

Table 1. Field effort by month, Otter Creek Mine fish and wildlife resources monitoring, 2012-2013.

Month	Dates		Total
	WESTECH <sup>a</sup>	MTNHP <sup>b</sup>	
<b>Autumn 2012</b>			
Sept. 16-30	---	---	0
October	9, 10, 11	15, 16	5
November	---	---	0
Dec. 1-15	19, 20, 21	---	3
<b>Winter 2012-2013</b>			
Dec. 16-31	---	---	0
January 2011	16, 17, 18	---	3
February	---	---	0
March 1-15	14, 15, 16	---	3
<b>Spring 2013</b>			
March 16-31	---	---	0
April	24, 25, 26, 27	---	4
May	---	16, 17	2
June 1-15	4, 5, 6, 7	---	4
<b>Summer 2013</b>			
June 16-30	---	---	0
July	---	16, 17	2
August	---	---	0
Sept. 1-15	---	---	0
<b>Autumn 2013</b>			
October	---	14, 15	2
<b>Total</b>	<b>20</b>	<b>8</b>	<b>28</b>

<sup>a</sup>Dates on which wildlife sightings were recorded by WESTECH biologists.

<sup>b</sup>Dates on which aquatics, fish and/or wildlife sightings were recorded by Montana Natural Heritage Program (MTNHP) ecologists (Stagliano 2013, 2014).

Table 2. Vertebrate animal Species of Concern potentially occurring in the Otter Creek Mine fish and wildlife resources study area.

Species	Montana Species of Concern	USFS Sensitive Species	USFS Management Indicator Species	BLM Sensitive Species
<b>FISH</b>				
Brassy minnow ( <i>Hybognathus hankinsoni</i> )	XP <sup>a</sup>			
Plains minnow ( <i>Hybognathus placitus</i> )	XP			
<b>AMPHIBIANS</b>				
Great Plains toad ( <i>Bufo cognatus</i> )	X	X		X
Northern leopard frog ( <i>Lithobates pipiens</i> )		X		X
Plains spadefoot ( <i>Spea bombifrons</i> )	X	X		X
<b>REPTILES</b>				
Snapping turtle ( <i>Chelydra serpentina</i> )	X			X
Spiny softshell ( <i>Apalone spinifera</i> )	X			X
Greater short-horned lizard ( <i>Phrynosoma hernandesi</i> )	X	X		X
Western hog-nosed snake ( <i>Heterodon nasicus</i> )	X	X		X
Milksnake ( <i>Lampropeltus triangulum</i> )	X	X		X
<b>MAMMALS</b>				
Merriam's shrew ( <i>Sorex merriami</i> )	X			
Pallid bat ( <i>Antrozus pallidus</i> )	X	X		X
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	X	X		X
Silver-haired bat ( <i>Lasionycteris noctivagans</i> )	XP			
Eastern red bat ( <i>Lasiurus borealis</i> )	XP			
Hoary bat ( <i>Lasiurus cinereus</i> )	X			
Little brown myotis ( <i>Myotis lucifugus</i> )	X			
Fringed myotis ( <i>Myotis thysanodes</i> )	X	X		X
Spotted bat ( <i>Euderma maculatum</i> )	X			
Meadow jumping mouse ( <i>Zapus hudsonius</i> )	XP			X
Porcupine ( <i>Erethizon dorsatum</i> )	XP			
White-footed mouse ( <i>Peromyscus leucopus</i> )	XP			
Black-tailed prairie dog ( <i>Cynomys ludovicianus</i> )	X	X		X
Swift fox ( <i>Vulpes velox</i> )	X			X
Black-footed ferret ( <i>Mustela nigripes</i> )	X		X	
White-tailed deer ( <i>Odocoileus virginianus</i> )			X	
Elk ( <i>Cervus canadensis</i> )			X	
<b>BIRDS</b>				
Trumpeter swan ( <i>Cygnus buccinator</i> )	X			
Barrow's goldeneye ( <i>Bucephala islandica</i> )	XP			
Hooded merganser ( <i>Lophodytes cucullatus</i> )	XP			
Greater sage-grouse ( <i>Centrocercus urophasianus</i> )	X	X		X
Sharp-tailed grouse ( <i>Tympanuchus pahsianellus</i> )			X	
Common loon ( <i>Gavia immer</i> )	X	X		X
Ckark's grebe ( <i>Aechmophorus clarkia</i> )	X			
Horned grebe ( <i>Podiceps auritus</i> )	X			
Great blue heron ( <i>Ardea herodias</i> )	X			
American bittern ( <i>Botaurus lentiginosus</i> )	X			
Black-crowned night heron ( <i>Nycticorax nycticorax</i> )	X			X
American white pelican ( <i>Pelecanus erythrorhynchus</i> )	X			
White-faced ibis ( <i>Plegadis chihi</i> )	X			X
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	XS <sup>b</sup>	X	X	X
Northern goshawk ( <i>Accipiter gentilis</i> )	X		X	X
Swainson's hawk ( <i>Buteo swainsoni</i> )				X
Ferruginous hawk ( <i>Buteo regalis</i> )	X			X
Golden eagle ( <i>Aquila chrysaetos</i> )	X			X
Peregrine falcon ( <i>Falco peregrines</i> )	X	X	X	X
Merlin ( <i>Falco columbarius</i> )			X	
Piping plover ( <i>Charadrius melodus</i> )	X			
Mountain plover ( <i>Charadrius montanus</i> )	X			X
Black-necked stilt ( <i>Hymenopus mexicanus</i> )	X			

Table 2 (continued).

Species	Montana Species of Concern	USFS Sensitive Species	USFS Management Indicator Species	BLM Sensitive Species
Long-billed curlew ( <i>Numenius americanus</i> )	X	X		X
Franklin's gull ( <i>Leucophaeus pipixcan</i> )	X			X
Common tern ( <i>Sterna hirundo</i> )	X			
Forster's tern ( <i>Sterna forsteri</i> )	X			
Caspian tern ( <i>Hydroprone caspia</i> )	X			
Black tern ( <i>Chlidonia niger</i> )	X			X
Black-billed cuckoo ( <i>Coccyzus erythrophthalmus</i> )	X			
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	X			X
Eastern screech-owl ( <i>Megascops asio</i> )	XP			
Burrowing owl ( <i>Athene cunicularia</i> )	X	X		X
Short-eared owl ( <i>Asio flammeus</i> )	XP			
Common poorwill ( <i>Phalaenoptilus nuttallii</i> )	XP			
Chimney swift ( <i>Chaetura pelagica</i> )	XP			
Lewis' woodpecker ( <i>Melanerpes lewis</i> )	X			
Red-headed woodpecker ( <i>Melanerpes erythrocephalus</i> )	X			X
Black-backed woodpecker ( <i>Picoides arcticus</i> )	X	X		X
Kingbird spp. ( <i>Tyrannus spp.</i> )			X	
Cassin's kingbird ( <i>Tyrannus vociferans</i> )	XP			
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	X	X		X
Plumbeous vireo ( <i>Vireo plumbeus</i> )	XP			
Pinyon jay ( <i>Gymnorhinus cyanocephalus</i> )	X			
Clark's nutcracker ( <i>Nucifraga columbiana</i> )	X			
Brown creeper ( <i>Certhia americana</i> )	X			
Eastern bluebird ( <i>Sialia sialis</i> )	XP			
Veery ( <i>Catharus fuscescens</i> )	X			
Sage thrasher ( <i>Oreoscoptes montanus</i> )	X			X
Sprague's pipit ( <i>Anthus spragueii</i> )	X	X		X
Chestnut-collared longspur ( <i>Calcarius ornatus</i> )	X			X
McCown's longspur ( <i>Rhynchophanes mccownii</i> )	X			X
Ovenbird ( <i>Seiurus aurocapilla</i> )	XP		X	
Black-and-white warbler ( <i>Mniotilta varia</i> )	XP			
Tennessee warbler ( <i>Oreothlypis peregrine</i> )	XP			
Green-tailed towhee ( <i>Pipilo chlorurus</i> )	X			
Rufus-sided towhee ( <i>Pipilo maculatus</i> )			X	
Brewer's sparrow ( <i>Spizella breweri</i> )	X		X	X
Baird's sparrow ( <i>Ammodramus bairdii</i> )	X	X		X
Dickcissel ( <i>Spiza americana</i> )	XP			
Bobolink ( <i>Dolichonyx orizivorus</i> )	X			X
Northern oriole ( <i>Icterus galbula</i> )			X	
Cassin's finch ( <i>Carpodacus cassinii</i> )	X			
Gray-crowned rosy-finch ( <i>Leucosticte tephrocotis</i> )	X			
Evening grosbeak ( <i>Coccothraustes vespertinus</i> )	X			

<sup>a</sup>Potential Species of Concern<sup>b</sup>Special Status Species

Table 3. Pronghorn sightings by habitat, Otter Creek Mine area, 2012-2013.

Month	Habitat Subtype									
	001 Rock-Cliff	002 Water <sup>a</sup>	021 Bldg.	110 Decid. Tree	123 Pon. Pine- Grass	124 Pon. Pine- Shrub	130 Juniper	212 Big Sage	222 Silver Sage	280 Breaks
<b>AUTUMN</b>										
Sept. 16-30, 2012										
October								1(6) <sup>b</sup>		3(25)
November										
Dec. 1-15										
Sub-total Nos.								1(6)		3(25)
Sub-total Percent								6.7(4.7)		20.0(19.5)
<b>WINTER</b>										
Dec. 16-30								6(202)		
Jan. 2013										
Feb.										
March 1-15								6(41)		
Sub-total Nos.								12(243)		
Sub-total Percent								42.8(51.3)		
<b>SPRING</b>										
March 16-31										
April								4(13)		
May										
June 1-15								5(12)	3(7)	2(8)
Sub-total Nos.								9(25)	3(7)	2(8)
Sub-total Percent								27.3(24.7)	9.1(6.9)	6.1(7.9)
<b>SUMMER</b>										
June 16-30										
July										
August										
Sept. 1-15										
Sub-total Nos.										
Sub-total Percent										
<b>TOTAL NOS.</b>								<b>22(274)</b>	<b>3(7)</b>	<b>5(33)</b>
<b>TOTAL PERCENT</b>								<b>28.9(39.0)</b>	<b>3.9(1.0)</b>	<b>6.6(4.7)</b>

<sup>a</sup>Includes riparian habitat adjacent to ponds, stream courses, etc.

<sup>b</sup>No. groups (no. individuals)

Table 3 (continued).

Month	Habitat Subtype									
	310 Tall Mesic Shrub	320 Low Mesic Shrub	411 Bunch-grass	412 Sod-forming Grass	413 Rip. Grass	430 P. Dog	510 Hay	530 Pasture	Sub-total Nos.	Sub-total Percent
<b>AUTUMN</b>										
Sept. 16-30, 2012										
October			6(52)	2(24)			2(16)	1(5)	15(128)	
November										
Dec. 1-15										
Sub-total Nos.			6(52)	2(24)			2(16)	1(5)	15(128)	
Sub-total Percent			40.0(40.6)	13.3(18.8)			13.3(12.5)	6.7(3.9)		100.0(100.0)
<b>WINTER</b>										
Dec. 16-30									6(202)	21.4(42.6)
Jan. 2013									0(0)	
Feb.										
March 1-15			10(142)	1(1)		1(30)		4(58)	22(272)	78.6(57.4)
Sub-total Nos.			10(142)	1(1)		1(30)		4(58)	28(474)	
Sub-total Percent			35.7(30.0)	3.6(0.2)		3.6(6.3)		14.3(12.2)		100.0(100.0)
<b>SPRING</b>										
March 16-31										
April			7(20)	6(25)		1(2)		2(9)	20(69)	60.6(68.3)
May										
June 1-15			2(2)	1(3)					13(32)	39.4(31.7)
Sub-total Nos.			9(22)	7(28)		1(2)		2(9)	33(101)	
Sub-total Percent			27.3(21.8)	21.2(27.7)		3.0(2.0)		6.1(8.9)		100.1(99.9)
<b>SUMMER</b>										
June 16-30										
July										
August										
Sept. 1-15										
Sub-total Nos.									0(0)	
Sub-total Percent										0(0)
<b>TOTAL NOS.</b>			<b>25(216)</b>	<b>10(53)</b>		<b>2(32)</b>	<b>2(16)</b>	<b>7(72)</b>	<b>76(703)</b>	
<b>TOTAL PERCENT</b>			<b>32.9(30.7)</b>	<b>13.2(7.5)</b>		<b>2.6(4.6)</b>	<b>2.6(2.3)</b>	<b>9.2(10.2)</b>		<b>99.9(100.0)</b>

<sup>a</sup>Includes shoreline habitat at ponds and streams.

<sup>b</sup>No. groups (no. individuals).

Table 4. Pronghorn population characteristics, Otter Creek Mine area, 2012-2013.

Month	Group Characteristics				No. Classified <sup>a</sup>		
	No. Groups (No. Animals)	Range	Average	Median	Males	Females	Fawns
<b>Autumn</b>							
Sept. 16-30, 2012	---						
October	15(128)	1-20	8.5	6	27	81	20
	Minimum known number <sup>b</sup> : East of Otter Creek: 51 West of Otter Creek: 77				No. Males Per 100 Females: 33 No. Fawns Per 100 Females: 25		
November	---						
Dec. 1-15							
<b>Winter</b>							
Dec. 16-31	6(202)	11-63	33.7	30			
	Minimum known number <sup>b</sup> : East of Otter Creek: 74 West of Otter Creek: 60						
January 2012	0(0)						
February	---						
March 1-15	22(272)	1-48	12.4	9			
	Minimum known number <sup>b</sup> : East of Otter Creek: 147 West of Otter Creek: 47						
<b>Spring</b>							
March 16-31	---						
April	20(69)	1-10	3.5	2			
	Minimum known number <sup>b</sup> : East of Otter Creek: 23 West of Otter Creek: 25						
May							
June 1-15	13(32)	1-5	2.5	3			
<b>Summer</b>							
June 16-30	---						
July	---						
August	---						
Sept. 1-15	---						

<sup>a</sup>Determined by aerial survey; yearling males and females combined with adults.

<sup>b</sup>Determined by aerial survey; no duplicate counts of individual animals

Table 5. Mule deer sightings by habitat, Otter Creek Mine area, 2012-2013.

Month	Habitat Subtype									
	001 Rock-Cliff	002 Water <sup>a</sup>	021 Bldg.	110 Decid. Tree	123 Pon. Pine- Grass	124 Pon. Pine- Shrub	130 Juniper	212 Big Sage	222 Silver Sage	280 Breaks
<b>AUTUMN</b>										
Sept. 16-30, 2012										
October			1(3) <sup>b</sup>	1(4)	3(13)			1(2)	1(4)	
November										
Dec. 1-15										
Sub-total Nos.			1(3)	1(4)	3(13)			1(2)	1(4)	
Sub-total Percent			10.0(8.3)	10.0(11.1)	30.0(36.1)			10.0(5.6)	10.0(11.1)	
<b>WINTER</b>										
Dec. 16-30								3(17)		1(4)
Jan. 2013						1(6)		1(1)	1(1)	2(9)
Feb.										
March 1-15					1(9)	1(6)		3(41)		2(18)
Sub-total Nos.					1(9)	2(12)		7(59)	1(1)	5(31)
Sub-total Percent					4.5(5.6)	9.1(7.4)		31.8(36.4)	4.5(0.6)	22.7(19.1)
<b>SPRING</b>										
March 16-31										
April					1(1)					3(13)
May										
June 1-15					2(4)			1(2)		1(1)
Sub-total Nos.					3(5)			1(2)		4(14)
Sub-total Percent					33.3(22.7)			11.1(9.1)		44.4(63.6)
<b>SUMMER</b>										
June 16-30										
July										
August										
Sept. 1-15										
Sub-total Nos.										
Sub-total Percent										
<b>TOTAL NOS.</b>			<b>1(3)</b>	<b>1(4)</b>	<b>7(27)</b>	<b>2(12)</b>		<b>9(63)</b>	<b>2(5)</b>	<b>9(45)</b>
<b>TOTAL PERCENT</b>			<b>2.4(1.4)</b>	<b>2.4(1.8)</b>	<b>17.0(12.3)</b>	<b>4.9(5.5)</b>		<b>22.0(28.6)</b>	<b>4.9(2.2)</b>	<b>22.0(20.5)</b>

<sup>a</sup>Includes riparian habitat adjacent to ponds, stream courses, etc.

<sup>b</sup>No. groups (no. individuals)

Table 5 (continued).

Month	Habitat Subtype									
	310 Tall Mesic Shrub	320 Low Mesic Shrub	411 Bunch-grass	412 Sod-forming Grass	413 Rip. Grass	430 P. Dog	510 Hay	530 Pasture	Sub-total Nos.	Sub-total Percent
<b>AUTUMN</b>										
Sept. 16-30, 2012										
October		2(6)						1(4)	10(36)	100.0(100.0)
November										
Dec. 1-15										
Sub-total Nos.		2(6)						1(4)	10(36)	
Sub-total Percent		20.0(16.7)						10.0(11.1)		100.0(100.0)
<b>WINTER</b>										
Dec. 16-30									4(21)	18.1(13.0)
Jan. 2013			1(5)	1(10)					7(32)	31.8(19.8)
Feb.										
March 1-15			2(19)				2(16)		11(109)	50.0(67.3)
Sub-total Nos.			3(24)	1(10)			2(16)		22(162)	
Sub-total Percent			13.6(14.8)	4.5(6.2)			9.1(9.9)			99.9(100.1)
<b>SPRING</b>										
March 16-31										
April									4(14)	44.4(63.6)
May										
June 1-15								1(1)	5(8)	55.6(36.4)
Sub-total Nos.								1(1)	9(22)	
Sub-total Percent								11.1(4.5)		100.0(100.0)
<b>SUMMER</b>										
June 16-30										
July										
August										
Sept. 1-15										
Sub-total Nos.										
Sub-total Percent										
<b>TOTAL NOS.</b>		2(6)	3(24)	1(10)			2(16)	2(5)	41(220)	
<b>TOTAL PERCENT</b>		4.9(2.7)	7.3(10.9)	2.4(4.5)			4.9(7.3)	4.9(2.2)		100.0(99.9)

<sup>a</sup>Includes shoreline habitat at ponds and streams.

<sup>b</sup>No. groups (no. individuals).



Table 6. Mule deer population characteristics, Otter Creek Mine area, 2012-2013.

Month	Group Characteristics				No. Classified <sup>a</sup>		
	No. Groups (No. Animals)	Range	Average	Median	Males	Females	Fawns
<b>Autumn</b>							
Sept. 16-30, 2012	---						
October	10(36)	1-7	3.6	4	11	15	10
	Minimum known number <sup>b</sup> : East of Otter Creek: 27 West of Otter Creek: 9				No. Males Per 100 Females: 73 No. Fawns Per 100 Females: 67		
November	---						
Dec. 1-15	5(24)	2-8	4.8	4			
	Minimum known number: East of Otter Creek: 15 West of Otter Creek: 9						
<b>Winter</b>							
Dec. 16-31	4(21)	1-11	5.3	5			
	Minimum known number: East of Otter Creek: 21 West of Otter Creek: 0						
January 2013	7(32)	1-10	4.6	5			
	Minimum known number: East of Otter Creek: 26 West of Otter Creek: 6						
March 1-15	11(109)	3-19	9.9	10			
	Minimum known number: East of Otter Creek: 62 West of Otter Creek: 47						
<b>Spring</b>							
March 16-31							
April	4(14)	1-7	3.5	3			
	Minimum known number: East of Otter Creek: 1 West of Otter Creek: 13						
May							
June 1-15	5(8)	1-2	1.6	2			
<b>Summer</b>							
June 16-30	---						
July	---						
August	---						
Sept. 1-15	---						

<sup>a</sup>Determined by aerial survey; yearling males and females combined with adults.

<sup>b</sup>Determined by aerial survey; no duplicate counts of individual animals

Table 7. Sharp-tailed grouse lek counts, Otter Creek Mine wildlife resources inventory area, spring 2013.

Lek ID	Active/Inactive	No. Birds	Males	Females	Unclassified
PO <sup>a</sup> -039	I	0			
PO-040	I	0			
PO-044	I	0			
PO-045	A	9	9		
PO-056	I	0			
PO-057	I	0			
PO-058	I	0			
PO-060	I	0			
PO-079	A	6	6		
PO-080	A	7	7		
PO-146	I	0			
PO-148	I	0			
PO-149	A	13	11		2
PO-150	I	0			
PO-151	A	17	13	3	1
PO-152	I	0			
PO-157	I	0			
PO-158	I	0			
OC <sup>b</sup> -1	A	2			2

<sup>a</sup>FWP designation

<sup>b</sup>WESTECH designation (Farmer 2013)

Table 8. Red-tailed hawk nest characteristics, Otter Creek Mine fish and wildlife resources inventory area, 2012-2013.

Nest ID No.	Location			Nest Substrate <sup>a</sup>	Tree/snag hgt. (ft.) <sup>b</sup>	Nest hgt. (ft.) <sup>b</sup>	Active						Comments
	Section	T	R				2011	Chicks	2012	Chicks	2013	Chicks	
OC-RTH-01	NE ¼ Ne ¼ S 16	4S	45E	Live <i>Pop del</i>	75	60	Y	2	Y	?	Y	2	Fledged one in 2011; unknown in 2012, 2013
OC-RTH-02	NE ¼ SE ¼ S 34	4S	45E	Live <i>Pop del</i>	75	70	Y	0	N	0	N	0	Destroyed in spring 2011; rebuilt in summer 2011; inactive 2012, 2013
OC-RTH-03	SE ¼ NW ¼ S 11	5S	45E	Live <i>Pop del</i>	70	60	N	0	Y	?	N	0	Production unknown in 2012; destroyed 2013
OC-RTH-04	SE ¼ NW ¼ S 10	5S	45E	Live <i>Pop del</i>	60	50	N	0	N	0	N	0	Badly deteriorated in 2013
OC-RTH-05	SE ¼ SW ¼ S 34	4S	45E	Live <i>Pin pon</i>	70	69	--- <sup>c</sup>	---	Y	?	Y	?	Production unknown in 2012, 2013
OC-RTH-06	NW ¼ NE ¼ S 10	4S	45E	Live <i>Pop del</i>	60	40	---	---	Y	?	N	0	Production unknown in 2012; destroyed in 2013

<sup>a</sup>*Pop del* = Eastern cottonwood ; *Pin pon* = Ponderosa pine

<sup>b</sup>Ocular estimate

<sup>c</sup>Nest not identified in 2011

Table 9. Landbird plot results, Otter Creek Mine fish and wildlife resources inventory area, 2013.

Species	Plot <sup>a</sup> /Habitat Subtype <sup>b</sup>	
	22/530	23/222
Canada goose	(1)	
Sandhill crane	(1)	
Ring-necked pheasant	2	(1)
Mourning dove	1	1
Common nighthawk	(3)	
American crow		(1)
American robin		1
Vesper sparrow		1
Savannah sparrow	1	
Red-winged blackbird	2	
Western meadowlark	1	3
Brewer's blackbird		1
Brown-headed cowbird	(8)	
<b>Total No. Species</b>	<b>5</b>	<b>5</b>

<sup>a</sup>Figure 5

<sup>b</sup>222 = Silver Sagebrush/Grass; 530 = Tame Pasture

<sup>c</sup>Largest number of displaying males counted at this plot

<sup>d</sup>Floyers or incidentals (not breeding in plot)

Table 10. Landbird plot results, Otter Creek Mine fish and wildlife resources inventory, 2011-2013.

Species	Plot/Habitat Subtype <sup>a</sup>														
	1/212	2 <sup>b</sup> /123	3/280	4/124	5/212	6/412	7/222	8/130	9 <sup>b</sup> /123	10/430	11/411	12/280	13/411-001	14 <sup>b</sup> /110	15/110
Canada goose															
Wood duck															
Mallard															
Blue-winged teal															
Ruddy duck															
Sandhill crane															
Ring-necked pheasant															
Sharp-tailed grouse										(1) <sup>d</sup>					
Red-tailed hawk															
Prairie falcon					(1)										
American coot															
Killdeer															
Upland sandpiper							1	1			1				
Mourning dove	2 <sup>c</sup>	1		1											
Common nighthawk															
Hairy woodpecker															
Northern flicker		1													1
Western wood-pewee		1		1					1						1
Least flycatcher															
Say's phoebe															
Cassin's kingbird	2														
Western kingbird				2	2										
Eastern kingbird															
American crow				1											
Tree swallow													(1)		
Northern rough-wing swallow										(1)					
Bank swallow															
Black-capped chickadee				1				1							1
White-breasted nuthatch															
Red-breasted nuthatch															
Rock wren													1		
House wren															
Mountain bluebird			1	1									1		1
American robin		1		2					1					1	2
Brown thrasher															
European starling															
Yellow warbler															1
Yellow-rumped warbler		2							1					4	
Yellow-breasted chat															1
Spotted towhee		1							2				1	1	1
Chipping sparrow				1				1							1

Species	Plot/Habitat Subtype <sup>a</sup>														
	1/212	2 <sup>b</sup> /123	3/280	4/124	5/212	6/412	7/222	8/130	9 <sup>b</sup> /123	10/430	11/411	12/280	13/411-001	14 <sup>b</sup> /110	15/110
Clay-colored sparrow							1								
Brewer's sparrow	1														
Vesper sparrow	1		1	1	2					1	1		2	1	
Lark sparrow	2			1							1	1	4	1	
Lark bunting															
Savannah sparrow															
Grasshopper sparrow						8				1	2				
Lazuli bunting															
Western tanager									1						
Red-winged blackbird															
Western meadowlark	2	1	3	6	7	8	9	4		8	4	3	3	2	1
Brewer's blackbird								1							
Brown-headed cowbird				1											
Bullock's oriole	1														
Red crossbill															
American goldfinch															
<b>Total No. Species</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>10</b>

<sup>a</sup>001 = Rock Outcrop; 110 = Riparian Tree; 123 = Ponderosa Pine/Grass; 124 = Ponderosa Pine/Shrub; 130 = Juniper; 212 = Big Sagebrush; 222 = Silver Sagebrush; 280 = Breaks; 411 = Bunchgrass; 412 = Sod-forming Grass; 430 = Prairie Dog Colony

<sup>b</sup>Plot run once

<sup>c</sup>Maximum number of displaying males of each species counted at this plot

<sup>d</sup>( ) = flyovers, flocks, incidentals

Species	Plot/Habitat Subtype <sup>a</sup>							
	16/280	17/110	18/123	19/002	20/124	21/110	22/530	23/222
Canada goose							(1)	
Wood duck				1				
Mallard				2				
Blue-winged teal				1				
Ruddy duck				2				
Sandhill crane							(1)	
Ring-necked pheasant		1	(1)				2	(1)
Sharp-tailed grouse								
Red-tailed hawk		(1)						
Prairie falcon								
American coot				1				
Killdeer				2		2		
Upland sandpiper								
Mourning dove		2			1	3	1	1
Common nighthawk							(3)	
Hairy woodpecker						1		
Northern flicker		1	1					
Western wood-pewee		2	1			1		
Least flycatcher		2						
Say's phoebe						1		
Cassin's kingbird								
Western kingbird		(1)				4		
Eastern kingbird		(1)			1	2		
American crow			1					(1)
Tree swallow				(1)				
Northern rough-wing swallow								
Bank swallow		(2)						
Black-capped chickadee		1	2		3			
White-breasted nuthatch			1					
Red-breasted nuthatch			1					
Rock wren								
House wren		3	1					
Mountain bluebird		1						
American robin		3			1	1		1
Brown thrasher		1						
European starling		(1)						
Yellow warbler		2				5		
Yellow-rumped warbler					1			
Yellow-breasted chat								
Spotted towhee		2				5		
Chipping sparrow					1			

Species	Plot/Habitat Subtype <sup>a</sup>							
	16/280	17/110	18/123	19/002	20/124	21/110	22/530	23/222
Clay-colored sparrow								
Brewer's sparrow								
Vesper sparrow	3					1		1
Lark sparrow	2	1	2			4		
Lark bunting	(2)			(5)				
Savannah sparrow							1	
Grasshopper sparrow	2							
Lazuli bunting		(1)						
Western tanager					1			
Red-winged blackbird				10		1	2	
Western meadowlark	3	3	1	(5)	1	1	1	2
Brewer's blackbird								1
Brown-headed cowbird		2			2	3	(8)	
Bullock's oriole						3		
Red crossbill					2			
American goldfinch		1				1		
<b>Total No. Species</b>	<b>4</b>	<b>15</b>	<b>9</b>	<b>7</b>	<b>10</b>	<b>17</b>	<b>5</b>	<b>5</b>

<sup>b</sup>001 = Rock Outcrop; 002 = Pond/Impoundment; 110 = Riparian Tree; 123 = Ponderosa Pine/Grass; 124 = Ponderosa Pine/Shrub; 130 = Juniper; 212 = Big Sagebrush; 222 = Silver Sagebrush; 280 = Breaks; 411 = Bunchgrass; 412 = Sod-forming Grass; 430 = Prairie Dog Colony ; 530 = Tame Pasture

<sup>b</sup>Plot run once

<sup>c</sup>Maximum number of displaying males of each species counted at this plot

<sup>d</sup>( ) = flyovers, flocks, incidentals



Table 11. Relative abundance of vertebrate Species of Concern<sup>a</sup> in the Otter Creek Mine fish and wildlife resources study area.

Species	Preferred Habitat in Study Area <sup>b</sup>	Recorded During Study <sup>b</sup>	Relative Abundance <sup>c</sup>
<b>FISH</b>			
Brassy minnow	Yes	X	Common
Plains minnow	Yes? <sup>e</sup>		Rare
<b>AMPHIBIANS</b>			
Great Plains toad	Yes		Uncommon
Northern leopard frog <sup>d</sup>	Yes	X	Common
Plains spadefoot	Yes		Uncommon/rare
<b>REPTILES</b>			
Snapping turtle	Yes	X	Common
Spiny softshell	Yes		Uncommon/rare
Greater short-horned lizard	Yes	X	Common but patchy
Western hog-nosed snake	Yes	X	Uncommon
Milksnake	Yes		Rare
<b>MAMMALS</b>			
Merriam's shrew	Yes		Unknown
Pallid bat	Yes	X	Unknown
Townsend's big-eared bat	Yes		Unknown
Silver-haired bat	Yes	X	Unknown
Eastern red bat	Yes	X	Unknown
Hoary bat	Yes	X	Unknown
Western small-footed myotis	Yes	X	Unknown
Long-eared myotis	Yes	X	Unknown
Little brown myotis	Yes	X	Unknown
Fringed myotis	Yes	X	Unknown
Long-legged myotis	Yes	X	Unknown
Spotted bat	Yes		Unknown
Meadow jumping mouse	Yes		Unknown
Porcupine	Yes	X	Common
Black-tailed prairie dog	Yes	X	Common
Swift fox	No		---
Black-footed ferret	No		---
White-tailed deer <sup>d</sup>	Yes	X	Uncommon
Elk <sup>d</sup>	Yes	X	Common
<b>BIRDS</b>			
Trumpeter swan	No		---
Barrow's goldeneye	No		---
Hooded merganser	No		---
Greater sage-grouse	Yes	X	Uncommon/Occasional
Sharp-tailed grouse <sup>d</sup>	Yes	X	Common
Common loon	No		---
Clark's grebe	No		---
Horned grebe	Yes		Uncommon
Great blue heron	Yes	X	Common
American bittern	No		---
Black-crowned night heron	No		---
American white pelican	No		---
White-faced ibis	No		---
Bald eagle	Yes	X	Common migrant/winter resident
Northern goshawk	Yes		Unknown
Swainson's hawk <sup>d</sup>	Yes	X	Uncommon
Ferruginous hawk	Yes		Uncommon
Golden eagle	Yes	X	Common
Peregrine falcon	No		---
Merlin <sup>d</sup>	Yes	X	Uncommon
Piping plover	No		---
Mountain plover	Yes		Rare

Species	Preferred Habitat in Study Area <sup>b</sup>	Recorded During Study <sup>b</sup>	Relative Abundance <sup>c</sup>
Black-necked stilt	No		---
Long-billed curlew	Yes		Uncommon
Franklin's gull	No		---
Common tern	No		---
Forster's tern	No		---
Caspian tern	No		---
Black tern	No		---
Black-billed cuckoo	Yes; very limited		Rare
Yellow-billed cuckoo	Yes; very limited		Rare
Eastern screech-owl	Yes; very limited	X	Uncommon
Burrowing owl	Yes	X	Common
Short-eared owl	Yes	X	Uncommon
Common poorwill	Yes	X	Uncommon
Chimney swift	Yes		Rare
Lewis' woodpecker	Yes		Unknown
Red-headed woodpecker	Yes	X	Uncommon
Black-backed woodpecker	Yes?		Rare
Olive-sided flycatcher	Yes?		Rare
Kingbird spp. <sup>d</sup>	Yes	X	Common
Loggerhead shrike	Yes	X	Uncommon
Plumbeous vireo	Yes		Unknown
Pinyon jay	Yes	X	Common
Clark's nutcracker	Yes	X	Uncommon
Brown creeper	Yes?		Unknown
Eastern bluebird	Yes	X	Uncommon
Veery	Yes?		Uncommon/rare
Sage thrasher	No		---
Sprague's pipit	Yes; limited		Rare
Chestnut-collared longspur	Yes		Rare
McCown's longspur	Yes		Rare
Ovenbird	No		---
Black-and-white warbler	No?		Rare migrant
Tennessee warbler	Yes		Rare migrant
Green-tailed towhee	Yes		Uncommon
Rufus-sided towhee <sup>d</sup>	Yes	X	Common
Brewer's sparrow	Yes	X	Uncommon
Baird's sparrow	Yes	X	Uncommon
Dickcissel	No		---
Bobolink	Yes		Rare
Northern oriole <sup>d</sup>	Yes	X	Common
Cassin's finch	Yes		Uncommon
Gray-crowned rosy-finch	No		---
Evening grosbeak	Yes	X	Uncommon

<sup>a</sup>Includes Montana Species of Concern (SOC), Montana Potential Species of Concern (PSOC), Montana Special Status Species, USFS Sensitive Species, USFS Management Indicator Species (MIS) and BLM Sensitive Species (Table 3).

<sup>b</sup>Appendix A.

<sup>c</sup>Common = easy to detect with applicable methods in appropriate habitats; Uncommon = seldom detected with applicable methods in appropriate habitats; Rare = almost never detected with applicable methods in appropriate habitats; Unknown = too little information available to determine relative abundance.

<sup>d</sup>Not a Montana SOC or PSOC but is a USFS or BLM Sensitive Species, or USFS MIS.

<sup>e</sup>? = Availability of preferred/breeding habitat uncertain.