced ibis	2	yes	fly over
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-West	11:10	12:00	50-99	Passerine	European starling	25	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	12:00	12:30	0-49	Passerine	black-capped chickadee	4	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	12:00	12:30	0-49	Passerine	Empidonax sp.	1	no	
8/28/13	SUMMER	Provo River Parkway	Provo R. Parkway: Oxbow-East	12:00	12:30	0-49	Passerine	swallow sp.	2	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Raptors	American kestrel	2	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Passerine	northern flicker	2	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	0-49	Passerine	white-crowned sparrow	2	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	0-49	Passerine	song sparrow	3	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	1,000-3,000	Waterfowl	mallard	3	yes	fly over
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Passerine	belted kingfisher	2	no	hovering/foraging
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	500-999	Raptors	red-tailed hawk	2	yes	fly over; soaring above creek on thermal

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Raptors	northern harrier	1	yes	fly over; high, mobbed by unknown passerines
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	NA	Passerine	passerine sp.	3	yes	fly over; high, mobbing northern harrier
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	0-49	Passerine	American goldfinch	3	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	1,000-3,000	Waders	great blue heron	1	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Waterfowl	cinnamon teal	10	no	flushed
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Waterfowl	cinnamon teal	150	no	flushed
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Waterfowl	blue-winged teal	4	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	0-49	Passerine	song sparrow	6	no	
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	50-99	Passerine	blackbird sp.	12	yes	fly over
9/29/13	FALL	Hobble Creek	Hobble Creek	16:50	17:35	100-499	Gulls	Larus sp.	2	no	
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Grebe	eared grebe	1	no	in canal, looks like a juvenile
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Grebe	pied-billed grebe	5	no	in a row on canal
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	1,000-3,000	Pelicans & Cormorants	double-crested cormorant	1	no	in canal
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Raptors	northern harrier	1	no	flying/foraging over airport and canal
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	50-99	Passerine	red-winged blackbird	1	no	in phrag on bank
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Grebe	eared grebe	2	no	in canal
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Grebe	eared grebe	2	no	canal
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	100-499	Grebe	pied-billed grebe	1	no	
9/29/13	FALL	Provo Airport Dike	Airport, Runway and Canal	17:50	19:00	50-99	Passerine	red-winged blackbird	5	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	0-49	Passerine	marsh wren	2	no	in phrag
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	50-99	Passerine	red-winged blackbird	6	yes	fly over
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	0-49	Passerine	barn swallow	5	yes	fly over
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	0-49	Passerine	swallow sp.	200	no	circling over Bay
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Gulls	Larus sp.	1	yes	fly over
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	0-49	Passerine	marsh wren	2	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	500-999	Waders	white-faced ibis	1	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	NA	Waterfowl	duck sp.	29	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Shorebirds	black-necked stilt	2	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Shorebirds	greater yellowlegs	4	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Shorebirds	American avocet	3	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	500-999	Rails & coots	American coot	20	no	out in Bay beyond vegetation
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	NA	Waterfowl	duck sp.	8	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Shorebirds	American avocet	1	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	100-499	Shorebirds	black-necked stilt	2	no	
9/29/13	FALL	Provo Airport Dike	Provo Bay	17:50	19:00	50-99	Shorebirds	killdeer	12	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	warbler sp.	1	no	in top of cottonwood by parking lot
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Raptors	American kestrel	1	no	on fencepost
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Gulls	Larus sp.	1	yes	fly over
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Passerine	red-winged blackbird	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Passerine	American robin	8	yes	fly over
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	Wilson's warbler	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	500-999	Terns	Caspian tern	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Passerine	American robin	3	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	warbler sp.	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	white-crowned sparrow	4	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	1,000-3,000	Grebe	Clark's grebe	10	no	in water in Bay
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	500-999	Terns	Caspian tern	30	no	on shoreline of Bay
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Gulls	Larus sp.	19	no	on shoreline of Bay
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	1,000-3,000	Waterfowl	northern shoveler	6	no	Bay
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Gulls	Franklin's gull	1	no	Bay
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Shorebirds	killdeer	1	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	1,000-3,000	Waterfowl	northern shoveler	5	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	1,000-3,000	Grebe	Clark's grebe	2	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	song sparrow	1	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	100-499	Passerine	northern flicker	1	no	in trees along trail
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Shorebirds	killdeer	8	no	along shoreline
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Passerine	western meadowlark	1	no	near trail
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	1,000-3,000	Waterfowl	mallard	8	no	in water right at shore
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	marsh wren	3	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	1,000-3,000	Waterfowl	northern shoveler	1	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Shorebirds	spotted sandpiper	1	no	shoreline of Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Shorebirds	killdeer	10	no	shoreline of Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Shorebirds	killdeer	7	no	shoreline of Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Shorebirds	killdeer	17	no	shoreline of Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	1,000-3,000	Waterfowl	mallard	6	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	100-499	Shorebirds	American avocet	3	no	shoreline of Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	100-499	Waterfowl	green-winged teal	3	no	Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Shorebirds	killdeer	9	no	flushed
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	NA	Waterfowl	duck sp.	15	no	in Bay
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	marsh wren	3	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	black-capped chickadee	2	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Passerine	red-winged blackbird	9	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	50-99	Passerine	American robin	4	yes	fly over
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	song sparrow	5	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	warbler sp.	1	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	yellow-rumped warbler	8	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	swallow sp.	6	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	violet-green swallow	2	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	black-capped chickadee	6	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	bank swallow	3	no	
9/30/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:20	10:20	0-49	Passerine	yellow-rumped warbler	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Passerine	American robin	4	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	yellow-rumped warbler	8	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	yellow warbler	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	50-99	Passerine	American robin	4	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Passerine	northern flicker	4	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	1,000-3,000	Grouse	ring-necked pheasant	6	no	in pasture
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	downy woodpecker	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	warbler sp.	3	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	0-49	Passerine	ruby-crowned kinglet	1	no	
9/30/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:20	10:20	100-499	Passerine	black-billed magpie	2	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	1,000-3,000	Grouse	ring-necked pheasant	2	no	juveniles, flushed from ditch
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	song sparrow	1	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	500-999	Raptors	osprey	1	yes	fly over
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	savannah sparrow	3	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	white-crowned sparrow	2	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	red-winged blackbird	2	no	cottonwoods on east side
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Passerine	black-billed magpie	1	no	cottonwoods on east side
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	American robin	1	no	cottonwoods on east side
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Raptors	American kestrel	1	no	cottonwoods on north end
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	northern flicker	1	no	cottonwoods on north end
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Gulls	Larus sp.	2	no	circling over north end
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	swallow sp.	30	no	circling over north end
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Gulls	Franklin's gull	2	yes	fly over
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	500-999	Raptors	red-tailed hawk	1	no	north end
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	northern flicker	1	no	north end
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	song sparrow	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Doves	mourning dove	3	no	north end, on fence near house
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	1	no	north end
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	western meadowlark	5	no	flushed
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Doves	mourning dove	2	no	cottonwoods
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	northern flicker	1	no	on shed
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	house sparrow	1	no	on house
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	northern flicker	1	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	yellow-rumped warbler	2	no	cottonwoods
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	warbler sp.	1	no	southern cottonwoods
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	American robin	1	no	southern cottonwoods
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Doves	mourning dove	2	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	western meadowlark	2	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	European starling	20	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	European starling	28	yes	fly over
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	0-49	Passerine	house sparrow	4	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	American robin	2	no	
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Doves	mourning dove	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	European starling	50	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	1	no	on fence of corral
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	Say's phoebe	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	1,000-3,000	Raptors	turkey vulture	2	no	fly over; circling
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	50-99	Passerine	Brewer's blackbird	1	no	cottonwood
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Doves	mourning dove	6	no	cottonwood
9/30/13	FALL	PRDRP South End	South end	10:50	13:10	100-499	Doves	mourning dove	10	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	2	no	on fence
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	swallow sp.	3	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	savannah sparrow	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	1	no	fence
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Gulls	Larus sp.	30	no	fly over; circling overhead
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Gulls	Larus sp.	7	no	fly over; circling overhead
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	swallow sp.	160	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Gulls	Franklin's gull	95	yes	fly over; going south
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	marsh wren	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Gulls	Larus sp.	5	no	circling
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	song sparrow	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	50	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	NA	Waterfowl	duck sp.	75	no	flushed from northern end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	NA	Waterfowl	duck sp.	8	no	flushed from northern end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	>3,000	Cranes	sandhill crane	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	1,000-3,000	Waders	great blue heron	1	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	25	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	35	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	3	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	40	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	40	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	40	no	flushed from north end marsh
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Doves	mourning dove	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	American robin	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	50-99	Passerine	red-winged blackbird	15	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	500-999	Raptors	red-tailed hawk	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	swallow sp.	20	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	northern flicker	1	no	east side
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	house finch	2	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	American goldfinch	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	marsh wren	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	0-49	Passerine	song sparrow	1	no	
9/30/13	FALL	PRDRP Wetlands	North end	10:50	13:10	100-499	Passerine	black-billed magpie	1	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:45	0-49	Passerine	black-capped chickadee	12	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:45	0-49	Passerine	swallow sp.	3	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:45	1,000-3,000	Waterfowl	mallard	8	no	in river
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:45	0-49	Passerine	sparrow sp.	2	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	14:00	14:45	0-49	Passerine	song sparrow	1	no	
9/30/13	FALL	PRDRP South End	South end	14:00	14:45	1,000-3,000	Grouse	ring-necked pheasant	1	no	male
9/30/13	FALL	PRDRP South End	South end	14:00	14:45	500-999	Raptors	red-tailed hawk	1	no	hunting, eating a mouse on a fencepost
9/30/13	FALL	PRDRP South End	South end	14:00	14:45	50-99	Passerine	American robin	1	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:45	15:15	0-49	Passerine	black-capped chickadee	2	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:45	15:15	100-499	Passerine	northern flicker	3	no	
9/30/13	FALL	PRDRP South End	South end	14:45	15:15	1,000-3,000	Grouse	ring-necked pheasant	1	no	male, on road
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:45	15:15	50-99	Passerine	European starling	30	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:45	15:15	0-49	Passerine	black-capped chickadee	1	no	
9/30/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	14:45	15:15	0-49	Passerine	yellow-rumped warbler	5	no	
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	50-99	Passerine	red-winged blackbird	39	no	
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	0-49	Passerine	song sparrow	7	no	
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	100-499	Passerine	northern flicker	3	no	
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	500-999	Raptors	Swainson's hawk	1	no	in tree on north side
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	100-499	Raptors	northern harrier	1	no	
10/20/13	FALL	Hobble Creek	Hobble Creek	16:20	16:50	100-499	Shorebirds	greater yellowlegs	1	no	one injured leg
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	100-499	Passerine	northern flicker	2	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	1,000-3,000	Waterfowl	mallard	3	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	1,000-3,000	Waterfowl	domestic duck	2	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	0-49	Passerine	black-capped chickadee	4	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	50-99	Passerine	American robin	1	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-West	17:00	18:45	50-99	Passerine	European starling	10	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	0-49	Passerine	house finch	12	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	1,000-3,000	Grouse	ring-necked pheasant	1	no	juvenile male
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	100-499	Passerine	northern flicker	2	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	50-99	Passerine	American robin	2	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	50-99	Passerine	European starling	8	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	0-49	Passerine	black-capped chickadee	1	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	50-99	Passerine	European starling	1	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	100-499	Passerine	black-billed magpie	1	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	0-49	Passerine	sparrow sp.	1	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	50-99	Passerine	European starling	17	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	50-99	Passerine	American robin	5	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	0-49	Passerine	downy woodpecker	1	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	100-499	Passerine	black-billed magpie	2	no	
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	100-499	Gulls	Larus sp.	2	yes	fly over
10/20/13	FALL	PRDRP South End	South end	17:00	18:45	100-499	Passerine	northern flicker	1	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	0-49	Passerine	black-capped chickadee	6	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	0-49	Passerine	sparrow sp.	1	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	1,000-3,000	Waterfowl	mallard	9	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	1,000-3,000	Waterfowl	mallard	7	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	1,000-3,000	Waterfowl	mallard	10	no	
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	100-499	Raptors	Accipiter sp.	1	yes	fly over; low and slow
10/20/13	FALL	Provo River Parkway	Provo R. Parkway: Oxbow-East	17:40	18:05	100-499	Passerine	northern flicker	1	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	100-499	Passerine	black-billed magpie	1	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	song sparrow	2	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	black-capped chickadee	4	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	song sparrow	2	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	100-499	Gulls	Larus sp.	2	no	in water of Bay
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	1,000-3,000	Grebe	western/Clark's grebe	1	no	water of Bay
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	100-499	Gulls	Larus sp.	25	no	along shoreline
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	500-999	Waterfowl	duck sp.	10	no	water of Bay
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	50-99	Shorebirds	killdeer	12	no	along shoreline
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	100-499	Doves	mourning dove	1	yes	fly over
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	dark-eyed junco	2	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	song sparrow	3	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	sparrow sp.	2	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	100-499	Passerine	black-billed magpie	5	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	marsh wren	3	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	song sparrow	9	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	spotted towhee	2	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	ruby-crowned kinglet	1	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	black-capped chickadee	3	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	50-99	Passerine	American robin	1	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	100-499	Doves	mourning dove	2	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	marsh wren	1	no	
10/21/13	FALL	PRDRP Wetlands	Skipper Bay Dike north end	8:30	9:50	0-49	Passerine	song sparrow	2	no	

DATE	SEASON	PROJECT AREA	AREA	START TIME	END TIME	SIZE CLASS (Mass)	TAXA GROUP	SPECIES	NUMBER	FLYOVER	NOTES
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	black-capped chickadee	5	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	yellow-rumped warbler	1	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	100-499	Passerine	black-billed magpie	1	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	spotted towhee	1	no	
10/21/13	FALL	PRDRP South End	Skipper Bay Dike south end	8:30	9:50	0-49	Passerine	ruby-crowned kinglet	2	no	
10/21/13	FALL	PRDRP South End	South end	10:10	12:10	100-499	Passerine	black-billed magpie	5	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	American robin	2	no	
10/21/13	FALL	PRDRP South End	South end	10:10	12:10	50-99	Passerine	red-winged blackbird	1000	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	red-winged blackbird	182	no	
10/21/13	FALL	PRDRP South End	South end	10:10	12:10	50-99	Passerine	red-winged blackbird	20	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	500-999	Raptors	red-tailed hawk	1	no	in cottonwoods on border with south end
10/21/13	FALL	PRDRP South End	South end	10:10	12:10	0-49	Passerine	white-crowned sparrow	4	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	western meadowlark	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	song sparrow	3	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	northern flicker	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	black-billed magpie	4	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	European starling	10	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	1,000-3,000	Grouse	ring-necked pheasant	2	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	red-winged blackbird	8	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	marsh wren	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	500-999	Raptors	red-tailed hawk	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	black-billed magpie	7	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	song sparrow	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	American robin	11	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Raptors	American kestrel	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	yellow-rumped warbler	4	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	song sparrow	3	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	ruby-crowned kinglet	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Gulls	Larus sp.	15	no	fly over; circling
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	house finch	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	0-49	Passerine	white-crowned sparrow	2	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	northern flicker	4	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	500-999	Waterfowl	duck sp.	1	yes	fly over
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	500-999	Rails & coots	American coot	50	no	north end pond
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	500-999	Waterfowl	American wigeon	25	no	north end pond
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Raptors	northern harrier	1	no	north end pond
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	50-99	Passerine	red-winged blackbird	5	no	north end pond
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Doves	rock pigeon	2	no	in yard of house
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	northern flicker	1	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Passerine	black-billed magpie	6	no	
10/21/13	FALL	PRDRP Wetlands	North end	10:10	12:10	100-499	Doves	mourning dove	1	no	
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	50-99	Passerine	red-winged blackbird	1	no	
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	500-999	Waterfowl	duck sp.	100	yes	large flock flying low over water in Provo Bay, too far away to identify to species
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	500-999	Waterfowl	duck sp.	10	no	in Bay in water
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	NA	Gulls	gull sp.	35	no	circling over Provo Bay wetlands
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	500-999	Rails & coots	American coot	2	no	
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	100-499	Raptors	northern harrier	2	no	chasing each other over the marsh
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	NA	Shorebirds	shorebird sp.	12	no	probably LBDO, flying in a tight group over the marsh before leaving
10/21/13	FALL	Provo Airport Dike	Provo Bay	12:40	13:30	0-49	Passerine	American goldfinch	60	no	flock along shoreline of lake
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Grebe	pied-billed grebe	1	no	in canal
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	1,000-3,000	Grebe	western/Clark's grebe	1	no	in canal
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Raptors	American kestrel	1	no	on fence
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Passerine	black-billed magpie	5	no	on runway
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Passerine	northern flicker	1	no	
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	500-999	Raptors	red-tailed hawk	1	no	perched at top of cottonwood, light morph juvenile
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	1,000-3,000	Waders	great blue heron	1	no	near runway
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Grebe	pied-billed grebe	8	no	canal
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	1,000-3,000	Waterfowl	mallard	1	no	canal
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	500-999	Rails & coots	American coot	7	no	in canal
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	100-499	Passerine	northern flicker	2	no	
10/21/13	FALL	Provo Airport Dike	Airport, Runway and Canal	12:40	13:30	0-49	Passerine	marsh wren	1	no	