



Final Report

2005 Avian Wetland Surveys at the Monticello Mill Tailings Site

October 2005



U.S. Department
of Energy

Office of Legacy Management

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1.0 Summary

Avian wetland surveys were conducted in the spring and summer of 2005 at the Monticello Mill Tailings Site (MMTS) in order to determine target species for estimating potential risks due to elevated selenium levels. Field surveys were conducted from April 20 through August 29, and two nest studies were conducted in June. Red-winged blackbirds were the most abundant species observed throughout the field season at the wetland locations, and Cliff swallows were the most abundant species observed at the pond.

2.0 Methods

Avian wetland surveys were conducted at MMTS in the spring and summer of 2005 at the three constructed wetland areas and the sediment retention pond. The surveyors were Lisa Horzepa and David Steward (Appendix A).

Surveys were set up and conducted according to the directives set out in the Statement of Work (SOW) provided by the DOE contractor, S.M. Stoller Corp. (S.M. Stoller Corp. 2005). Surveyors met with members of the contractor staff on April 19 to tour the site and set up observation points. There were two observation points at each of the three constructed wetland areas and the sediment retention pond. The observation points were marked in a GPS unit (Table 1). Surveys were begun on the following day and continued bimonthly from May through August, with at least 1 week between field days. Surveys were conducted for 3 hours in the morning and 3 hours in the evening. Morning surveys began approximately ½ hour before sunrise and evening surveys went until approximately dusk. Morning and evening surveys were conducted on the same day, or in the evening and the following morning. At least 15 minutes was spent at each of the eight observation points. To eliminate bias due to time of day, the survey order varied (Table 2). Surveyors, using a data sheet supplied by the contractor (Appendix B), recorded species observed and their relative abundance at each location. The intent of the initial surveys was to identify as many species as possible. Beginning with the second survey in June, focus was placed on those species with moderate to high population abundance recorded during initial surveys.

In addition to the field observations, two nest studies were conducted at each location in accordance with the SOW. Surveyors spent at least 1 hour at each of the three wetland areas and the sediment retention pond. They walked an elliptical transect along the perimeter of the wetland or pond looking for evidence of nesting 10 meters (m) on either side of the transect. These studies were conducted on June 14 and June 27-28 (Table 2). These dates were chosen, through consultation with the Utah Division of Wildlife Resources (Seglund 2005), to coincide with the breeding seasons of the most abundant species observed on the initial surveys. Surveyors recorded on a modified version of the data sheet (Appendix C), nests, eggs, nestlings, and breeding behavior for each species. Breeding was confirmed if nests, eggs, nestlings, recently fledged young, or adults carrying food to or fecal sacs from nests were observed. Breeding was suspected if a pair was observed throughout the breeding season and displayed territorial behavior.

3.0 Results

3.1 Field Observations

Over 65 species of birds were identified during the surveys: 46 at one or more of the wetland areas, 39 at the pond, and 15 at both the wetlands and the pond (Appendix D).

3.1.1 Wetlands

At all three of the wetland areas, Red-winged blackbirds were the most abundant species throughout the field season. They were located throughout each of the wetland locations, perching primarily on vegetation within the wetlands. The approximate boundaries of this vegetation were documented on a map (Appendix E). They used the surrounding dry grasslands and the unvegetated mudflats for foraging. Fledglings were abundant throughout all three locations in July and August. When Wetland 3 was surveyed first in the morning or last in the evening, large mixed flocks were observed perched throughout the vegetation in the wetland and on the fence just east of the wetland. The composition of these flocks varied throughout the field season, always including a high abundance of Red-winged blackbirds and a moderate to high abundance of Brewer's blackbirds. Brown-headed cowbirds were observed in moderate abundance on the first surveys in May and July. European starlings were observed in moderate abundance on the first survey in August. These large flocks were not observed at other times of the morning or evening or at either of the other wetland sites. At all three locations, small numbers of Western meadowlarks were observed on the surrounding dry grasslands throughout the spring and summer. In the spring, small groups of Cinnamon teals were observed in the standing water at all three locations. Turkey vultures were consistently present in low to moderate numbers flying over and roosting on the fence posts north of Wetlands 1 and 2. Sora were consistently detected in all three wetlands throughout the field season. They were rarely seen, but frequently heard in the dense vegetation. Mallards were observed throughout the field season, primarily at Wetland 3. Swallows were observed throughout the spring and summer. Violet-green, Barn, and Cliff swallows were occasionally present in moderate to high abundance. The surveyors' data sheets and field notes provide more detailed information on the results of these surveys (Appendix F, G).

3.1.2 Sediment Pond

At the sediment pond, Cliff swallows were consistently abundant during the surveys, usually flocking with other swallows, primarily Violet-green. They nested in a colony approximately 50 miles downstream from the pond on the south side of the canyon and were observed foraging at the pond and surrounding area. Song sparrows were observed throughout the spring and summer in the willows surrounding and downstream from the pond. A pair of Great horned owls was consistently observed roosting in the canyon wall immediately upstream from the Cliff swallow nests. Other species regularly detected in the vicinity of the pond include American robin, Mallard, and Black-billed magpie. The surveyors' data sheets and field notes provide more detailed information on the results of these surveys (Appendix F, G).

3.2 Field Studies

At MMTS, breeding was confirmed for nine species, and suspected for two species, in 2005 (Appendix D). *additional?*

3.2.1 Wetlands

Breeding of Red-winged blackbirds and Sora was documented at all three wetland areas. During the first nest study on June 14, seven Red-winged blackbird nests were found at Wetland 1, 14 at Wetland 2, and seven at Wetland 3. During the second nest study on June 27-28, 9 nests were found at Wetland 1, 20 at Wetland 2, and 14 at Wetland 3. These nests represent a fraction of the total at each location. The nests were camouflaged in the dense vegetation and could not all be located in 1 hour. Based on territorial behavior and number of adults present at each location it was apparent that nests were located throughout the wetlands, beyond the area that could be searched during perimeter transects. Wetland 3, the largest of the wetlands, was the most active location with the highest abundance of Red-winged blackbirds. It was the most difficult to survey due to the depth of the water at the time of the field studies, but appeared to have a higher abundance of territories than either 1 or 2. Fledged young were observed at all three locations. During the first nest study, two sora nests were found at Wetland 1 and one at each of the other wetlands. During the second nest study one nest was found at Wetland 1. Agitated behavior of adult Sora indicated that nests or young were at all three wetland locations. At Wetland 2, Great-tailed grackles and Song sparrows also bred. A pair of adult Great-tailed grackles was observed delivering food, though a nest was not located, and a Song sparrow nest with nestlings was located on the second nest study and fledged young were observed during surveys in July. *when?* At Wetland 3, an adult Mallard was observed with 6-8 young. A Western meadowlark nest was found in the grasses north of Wetland 3. Killdeer were suspected of breeding based on territorial behavior and distraction displays observed on the southeast side of the wetland. Locations for nests found were marked both in a GPS unit (Table 3) and on a map (Appendix E).

3.2.2 Sediment Pond

A Cliff swallow colony containing approximately 140 nests was located 100 m downstream from the pond on the south side of the canyon. A Song sparrow nest was located in the willows on the north shore of the pond, and there were other territories indicated by territorial behavior (singing) of adults during the breeding season. A recently fledged American robin was observed in the wooded area on the north side of the pond, and an adult Gadwall was observed with two young on the pond. Great horned owls were suspected of breeding due to presence throughout the spring and summer, though young were not observed. Locations for nests found were marked both in a GPS unit (Table 3) and on a map (Appendix E).

4.0 Discussion

No federally listed or state sensitive species (Utah Division of Wildlife Resources 2005) were observed at MMTS in the spring and summer of 2005. Four of the species protected as migratory birds that were selected by the DOE as representative of avian species potentially occurring in San Juan County, Utah, were observed at MMTS during the field season (S.M. Stoller

Corp. 2005). These species are Canada goose, Common snipe, Red-tailed hawk, and Red-winged blackbird. Of these, only the Red-winged blackbird was observed throughout the spring and summer and present in moderate to high abundance. One black-throated gray warbler, a priority species of concern for both Birds of Conservation Concern and Partners in Flight, was observed during the first survey in August at the pond (Parrish, 2002 and U.S. Fish and Wildlife Service 2002).

The primary target species for estimating potential risks due to elevated selenium levels in sediments and surface waters at the three wetland areas should be the Red-winged blackbird. They were the most abundant species and the primary species to breed at all three locations. Sora should also be considered a target species. They were detected throughout the field season and bred at all three wetlands.

The primary target species at the pond should be the Cliff swallow. They were observed in moderate to high abundance throughout the field season, and nest 50 m downstream from the pond. Song sparrows should also be considered a target species. They were detected throughout the spring and summer and nest immediately adjacent to the sediment pond.

5.0 Literature Cited

Parrish, J. R., F. P. Howe, R. E. Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program, Utah Division of Wildlife Resources, Salt Lake City, UT, UDWR Publication Number 02-27. i-xiv + 302 pp.

S.M. Stoller Corp. 2005. Statement of Work for Monticello Avian Wetland Species Monitoring. S.M. Stoller Corp. Grand Junction, CO.

Seglund, Amy, 2005. Personal communication June 3, 2005. Sensitive Species Biologist, Utah Division of Wildlife Resources, South Ogden, UT.

U.S. Fish and Wildlife Service. 2002. Birds of conservation concern 2002. Division of Migratory Bird Management, Arlington, Virginia. 99 pp.

Utah Division of Wildlife Resources. 2005. Utah Sensitive Species List. Utah Division of Wildlife Resources, Utah Conservation Data Center.

Table 1. Field Observation Points for Avian Wetland Surveys at MMTS, 2005

Observation point	UTM (NAD 27)
Wetland 1	a 12 S 646245 4191768
	b 12 S 646193 4191682
Wetland 2	a 12 S 646461 4191812
	b 12 S 646574 4191896
Wetland 3	a 12 S 646976 4191826
	b 12 S 647129 4191806
Pond	a 12 S 649301 4191150
	b 12 S 649336 4191084

Table 2. Summary of Survey Dates, Times and Order for Avian Wetland Surveys at MMTS, 2005.

Date	Time	Survey Order*
04/20/05	0622-0918	3 2 1 P
04/20/05	1635-2015	3 2 1 P
05/02/05	0613-0930	P 1 2 3
05/02/05	1715-2017	P 1 2 3
05/30/05	1747-2100	1 2 3 P
05/31/05	0553-0850	1 2 3 P
06/13/05	1756-2105	P 3 2 1
06/14/05	0552-0855	P 3 2 1
06/14/05 (Nest Study)	1005-1500	1 2 3 P
06/27/05	1800-2100	2 3 1 P
06/27/05 (Nest Study)	1645-1745	1
06/28/05	0543-0845	2 3 1 P
06/28/05 (Nest Study)	0845-0945, 1155-1450	P 2 3
07/10/05	1755-2100	P 1 3 2
07/11/05	0549-0849	P 1 2 3
07/18/05	1750-2052	3 2 1 P
07/19/05	0555-0905	3 2 1 P
08/08/05	1734-2035	P 1 2 3
08/09/05	0623-0930	3 2 1 P
08/28/05	1700-2015	1 2 3 P
08/29/05	0628-0940	1 2 3 P

*1 = Wetland 1, 2 = Wetland 2, 3 = Wetland 3, P = pond

Table 3. Nest Locations for Avian Wetland Surveys at MMTS, 2005.

Nest Study 1, June 14, 2005		
Species	Location *	UTM (NAD 27)
Red-winged blackbird	1	12 S 646216 4191702
Red-winged blackbird	1	12 S 646196 4191703
Red-winged blackbird	1	12 S 646253 4191725
Red-winged blackbird	1	12 S 646258 4191736
Red-winged blackbird	1	12 S 646242 4191738
Red-winged blackbird	1	12 S 646254 4191739
Red-winged blackbird	1	12 S 646242 4191739
Sora	1	12 S 646226 4191732
Sora	1	12 S 646212 4191734
Red-winged blackbird	2	12 S 646476 4191831
Red-winged blackbird	2	12 S 646490 4191832
Red-winged blackbird	2	12 S 646475 4191835
Red-winged blackbird	2	12 S 646477 4191837
Red-winged blackbird	2	12 S 646453 4191841
Red-winged blackbird	2	12 S 646499 4191844
Red-winged blackbird	2	12 S 646544 4191853
Red-winged blackbird	2	12 S 646491 4191853
Red-winged blackbird	2	12 S 646562 4191860
Red-winged blackbird	2	12 S 646501 4191881
Red-winged blackbird	2	12 S 646544 4191883
Red-winged blackbird	2	12 S 646516 4191884
Red-winged blackbird	2	12 S 646506 4191887
Red-winged blackbird	2	12 S 646504 4191894
Sora	2	12 S 646532 4191890
Red-winged blackbird	3	12 S 647052 4191761 ⁺
Red-winged blackbird	3	12 S 647100 4191764
Red-winged blackbird	3	12 S 647064 4191767 ⁺
Red-winged blackbird	3	12 S 647090 4191768
Red-winged blackbird	3	12 S 646992 4191769
Red-winged blackbird	3	12 S 646993 4191787
Red-winged blackbird	3	12 S 647049 4191818
Sora	3	12 S 647075 4191811
Great horned owl	P	12 S 649377 4191085 [±]
Song sparrow	P	12 S 649302 4191139

*1 = Wetland 1, 2 = Wetland 2, 3 = Wetland 3, P = pond

⁺ nest marked from shoreline, actual location 5-10m towards center of wetland

[±] roost location, nesting not confirmed

Nest Study 2, June 27-28, 2005		
Species	Location*	UTM (NAD 27)
Red-winged blackbird	1	12 S 646206 4191699
Red-winged blackbird	1	12 S 646203 4191717
Red-winged blackbird	1	12 S 646211 4191723
Red-winged blackbird	1	12 S 646210 4191728
Red-winged blackbird	1	12 S 646209 4191731
Red-winged blackbird	1	12 S 646233 4191735
Red-winged blackbird	1	12 S 646243 4191740
Red-winged blackbird	1	12 S 646242 4191741
Red-winged blackbird	1	12 S 646238 4191742
Sora	1	12 S 646224 4191708
Red-winged blackbird	2	12 S 646491 4191828
Red-winged blackbird	2	12 S 646487 4191830
Red-winged blackbird	2	12 S 646487 4191831
Red-winged blackbird	2	12 S 646479 4191832
Red-winged blackbird	2	12 S 646475 4191835
Red-winged blackbird	2	12 S 646479 4191837
Red-winged blackbird	2	12 S 646501 4191843
Red-winged blackbird	2	12 S 646454 4191843
Red-winged blackbird	2	12 S 646492 4191854
Red-winged blackbird	2	12 S 646559 4191857
Red-winged blackbird	2	12 S 646556 4191858
Red-winged blackbird	2	12 S 646562 4191862
Red-winged blackbird	2	12 S 646561 4191876
Red-winged blackbird	2	12 S 646513 4191882
Red-winged blackbird	2	12 S 646504 4191884
Red-winged blackbird	2	12 S 646527 4191890
Red-winged blackbird	2	12 S 646534 4191890
Red-winged blackbird	2	12 S 646537 4191897
Red-winged blackbird	2	12 S 646496 4191901
Song sparrow	2	12 S 646557 4191882
Red-winged blackbird	3	12 S 647051 4191765 ⁺⁴
Red-winged blackbird	3	12 S 647029 4191766
Red-winged blackbird	3	12 S 646999 4191773
Red-winged blackbird	3	12 S 646993 4191787
Red-winged blackbird	3	12 S 647085 4191809 ⁺
Red-winged blackbird	3	12 S 647074 4191809 ⁺²
Red-winged blackbird	3	12 S 647064 4191810 ⁺
Red-winged blackbird	3	12 S 647065 4191813 ⁺
Red-winged blackbird	3	12 S 647059 4191818 ⁺²
Western meadowlark	3	12 S 646974 4191898
Cliff swallow	P	12 S 649381 4191085
Great horned owl	P	12 S 649377 4191085 [±]
Song sparrow	P	12 S 649302 4191139

*1 = Wetland 1, 2 = Wetland 2, 3 = Wetland 3, P = pond

⁺ nest marked from shoreline, actual location 5-10m towards center of wetland

⁺² 2 nests marked from shoreline, actual location 5-10m towards center of wetland

⁺⁴ 4 nests marked from shoreline, actual location 5-10m towards center of wetland

[±] roost location, nesting not confirmed

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Appendix A

Surveyors' Resumes

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Lisa Horzepa

Education: Wesleyan University, Science in Society Program, 1994.

Work Experience: April 2004 - present
Biological Aide/ Wildlife Technician
Utah Division of Wildlife Resources Price, UT
Conduct surveys and monitor known populations of sensitive species,
primarily avian throughout Southeastern UT.

Summer 2004 & 2005
Mexican Spotted Owl Surveyor
Southwest Research Moab, UT
Conducted surveys in the Moab, UT BLM district for Mexican spotted
owls.

**Trainings/
Certifications:** Mexican Spotted Owl Surveyor Training and Certification

2005 Moab, UT
2004 Moab, UT

Southwestern Willow Flycatcher and Yellow-billed Cuckoo Training

2004 Moab, UT

David Steward

Work Experience: Summer 2004 & 2005
Mexican Spotted Owl Surveyor
Southwest Research Moab, UT
Conducted surveys in the Moab, UT BLM district for Mexican spotted
owls.

Spring 2004
Biological Aide
Utah Division of Wildlife Resources Price, UT
Conducted Mexican spotted owl surveys and monitored Peregrine falcons
in the Dirty Devil River corridor.

1992 - 1995
Mexican Spotted Owl Surveyor
Conducted surveys for Mexican spotted owls in UT and NM.

**Trainings/
Certifications:**

Mexican Spotted Owl Surveyor Training and Certification

2005	Moab, UT
2004	Moab, UT
1994	Albuquerque, NM
1992	Albuquerque, NM

Southwestern Willow Flycatcher and Yellow-billed Cuckoo Training

2004	Moab, UT
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Appendix B

**Data Sheet for Avian Wetland Surveys
at MMTS, 2005**

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Appendix C

**Data Sheet for Nest Studies for
Avian Wetland Surveys at MMTS, 2005**

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Appendix D

**Bird list, Detection Locations, and Breeding Information
for Avian Wetland Surveys at MMTS, 2005**

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Species		Location *	Breeding Location ⁺
Great Blue Heron	<i>Ardea herodias</i>	3	
White-faced Ibis	<i>Plegadis chihi</i>	1 2 3	
Canada Goose	<i>Branta canadensis</i>	3 P	
Mallard	<i>Anas platyrhynchos</i>	1 2 3 P	B, 3
Cinnamon Teal	<i>Anas cyanoptera</i>	1 2 3	
Gadwall	<i>Anas strepera</i>	P	B, P
Turkey Vulture	<i>Cathartes aura</i>	1 2 3 P	
Cooper's Hawk	<i>Accipiter cooperli</i>	2	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	P	
American Kestrel	<i>Falco sparverius</i>	1 2 3	
Sora	<i>Porzana carolina</i>	1 2 3	B, 1 2 3
Killdeer	<i>Charadrius vociferus</i>	3	B?, 3
Spotted Sandpiper	<i>Actitis macularia</i>	3	
Common Snipe	<i>Gallinago gallinago</i>	1 2 3	
Mourning Dove	<i>Zenaida macroura</i>	1 2 3 P	
Great Horned Owl	<i>Bubo virginianus</i>	P	B?, P
Common Nighthawk	<i>Chordeiles minor</i>	1 2 P	
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	1 2 P	
Rufous Hummingbird	<i>Selasphorus rufus</i>	2	
Northern (Red-shafted) Flicker	<i>Colaptes auratus</i>	P	
Olive-sided Flycatcher	<i>Contopus borealis</i>	P	
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	1	
Western Wood-pewee	<i>Contopus sordidulus</i>	P	
Black Phoebe	<i>Sayornis nigricans</i>	P	
Say's Phoebe	<i>Sayornis saya</i>	1 2 3 P	
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>	P	
Tree Swallow	<i>Tachycineta bicolor</i>	2 3	
Violet-green Swallow	<i>Tachycineta thalassina</i>	1 2 3 P	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	1 2 3 P	
Bank Swallow	<i>Riparia riparia</i>	2	
Cliff Swallow	<i>Hirundo pyrrhonota</i>	1 2 3 P	B, P
Barn Swallow	<i>Hirundo rustica</i>	1 2 3	
Scrub Jay	<i>Aphelocoma coerulescens</i>	2 P	
Black-billed Magpie	<i>Pica pica</i>	1 2 P	
American Crow	<i>Corvus brachyrhynchos</i>	1 3	
Common Raven	<i>Corvus corax</i>	1 2 3 P	
Bushtit	<i>Psaltriparus minimus</i>	P	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	P	
Canyon Wren	<i>Catherpes mexicanus</i>	P	
Bewick's Wren	<i>Thryomanes bewickii</i>	P	
Mountain Bluebird	<i>Sialia currucoides</i>	3	
American Robin	<i>Turdus migratorius</i>	P	B, P
European Starling	<i>Sturnus vulgaris</i>	3	
Yellow Warbler	<i>Dendrocia petechia</i>	P	
Yellow-rumped Warbler	<i>Dendrocia coronata</i>	P	
Black-throated Gray Warbler	<i>Dendrocia nigrescens</i>	P	
MacGillivray's Warbler	<i>Oporonis tolmiei</i>	P	
Wilson's Warbler	<i>Wilsonia pusilla</i>	P	
Western Tanager	<i>Piranga ludoviciana</i>	P	
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	P	
Blue Grosbeak	<i>Guiraca caerulea</i>	P	
Lazuli Bunting	<i>Passerina amoena</i>	1	
Spotted Towhee	<i>Pipilo erythrophthalmus</i>	P	
Chipping Sparrow	<i>Spizella passerina</i>	1 2 3	

Species		Location *	Breeding ⁺ Location*
Vesper Sparrow	<i>Poocetes gramineus</i>	2 3	
Lark Sparrow	<i>Chondestes grammacus</i>	P	
Song Sparrow	<i>Melospiza melodia</i>	1 2 3 P	B, 2 P
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1 2 3 P	B, 1 2 3
Western Meadowlark	<i>Sturnella neglecta</i>	1 2 3	B, 3
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	2 3	
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	3	
Brown-headed Cowbird	<i>Molothrus ater</i>	3 P	
Great-tailed Grackle	<i>Quiscalus mexicanus</i>	1 2 3	B, 2
House Finch	<i>Carpodacus mexicanus</i>	2	
Pine Siskin	<i>Carduelis pinus</i>	1	
Lesser Goldfinch	<i>Carduelis psaltria</i>	1 3	
American Goldfinch	<i>Carduelis tristis</i>	1	

* 1 = Wetland 1, 2 = Wetland 2, 3 = Wetland 3, P = pond

⁺ B = confirmed breeding, B? = suspected breeding

Appendix E

**Map Showing Nest Locations and Vegetation Boundaries
for Avian Wetland Surveys at MMTS, 2005**

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Appendix F

Completed Data Sheets for Avian Wetland Surveys at MMTS, 2005

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Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 4/20/05 Time(s): 6:22 - 8:25 Surveyor: Lisatto-Zepa, David Steward
Linda Sheader

Weather: () Clear (✓) Cloudy () Rain () Windy Comment: stream running very high; wetlands full

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	3		4			pair of unknown ducks flew away
meadowlarks	3		1			upon approach
mourning doves	3		1			pair
crow	3		1			3
say's phoebe	3		1			one heard
canada geese	3		1			2 pairs
red-winged blackbird	2		3			
song sparrow	2		1			1 heard
magpie	2		1			flew by
ravens	2		1			pair flew by
turkey vultures	2		1			pair flew by
turkey vultures	1		2			7 flew by from west
cinnamon teals	1		2			5 pairs
mallards	1		1			2 pairs
red-winged blackbirds	1		2			
meadowlarks	1		1			1 pair
kestrel	1		1			1 kiting to east, another observed to north
crow	1		1 ²			1 flew overhead
swallows (sp?)						pair briefly observed to East

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 4/20/05 Time(s): 8:40 - 9:18 Surveyor: Lisa Horzempa, David Steward
Linda Sheeder

Weather: () Clear (✓) Cloudy () Rain () Windy Comment: pond full, strong stream flow

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
mallards		✓	1			pair
red-winged blackbirds		✓	2			
song sparrow		✓	1			pair
rough-winged swallows		✓	2			
Canada geese		✓	1			nesting in cliff SE of pond! 2 more flew by
red-tailed hawk		✓	1			to West
ravens		✓	1			pair
magpie		✓	1			
great-horned owl		✓	1			brief glimpse of large owl - flew into trees.
cliff swallow		✓	1			saw one, many nests in cliffs SE of pond.
bush tits		✓	1			

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 4/20/05

 Time(s): 16:35 - 18:50

 Surveyor: Lisa Horzempa, David Stewart

Weather: () Clear (✓) Cloudy () Rain (✓) Windy

 Comment: breezy, official sunset 1955, earlier behind mountain. stayed at 1st+last points at least 20 mins.

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	3		2			blackbirds not very active, staying low.
killdeer	3		1			2 on edges of wetland
meadowlark	3		1			4 on fence posts
mourning dove	3		1			2 on fence posts
turkey vulture	3		1			1 to South
canada goose	3		1			pair flew in from East
raven	3		1			
red-winged blackbird	2		2			about a dozen+
meadowlark	2		1			singing in the grasses
barn swallow	2		1			solitary one flying over wetland
kestrel	2		1			kiting to South, flew across to re-bar past
mallard	2		1			a couple of pairs flying around. Flushed from streamside
song sparrow	2		1			one at spring on hillside, to the North
red-winged blackbird	1		2			about a dozen+
meadowlark	1		1			pair
mallard	1		1			pair
Say's Phoebe	1		1			1 on south side of creek
cinnamon teal	1		2 ²			4 pairs
turkey vulture	1		1			

 Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 4/20/05 Time(s): 1918 - 2015 Surveyor: Lisa Harzeman, David Stewart

Weather: Clear Cloudy Rain Windy Comment: sun set at pond at 1940 - later than wetlands

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
cliff swallow		✓	4			utilizing nests on cliffs east of pond. Southside
mourning dove		✓	1			pair
robin		✓	1			2 pair
maggie		✓	1			three
mallard		✓	1			pair flew off on arrival
song sparrow		✓	1			one
Canada goose		✓	1			3 flew from W. to E then back again
great horned owl		✓	1			pair - E. of pond N side of stream

Sheet ___ of ___

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 5/02/05

 Time(s): 6:13

 Surveyor: Lisa Forzeka, David Stewart

official sunrise 6:20

 Weather: () Clear () Cloudy () Rain () Windy

 Comment: water conditions still running high, saw a beaver at pond

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird		<input checked="" type="checkbox"/>	1			
canada goose		<input checked="" type="checkbox"/>	1			2 pairs fly by - one pair lands upstream
maggie		<input checked="" type="checkbox"/>	1			
sage's phoebe		<input checked="" type="checkbox"/>	1			1 - heard
raven		<input checked="" type="checkbox"/>	1			
mallard		<input checked="" type="checkbox"/>	1			pair - circling
spotted towhee		<input checked="" type="checkbox"/>	1			heard
song sparrow		<input checked="" type="checkbox"/>	1			heard
swallows (sp.?) cliff?		<input checked="" type="checkbox"/>	2			briefly glimpsed, disappeared into fog
red-winged blackbird	1		3			
white faced ibis	1		1			pair - one flew upon approach, came back - pair then flew off after awhile
maggie	1		1			
mallard	1		1			pair flew upon approach
cinnamon teal	1		1			pair
sora	1		1			heard
raven	1		1			
turkey vulture	1		1			
mallard	2		1 ²			pair
white faced ibis	2		1			1 then 3 more flew to WL 1

Sheet ___ of ___

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 5/02/05

 Time(s): 8:00 AM - 9:30

 Surveyor: Lisattorzepe, David Steward

Weather: () Clear (✓) Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
turkey vulture	2		2			9 sitting on posts on N. hill, 3 more flew by
meadowlark	2		1			
red-winged blackbird	2		3			
sora	2		1			heard
common merganser (?)	2		1			flew out of sight to W.
killdeer	3		1			
white-faced ibis	3		1			one flew off
cinnamon teal	3		1			2 pairs + single male
snipe	3		1			1 flew off to E
mourning dove	3		1			3 on fence to E
tree swallow	3		1			just 1
meadowlark	3		1			
red-winged blackbird	3		3			
cowbird (brown-sided)	3		1			at farm to E.
violet-green swallow	3		2			
canada goose	3		1			pair flew in from E
rough-winged swallow	3		1			
rough-legged hawk(?)	3		1			flew to 1 wetland mobbed by blackbirds
barn swallow	3		2			
yellow-headed blackbird	3		1			just 1

Sheet ___ of ___

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 5/02/05

 Time(s): 17:15 - 20:17

 Surveyor: Lisa Horzempa, David Stewart
Linda Sreeder

 Weather: () Clear (✓) Cloudy (✓) Rain ^{light} () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
cliff swallows		✓	3			
bush-tits		✓	1			
song sparrow		✓	1			
maggie		✓	1			
great horned owl		✓	1			flew from S. side of canyon to N.
red-winged blackbird		✓	1			
red-tailed hawk		✓	1			perched NW of pond - flew E.
Canada goose		✓	1			pair
mallards		✓	1			pair
mourning doves		✓	1			5
white-faced ibis	1		1			3 - flew off - pair came back
meadow lark	1		1			
mallard	1		1			3 males
red-winged blackbird	1		3			
rough-winged swallow	1		1			one
maggie	1		1			
turkey vulture	1		2			8 flew in from W.
sora	1		1			heard
great-tailed grackle	1		1			one

 Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 5/02/05 Time(s): 18:53 - 2017 Surveyor: Lisa Horzapp, David Stewar, Linda Sheader

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
mallard	2		1			
white-faced ibis	2		1			
yellow-headed blackbird	2		1			two
meadowlark	2		1			
red-winged blackbird	2		4			
Cinnamon teal	2		1			2 pairs
rough-winged swallow	2		1			one
red-winged blackbird	3		4			
yellow-headed blackbird	3		2			
cinnamon teal	3		1			2 pairs
killdeer	3		1			one
white-faced ibis	3		1			five
rough-winged swallow	3		1			3
cliff swallow (?)	3		3			
mallard	3		1			pair
meadowlark	3		1			
brewer's blackbird	3		2			
brown-headed cowbird	3		3			↑
snipe	3		1			all the different blackbirds + cowbirds were hanging out together on fence to E, Sheet <u>2</u> of <u>2</u>
Sora	3		1			

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 5/30/05 Time(s): 1747 - 2100 Surveyor: Lisa Horzempa, David Stewart

Weather: () Clear () Cloudy () Rain () Windy official sunset 7:20:31 Comment: breezy, water levels still high

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	1		2			closer to 20
mallard	1		1			pair
turkey vulture	1		1			
magpie	1		1			
sora	1		1			heard
mourning dove	1		1			
raven	1		1			
great-tailed grackle	2		1			
red-winged blackbird	2		3			
meadowlark	2		1			
cinnamon teal	2		1			pair
barn swallow	2		1			one
n. rough-winged swallow	2		1			two
turkey vulture	2		1			
say's phoebe	2		1			on fence above to N.
house finch	2		1			" "
tree swallow	2		1			
raven	3		1 ²			
meadowlark	3		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 5/30/05 Time(s): 2100 - finish Surveyor: Lisa Horzempa, David Stewart

Weather: () Clear () Cloudy () Rain () Windy Comment: slight breeze

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	3		3			
vulture	3		1			three
mourning dove	3		1			3 on fence to E
sora	3		1			heard one
yellow-headed blackbird	3		1			one
barn swallow	3		1			one
n. flicker		✓	1			
maggie		✓	1			
song sparrow		✓	1			
cliff swallow		✓	2			
red-winged blackbird		✓	1			
gadwall		✓	1			one male - briefly landed in pond, pair flew by at dusk
robin		✓	1			two
yellow warbler		✓	1			heard
great-horned owl		✓	1			one flew out from cliffs to S.+E.

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 5/31/05 Time(s): 0553-0850 Surveyor: Lisa Torzema, David Stewart

Weather: Clear () Cloudy () Rain () Windy Comment: official sunrise 0557 breezy

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	1		2			closer to 20
sora	1		1			sounds like more than one
meadowlark	1		1			
turkey vulture	1		1			
red-winged blackbird	2		3			lower end of moderate
meadowlark	2		1			
sage pheasant	2		1			
sora	2		1			
great tailed grackle	2		1			part
raven	2		1			
mallard	2		1			one flew over
red-winged blackbird	3		3			lower end of moderate
meadowlark	3		1			
spotted sandpiper	3		1			flew from W. to E. out of area
n. rough-winged swallow	3		1			
sora	3		1			
violet green swallow	3		1			
killdeer	3		1			
raven	3		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 5/31/05 Time(s): 0850 - finish Surveyor: Lisattorzepe, David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: breezy, water high

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
mallard		✓	1			3 males just upstream from pond
flicker		✓	1			
song sparrow		✓	1			
cliff swallow		✓	3			on high end of scale
mourning dove		✓	1			
magpie		✓	1			
bush tit		✓	1			
black-headed grosbeak		✓	1			
scrub jay		✓	1			
violet-green swallow		✓	2			
red-winged blackbird		✓	1			
great horned owl		✓	1			one, definite roost in cliffs to SE, feathers white wash
raven		✓	1			
robin		✓	1			
yellow warbler		✓	1			heard
cowbird		✓	1			

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 6/13/05

 Time(s): 17:56 - 21:05

 Surveyor: Lisa Horzepa, David Stewart

 Weather: () Clear () Cloudy () Rain () Windy

 Comment: official sunset 2043, 11 deer at WT 3, housecat between 3+2

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
black-chinned hummingbird		✓	1			
mourning dove		✓	1			
scrub jay		✓	1			
cliff swallow		✓	3			
song sparrow		✓	1			
violet-green swallow		✓	1			
mountain bluebird	3		1			
meadowlark	3		1			
mallard	3		1			one male
red-winged blackbird	3		3			
killdeer	3		1			
great-blue heron	3		1			flew in from E., got mobbed by blackbirds
sora	3		1			
cliff swallow	3		1			
mourning dove	3		1			
violet-green swallow	3		1			
red-winged blackbird	2		3			
meadowlark	2		1			
raven	2		1			

 Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 6/13/05 Time(s): 17:56 - 21:05 Surveyor: Lisa Horzempa, David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
great-tailed grackle	2		1			♀ + ♂
sora	2		1			
violet-green swallow	2		1			
song sparrow	2		1			
red-winged blackbird	1		3			
mallard	1		1			pair
magpie	1		1			
sora	1		1			
mourning dove	1		1			

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 6/14/05 Time(s): 0552-0855 Surveyor: Lisette Zepa, David Steward

Weather: Clear Cloudy Rain Windy Comment: official sunrise 0554

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
song sparrow		✓	1			
cliff swallow		✓	2			
gadwall		✓	1			pair on pond briefly
yellow warbler		✓	1			
flicker		✓	1			
mourning dove		✓	1			
blue grosbeak		✓	1			
mallard		✓	1			pair - flew over
killdeer		✓	1			
red-winged blackbird	3		3			
mallard	3		1			male in off
killdeer	3		1			pair
meadowlark	3		1			
sora	3		1			
rough-winged swallow	3		1			
great blue heron	3		1			flew in + out
raven	3		1			
red-winged blackbird	2		3			
sora	2		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 6/14/05 Time(s): 0552--0855 Surveyor: Lisa Horzempa, David Steward

Weather: Clear Cloudy Rain Windy Comment: water levels lower

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
song sparrow	2		1			
violet-green swallow	2		1			
great-tailed grackle	2		1			
scrub jay	2		1			in tree above to N.
maggie	2		1			
turkey vulture	2		2			12 perched on fence posts to N. on rd
red-winged blackbird	1		3			
barn swallow	1		1			
Sora	1		1			
meadowlark	1		1			
violet-green swallow	1		1			
turkey vulture	1		1			one

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

 Date: 6/27/05

 Time(s): 18:00

 Surveyor: Lisa Horzempa, David Steward

 Weather: () Clear () Cloudy () Rain () Windy Comment: breezy

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	2		3			male feeding young
song sparrow	2		1			
sora	2		1			
violet-green swallow	2		1			
rough-winged swallow	2		1			
red-winged blackbird	3		4			lots of young, female feeding young
mallard	3		1			
violet-green swallow	3		1			
sora	3		1			
red-winged blackbird	1		3			a lot of activity at E. end of wetland briefly
sora	1		1			
say's phoebe	1		1			
violet green swallow	1		1			
turkey vulture	1		1			
cliff swallow		✓	4			
song sparrow		✓	1			
great-horned owl		✓	1			
flicker		✓	1			
magpie		✓	1			

 Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 6/28/05 Time(s): 05:43 - 08:45 Surveyor: Lisa Horzega, David Stewart

Weather: () Clear () Cloudy () Rain () Windy Comment: partly cloudy

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	2		3			
sora	2		1			
song sparrow	2		1			
red-winged blackbird	3		4			lots of young
sora	3		1			
great blue heron	3		1			
violet-green swamph.	3		1			
killdeer	3		1			
meadowlark	3		1			
red-winged blackbird	1		3			
sora	1		1			
turkey vulture	1		2			15 take usual positions on fence posts to N.
meadowlark	1		1			
cliff swallow		✓	4			
song sparrow		✓	1			
mourning dove		✓	1			
flicker		✓	1			
great horned owl		✓	1			
robin		✓	1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 7/10/05

Time(s): 1755 - 2100

Surveyor(s): Lisa Horzempa, David Steu

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1,2, or 3	Pond				
cliff swallow		✓	4			
song sparrow		✓	1			
great-horned owl		✓	1			pair
red-tailed hawk		✓	1			
maggie		✓	1			
red-winged blackbird	1		3			
lazuli bunting	1		1			
black-chinned hummingbird	1		1			pair
cliff swallow	1		3			
meadowlark	1		1			
raven	1		1			
red-winged blackbird	3		4			
raven	3		1			
cliff swallow	3		2			
violet-green swallow	3		1			
brown-headed cowbird	3		3			
song sparrow	3		1			
brewer's blackbird	3		3			
mourning dove	3		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 7/10/05

Time(s): 1755-2100

Surveyor(s): Lisa Horner,
David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1,2, or 3	Pond				
mallard	3		2			lots of babies
red-winged blackbird	2		4			
great-tailed grackle	2		1			3 of them
song sparrow	2		1			
cliff swallow	2		4			
violet-green swallow	2		1			
barn swallow	2		1			
night hawk	2		1			

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 7/11/05

Time(s): 0549-08:49

Surveyor(s): Lisa Horzempa
David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: official sunrise - 0603

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1,2, or 3	Pond				
blue grosbeak		✓	1			
song sparrow		✓	2	1		
great horned owl		✓	1			
mourning dove		✓	1			
cliff swallow		✓	4			
canyon wren		✓	1			
scrub jay		✓	1			
robin		✓	1			
red-winged blackbird	1		3			
luziti bunting	1		1			
sora	1		1			
cordilleran flycatcher	1		1			
meadowlark	1		1			
cliff swallow	1		1			
magpie	1		1			
song sparrow	2		1			young seen
red-winged blackbird	2		3			
great-tailed grackle	2		1			young seen
cliff swallow	2		4			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 7/11/05

Time(s): 05:49 - 08:49

Surveyor(s): Lisa Horzempa
David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1,2, or 3	Pond				
sora	2		1			
say's phoebe	2		1			
red-winged blackbird	3		4			
raven	3		1			
cliff swallow	3		2			
killdeer	3		2			around 6, noise: young, suspected bird ..
violet-green swallow	3		1			
sora	3		1			
song sparrow	3		1			
barn swallows	3		1			

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 7/18/05

Time(s): 1750-2052

Surveyor(s): Lisa Horzempa
David Steward

Weather: () Clear () Cloudy () Rain ()

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1,2, or 3	Pond				
red-winged blackbird	3		4			
raven	3		1			
turkey vulture	3		1			
lesser goldfinch	3		1			
tree swallow	3		1			
red-winged blackbird	2		3			
violet green swallow	2		1			
song sparrow	2		1			young
turkey vulture	2		1			
raven	2		1			
barn swallow	2		1			
black-chinned hummingbird	2		1			
red-winged blackbird	1		3			
vulture	1		1			
violet green swallow	1		1			
black-chinned hummingbird	1		1			
song	1		1			
lazuli hunting	1		1			
cliff swallow	1		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21-50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/8/05 Time(s): 1734 - 2035 Surveyor: Lisa Horzempa, David Stewart

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
cliff swallow	2		1			
violet green swallow	2		2			
bank swallow	2		1			
red-winged blackbird	2		2			primarily heard not seen
rufous hummingbird	2		1			
raven	2		1			
song sparrow	2		1			
red-winged blackbird	3		4			huge mixed flock
Brewer's blackbird	3		4			
yellow-headed blackbird	3		1			
mallard	3		2			7 ducks in a group
mourning dove	3		1			
european starling	3		3			part of mixed flock

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/9/05 Time(s): 0623 - 0930 Surveyor: Lisette Lopez, David Frazar

Weather: () Clear () Cloudy () Rain () Windy Comment: rained in the night

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	3		4			hundreds of most blackbirds they all took off to nest behind RWHB
brewer's blackbird	3		4			
yellow-headed blackbird	3		2			
raven	3		1			
kestrel	3		1			
red-winged blackbird	2		2			
raven	2		1			
meadowlark	2		1			
barn swallow	2		1			
turkey vulture	2		2			
magpie	2		2			in trees at margins to N. + S.
hummingbird (sp?)	2		1			
song sparrow	2		1			
raven	1		1			
magpie	1		1			
vulture	1		1			
red-winged blackbird	1		2			
barn swallow	1		2			
black-chinned nuthatch	1		1			

Sheet 1 of 3

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/9/05 Time(s): 0623 - 0930 Surveyor: Lisa Horvath, Don Strand

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
meadow lark	1		1			
soot	1		1			
mallard		✓	1			
olive-sided flycatcher		✓	1			
lark sparrow		✓	1			
violet-green swallow		✓	4			
cliff swallow		✓	4			
canyon wren		✓	1			
brown-headed cowbird		✓	1			
yellow warbler		✓	2			
black-throated gray warbler		✓	1			Wetland 1
song sparrow		✓	1			
great-horned owl		✓	1			
western wood pee-wee		✓	1			
blue grosbeak		✓	1			Wetland 1
western tanager		✓	1			
raven		✓	1			Wetland 1
european starling	3		3			part of huge mixed blackbird flock

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/28/05 Time(s): 17:00 - 20:15 Surveyor: Lisa Horzempa, David Stenar

Weather: () Clear () Cloudy () Rain () Windy Comment: official sunset 19:54

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
red-winged blackbird	1		2			
turkey vulture	1		2			
song sparrow	1		1			
raven	1		1			
hummingbird (sp?)	1		1			
raven	2		1			
red-winged blackbird	2		2			
barn swallow	2		1			
maggie	2		1			
song sparrow	2		1			
turkey vulture	2		1			
black-chested hummingbird	2		1			
chipping sparrow	2		2			
snipe	2-3		1			between 2 + 3
red-winged blackbird	3		4			groups of 10 or so keep flying in from E.
violet-green swallow	3		3			
song sparrow	3		1			
raven	3		1			
turkey vulture	3		1			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/29/05 Time(s): 0628-0940 Surveyor: L. J. ...

Weather: () Clear () Cloudy () Rain () Windy Comment: official sunrise 6:47

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
raven	1		2			fly over
magpie	1		3			fly over
red-winged blackbird	1		2			fly over
turkey vulture	1		2			
chipping sparrow	1		1			
lazuli bunting	1		1			
red-winged blackbird	2		3			
turkey vulture	2		2			on path to ...
cooper's hawk	2		1			fly + hovering over wetland
song sparrow	2		1			
magpie	2		4			fly over wetland at ...
rufous hummingbird	2		1			
meadowlark	2		1			
black-chinned hummingbird	2		1			
vesper sparrow	2		2			
red-winged blackbird	3		3			
song sparrow	3		1			
vesper sparrow	3		2			
barn swallow	3		2			

Sheet 1 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more).

Wildlife Surveys – Avian Wetland Species Monitoring Form

Date: 8/21/05 Time(s): 0628 - 0940 Surveyor: Lisa Horvath, David Stewart

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Abundance ¹	Nests	Eggs	Comments
	Wetland 1, 2, or 3	Pond				
violet-green swallow	3		2			
chipping sparrow	5		2			
wilson's warbler		✓	1			
western tanager		✓	1			
violet-green swallow		✓	2			
macgillivray's warbler		✓	1			
yellow warbler		✓	1			
turkey vulture		✓	1			
raven		✓	1			
red-tailed hawk		✓	1			two to NW
blue grosbeak		✓	1			
yellow-rumped warbler		✓	1			
n. flicker		✓	1			

Sheet 2 of 2

¹ 1 = few (1-5), 2 = low abundance (6-20), 3 = moderate abundance (21 -50), 4 = high abundance (50 or more)

Wildlife Surveys – Avian Nest Study Monitoring Form

Date: 6/14/05

Time(s): 10:05 - 15:00

Surveyor(s): Lisa Horzempa, David Steward

Weather: (✓) Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Nests	Eggs	Nestlings	Behavior *	Comments
	Wetland 1, 2, or 3	Pond					
red-winged blackbird	1		7		1 dead	A, DD, FY, RF, T	2 nests still in progress
sora	1		2	1, 4		NE	
red-winged blackbird	2		14			T, UN, A, DD, FY NE, NY, RF	
sora	2		1				
great-tailed grackle	2					FY, T	
unknown duck	2			1			egg found under-water
red-winged blackbird	3		7		3, 3	A, DD, FY, T NY, RF	more nests presumed present but inaccessible from deep water. Most abundant wetland.
sora	3		1				
killdeer	3					T	
cliff swallow		✓	140 approx.				2 young swimming w/ adult male
gadwall		✓					
great-horned owl		✓				T	pair present. breed winter/early spring
song sparrow		✓				T	

Sheet 1 of 1

* A – agitated behavior, anxiety calls from adults, AF – Allo-feeding between pair, AON – apparently occupied nest with adult present, B – nest building, BP – brood patch on bird, DD – distraction display, injury feigning, FY – adults carrying food to or fecal sac from nest, NE – nest with eggs, NY – nest with young, ON – occupied nest, RF – recently fledged young, SC – soliciting call of adult, T – individual or pair holding territory, UN – eggshell remains

Wildlife Surveys – Avian Nest Study Monitoring Form

Date: 6/27/05 - 6/28/05

Time(s): ^{6/27} 1645-1745, ^{6/28} 1155-1450

Surveyor(s): Lisa Horzempa, David Steward

Weather: Clear Cloudy Rain Windy Comment: _____

Species (Common Name)	Location		Nests	Eggs	Nestlings	Behavior *	Comments
	Wetland 1,2, or 3	Pond					
red-winged blackbird	1		9	6	1	A, AON, DD, FY, NE NY, RF, T, UN	4 dead nestlings, 2 nests w/ cracked egg
sora	1		1	3	0	NE	
red-winged blackbird	2		20	8	3	A, DD, FY, NE NY, RF, T, UN	2 nests with dead nestlings 3 nests w/ 8 broken or cracked eggs between them
sora	2					T, A	
great-tailed grackle	2					A, FY, T	
song sparrow	2		1	0	3	NY	
red-winged blackbird	3		14	0	0	A, DD, FY, RF, T	many fledgings. Nests inaccessible for closer viewing due to high water
sora	3					A, T	

Sheet 1 of 2

* A – agitated behavior, anxiety calls from adults, AF – Allo-feeding between pair, AON – apparently occupied nest with adult present, B – nest building, BP – brood patch on bird, DD – distraction display, injury feigning, FY – adults carrying food to or fecal sac from nest, NE – nest with eggs, NY – nest with young, ON – occupied nest, RF – recently fledged young, SC – soliciting call of adult, T – individual or pair holding territory, UN – eggshell remains

Wildlife Surveys – Avian Nest Study Monitoring Form

Date: 6/28/05

Time(s): 08:45 - 09:45

Surveyor(s): Lisa Horzopa, David Steward

Weather: () Clear () Cloudy () Rain () Windy Comment: _____

Species (Common Name)	Location		Nests	Eggs	Nestlings	Behavior *	Comments
	Wetland 1,2, or 3	Pond					
cliff swallow		✓	140		± 50	FY, ON, AF, NY, AON	50 nests above owl apparently unoccupied
robin		✓				RF	
great-horned owl		✓				T	generally banded early (winter-early spring)
Song Sparrow		✓				T	

Sheet 2 of 2

* A – agitated behavior, anxiety calls from adults, AF – Allo-feeding between pair, AON – apparently occupied nest with adult present, B – nest building, BP – brood patch on bird, DD – distraction display, injury feigning, FY – adults carrying food to or fecal sac from nest, NE – nest with eggs, NY – nest with young, ON – occupied nest, RF – recently fledged young, SC – soliciting call of adult, T – individual or pair holding territory, UN – eggshell remains

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Appendix G

Field Notes for Avian Wetland Surveys at MMTS, 2005

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MMTS

4/20/05

Wetland 3A

6:22 AM

Meadowlark

Blackbirds

Ducks

6:40 - 3B

cross

7:05 - WL 2B

7:26 - WL 2A

7:48 - WL 1B

8:10 WL 1A

8:40 Pond

8:58 Pond

Evening survey

3B - 1635 - 1658

3A - 1702

2B - 1725

2A - 1747

1B - 1807

1A - 1828 - 1850

PondA 1918

PondB - 1940 - sun just set

5/2/05

6:13 - reach pond
6:32 pond 3
6:53 - leave pond
7:13 - reach 1B
7:35 1A
7:52 - leave
8:00 - 2A
8:20 - 2B
8:43 - 3A
9:00 - 3B
9:30 finish

5/2/05

17:15 Pond A
17:33 Pond B
17:53 leave pond
18:17 - 1A
18:30 - 1B
18:53 - 2A
19:17 - 2B
19:40 - 3A
20:00 - 3B
20:17 - leave 3B

MMTS

5/30/05

1747 - start survey at WL1A

1805 - WL1B

1825 - WL2A

1846 - WL2B

1911 - WL3A

vulture - 3

moving dove - 3 on fencepost to E.

1931 - WL3B

sota

yellow headed blackbird - 1

barn swallow - 1

2013 - pond

5/31/05

0553 - start at WL1A

0611 - WL1B

0631 - WL2A

0651 - WL2B

0714 - WL3A

0733 - WL3B

0807 - pond A

0825 - pond B

MMTS

6/13/05

1756 - start survey at pond A

1813 - Pond B

1852 - WL3B

1913 - WL3A

1940 - WL2B

2002 - WL2A

2022 - WL1B

2042 - WL1A

6/14/05

0552 - start survey Pond A

0614 - Pond B

0652 - WL3B

0711 - WL3A

0737 - WL2B

0757 - WL2A

0818 - WL1B

0839 - WL1A

6/27/05 Nest Survey MMTS

1645 - 17:45

Wetland 1

NB1-1 - empty

NB2 RWBDED - broken egg dead

NB1-3 3E1B - redwing nest - 3 eggs - 1 broken

6/27/05 WL2 - point count MMTS

1800 - WL2A

1820 - WL2B

1845 - WL3A

1907 - WL3B

1934 - WL1A

1954 - WL1B

2025 - Pond A

2045 - Pond B

add to sheet morning

gate wall

6/28/05 MMTS

0543 - start survey WL2B

0603 - WL2A

0626 - WL3A

0645 - WL3B

0713 - WL1B

0731 - WL1A

0808 - Pond A

0830 - Pond B

0845 - end point count survey

6/28/05 Nest Survey MMTS

0845 - begin nest survey at Pond

1000 - end survey + form filling

1155 - begin nest survey WL2

1312 - " " WL3

1337 - abort survey - lightning storm

1420 - restart survey

1450 - end survey - lightning storm

NB1-1 0

NB2 - RWBDED dead

NB1-3 3E1B

NB3-1 10M - 2 nests

NB2-10 1E2B

NB3-3 1SM

NB2-1 RW1D 1 dead

NB3-4-15M

NB2-2 RW 0

NB3-5-10M

NB2-3 RW 0

NB3-6 15M 2 nests

NB2-4 RW 0

NB3-8 Ground Cup

NB2-5 RW 4BE

NB3-9

NB2-6 RW 3E ?

Pond 2 stick nest

NB2-7 RW-0

NB2-8 RW-0

NB2-9 RW 2E ^{empty} _{sheet}

Nesting Studies MMTS 6/14/05

1005 - start at WL 1

1115 - WL 2

1225 - WL 3

1855



Bird - 1355 - 85 + 55 (above owl)

Cliff Swallow nests - 140

MMTS

7/10/05

official sunset - 2084

1755 - start survey at Pond B

1813 - Pond A

1831 - leave

1853 - start 1A

1913 - 1B

1935 - 3A

1955 - 3B

2020 - 2B

red-wings - 50+

great-tailed grackle - 3?

song sparrow

cliff swallow - 50+

barn swallow - 1-5

white-green - 1-5

sora ?

2044 - 2A

MMTS

7/11/05

0549 - start survey at Pond A

0607 - Pond B

0642 - WL1A

0700 - WL1B

0720 - WL2A

sora

0740 - 2B

0807 - WL3A

0835 - 3B

0849 - finish

MMTS - monitoring

7/18/05

1750 - begin survey at WL 3A

1811 - WL 3 B

1836 - WL 2 B

1856 - WL 2 A

1918 - WL 1 B

1930 - WL 1 A

add to sheet: mourning dove

2015 - Pond A

mallards 1 - 3 ducks

cliff swallow 4

song sparrow 2?

violet-green swallow 2

bush tit

black phoebe

2033 - Pond B

night hawk

scrub jay

mourning dove

great horned owl

2052 - leave Pond

MUMTS

7/19/05

partly cloudy

0555 - start survey WL 3A

red-winged blackbird 21-50

great-tailed grackle - 4 birds

mallard

brewer's blackbird - 50+ lots of em

hanging out at west end of wetland

0622 - WL 3B

0648 - WL 2B

red-winged blackbird 6-20

morning dove

♀ hummer

song sparrow

0711 - WL 2A sora

0733 - WL 1B

red-winged blackbird 6-20

sora

black-chinned hummingbird

lesser goldfinch 6-20 include psaltria "Arkansas"

0753 - WL 1A lazuli bunting

American goldfinch

0825 - Pond A

0843 - Pond B

song sparrow 6-20

black phoebe

great horned owl

violet-green swallow 6-20

cliff swallow 7-11

black-headed grosbeak ♀

raven 6-20

vulture

brown-headed cowbird

09:05 Leave pond

MMTS

8/8/05

1734 - Begin survey Pond A

1752 - Pond B

1810 - Leave Pond

1835 - WL 1 A

1853 - WL 1 B

1917 - W2 A

cliff swallow - 1

violet green swallow - 2

bank swallow - 1

red-winged blackbird -

troop hummer

1940 - W2 B

2002 - W3 A

2022 - W3 B

MMTS

8/9/05

0623 - start WL3A

0640 - WL3B observed more in middle
of area (W. side) as that's where the
action was.

0710 - WL2B

0731 - WL2A

0751 - WL2B

0811 -- wa 1A - merdon lark

Sora

0851 - Pond A

0910 - Pond B

MMTS

8/28/05

- 1700 - start survey of WL 1 A
- 1723 - leave
- 1728 - WL 1 B
- 1752 - WL 2 A
- 1814 - WL 2 B
- 1842 - WL 3 A
- 1900 - leave WL 3 A
- 1905 - WL 3 B add - mallard
- 1941 - Pond A
- 1959 - Pond B

MMTS

8/29/05

- 0628 - WL 1 A Start Survey
- 0647 - WL 1 B
- 0713 WL 2 A
- 0742 - WL 2 B
- 0808 - WL 3 A add violet green
- 0830 - WL 3 B
- 0904 - Pond A
- 0922 - Pond B