

US Department of the Interior
Bureau of Land Management



MIGRATORY LANDBIRD SPECIES USE OF RIPARIAN AND
SHRUB STEPPE SYSTEMS ON 2 SITES IN EASTERN WASHINGTON

PACKER CREEK PARCEL, WHITMAN COUNTY
SOUTH SPRAGUE PARCEL, LINCOLN COUNTY



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INTRODUCTION/MISSION

Loss of habitat has been recognized as one of the major factors for the decline of bird populations. In several western states, riparian and shrub steppe habitats are critical to the conservation of migratory and resident bird species. Projects like this one are providing a continuous census of the presence and density of bird species in Bureau of Land Management (B.L.M.) administered lands in Eastern Washington.

The mission is to conduct point counts and baseline search as described herein. The data being obtained at fixed locations becomes a tool, over a period of time, to identify trends in the fluctuation of bird abundance and to allow comparative analysis with habitat modifications. Consistency of methods is essential and must be adapted to the conditions in which surveys are conducted, thus the need for guidelines and stricter protocols as the data becomes better defined.

Following the twelve month four season initial search and inventory of the Escure Ranch Parcel - Rock Creek Management Area in 2000 - 2001, the decision was made to further investigate two sites with different survey needs. Those sites are described here in Part I Packer Creek and Part II South Sprague. Although Packer Creek is detached from the Escure Ranch contiguous acreage, it was originally included in that survey grid as Sector 1A, and was visited several times. Its physical characteristics are somewhat distinct. This parcel includes a 200 + acre intermittent wetland, only partially drained by the flow of Packer Creek, and other riparian features. For that reason it is of interest to land managers as a proposed site for wetland rehabilitation, and needed more data on avian species that a repeat baseline search could have provided. To be usable as an ongoing comparative and monitoring study, a protocol directed field transect was selected as the most appropriate method (see page 6, paragraph B1- Survey Methodology Overview)

Part II of this report, South Sprague, had been informally visited and reported in the past. It was not a total unknown. The recent adjustment and reversal of ownership affected the attribution of that basic data; therefore in this case, it was decided to proceed with a new baseline search, similar to the 2000 – 2001 search at the Escure Ranch.

It was also decided to confine both surveys within a five month period, May through September, emphasis being placed on breeding arrivals and departures. Two visits per month were considered to be sufficient for both surveys. The presence and actions of cattle was noted as a matter of record, but it is not the role of this report to draw any conclusions or make any management recommendations. This report limits its observations to birds in their existing conditions.

GENERAL NOTES

A - SURVEYORS

Surveyors' skills varied with individuals, but all were familiar with common scabland birds and had been encouraged to study the less common ones. Any unusual sighting was discussed and the team leader decided in a few cases not to accept it. Eighteen surveyors took part in the surveys.

B - CLIMATIC CONDITIONS

Climatic conditions of both sites which are about 12 direct miles apart, with the South Sprague Parcel culminating 200 ft higher, are typical of the Columbia Basin. In winter it is frequently snow free when areas further north and east are snowbound. Annual precipitation seldom exceeds 14 inches. Spring arrives somewhat earlier.

The spring of 2002; however, was late in coming. Winter was not severe in the lowlands, but persisted until late April with cold and windy days. High winds were encountered frequently and some surveys were rescheduled because of them. A hot drought began in mid June and lasted until the end of the period with only a few days of rain. That rain fell in the form of thunderstorms on two Packer Creek surveys in August, with enough lightning to worry the surveyors but not enough rainfall to invalidate the surveys. For specific impact of weather conditions on each site see survey assessments in Part I - Packer Creek and in Part II - South Sprague.

Temperatures above 90 ° F occurred on many days from June to September, July 13 being the warmest day with 102° F. Daytime temperatures were in the 60's most of April and May, dipping at night to 21° F on April 24, and to 24° F May 8, to set new record lows on those days.

August was the driest month with 0.67 inch of rain and June was the wettest with 1.41 inches. Monthly precipitation usually fell within 48 hour periods. Conditions remained dry for weeks in between.

PART I PACKER CREEK TRANSECT SURVEY

A - SITE DESCRIPTION

1. GEOGRAPHICAL DESCRIPTION

The parcel, also known by the name of the previous owner as Bailey Ranch, is located south of the junction of Wagner Road and Highway 23. It is made of Section 29, 31 and 32, Range 40E, Township 19N and that part of Section 5, Range 40E, Township 18N, north of the vacated Chicago-Milwaukee railroad bed, which is now state land. It is bordered to the west by private property, Section 6, and state land, Section 36, to the north by Wagner Road, a 120 acre plus, private holding around a ranch house and adjacent buildings and Highway 23. Privately owned Sections 28 and 33 are the eastern boundary (see maps page 20 & 21 and aerial photo on page 22).

It is essentially a treeless scabland containing a main seasonal marsh of about 200 acres in its center. The South-Eastern corner, which is the eastern half of Section 32 and the North-West quarter of Section 5, is more rugged with cliffs and shrub covered rock talus. For an area of roughly 1600 acres, 400 acres could be described as wet land-riparian, 300 acres as rocky slopes and cliffs and the rest as dry rangeland.

2. ACQUISITION AND LAND USE

The Packer Creek (Bailey Ranch) property was acquired as part of the B.L.M. management goal to re-establish desirable plant communities in upland and riparian areas and restore the natural hydrology and habitat characteristics of the Rock Creek corridor.

Prior to this acquisition, the parcel was managed for intensive grazing and Packer Creek flows were diverted or drained for that purpose.

See B.L.M. WAOR 50525 EA # OR 130-09-07, May 1999 and other documents for Bailey Ranch acquisition

3. CURRENT CONDITIONS

The parcel is still under a cattle grazing agreement of an average 640 Animal Unit Months (AUM) on a rest rotation basis, March 15 – December 12. Sixty plus head of cattle appear to be feeding on the site. The presence of at least two bulls, described as gentle, but inherently unpredictable made surveyors nervous but caused only one station omission. The cattle are usually concentrated along Packer Creek and the area around the ranch house holding. The observation of the marsh seems to indicate that a dike existed at one time when the site was in private ownership. After Packer Creek was restored to a free flow, the marsh responded by a reduction in open water and seasonal duration. It increased the size and variety of wetland vegetation. Remains of the old dike are still visible and are still contributing to the configuration of the marsh. We noted that the dense reeds seemed to deter the cattle from reaching open water in the center of the marsh in spring. The stream inlet near the service trail and the brushy area south of the ranch downstream were used instead. Penetration of the marsh increased as the open water shrank, but most species seemed to have fledged at that time. Packer Creek is formed by a few small rivulets about 8 miles to the north. After crossing Highway 23 it enters a spring fed bog from which a smaller stream flows down towards the main marsh. That bog holds a

considerable amount of water in the spring, as unsuspecting surveyors found out to their discomfort. There is hedge type vegetation with a few medium size trees, a distinct feature in this barren landscape.

After a few hundred meters, Packer Creek enters the private holding where it is not observable from the outside, and then it emerges in the southwest corner of that holding and enters the secondary seasonal marsh. About 500 meters downstream the creek bed is a narrow ditch, with intermittent presence of water in spring, until it becomes possibly subterranean but visually dry in summer, as it was in 2002.

The vegetation is typical of the surrounding channeled scablands. Short grasses, wild rose bushes, various shrubs, non-native plants and weeds are prevalent. Several patches of common camas occur in moist level areas. The southeast corner near the railroad bed is covered with poison ivy, phlox clumps, bitterroot, and other rock flowers. Two main service roads reach the south boundary. They are not rutted and are often recognizable only as a pattern change in the ground cover. Several grazing fences divide the site.

The parcel is open to the non-motorized public, and there were concerns of possible interference with the surveys and disturbance of the birds. This did not materialize and no other persons were encountered, although evidence of human activities was noted in the southeast area.

B - SURVEY METHODOLOGY

1. OVERVIEW

Due to logistics and the late spring arrival in 2002, transects were not marked in the field until April 25 (temperature as noted previously went down to 21° F on April 24). The preliminary site investigation took place on April 7. The first Packer Creek survey was conducted on May 15. The intent was to balance the physical capabilities and safety of surveyors with the time limitations to achieve the maximum and most diversified coverage. It was determined that a productive method would be a combination transect route and point counts. Such combination would probably be an overreach in most conditions, but given the sparse vegetation and open spaces of the Packer Creek site, it appeared workable, particularly to avoid visual and audio duplications, repeat counts and to maintain overall accuracy.

To minimize disturbance, it was decided to establish a direct return route that crosses but does not follow the transect routes.

Eight stations were selected based on 1) Differences in habitat, 2) Differences in topographical features, 3) Open views, and 4) Similar intervals. The transect route was then established to link these stations making best use of the intervening terrain. (see page 7, paragraph B 2 - Coverage and Station Description) Total distance from start to finish was about 5.2 miles. This distance was covered by two teams, walking towards each other.

2. COVERAGE AND STATION DESCRIPTION

The survey stations were located by Global Positioning System (GPS) instrumentation as listed below. For transect progression between stations see this section, Protocols and Transect Route, page 8.

Station Point	Northing	Easting
1	5217384	439027
2	5216833	439577
3	5216078	439744
4	5215573	439924
5	5214993	439143
6	5216102	438721
7	5215985	438036
8	5215801	437108

Station 1 is in the Packer Creek bog, 200 meters N.E. of the N.E. corner of the private holding, immediately south of the outlet stream in the center of the tree hedge. The stake is hard to see and the water is deep in the spring, but when the position is known, firm ground observations can be made from a short distance.

Station 2 is 1100 meters from Station 1 along the road on a rocky promontory within a southward turn, overlooking the east end of the marsh, about 800 meters E. of the private holding.

Station 3 is 900 meters south of Station 2, first down the road then up the bluff until it reaches the edge of a cliff overlooking a large seasonal shallow slough, which disappears in late summer. At 1800 ft, it is the highest non-mesa, walk accessible spot within the parcel. The parcel slopes toward Rock Creek, the highest elevation is near where Packer Creek enters it.

Station 4 is 900 meters from Station 3, near the railroad bed by an abandoned gate across the road and the triangle of public land S.W. of a distinctive basalt outcropping. It is humid in spring and has a few small hawthorn trees.

Station 5 is about 1 km southwest along the railroad bed from Station 4 but high on the cliff overlooking it. The surveyors come from Station 6 which is 1400 meters to the north. A few white berry bushes and other shrubs cover the north slope of the ridge and both sides of the railroad bed. It offers a wide view of Rock Creek and of the farmlands beyond.

Station 6 is 850 meters from Station 7 and 400 meters south of the ranch, a short distance west of the service road on the south edge of the main marsh and overlooking it.

Station 7 is 1100 meters east of Station 8, between seasonal patches of wetland and 300 meters south of Packer Creek, on what looks like a mima mound but is more likely an old dredging pile. Water was present only until mid July. It offers views to the north and close observation of the lone high poplar tree, where a pair of Red-tailed Hawks and Western Kingbirds tried unhappily to coexist.

Station 8 It is near the western boundary, about 200 meters east of it. It is on a high point 100 meters north of a crudely fenced mud hole on Packer Creek. The only time a bull kept surveyors away was at that station.

3. PROTOCOL AND TRANSECT ROUTE

Each survey day consisted of two teams traveling to the site usually in one vehicle. Each team consisted of two surveyors, one observing and one recording. The initial protocol submitted to the B.L.M. also considered the possibility of two teams of one person or one team of two persons. For the safety of the surveyors, and the best performance of the survey, the two teams of two surveyors approach was adopted.

Initial observations were made by the designated observer, but the recorder contributed to identification and secondary location. Those functions were interchangeable. The survey had to be completed by sunrise + 5 hours and starting times were established accordingly. The west team was driven to the starting point at the N.W. corner of the site along Wagner Road and started surveying immediately. The car returned to the gate on Highway 23, where the east team parked and started their half of the survey. The two teams met at the point noted as ES (End of Survey), then proceeded along the return route to the parked car. A special daily survey form was designed. They are submitted with this report.

West Team

Starting at the N.W. corner of the site, the route follows the fence southward, crosses Packer Creek, proceeds up the bluff until the south boundary is reached, turns back northward to re-cross Packer Creek 300 meters further east and goes N.W. to Station 8.

From Station 8, it goes down to the enclosed mud hole, then eastward along the low ridge, following a fence south of Packer Creek for 900 meters until it reaches Station 7. Station 7 is near an inside corner where two fence lines meet. In the spring this area is quite wet. The route then turns north for 100 meters or less, then S.W. on narrow higher grounds until it reaches the south edge of the marsh. Station 6 is visible on the nearest skyline about 400 meters away. From Station 6 the transect route veers south along the barely defined road/trail for about 500 meters until it rises to a gap between low rocky ridges. At this point it leaves the road, weaves south, crosses 2 grassy depressions separated by a low ridge then rounds the cliff face west of Station 5. The route then goes east down slope from Station 5, overlooking a small depression, until it reaches the west road. Then from near this point it follows a trail that connects the 2 main roads. When the east road is reached, at a gate in the existing cattle fence, it is the end of the West Team transect route.

East Team

Starting at the service entrance gate along Highway 23, the transect route follows the road toward Packer Creek and the private holding. Immediately after the road crosses a smaller stream flowing out of a bog, facing west towards the cluster of trees, is the location of Station 1, about 60 meters from the road, which is well defined on that stretch. The transect route then follows that road until it turns sharply eastward at the entrance of the private property. The transect cuts the corner within the turn, then crosses back over the same stream near or at a small waterfall (dry in late summer) then follows the road 500 meters along a meadow with low trees (wet in spring) to Station 2. From Station 2 the

transect route follows the road for 300 meters, crosses the east end of a marsh, then leaves the road and ascends the hill, rounds a couple of grassy spots, until it reaches Station 3. The route between Station 3 and Station 4 is the most productive area for landbirds but also the most difficult part of the transect. From Station 3 the route first follows the ridge eastward around the seasonal wetland below until it reaches the eastern boundary of the parcel, then follows the boundary up and down low rocky folds then down a “chimney” like configuration that allows access to the railroad bed below. That particular part of the transect is made of unstable rock slides, precarious fences and is infested with poison ivy. Once the railroad bed is reached it goes through the gap formed by a cliff face and a basalt needle. The old gate and Station 4 are about 100m further west. From Station 4 it ascends northward on a faintly defined road until it reaches ES – (End of Survey).

Exit Route

When the two teams have met and the survey is completed, they return by a route established to avoid the survey transect and provide a direct return to the vehicle. That route goes up the hill eastward until it crosses the transect south of the seasonal slough, and as distant as possible from its shoreline (Spring) near the east boundary. It then heads north following the fence until the vehicle is reached.

The return walk is not an easy walk, and going around cliffs and obstacles represents a factual distance of about two miles. Its necessity could be reconsidered for future surveys.

C - SURVEY ASSESSMENT

With its open spaces, wide sky and long vistas, the only surprises on the Packer Creek site were expected to come from the marsh. The marsh actually produced a Virginia Rail calling, which was interesting. It was neither heard of again nor visually observed. Very few ducks were observed, and shorebird passages were meager. The best bird was a Long-billed Curlew, which was seen twice in the same area near Station 7.

The only Canada Goose seen between May 24 and Sep 14 was deceased. Mallards and American Green-winged Teals were the only species of ducks seen after July 7 as the wet areas were greatly reduced. Nesting for many species may not have been very successful. Raptors were not abundant and Swainson’s Hawks apparently did not nest on the site. Northern Harriers and Kestrels seemed to have fared better.

Only four White-throated Swifts on May 15 and one on Sep 14 indicated no nesting near the site. Swallows move around fast and are hard to follow. An accurate count was not possible. Estimates must be made based on the frequency of observations which included of course many over counts and under counts, as illustrated by 533 Cliff Swallows observed in 10 surveys and 31 Barn Swallow in 6 surveys. Eleven Bank Swallows on June 22 were the only ones reported. Many species were unexpectedly consistent; others were oddly consistent as 10 Black Terns counted on each of 3 consecutive visits.

Most encouraging was the discovery of a Barn Owl nest that hopefully produced two fledglings. Observation of the nest, located in a basalt stack between Station 5 and ES, was difficult. It was off the transect and it was not approached. House Sparrows were expected around the ranch house, where several larger trees and outbuildings provided good nesting conditions, but none were seen. House Finches, which were not expected, were observed, one was quite a distance from the ranch house.

Although, as mentioned above, repeat observations and recordings were inevitable, the data collection method could not be selectively adjusted in the field and had to proceed in a consistent manner. Surveyors were instructed not to count again individuals that they knew were already counted on the transect route or at a previous station. The analysis of the collected data will determine the estimated numbers of a species. The accuracy of the process increases as the species becomes less numerous and therefore more significant. For example, a maximum of 3 Common Yellowthroat seen on 5 surveys out of 10, near the same station, for a total of 10 contacts is probably close to the correct number. On the observed 396 total contacts of Red-Winged Blackbirds on all 10 surveys and at all locations, has a wide margin of error but an estimate of a summer population on the site of about 40 (396/10) Red-winged Blackbirds is not that far off the mark.

Observed on site, but off survey, some interesting species are noteworthy. A Gray Flycatcher was observed in August on the exit route as was a pair of Common Mergansers in May. On the site evaluation visit of April 7, a splendid sub-adult Golden Eagle was hunting close to the ground until driven away by a pair of Red-tailed Hawks.

Not being a survey target, mammals and herpetofauna were not the object of lengthy observations. Mammal observations were scant. A few yellow belly marmots and coyotes were observed, but not on all surveys. Mule Deer were regularly observed with a daily high number of 22. Birthing took place on the parcel. No raccoon were seen but tracks were noted. A longtail weasel was an interesting sighting. Mountain (Nuttall's) Cottontails were seen a few times. Chipmunks were probably Yellow-Pines, but in such an arid habitat, Least Chipmunks are a possibility. Great Basin Gopher snakes and Common Garter snakes were occasionally seen.

Table 1 Packer Creek

LIST OF OBSERVED SPECIES

(1) TOTAL OBSERVATIONS PER SPECIES:

NUMBER OF TIMES INDIVIDUALS OF A SPECIES WERE OBSERVED, EITHER SINGLY OR IN A FLOCK OR GROUP – THE SAME INDIVIDUAL SEEN ON 3 OUT OF 10 SURVEYS WILL BE LISTED AS 3 OBSERVATIONS. THIS TALLY REFERS TO FREQUENCY OF OBSERVATIONS SINCE SEPARATING INDIVIDUALS IN THE FIELD IS NOT GENERALLY POSSIBLE

(2) OBSERVATION RATIO:

NUMBER OF SURVEYS WHEN A SPECIES WAS OBSERVED OVER THE 10 SURVEYS CONDUCTED.

(3) BREEDING:

CON: CONFIRMED - WHEN NEST WAS LOCATED OR JUVENILES WERE PRESENT

PRE: PRESUMED- WHEN THE SPECIES WAS IN ITS BREEDING RANGE, SEASON, AND SUITABLE NESTING HABITAT OR WHEN FEEDING OF YOUNG WAS SUSPECTED

UNK: UNKNOWN - WHEN THE BREEDING OF THE SPECIES CANNOT BE PRESUMED WITHOUT CONFIRMATION, DUE TO ITS OVERALL OR LOCAL SCARCITY OR DUE TO MARGINAL NESTING HABITAT.

NBR: NON BREEDER - WHEN THE SPECIES IS OUT OF ITS BREEDING RANGE OR ITS NORMAL BREEDING HABITAT. EX: LONG RANGE MIGRANT, FOREST BREEDER, ETC...

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY										TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 15	MAY 24	JUNE 22	JUNE 30	JULY 7	JULY 25	AUG 13	AUG 22	SEP 14	SEP 25			
PIED-BILLED GREBE					2						2	1/10	PRE
GREAT BLUE HERON	2	1	2		3			1	1	1	11	7/10	NBR
CANADA GOOSE	45	3				1			70	155	274	5/10	UNK
MALLARD	20	11	5		16	3	1	4			60	7/10	CON
GADWALL		5	3	14							22	3/10	PRE
REDHEAD	3		2								5	2/10	UNK
CINNAMON TEAL	1		1								2	2/10	UNK
BLUE-WINGED TEAL	3	6	9	3	4						25	5/10	CON
NORTHERN PINTAIL	4										4	1/10	NBR

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY										TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 15	MAY 24	JUNE 22	JUNE 30	JULY 7	JULY 25	AUG 13	AUG 22	SEP 14	SEP 25			
NORTHERN SHOVELER	6	3	1								10	3/10	UNK
AMERICAN GREEN-WINGED TEAL		8				2	2				12	3/10	PRE
RUDDY DUCK		1	2								3	2/10	PRE
OSPREY								1			1	1/10	UNK
NORTHERN HARRIER	3		3	1	1	2		1	1	3	15	8/10	PRE
SHARP-SHINNED HAWK										1	1	1/10	UNK
COOPER'S HAWK									2		2	1/10	UNK
SWAINSON'S HAWK			1		1						2	2/10	UNK
RED-TAILED HAWK	5	2	7	2	3	4	4	2	3	1	33	10/10	CON
AMERICAN KESTREL	4		2	3	7	2	9	6	1	1	35	9/10	CON
GRAY PARTRIDGE							3	1	2	1	7	4/10	CON
RING-NECKED PHEASANT	6	18	22	4	22	8	1	20		4	105	9/10	CON
CALIFORNIA QUAIL	5	1	3				17	3			29	5/10	CON
VIRGINIA RAIL						1					1	1/10	PRE
AMERICAN COOT	5	3	8	5	4	1		3			29	7/10	PRE
KILLDEER	16	8	15	7	10	6	10	13	2		87	9/10	CON
GREATER YELLOWLEGS						8	2				10	2/10	NBR
SOLITARY SANDPIPER								2			2	1/10	NBR
SPOTTED SANDPIPER							2	1			3	2/10	PRE
LONG-BILLED CURLEW			1			1					2	2/10	UNK
WESTERN SANDPIPER									10		10	1/10	NBR
LONG-BILLED DOWITCHER	3										3	1/10	NBR
COMMON SNIPE	5	12	18	4	8	1		10		4	62	8/10	CON
WILSON'S PHALAROPE		13	2								15	2/10	UNK
RING-BILLED GULL		2		2	5						9	3/10	NBR
CALIFORNIA GULL					13						13	1/10	NBR

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY										TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 15	MAY 24	JUNE 22	JUNE 30	JULY 7	JULY 25	AUG 13	AUG 22	SEP 14	SEP 25			
BLACK TERN		7	10	10	10						37	4/10	UNK
MOURNING DOVE	8	3	6	2	3	3	15	2			42	8/10	PRE
ROCK DOVE			3								3	1/10	UNK
BARN OWL	1			2	1					1	5	4/10	CON
GREAT-HORNED OWL	2										2	1/10	PRE
COMMON NIGHTHAWK			5	1	5	1	6	1			19	6/10	PRE
WHITE-THROATED SWIFT		4							1		5	2/10	UNK
BELTED KINGFISHER					1						1	1/10	UNK
NORTHERN FLICKER	1	1	6	1	7	4	2	1	2	11	36	10/10	CON
WESTERN WOOD-PEWEE			1					3			4	2/10	UNK
WILLOW FLYCATCHER			1								1	1/10	UNK
HAMMOND'S FLYCATCHER								3			3	1/10	NBR
SAY'S PHOEBE			1		3		1	2			7	4/10	CON
WESTERN KINGBIRD		2	3	2	1	8					16	5/10	CON
EASTERN KINGBIRD	2	5	14	18	21	13	27	28			128	8/10	CON
HORNED LARK	8	9	12	8	23		2	7		1	70	8/10	CON
TREE SWALLOW		2	1			12					4	3/10	UNK
VIOLET-GREEN SWALLOW	18	4	13	11	2	2					50	6/10	PRE
NO. ROUGH-WINGED SWALLOW		3	1		3	6					13	4/10	UNK
BANK SWALLOW			11								11	1/10	UNK
CLIFF SWALLOW	51	18	65	46	300+	15	7	31			533	8/10	CON
BARN SWALLOW	1		1		2	16		3	8		31	6/10	PRE
BLACK-BILLED MAGPIE	12	7	18	3	12	6	8	30	18	20	134	10/10	CON
COMMON RAVEN	5	3	1	1	4	1			4	3	22	8/10	UNK
BLACK-CAPPED CHICKADEE									2		2	1/10	UNK
ROCK WREN	1	3	1	3			2	2	2	2	16	8/10	CON

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY										TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 15	MAY 24	JUNE 22	JUNE 30	JULY 7	JULY 25	AUG 13	AUG 22	SEP 14	SEP 25			
CANYON WREN	5	5	8	3	4	6	7		1	3	42	9/10	CON
BEWICK'S WREN		1						3		1	5	3/10	PRE
HOUSE WREN		1						1		1	3	3/10	PRE
MARSH WREN	2	4	5	4	4	3	2	5	1	8	38	10/10	CON
GOLDEN-CROWNED KINGLET	1										1	1/10	NBR
RUBY-CROWNED KINGLET										9	9	1/10	NBR
WESTERN BLUEBIRD										1	1	1/10	NBR
TOWNSEND'S SOLITAIRE	1										1	1/10	NBR
AMERICAN ROBIN	6	2	2	3	12	1	3	8		3	40	9/10	CON
GRAY CATBIRD						1					1	1/10	UNK
CEDAR WAXWING					2						2	1/10	UNK
EUROPEAN STARLING	2	2	5			7	7			20	43	6/10	CON
ORANGE-CROWNED WARBLER								2		1	3	2/10	UNK
YELLOW WARBLER			1	1							2	2/10	PRE
YELLOW-RUMPED WARBLER								1			1	1/10	UNK
MACGILLIVRAY'S WARBLER								1		4	5	2/10	NBR
COMMON YELLOWTHROAT		2	3	1	2	2					10	5/10	CON
WILSON'S WARBLER							1	3			4	2/10	NBR
BLACK-HEADED GROSBEAK			1								1	1/10	UNK
LAZULI BUNTING			2		5	4					11	3/10	PRE
SPOTTED TOWHEE					1						1	1/10	UNK
CHIPPING SPARROW									1	23	24	2/10	NBR
BREWER'S SPARROW										1	1	1/10	YUNK
VESPER SPARROW	8		11	6	4	8	11	7	7	4	66	9/10	CON
LARK SPARROW		1				1					2	2/10	UNK
SAVANNAH SPARROW	7	13	21	6	10	13	21	14	10		115	9/10	CON

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY										TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 15	MAY 24	JUNE 22	JUNE 30	JULY 7	JULY 25	AUG 13	AUG 22	SEP 14	SEP 25			
GRASSHOPPER SPARROW	13	4	10	24	9	11	3		12		86	8/10	CON
SONG SPARROW	15	6	11	4	9	3	3	3	1	14	69	10/10	CON
LINCOLN'S SPARROW								1		3	4	2/10	NBR
WHITE-CROWNED SPARROW	3								10	29	42	3/10	NBR
DARK-EYED JUNCO		1								8	9	2/10	NBR
RED-WINGED BLACKBIRD	106	36	35	32	51	43	10	6	19	58	396	10/10	CON
WESTERN MEADOWLARK	69	41	48	50	83	50	73	50	112	48	624	10/10	CON
YELLOW-HEADED BLACKBIRD	53	45	45	72	15	12	2	11			255	8/10	CON
BREWER'S BLACKBIRD	18	12	22	10	34	27	66	42	83	6	320	10/10	CON
BROWN-HEADED COWBIRD	3	5	4	5	7		1				25	6/10	PRE
BULLOCK'S ORIOLE			5	1	2						8	3/10	PRE
HOUSE FINCH						1		2			3	2/10	UNK
AMERICAN GOLDFINCH			1			1	3	4		4	13	5/10	PRE

TOTAL NUMBER OF OBSERVED SPECIES: 100

Table 2 Packer Creek SITE UTILIZATION

- INDICATES STATIONS WHERE, OR FROM WHICH, SPECIES WERE OBSERVED
(REFER TO LIST OF OBSERVED SPECIES – TABLE 1 – FOR COMPARATIVE ABUNDANCE AND REFER TO SECTIONS 2 & 3 FOR HABITAT DESCRIPTIONS.)

SPECIES	STATIONS								ROUTE	TOTAL LOCATIONS
	1	2	3	4	5	6	7	8		
PIED-BILLED GREBE									●	1
GREAT BLUE HERON						●	●	●	●	4
CANADA GOOSE		●	●	●	●			●	●	6
MALLARD	●			●	●	●	●	●		6
GADWALL			●			●			●	3
REDHEAD						●			●	2
CINNAMON TEAL									●	1
BLUE-WINGED TEAL			●	●	●				●	4
NORTHERN PINTAIL						●			●	2
NORTHERN SHOVELER			●			●			●	3
AMERICAN GREEN-WINGED TEAL			●				●		●	3
RUDDY DUCK						●			●	2
OSPREY				●						1
NORTHERN HARRIER			●	●		●	●		●	5
SHARP-SHINNED HAWK									●	1
COOPER'S HAWK			●							1
SWAINSON'S HAWK									●	1
RED-TAILED HAWK	●	●			●	●	●	●	●	7
AMERICAN KESTREL		●	●	●	●			●	●	6
GRAY PARTRIDGE	●	●					●		●	4
RING-NECKED PHEASANT	●	●	●	●	●		●	●		7
CALIFORNIA QUAIL				●					●	2

SPECIES	STATIONS								ROUTE	TOTAL LOCATIONS
	1	2	3	4	5	6	7	8		
VIRGINIA RAIL						●				1
AMERICAN COOT						●			●	2
KILLDEER	●	●	●	●		●	●	●	●	8
GREATER YELLOWLEGS						●			●	2
SOLITARY SANDPIPER									●	1
SPOTTED SANDPIPER			●						●	2
LONG-BILLED CURLEW							●			1
WESTERN SANDPIPER									●	1
LONG-BILLED DOWITCHER			●						●	2
COMMON SNIPE	●	●	●			●	●	●	●	7
WILSON'S PHALAROPE			●							1
RING-BILLED GULL	●								●	2
CALIFORNIA GULL	●								●	2
BLACK TERN			●	●	●	●			●	5
MOURNING DOVE	●		●	●	●		●	●		6
ROCK DOVE					●				●	2
BARN OWL									●	1
GREAT HORNED OWL									●	1
COMMON NIGHTHAWK		●	●	●	●				●	5
WHITE-THROATED SWIFT				●						1
BELTED KINGFISHER									●	1
NORTHERN FLICKER	●	●	●	●	●				●	6
WESTERN WOOD-PEWEE	●				●					2
WILLOW FLYCATCHER									●	1
HAMMOND'S FLYCATCHER	●								●	2
SAY'S PHOEBE	●								●	2

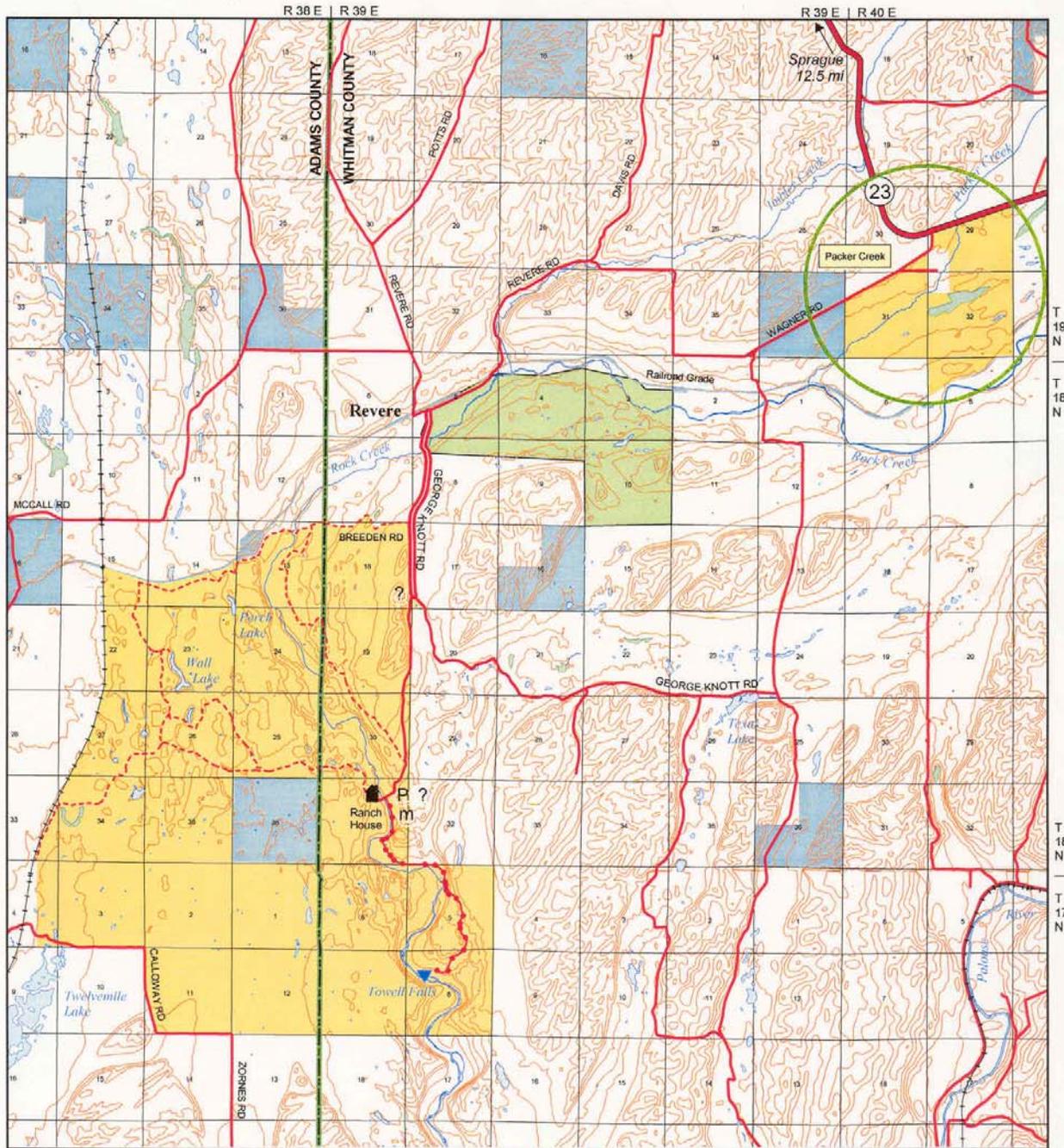
SPECIES	STATIONS								ROUTE	TOTAL LOCATIONS
	1	2	3	4	5	6	7	8		
WESTERN KINGBIRD	●			●	●				●	4
EASTERN KINGBIRD	●	●	●	●	●		●	●	●	8
HORNED LARK							●	●	●	3
TREE SWALLOW		●			●				●	3
VIOLET-GREEN SWALLOW		●	●		●			●	●	5
NO. ROUGH-WINGED SWALLOW		●			●		●		●	4
BANK SWALLOW									●	1
CLIFF SWALLOW	●	●	●	●	●	●	●		●	8
BARN SWALLOW					●	●	●	●	●	5
BLACK-BILLED MAGPIE	●	●	●	●	●	●	●		●	8
COMMON RAVEN		●	●				●		●	4
BLACK-CAPPED CHICKADEE			●							1
ROCK WREN		●	●	●	●				●	5
CANYON WREN		●	●	●	●				●	5
BEWICK'S WREN					●				●	2
HOUSE WREN	●								●	2
MARSH WREN		●	●			●	●		●	5
GOLDEN-CROWNED KINGLET	●									1
RUBY-CROWNED KINGLET	●		●						●	3
WESTERN BLUEBIRD									●	1
TOWNSEND'S SOLITAIRE									●	1
AMERICAN ROBIN	●			●	●	●			●	5
GRAY CATBIRD									●	1
CEDAR WAXWING									●	1
EUROPEAN STARLING	●			●					●	3
ORANGE-CROWNED WARBLER	●								●	2

SPECIES	STATIONS								ROUTE	TOTAL LOCATIONS
	1	2	3	4	5	6	7	8		
YELLOW WARBLER					●					1
YELLOW-RUMPED WARBLER									●	1
MACGILLIVRAY'S WARBLER	●								●	2
COMMON YELLOWTHROAT						●			●	2
WILSON'S WARBLER	●		●						●	3
BLACK-HEADED GROSBEAK									●	1
LAZULI BUNTING			●		●				●	3
SPOTTED TOWHEE	●									1
CHIPPING SPARROW									●	1
BREWER'S SPARROW									●	1
VESPER SPARROW		●		●			●	●	●	5
LARK SPARROW									●	1
SAVANNAH SPARROW	●					●	●		●	4
GRASSHOPPER SPARROW	●	●				●	●	●	●	6
SONG SPARROW	●	●	●	●		●			●	6
LINCOLN'S SPARROW									●	1
WHITE-CROWNED SPARROW	●					●			●	3
DARK-EYED JUNCO		●							●	2
RED-WINGED BLACKBIRD	●	●	●	●	●	●	●	●	●	9
WESTERN MEADOWLARK	●	●	●	●	●	●	●	●	●	9
YELLOW-HEADED BLACKBIRD	●	●	●	●	●	●	●		●	8
BREWER'S BLACKBIRD	●	●	●	●	●	●	●	●	●	9
BROWN-HEADED COWBIRD	●	●			●		●	●		5
BULLOCK'S ORIOLE	●		●	●					●	4
HOUSE FINCH	●								●	2
AMERICAN GOLDFINCH	●				●	●			●	4

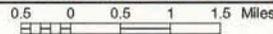
Packer Creek / South Sprague Parcel - Bird Species Report - 2002



Packer Creek / Rock Creek Vicinity Map



Contour Interval 50 Feet



Bureau of Land Management
Spokane District
1103 N. Fancher
Spokane, WA 99212
(509) 536-1200

It is unlawful to trespass on private lands. State hunting and fishing regulations apply to private lands. Landowners are not required to post or fence their lands. Check with private landowners before entering their property.

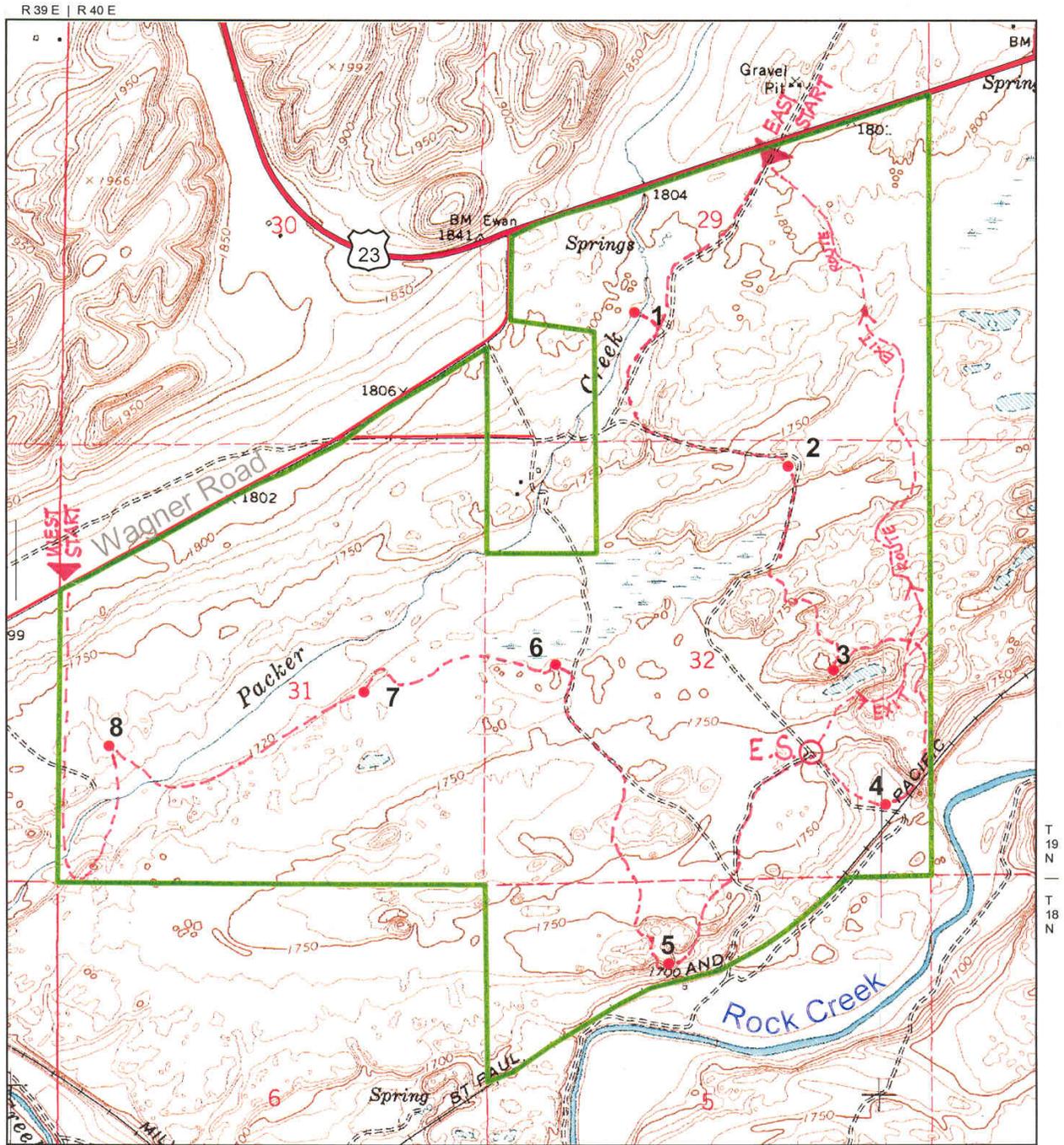
LEGEND

- BLM Administered Land
- Dept. of Natural Resources
- Dept. of Fish & Wildlife
- Private Land
- State Highway
- Access Route
- Railroad
- Seasonal Motorized Access



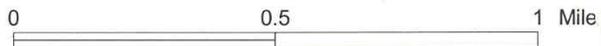
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Packer Creek Survey Area



Bureau of Land Management
 Spokane District
 1103 N. Fancher
 Spokane, WA 99212
 (509) 536-1200

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LEGEND

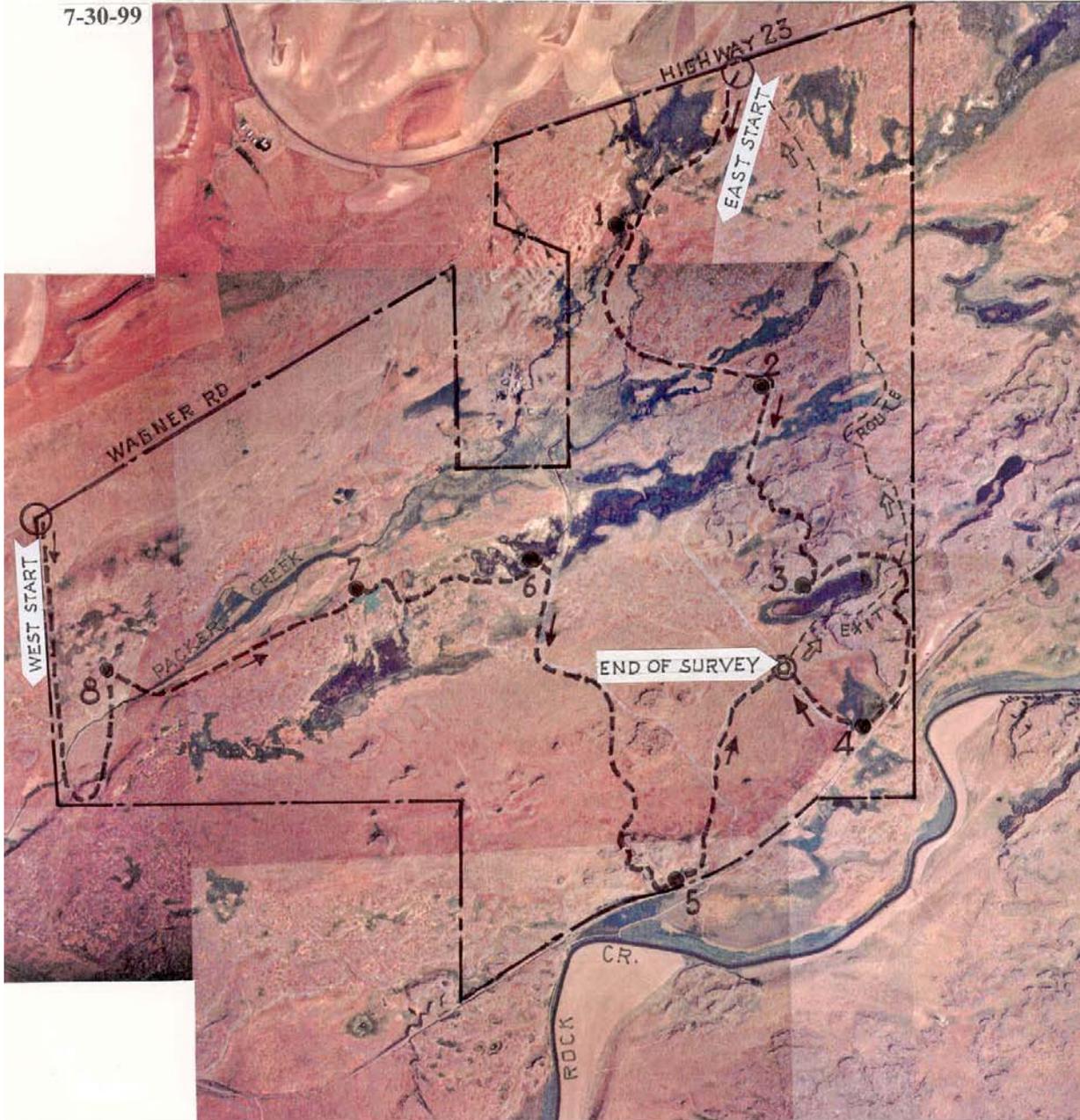
- Survey Point Site
- Packer Creek Boundary
- State Highway
- - - Other Road or Foot Trail Access as Designated
- +—+—+ Railroad



Packer Creek / South Sprague Parcel - Bird Species Report - 2002

Packer Creek Survey Route Aerial Photograph

7-30-99



Bureau of Land Management
Spokane District
1103 N. Fancher
Spokane, WA 99212
(509) 536-1200

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0 1/4 1/2 3/4 1 Mile

APPROXIMATE SCALE



This document is made by the Bureau of Land Management as part of the survey, or related, or control survey of the land of the United States. It is not to be used with other maps. Original data was collected from the source. This information was developed through digital means and may be updated without notification.

PART II SOUTH SPRAGUE PARCEL

A - SITE DESCRIPTION

1. GEOGRAPHICAL DESCRIPTION

The description of the parcel is for its current limits, after the exchange procedure described below. It includes NW 1/4, E 1/2, Section 26, part of W1/2 of Section 25, and slivers of Sections 24, 35, 36, all within Township 21N and Range 38E. It is bordered by private property on all sides except for the north border of Section 36, and a short length of Highway 23. It is a land of geographical and historical interest which has been considered for cultural public development. (see maps page 31 & 32 and aerial photo page 33).

2. ACQUISITION AND LAND USE

The parcel was originally acquired in 1992 as part of an 8,000 acre land and water conservation fund purchase. It was returned to private ownership by an exchange agreement with Hercules Ranch LP, recorded on December 26, 1997. As a result of that agreement 240 acres were deducted and 520 acres were added to the existing B.L.M. land for a total of about 800 acres. A contiguous state land section south of the parcel provides a consolidation of 1400 acres of public land. This survey covered only the B.L.M. land.

3. CURRENT CONDITIONS

The topography is typical channeled scabland, with small sloughs and basalt stacks and cliffs. Grazing leases are in effect; 18 cattle or horses, 33 Animal Unit Months (AUM) from March 1 – April 30, 49 AUMs October 1 – December 31. Four main sloughs have surprisingly retained water in spite of a severe drought throughout the summer of 2002. However; the many other potholes dried out rapidly early in the year. The only serviceable road is the eastern boundary, only 200m or less from Highway 23. Another road comes from the Sprague easement access and becomes unusable after it reaches the largest pothole. Several fences divide the parcel.

The vegetation is dominated by non native species, including cheat grass, thistle, knapweed, and others. Native plants consist mostly of short grasses, grease wood, rabbit brush, phlox, or similar dry land species. There are also sheltered shallow canyons that are wet in spring and support larger trees as willows, water birches and a few aspens.

Several dense clusters of hawthorn, wild berry bushes, Russian olive shrubs, and red osier dogwood are scattered throughout. Medium height sagebrush, possibly of two species, occurs in the southern part of the parcel. Buckwheat, wheat grass, fescue and other native grasses are present in a limited representation. The state endangered Spalding's Catchfly is occurring in small numbers. Only the slough, closest to the State land, has a substantial riparian vegetation. Other potholes have shrub covered rocky slopes above them, but their shoreline is mostly a bare beach.

The dominant soil appeared to be permeable to cobbled silt loams over bedrock of gravel foundation.

There is an easement for access from the north on privately owned Section 23, and an easement to Avista Corporation for power transmission over the parcel. Although it is open to non-motorized public, no one was ever encountered during our surveys.

B – SURVEY METHODOLOGY

1. OVERVIEW

As stated in the introduction on page 3 of this report, previous visits to this parcel took place on what is now again private land and obviously none took place on what was then private land. This resulted in an absence of preliminary data. It was decided to proceed with a baseline inventory, similar to the 2000 – 2001 Escure Ranch survey, but due to the small size of the parcel to confine the survey to a 5 month period. Like for Packer Creek, due to logistics and weather conditions, survey teams were late in getting in the field. The first survey took place on May 2. Nine surveys were conducted (only one in August). Two surveys included evening hours of the previous day.

2. PROTOCOL

This, survey because of its intent to locate and record as many species as possible, could not be held to the obligations of a rigid protocol. However; some guidelines were in order to ensure an efficient search. These guidelines were initially submitted without knowledge of the December 26 exchange and were revised as described here. The survey teams consisted of two to four surveyors, only one survey had four surveyors and it was the last scheduled and the least productive. Surveyors were instructed to remain in visual contact to avoid double counts. Starting time was as close as possible to sunrise, there was no ending time, but a minimum of five survey hours was requested.

The survey routes were originally intended to cover most of the parcel and reach both north and south boundaries. However, the configuration of the sloughs and other spots resulted in a de facto survey route that looped from where the vehicle was parked, and back to it. Most surveyors chose to enter on Highway 23 access, drive south on the boundary road and park on the two-track near the old gravel pit. Some surveyors entered using the section 23 easement and parked on the north end near the basalt organ pipes landmark. By devoting early hours either to the south or north area, the daily tally was affected, in a desirable way. Surveyors were encouraged to car camp overnight in order to add an evening survey. This was done only twice. The rule was no fire, no waste, and no impact. A field report form was created for South Sprague. Completed forms are submitted with this report.

3. COVERAGE DESCRIPTION

The survey loop would originally round and climb a mesa and visit the two major sloughs at the south end of Section 26. The shallow wetland west of the trail is dry early in the season. It would then proceed northwest to the center of Section 26 near the private land corner and wander through the small canyons until it reaches the south line of Section 23, then proceed eastwards, climb the rocky outcroppings and overlook the triangular piece of Section 24. At this point it would go south in a sinuous progression until the two other major sloughs are reached. To get lost is impossible, but drifting laterally is easily done. Scabland potholes blend in the landscape and can be missed by 100 meters or less. Most of the site was probably covered in that way, when the intention was to go straight. The survey loop could be as much as six miles in the field.

C – SURVEY ASSESSMENT

A total of 98 species were observed in the May through September period (see Table 3). Two factors are to be considered. First, the three main habitats: modestly riparian, dry upland and shrub/tree cluster. The habitats are in very close association on this site and separation by habitat was not practical. Second, the proximity of Sprague Lake which provided observation of species that had no link with the South Sprague parcel.

All potholes had still some water in early May, but only four retained water until the end of the survey. The quality of the water deteriorated as the year progressed. The common Great Blue Heron was seen only once. Ducks were few and absent after June, although the lone observation of ruddy ducks was a pair on July 10. The attribution of breeding status was a judgmental process, as larger, more hospitable habitats surrounded the survey sites. Visits to those areas revealed numerous observations of species that were seldom seen on South Sprague. Distant or brief observations that did not allow identifications, and were reported on the daily field form as only “Sp” are not included here. It was decided that only identified species would be significant. A flight of 33 shorebirds on August 16 was thus reluctantly excluded.

The shorebird passage was poor in the Spokane area, in part due to the severe drought, that eliminated wet shorelines. The four potholes that retained water hosted several species of shorebirds. Baird’s Sandpipers provided 11 observations on August 16, 24 on September 5, and were absent on September 29. Gray Partridges were scarce. Ring-necked Pheasant maximum count was 7 on June 19. It was not recorded after that. California Quails were not seen on July 27, but were seen on all other surveys with a high number of 44 on July 10. A daily maximum of 6 Red-tailed Hawks and 6 American Kestrels were observed. Surprisingly, only one Northern Harrier was recorded and not surprisingly only one Sharp-shinned Hawk. The last swallows seen were on July 27. All expected ground nesting migrating passerines species were seen but in very small numbers. Horned Larks were not observed on 3 surveys, only one on two surveys and the maximum daily count was a low 9. Pacific-slope Flycatcher, Sage Thrasher, Brewer’s sparrow were interesting one time sightings. Grasshopper sparrows were seen only on 4 surveys with the high daily count a disappointing 3.

Ninety-eight species present at one time or another during a 5 month period, on barely two square miles of a rather uniform habitat, is a fairly good total. It can be speculated that a high nesting mortality was caused by the very cold late April and early May, resulting in a low numbers of individuals.

Table 3- South Sprague

LIST OF OBSERVED SPECIES

(1) TOTAL OBSERVATIONS PER SPECIES:

NUMBER OF TIMES INDIVIDUALS OF A SPECIES WERE OBSERVED, EITHER SINGLY OR IN A FLOCK OR GROUP - THE SAME INDIVIDUAL SEEN ON 3 OUT OF 10 SURVEYS WILL BE LISTED AS 3 OBSERVATIONS. THIS TALLY REFERS TO FREQUENCY OF OBSERVATIONS SINCE SEPARATING INDIVIDUALS IN THE FIELD IS NOT GENERALLY POSSIBLE

(2) OBSERVATION RATIO:

NUMBER OF SURVEYS WHEN A SPECIES WAS OBSERVED OVER THE 9 SURVEYS CONDUCTED.

(3) BREEDING:

CON: CONFIRMED - WHEN NEST WAS LOCATED OR JUVENILES WERE PRESENT

PRE: PRESUMED- WHEN THE SPECIES WAS IN ITS BREEDING RANGE, SEASON, AND SUITABLE NESTING HABITAT OR WHEN FEEDING OF YOUNG WAS SUSPECTED

UNK: UNKNOWN - WHEN THE BREEDING OF THE SPECIES CANNOT BE PRESUMED WITHOUT CONFIRMATION, DUE TO ITS OVERALL OR LOCAL SCARCITY OR DUE TO MARGINAL NESTING HABITAT.

NBR: NON BREEDER - WHEN THE SPECIES IS OUT OF ITS BREEDING RANGE OR ITS NORMAL BREEDING HABITAT. EX: LONG RANGE MIGRANT, FOREST BREEDER, ETC...

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY									TOTAL OBSRV FOR SPECIES	OBSRV RATIO	BREEDING
	MAY 02	MAY 09	JUNE 06	JUNE 19	JULY 10	JULY 27	AUG 16	SEP 05	SEP 29			
										(1)	(2)	(3)
PIED-BILLED GREBE		2								2	1/9	UNK
AMERICAN WHITE PELICAN		2								2	1/9	NBR
DOUBLE-CRESTED CORMORANT		5		1						6	2/9	NBR
GREAT BLUE HERON		1								1	1/9	NBR
CANADA GOOSE	8	10							1	19	3/9	UNK
MALLARD	7	31	14		8		6	31	47	144	7/9	CON
GADWALL	2	8	4			16				30	4/9	CON
AMERICAN WIGEON	2	8	1							9	2/9	UNK
REDHEAD	2	15	14							31	3/9	UNK

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY									TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 02	MAY 09	JUNE 06	JUNE 19	JULY 10	JULY 27	AUG 16	SEP 05	SEP 29			
LESSER SCAUP		2								2	1/9	UNK
CINNAMON TEAL		8		1						9	2/9	UNK
BLUE-WINGED TEAL	2		8	19	16		11	3	3	62	7/9	CON
RING-NECKED DUCK	2	4								6	2/9	UNK
NORTHERN PINTAIL	2	8								10	2/9	NBR
NORTHERN SHOVELER		1	3							4	2/9	UNK
AMERICAN GREEN-WINGED TEAL	2	2					5	2	6	17	5/9	PRE
BUFFLEHEAD	2	8								10	2/9	NBR
RUDDY DUCK					2					2	1/9	UNK
TURKEY VULTURE	2	2	2					1		7	4/9	UNK
NORTHERN HARRIER			1							1	1/9	UNK
SHARP-SHINNED HAWK									1	1	1/9	NBR
RED-TAILED HAWK	3	4	4	6	5	3	1	3		29	8/9	CON
AMERICAN KESTREL	2	6	5			1		4	1	19	6/9	CON
GRAY PARTRIDGE	1	2	1					2		6	4/9	PRE
RING-NECKED PHEASANT	2	1	6	7						16	4/9	CON
CALIFORNIA QUAIL	5	11	4	7	44		21	7	11	110	8/9	CON
AMERICAN COOT		2	2		1					5	3/9	PRE
KILLDEER	7	5	12	4	15	10	14	6	5	78	9/9	CON
GREATER YELLOWLEGS					1	1	3			5	3/9	NBR
LESSER YELLOWLEGS							13			13	1/9	NBR
SOLITARY SANDPIPER							1			1	1/9	NBR
SPOTTED SANDPIPER					1		6			7	2/9	CON
LONG-BILLED CURLEW		2								2	1/9	UNK
SEMIPALMATED SANDPIPER							3			3	1/9	NBR
WESTERN SANDPIPER							2			2	1/9	NBR

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY									TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 02	MAY 09	JUNE 06	JUNE 19	JULY 10	JULY 27	AUG 16	SEP 05	SEP 29			
LEAST SANDPIPER							2			2	1/9	NBR
BAIRD'S SANDPIPER							11	24		35	2/9	NBR
COMMON SNIPE							1			1	1/9	UNK
WILSON'S PHALAROPE							1			1	1/9	UNK
RING-BILLED GULL	3	16	17	7	5	4	1			53	7/9	NBR
CALIFORNIA GULL		1		7						8	2/9	NBR
CASPIAN TERN	3	2								5	2/9	NBR
FORSTER'S TERN			1							1	1/9	NBR
BLACK TERN		2								2	1/9	NBR
MOURNING DOVE	2	6	1	8	1	3	3			24	7/9	PRE
GREAT-HORNED OWL	2		2						1	5	3/9	CON
COMMON NIGHTHAWK				3	2		9			14	3/9	CON
CALLIOPE HUMMINGBIRD					1					1	1/9	UNK
NORTHERN FLICKER	3	3		2	1		2		4	15	6/9	CON
WESTERN WOOD-PEWEE			3	1	2		2	1		9	5/9	CON
WILLOW FLYCATCHER							2			2	1/9	CON
PACIFIC-SLOPE FLYCATCHER		1								1	1/9	NBR
SAY'S PHOEBE	3	3		1	2	1		2		12	6/9	CON
WESTERN KINGBIRD		1	5				2			8	3/9	UNK
EASTERN KINGBIRD			27	11	30	25	9			102	5/9	CON
HORNED LARK	1	9	1	7	5		5			28	6/9	PRE
TREE SWALLOW						4				4	1/9	UNK
VIOLET-GREEN SWALLOW	23	37	7	9	14					90	5/9	PRE
NO. ROUGH-WINGED SWALLOW		3				1				4	2/9	UNK
CLIFF SWALLOW	2	11	18	55	100+	100				286	6/9	CON
BARN SWALLOW		3		3						6	2/9	UNK

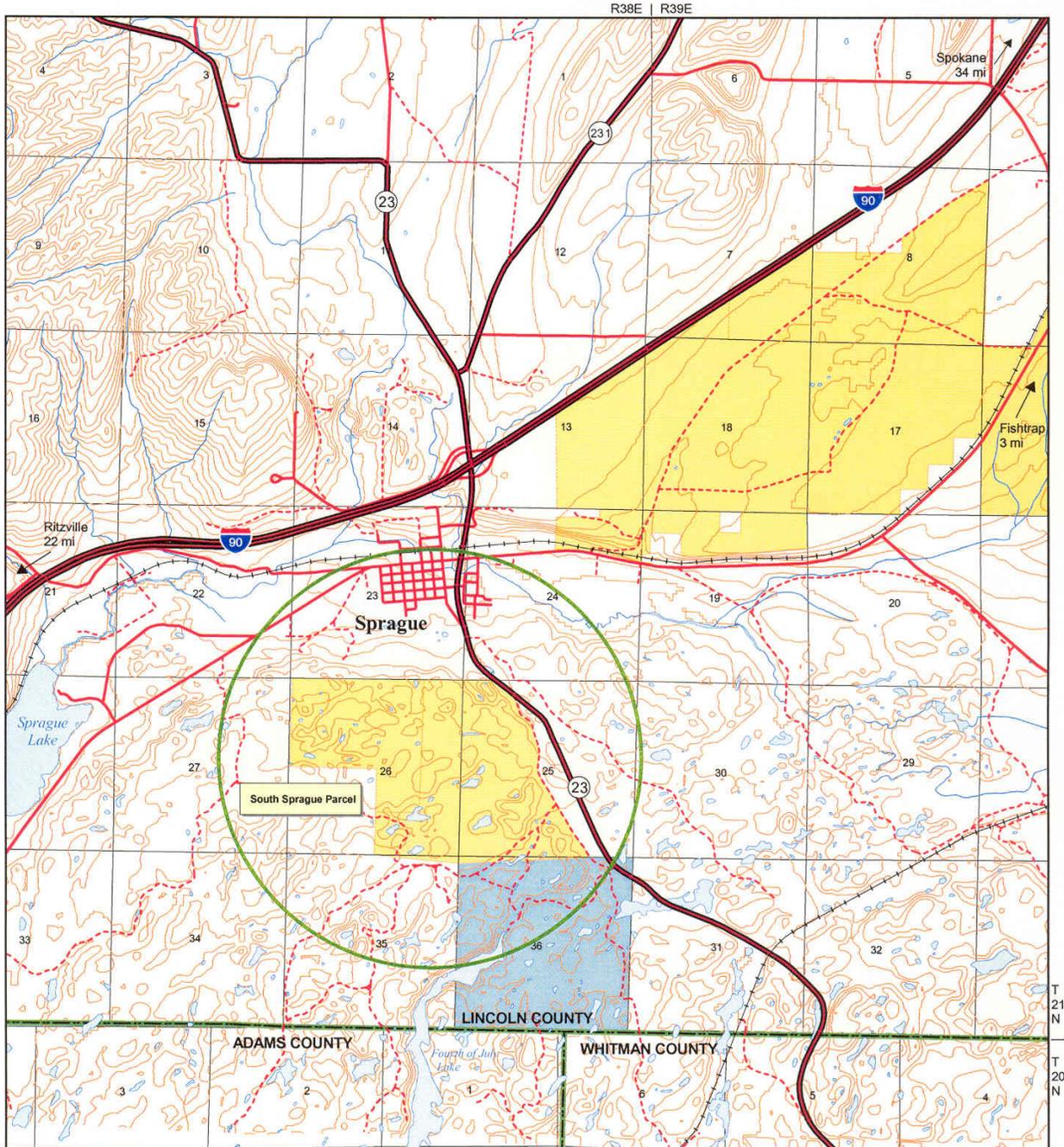
SPECIES	NUMBER OF OBSERVATIONS PER SURVEY									TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 02	MAY 09	JUNE 06	JUNE 19	JULY 10	JULY 27	AUG 16	SEP 05	SEP 29			
BLACK-BILLED MAGPIE	4	6	2	1	8		1	2		24	7/9	CON
COMMON RAVEN									1	1	1/9	UNK
ROCK WREN		1		1	10	3	6	6		27	6/9	CON
CANYON WREN								1		1	1/9	UNK
HOUSE WREN		3	7	9	11			1		31	5/9	PRE
MARSH WREN	2	5	2	6	10			3	2	30	7/9	CON
RUBY-CROWNED KINGLET		3							2	5	2/9	NBR
AMERICAN ROBIN	1	23	16	4	14	5	1	1		65	8/9	CON
SAGE THRASHER								4		4	1/9	NBR
AMERICAN PIPIT		2			15		7	3	15	42	5/9	NBR
CEDAR WAXWING					1		2			3	2/9	UNK
EUROPEAN STARLING		32	18	3		8				61	4/9	PRE
WARBLING VIREO								1		1	1/9	NBR
ORANGE-CROWNED WARBLER		2						2		4	2/9	UNK
NASHVILLE WARBLER		1								1	1/9	NBR
YELLOW-RUMPED WARBLER		3					1	1		5	3/9	NBR
TOWNSEND'S WARBLER		1								1	1/9	NBR
MACGILLIVRAY'S WARBLER								1		1	1/9	NBR
WILSON'S WARBLER								2		2	1/9	NBR
SPOTTED TOWHEE			1		4		1			6	3/9	UNK
CHIPPING SPARROW	1						3			4	2/9	NBR
VESPER SPARROW	10	13	7	5	18	5	6	16		80	8/9	CON
LARK SPARROW							1			1	1/9	UNK
SAVANNAH SPARROW	3	6	5	1	6		7	17		45	7/9	CON
GRASSHOPPER SPARROW	1	2	3			1				7	4/9	PRE
SONG SPARROW	4	8	6		6			16	2	42	6/9	CON

SPECIES	NUMBER OF OBSERVATIONS PER SURVEY									TOTAL OBSRV FOR SPECIES (1)	OBSRV RATIO (2)	BREEDING (3)
	MAY 02	MAY 09	JUNE 06	JUNE 19	JULY 10	JULY 27	AUG 16	SEP 05	SEP 29			
BREWER'S SPARROW						1				1	1/9	UNK
LINCOLN'S SPARROW							2	1		3	2/9	NBR
WHITE-CROWNED SPARROW	18	70					3	9	30	130	5/9	NBR
RED-WINGED BLACKBIRD	18	56	11	12	55	26	17	1		196	8/9	CON
WESTERN MEADOWLARK	50+	50+	59	17	41	36	23	21	7	354	9/9	CON
YELLOW-HEADED BLACKBIRD	7	9	39	9						64	4/9	PRE
BREWER'S BLACKBIRD		2		14	8	6	37	3		70	6/9	CON
BROWN-HEADED COWBIRD		24	8	7	10			1		50	5/9	PRE
BULLOCK'S ORIOLE			8	5	4	2				19	4/9	PRE
HOUSE FINCH					5					5	1/9	UNK
AMERICAN GOLDFINCH				2	3		3	1		9	4/9	PRE

TOTAL NUMBER OF OBSERVED SPECIES: 98

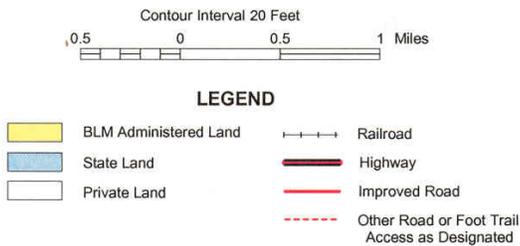
Packer Creek / South Sprague Parcel - Bird Species Report - 2002

South Sprague Vicinity Map



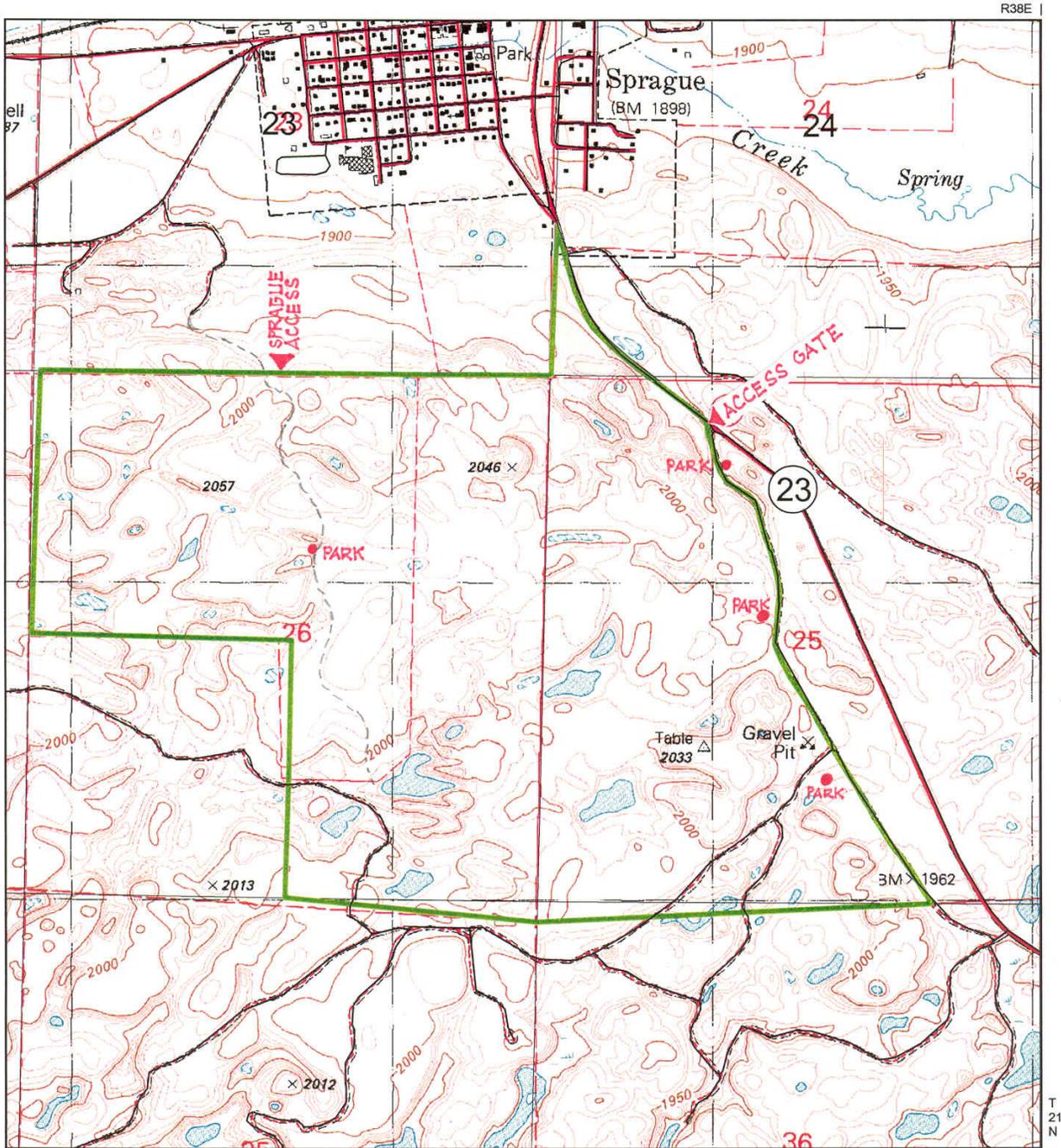
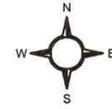
Bureau of Land Management
 Spokane District
 1103 N. Fancher
 Spokane, WA 99212
 (509) 536-1200

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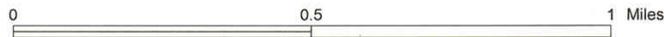
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South Sprague Survey Area



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LEGEND

Roads

South Sprague Boundary

Railroad

Highway

Improved Road

Other Road or Foot Trail
Access as Designated



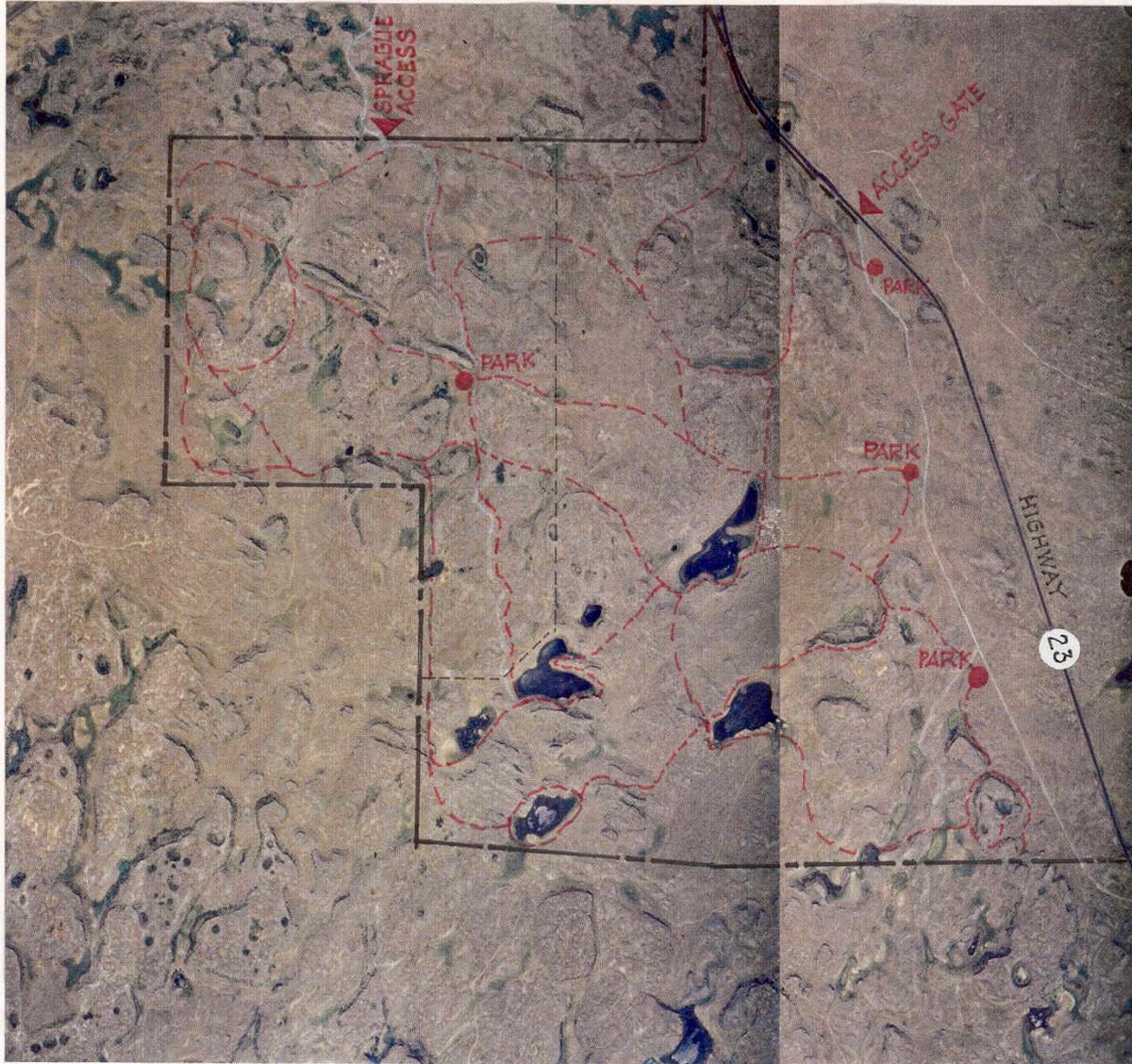
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Packer Creek / South Sprague Parcel - Bird Species Report - 2002

South Sprague Survey Routes

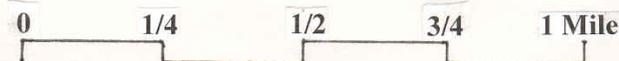
Aerial Photograph

7-29-99



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APPROXIMATE SCALE



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CONCLUSION

There is a need to clarify the relationship between past, current, and future bird surveys on B.L.M. land in the Rock Creek / Sprague area.

The survey conducted in 2000 – 2001, and identified as Sector 1A of the Escure – Rock Creek project, was a random first baseline search.

The survey conducted in 2002 and included in this report under Part II - South Sprague is also a random first baseline search.

No decision has been made at the time to further explore those two sites.

The survey conducted in 2002 and indicated in this report under Part I - Packer Creek is on the former Sector 1A . In order to provide the consistency required for future analysis, the survey was performed according to a protocol and following a point count – transect route and will be the starting point for ongoing studies. The location, spatial and temporal changes mentioned in the project statement of work are confined to this initial coverage. The significance, trends and interpretation will emerge only when other surveys are conducted in the same manner.

Surveyor's bias was not a critical factor (see A - Surveyors on page 3). They offered a good and close mix of skills and the two person team provided a further prevention of personal error. The possibility of auditory bias was not ignored since several surveyors were over the age of 55. Most of the observations were visual in that open terrain and most of the species encountered have vigorous, loud, familiar songs and calls. It was therefore not believed that the data was greatly impacted by bias. It is probable that a few Grasshopper Sparrows that sang, but did not flush, went uncounted but on the whole the standards of accuracy for survey efforts by volunteers were respected. It would be desirable to maintain the same level of skills for successive teams and consideration should be given to the sustainability of putting super teams in the fields.

The method of ratio observations/number of visits was selected for its adaptability, but changes in visit frequency or seasonal extensions may affect the integrity of the data. In such case, separate surveys could be considered (winter surveys, species counts, etc.).

Finally, thanks to all surveyors for their efforts, and in particular to those who suffered from poison ivy.

Thanks to Warren Walker for his computer assistance.

Thanks to Tom Munson for taking and processing the cover photographs.
Permission is granted to the B.L.M. to use them for educational, but not commercial, purposes.

Maurice Vial,
Team Leader and Compiler.