

Bird Surveys on the American Prairie Reserve
and in surrounding South Phillips County, Montana
2009 Project Report

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Introduction

In spring 2009, World Wildlife Fund (WWF) contracted Wild Things Unlimited, Inc. (WTU) to conduct additional bird surveys on the American Prairie Reserve (APR) in north-central Montana. Previous involvement of WTU on the APR included bird survey efforts in 2005, and results of those surveys are documented in *Bird Surveys in the American Prairie Restoration Project Area – Phillips County, Montana – September 2005*. In 2005 only 8,000 deeded acres were included in the APR, but by 2009, land purchases had increased that total to 35,000 deeded acres; thus, creating a need for information related to bird species, numbers, and distributions on the grasslands, sagebrush communities, and wetlands within the new properties. Additionally, there was a need to re-survey key habitats within the original properties of the APR, and document any differences between years.

The APR in 2009 consisted of four somewhat geographically distinct subunits, including: the Core Reserve Complex (this includes the original properties in the south-central portion of the Reserve, between Telegraph Creek and Reynolds Hill Road), the Cowell Property (east of the Core Reserve Complex), the Schwenke Property (west of the Core Reserve Complex, along Highway 191), and the Lazy J 5 Complex (northern portion of the Reserve, between Highway 191 and the Regina Road)

The primary goal of this project was to provide a more complete inventory of birds on the APR; that could be used as baseline data for tracking trends in bird species present, bird distributions, and bird numbers in subsequent years. A secondary goal was to learn more about bird species presence and distributions within key habitats in surrounding South Phillips County, in the vicinity of the APR. The main objectives of the project were: 1) to determine species and numbers of birds in high quality habitat zones (including streams, grasslands, sagebrush communities, forests, and wetlands [ponds, lakes, marshes] within each of the four subunits of the APR; 2) to determine the status (occupancy and species nesting) of all raptor nests visible from roads and bird survey routes, in the APR and surrounding South Phillips County; 3) to identify additional important bird habitats (especially grasslands and wetlands) in the vicinity of the APR, and determine species and numbers of birds in those areas; and 4) to compare 2009 survey results from the Core Reserve Complex to 2005 survey results from that area.

Methods

Due to limited funds and time, 2009 bird survey efforts were focused on the most productive bird habitat types within the APR, including streams, wetlands, and grasslands. In each of the four subunits of the APR, we selected what we believed to be the highest quality stream segments, wetlands, and grassland patches for survey.

The basic inventory or atlas of birds was accomplished by observing and recording bird species and numbers, while walking along or through selected habitat segments (stream segments; pond, lake, and wetland edges) or patches (grasslands, sagebrush communities, forests, prairie dog towns). These surveys were conducted during morning (0500-1000h) or evening (1700-2100h) to optimize viewing and hearing of birds. Birds flying over a habitat type (for example water birds or raptors) during a survey were recorded, even though they may not have utilized that habitat.

Because we wanted to obtain total counts of bird species (and sometimes numbers of birds), on ponds, lakes and wetlands, we did not use a pre-determined observation time, but remained at each location until all visible birds were tallied. Observations were made with spotting scopes, from distances that allowed optimal viewing and minimum disturbance of birds. Thus observation distances varied with location and configuration of the water feature, and with surrounding topography and vegetative cover.

Locating and monitoring of raptor nests was accomplished primarily by driving roads, and searching trees, grasslands, and prairie dog towns with binoculars and spotting scopes. We also searched for and observed raptors while walking transect routes and conducting other aspects of the project.

When searching for burrowing owl nests at prairie dog towns, we followed guidelines specified by the Montana Burrowing Owl Survey protocol (E. Atkinson, personal communication). When we visited prairie dog towns on foot, we walked through the towns at a very slow pace, and observed from elevated topographic features with binoculars and spotting scopes.

In order to take full advantage of our limited time on the APR, some raptor surveys, wetland surveys, and prairie dog town surveys were conducted during mid-day hours, outside of the preferred bird observation periods of early morning and evening.

Results and Conclusions

A total of 132 species of birds were observed on the APR during 2009, including 31 species that were not seen in 2005 (Table 1). When the 31 new species were added to the 113 bird species seen in 2005, we arrived at a new total of 144 bird species observed on the APR by WTU during the two years; 101 of those species were observed in both years. Fifty of the 144

species were water birds (ducks, geese, grebes, pelican, cormorant, herons, rails, cranes, shorebirds, gulls, and terns), 14 species were raptors (hawks, eagles, falcons, and owls), four species were upland game birds (grouse, pheasant, partridge), and 76 species were songbirds (all other sub-categories, Table 1).

Fourteen of the 31 new species seen on the APR in 2009 were water birds (American bittern, black-crowned night-heron, Barrow's goldeneye, common goldeneye, bufflehead, sandhill crane, greater yellowlegs, lesser yellowlegs, long-billed dowitcher, Franklin's gull, California gull, Forster's tern, common tern, and red-breasted merganser), two were raptors (Ferruginous hawk and bald eagle), and 15 species were songbirds (downy woodpecker, Say's phoebe, northern rough-winged swallow, black-capped chickadee, marsh wren, northern mockingbird, mountain bluebird, Tennessee warbler, orange-crowned warbler, Cape May warbler, northern waterthrush, lazuli bunting, green-tailed towhee, house sparrow, and chestnut-collared longspur).

The Lazy J 5 Complex (particularly the Beaver Creek lakes and the Beaver Creek riparian zone) accounted for 22 of the 31 new species observed in 2009, including 13 of 14 new water bird species, one of the two new raptor species, and eight of the 15 new songbird species (Table 2). Eight new bird species, including one new water bird, one new raptor, and six new songbirds, were observed on the Core Reserve Complex of the APR, and one new songbird species was observed on the Cowell Property.

Twelve bird species that were observed in the Core Reserve Complex of the APR in 2005 were not seen there or anywhere else on the APR during 2009 (Tables 1 and 2). Two of those species were water birds (red-breasted merganser and solitary sandpiper), two were raptors (Cooper's hawk and osprey), and eight were songbirds (willow flycatcher, hermit thrush, Townsend's solitaire, red-eyed vireo, blackpoll warbler, MacGillivray's warbler, American redstart, and Savannah sparrow).

The number of bird species observed by WTU in the broader region of South Phillips County, surrounding the APR, increased by 30 in 2009, for a new total of 159 (Table 1). The 30 new species included 15 species of water birds (the 14 species listed above for the APR plus Baird's sandpiper), one of the two raptors listed above (bald eagle), and the 14 species of songbirds listed above as new species for the APR. Seventeen of the 129 bird species that were observed in South Phillips County during 2005 were not seen during 2009; that total included one water bird (red-necked phalarope), one raptor (Cooper's hawk), and 15 songbirds (the eight species listed above, that were seen in the CRC during 2005, but not in 2009, plus ovenbird, western tanager, rose-breasted grosbeak, red crossbill, ruby-crowned kinglet, red-breasted nuthatch, and Clark's nutcracker). Of the 159 bird species observed by WTU in South Phillips County, 112 species were seen during both 2005 and 2009 (Table 1).

During the course of the two field seasons, 15 bird species were observed in surrounding South Phillips County, but not on the APR. Those species included four grassland birds (mountain plover, Sprague's pipit, Baird's sparrow, and McCown's longspur), one wetland bird

(Baird's sandpiper), one apparent transient (red-headed woodpecker), and nine birds that were observed in either the cottonwood gallery forest along the Missouri River or the Missouri River breaks (common grackle, cliff swallow, ovenbird, western tanager, rose-breasted grosbeak, ruby-crowned kinglet, red crossbill, red-breasted nuthatch and Clark's nutcracker).

Twenty-five of the bird species observed during this project are listed as *Species of Concern* by the State of Montana, including eight water birds (American bittern, American white pelican, black-crowned night heron, black tern, common tern, Forster's tern, Franklin's gull, and mountain plover), five raptors (golden eagle, bald eagle, ferruginous hawk, Swainson's hawk, and burrowing owl), two upland game birds (greater sage grouse and sharp-tailed grouse), and 10 songbirds (Clark's nutcracker, loggerhead shrike, red-headed woodpecker, sage thrasher, Brewer's sparrow, grasshopper sparrow, Sprague's pipit, lark bunting, chestnut-collared longspur, and McCown's longspur). Nineteen of the 25 species were observed on the APR and six species (mountain plover, bald eagle, red-headed woodpecker, Clark's nutcracker, Sprague's pipit, and McCown's longspur) were seen in surrounding South Phillips County.

Core Reserve Complex

The Core Reserve Complex (CRC) of the APR contains a diversity of bird habitat types, including sagebrush/grassland, abandoned agriculture fields, streams, stock ponds, and some coniferous forest (Missouri River breaks, south of the APR deeded lands). The primary drainage within the CRC is Telegraph Creek, and two of its largest tributaries, Box Elder Creek and Third Creek, are prominent within the CRC boundaries.

In 2005, we made rather extensive systematic surveys of the habitats within the CRC, and documented presence of 113 bird species (Table 3), including 36 water birds, nine raptors, four upland game birds, and 64 songbirds. Due to financial and time constraints, our 2009 surveys within the CRC were significantly less comprehensive than those of 2005. We surveyed the same segments of Telegraph Creek and Box Elder Creek in 2009 that were surveyed in 2005, but did not survey Third Creek; and we surveyed only two main stock ponds in 2009, compared to 61 active stock ponds that were surveyed in 2005.

The 2009 surveys of the CRC (Tables 2 and 3) yielded 94 bird species (83% of 2005 total), including 10 species that were not seen in any of the other three subunits of the APR (Table 2); those 10 species included one water bird (red-breasted merganser), one raptor (bald eagle), and eight songbirds (hairy woodpecker, downy woodpecker, Say's phoebe, northern mockingbird, cedar waxwing, black-headed grosbeak, lazuli bunting, and white-crowned sparrow). The total species count for the CRC in 2009 included 30 water birds (83% of 2005 total), seven raptors (78% of 2005 total), two upland game birds (50% of 2005 total), and 55 songbirds (86% of 2005 total). Twenty-seven bird species were observed in the CRC during 2005 but not in 2009, and eight species were seen in 2009 but not in 2005 (Table 3).

Several factors seem to be related to the reduced number of bird species observed in the CRC in 2009, compared to 2005, including: 1) differences in survey effort between years, 2) differences in bird distributions within a breeding season (or year), and 3) differences in bird distributions between years.

Differences in survey effort included differences in the total number of surveys conducted, differences in the number of repeat surveys of streams, ponds, or other habitat, and differences in the diversity of habitat surveyed. Survey effort in 2005 was greater in each of these categories than it was in 2009. First, twice as many surveys of stream segments in the CRC, and 80 more surveys of stock ponds, were conducted in 2005 than in 2009. In 2005, segments of Telegraph Creek, Box Elder Creek, and Third Creek were surveyed 10 times, while in 2009, segments of Telegraph and Box Elder Creeks were surveyed five times (Table 4). In 2005, we surveyed 61 different stock ponds 85 times, while in 2009 we surveyed only two of those ponds a total of five times (Table 5). Second, data from 2005 indicated that significant numbers of “new” species were added to bird inventories when repeat surveys were performed along stream segments and at stock ponds. Along three stream segments that were surveyed twice in 2005 (one segment each on Telegraph, Box Elder, and Third Creeks), 43 to 45% of the bird species observed along each stream were seen during only one of the two surveys. Also, at 57% of the 21 ponds that were surveyed twice in 2005, “new” bird species were observed during the second survey. The same result occurred on a more limited scale in 2009, when “new” species were observed during repeat surveys of the two surveyed ponds. The fact that we performed no repeat surveys of stream segments in 2009 may have been related to the lower number of songbird species observed in 2009 compared to 2005. Third, evidence suggested that a survey scheme that covers a greater number of locations and a greater diversity of habitat will result in a greater number of bird species detected. In 2005, when we conducted surveys along Telegraph Creek, Box Elder Creek, and Third Creek, only 21 of 91 observed bird species (23%) were seen in all three drainages, and 43 of the 91 species (47%) were observed in only one of the three drainages. Similarly, it is reasonable to assume that the variation in pond size, configuration and vegetation among the 61 ponds surveyed in 2005 was considerably greater than that of the two ponds surveyed in 2009, and that the greater diversity of habitat lead to a greater number of water birds observed in 2005.

The evidence that repeat surveys of stream segments and ponds frequently added new species also supports the conclusion that the bird species composition along streams and at wetlands likely varied significantly throughout the breeding season. With regards to ponds, this conclusion was supported by frequent observations at two select ponds during 2005. Possible reasons for variable bird species composition along stream segments and at wetlands during the breeding season include: differences in arrival times of migratory species, and movement of birds among different habitat types or different wetlands throughout the breeding season.

Data from 2005 and 2009 suggest that the lower number of bird species observed in the CRC during 2009 was not solely a result of lower levels of survey effort, and that were actual differences in the numbers and composition of bird species present between the two years. Despite the fact that survey effort was considerably greater in 2005 than in 2009, there were

eight species of birds observed in the CRC during 2009 that were not seen in 2005 (Table 3). Although the 85 surveys of 61 ponds plus other project activities conducted in 2005 resulted in the observation of seven more water bird species than the five surveys of two ponds plus other project activities conducted in 2009, one water bird species (red-breasted merganser) was seen in 2009 but not in 2005. Similarly, even though twice as many surveys of stream segments and a greater diversity of streams were surveyed in 2005 than in 2009, there were six songbird species (downy woodpecker, Say's phoebe, northern mockingbird, mountain bluebird, green-tailed towhee, and lazuli bunting) and one raptor (bald eagle) observed in 2009 that were not seen in 2005. It is possible that the relatively harsh spring weather conditions of 2009 (colder and wetter than normal) prevented some birds from reaching the APR, or caused them to move on to other areas, and thus created real differences in the number of species present and the overall composition of bird species within the CRC, compared to 2005. Steve Forrest of WWF reported that some of the long-billed curlews that were radio-outfitted on the APR during spring 2009 subsequently left the region and headed south before the nesting period began.

Lazy J 5 Complex

The addition of the Lazy J 5 Ranch and other nearby land parcels to the APR contributed a tremendous amount of high quality bird habitat, including several large lakes, numerous other ponds and wetlands, a major stream with several tributaries, and large patches of grassland, to the APR. The vegetation along Beaver Creek and its associated impoundments is very diverse in terms of species and structure, and thereby provides habitat for many bird species.

A total of 116 bird species were observed in the Lazy J 5 Complex during 2009; this represents 88% of the 132 species observed in the APR during 2009 (Table 2). Those 116 species included 47 of the 48 water birds, 10 of the 12 raptors, three of the four upland game birds, and 56 of the 67 songbirds that were observed in the APR during 2009 (Tables 1 and 2). Also, as previously noted, surveys within the Lazy J 5 Complex accounted for 22 of the 31 "new" species (73%) observed on the APR during 2009.

Twenty-one of the 22 "new" bird species, plus 10 additional species observed in the Lazy J 5 complex, were not observed in any of the other three subunits of the APR during 2009. The 31 bird species in this category included (Table 2): 18 water birds (double-crested cormorant, American bittern, black-crowned night heron, great blue heron, green-winged teal, ring-necked duck, Barrow's goldeneye, common goldeneye, bufflehead, common tern, sandhill crane, greater yellowlegs, lesser yellowlegs, long-billed dowitcher, Franklin's gull, California gull, Forster's tern, and common tern), one raptor (ferruginous hawk), one upland game bird (gray partridge), and 11 songbirds (violet-green swallow, common raven, red-breasted nuthatch, march wren, Tennessee warbler, orange-crowned warbler, Cape May warbler, Wilson's warbler, northern waterthrush, pine siskin, house sparrow, and chestnut-collared longspur).

Five transect surveys were conducted along four segments of the Beaver Creek riparian zone, providing coverage from Whitcomb Lodge to the Regina Road. During those surveys, we

observed 96 bird species, with a maximum of 64 species seen within any one of the four stream segments (Table 4).

The 96 species included 38 water birds, six raptors, two upland game birds, and 50 songbirds.

A short segment of Big Warm Creek, in the northern-most portion of the Lazy J 5 Complex, was also surveyed. Habitat along this segment was dominated by snowberry, with very low streamside diversity. Consequently, we observed only 18 bird species along this stream segment; that total included eight water bird species, three raptors, one upland game bird, and six songbirds (Table 4). The most notable observations from this survey were: a group of three American bitterns, a nesting Swainson's hawk, a golden eagle, a high density of red-winged blackbirds, and the lack of any members of the sparrow group.

Obviously, the wetland habitat in the Lazy J 5 complex is extremely significant. During surveys of three wetland units within the Lazy J 5 Complex, Beaver Creek lakes, Lonesome Coulee pond, and Section 9 pond (Table 5), we observed 91 of the 116 bird species (78%) documented in the Complex. This total included 45 of the 48 species of water birds seen in the APR during 2009; two of the three species not observed in these three units were seen elsewhere in the Lazy J 5 Complex (American bittern along Big Warm Creek, and long-billed dowitcher in the Section 21 wetland, just west of Beaver Creek lakes), and the other was seen in the CRC (red-breasted merganser).

The Lazy J 5 Complex also contains patches of excellent grassland habitat, and we inventoried bird species in this habitat type while driving roads that bisected grasslands, and on one walk through Sections 35 and 36 (T26N, R29E), just south of Beaver Creek. The three most commonly observed grassland bird species were chestnut-collared longspur, lark bunting, and horned lark. We also observed three grassland-associated raptors (ferruginous hawk, short-eared owl, and merlin), two grassland-associated shorebirds (upland sandpiper and long-billed curlew), plus nine more members of the finch/sparrow/bunting group (American goldfinch, pine siskin, chipping sparrow, clay-colored sparrow, Brewer's sparrow, lark sparrow, grasshopper sparrow, song sparrow, vesper sparrow).

Cowell Property

Habitat on the Cowell Property is significantly drier and less diverse than that found on the Core Reserve Complex and the Lazy J 5 Complex. There is no surface water in any streambeds on the Property (at least not in 2009), and sagebrush/grassland dominates the landscape. A few cottonwood trees and willow shrubs grow along the edges of some of the 10 small ponds present on the Property, and a patch of dry coniferous forest exists along the southern edge of the Property. This combination of habitat features supported significantly fewer bird species than did habitat on the CRC and L J5 Complexes.

All survey efforts on the Cowell Property occurred on one day (6/13/09), and involved walking through coniferous forest habitat and sagebrush/grassland habitat, driving roads, and stopping at 10 stock ponds. Those efforts resulted in the observation of 48 bird species,

including: 13 water birds, five raptors, two upland game birds, and 28 songbirds (Tables 2, 6, and 7).

The walk through sparsely forested habitat along the southern edge of the Property (La Plaz Coulee) yielded 20 bird species, including three species not observed in any of the three other subunits of the APR in 2009 (prairie falcon, field sparrow, and black-capped chickadee). While driving and walking through sagebrush/grassland habitat, we observed 15 additional species, including golden eagle, burrowing owl, , American white pelican, long-billed curlew, common nighthawk, sharp-tailed grouse, brown thrasher, Bullock's oriole, Brewer's sparrow, and rough-winged swallow.

Surveys of the 10 small stock ponds on the Cowell Property resulted in the observation of 15 bird species, including 12 water birds and three songbirds (Table 7). American widgeon was by far the most commonly seen bird on the 10 ponds (a total of 28 birds, seen on nine of 10 ponds); other observed water birds included: eared grebe, Canada goose, mallard, gadwall, blue-winged teal, American coot, killdeer, long-billed curlew, willet, Wilson's phalarope, and ring-billed gull.

Schwenke Property

The Schwenke Property is the smallest of the four APR subunits, and like the Cowell Property, has relatively low habitat diversity. The predominant habitat type is sagebrush/grassland, with some greasewood and some snowberry in the drainages. Duval Creek is the main stream on the Property, and it held intermittent pools of surface water at the time of our survey. Some patches of native grasses and a few cottonwood trees grow in Duval Creek bottom. The Property also contains six small stock ponds.

The relatively small size and low habitat diversity of the Schwenke Property resulted in the lowest bird species tally among the four subunits of the APR in 2009. During surveys of a segment of Duval Creek and the six stock ponds, we observed 27 bird species (Tables 2, 6, and 7); this represents 20% of the 132 species observed on the APR in 2009. All of the bird species seen on the Schwenke Property were also observed in other subunits of the APR.

Sixteen bird species were seen during the transect survey along Duval Creek on June 17, with the most notable species being common nighthawk, sage thrasher, rock wren, grasshopper sparrow, vesper sparrow, clay-colored sparrow, Brewer's sparrow, and green-tailed towhee (Table 6).

Nine bird species were observed during surveys of six stock ponds on the Schwenke Property, on June 17, 2009 (Table 7); the most common species was gadwall, and the other species were: blue-winged teal, American widgeon, American coot, killdeer, willet, American avocet, Wilson's phalarope, and red-winged blackbird.

Raptors

Of the 14 raptor species observed by WTU on the APR and in surrounding South Phillips County during 2005 and 2009, 12 were seen on the APR in 2009, including: red-tailed hawk, Swainson's hawk, ferruginous hawk, golden eagle, bald eagle, northern harrier, prairie falcon, merlin, American kestrel, great-horned owl, burrowing owl, and short-eared owl (Table 1). The two raptor species observed in 2005, but not in 2009 were Cooper's hawk and osprey.

Four raptor species observed in SPC during 2009 are listed as *Species Of Concern* by the state of Montana (ferruginous hawk, Swainson's hawk, golden eagle, and burrowing owl), and three additional species appear to be somewhat rare in the county (merlin, prairie falcon, and short-eared owl); sightings of birds of each of these seven species were recorded (Table 8) and are summarized below (except for burrowing owl; next subsection).

Ferruginous hawks were observed 20 times during 2009, in eight relatively distinct regions of SPC: once along the eastern half of the Dry Creek Road; once each along northern and southern portions of the Second Creek School road; four times along the First Creek Hall road; five times along the West Regina road near the LJ5 compound; twice along Midale Road; and six times along northern and southern portions of the Sun Prairie Road (Table 8).

Swainson's hawks were observed 31 times in 14 areas during 2009: once near the north end of the Telegraph Creek road; three times along the northern end of the Second Creek School road; seven times along three portions (north, middle, south) of the Regina Road; three times along the E-W Regina connector; three times near the southern end of the Midale Road; once each in Beaver Creek and Big Warm Creek; three times near the northern and southern ends of the Sun Prairie Road; and twice near the northern end of the content road (Table 8).

Golden eagles were observed eight times during 2009, in five general regions of SPC: Box Elder Creek, the middle portion of the Regina Road; on the LJ5, west to southwest of Whitcomb Lodge; in the Big Warm Creek drainage; and near the northern end of the Sun Prairie Road (Table 8).

We observed a prairie falcon once during 2009 (along the mid-portion of the Regina road) and merlins three times (along Third Creek, West Regina Road, and Sun Prairie Road) (Table 8).

Short-eared owls were seen nine times in 2009, in six general areas of SPC: the northern end of Telegraph Creek road; northern and southern portions of Regina Road; the vicinity of the west end of the E-W Regina connector; west of the Whitcomb Lodge, along the LJ5 cutoff road; and the mid-section of the Midale Road (Table 8).

In an attempt to determine the status of as many raptor nests as possible (excluding burrowing owl nests), we examined 20 nest sites on the APR (Table 9) and 24 nest sites outside of the APR in surrounding South Phillips County (Table 10), for a total of 44 nest sites observed in South Phillips County during the two years of study. Despite a larger search area in 2009,

20% fewer occupied raptor nests were observed in 2009 (n=24) compared to 2005 (n=30). Similarly, among the 35 nest sites that were visited during both years, the occupancy rate was 20% lower in 2009 (60%, 21 of 35) than in 2005 (80%, 28 of 35). At 80% of the nest sites visited during both 2005 and 2009, there was a change in status between the two years (occupied by different species, occupied vs. unoccupied, present vs. gone from tree; details below).

Of the 20 nest sites visited on the APR, 15 were visited and had occupied nests in 2005 (three red-tailed hawks, one Swainson's hawk, one golden eagle, one osprey, one merlin, six American kestrels, and two great-horned owls), two sites were unknown because they had no nests in 2005 (but had nests occupied by red-tailed hawk and golden eagle in 2009), and three were unknown in 2005 because they were on the Lazy J 5 Complex (not part of the APR at that time).

In 2009, we re-visited 13 of the 15 nests that were occupied in 2005, and learned that: four of those nests were gone from their trees, one nest was unoccupied (same species, golden eagle, occupied a new nest in same drainage), one nest was occupied by the same species as in 2005 (red-tailed hawk), and seven nests likely were occupied by the same species (site visits were too early to observe fledglings and confirm nesting by six pairs of kestrels and one pair of merlins) (Table 9). The two nests that we did not re-visit in 2009 were an osprey nest in the Missouri River Breaks portion of the CRC, and a great-horned owl nest in the southern segment of Telegraph Creek. The five raptor nests observed in during 2009 but not in 2005, included two nests in the CRC (a red-tailed hawk nest in Telegraph Creek and a golden eagle nest in Box Elder Creek and three nests in the Lazy J 5 Complex (one great-horned owl nest and one Swainson's hawk nest in Beaver Creek, and one Swainson's hawk nest in Big Warm Creek).

In the CRC, among the 13 raptor nests that were observed during both years, there were three fewer occupied nests in 2009, compared to 2005 (13 to 10); that difference was a result of one less red-tailed hawk nest, one less Swainson's hawk nest, and one less great-horned owl nest observed in 2009 (Table 9). We believe that in 2009 a Swainson's hawk pair may have nested to the south of the 2005 nest location in Telegraph Creek, but the nest was undetected due to dense cottonwood foliage; and we believe that great-horned owl nests were present but undetected in Telegraph and Box Elder Creeks in 2009, because owls were seen during surveys of each of those drainages.

Twenty-two of the 24 raptor nest sites that were documented outside of the APR, in South Phillips County, were checked during both 2005 and 2009; in 2005, 15 of 22 sites had active nests (three ferruginous hawk, eight Swainson's hawk, one red-tailed hawk, two unknown hawk, and one great-horned owl), and in 2009, 11 of the 22 sites had active nests (two ferruginous hawk, six Swainson's hawk, one golden eagle, and two great-horned owl) (Table 10).

At 20 of the 22 raptor nest sites outside of the APR there was a change in nest status between the two years (Table 10). In 2005, 15 of the 22 nest sites were occupied, three sites had empty nests, and four sites had no nests. The status of the 15 nests that were occupied in 2005; were as follows in 2009: at two nests there was no change in species (Swainson's hawk

and great-horned owl), at two nests there was a change in species (ferruginous hawk to golden eagle, and ferruginous hawk to Swainson's hawk), at one nest species status was unknown (but nest was occupied each year), at six sites nests were gone from the trees that held them in 2005, and at four sites nests that were occupied in 2005 were empty in 2009. Of three nests that were empty in 2005, two were gone and one was occupied by a Swainson's hawk in 2009, and at four sites where there was no nest observed in 2005, there was one nest occupied by a ferruginous hawk, two nests occupied by Swainson's hawks, and one empty nest in 2009.

Burrowing Owl

Burrowing owls were not a primary focus of this project in 2009; however, we did search for owls coincidentally to other project activities. A total of 19 prairie dog towns in South Phillips County were scanned at least once during 2009, and burrowing owls were observed at 14 (74%) of those towns (Table 11).

On the APR, burrowing owls were observed at seven of 12 surveyed prairie dog towns, and in three of the four subunits (Table 11). In the Core Reserve Complex, burrowing owls were seen at four of six prairie dog towns, but were not observed at two of the five towns that were surveyed and had owls in 2005; at prairie dog towns P086 and P131, along Box Elder Creek, we saw no owls and saw either no (P086), or very few (P131) prairie dogs. In the Lazy J 5 Complex, we saw burrowing owls at two prairie dog towns, one north of Beaver Creek (LJ5-new) and one north of Big Warm Creek (B100). On the west side of the Cowell Property, a burrowing owl was seen at prairie dog town P042, but no owls were observed at town P084 on the northeast side of the property. No burrowing owls were observed at two prairie dog towns (S23/S26 line and center of S24) on the Schwenke Property.

In South Phillips County, outside of the APR, burrowing owls were observed at all seven of the surveyed prairie dog towns, which included: two towns along Dry Fork Road, two towns along the southern portion of Second Creek School road; and one town each along the Regina Road, the West Regina road, and the Midale Road (Table 11).

Wetlands outside of the APR

In order to gain some insight into the quality and diversity of bird habitat at wetlands outside of the APR, we surveyed four prominent wetlands in surrounding South Phillips County, including Bison Bone Reservoir (along Dry Fork Road), Nelson Reservoir (along Regina Road), Sun Prairie wetland (along Sun Prairie Road), and Holzhey Reservoir (along the E-W Regina connector). A total of 41 bird species were seen among those four areas, and two species (Baird's sandpiper and solitary sandpiper) were not observed on the APR or in any other areas of South Phillips County during 2009; 37 of the 41 species were water birds and four were songbirds (Table 12).

At Bison Bone Reservoir, 32 bird species were observed, and five of those species (cinnamon teal, ring-necked duck, canvasback, ring-billed gull, and California gull) were not seen at any of

the other three areas (Table 12). At the Sun Prairie wetland, 28 bird species were seen, five species (black-crowned night heron, great blue heron, upland sandpiper, solitary sandpiper, and common yellowthroat) were not seen in any of the other three areas, and one species (solitary sandpiper) was not seen anywhere else during 2009 surveys. At Nelson Reservoir, we observed 26 species, of which two (Baird's sandpiper and barn swallow) were not seen at any of the other three areas and one (Baird's sandpiper) was not seen anywhere else in 2009. At Holzhey Reservoir, 12 bird species were observed, and all species were seen at one or more of the other three areas.

Table 1. Bird species observed on American Prairie Reserve (APR) and in South Phillips County (SPC), Montana, by WTU during 2005 and 2009 field seasons. a/

	2005	2009		2005	2009
Species Observed <u>b/</u>	APR	APR		SPC	SPC
Grebes					
Eared Grebe	x	x		x	x
Western Grebe	x	x		x	x
Pied-billed Grebe	x	x		x	x
Pelicans, Cormorants					
American White Pelican	x	x		x	x
Double-crested Cormorant	x	x		x	x
Hérons					
American Bittern		X			X
Black-crowned night-heron		X			X
Great Blue Heron	x	x		x	x
Ducks and Geese					
Canada Goose	x	x		x	x
Mallard	x	x		x	x
Gadwall	x	x		x	x
Northern Pintail	x	x		x	x
Green-winged Teal	x	x		x	x
Blue-winged Teal	x	x		x	x
Cinnamon Teal	x	x		x	x
American Widgeon	x	x		x	x
Northern Shoveler	x	x		x	x
Canvasback	x	x		x	x
Redhead	x	x		x	x
Ring-necked Duck	x	x		x	x
Lesser Scaup	x	x		x	x
Barrow's Goldeneye		X			X
Common Goldeneye		X			X
Bufflehead		X			X
Ruddy Duck	x	x		x	x
Common Merganser	x	x		x	x
Red-breasted Merganser		X			X
Hawks, Eagles, Falcons					
Cooper's Hawk	X			X	
Red-tailed Hawk	x	x		x	x
Swainson's Hawk	x	x		x	x
Ferruginous Hawk		X		x	x
Golden Eagle	x	x		x	x
Bald Eagle		X			X
Northern Harrier	x	x		x	x
Osprey	X			x	x
Prairie Falcon	x	x		x	x
Merlin	x	x		x	x
American Kestrel	x	x		x	x
Grouse, Pheasants, etc					
Sharp-tailed Grouse	x	x		x	x
Sage Grouse	x	x		x	x
Ring-necked Pheasant	x	x		x	x
Gray Partridge	x	x		x	x

Table 1. Continued.					
	2005	2009		2005	2009
Species Observed	APR	APR		SPC	SPC
Rails, Cranes					
Sora	x	x		x	x
American Coot	x	x		x	x
Sandhill Crane		X			X
Shorebirds, Gulls, Terns					
Killdeer	x	x		x	x
<i>Mountain Plover</i>				x	x
Long-billed Curlew	x	x		x	x
Upland Sandpiper	x	x		x	x
Spotted Sandpiper	x	x		x	x
Solitary Sandpiper	X			x	x
<i>Baird's Sandpiper</i>					X
Willet	x	x		x	x
Greater Yellowlegs		X			X
Lesser Yellowlegs		X			X
Marbled Godwit	x	x		x	x
American Avocet	x	x		x	x
Long-billed Dowitcher		X			X
Common Snipe	x	x		x	x
Wilson's Phalarope	x	x		x	x
Red-necked Phalarope	X			X	
Franklin's Gull		X			X
Ring-billed Gull	x	x		x	x
California Gull		X			X
Forster's Tern		X			X
Common Tern		X			X
Black Tern	x	x		x	x
Doves					
Mourning Dove	x	x		x	x
Cuckoos					
Black-billed Cuckoo	x	x		x	x
Owls					
Great Horned Owl	x	x		x	x
Burrowing Owl	x	x		x	x
Short-eared Owl	x	x		x	x
Goatsuckers					
Common Nighthawk	x	x		x	x
Woodpeckers					
Northern Flicker	x	x		x	x
Hairy Woodpecker	x	x		x	x
Downy Woodpecker		X			X
<i>Red-headed Woodpecker</i>					X
Flycatchers					
Eastern Kingbird	x	x		x	x
Western Kingbird	x	x		x	x
Willow Flycatcher	X			X	
Least Flycatcher	x	x		x	x
Western Wood-Pewee	x	x		x	x
Say's Phoebe		X			X

Table 1. Continued.					
	2005	2009		2005	2009
Species Observed	APR	APR		SPC	SPC
Larks					
Horned Lark	x	x		x	x
Swallows					
Violet-green Swallow	x	x		x	x
Tree Swallow	x	x		x	x
Barn Swallow	x	x		x	x
<i>Cliff Swallow</i>				x	x
Northern rough-winged swallow		X			X
Jays, Magpies, Crows					
Black-billed Magpie	x	x		x	x
Common Raven	x	x		x	x
<i>Clark's Nutcracker</i>				X	
Chickadees					
Black-capped Chickadee		X		x	x
Nuthatches					
<i>Red-breasted Nuthatch</i>				X	
Wrens					
House Wren	x	x		x	x
Rock Wren	x	x		x	x
Marsh Wren		X			X
Mockingbirds, Thrashers					
Northern Mockingbird		X			X
Gray Catbird	x	x		x	x
Brown Thrasher	x	x		x	x
Sage Thrasher	x	x		x	x
Thrushes, Bluebirds					
American Robin	x	x		x	x
Hermit Thrush	X			X	
Swainson's Thrush	x	x		x	x
Mountain Bluebird		X		x	x
Townsend's Solitaire	X			X	
Kinglets					
<i>Ruby-crowned Kinglet</i>				X	
Waxwings					
Cedar Waxwing	x	x		x	x
Shrikes					
Loggerhead Shrike	x	x		x	x
Starlings, Pipits					
European Starling	x	x		x	x
<i>Sprague's Pipit</i>					X
Vireos					
Red-eyed Vireo	X			X	
Warbling Vireo	x	x		x	x
Warblers					
Tennessee Warbler		X			X
Orange-crowned Warbler		X			X
Cape May Warbler		X			X
Yellow-rumped Warbler	x	x		x	x
Blackpoll Warbler	X			X	
Yellow Warbler	x	x		x	x

Table 1. Continued.					
	2005	2009		2005	2009
Species Observed	APR	APR		SPC	SPC
Warblers -- continued					
MacGillivray's Warbler	X			X	
Wilson's Warbler	x	x		x	x
<i>Ovenbird</i>				X	
Northern Waterthrush		X			X
Common Yellowthroat	x	x		x	x
Yellow-breasted Chat	x	x		x	x
American Redstart	X			X	
Blackbirds, Orioles, etc					
Western Meadowlark	x	x		x	x
Yellow-headed Blackbird	x	x		x	x
Red-winged Blackbird	x	x		x	x
Orchard Oriole	x	x		x	x
Bullock's Oriole	x	x		x	x
Baltimore Oriole	x	x		x	x
Brewer's Blackbird	x	x		x	x
<i>Common Grackle</i>				X	
Brown-headed Cowbird	x	x		x	x
Tanagers					
<i>Western Tanager</i>				X	
Grosbeaks, Finches, Sparrows, Buntings					
<i>Rose-breasted Grosbeak</i>				X	
Black-headed Grosbeak	x	x		x	x
Lazuli Bunting		X		x	x
Pine Siskin	x	x		x	x
American Goldfinch	x	x		x	x
<i>Red Crossbill</i>				X	
Green-tailed Towhee		X			X
Spotted Towhee	x	x		x	x
Field Sparrow	x	x		x	x
Chipping Sparrow	x	x		x	x
Clay-colored Sparrow	x	x		x	x
Brewer's Sparrow	x	x		x	x
Lark Sparrow	x	x		x	x
Grasshopper Sparrow	x	x		x	x
<i>Baird's Sparrow</i>					X
Lark Bunting	x	x		x	x
Savannah Sparrow	X			x	x
Song Sparrow	x	x		x	x
Vesper Sparrow	x	x		x	x
White-crowned Sparrow	x	x		x	x
House Sparrow		X			X
<i>McCown's Longspur</i>				x	x
Chestnut-collared Longspur		X		x	x
Number of species observed	113	132		129	142
a/ X = species that were observed in one year but not the other, for APR or SPC					
b/ <i>italics</i> = species that were observed in SPC, but not on the APR					

Table 2. Bird species observed on four units of the American Prairie Reserve in South Phillips County, Montana, during 2009.				
	2009	2009	2009	2009
	Core Reserve	Cowell	LJ5	Schwenke
Species Observed	Complex	Property	Complex	Property
Grebes				
Eared Grebe	x	x	x	
Western Grebe	x		x	
Pied-billed Grebe	x		x	
Pelicans, Cormorants				
American White Pelican	x	x	x	
Double-crested Cormorant			x	
Hérons				
American Bittern			x	
Black-crowned night-heron			x	
Great Blue Heron			x	
Ducks and Geese				
Canada Goose	x	x	x	
Mallard	x	x	x	
Gadwall	x	x	x	x
Northern Pintail	x		x	
Green-winged Teal			x	
Blue-winged Teal	x	x	x	x
Cinnamon Teal	x		x	
American Widgeon	x	x	x	x
Northern Shoveler	x		x	
Canvasback	x		x	
Redhead	x		x	
Ring-necked Duck			x	
Lesser Scaup	x		x	
Barrow's Goldeneye			x	
Common Goldeneye			x	
Bufflehead			x	
Ruddy Duck	x		x	
Common Merganser			x	
Red-breasted Merganser	x			
Hawks, Eagles, Falcons				
Copper's Hawk				
Red-tailed Hawk	x	x	x	
Swainson's Hawk	x		x	
Ferruginous Hawk			x	
Golden Eagle	x	x	x	
Bald Eagle	x			
Northern Harrier	x	x	x	x
Osprey				
Prairie Falcon		x		
Merlin	x		x	
American Kestrel	x		x	
Grouse, Pheasants, etc				
Sharp-tailed Grouse	x	x	x	
Sage Grouse		x		
Ring-necked Pheasant	x		x	
Gray Partridge			x	

Table 2. Continued.				
	2009	2009	2009	2009
	Core Reserve	Cowell	LJ5	Schwenke
Species Observed	Complex	Property	Complex	Property
Rails, Cranes				
Sora	x		x	
American Coot	x	x	x	x
Sandhill Crane			x	
Shorebirds, Gulls, Terns				
Killdeer	x	x	x	x
Mountain Plover				
Long-billed Curlew	x	x	x	x
Upland Sandpiper	x		x	
Spotted Sandpiper	x		x	
Solitary Sandpiper				
Baird's Sandpiper				
Willet	x	x	x	x
Greater Yellowlegs			x	
Lesser Yellowlegs			x	
Marbled Godwit	x		x	
American Avocet	x		x	x
Long-billed dowitcher			x	
Common Snipe	x		x	
Wilson's Phalarope	x	x	x	x
Red-necked Phalarope				
Franklin's Gull			x	
Ring-billed Gull	x	x	x	
California Gull			x	
Forster's Tern			x	
Common Tern			x	
Black Tern	x		x	
Doves				
Mourning Dove	x	x	x	
Cuckoos				
Black-billed Cuckoo	x		x	
Owls				
Great Horned Owl	x		x	
Burrowing Owl	x	x	x	
Short-eared Owl	x		x	
Goatsuckers				
Common Nighthawk	x	x	x	x
Woodpeckers				
Northern Flicker	x	x	x	
Hairy Woodpecker	x			
Downy Woodpecker	x			
Red-headed Woodpecker				
Flycatchers				
Eastern Kingbird	x	x	x	x
Western Kingbird	x		x	
Willow Flycatcher				
Least Flycatcher	x	x	x	
Western Wood-Pewee	x	x	x	
Say's Phoebe	x			

Table 2. Continued.				
	2009	2009	2009	2009
	Core Reserve	Cowell	LJ5	Schwenke
Species Observed	Complex	Property	Complex	Property
Larks				
Horned Lark	x		x	
Swallows				
Violet-green Swallow			x	
Tree Swallow	x		x	x
Barn Swallow	x	x	x	x
Cliff Swallow				
Northern rough-winged Swallow		x	x	
Jays, Magpies, Crows				
Black-billed Magpie	x	x	x	
Common Raven		x	x	
Clark's Nutcracker				
Chickadees				
Black-capped Chickadee		x		
Nuthatches				
Red-breasted Nuthatch			x	
Wrens				
House Wren	x	x	x	
Rock Wren	x			x
Marsh Wren			x	
Mockingbirds, Thrashers				
Northern Mockingbird	x			
Gray Catbird	x		x	
Brown Thrasher	x	x	x	
Sage Thrasher			x	x
Thrushes, Bluebirds				
American Robin	x	x	x	
Hermit Thrush				
Swainson's Thrush	x		x	
Mountain Bluebird	x	x		
Townsend's Solitaire				
Kinglets				
Ruby-crowned Kinglet				
Waxwings				
Cedar Waxwing	x			
Shrikes				
Loggerhead Shrike	x		x	
Starlings, Pipits				
European Starling	x		x	
Sprague's Pipit				
Vireos				
Red-eyed Vireo				
Warbling Vireo	x		x	
Warblers				
Tennessee Warbler			x	
Orange-crowned Warbler			x	
Cape May Warbler			x	
Yellow-rumped Warbler	x	x	x	
Blackpoll Warbler				

Table 2. Continued.				
	2009	2009	2009	2009
	Core Reserve	Cowell	LJ5	Schwenke
Species Observed	Complex	Property	Complex	Property
Warblers -- continued				
Yellow Warbler	x		x	
MacGillivray's Warbler				
Wilson's Warbler			x	
Ovenbird				
Northern Waterthrush			x	
Common Yellowthroat	x		x	
Yellow-breasted Chat	x		x	
American Redstart				
Blackbirds, Orioles, etc				
Western Meadowlark	x	x	x	x
Yellow-headed Blackbird	x		x	
Red-winged Blackbird	x	x	x	x
Orchard Oriole	x		x	
Bullock's Oriole	x	x	x	
Baltimore Oriole	x		x	
Brewer's Blackbird	x	x	x	x
Common Grackle				
Brown-headed Cowbird	x	x	x	x
Tanagers				
Western Tanager				
Grosbeaks, Finches,				
Sparrows, Buntings				
Rose-breasted Grosbeak				
Black-headed Grosbeak	x			
Lazuli Bunting	x			
Pine Siskin			x	
American Goldfinch	x		x	
Red Crossbill				
Green-tailed Towhee	x	x		x
Spotted Towhee	x	x	x	x
Field Sparrow		x		
Chipping Sparrow	x		x	
Clay-colored Sparrow	x	x	x	x
Brewer's Sparrow	x	x	x	x
Lark Sparrow	x	x	x	
Grasshopper Sparrow			x	x
Baird's Sparrow				
Lark Bunting	x		x	
Savannah Sparrow				
Song Sparrow	x		x	x
Vesper Sparrow	x	x	x	x
White-crowned Sparrow	x			
House Sparrow			x	
McCown's Longspur				
Chestnut-collared Longspur			x	
Number of Species Observed:	94	48	116	27

Table 3. Bird species observed in the Core Reserve Complex of the American Prairie Reserve, during 2005 and 2009 <u>a/</u> .							
Species	Box Elder Creek		Telegraph Creek		Core Reserve Complex (Total)		
	2005	2009	2005	2009	2005	2009	
Grebes							
Eared Grebe					w	w	
Western Grebe					w	w	
Pied-billed Grebe					w	w	
Pelicans							
American White Pelican	x			x	x	x	
Double-crested Cormorant					W		
Hérons							
Great Blue Heron	x		x		X		
Ducks and Geese							
Canada Goose			x	x	x	x	
Mallard	x	x	x	x	x	x	
Gadwall				x	w	x	
Northern Pintail					w	w	
Green-winged Teal					W		
Blue-winged Teal			x	x	x	x	
Cinnamon Teal					w	w	
American Widgeon	x				x	w	
Northern Shoveler				x	w	x	
Redhead					w	w	
Ring-necked Duck					W		
Canvasback					w	w	
Lesser Scaup					w	w	
Ruddy Duck					w	w	
Common Merganser					W		
Red-breasted Merganser						W	
Hawks, Eagles, Falcons							
Cooper's Hawk	x				X		
Red-tailed Hawk	x	x	x	x	x	x	
Swainson's Hawk				x	x	x	
Golden Eagle	x	x			x	x	
Bald Eagle						X*	
Northern Harrier	x	x	x	x	x	x	
Osprey	x				X		
Prairie Falcon	x				X		
Merlin		x			x	x	
American Kestrel	x	x	x	x	x	x	
Grouse, Pheasants, Partridges							
Sharp-tailed Grouse	x	x			x	x	
Sage Grouse	x				X		
Ring-necked Pheasant			x	x	x	x	
Gray Partridge					X*		
Rails							
Sora					w	w	
American Coot					w	w	

Table 3. Continued							
	Box Elder Creek		Telegraph Creek		Core Reserve Complex (Total)		
Species	2005	2009	2005	2009	2005	2009	
Shorebirds, Gulls, and Terns							
Killdeer	x	x	x	x	x	x	
Wilson's Snipe	x			x	x	x	
Long-billed Curlew	x	x		x	x	x	
Upland Sandpiper			x	x	x	x	
Spotted Sandpiper					w	w	
Solitary Sandpiper					W		
Willet	x				x	w	
Marbled Godwit				x	w	x	
American Avocet					w	w	
Wilson's Phalarope	x	x			x	x	
Red-necked Phalarope					W		
Ring-billed Gull	x		x	x	x	x	
Black Tern					w	w	
Doves							
Mourning Dove	x	x	x	x	x	x	
Cuckoos							
Black-billed Cuckoo			x	x	x	x	
Owls							
Great Horned Owl		x	x	x	x	x	
Burrowing Owl	x	x	x		x	x	
Short-eared Owl					x	x*	
Goatsuckers							
Common Nighthawk			x	x	x	x	
Woodpeckers							
Northern Flicker	x	x	x	x	x	x	
Hairy Woodpecker			x	x	x	x	
Downy Woodpecker				x		X	
Flycatchers							
Eastern Kingbird	x	x	x	x	x	x	
Western Kingbird	x	x	x	x	x	x	
Willow Flycatcher			x		X		
Least Flycatcher	x	x	x	x	x	x	
Western Wood-Pewee			x	x	x	x	
Say's Phoebe				x		X	
Larks							
Horned Lark	x				x	x*	
Swallows							
Violet-green Swallow	x				X		
Tree Swallow	x		x	x	x	x	
Barn Swallow	x	x	x	x	x	x	
Jays, Magpies, Crows							
Black-billed Magpie	x	x		x	x	x	
Common Raven	x				X		
Wrens							
House Wren	x	x	x	x	x	x	
Rock Wren	x				x	x*	

Table 3. Continued							
					Core Reserve		
	Box Elder Creek		Telegraph Creek		Complex (Total)		
Species	2005	2009	2005	2009	2005	2009	
Mockingbirds, Thrashers							
Northern Mockingbird				x		X	
Gray Catbird	x		x	x	x	x	
Brown Thrasher	x		x	x	x	x	
Sage Thrasher	x				X		
Thrushes, Bluebirds							
American Robin			x	x	x	x	
Hermit Thrush			x		X		
Swainson's Thrush			x	x	x	x	
Mountain Bluebird						X	
Townsend's Solitaire					X		
Waxwings							
Cedar Waxwing			x	x	x	x	
Shrikes							
Loggerhead Shrike	x	x	x	x	x	x	
Starlings							
European Starling		x	x	x	x	x	
Vireos							
Red-eyed Vireo			x		X		
Warbling Vireo	x		x	x	x	x	
Warblers							
Yellow Warbler	x	x	x	x	x	x	
Yellow-rumped Warbler	x				x	x*	
Blackpoll Warbler			x		X		
MacGillivray's Warbler			x		X		
Common Yellowthroat	x	x	x	x	x	x	
Yellow-breasted Chat	x	x	x	x	x	x	
Wilson's Warbler	x		x		X		
American Redstart			x		X		
Meadowlarks, Blackbirds, Orioles							
Western Meadowlark	x	x	x	x	x	x	
Yellow-headed Blackbird				x	w	x	
Red-winged Blackbird	x	x	x	x	x	x	
Orchard Oriole			x	x	x	x	
Bullock's Oriole	x	x	x	x	x	x	
Baltimore Oriole			x	x	x	x	
Brewer's Blackbird	x	x	x	x	x	x	
Brown-headed Cowbird	x	x	x	x	x	x	
Grosbeaks, Finches, Sparrows, Buntings							
Black-headed Grosbeak			x	x	x	x	
Pine Siskin	x				X		
American Goldfinch	x		x	x	x	x	
Spotted Towhee	x	x	x	x	x	x	
Green-tailed Towhee				x		X	
Lazuli Bunting				x		X	
Lark Bunting	x	x	x	x	x	x	
Savannah Sparrow	x				X		
Grasshopper Sparrow					X*		
Vesper Sparrow	x	x	x		x	x	

Table 3. Continued							
	Box Elder Creek		Telegraph Creek		Core Reserve Complex (Total)		
Species	2005	2009	2005	2009	2005	2009	
Grosbeaks, Finches, Sparrows, Buntings, continued							
Lark Sparrow	x	x	x	x	x	x	
Chipping Sparrow	x		x	x	x	x	
Clay-colored Sparrow	x	x	x	x	x	x	
Brewer's Sparrow	x	x	x		x	x	
Field Sparrow	x		x		X		
White-crowned Sparrow	x			x	x	x	
Song Sparrow	x			x	x	x	
Number of Species	61	36	60	64	113	94	
a/ x = species observed during transects along streams (Box Elder Creek and Tekegraph Creek)							
x* = species observed, but not during a transect or systematic survey							
X = species observed during transects along streams in one year but not the other							
w = species observed during surveys of wetlands (stock ponds, lakes, marshes)							
W = species observed during surveys of wetlands in one year but not the other							

Table 4. Continued.												
Species Observed	Core Reserve Complex					Lazy J 5 Complex						
	TC-N	TC-M	TC-S	TC-M/S	BE	BC-1	BC-2	BC-3	BC-4	BC-1a	BWC	
Grosbeaks, Finches, Sparrows, Buntings												
Black-headed Grosbeak		5		x								
Lazuli Bunting		2		x								
Pine Siskin										X		
American Goldfinch		8	1	x				2				
Green-tailed Towhee			1									
Spotted Towhee		28	3	x	2				8			
Chipping Sparrow				X				1		x		
Clay-colored Sparrow		1		x	3		2	3	19	x		
Brewer's Sparrow					2	1			6	x		
Lark Sparrow		14	4	x	4	4		1	2			
Grasshopper Sparrow						1			6	x		
Lark Bunting				x	2	2	3	60	9	x		
Song Sparrow			1			1				x		
Vesper Sparrow					3	3				x		
White-crowned Sparrow		1										
House Sparrow										X		
# of species observed	28	49	33	36	36	64	43	52	36	54	18	
a/ TC-N = northern segment of Telegraph Creek, NW1/4S33 to bridge; 6/14/09												
TC-M = middle segment of Telegraph Creek, bridge to ranch house; 5/24/09												
TC-S = southern segment of Telegraph Creek, ranch house to NE1/4S30; 6/14/09												
TC-M/S = subset of TC-M and TC-S; 7/23/09; x=present												
b/ BC1 = Beaver Creek, Whitcomb Lodge to SW1/4S25, pond; 5/23/09												
BC2= Beaver Creek, SW1/4S25,pond, to dam in SE corner S19; 5/25/09												
BC3 = Beaver Creek, SE corner S19 to confluence with Big Warm Creek; 5/23/09												
BC4 = Beaver Creek, confluence with Big Warm Creek to bridge, Regina Road; 5/25/09												
BC1a = Beaver Creek, partial survey of BC1; 7/22/09; x = present												
BWC = Big Warm Creek; 6/15/09												

Table 5. Continued.					
	Core Reserve		Lazy J 5 Complex		
	Complex		Beaver	Lonesome	Sec. 9
Species observed	#20 Res.	p.77561	Creek lakes	Coulee	pond
Shorebirds, Gulls, Terns					
Killdeer	x (1)	x	x		
Long-billed Curlew	x (1)		x		x
Upland Sandpiper	x (2)		x	x	x
Spotted Sandpiper	x		x		
Willet	x (2)	x (1)	x		
Greater Yellowlegs			x		
Lesser Yellowlegs			x		
Marbled Godwit		x (1)	x		
American Avocet	x (1)		x		
Wilson's Snipe			x		
Wilson's Phalarope	x (5)		x	x	x
Franklin's Gull			x		
Ring-billed Gull			x		
California Gull			x		x
Forster's Tern			x		
Common Tern			x		
Black Tern			x		
Doves					
Mourning Dove			x	x	
Cuckoos					
Black-billed Cuckoo			x		
Goatsuckers					
Common Nighthawk		x	x	x	
Woodpeckers					
Northern Flicker			x		
Flycatchers					
Eastern Kingbird	x		x	x	
Western Kingbird			x	x	
Least Flycatcher			x		
Western Wood-Pewee			x		
Larks					
Horned Lark			x		x
Swallows					
Violet-green Swallow			x		
Tree Swallow	x		x		
Barn Swallow			x		
N. rough-winged swallow			x		
Jays, Magpies, Crows					
Black-billed Magpie					x
Table 5. Continued.					

	Core Reserve		Lazy J 5 Complex		
	Complex		Beaver	Lonesome	Sec. 9
Species observed	#20 Res.	p.77561	Creek lakes	Coulee	pond
Wrens					
House Wren			x		
Rock Wren					
Marsh Wren			x		
Mockingbirds, Thrashers					
Gray Catbird			x		
Brown Thrasher			x		
Thrushes, Bluebirds					
American Robin			x		
Swainson's Thrush			x		
Starlings, Pipits					
European Starling			x		
Vireos					
Warbling Vireo			x		
Warblers					
Tennessee Warbler			x		
Orange-crowned Warbler			x		
Cape May Warbler			x		
Yellow-rumped Warbler			x		
Yellow Warbler			x		
Common Yellowthroat			x		
Yellow-breasted Chat			x		
Blackbirds, Orioles, etc					
Western Meadowlark			x		
Yellow-headed Blackbird	x		x	x	x
Red-winged Blackbird	x	x	x	x	x
Orchard Oriole			x		
Bullock's Oriole			x	x	
Baltimore Oriole			x		
Brewer's Blackbird			x		
Brown-headed Cowbird			x		
Grosbeaks, Finches, Sparrows, Buntings					
Pine Siskin			x		
Spotted Towhee			x		
Chipping Sparrow			x		
Clay-colored Sparrow			x		
Lark Sparrow			x		
Lark Bunting					x
Song Sparrow			x		
# of Species Observed	24	12	89	21	16

a/ (#) = maximum number of birds of that species observed during a survey of that wetland

Table 6. Numbers of birds, by species, observed on transects along a stream on the Schwenke Property, and in forested habitat on the Cowell Property of the American Prairie Reserve, during 2009.		
	Schwenke Property	Cowell Property
Species Observed	Duval Creek	forest habitat
Hawks, Eagles, Falcons		
Red-tailed Hawk		1
Northern Harrier	1	
Prairie Falcon		1
Doves, Goatsuckers		
Mourning Dove		3
Common Nighthawk	1	1
Woodpeckers, Flycatchers		
Northern Flicker		1
Eastern Kingbird	4	
Least Flycatcher		1
Western Wood-Pewee		6
Swallows, Corvids		
Tree Swallow	1	
Barn Swallow	1	
Common Raven		5
Chickadees, Wrens		
Black-capped Chickadee		3
House Wren		7
Rock Wren	1	
Mockingbirds, Thrashers		
Sage Thrasher	1	
Thrushes, Bluebirds		
American Robin		11
Mountain Bluebird		3
Warblers		
Yellow-rumped Warbler		4
Blackbirds, Orioles, etc		
Western Meadowlark	12	6
Brewer's Blackbird	4	
Brown-headed Cowbird	3	8
Sparrows, Towhees		
Green-tailed Towhee	1	1
Spotted Towhee		10
Field Sparrow		2
Chipping Sparrow		10
Clay-colored Sparrow	6	
Brewer's Sparrow	10	
Lark Sparrow		4
Grasshopper Sparrow	1	
Song Sparrow	1	
Vesper Sparrow	4	
# of Species Observed	16	20

Table7. Bird species (and numbers a/) observed in key wetland habitats on the Cowell and Schwenke Properties of the American Prairie Reserve, during 2009.			
	Cowell Prop.		Schwenke Prop.
Species Observed	10 ponds		6 ponds
Grebes			
Eared Grebe	2, 1/10		
Ducks and Geese			
Canada Goose	7, 1/10		
Mallard	3, 2/10		
Gadwall	7, 4/10		8, 2/6
Blue-winged Teal	7, 4/10		1, 1/6
American Widgeon	28, 9/10		5, 2/6
Rails, Cranes			
American Coot	3, 1/10		1, 1/6
Shorebirds, Gulls, Terns			
Killdeer	1, 1/10		2, 2/6
Long-billed Curlew	1, 1/10		
Willet	2, 1/10		2, 1/6
American Avocet			3, 1/6
Wilson's Phalarope	1, 1/10		1, 1/6
Ring-billed Gull	1, 1/10		
Flycatchers			
Eastern Kingbird	3, 2/10		
Jays, Magpies, Crows			
Black-billed Magpie	1, 1/10		
Blackbirds, Orioles, etc			
Red-winged Blackbird	6, 5/10		1, 1/6
# of Species Observed	15		9
a/ entries include total number of birds of that species observed,			
in x of y numbers of ponds surveyed;			
Cowell Property ponds surveyed on 6/13/09 and			
Schwenke Property ponds surveyed on 6/17/09			

Table 8. Locations of select raptor species observed in South Phillips County, Montana, during 2009.

Species	Location	Date
ferruginous hawk	Dry Fork Road; 16.2 mi E of H191 (nest)	6/12/2009
	Second Creek School road; 8.2 mi S of school intersection (nest)	6/23/2009
	Second Creek School road; 0.25 mi S of First Cr. Hall Rd.	6/17/2009
	First Creek Hall road; 2.7 mi W of Sun Prairie	6/16/2009
	First Creek Hall road; 3.4 mi W of Sun Prairie	6/17/2009
	First Creek Hall road; 5.3 mi W of Sun Prairie	7/8/2009
	First Creek Hall road; 2.0 mi W of Regina Road	6/25/2009
	LJ5; Beaver Creek; prairie dog town N of creek; N1/2S25	6/16/2009
	West Regina road; 1.2 mi S of LJ5/Whitcomb Lodge	5/25/2009
	West Regina road; 1.0 mi S of LJ5/Whitcomb Lodge	7/22/2009
	West Regina road; 3.9 mi S of LJ5/Whitcomb Lodge	6/17/2009
	West Regina road; 6.5 mi S of LJ5/Whitcomb Lodge	7/21/2009
	Midale Road; 5.4 mi S of H191	6/23/2009
	Midale Road; 4.9 mi S of H191	7/8/2009
	Sun Prairie Road; 2.8 mi N of First Creek Hall road	6/17/2009
	Sun Prairie Road; 3.8 mi N of First Creek Hall road	6/17/2009
	Sun Prairie Road; 3.4 mi N of First Creek Hall road	7/9/2009
	Sun Prairie Road; 5.4 mi N of First Creek Hall road	7/22/2009
	Sun Prairie Road; 20.9 mi N of First Creek Hall road; 0.5 mi S of large wetland	6/17/2009
	Sun Prairie Road; 27.5 mi N of First Creek Hall road	7/22/2009
Swainson's hawk	Telegraph Creek road; 1.1 mi S of First Creek Hall rd/Sun Prairie	5/24/2009
	Second Creek School road; 0.5 mi S of First Creek Hall road	6/22/2009
	Second Creek School road; 1.3 mi S of First Creek Hall road	6/23/2009
	Second Creek School road; 1.6 mi S of First Creek Hall road	7/21/2009
	First Creek Hall road; 5.4 mi E of Regina Road; (nest) and 1.5 mi W of Sun Prairie	6/12/2009
	First Creek Hall road; 0.1 mi E of Regina Road	6/25/2009
	First Creek Hall road; 3.5 mi E of Regina Road	6/26/2009
	First Creek Hall road; 1.0 mi W of Regina Road	7/6/2009
	West Regina road; 0.7 mi N of First Creek Hall road	7/21/2009
	Regina Road; 0.35 mi N of Beaver Creek	6/16 & 7/8
	Regina Road; 1.25 mi N of Alkali Creek	6/16/2009
	Regina Road; 24.55 mi N of E-W Regina connector (nest)	6/16 & 7/8
	Regina Road; 27.8 mi N of E-W Regina connector (nest)	6/16/2009
	Regina Road; 3.35 mi N of First Creek Hall road (nest)	5/25/2009
	Regina Road; 3.4 mi N of First Creek Hall road	6/26/2009
Regina Road; 7.2 mi N of First Creek Hall road	7/8/2009	
E-W Regina connector; 5.2 mi W of West Regina road	6/23/2009	
E-W Regina connector; 6.5 mi W of West Regina road	7/8/2009	
E-W Regina connector; 3.1 mi E of West Regina road	6/25/2009	

Table 8. Continued.

Species	Location	Date
Swainson's hawk, continued	Midale Road; 2.2 mi N of E-W Regina connector	6/24/2009
	Midale Road; 2.2 mi N of E-W Regina connector	7/8/2009
	Midale Road; 0.5 mi N of E-W Regina connector	7/6/2009
	LJ5 cutoff road; 2.2 mi W of Whitcomb Lodge	7/8/2009
	LJ5 cutoff road; 2.8 mi W of Whitcomb Lodge	7/10/2009
	Beaver Creek; T26N,R29E,NE1/4S26 (nest)	5/25/2009
	Big Warm Creek; T27N,R28E,SW1/4S12 (nest)	6/15/2009
	Sun Prairie Road; 0.2 mi N of First Creek Hall road	7/9/2009
	Sun Prairie Road; 4.8 mi S of Content Road intersection	7/22/2009
	Sun Prairie Road; 4.9 mi S of Content Road intersection	7/22/2009
	Content Road; 2.5 mi S of "Y" (N end) (nest)	6/17/2009
	Content Road; 6.7 mi S of "Y" (N end) (nest)	6/17/2009
	golden eagle	Box Elder Creek, approx. 1 mi E of Telegraph Cr. Road (nest)
Regina Road; 2.2 mi N of E-W Regina connector (nest)		5/24/2009
Regina Road; 12.9 mi N of E-W Regina connector		6/16/2009
Regina Road; 14.8 mi N of E-W Regina connector		7/22/2009
West Regina road; 2.6 mi S of LJ5 compound, 1 mi W of road		6/16/2009
LJ5 cutoff road; 2.65 mi W of W hitcomb Lodge		5/23/2009
Big Warm Creek; T27N, R29E, NW1/4S18		6/15/2009
Sun Prairie Road; 5.7 mi S of Content Road intersection	7/22/2009	
prairie falcon	Regina Road; 4.1 mi N of E-W Regina connector	7/22/2009
merlin	West Regina road; near intersection of E-W Regina connector	5/23/2009
	Sun Prairie Road; 12.4 mi S of Content Road intersection	7/22/2009
	Third Creek; T23N, R30E, SE1/4S2 (nest)	6/14/2009
short-eared owl	Telegraph Creek road/Sun Prairie; 0.2 mi S of First Cr. Hall road	6/16/2009
	Regina Road; 1.0 mi N of First Creek Hall road	6/16/2009
	West Regina road; 0.9 mi N of E-W Regina connector	6/17/2009
	E-W Regina connector; 2.3 mi W of West Regina road	7/10/2009
	Midale Road; 0.2 mi N of E-W Regina connector	6/24/2009
	Midale Road; 0.1 mi N of E-W Regina connector	7/8/2009
	LJ5 cutoff road; 1.7 mi W of Whitcomb Lodge	7/8/2009
	Midale Road; 7.7 mi N of E-W Regina connector	6/23/2009
	Regina Road; 11.0 mi N of Beaver Creek	7/8/2009

Table 9. Locations and status of raptor nests (except burrowing owl) observed on the APR, during 2005 and 2009.

Nest Location	2005 status	2009 status
Core Reserve Complex		
Telegraph Cr., T24N, R31E, SE1/4S33	Red-tailed Hawk	Red-tailed Hawk
Telegraph Cr/Second Cr, T23N, R31E, NW1/4S8	Red-tailed Hawk	nest gone
Telegraph Cr trib, T23N, R31E, SW1/4S29	Red-tailed Hawk	nest gone
Telegraph Creek, T23N, R31E, SW1/4S19	no nest	Red-tailed Hawk
Telegraph Cr Road, T24N, R31E, NW1/4S28	Swainson's Hawk	nest gone; SWHA seen in cottonwoods to south
Telegraph Cr, T23N, R31E, NE1/4S30	Great-horned Owl	did not check nest site; GHOW seen to north
Telegraph Cr/Second Cr, T23N, R31E, NE1/4S7	Great-horned Owl	nest gone
Box Elder Cr, T23N, R31E, SE1/4S15	Golden Eagle	nest empty
Box Elder Cr, T23N, R31E, NE1/4S21	no nest	Golden Eagle
Box Elder Cr, T23N, R31E, NE1/4S25	American Kestrel	AMKE seen in vicinity*
Box Elder Cr, T23N, R31E, SE1/4S15	American Kestrel	AMKE seen in vicinity*
Third Cr, T23N, R30E, SE1/4S2	Merlin	Merlin seen in vicinity*
Third Cr, T23N, R31E, SE1/4S18	American Kestrel	AMKE seen in vicinity*
Third Cr, T23N, R31E, NW1/4S18	American Kestrel	AMKE seen in vicinity*
Third Cr, T23NR30E, SW1/4S1	American Kestrel	AMKE seen in vicinity*
Third Cr, T23NR30E, SE1/4S2	American Kestrel	AMKE seen in vicinity*
Miss. River breaks, T22N, R31E, SE1/4S1	Osprey	did not check nest site
Lazy J 5 Complex		
Beaver Creek, T26N, R30E, SE1/4S18	did not visit site	Great-horned Owl
Beaver Creek, T26N, R29E, NE1/4S26	did not visit site	Swainson's Hawk
Big Warm Creek, T27N, R28E, SW1/4S12	did not visit site	Swainson's Hawk

* nesting likely, but visit to site was too early to observe fledglings and confirm nesting

Table 10. Locations and status of raptor nests observed outside of the APR, in South Phillips County, during 2005 and 2009.

Nest Location	2005 status	2009 status
Dry Fork Road		
Beauchamp Creek bridge, 12.7 mi E of H191 16.2 mi East of H191	Great-horned Owl no nest	Great-horned Owl Ferruginous Hawk
Second Creek School road		
8.2 mi south of School intersection	did not check site	Ferruginous Hawk
First Creek Hall road		
1.5 mi W of Sun Prairie	no nest	Swainson's Hawk
Regina Road, from First Creek Hall road to Malta		
1.5 mi N, First Creek	Swainson's Hawk	empty
1.8 mi N, E side of road	Ferruginous Hawk on snag beside nest	pair of Golden Eagles on snag
3.35 mi N	Ferruginous hawk	Swainson's Hawk
4.35 mi N	Swainson's Hawk	empty
11.2 mi N, Beaver Creek bridge	did not check site	Great-horned Owl
16.75 mi N, E of road	poss. Harlan's RTHA	nest gone
20.6 mi N	unk. hawk	nest gone
25.4 mi N, W of road	Swainson's Hawk	nest gone
27.2 mi N, E of road	unk. hawk	Swainson's Hawk
30.45 mi N	no nest	Swainson's Hawk
Content Road and Sun Prairie Road, from Malta to First Creek Hall road,		
2.4 mi S on Content Road, W of road	Swainson's Hawk	Swainson's Hawk
2.9 mi S on CR, W side of road	Ferruginous hawk	nest gone
4.0 mi S on CR, E side of road	empty nest	nest gone
4.8 mi S on CR, E side of road	Swainson's Hawk	empty
5.1 mi S on CR	no nest	empty nest
5.75 mi S on CR, E of road	Swainson's Hawk	empty
6.5 mi S on CR, W side of road	empty	Swainson's Hawk
3.1 mi S on Sun Prairie Road, E of road	empty	nest gone
5.75 mi S on SPR, N side of road	Swainson's Hawk	nest gone
24.45 mi S on SPR, E side of road	Swainson's Hawk	nest gone

Table 11. Results of searches for burrowing owls on the the APR and in surrounding areas of South Phillips County, Montana, 2009.

Prairie Dog			
Town i.d. <u>a/</u>	Location	Date	Observations
APR, Core Reserve Complex			
Wiederrick*	Telegraph Creek; T23N R31E S32	5/22/09	4 BUOW
		6/25/09	2 BUOW
P130*	Telegraph Creek; T23N R31E S30	5/22/09	6 BUOW
?	Telegraph Creek,W of #20 Reservoir; T23N R30E S1	6/14/09	7 BUOW
S013*	Telegraph Creek; T23N R31E S9, 16	6/16/09	1 BUOW
P131*	Box Elder Creek; T23N R31E S23,24,25,26	5/24/09	0 BUOW, some p. dogs
P086*	Box Elder Creek; T23N R31E S15, 22	5/24/09	0 BUOW, no p. dogs
APR, Lazy J 5 Complex			
LJ5-new	Beaver Creek; T26N R29E NW1/4S25	6/16/09	8 BUOW (4 ad.,4 fledglings)
B100	Big Warm Creek; T27N R29E SW1/4S7	6/15/09	1 BUOW
APR, Cowell Property			
P042	West side; T23N R31E S21,22,27,28	6/13/09	1 BUOW
P084	Northeast side; T23N R33E S19	6/13/09	0 BUOW
APR, Schwenke Property			
?	T23N R23E S23, 26	6/17/09	0 BUOW
?	T23N R23E center S24	6/17/09	0 BUOW
South Phillips County, outside of APR			
?	Dry Fork Road, 0.8 mi E of H191, S of road	6/12/09	1 BUOW
		7/21/09	0 BUOW
?	Dry Fork Road, 8.8 mi E of H191, 500m S of road	7/6/09	2 BUOW (1 ad., 1 fledgling)
?	Second Creek School road, 9.9-10.2 mi S of school intersec.	6/23/09	1 BUOW
?	Second Creek School road, 12.8 mi S of school intersec.	6/23/09	1 BUOW
P089	West Regina road, 2.8 mi N of First Creek Hall road	7/21/09	11 BUOW
?	Regina Road; T27N R30E S5 (BLM)	6/15/09	5 BUOW
		6/35/09	7 BUOW
		7/22/09	24 BUOW
?	Midale Road, 3.5 mi S of H191	6/23/09	8 BUOW (2 ad., 6 chicks)

a/ * indicates prairie dog towns that also were surveyed in 2005

Table 12. Bird species observed in key wetland habitats in South Phillips County, outside of the American Prairie Reserve, during 2009 a/.				
Species Observed	Bison Bone Reservoir	Nelson Reservoir	Sun Prairie Wetland	Holzhey Reservoir
Grebes				
Eared Grebe	x (13)	x	x	x
Western Grebe	x	x (2)		
Pied-billed Grebe	x		x	x
Pelicans, Cormorants				
American White Pelican	x (27)	x (14)		
Double-crested Cormorant	x (70)	x (6)	x	
Hérons				
Black-crowned night heron			x (3)	
Great Blue Heron			x	
Ducks and Geese				
Canada Goose	x (32)	x		
Mallard	x (7)	x	x	
Gadwall	x (22)	x	x	x
Northern Pintail	x (2)		x	x
Green-winged Teal	x (4)	x		
Blue-winged Teal	x (8)	x	x	x
Cinnamon Teal	x (2)			
American Widgeon	x (17)	x	x	x
Northern Shoveler	x (7)	x	x	
Canvasback	x (5)			
Redhead		x	x	x
Ring-necked Duck	x			
Lesser Scaup	x	x	x	
Bufflehead	x	x		
Ruddy Duck	x (6)	x	x	x
Rails, Cranes				
American Coot	x (19)	x	x	x
Shorebirds, Gulls, Terns				
Killdeer	x (3)	x	x	
Long-billed Curlew	x (3)		x	
Upland Sandpiper			x	
Spotted Sandpiper	x (1)	x	x	
Solitary Sandpiper			x	
Baird's Sandpiper		x (3)		
Willet	x (1)	x	x	x
Lesser Yellowlegs	x (1)		x	
Marbled Godwit	x (1)	x	x	
American Avocet	x (1)	x (3)	x	
Wilson's Phalarope	x (3)	x	x	
Ring-billed Gull	x			
California Gull	x (1)			
Common Tern		x		x

Table 12. Continued.				
	Bison Bone	Nelson	Sun Prairie	Holzhey
Species Observed	Reservoir	Reservoir	Wetland	Reservoir
Swallows				
Barn Swallow		x		
Warblers				
Common Yellowthroat			x	
Blackbirds, Orioles, etc				
Yellow-headed Blackbird	x		x	x
Red-winged Blackbird	x	x	x	
# of Species Observed	32	26	28	12
a/ x=species present, (#) = maximum number of birds of that species observed during a survey of that wetland				
Bison Bone Reservoir surveyed on 6/12/09, 6/22/09, and 7/21/09				
Nelson Reservoir surveyed on 6/15/09 and 7/22/09				
Sun Prairie wetland surveyed on 6/17/09 and 7/21/09				
Holzhey Reservoir surveyed on 6/24/09				

APPENDIX

Birds observed by WTU in South Phillips County, Montana, during 2005 and 2009 field seasons.		
	species	
Species Observed a/	abbrev.	
Grebes		
Eared Grebe	EAGR	
Western Grebe	WEGR	
Pied-billed Grebe	PBGR	
Pelicans, Cormorants		
American White Pelican	AMWP	
Double-crested Cormorant	DCCO	
Hérons		
American Bittern	AMBI	
Black-crowned Nightheron	BCNH	
Great Blue Heron	GBHE	
Ducks and Geese		
Canada Goose	CAGO	
Mallard	MALL	
Gadwall	GADW	
Northern Pintail	NOPI	
Green-winged Teal	GWTE	
Blue-winged Teal	BWTE	
Cinnamon Teal	CITE	
American Widgeon	AMWI	
Northern Shoveler	NOSH	
Canvasback	CANV	
Redhead	REDH	
Ring-necked Duck	RNDU	
Lesser Scaup	LESC	
Barrow's Goldeneye	BAGO	
Common Goldeneye	COGO	
Bufflehead	BUFF	
Ruddy Duck	RUDU	
Common Merganser	COME	
Red-breasted Merganser	RBME	
Hawks, Eagles, Falcons		
Cooper's Hawk	COHA	
Red-tailed Hawk	RTHA	
Swainson's Hawk	SWHA	
Ferruginous Hawk	FEHA	
Golden Eagle	GOEA	
Bald Eagle	BAEA	
Northern Harrier	NOHA	
Osprey	OSPR	
Prairie Falcon	PRFA	
Merlin	MERL	
American Kestrel	AMKE	
Grouse, Pheasants, etc		
Sharp-tailed Grouse	STGR	
Sage Grouse	SAGR	
Ring-necked Pheasant	RNPH	
Gray Partridge	GRPA	

SPC birds, 2005 & 2009, continued.	
	species
Species Observed	abbrev.
Rails, Cranes	
Sora	SORA
American Coot	AMCO
Sandhill Crane	SACR
Shorebirds, Gulls, Terns	
Killdeer	KILL
<i>Mountain Plover</i>	MOPL
Long-billed Curlew	LBCU
Upland Sandpiper	UPSA
Spotted Sandpiper	SPSA
Solitary Sandpiper	SOSA
<i>Baird's Sandpiper</i>	BASA
Willet	WILL
Greater Yellowlegs	GRYE
Lesser Yellowlegs	LEYE
Marbled Godwit	MAGO
American Avocet	AMAV
Long-billed Dowitcher	LBDO
Common Snipe	COSN
Wilson's Phalarope	WIPH
Red-necked Phalarope	RNPH
Franklin's Gull	FRGU
Ring-billed Gull	RBGU
California Gull	CAGU
Forster's Tern	FOTE
Common Tern	COTE
Black Tern	BLTE
Doves	
Mourning Dove	MODO
Cuckoos	
Black-billed Cuckoo	BBCU
Owls	
Great Horned Owl	GHOW
Burrowing Owl	BUOW
Short-eared Owl	SEOW
Goatsuckers	
Common Nighthawk	CONI
Woodpeckers	
Northern Flicker	NOFL
Hairy Woodpecker	HAWO
Downy Woodpecker	DOWO
<i>Red-headed Woodpecker</i>	RHWO
Flycatchers	
Eastern Kingbird	EAKI
Western Kingbird	WEKI
Willow Flycatcher	WIFL
Least Flycatcher	LEFL
Western Wood-Pewee	WWPE
Say's Phoebe	SAPH

SPC birds, 2005 & 2009, continued.	
	species
Species Observed	abbrev.
Larks	
Horned Lark	HOLA
Swallows	
Violet-green Swallow	VGSW
Tree Swallow	TRSW
Barn Swallow	BASW
<i>Cliff Swallow</i>	CLSW
Northern rough-winged Swallow	NRSW
Jays, Magpies, Crows	
Black-billed Magpie	BBMA
Common Raven	CORA
<i>Clark's Nutcracker</i>	CLNU
Chickadees	
Black-capped Chickadee	BCCH
Nuthatches	
<i>Red-breasted Nuthatch</i>	RBNU
Wrens	
House Wren	HOWR
Rock Wren	ROWR
Marsh Wren	MAWR
Mockingbirds, Thrashers	
Northern Mockingbird	NOMO
Gray Catbird	GRCA
Brown Thrasher	BRTH
Sage Thrasher	SATH
Thrushes, Bluebirds	
American Robin	AMRO
Hermit Thrush	HETH
Swainson's Thrush	SWTH
Mountain Bluebird	MOBL
Townsend's Solitaire	TOSO
Kinglets	
<i>Ruby-crowned Kinglet</i>	RCKI
Waxwings	
Cedar Waxwing	CEWA
Shrikes	
Loggerhead Shrike	LOSH
Starlings, Pipits	
European Starling	EUST
<i>Sprague's Pipit</i>	SPPI
Vireos	
Red-eyed Vireo	REVI
Warbling Vireo	WAVI
Warblers	
Tennessee Warbler	TEWA
Orange-crowned Warbler	OCWA
Cape May Warbler	CMWA
Yellow-rumped Warbler	YRWA
Blackpoll Warbler	BLWA
Yellow Warbler	YEWA

SPC birds, 2005 & 2009, continued.	
	species
Species Observed	abbrev.
Warblers -- continued.	
MacGillivray's Warbler	MCWA
Wilson's Warbler	WIWA
<i>Ovenbird</i>	OVEN
Northern Waterthrush	NOWA
Common Yellowthroat	COYE
Yellow-breasted Chat	YBCH
American Redstart	AMRE
Blackbirds, Orioles, etc	
Western Meadowlark	WEME
Yellow-headed Blackbird	YHBL
Red-winged Blackbird	RWBL
Orchard Oriole	OROR
Bullock's Oriole	BUOR
Baltimore Oriole	BAOR
Brewer's Blackbird	BRBL
<i>Common Grackle</i>	COGR
Brown-headed Cowbird	BHCO
Tanagers	
<i>Western Tanager</i>	WETE
Grosbeaks, Finches, Sparrows, Buntings	
<i>Rose-breasted Grosbeak</i>	RBGR
Black-headed Grosbeak	BHGR
Lazuli Bunting	LZBU
Pine Siskin	PISI
American Goldfinch	AMGO
<i>Red Crossbill</i>	RECR
Green-tailed Towhee	GRTO
Spotted Towhee	SPTO
Field Sparrow	FISP
Chipping Sparrow	CHSP
Clay-colored Sparrow	CCSP
Brewer's Sparrow	BRSP
Lark Sparrow	LASP
Grasshopper Sparrow	GRSP
<i>Baird's Sparrow</i>	BASP
Lark Bunting	LABU
Savannah Sparrow	SASP
Song Sparrow	SOSP
Vesper Sparrow	VESP
White-crowned Sparrow	WCSP
House Sparrow	HOSP
<i>McCown's Longspur</i>	MCLO
Chestnut-collared Longspur	CCLO
<i>a/ italics = species not observed on the APR</i>	