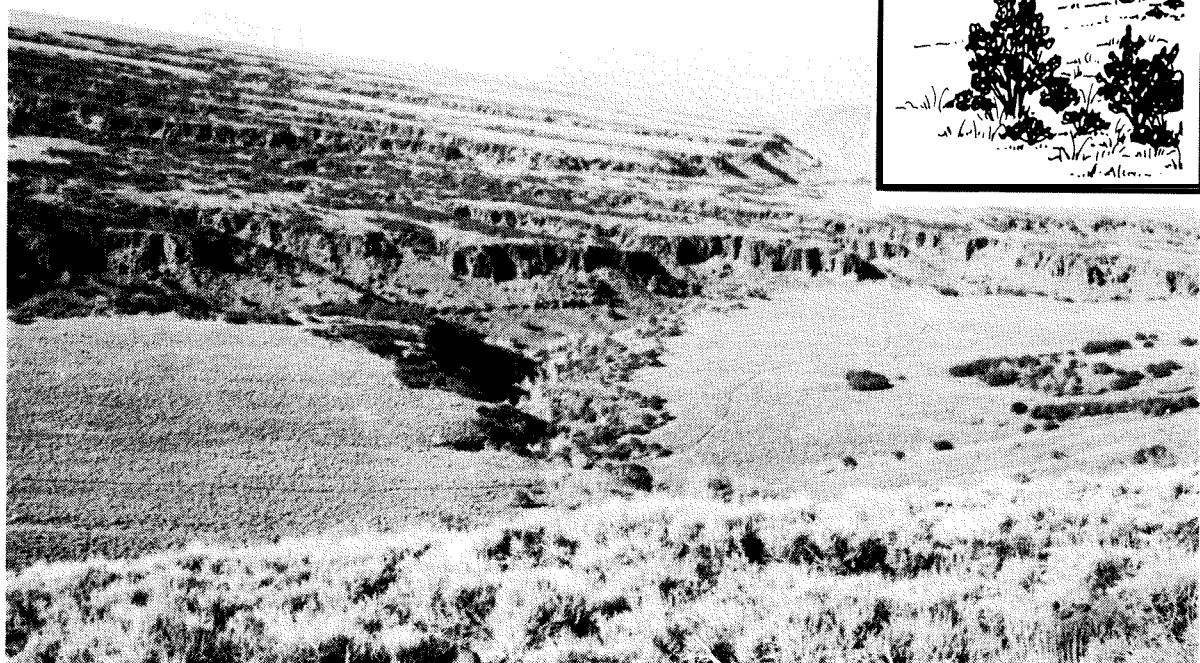


# WILDLIFE HABITATS IN MANAGED RANGELANDS-- THE GREAT BASINS OF SOUTHEASTERN OREGON

## THE RELATIONSHIP OF TERRESTRIAL VERTEBRATES TO PLANT COMMUNITIES AND STRUCTURAL CONDITIONS

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## **ABSTRACT**

The relationships of terrestrial vertebrates to plant communities, structural conditions, and special habitats in the Great Basin of southeastern Oregon are described in a series of appendices. The importance of habitat components to wildlife and the predictability of management activities on wildlife are examined in terms of managed rangelands. The derivation and use of these appendices are described in a companion publication, General Technical Report PNW-172, Part 1.

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This publication is part of the series Wildlife Habitats in Managed Rangelands-The Great Basin of Southeastern Oregon. The purpose of the series is to provide a range manager with the necessary information on wildlife and its relationship to habitat conditions in managed rangelands in order that the manager may make fully informed decisions.

The information in this series is specific to the **Great** Basin of southeastern Oregon and is generally applicable to the shrub-steppe areas of **the** Western United States. The principles and processes described, however, are generally applicable to all managed rangelands. The purpose of the series is to provide specific information for a particular area but in doing so to develop a process for considering the welfare of wildlife when range management decisions are made.

The series is composed of 14 separate publications designed to form a comprehensive whole. Although each part will be an indepen-

dent treatment of a specific subject, when combined in sequence, the individual parts will be as chapters in a book.

Individual parts will be printed as they become available. In this way the information will be more quickly available to potential users. This means, however, that the sequence of printing will not be in the same order as the final organization of the separates into a comprehensive whole.

A list of the publications in the series, their current availability, and their final organization is shown on the inside back cover of this publication.

Wildlife Habitats in Managed Rangelands—The Great Basin of Southeastern Oregon is a cooperative effort of the USDA Forest Service, Pacific Northwest Forest and Range Experiment Station, and United States Department of the Interior, Bureau of Land Management.

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## Introduction

The appendices **that** follow provide the data base information to consider wildlife habitat relationships in that portion of the Great Basin that lies in southeastern Oregon. The details on how this information was derived and how it may be used to analyze impacts of land management decisions on terrestrial vertebrates are given in:

Maser, Chris; Thomas, Jack Ward; Anderson, Ralph G. Wildlife habitats in managed rangelands-the Great Basin of southeastern Oregon: the relationships of terrestrial vertebrates to plant communities and structural conditions. Gen. Tech. Rep. PNW-172, part 1 of 2 parts. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1984. 25 p.

These appendices are published separately as they are apt to be of interest primarily to those applying the wildlife habitat relationships system to the particular geographical area described. The text (part 1, referenced above) discusses the principles and procedures concerning the development and application of wildlife habitat relationships that are of a more general interest.

Appendix 1. 341 wildlife species of southeast Oregon listed phylogenetically by common and scientific names.

Letter code	Life form	Common name	Scientific name
AMPHIBIANS			
AMMA	2	long-toed salamander	<i>Ambystoma macrodactylum</i>
SCIN	2	Great Basin spadefoot	<i>Scaphiopus intermontanus</i>
BUBO	2	western toad	<i>Bufo boreas</i>
BUWO	2	Woodhouse toad	<i>Bufo woodhousei</i>
HYRE	2	Pacific treefrog	<i>Hyla regilla</i>
RAPR	1	spotted frog	<i>Ranapretiosa</i>
RAPI	2	leopard frog	<i>Ranapiiens</i>
RACA	1	bullfrog	<i>Rana catesbeiana</i>
REPTILES			
CRCO	4	collared lizard	<i>Crotaphytus collaris</i>
CRWI	5	leopard lizard	<i>Crotaphytus wislizeni</i>
SCOC	4	western fence lizard	<i>Sceloporus occidentalis</i>
SCGR	5	sagebrush lizard	<i>Sceloporus graciosus</i>
UTST	5	side-blotched lizard	<i>Uta stansburiana</i>
PHPL	5	desert horned lizard	<i>Phrynosoma platyrhinos</i>
PHDO	5	short-horned lizard	<i>Phrynosoma douglassi</i>
EUSK	5	western skink	<i>Eumeces skiltonianus</i>
CNTI	5	western whiptail	<i>Cnemidophorus tigris</i>
CHBO	5	rubber boa	<i>Charina bottae</i>
COCONS	5	yellow-bellied racer	<i>Coluber constrictor</i>
MATA	5	striped whipsnake	<i>Masticophis taeniatus</i>
PIME	5	gopher snake	<i>Pituophis melanoleucus</i>
THSI	3	common garter snake	<i>Thamnophis sirtalis</i>
THEL	3	wandering garter snake	<i>Thamnophis elegans</i>
SOSE	15	western ground snake	<i>Sonora semiannulata</i>
HYTO	5	night snake	<i>Hypsiglena torquata</i>
CRVI	5	western rattlesnake	<i>Crotalus viridis</i>

Letter code	Life form	Common name	Scientific name
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BIRDS			
GAIM	3	common loon	<i>Gavia immer</i>
POGRI	3	red-necked grebe	<i>Podiceps grisegena</i>
POAUA	3	horned grebe	<i>Podiceps auritus</i>
PONIGR	3	eared grebe	<i>Podiceps nigricollis</i>
AELOC	3	western grebe	<i>Aechmophorus occidentalis</i>
POP0	3	pied-billed grebe	<i>Podilymbus podiceps</i>
PEERY	3	American white pelican	<i>Pelecanus erythrorhynchos</i>
PHAU	3	double-crested cormorant	<i>Phalacrocorax auritus</i>
ARHE	12	great blue heron	<i>Ardea herodias</i>
BUST	7	green heron	<i>Butorides striatus</i>
CAAL	12	common egret	<i>Casmerodius albus</i>
BUIB	7	cattle egret	<i>Bubulcus ibis</i>
NYNY	7	black-crowned night heron	<i>Nycticorax nycticorax</i>
BOLE	3	American bittern	<i>Botaurus lentiginosus</i>
IXEX	3	least bittern	<i>Ixobrychus exilis</i>
PLCH	7	white-faced ibis	<i>Plegadis chihi</i>
OLCO	3	whistling swan	<i>Olor columbianus</i>
BRCA	3	Canada goose	<i>Branta canadensis</i>
BRCALE	3	Aleutian Canada goose	<i>Branta canadensis leucopareia</i>
ANAL	3	greater white-fronted goose	<i>Anser albifrons</i>
ANALGA	3	Tule white-fronted goose	<i>Anser albifrons gambelli</i>
CHCA	3	snow goose	<i>Chen caerulescens</i>
CHRO	3	Ross' goose	<i>Chen rossii</i>
ANPL	3	mallard	<i>Anas platyrhynchos</i>
ANSTR	3	gadwall	<i>Anas strepera</i>
ANAC	3	common pintail	<i>Anas acuta</i>
ANCR	3	green-winged teal	<i>Anas crecca</i>
ANDIS	3	blue-winged teal	<i>Anas discors</i>
ANCY	3	cinnamon teal	<i>Anas cyanoptera</i>
ANAMEO	3	American wigeon	<i>Anas americana</i>
ANCL	3	northern shoveler	<i>Anas clypeata</i>
AISP	14	wood duck	<i>Aix sponsa</i>
AYAM	3	redhead	<i>Aythya americana</i>
AYCO	3	ring-necked duck	<i>Aythya collaris</i>
AYVA	3	canvasback	<i>Aythya valisineria</i>
AYMA	3	greater scaup	<i>Aythya marila</i>

Letter code	Life form	Common name	Scientific name
AYAF	3	lesser scaup	<i>Aythya affinis</i>
BUCL	3	common goldeneye	<i>Bucephala clangula</i>
BUIS	14	Barrow's goldeneye	<i>Bucephala islandica</i>
BUALBE	14	bufflehead	<i>Bucephala albeola</i>
SOSP	3	king eider	<i>Somateria spectabilis</i>
CLHY	3	oldsquaw	<i>Clangula hyemalis</i>
OXJA	3	ruddy duck	<i>Oxyura jamaicensis</i>
LOCU	14	hooded merganser	<i>Lophodytes cucullatus</i>
MEMER	14	common merganser	<i>Mergus merganser</i>
MESE	3	red-breasted merganser	<i>Mergus serrator</i>
CAAU	4	turkey vulture	<i>Cathartes aura</i>
ACGE	11	northern goshawk	<i>Accipiter gentilis</i>
ACST	11	sharp-shinned hawk	<i>Accipiter striatus</i>
ACCO	11	Cooper's hawk	<i>Accipiter cooperii</i>
BUJA	12	red-tailed hawk	<i>Buteo jamaicensis</i>
BUSW	7	Swainson's hawk	<i>Buteo swainsoni</i>
BULA	4	rough-legged hawk	<i>Buteo lagopus</i>
BUREG	4	ferruginous hawk	<i>Buteo regalis</i>
AQCH	12	golden eagle	<i>Aquila chrysaetos</i>
HALE	12	bald eagle	<i>Haliaeetus leucocephalus</i>
CICY	5	northern harrier	<i>Circus cyaneus</i>
PAHA	12	osprey	<i>Pandion haliaetus</i>
FAME	4	prairie falcon	<i>Falco mexicanus</i>
FAPE	4	peregrine	<i>Falco peregrinus</i>
FACO	11	merlin	<i>Falco columbarius</i>
FASP	14	American kestrel	<i>Falco sparverius</i>
DEOB	5	blue grouse	<i>Dendragapus obscurus</i>
BOUM	5	ruffed grouse	<i>Bonasa umbellus</i>
CEUR	5	sage grouse	<i>Centrocercus urophasianus</i>
LOCA	5	California quail	<i>Lophortyx californicus</i>
ORPI	5	mountain quail	<i>Oreortyx pictus</i>
ALCH	4	chukar	<i>Alectoris chukar</i>
PEPER	5	grey partridge	<i>Perdix perdix</i>
PHCOL	5	ring-necked pheasant	<i>Phasianus colchicus</i>
GRCA	3	sandhill crane	<i>Grus canadensis</i>

Letter code		Life form	Common name	Scientific name
RALI	3	Virginia rail	<i>Rallus limicola</i>	
POCAR	3	sora	<i>Porzana carolina</i>	
FUAM	3	American coot	<i>Fulica americana</i>	
CHSEM	3	semipalmated plover	<i>Charadrius semipalmatus</i>	
CHALE	3	snowy plover	<i>Charadrius alexandrinus</i>	
CHVO	3	killdeer	<i>Charadrius vociferus</i>	
CHMO	3	mountain plover	<i>Charadrius montanus</i>	
CAGA	3	common snipe	<i>Capella gallinago</i>	
NUAM	3	long-billed curlew	<i>Numenius americanus</i>	
ACMA	3	spotted sandpiper	<i>Actitis macularia</i>	
TRSO	7	solitary sandpiper	<i>Tringa solitaria</i>	
TRME	3	greater yellowlegs	<i>Tringa melanoleuca</i>	
TRFL	3	lesser yellowlegs	<i>Tringa flavipes</i>	
CASE	3	willet	<i>Catoptrophorus semipalmatus</i>	
CAMEL	3	pectoral sandpiper	<i>Calidris melanotos</i>	
CABA	3	Baird's sandpiper	<i>Calidris bairdii</i>	
CAMI	3	least sandpiper	<i>Calidris minutilla</i>	
CAMAU	3	western sandpiper	<i>Calidris mauri</i>	
LISC	3	long-billed dowitcher	<i>Limnodromus scolopaceus</i>	
LIFE	3	marbled godwit	<i>Limosa fedoa</i>	
REAM	3	American avocet	<i>Recurvirostra americana</i>	
HIME	3	black-necked stilt	<i>Himantopus mexicanus</i>	
STTRI	3	Wilson's phalarope	<i>Steganopus tricolor</i>	
LOLO	3	northern phalarope	<i>Lobipes lobatus</i>	
LAAR	3	herring gull	<i>Larus argentatus</i>	
LACA	3	California gull	<i>Larus californicus</i>	
LADE	3	ring-billed gull	<i>Larus delawarensis</i>	
LAP1	3	Franklin's gull	<i>Larus pipixcan</i>	
LAPH	3	Bonaparte's gull	<i>Larus philadelphicus</i>	
STFO	3	Forster's tern	<i>Sterna forsteri</i>	
STCAS	3	Caspian tern	<i>Sterna caspia</i>	
CHNI	3	black tern	<i>Chlidonias niger</i>	
COLI	4	rock dove	<i>Columba livia</i>	
ZEMA	11	mourning dove	<i>Zenaidura macroura</i>	
COAM	8	yellow-billed cuckoo	<i>Coccyzus americanus</i>	
TYAL	14	barn owl	<i>Tyto alba</i>	

Letter code		Life form	Common name	Scientific name
OTAS	14	common screech owl	<i>Otus asio</i>	
OTFL	14	flammulated owl	<i>Otus flammeolus</i>	
BUVIR	12	great horned owl	<i>Bubo virginianus</i>	
GLGN	14	pygmy owl	<i>Glaucidium gnoma</i>	
ATCU	15	burrowing owl	<i>Athene cunicularia</i>	
ASOT	11	long-eared owl	<i>Asio otus</i>	
ASF	5	short-eared owl	<i>Asio flammeus</i>	
AEAC	14	saw-whet owl	<i>Aegolius acadicus</i>	
PHNU	6	poorwill	<i>Phalaenoptilus nuttalli</i>	
CHMI	6	common nighthawk	<i>Chordeiles minor</i>	
CYNI	4	black swift	<i>Cypseloides niger</i>	
CHVA	14	Vaux's swift	<i>Chaetura vauxi</i>	
AESA	4	white-throated swift	<i>Aeronautes saxatalis</i>	
ARAL	7	black-chinned hummingbird	<i>Archilochus alexandri</i>	
SEPL	7	broad-tailed hummingbird	<i>Selasphorus platycercus</i>	
SERUF	11	rufous hummingbird	<i>Selasphorus rufus</i>	
STCAL	7	calliope hummingbird	<i>Stellula calliope</i>	
CAAN	7	Anna's hummingbird	<i>Calypte anna</i>	
MEAL	16	belted kingfisher	<i>Megacyrle alcyon</i>	
COAU	13	common flicker	<i>Colaptes auratus</i>	
MELE	13	Lewis's woodpecker	<i>Melanerpes lewis</i>	
SPVAR	13	yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	
SPTH	13	Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>	
PIVI	13	hairy woodpecker	<i>Picoides villosus</i>	
PIPU	13	downy woodpecker	<i>Picoides pubescens</i>	
PIAL	13	white-headed woodpecker	<i>Picoides albolarvatus</i>	
TYTY	7	eastern kingbird	<i>Tyrannus tyrannus</i>	
TYVE	11	western kingbird	<i>Tyrannus verticalis</i>	
MYCI	14	ash-throated flycatcher	<i>Myiarchus cinerascens</i>	
SASA	4	Say's phoebe	<i>Sayornis saya</i>	
EMTR	7	willow flycatcher	<i>Empidonax traillii</i>	
EMHA	11	Hammond's flycatcher	<i>Empidonax hammondi</i>	

Letter code	Life form	Common name	Scientific name
EMWR	7	gray flycatcher	<i>Empidonax wrightii</i>
EMDI	10	western flycatcher	<i>Empidonax difficilis</i>
COSO	11	western wood pewee	<i>Contopus sordidulus</i>
NUBO	10	olive-sided flycatcher	<i>Nuttallornis borealis</i>
ERAL	5	horned lark	<i>Eremophila alpestris</i>
TATH	14	violet-green swallow	<i>Tachycineta thalassina</i>
IRBI	14	treeswallow	<i>Iridoprocne bicolor</i>
RIRI	16	bankswallow	<i>Riparia riparia</i>
STRU	16	rough-winged swallow	<i>Stelgidopteryx ruficollis</i>
HIRU	4	barn swallow	<i>Hirundo rustica</i>
PEPY	4	cliffswallow	<i>Petrochelidon pyrrhonota</i>
PECA	11	gray jay	<i>Perisoreus canadensis</i>
CYST	11	Steller's jay	<i>Cyanocitta stelleri</i>
APCO	7	scrubjay	<i>Aphelocoma coerulescens</i>
PIPI	7	black-billed magpie	<i>Pica pica</i>
COCOR	4	northern raven	<i>Corvus corax</i>
COBRA	11	American crow	<i>Corvus brachyrhynchos</i>
GYCY	10	pinyon jay	<i>Gymnorhinus cyanocephalus</i>
NUCO	10	Clark's nutcracker	<i>Nucifraga columbiana</i>
PAATR	14	black-capped chickadee	<i>Parus atricapillus</i>
PAGA	14	mountain chickadee	<i>Parus gambeli</i>
PSMI	8	bushtit	<i>Psaltriparus minimus</i>
SICAR	13	white-breasted nuthatch	<i>Sitta carolinensis</i>
SICAN	13	red-breasted nuthatch	<i>Sitta canadensis</i>
CEFA	14	brown creeper	<i>Certhia familiaris</i>
CIME	3	dipper	<i>Cinclus mexicanus</i>
TRAЕ	14	house wren	<i>Troglodytes aedon</i>
TRTR	3	winter wren	<i>Troglodytes troglodytes</i>
CIPA	3	marsh wren	<i>Cistophorus palustris</i>

Letter code	Life form	Common name	Scientific name
CAMEXO	4	canyonwren	<i>Catherpes mexicanus</i>
SAOB	4	rock wren	<i>Salpinctes obsoletus</i>
MIPO	7	northern mockingbird	<i>Mimus polyglottos</i>
DUCA	7	gray catbird	<i>Dumetella carolinensis</i>
TORU	7	brown thrasher	<i>Toxostoma rufum</i>
ORMO	7	sage thrasher	<i>Oreoscoptes montanus</i>
TUMI	7	American robin	<i>Turdus migratorius</i>
IXNA	11	varied thrush	<i>Ixoreus naevius</i>
CAGU	5	hermit thrush	<i>Catharus guttatus</i>
CAUS	7	Swainson's thrush	<i>Catharus ustulatus</i>
CAFU	5	veery	<i>Catharus fuscescens</i>
SIME	14	western bluebird	<i>Sialia mexicana</i>
SICU	14	mountain bluebird	<i>Sialia currucoides</i>
MYTO	6	Townsend's solitaire	<i>Myadestes townsendi</i>
POCAE	7	blue-gray gnatcatcher	<i>Polioptila caerulea</i>
RESA	10	golden-crowned kinglet	<i>Regulus satrapa</i>
RECA	10	ruby-crowned kinglet	<i>Regulus calendula</i>
ANST	5	water pipit	<i>Anthus spinolella</i>
BOGA	9	Bohemian waxwing	<i>Bombycilla garrulus</i>
BOCE	9	cedar waxwing	<i>Bombycilla cedrorum</i>
LAEX	7	northern shrike	<i>Lanius excubitor</i>
LALU	7	loggerhead shrike	<i>Lanius ludovicianus</i>
STVU	14	European starling	<i>Sturnus vulgaris</i>
VISO	11	solitary vireo	<i>Vireo solitarius</i>
VIOL	11	red-eyed vireo	<i>Vireo olivaceus</i>
VIGI	11	warbling vireo	<i>Vireo gilvus</i>
VECE	6	orange-crowned warbler	<i>Vermivora celata</i>
DEPE	8	yellow warbler	<i>Dendroica petechia</i>
DECOR	10	yellow-rumped warbler	<i>Dendroica coronata</i>
DENI	10	black-throated grey warbler	<i>Dendroica nigrescens</i>

Letter code		Life form	Common name	Scientific name
DET0	10	Townsend's warbler	<i>Dendroica townsendi</i>	
OPTO	7	MacGillivray's warbler	<i>Oporornis tolmiei</i>	
GETR	3	common yellowthroat	<i>Geothlypis trichas</i>	
ICVI	8	yellow-breasted chat	<i>Icteria virens</i>	
SEAU	7	ovenbird	<i>Seiurus aurocapillus</i>	
WIPU	5	Wilson's warbler	<i>Wilsonia pusilla</i>	
SERUT	9	American redstart	<i>Setophaga ruticilla</i>	
PAD0	14	house sparrow	<i>Passer domesticus</i>	
DOOR	5	bobolink	<i>Dolichonyx oryzivorus</i>	
STNEG	5	western meadowlark	<i>Sturnella neglecta</i>	
XAXA	7	yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	
AGPH	7	red-winged blackbird	<i>Agelaius phoeniceus</i>	
ICGA	9	northern oriole	<i>Icterus galbula</i>	
EUCY	7	Brewer's blackbird	<i>Euphagus cyanocephalus</i>	
MOAT	7	brown-headed cowbird	<i>Molothrus ater</i>	
PILU	10	western tanager	<i>Piranga ludoviciana</i>	
PHLU	9	rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	
PHME	11	black-headed grosbeak	<i>Pheucticus melanocephalus</i>	
PACY	8	indigo bunting	<i>Passerina cyanea</i>	
PAAMO	7	lazuli bunting	<i>Passerina amoena</i>	
HEVE	11	evening grosbeak	<i>Hesperiphona vespertina</i>	
CAPU	11	purple finch	<i>Carpodacus purpureus</i>	
CACUS	11	Cassin's finch	<i>Carpodacus cassinii</i>	
CAMEXI	9	house finch	<i>Carpodacus mexicanus</i>	
LEAT	4	black rosy finch	<i>Leucosticte atrata</i>	
CAFL	9	common redpoll	<i>Carduelis flammea</i>	
CAP1	11	pine siskin	<i>Carduelispinus</i>	
CATR	8	American goldfinch	<i>Carduelis tristis</i>	
CAPS	7	lesser goldfinch	<i>Carduelis psaltria</i>	

Letter code		Life form	Common name	Scientific name
PICH	7	green-tailed towhee	<i>Pipilo chlorura</i>	
PIER	7	rufous-sided towhee	<i>Pipilo erythrorthalus</i>	
PASA	5	savannah sparrow	<i>Passerculus sandwichensis</i>	
AMSA	5	grasshopper sparrow	<i>Ammodramus savannarum</i>	
POGRA	5	vesper sparrow	<i>Pooecetes gramineus</i>	
CHGR	5	lark sparrow	<i>Chondestes grammacus</i>	
AMBI	7	black-throated sparrow	<i>Amphispiza bilineata</i>	
AMBE	7	sage sparrow	<i>Amphispiza belli</i>	
JUHY	5	northern junco	<i>Junco hyemalis</i>	
SPARB	11	American tree sparrow	<i>Spizella arborea</i>	
SPPA	7	chipping sparrow	<i>Spizella passerina</i>	
SPBRE	7	Brewer's sparrow	<i>Spizella breweri</i>	
ZOLE	7	white-crowned sparrow	<i>Zonotrichia leucophrys</i>	
ZOAT	7	golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	
PAIL	7	fox sparrow	<i>Passerella iliaca</i>	
MEL1	6	Lincoln's sparrow	<i>Melospiza lincolni</i>	
MEMEL	7	song sparrow	<i>Melospiza melodia</i>	
CALA	5	Lapland longspur	<i>Calcarius lapponicus</i>	
PLNI	5	snow bunting	<i>Plectrophenax nivalis</i>	
			MAMMALS	
SOPR	16	Malheur shrew	<i>Sorex oreblei</i>	
SOVA	16	wandering shrew	<i>Sorex vagrans</i>	
SOME	15	Merriam shrew	<i>Sorex merriami</i>	
MYLU	4	little brown myotis	<i>Myotis lucifugus</i>	
MYYU	14	Yuma myotis	<i>Myotis yumanensis</i>	
MYEV	14	long-eared myotis	<i>Myotis evotis</i>	
MYTH	4	fringed myotis	<i>Myotis thysanodes</i>	
MYVO	14	long-legged myotis	<i>Myotis volans</i>	
MYCA	4	California myotis	<i>Myotis californicus</i>	
MLE	4	small-footed myotis	<i>Myotis leibii</i>	

Letter code		Life form	Common name	Scientific name
LANO	14	silver-haired bat	<i>Lasionycteris noctivagans</i>	
PIHE	4	western pipistrelle	<i>Pipistrellus hesperus</i>	
EPFU	4	big brown bat	<i>Eptesicus fuscus</i>	
LACI	9	hoary bat	<i>Lasiurus cinereus</i>	
EUMAC	4	spotted bat	<i>Euderma maculatum</i>	
PLTO	4	western big-eared bat	<i>Plecotus townsendi</i>	
ANPA	4	pallid bat	<i>Antrozous pallidus</i>	
SYID	5	pygmy rabbit	<i>Sylvilagus idahoensis</i>	
SYNU	5	mountain cottontail	<i>Sylvilagus nuttalli</i>	
LETO	5	white-tailed jackrabbit	<i>Lepus townsendi</i>	
LECA	5	black-tailed jackrabbit	<i>Lepus californicus</i>	
EUMI	15	least chipmunk	<i>Eutamias minimus</i>	
EUAM	15	yellow pine chipmunk	<i>Eutamias amoenus</i>	
MAFL	4	yellow-bellied marmot	<i>Marmota flaviventris</i>	
AMLE	15	antelope ground squirrel	<i>Ammospermophilus leucurus</i>	
SPTO	15	Townsend ground squirrel	<i>Spermophilus townsendi</i>	
SPRI	15	Richardson ground squirrel	<i>Spermophilus richardsoni</i>	
SPBE	15	Belding ground squirrel	<i>Spermophilus beldingi</i>	
SPCO	15	Columbian ground squirrel	<i>Spermophilus columbianus</i>	
SPLA	15	mantled ground squirrel	<i>Spermophilus lateralis</i>	
THTO	15	Townsend pocket gopher	<i>Thomomys townsendi</i>	
THTA	15	northern pocket gopher	<i>Thomomys talpoides</i>	
PELO	15	littlepocket mouse	<i>Perognathus longimembris</i>	
PEPA	15	Great Basin pocket mouse	<i>Perognathus parvus</i>	
MIME	15	dark kangaroo mouse	<i>Microdipodops megacephalus</i>	
DIOR	15	Ord kangaroo rat	<i>Dipodomys ordi</i>	

Letter code		Life form	Common name	Scientific name
DIM1	15	chisel-toothed kangaroo rat	<i>Dipodomys microps</i>	
CACAN	16	beaver	<i>Castor canadensis</i>	
REME	15	western harvest mouse	<i>Reithrodontomys megalotis</i>	
PECR	4	canyon mouse	<i>Peromyscus crinitus</i>	
PEMA	15	deer mouse	<i>Peromyscus maniculatus</i>	
ONLE	15	northern grasshopper mouse	<i>Onychomys leucogaster</i>	
NELE	4	desert woodrat	<i>Neotoma lepida</i>	
NECI	4	bushy-tailed woodrat	<i>Neotoma cinerea</i>	
MIMO	15	montane vole	<i>Microtus montanus</i>	
MILO	15	long-tailed vole	<i>Microtus longicaudus</i>	
LACU	15	sage vole	<i>Laguruscurtatus</i>	
ONZI	16	muskrat	<i>Ondatra zibethicus</i>	
RARA	5	black rat	<i>Rattus rattus</i>	
RANO	5	Norway rat	<i>Rattus norvegicus</i>	
ZAPR	15	western jumping mouse	<i>Zapus princeps</i>	
ERDO	4	porcupine	<i>Erethizon dorsatum</i>	
CALAT	15	coyote	<i>Canis latrans</i>	
v u v u	15	red fox	<i>Vulpes vulpes</i>	
VUMA	15	kit fox	<i>Vulpes macrotis</i>	
PRLO	14	raccoon	<i>Procyon lotor</i>	
MUER	15	short-tailed weasel	<i>Mustela erminea</i>	
MUFR	15	long-tailed weasel	<i>Mustela frenata</i>	
MUVI	16	mink	<i>Mustela vison</i>	
TATA	15	badger	<i>Taxidea taxus</i>	
SPPU	4	spotted skunk	<i>Spilogaleputorius</i>	
MEMEP	15	stripped skunk	<i>Mephitis mephitis</i>	
LUCA	16	river otter	<i>Lutra canadensis</i>	
FECO	4	puma	<i>Felis concolor</i>	
FECA	5	feral house cat	<i>Felis catus</i>	
LYRU	4	bobcat	<i>Lynx rufus</i>	
EQCA	5	feral horse	<i>Equus cabalus</i>	
CEEL	5	elk	<i>Cervus elaphus</i>	
ODHE	5	mule deer	<i>Odocoileus hemionus</i>	
ANAMER	5	pronghorn	<i>Antilocapra americana</i>	
OVCA	5	bighorn sheep	<i>Ovis canadensis</i>	

Appendix 2. Alphabetical computer codes for  
341 wildlife species in southeast Oregon.

Letter code	Life form	Scientific name	Common name
ACCO	11	<i>Accipiter cooperii</i>	Cooper's hawk
ACGE	11	<i>Accipiter gentilis</i>	northern goshawk
ACMA	3	<i>Actitis macularia</i>	spotted sandpiper
ACST	11	<i>Accipiter striatus</i>	sharp-shinned hawk
<b>AEAC</b>	<b>14</b>	<i>Aegolius acadicus</i>	saw-whet owl
AEOC	3	<i>Aechmophorus occidentalis</i>	western grebe
AESA	4	<i>Aeronautes saxatalis</i>	white-throated swift
AGPH	7	<i>Agelaius phoeniceus</i>	red-winged blackbird
AISP	14	<i>Aix sponsa</i>	wood duck
ALCH	4	<i>Alectoris rhukar</i>	chukar
AMBE		<i>A mphispiza belli</i>	sage sparrow
AMBI	7	<i>Amphispiza bilineata</i>	black-throated sparrow
AMLE	15	<i>Ammospermophilus leucurus</i>	antelope ground squirrel
AMMA	2	<i>Ambystoma macrodactylum</i>	long-toed salamander
AMSA	5	<i>Ammodramus savannarum</i>	grasshopper sparrow
<b>ANAC</b>	3	<i>Anas acuta</i>	common pintail
ANAL	3	<i>Anser albifrons</i>	greater white-fronted goose
ANALGA	3	<i>Anser albifrons gambelli</i>	Tule white-fronted goose
ANAMEO	3	<i>A nas americana</i>	American wigeon
ANAMER	5	<i>Antilocapra americana</i>	pronghorn
ANCL	3	<i>Anas clypeata</i>	northern shoveler
ANCR	3	<i>Anas crecca</i>	green-winged teal
ANCY	3	<i>Anas cyanoptera</i>	cinnamon teal
ANDIS	3	<i>Anas discors</i>	blue-winged teal
ANPA	4	<i>Antrozous pallidus</i>	pallid bat
ANPL	3	<i>Anas platyrhynchos</i>	mallard
ANSP	5	<i>Anthus spinolella</i>	water pipit
ANSTR	3	<i>Anas strepera</i>	gadwall
APCO	7	<i>Aphelocoma coerulescens</i>	scrub jay
AQCH	12	<i>Aquila chrysaetos</i>	golden eagle
ARAL	7	<i>Archilochus alexandri</i>	black-chinned hummingbird
ARHE	12	<i>Ardea herodias</i>	great blue heron
ASFL	15	<i>Asio flammeus</i>	short-eared owl

Letter code	Life form	Scientific name	Common name
ASOT	11	<i>Asio otus</i>	long-eared owl
ATCU	15	<i>Athene cunicularia</i>	burrowing owl
AYAF	3	<i>Aythya affinis</i>	lesser scaup
AYAM	3	<i>Aythya americana</i>	redhead
AYCO	3	<i>Aythya collaris</i>	ring-necked duck
AYMA	3	<i>Aythya marila</i>	greater scaup
AYVA	3	<i>Aythya valisineria</i>	canvasback
BOCE	9	<i>Bombycilla cedrorum</i>	cedar waxwing
BOGA	9	<i>Bombycilla garrulus</i>	Bohemian waxwing
BOLE	3	<i>Botaurus lentiginosus</i>	American bittern
BOUM	5	<i>Bonasa umbellus</i>	ruffed grouse
BRCA	3	<i>Branta canadensis</i>	Canada goose
BRCALE	3	<i>Branta canadensis gambelli</i>	Aleutian Canada goose
BUALBE	14	<i>Bucephala albeola</i>	bufflehead
BUBO	2	<i>Bufo boreas</i>	western toad
BUCL	3	<i>Bucephala clangula</i>	common goldeneye
BUIB	7	<i>Bubulcus ibis</i>	cattle egret
BUIS	14	<i>Bucephala islandica</i>	Barrow's goldeneye
BUJA	12	<i>Buteo jamaicensis</i>	red-tailed hawk
BULA	4	<i>Buteo lagopus</i>	rough-legged hawk
BUREG	4	<i>Buteo regalis</i>	ferruginous hawk
BUST	7	<i>Butorides striatus</i>	green heron
BUSW	7	<i>Buteo swainsoni</i>	Swainson's hawk
BUVIR	12	<i>Bubo virginianus</i>	great horned owl
BUWO	2	<i>Bufo woodhousei</i>	Woodhouse toad
CAAL	12	<i>Casmerodus albus</i>	common egret
CAAN	7	<i>Calypte anna</i>	Anna's hummingbird
CAAU	4	<i>Cathartes aura</i>	turkey vulture
CABA	3	<i>Calidris bairdii</i>	Baird's sandpiper
CACAN	16	<i>Castor canadensis</i>	beaver
CACAS	11	<i>Carpodacus cassini</i>	Cassin's finch
CAFL	9	<i>Carduelis flammea</i>	common redpoll
CAFU	5	<i>Catharus fuscescens</i>	veery
CAGA	3	<i>Capella gallinago</i>	common snipe
CAGU	5	<i>Catharus guttatus</i>	hermit thrush
CALA	5	<i>Calcarius lapponicus</i>	Lapland longspur

Letter code	Life form	Scientific name	Common name
CALAT	5	<i>Canis latrans</i>	coyote
C A M A U	3	<i>Calidris mauri</i>	western sandpiper
CAMEL	3	<i>Calidris melanotos</i>	pectoral sandpiper
C A M E X O	4	<i>Catherpes mexicanus</i>	canyon wren
CAMEXI	9	<i>Carpodacus mexicanus</i>	house finch
CAMI	3	<i>Calidris minutilla</i>	least sandpiper
CAPI	11	<i>Carduelispinus</i>	pine siskin
CAPS	7	<i>Carduelispaltria</i>	lesser goldfinch
CAPU	11	<i>Carpodacus purpureus</i>	purple finch
CASE	3	<i>Catoptrophorus semipalmatus</i>	willet
CATR	8	<i>Carduelis tristis</i>	American goldfinch
CAUS	7	<i>Catharus ustulatus</i>	Swainson's thrush
CEEL	5	<i>Cervus elaphus</i>	elk
CEFA	14	<i>Certhia familiaris</i>	brown creeper
CEUR	5	<i>Centrocercus urophasianus</i>	sage grouse
CHALE	3	<i>Charadrius alexandrinus</i>	snowy plover
CHBO	5	<i>Charina bottae</i>	rubber boa
CHCA	3	<i>Chen caerulescens</i>	snow goose
CHGR	5	<i>Chondestes grammacus</i>	lark sparrow
CHMI	6	<i>Chordeiles minor</i>	common nighthawk
CHMO	3	<i>Charadrius montanus</i>	mountain plover
CHNI	3	<i>Chlidonias niger</i>	black tern
CHRO	3	<i>Chen rossii</i>	Ross' goose
CHSEM	3	<i>Charadrius semipalmatus</i>	semipalmated plover
CHVA	14	<i>Chaetura vauxi</i>	Vaux's swift
CHVO	3	<i>Charadrius vociferus</i>	killdeer
CICY	5	<i>Circus cyaneus</i>	northern harrier
CIME	3	<i>Cinclus mexicanus</i>	dipper
CIPA	3	<i>Cistophorus palustris</i>	marsh wren
CLHY	3	<i>Clangula hyemalis</i>	oldsquaw
CNTI	5	<i>Cnemidophorus tigris</i>	western whiptail
COAM	8	<i>coccycus americanus</i>	yellow-billed cuckoo
COAU	13	<i>Colaptes auratus</i>	common flicker

Letter code	Life form	Scientific name	Common name
COBRA	11	<i>Corvus brachyrhynchos</i>	American crow
COCONS	5	<i>Coluber constrictor</i>	yellow-bellied racer
COCOR	4	<i>Corvus corax</i>	northern raven
COLI	4	<i>Columba livia</i>	rock dove
COSO	11	<i>Contopus sordidulus</i>	western wood pewee
CRCO	4	<i>Crotaphytus collaris</i>	collared lizard
CRVI	5	<i>Crotalus viridis</i>	western rattlesnake
CRWI	5	<i>Crotaphytus wislizeni</i>	leopard lizard
CYNI	4	<i>Cypseloides niger</i>	black swift
CYST	11	<i>Cyanocitta stelleri</i>	Steller's jay
DECOR	10	<i>Dendroica coronata</i>	yellow-rumped warbler
DENI	10	<i>Dendroica nigrescens</i>	black-throated grey warbler
DEOB	5	<i>Dendragapus obscurus</i>	blue grouse
DEPE	8	<i>Dendroica petechia</i>	yellow warbler
DET0	10	<i>Dendroica townsendi</i>	Townsend's warbler
DIM1	15	<i>Dipodomys microps</i>	chisel-toothed kangaroo rat
DIOR	15	<i>Dipodomys ordi</i>	Ord kangaroo rat
DOOR	5	<i>Dolichonyx oryzivorus</i>	bobolink
DUCA	7	<i>Dumetella carolinensis</i>	gray catbird
EMDI	10	<i>Empidonax difficilis</i>	western flycatcher
EMHA	11	<i>Empidonax hammondi</i>	Hammond's flycatcher
EMTR	7	<i>Empidonax traillii</i>	willow flycatcher
EMWR	7	<i>Empidonax wrightii</i>	gray flycatcher
EPFU	4	<i>Eptesicus fuscus</i>	big brown bat
EQCA	5	<i>Equus cabalus</i>	feral horse
ERAL	5	<i>Eremophila alpestris</i>	horned lark
ERDO	4	<i>Erethizon dorsatum</i>	porcupine
EUAM	15	<i>Eutamias amoenus</i>	yellow pine chipmunk
EUCY	7	<i>Euphagus cyanocephalus</i>	Brewer's blackbird

Letter code	Life form	Scientific name	Common name
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EUMA 4 *Euderma maculatum* spotted bat  
EUMI 15 *Eutamias minimus* least chipmunk  
EUSK 5 *Eumeces skiltonianus* western skink  
FACO 11 *Falco columbarius* merlin  
FAME 4 *Falco mexicanus* prairie falcon  
FAPE 4 *Falco peregrinus* peregrine falcon  
FASP 14 *Falco sparverius* American kestrel  
FECA 5 *Felis catus* feral house cat  
FECO 4 *Felis concolor* puma  
FUAM 3 *Fulica americana* American coot  
GAIM 3 *Gavia immer* common loon  
GETR 3 *Geothlypis trichas* common yellowthroat  
GLGN 14 *Glaucidium gnoma* pygmy owl  
GRCA 3 *Grus canadensis* sandhill crane  
GYCY 10 *Gymnorhinus cyanocephalus* pinyon jay  
HALE 12 *Haliaeetus leucocephalus* bald eagle  
HEVE 11 *Hesperiphona vespertina* evening grosbeak  
HIME 3 *Himantopus mexicanus* black-necked stilt  
HIRU 4 *Hirundo rustica* barn swallow  
HYRE 2 *Hyla regilla* Pacific treefrog  
HYTO 5 *Hypsiglena torquata* night snake  
ICGA 9 *Icterus galbula* northern oriole  
ICVI 8 *Icteria virens* yellow-breasted chat  
IRBI 14 *Iridoprocne bicolor* tree swallow  
IXEX 3 *Ixobrychus exilis* least bittern  
IXNA 11 *Ixoreus naevius* varied thrush  
JUHY 5 *Junco hyemalis* northern junco  
LAAR 3 *Larus argentatus* herring gull  
LACA 3 *Larus californicus* California gull  
LACI 9 *Lasturus cinereus* hoary bat  
LACU 15 *lagurus curtatus* sage vole  
LADE 3 *Larus delawarensis* ringed-billed gull  
LAEX 7 *Lanius excubitor* northern shrike  
LALU 7 *Lanius ludovicianus* loggerhead shrike  
LANO 14 *Lasionycteris noctivagans* silver-haired bat

Letter code	Life form	Scientific name	Common name
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LAPH 3 *Larus philadelphia* Bonaparte's gull  
LAPI 3 *Laruspipixcan* Franklin's gull  
LEAT 4 *Leucosticte atrata* black rosy finch  
LECA 5 *Lepus californicus* black-tailed jackrabbit  
LETO 5 *Lepus townsendi* white-tailed jackrabbit  
LIFE 3 *Limosa fedoa* marbled godwit  
LISC 3 *Limodromus scolopaceus* long-billed dowitcher  
LOCA 5 *Lophortyx californicus* California quail  
LOCO 14 *Lophodytes cucullatus* hooded merganser  
LOLO 3 *Lobipes lobates* northern phalarope  
LUCA 16 *Lutra canadensis* river otter  
LYRU 4 *Lynx rufus* bobcat  
MAFL 4 *Marmota flaviventris* yellow-bellied marmot  
MATA 5 *Masticophis taeniatus* striped whipsnake  
MEAL 16 *Megaceryle alcyon* belted kingfisher  
MELE 13 *Melanerpes lewis* Lewis' woodpecker  
MEL1 6 *Melospiza lincolni* Lincoln's sparrow  
MEMEL 7 *Melospiza melodia* song sparrow  
MEMEP 15 *Mephitis mephitis* striped skunk  
MEMER 14 *Mergus merganser* common merganser  
MESE 3 *Mergus serrator* red-breasted merganser  
MILO 15 *Microtus longicaudis* long-tailed vole  
MIME 15 *Microdipodops megacephalus* dark kangaroo mouse  
MIMO 15 *Microtus montanus* montane vole  
MIPO 7 *Mimus polyglottos* northern mockingbird  
MOAT 7 *Molothrus ater* brown-headed cowbird  
MUER 15 *Mustela erminea* short-tailed weasel  
MUFR 15 *Mustela frenata* long-tailed weasel  
MUVI 16 *Mustela vison* mink  
MYCA 4 *Myotis californicus* California myotis

Letter code		Life form	Scientific name	Common name
MYCI	14		<i>Myiarchus cinerascens</i>	ash-throated flycatcher
MYEV	14		<i>Myotis evotis</i>	long-eared myotis
MYLE	4		<i>Myotis leibi</i>	small-footed myotis
MYLU	4		<i>Myotis lucifugus</i>	little brown myotis
MYTH	4		<i>Myotis thysanodes</i>	fringed myotis
MYTO	6		<i>Myadestes townsendi</i>	Townsend's solitaire
MYVO	14		<i>Myotis volans</i>	long-legged myotis
MYYU	14		<i>Myotis yumanensis</i>	Yuma myotis
NECI	4		<i>Neotoma cinerea</i>	bushy-tailed woodrat
NELE	4		<i>Neotoma lepida</i>	desert woodrat
NUAM	3		<i>Numenius americanus</i>	long-billed curlew
NUBO	10		<i>Nuttallornis borealis</i>	olive-sided flycatcher
NUCO	10		<i>Nucifraga columbiana</i>	Clark's nutcracker
NYNY	7		<i>Nycticorax nycticorax</i>	black-crowned night heron
ODHE	5		<i>Odocoileus hemionus</i>	mule deer
OLCO	3		<i>Olorcolumbianus</i>	whistling swan
ONLE	15		<i>Onychomys leucogaster</i>	northern grass-hopper mouse
ONZI	16		<i>Ondatra zibethicus</i>	muskrat
OPTO	7		<i>Oporornis tolmieri</i>	MacGillivray's warbler
ORMO	7		<i>Oreoscoptes montanus</i>	sage thrasher
ORPI	5		<i>Oreortyx pictus</i>	mountain quail
OTAS	14		<i>Otus asio</i>	common screech owl
OTFL	14		<i>Otus flammeolus</i>	flammmulated owl
OVCA	5		<i>Ovis canadensis</i>	bighorn sheep
OXJA	3		<i>Oxyura jamaicensis</i>	ruddy duck
PAAMO	7		<i>Passerina amoena</i>	lazuli bunting
PAATR	14		<i>Parus atricapillus</i>	black-capped chickadee
PACY	8		<i>Passerina cyanea</i>	indigo bunting
PAD0	14		<i>Passer domesticus</i>	house sparrow
PAGA	14		<i>Parus gambeli</i>	mountain chickadee

Letter code		Life form	Scientific name	Common name
PAHA	12		<i>Pandion haliaetus</i>	osprey
PAIL	7		<i>Passerella iliaca</i>	fox sparrow
PASA	5		<i>Passerculus sandwichensis</i>	savannah sparrow
PECA	11		<i>Perisoreus canadensis</i>	gray jay
PECR	4		<i>Peromyscus crinitis</i>	canyon mouse
PEERY	3		<i>Pelecanus erythrorhynchos</i>	American white pelican
PELO	15		<i>Perognathus longimembris</i>	little pocket mouse
PEMA	15		<i>Peromyscus maniculatus</i>	deer mouse
PEPA	15		<i>Perognathus parvus</i>	Great Basin pocket mouse
PEPER	5		<i>Perdix perdix</i>	grey partridge
PEPY	4		<i>Petrochelidon pyrrhonota</i>	cliffswallow
PHAU	3		<i>Phalacrocorax auritus</i>	double-crested cormorant
PHCOL	5		<i>Phasianus colchicus</i>	ring-necked pheasant
PHDO	5		<i>Phrynosoma douglassi</i>	short-horned lizard
PHLU	9		<i>Pheucticus ludovicianus</i>	rose-breasted grosbeak
PHME	11		<i>Pheucticus melanocephalus</i>	black-headed grosbeak
PHNU	6		<i>Phalaenoptilus nuttalli</i>	poorwill
PHPL	5		<i>Phrynosoma platyrhinos</i>	desert horned lizard
PIAL	13		<i>Picoides albolarvatus</i>	white-headed woodpecker
PICH	7		<i>Pipilo chlorura</i>	green-tailed towhee
PIER	7		<i>Pipilo erythrorthalus</i>	rufous-sided towhee
PIHE	4		<i>Pipistrellus hesperus</i>	western pipistrelle
PILU	10		<i>Pirurga ludoviciana</i>	western tanager
PIME	5		<i>Pituophis melanoleucus</i>	gopher snake
PIP1	7		<i>Pica pica</i>	black-billed magpie
PIPU	13		<i>Picoides pubescens</i>	downy woodpecker
PIVI	13		<i>Picoides villosus</i>	hairy woodpecker

Letter code	Life form	Scientific name	Common name
PLCH	7	<i>Plegadis chihi</i>	white-faced ibis
PLNI	5	<i>Plectrophenax nivalis</i>	snow bunting
PLTO	4	<i>Plecotus townsendi</i>	western big-eared bat
POAU	3	<i>Podiceps auritus</i>	horned grebe
POCAE	7	<i>Polioptila caerulea</i>	blue-grey gnatcatcher
POCAR	3	<i>Porzana carolina</i>	sora
POGRA	5	<i>Pooecetes gramineus</i>	vesper sparrow
POGRI	3	<i>Podiceps grisegena</i>	red-necked grebe
PONIGR	3	<i>Podiceps nigricollis</i>	eared grebe
POP0	3	<i>Podilymbus podiceps</i>	pied-billed grebe
PRLO	14	<i>Procyon lotor</i>	raccoon
PSMI	8	<i>Psaltriparus minimus</i>	bushtit
RACA	1	<i>Rana catesbeiana</i>	bullfrog
RALI	3	<i>Rallus limicola</i>	Virginia rail
RANO	5	<i>Rattus norvegicus</i>	Norway rat
RAP1	2	<i>Ranapipiens</i>	leopard frog
RAPR	1	<i>Ranapretiosa</i>	spotted frog
RARA	5	<i>Rattus rattus</i>	black rat
REAM	3	<i>Recurvirostra americana</i>	American avocet
RECA	10	<i>Regulus calendula</i>	ruby-crowned kinglet
REME	15	<i>Reithrodontomys megalotis</i>	western harvest mouse
RESA	10	<i>Regulus satrapa</i>	golden-crowned kinglet
RIRI	16	<i>Riparia riparia</i>	bank swallow
SAOB	4	<i>Salpinctes obsoletus</i>	rock wren
SASA	4	<i>Sayornis saya</i>	Say's phoebe
SCGR	5	<i>Sceloporus graciosus</i>	sagebrush lizard
SCIN	2	<i>Schaphiopus intermontanus</i>	Great Basin spadefoot
SCOC	4	<i>Sceloporus occidentalis</i>	western fence lizard
SEAU	7	<i>Seiurus aurocapillus</i>	ovenbird
SEPL	7	<i>Selasphorus platycerus</i>	broad-tailed hummingbird
SERUF	11	<i>Selasphorus rufus</i>	rufous hummingbird

Letter code	Life form	Scientific name	Common name
SERUT	9	<i>Setophaga ruticilla</i>	American redstart
SICAN	13	<i>Sitta canadensis</i>	red-breasted nuthatch
SICAR	13	<i>Sittacarinensis</i>	white-breasted nuthatch
SICU	14	<i>Sialia currucoides</i>	mountain bluebird
SIME	14	<i>Sialia mexicana</i>	western bluebird
SOME	15	<i>Sorex merriami</i>	Merriam shrew
SOPR	16	<i>Sorex preblei</i>	Malheur shrew
SOSE	15	<i>Sonora semiannulata</i>	western ground snake
SOSP	3	<i>Somateria spectabilis</i>	king eider
SOVA	16	<i>Sorex vagrans</i>	wandering shrew
SPARB	11	<i>Spizella arborea</i>	American tree sparrow
SPBE	15	<i>Spermophilus beldingi</i>	Belding ground squirrel
SPBRE	7	<i>Spizella breweri</i>	Brewer's sparrow
SPCO	15	<i>Spermophilus columbianus</i>	Columbian ground squirrel
SPLA	15	<i>Spermophilus lateralis</i>	mantled ground squirrel
SPPA	7	<i>Spizella passerina</i>	chipping sparrow
SPPU	4	<i>Spilogale putorius</i>	spotted skunk
SPRI	15	<i>Spermophilus richardsoni</i>	Richardson ground squirrel
SPTH	13	<i>Sphyrapicus thyroideus</i>	Williamson's sapsucker
SPTO	15	<i>Spermophilus townsendi</i>	Townsend ground squirrel
SPVAR	13	<i>Sphyrapicus varius</i>	yellow-bellied sapsucker
STCAL	7	<i>Stellula calliope</i>	calliope hummingbird
STCAS	3	<i>Sterna caspia</i>	Caspian tern
STFO	3	<i>Sterna forsteri</i>	Forster's tern
STNEG	5	<i>Sturnella neglecta</i>	western meadowlark
STRU	16	<i>Stelgidopteryx ruficollis</i>	rough-winged swallow
STTRI	3	<i>Steganopus tricolor</i>	Wilson's phalarope
STVU	14	<i>Sturnus vulgaris</i>	European starling
SYID	5	<i>Sylvilagus idahoensis</i>	pygmy rabbit
SYNU	5	<i>Sylvilagus nuttalli</i>	mountain cottontail

Letter code		Life form	Scientific name	Common name
TATA	15		<i>Taxidea taxus</i>	badger
TATH	14		<i>Tachycineta thalassina</i>	violet-green swallow
THEL	3		<i>Thamnophis elegans</i>	wandering garter snake
THSI	3		<i>Thamnophis sirtalis</i>	common garter snake
THTA	15		<i>Thomomys tulipoides</i>	northern pocket gopher
THTO	15		<i>Thomomys townsendi</i>	Townsend pocket gopher
TORU	7		<i>Toxostoma rufum</i>	brown thrasher
TRAЕ	14		<i>Troglodytes aedon</i>	house wren
TRTR	3		<i>Troglodytes troglodytes</i>	winter wren
TUMI	7		<i>Turdus migratorius</i>	American robin
TRFL	3		<i>Tringa flavipes</i>	lesser yellowlegs
TRME	3		<i>Tringa melanoleuca</i>	greater yellowlegs
TRSO	7		<i>Tringa solitaria</i>	solitary sandpiper
TYAL	14		<i>Tyto alba</i>	barn owl

Letter code		Life form	Scientific name	Common name
TYTY	7		<i>Tyrannus tyrannus</i>	eastern kingbird
TYVE	11		<i>Tyrannus verticalis</i>	western kingbird
UTST	5		<i>Uta stansburiana</i>	side-blotched lizard
VECE	6		<i>Vermivora celata</i>	orange-crowned warbler
VIGI	11		<i>Vireogilvus</i>	warbling vireo
VIOL	11		<i>Vireo olivaceus</i>	red-eyed vireo
VISO	11		<i>Vireo solitarius</i>	solitary vireo
VUMA	15		<i>Vulpes macrotis</i>	kit fox
v u v u	15		<i>Vulpes vulpes</i>	red fox
WIPU	5		<i>Wilsonia pusilla</i>	Wilson's warbler
XAXA	7		<i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird
ZAPR	15		<i>Zapus princeps</i>	western jumping mouse
ZEMA	11		<i>Zenaida macroura</i>	mourning dove
ZOAT	7		<i>Zonotrichia atricapilla</i>	golden-crowned sparrow
ZOLE	7		<i>Zonotrichia leucophrys</i>	white-crowned sparrow

Appendix 3. Relative degree of use, by the life form, of plant communities and structural conditions (overstory and understory). Life form 1: reproduces in water, feeds in water. (2 species)

Plant community	Function	Structural conditions								
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub				
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0									
subalpine bunchgrass	R 0 F 0									
permanently wet meadows	R 0 F 0									
seasonally wet meadows	R 0 F 0									
shadscale saltbush/ bun&grass	R 0 F 0									
low sagebrush/bunchgrass	R 0 F 0									
black greasewood/grass	R 0 F 0									
tall sagebrush/bunchgrass	R 0 F 0									
squaw apple/bunchgrass	R 0 F 0									
curlleaf mountainmahogany/ bunchgrass	R 0 F 0									
curlleaf mountainmahogany/ pinegrass	R 0 F 0									
juniper/sagebrush/ bunchgrass	R 0 F 0									
curlleaf mountainmahogany/ shrub	R 0 F 0									
quaking aspen/grass	R 0 F 0									
quaking aspen/mountain b i g sagebrush/bunchgrass	R 0 F 0									
riparian	R 2 F 2	2 2	— <sup>2</sup>	2	2	2	2	2	2	

Appendix 3. Life form 2: reproduces in water; feeds on ground, in shrubs, and/or in trees. (6 species)

Plant community	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 1	1	0										
	F 2	2	1										
subalpine bunchgrass	R 0	0	0										
	F 1	1	1										
permanently wet meadows	R 2	2	0										
	F 5	5	2										
seasonally wet meadows	R 0	0	0										
	F 4	4	2										
shadscale saltbush/ bunchgrass	R 0												
	F 0												
low sagebrush/bunchgrass	R 0												
	F 0												
black greasewood/grass	R 0												
	F 0												
tall sagebrush/bunchgrass	R 3		3	0	1		3	0	1				
	F 3		2	3	2		2	3	2				
squaw applebunchgrass	R 0		0				0						
	F 1		1				1						
curlleaf mountainmahogany/ bunchgrass	R 0		0	0	0		0	0	0		0	0	
	F 1		1	1	1		1	1	1		1	1	
curlleaf mountainmahogany/ pinegrass	R 0		0	0	0		0	0	0		0	0	
	F 1		1	1	1		1	1	1		1	1	
juniper/sagebrush/ bunchgrass	R 0												
	F 0												
curlleaf mountainmahogany/ shrub	R 0												
	F 0												
quaking aspen/grass	R 4		2	0	2		2	0	2		1	4	4
			2	0	2		2	0	2		1	4	4
quaking aspen/mountain big sagebrush/bunchgrass	R 0		0	0	0		0	0	0		0	0	0
	F 3		1	3	0		13	1	1		3	3	2
riparian	R 6		6	0	16		0	15		0	1	1	2
	F 6		2	6	3		2	6	3		15	5	3

Appendix 3. Life form 3: reproduces on ground around water or on floating or emergent vegetation; feeds in water, on ground, in shrubs and trees. (44 species)

R → reproduction F → feeding B.G. → bare ground Ann. → annuals Bunch. native bunchgrass	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	
Plant community		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0												
	F 0												
subalpine bunchgrass	R 1	11	1										
	F 1	1	1	1									
permanently wet meadows	R 6	3	6	2									
	F 2 0	7	8	4									
seasonally wet meadows	R 5	3	5	2									
	F 9	7	8	4									
shadscale saltbrush/ bunchgrass	R 1	11			11	11							
	F 1	1	11		11	1							
low sagebrush/bunchgrass	R 2	1	1	1	2	2	2						
	F 1	1	1	1	1	1	1						
black greasewood/grass	R 2	2	2	2	2	2	2	2	2	2			
	F 2 1	2	2	2	1	2	2	1	2	2			
tall sagebrush/bunchgrass	R 3	2	2	2	3	3	3	3	3	3			
	F 2	2	2	2	2	2	2	2	2	2			
squaw apple/bunchgrass	R 1	1	1	1	1	1	1	1	1	1			
	F 1	1	1	1	1	1	1	1	1	1			
curlleaf mountainmahogany/ bunchgrass	R 1	1	1	1	1	1	1	1	1	1			
	F 1	1	1	1	1	1	1	1	1	1			
curlleaf mountainmahogany: pinegrass	R 1	1	1	1	1	1	1	1	1	1			
	F 1	1	1	1	1	1	1	1	1	1			
juniper/sagebrush/ bunchgrass	R 2	2	2	2	2	2	2	2	2	2			
	F 2	2	2	2	2	2	2	2	2	2			
curlleaf mountainmahogany/ shrub	R 1	1	1	1	1	1	1	1	1	1			
	F 1	1	1	1	1	1	1	1	1	1			
quaking aspen/grass	R 0												
	F 2	2	2	2	2	2	2	2	2	2			
quaking aspen/mountain big sagebrush/bunchgrass	R 0												
	F 2	2	2	2	2	2	2	2	2	2			
riparian	R 38	3	25	3	4	35	11	4	28	11	3	6	10
	F 39	20	39	8	19	31	10	14	23	10	8	6	10
											9	22	11

Appendix 3. Life form 4: reproduces in cliffs, caves, rims and/or talus; feeds on ground or in air.  
(33 species)

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub			Tall shrub		Tree	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded)	R 4	0	2	4							
	F 10	1	10	2							
subalpine bunchgrass	R 3	0	3	3							
	F 6	2	4	4							
permanently wet meadows	R 2	0	2	2							
	F 10	2	9	9							
seasonally wet meadows	R 1	0	1	1							
	F 9	2	8	8							
shadscale saltbush/ bunchgrnss	R 6	2	5	5	1	4	4				
	F 11	5	10	10	3	8	8				
low sagebrush/bunchgrass	R 14	3	8	12	2	7	10				
	F 16	5	15	14	3	12	11				
black greasewood/grass	R 8	2	6	7	1	6	6	1	8	8	
	F 11	5	10	10	3	8	8	3	11	11	
tall sagebrush/bunchgrass	R 27	7	17	23	3	13	18	4	19	24	
	F 27	8	25	25	6	19	19	5	27	27	
squaw applebunchgrass	R 6	2	4	5	2	3	4	2	5	6	
	F 11	5	10	10	4	7	8	4	11	11	
curlleaf mountainmahogany/ bunchgrass	R 8	2	4	5	2	4	4	2	6	7	2
	F 13	5	11	11	4	8	8	4	13	13	6
		2	4	5	2	3	4	2	6	7	7
cuphegrassintainmahogany/	R 8	5	11	11	4	8	8	4	13	13	5
	F - - 13	2	4	5	2	3	4	2	6	7	12
juniper/sagebrush/ bunchgrass	R 18	6	12	14	3	9	10	4	14	15	5
	F 21	7	19	19	5	14	14	6	21	21	16
curlleaf mountainmahogany/ shrub	R 8	2	4	5	2	3	4	2	6	7	5
	F 14	5	12	12	4	9	9	4	14	14	16
quaking aspen/grass	R 6	0	2	5	0	2	4	0	4	6	0
	F 9	2	7	7	2	6	6	2	9	9	3
quaking aspen/mountain big sagebrush/bunchgrass	R 6	0	2	5	0	2	4	0	4	6	0
	F 10	2	8	8	2	7	7	2	10	10	3
riparian	R 20	2	14	18	0	12	15	1	14	17	1
	F 28	4	26	25	4	22	21	5	27	27	14
		2	14	17	1	14	17	7	26	26	17
		4	26	26	8	26	26	8	26	26	17

**Appendix 3. Life form 5: reproduces on ground without specific water, cliff, rim or talus association; feeds on ground.(45 species)**

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub			Tall shrub		Tree	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded )	R	3	1	1	2						
	F	6	1	3	4						
subalpine bunchgrass	R	1	0	0	1						
	F	5	0	5	5						
permanently wet meadows	R	6	0	4	2						
	F	16	1	16	12						
seasonally wet meadows	R	5	0	4	2						
	F	14	2	13	11						
shadscale saltbush bunchgrass	R	9	2	2	3	3	6	5			
	F	14	4	9	9	4	13	7			
low sagebrush/bunchgrass	R	22	3	8	9	4	13	14			
	F	24	7	16	17	6	20	16			
black greasewood/grass	R	13	1	1	2	2	8	8	2	11	11
	F	18	3	9	9	5	14	11	5	18	16
tall sagebrush/bunchgrass	R	31	3	9	6	4	17	15	3	22	21
	F	32	7	19	17	8	24	19	6	30	25
squaw apple/bunchgrass	R	5	0	1	3	0	3	4	0	3	4
	F	14	1	10	12	1	12	12	1	13	13
curlleaf mountainmahogany/ bunchgrass	R	7	0	0	2	0	3	3	0	4	6
	F	19	1	11	13	2	14	13	1	18	17
curlleaf mountainmahogany/ pinegrass	R	6	0	0	2	0	2	2	0	3	5
	F	15	1	10	10	1	11	9	0	14	13
juniper/sagebrush/ bunchgrass	R	19	1	2	4	2	10	7	2	14	12
	F	29	3	16	16	5	23	20	5	28	25
curlleaf mountainmahogany/ shrub	R	11	0	0	2	1	6	3	1	3	4
	F	17	0	9	9	1	13	10	1	16	14
quaking aspen/grass	R	11	0	1	1	0	6	3	0	9	5
	F	13	0	5	5	0	10	7	0	12	10
quaking aspen/mountain big sagebrush/bunchgrass	R	10	0	1	1	0	5	2	0	8	4
	F	14	0	5	5	0	10	8	0	13	10
riparian	R	22	0	6	2	0	15	7	0	17	11
	F	30	1	17	13	2	24	18	1	27	22
									1	19	18
									1	27	23

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 6: reproduces on ground; feeds in shrubs, trees, or air. (4 species)

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub			Tall shrub		Tree	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded)	R 0 F 0										
subalpine bunchgrass	R 0 F 0										
permanently wet meadows	R 0 F 2		0 0								
seasonally wet meadows	R 0 F 2		0 0								
shadscale saltbush/ bunchgrass	R 0 F 3		0 0	0 0 0							
low sagebrush/bunchgrass	R 2 F 3		0 0	0 2 1							
black greasewood/grass	R 0 F 3		0 0	0 0 0				0 0 0			
tall sagebrush/bunchgrass	R 3 F 31		0 0	0 3 2				0 3 2			
squaw apple/bunchgrass	R 0 F 3		0 0	0 0 0				0 0 0			
curlleaf mountainmahogany/ bunchgrass	R 1 F 21		0 0	0 11				0 1 1		0 1 1	
cupinegrass/mountainmahogany/	R 2	b 1	1 0	1 0 2				1 0 2	1 0 0	1 0 0	
juniper/sagebrush/ bunchgrass	R 2 F 2		0 0	0 2 2				0 2 2	0 2 2	0 2 2	0 2 2
curlleaf mountainmahogany/ shrub	R 1 F 2		0 0	0 1 1				0 1 1	0 1 1	0 1 1	0 1 1
quaking aspen/grass	R 1 F 3		0 0	0 1 0				0 1 o / o 1 0	0 1 0	1 3 2	1 3 2
quaking aspen/mountain big sagebrush/bunchgrass	R 3 F 3		0 0	0 3 2				0 3 2	0 3 2	1 3 2	1 3 2
riparian	R 1 F 4		0 0	0 10				0 1 0	0 10	0 10	0 10

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 7: reproduces in shrubs; feeds on ground, in water or air. (29 species)

Plant community	Function	Structural conditions										
		Grass-forb			Low shrub		Tall shrub		Tree		Tree/shrub	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.
crested wheatgrass (seeded)	R 0 F 1	0	0	0								
subalpine bunchgrass	R 0 F 1	0	0	0								
permanently wet meadows	R 3 F 10	3	3	0								
seasonally wet meadows	R 3 F 10	3	3	0								
shadscale saltbush/ bunchgrass	R 0 F 9	0	0	0	0	0	0	0	0	0	0	0
low sagebrush/bunchgrass	R 4 F 14	·	0	0	0	0	0	0	0	0	0	0
black greasewood/grass	R 1 F 12	0	0	0	0	0	0	0	0	0	0	1
tall sagebrush/bunchgrass	R 18 F 21	3	0	0	6	3	0	18	14	0	21	18
squaw apple/bunchgrass	R 2 F 15	0	0	0	1	1	0	2	2	15	12	0
curlleaf mountainmahogany/ bunchgrass	R 4 F 19	0	0	0	1	1	0	4	4	2	2	2
curlleaf mountainmahogany/ pinegrass	R 4 F 19	0	0	0	1	1	0	4	4	2	2	2
juniper/sagebrush/ bunchgrass	R 18 F 25	2	0	0	4	2	0	17	13	11	7	18 14
curlleaf mountainmahogany/ shrub	R 14 F 26	0	0	0	2	2	11	13	11)	7	4	13 10
quaking aspen/grass	R 19 F 24	3	0	0	4	1	0	19	11	14	7	18 11
quaking aspen/mountain big sagebrush/bunchgrass	R 25 F 28	3	0	0	6	3	0	25	17	15	8	24 17
riparian	R 23 F 25	3	0	0	4	1	0	21	14	14	7	1 22 15
		10	3	0	14	10	0	24	17	20	14	0 24 18

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 8: reproduces in shrubs; feeds in shrubs, trees, or air. (5 species)

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub			Tall shrub		Tree	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunc.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded)	R 0 F 0										
subalpine bunchgrass	R 0 F 0										
permanently wet meadows	R 0 F 0										
seasonally wet meadows	R 0 F 0										
shadscale saltbush/ bunchgrass	R 0 F 1				0 0			1 1			
low sagebrush/bunchgrass	R 0 F 1				0 0			1 1			
black greasewood/grass	R 0 F 1				0 0			0 1	0 1		
tall sagebrush/bunchgrass	R 1 F 4				0 0			0 4	0 4		
squaw apple/bunchgrass	R 0 F 4				0 0			0 4	0 4		
curlleaf mountainmahogany/ bunchgrass	R 0 F 4				0 0			0 4	0 4		
curlleaf mountainmahogany/ pinegrass	R 0 F 4				0 0			0 4	0 4		
juniper/sagebrush/ bunchgrass	R 1 F 3				0 0			0 3	0 3		
curlleaf mountainmahogany/ shrub	R 3 F 4				0 0			0 4	0 4		
quaking aspen/grass	R 1 F 2				0 0			0 2	0 2		
quaking aspen/mountain big sagebrush/bunchgrass	R 4 F 4				0 0			0 4	0 4		
riparian	R 5 F 5				0 0			0 5	0 5		

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 9: reproduces primarily in deciduous trees; feeds in shrubs, trees, or air.  
(3 species)

Plant community	Function	Structural conditions							
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0								
subalpine bunchgrass	R 0 F 0								
permanently wet meadows	R 0 F 0								
seasonally wet meadows	R 0 F 0								
shadscale saltbush/ bunchgrass	R 0 F 0								
low sagebrush/bunchgrass	R 0 F 0								
black greasewood/digress	R 0 F 0								
tall sagebrush/bunchgrass	R 0 F 1			0 0					
squaw apple/bunchgrass	R 0 F 1			1 0					
curlleaf mountainmahogany/ bunchgrass	R 0 F 1			0 0		0 0			
curlleaf mountainmahogany/ pinegrass	R 0 F 1			1 0		1 0			
juniper/sagebrush/ bunchgrass	R 1 F 3			0 0		0 0		1 1	
curlleaf mountainmahogany/ shrub	R 1 F 2			3 1		3 2		3 3	
quaking aspen/grass	R 3 F 3			2 0		1 0		3 3	
quaking aspen/mountain big sagebrush/bunchgrass	R 3 F 3			3 1		3 2		3 3	
riparian	R 3 F 3			2 0		1 0		3 3	
				3 1		3 2		3 3	

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 10: reproduces primarily in conifers; feeds in shrubs, trees, or air. (7 species)

Plant community	Function	Structural conditions											
		Grass-forb			Low shrub			Tall shrub		Tree		Tree/shrub	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0												
subalpine bunchgrass	R 0 F 0												
permanently wet meadows	R 0 F 0												
seasonally wet meadows	R 0 F 0												
shadscale saltbush/ bunchgrass	R 0 F 0												
low sagebrush/bunchgrass	R 0 F 0												
black greasewood/grass	R 0 F 0												
tall sagebrush/bunchgrass	R 0 F 2			0 0	0 0 0								
squaw applebunchgrass	R 0 F 2			0 0	0 0 0								
curlleaf mountainmahogany/ bunchgrass	R 0 F 2			0 0	0 0 0	0 0 0	0 0 0						
curlleaf mountainmahogany/ pinegrass	R 0 F 2 1			0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0				
juniper/sagebrush/ bunchgrass	R 3 F 5			0 0	0 2 2	0 3 3	15 4	0 3 2	0 3 2	0 3 2	15 4	15 4	
curlleaf mountainmahogany/ shrub	R 1 F 4			0 0	0 1 1	0 2 3	0 4 3	0 1 1	0 1 1	0 1 1	0 4 3	0 4 3	
quaking aspen/grass	R 3 F 6			0 0	0 0 0	0 3 3	16 4	0 3 0	0 3 0	0 3 0	16 4	16 4	
quaking aspen/mountain big sagebrush/bunchgrass	R 5 F 6			0 0	0 110	0 3 3	16 4	4 10	4 10	5 2	16 4	16 4	
riparian	R 5 F 7			0 0	0 110	0 3 3	16 4	4 10	4 10	5 1	16 4	16 4	

Appendix 3. Life form 11: reproduces in trees; feeds on ground, in shrubs, trees, or air. (13 species)

R = reproduction F = feeding R.G. = bare ground Ann. = annuals Bunch. = native bunchgrass	Function	Structural conditions									
		Grass-forb		Low shrub		Tall shrub		Tree		Tree/shrub	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
Plant community											
crested wheatgrass (seeded)	R	0	0								
	F	1	1								
subalpine bunchgrass	R	0	0								
	F	3	1								
permanently wet meadows	R	0	0								
	F	4	3								

seasonally wet meadows - 1

shadscale saltbush/ bunchgrass	R	0	0	0	0						
	F	2	4	2	1						
low sagebrush/bunchgrass	R	1	0	0	0						
	F	2	2	1	1						
black greasewood/grass	R	1	0	0	0	1	1				
	F	2	2	1	1	2	0				
tall sagebrush/bunchgrass	R	3	0	0	0	2	1				
	F	7	4	4	1	6	1				
squaw apple/bunchgrass	R	0	0	0	0	0	0				
	F	6	2	4	2	6	1				
curlleaf mountainmahogany/ bunchgrass	R	1	0	0	0	1	1	1	1	1	
	F	8	4	5	2	7	2	0	8	2	
curlleaf mountainmahogany/ pinegrass	R	1	0	0	0	1	1	1	1	1	
	F	8	4	5	2	7	2	0	8	2	
juniper/sagebrush/ bunchgrass	R	5	0	0	0	1	1	1	5	1	2 5 3
	F	10	4	4	2	8	2	0	10	2	1 10 7
curlleaf mountainmahogany/ shrub	R	2	0	0	0	1	1	1	2	1	1 2 2
	F	8	4	5	2	7	2	0	8	2	1 8 5
quaking aspen/grass	R	13	0	0	0	2	1	1	10	3	2 12 9
	F	13	4	5	2	8	2	0	12	3	7 13 8
quaking aspen/mountain big sagebrush/bunchgrass	R	12	0	0	0	2	1	1	10	2	2 12 8
	F	13	4	5	2	8	2	0	12	3	1 13 8
riparian	R	13	0	0	0	2	1	1	10	3	2 12 9
	F	13	4	5	2	8	2	0	12	3	1 13 8

Appendix 3. Life form 12: reproduces on very thick branches; feeds on ground or in water. (6 species)

R = reproduction F = feeding B.G. = bare ground Ann. = annuals Bunch. = native bunchgrass	Function	Structural conditions					
		Grass-forb		Low shrub	Tall shrub	Tree	Tree/shrub
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
<b>Plant community</b>							
crested wheatgrass (seeded)	R 0	0	0				
	F 1		1 1				
subalpine bunchgrass	R 0	0	0				
	F 2		2 2				
permanently wet meadows	R 0	0	0				
	F 5		5 3				
seasonally wet meadows	R 0	0	0				
	F 5		5 3				
shadscale saltbush/ bunchgrass	R 0	0	0	0	0		
	F 3		3 3	3	3		
low sagebrush/bunchgrass		0 0		0 0			
k----+t		3	3	3	3		
black greasewood/grass	R 0	0	0	0	0	0	0
	F 3 1		3 3	3 3 1		3 3	
tall sagebrush/bunchgrass	R 3	0	0	0	0	0	0
	F 3		3 3	3 3		3 3	
squaw apple/bunchgrass	R 0	0	0	0	0	0	0
	F 3		3 3	3 3		3 3	
curlleaf mountainmahogany/ bunchgrass	R 0	0	0	0	0	0	0
	F 3		3 3	3 3		3 3	0 3 3
curlleaf mountainmahogany/ pinegrass	R 0	0	0	0	0	0	0
	F 3		3 3	3 3		3 3	0 3 3
juniper/sagebrush/ bunchgrass	R 5	0	0	0	0	5 5 5	5 5 5
	F 3		3 3	3 3		3 3	0 3 3
curlleaf mountainmahogany/ shruh	R 3	0	0	0	0	0 3 3	0 3 3
	F 3		3 3	3 3		3 3	0 3 3
quaking aspen/grass	R 4	0	0	0	2	4 4 4	4 4 4
	F 3		3 3	3 3		3 3	0 3 3
quaking aspen/mountain big sagebrush/bunchgrass	R 4	0	0	0	2	4 4 4	4 4 4
	F 3		3 3	3 3		3 3	0 3 3
riparian	R 6	0	0	0	2	5 5 6	5 5 6
	F 5		5 3	3 3		3 3	0 3 3

**Appendix 3. Life form 13: reproduces – excavates own hole in a tree; feeds on ground, in shrubs, trees, or air. (9 species)**

Plant community	Function	Structural conditions								
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub				
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass seeded)	R 0	0								
	F 0	0								
subalpine bunchgrass	R 0	0								
	F 0	0								
permanently wet meadows	R 0	0								
	F 0	0								
seasonally wet meadows	R 0	0								
	F 0	0								
shadscale saltbush/ bunchgrass	R 0	0		0						
	F 1	1		1						
low sagebrush/bunchgrass	R 0	0		0						
	F 1	1		1						
black greasewood/grass	R 0	0		0			0			
	F 1	1		1			1			
tall sagebrush/bunchgrass	R 0	0		0			0			
	F 1	1		1			1			
squaw apple/bunchgrass	R 0	0		0			0			
	F 1	1		1			1			
curlleaf mountainmahogany/ bunchgrass	R 0	0		0		0		0	0	0
	F 1	1		1		1		1	1	1
curlleaf mountainmahogany/ pinegrass	R 0	0		0		0		0	0	0
	F 1	1		1		1		1	1	1
juniper/sagebrush bunchgrass	R 6	0		0		0		3	5	3
	F 6	1		1		3		3	5	3
curlleaf mountainmahogany/ shrub	R 0	0		0		0		0	0	0
	F 1	1		1		1		1	1	1
quaking aspen/grass	R 6	0		0		0		2	5	2
	F 9	1		2		5		4	8	4
quaking aspen/mountain big sagebrush/bunchgrass	R 6	0		0		0		2	5	2
	F 9	1		2		5		4	8	4
riparian	R 8	0		0		0		3	7	3
	F 9	1		2		5		4	8	4

**Appendix 3. Life form 14: reproduces in a hole made by another species or that has occurred naturally; feeds on ground, in water, or air. (25 species)**

Plant community	Function	Structural conditions								
		Grass-forch	Low shrub	Tall shrub	Tree	Tree/shrub				
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass ( seeded )	R 0 F 0	0 0	0 0							
subalpine bunchgrass	R 0 F 0	0 0	- 0 0							
permanently wet meadows	R 0 F 12	0 0	10 3							
seasonally wet meadows	R 0 F 12	0 0	10 3							
shadscale saltbush/ bunchgrass	R 0 F 6	0 0	2 2	2 6						
low sagebrush/bunchgrass	R 0 F 11	0 0	6 2	4 7						
black greasewood/grass	R 0 F 6	0 0	2 2	2 6	0 0	2 6				
tall sagebrush/bunchgrass	R 0 F 15	0 0	8 3	7 10	0 0	11 10				
squaw apple/bunchgrass	R 0 F 7	0 0	3 3	3 7	0 0	3 7				
curlleaf mountainmahogany/ bunchgrass	R 0 F 6	0 0	2 2	2 6	0 0	2 6	0 0	5 5	0 0	0 0
curlleaf mountainmahogany/ pinegrass	R 0 F 10	0 0	3 2	4 8	0 0	5 8	0 0	6 8	0 0	0 0
juniper/sagebrush/ bunchgrass	R 10 F 14	0 0	6 3	5 8	0 0	9 8	0 0	6 12	3 9	4 9
curlleaf mountainmahogany/ shrub	R 1 F 13	0 0	5 2	4 8	0 0	8 8	0 0	6 11	1 9	0 1
quaking aspen/grass	R 15 F 15	0 0	8 3	8 5	0 0	13 5	0 0	5 11	11 7	6 11
quaking aspen/mountain big sagebrush/bunchgrass	R 15 F 15	0 0	8 3	8 5	0 0	13 5	5 11	3 11	11 7	6 11
riparian	R 24 F 24	0 0	11 3	10 11	0 0	16 11	8 19	14 12	21 10	16 8

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 3. Life form 15: reproduces -underground burrow; feeds on or under ground. (32 species)**

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub			Tall shrub		Tree	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass !seeded!	R 8 F 8	0	3	5							
subalpine bunchgrass	R 9 F 9	0	2	6							
permanent ly wet meadows	R 10 F 11	0	4	7							
seasonally wet meadows	R 7 F 8	0	2	4							
shadscale saltbush/ bunchgrass	R 13 F 13	0	4	4	0	6	9				
low sagebrush/bunchgrass	I-- R 13 F 13	0	5	7	0	5	10				
black greasewood grass	R 12 F 13	0	3	3	0	3	6	0	6	10	
tall sagebrush bunchgrass	R 22 F 22	0	5	10	0	6	12	0	12	15	
squaw apple bunchgrass	R 4 F 5	0	1	1	0	12		0	3	4	
curlleaf mountainmahogany bunchgrass	R 6 F 6	0	1	1	0	1	3	0	3	6	4 6
curlleaf mountainmahogany pinegrass	R 6 F 6	0	1	1	0	1	3	0	3	6	4 6
juniper/sagebrush bunchgrass	R 12 F 12	0	1	4	0	1	6	0	9	12	9 13
curlleaf mountainmahogany/ shrub	R 6 F 6	0	3	2	0	2	3	0	4	6	4 6
quaking aspen/grass	R 2 F 2	0	1	1	0	1	1	0	2	2	2 2
quaking aspen/mountain big sagebrush/bunchgrass	R 2 F 2	0	1	1	0	1	1	0	2	2	2 2
riparian	R 15 F 16	0	3	7	0	3	7	0	8	9	7 11
		0	6	9	0	5	8	0	8	9	9 12
											10 14
											10 14

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 3. Life form 16: reproduces – underground burrow; feeds in water, on ground, or in air.  
 (9 species)

R reproduction F feeding B.G. – bare ground Ann. annuals Bunch. – native bunchgrass	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
Plant community		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0	0 0	0 0										
subalpine bunchgrass	R 2 F 2	0 2	0 2										
permanently wet meadows	R 2 F 4	0 2	2 2										
seasonally wet meadows	R 0 F 2 1	0 0	2 0										
shadscale saltbush/ bunchgrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0						
low sagebrush/bunchgrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0						
black greasewood/grass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0						
tall sagebrush/bunchgrass	R 1 F 3	0 1	2 1	0 1	2 3	0 1	2 3						
squaw apple/bunchgrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0						
curlleaf mountainmahogany/ bunchgrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
curlleaf mountainmahogany: pinegrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
juniper/sagebrush/ bunchgrass	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
curlleaf mountainmahogany/ shrub	R 0 F 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
quaking aspen/grass	R 0 F 2	0 0	2 0	0 0	2 2	0 0	2 2	0 0	0 0	0 0	0 0	0 0	0 0
quaking aspen/mountain big sagebrush/bunchgrass	R 0 F 2	0 0	2 0	0 0	2 2	0 0	2 2	0 0	0 0	0 0	0 0	0 0	0 0
riparian	R 9 F 9	0 2	2 4	5 7	3 5	6 8	6 8	5 7	6 5	6 8			

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Relative degree of use, by the life form, of plant communities and structural conditions (overstory without the refinements of the understory in appendix 3). Life form 1: reproduces in water; feeds in water. (2 species)**

Plant community	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0												
subalpine bunchgrass	R 0 F 0												
permanently wet meadows	R 0 F 0												
seasonally wet meadows	R 0 F 0												
shadscale saltbush/ bunchgrass	R 0 F 0												
low sagebrush/bunchgrass	R 0 F 0												
black greasewood/grass	R 0 F 0												
tall sagebrush/bunchgrass	R 0 F 0												
squaw apple/bunchgrass	R 0 F 0												
curlleaf mountainmahogany/ bunchgrass	R 0 F 0												
curlleaf mountainmahogany! pinegrass	R 0 F 0		I										
juniper/sagebrush/ bunchgrass	R 0 F 0												
curlleaf mountainmahogany! shrub	R 0 F 0												
quaking aspen/grass	R 0 F 0												
quaking aspen/mountain big sagebrush/bunchgrass	R 0 F 0												
riparian	R 2 F 2	2	2	2	2	2	2	2	2	2	2		

Appendix 4. Life form 2: reproduces in water; feeds on ground, in shrubs, and/or in trees. (6 species)

Plant community	Fu nicon	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
		B.G.	An nn.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0	1 2											
subalpine bunchgrass	R 0 F 1	0 1											
permanently wet meadows	R 2 F 5	2 5											
seasonally wet meadows	R 0 F 4	0 4											
shadscale saltbush/ bunchgrass	R 0 F 0												
low sagebrush/bunchgrass	R 0 F 0												
black greasewood/grass	R 0 F 0												
tall sagebrush/bunchgrass	R 3 F 3		3 3		3 3								
squaw apple/bunchgrass	R 0 F 1		0 1		0 1								
curlleaf mountainmahogany/ bunchgrass	R 0 F 1		0 1		0 1			0 1					
curlleaf mountainmahogany/ pinegrass	R 0 F 1		0 1		0 1			0 1					
juniper/sagebrush/ bunchgrass	R 0 F 0												
curlleaf mountainmahogany/ shrub	R 0 F 0												
quaking aspen/grass	R 0 F 4		0 4		0 4			0 4			0 3		
quaking aspen/mountain big sagebrush/bunchgrass	R 0 F 3		0 3		0 3			0 3			0 3		
riparian	R 6 F 6		6 6		6 6			5 5			3 3		

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 3: reproduces on ground around water, or on floating or emergent vegetation; feeds in water, on ground, in shrubs and trees. (44 species)**

Plant community	Function	Structural conditions									
		Grass-forb			Low shrub		Tall shrub		Tree		
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded)	R 0 F 0										
subalpine bunchgrass	R 1 F 1	1									
permanently wet meadows	R 6 F 20	6									
seasonally wet meadows	R 5 F 9	5									
shadscale saltbush/ bunchgrass	R 1 F 1	1			1						
low sagebrush/bunchgrass	R 2 F 1	1			1						
black greasewood/grass	R 2 F 2	2			2			2			
tall sagebrush/bunchgrass	R 2 F 2	2			2			2			
squaw apple/bunchgrass	R 1 F 1	1			1			1			
curlleaf mountainmahogany/ bunchgrass	R 1 F 1	1			1			1			
curlleaf mountainmahogany/ pinegrass	R 1 F 1	1			1			1			
juniper/sagebrush/ bunchgrass	R 2 F 2	2			2			2			2
curlleaf mountainmahogany/ shrub	R 1 F 1	1			1			1			1
quaking aspen/grass	R 0 F 2										
quaking aspen/mountain big sagebrush/bunchgrass	R 0 F 2										
riparian	R 38 F 39	25	35		28		10		25		22
		39	31		23		10				

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 4. Life form 4: reproduces in cliffs, caves, rims and/or talus; feeds on ground or in air.  
(33 species)

Plant community	Fu nction	Structural conditions					
		Grass-forb		Low shrub		Tall shrub	
		(B.) nA1 uB1 ch.	(B.) nA1 uB1 ch.	(B.) nA1 uB1 ch.	(B.) nA1 uB1 ch.	(B.) nA1 uB1 ch.	(B.) nA1 uB1 ch.
crested wheatgrass (seeded)	R 4 F 10	4 10					
subalpine bunchgrass	R 3 F 6	33 4					
permanently wet meadows	R 2 F 10	2 9					
seasonally wet meadows	R 1 F 9	1 8					
shadscale saltbush/ bunchgrass	R 6 F 11	5 10		4 8			
low sagebrush/bunchgrass	R 14 F 16	12 15		10 12			
black greasewood/grass	R 8 F 11	7 10		6 8		8 11	
tall sagebrush/bunchgrass	R 27 F 27	23 25		18 19		24 27	
squaw apple/bunchgrass	R 6 F 11	5 10		4 8		6 11	
curlleaf mountainmahogany/ bunchgrass	R 8 F 13	5 11		4 8		7 13	7 12
curlleaf mountainmahogany/ pinegrass	R 8 F 13	5 11		4 8		7 13	7 12
juniper/sagebrush/ bunchgrass	R 18 F 21	14 19		10 14		15 21	16 20
curlleaf mountainmahogany/ shrub	R 8 F 14	5 12		4 9		7 14	7 13
quaking aspen/grass	R 6 F 9	5 7		4 6		6 9	5 8
quaking aspen/mountain big sagebrush/bunchgrass	R 6 F 10	5 8		4 7		6 10	5 9
riparian	R 20 F 28	18 26		15 22		17 27	17 26

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 5: reproduces on ground without specific water, cliff, rim or talus association; feeds on ground. (45 species)**

Plant community	Function	Structural conditions											
		Grass-forb		Low shrub		Tall shrub		Tree		Tree/shrub			
		G.	nn.	unc ch.	G.	nn.	unc ch.	G.	nn.	unc ch.	G.	nn.	unc ch.
crested wheatgrass (seeded)	R 3	2											
	F 6		4										
subalpine bunchgrass	R 1		1										
	F 5			5									
permanently wet meadows	R 6		4										
	F 16			16									
seasonally wet meadows	R 5		4										
	F 14			13									
shadscale saltbush/ bunchgrass	R 9		3		6								
	F 14			9		13							
low sagebrush/bunchgrass	R 22		9		14								
	F 24			17		20							
black greasewood/grass	R 13		2		8		11						
	F 18			9		14		18					
tall sagebrush/bunchgrass	R 31		9		17		22						
	F 32			19		24		30					
squaw apple/bunchgrass	R 5		3		4		4						
	F 14			12		12		13					
curlleaf mountainmahogany/ bunchgrass	R 7		2		3		6		4				
	F 19			13		14		18		16			
curlleaf mountainmahogany/ pinegrass	R 6		2		2		5		3				
	F 15			10		11		14		13			
juniper/sagebrush/ bunchgrass	R 19		4		10		14		7		11		
	F 29			16		23		28		22		25	
curlleaf mountainmahogany/ shrub	R 11		2		6		7		4		6		
	F 17			9		13		16		13		16	
quaking aspen/grass	R 11		1		6		9		3		9		
	F 13			5		10		12		8		13	
quaking aspen/mountain high sagebrush/bunchgrass	R 10		1		5		8		2		8		
	F 14			5		10		13		9		13	
riparian	R 22		6		15		17		5		16		
	F 30			17		24		27		19		27	

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 4. Life form 6: reproduces on ground; feeds in shrubs, trees, or air. (4 species)

Plant community	Function	Structural conditions						u	b
		Grass-forb	Low shrub	Tall shrub	Tree	B.G.	Ann.	Bunch.	
crested wheatgrass (seeded)	R 0								
	F 0								
subalpine bunchgrass	R 0								
	F 0								
permanently wet meadows	R 0	0							
	F 2		2						
seasonally wet meadows	R 0	0							
	F 2		2						
shadscale saltbush/ bunchgrass	R 0	0		0					
	F 3		2		3				
low sagebrush/bunchgrass	R 2	0		2					
	F 3		2		3				
black greasewood/grass	R 0	0		0		0			
	F 3		2		3		3		
tall sagebrush/bunchgrass	R 3	0		3		3			
	F 3		2		3		3		
squaw applebunchgrass	R 0	0		0		0			
	F 3		2		3		3		
curlleaf mountainmahogany/ bunchgrass	R 1	0		1		1		1	
	F 2		1		2		2		2
curlleaf mountainmahogany/ pinegrass	R 0	0		0		0		0	
	F 2		1		2		2		2
juniper/sagebrush/ bunchgrass	R 2	0		2		2		2	
	F 2		1		2		2		2
curlleaf mountainmahogany/ shrub	R 1	0		1		1		1	
	F 2		1		2		2		2
quaking aspen/grass	R 1	0		1		1		1	
	F 3		1		3		3		3
quaking aspen/mountain big sagebrush/bunchgrass	R 3	0		3		3		3	
	F 3		1		3		3		3
riparian	R 1	0		1		1		1	
	F 4		1		4		4		3

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 7: reproduces in shrubs; feeds on ground, in water or air. (29 species)**

R reproduction F feeding B.G. bare ground Ann. - annuals Bunch. native bunchgrass	Function	Structural conditions					
		Grass-forb		Low shrub		Tall shrub	
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
Plant community		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded )	R 0	0					
	F 1		1				
subalpine bunchgrass	R 0	0					
	F 1		1				
permanently wet meadows	R 3	3					
	F 10		8				
seasonally wet meadows	R 3	3					
	F 10		8				
shadscale saltbush/ bunchgrass	R 0	0		0			
	F 9		4	6			
low sagebrush/bunchgrass	R 4	0		0			
	F 14		5	8			
black greasewood/grass	R 1	0		0		1	
	F 12		5	9		12	
tall sagebrush/bunchgrass	R 18	3		6		18	
	F 21		5	12		21	
squaw applebunchgrass	R 2	0		1		2	
	F 15		4	11		15	
curlleaf mountainmahogany/ bunchgrass	R 4	0		1		4	2
	F 19		6	13		19	14
curlleaf mountainmahogany/ pinegrass	R 4	0		1		4	2
	F 19		6	13		19	14
juniper/sagebrush! bunchgrass	R 18	2		4		17	11
	F 25		8	15		25	19
curlleaf mountainmahogany/ shrub	R 14	0		2		13	7
	F 26		8	15		26	20
quaking aspen/grass	R 19	3		4		19	14
	F 24		9	14		24	20
quaking aspen/mountain big sagebrushbunchgrass	R 25	3		6		25	15
	F 28		9	15		28	22
riparian	R 23	3		4		21	14
	F 25		10	14		24	20
							24

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 8: reproduces in shrubs; feeds in shrubs, trees, or air. (5 species)**

R reproduction F feeding B.G. - bare ground Ann. - annuals Bunch. - native bunchgrass	I	Function	Structural conditions									
			Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub					
Plant community	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0											
	F 0											
subalpine bunchgrass	R 0											
	F 0											
permanently wet meadows	s R t r u c t u r a l											
	F 0											
seasonally wet meadows	R 0											
	F 0											
shadscale saltbush/ bunchgrass	R 0				0							
	F 1				1							
low sagebrush/bunchgrass	R 0				0							
	F 1				1							
black greasewood/grass	R 0				0			0				
	F 1				1			1				
tall sagebrush/bunchgrass	R 1				0			1				
	F 4				2			4				
squaw apple/bunchgrass	R 0				0			0				
	F 4				2			4				
curlleaf mountainmahogany/ bunchgrass	R 0				0			0			0	
	F 4				2			4			3	
curlleaf mountainmahogany/ pinegrass	R 0				0			0			0	
	F 4				2			4			3	
juniper/sagebrush/ bunchgrass	R 1				0			1			0	1
	F 3				2			3			3	3
curlleaf mountainmahogany/ shrub	R 3				0			3			1	3
	F 4				2			4			3	4
quaking aspen/grass	R 1				0			1			1	1
	F 2				2			2			2	2
quaking aspen/mountain big sagebrush/bunchgrass	R 4				0			4			2	4
	F 4				2			4			3	4
riparian	R 5				0			5			2	5
	F 5				2			5			3	5

**Appendix 4. Life form 9: reproduces primarily in deciduous trees; feeds in shrubs, trees, or air.  
(3 species)**

Plant community	Function	Structural conditions									
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub					
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.
crested wheatgrass (seeded)	R 0 F 0										
subalpine bun&grass	R 0 F 0										
permanently wet meadows	R 0 F 0										
seasonally wet meadows	R 0 F 0										
shadscale saltbush/ bunchgrass	R 0 F 0										
low sagebrush/bunchgrass	R 0 F 0										
black greasewood/grass	R 0 F 0										
tall sagebrush/bunchgrass	R 0 F 1						0				
squaw apple/bunchgrass	R 0 F 1						0				
curlleaf mountainmahogany/ bunchgrass	R 0 F 1						0			0	
curlleaf mountainmahogany/ pinegrass	R 0 F 1						0			0	
juniper/sagebrush/ bunchgrass	R 1 F 3						0			0	1
curlleaf mountainmahogany/ shrub	R 1 F 2						3			3	3
quaking aspen/grass	R 3 F 3						2			1	3
quaking aspen/mountain big sagebrush/bunchgrass	R 3 F 3						3			3	3
riparian	R 3						2			3	3

Appendix 4. Life form 10: reproduces primarily in conifers; feeds in shrubs, trees, or air. (7 species)

R reproduction F feeding B.G. = bare ground Ann. annuals Hunch. = native bunchgrass	Function	Structural conditions											
		Grass-forb		Low shrub	Tall shrub	Tree	Tree/shrub						
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
Plant community													
crested wheatgrass <b>(seeded)</b>	R 0 F 0												
subalpine bunchgrass	R 0 F 0												
permanently wet meadows	R 0 F 0												
seasonally wet meadows	R 0 F 0												
shadscale saltbush/ bunchgrass	R 0 F 0												
low sagebrush/bunchgrass	R 0 F 0												
black greasewood/grass	R 0 F 0												
tall sagebrush/bunchgrass	R 0 F 2			0	0								
squaw apple/bunchgrass	R 0 F 2			0	0								
curlleaf mountainmahogany/ bunchgrass	R 0 F 2			1	2								
curlleaf mountainmahogany/ pinegrass	R 0 F 2			1	2								
juniper/sagebrush/ bunchgrass	R 3 F 5			0	2	3	3						
curlleaf mountainmahogany/ shrub	R 1 F 4			1	3	4	4						
quaking aspen/grass	R 3 F 6			0	0	3	6						
quaking aspen/mountain big sagebrush/bunchgrass	R 5 F 6			1	3	6	6						
riparian	R 5 F 7			0	1	4	4						
				1	3	6	6						

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 4. Life form 11: reproduces in trees; feeds on ground, in shrubs, trees, or air. (13 species)

Plant community	Function	Structural conditions																
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub												
B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.							
crested wheatgrass (seeded)	R 0	0	These plant communities do not achieve a habitat form like that characterized by these structural conditions.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.						
	F 1	1																
subalpine bunchgrass	R 0	0		B.G.	Ann.	Bunch.												
	F 3	1																
permanently wet meadows	R 0	0		B.G.	Ann.	Bunch.												
	F 4	3																
seasonally wet meadows	R 0	0		B.G.	Ann.	Bunch.												
	F 41	4																
shadscale saltbush/ bunchgrass	R 0	0		B.G.	Ann.	Bunch.												
	F 2	4																
low sagebrush/bunchgrass	R 1	0		B.G.	Ann.	Bunch.												
	F 2	2																
black greasewood/grass	R 1	0		B.G.	Ann.	Bunch.												
	F 21	2																
tall sagebrush/bunchgrass	R 3	0		B.G.	Ann.	Bunch.												
	F 7	4																
squaw apple/bunchgrass	R 0	0		B.G.	Ann.	Bunch.												
	F 61	2																
curlleaf mountainmahogany! bunchgrass	R 1	0		B.G.	Ann.	Bunch.												
	F 8	4																
curlleaf mountainmahogany/ pinegrass	R 1	0		B.G.	Ann.	Bunch.												
	F 8	4																
juniper/sagebrush/ bunchgrass	R 5	0		B.G.	Ann.	Bunch.												
	F 10	4																
curlleaf mountainmahogany/ shrub	R 2	0		B.G.	Ann.	Bunch.												
	F 8	4																
quaking aspen/grass	R 13	0		B.G.	Ann.	Bunch.												
	F 13	4																
quaking aspen/mountain big sagebrush/bunchgrass	R 12	0		B.G.	Ann.	Bunch.												
	F 13	4																
riparian	R 13	0		B.G.	Ann.	Bunch.												
	F 13	4																

Appendix 4. Life form 12: reproduces on very thick branches; feeds on ground or in water. (6 species)

Plant community	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 1	0	0	1									
subalpine bunchgrass	R 0 F 2	0	0	2									
permanently wet meadows	s t r u c t u r a l R 0 F 5	0	0	1									
seasonally wet meadows	R 0 F 5	0	0	5									
shadscale saltbush/ bunchgrass	R 0 F 3	0	0	3	0	3							
low sagebrush/bunchgrass	R 0 F 31	0	0	3	0	3							
black greasewood/grass	R 0 F 3	0	0	3	0	3	0	3					
tall sagebrush/bunchgrass	R 3	0	0	0	0	0	0	0					
squaw apple/bunchgrass	R 0 F 3	0	0	3	0	3	0	3					
curlleaf mountainmahogany/ bunchgrass	R 0 F 3	0	0	3	0	3	0	3	0	3			
curlleaf mountainmahogany/ pinegrass	R 0 F 3	0	0	3	0	3	0	3	0	3			
juniper/sagebrush/ bunchgrass	R 5 F 3	0	0	3	0	3	2	3	5	3	5	3	
curlleaf mountainmahogany/ shrub	R 3 F 3	0	0	3	0	3	0	3	3	3	3	3	
quaking aspen/grass	R 4 F 3	0	0	3	0	3	2	3	4	3	4	3	
quaking aspen/mountain big sagebrush/bunchgrass	R 4 F 3	0	0	3	0	3	2	3	4	3	4	3	
riparian	R 6 F 5	0	0	5	0	3	2	3	6	3	6	3	

These plant communities do not achieve a habitat form like that characterized by these conditions.

Appendix 4. Life form 13: reproduces – excavates own hole in a tree; feeds on ground, in shrubs, trees, or air. (9 species)

R = reproduction F = feeding B.C. = bare ground Ann. = annuals Bunch. = native bunchgrass	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
Plant community		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R 0 F 0		0										
subalpine bunchgrass	R 0 1F - - 0-		0										
permanently wet meadows	R 0 F 0		0										
seasonally wet meadows	R 0 F 0		0										
shadscale saltbush/ bunchgrass	R 0 F 1		0		0								
low sagebrush/bunchgrass	R 0 1F - - 1		0		0								
black greasewood grass	R 0 1F - - 1		0		0		0						
tall sagebrush/bunchgrass	R 0 1F - - 1		0		0		0						
squaw apple/bunchgrass	R 0 F 1		0		0		0						
curlleaf mountainmahogany! bunchgrass	R 0 F 1		0		0		0		0				
curlleaf mountainmahogany/ pinegrass	R 0 F 1		0		0		0		0				
juniper/sagebrush! bunchgrass	R 6 1F - - 6	0	0	0	0	0	5		5		6		6
curlleaf mountainmahogany/ shrub	R 0 F 1	0	0	0	0	0	0		0		0		0
quaking aspen/grass	R 6 F 9	0	0	0	0	0	5	8	5	8	6	9	9
quaking aspen/mountain big sagebrush/bunchgrass	R 6 F 9	0	0	0	0	0	5	8	5	8	6	9	9
riparian	R 8 F 9	0	0	0	0	0	5	7	0	8	7	8	9

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 4. Life form 14: reproduces in a hole made by another species or that has occurred naturally; feeds on ground, in water, or air. (25 species)

R - reproduction F - feeding B.G. bare ground Ann. - annuals Bunch. - native bunchgrass	Function	Structural conditions								
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub				
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
Plant community	Function									
crested wheatgrass (seeded)	R 0 F 0	0	0							
subalpine bunchgrass	R 0 F 0	0	0							
permanently wet meadows	R 0 F 12	0	10							
seasonally wet meadows	R 0 F 12	0	10							
shadscale saltbush/ bunchgrass	R 0 F 6	0	2	6						
low sagebrush/bunchgrass	R 0 F 11	0	6	7						
black greasewood/grass	R 0 F 6	0	2	6	0	6				
tall sagebrush/bunchgrass	R 0 F 15	0	8	10	11					
squaw apple/bunchgrass	R 0 F 7	0	3	0	0	7				
curlleaf mountainmahogany/ bunchgrass	R 0 F 6	0	2	6	0	6	5			
curlleaf mountainmahogany/ pinegrass	R 0 F 10	0	3	8	0	8	8			
juniper/sagebrush/ bunchgrass	R 10 F 14	0	6	8	0	9	12	9	13	
curlleaf mountainmahogany/ shrub	R 1 F 13	0	5	8	0	8	11	1	12	
quaking aspen/grass	R 15 F 15	0	8	0	0	13	12	12	12	
quaking aspen/mountain big sagebrush/bunchgrass	R 15 F 15	0	8	0	0	13	12	12	12	
riparian	R 24 F 24	0	11	0	0	16	19	17	21	
									19	

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 15: reproduces-underground burrow; feeds on or under ground. (32 species)**

Plant community	Function	Structural conditions							
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub			
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.
crested wheatgrass (seeded )	R 8 F 8	5 6							
subalpine <b>bunchgrass</b>	R 9 F 9	6 7							
permanently wet meadows	R 10 F 11	7 9							
seasonally wet meadows	R 7 F 8	4 6							
shadscale saltbush/ bunchgrass	R 13 F 13	4 5		9					
low sagebrush/bunchgrass	R 13 F 13	7 8		10					
black greasewood/grass	R 12 F 13	3 5		6		10			
tall sagebrush/bunchgrass	R 22 F 22	10 11		12		15			
squaw apple/bunchgrass	R 4 F 5	1 3		2		4			
curlleaf mountainmahogany/ bunchgrass	R 6 F 6	1 3		3		6		6	
curlleaf mountainmahogany/ pinegrass	R 6 F 6	1 3		3		6		6	
juniper/sagebrush/ bunchgrass	R 12 F 12	4 5		6		12		13	
curlleaf mountainmahogany/ shrub	R 6 F 6	1 3		3		6		6	
quaking aspen/grass	R 2 F 2	R F 2 2			1	1	1	1	
quaking aspen/mountain big sagebrush/bunchgrass	R 2 F 21	1 1		1	2		2		2
riparian	R 15 F 16	7 9		7 8	9		11 12		14

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

**Appendix 4. Life form 16: reproduces – underground burrow; feeds in water, on ground, or in air.  
(9 species)**

Plant community	Function	Structural conditions											
		Grass-forb	Low shrub	Tall shrub	Tree	Tree/shrub							
		B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.	B.G.	Ann.	Bunch.
crested wheatgrass (seeded)	R F	0	0	0									
subalpine bunchgrass	R F	2 2	2 2										
permanently wet meadows	R F	2 4	2 2										
seasonally wet meadows	R F	0 2	0 2										
shadscale saltbush/ bunchgrass	R F	0 0	0 0	0									
low sagebrush/bunchgrass	R F	0 0	0 0	0									
black greasewood/grass	R F	0 0	0 0	0									
tall sagebrush/bunchgrass	R F	1 3	1 2	1 3	1	3							
squaw apple/bunchgrass	R F	0 0	0 0	0									
curlleaf mountainmahogany/ bunchgrass	R F	0 0	0 0	0	0	0							
curlleaf mountainmahogany/ pinegrass	R F	0 0	0 0	0	0	0							
juniper/sagebrush/ bunchgrass	R F	0 0	0 0	0	0	0							
curlleaf mountainmahogany! shrub	R F	0 0	0 0	0	0	0							
quaking aspen/grass	R F	0 2	0 2	0 2	0 2	0 2							
quaking aspen/mountain big sagebrush/bunchgrass	R F	0 2	0 2	0 2	0 2	0 2							
riparian	R F	9 9	2 4	4 4	7 7	5 6	8 8						

These plant communities do not achieve a habitat form like that characterized by these structural conditions.

Appendix 5. 72 wildlife species found in south-east Oregon during migration or incidental in the area.

Letter code		Life form	Common name
BIRDS			
GAIM	3	common loon	
POGRI	3	red-necked grebe <sup>1</sup>	
POAU	3	horned grebe	
PEERY	3	American white pelican <sup>1</sup>	
PLCH	7	white-faced ibis <sup>1</sup>	
OLCO	3	whistling swan	
ANAL	3	white-fronted goose <sup>1</sup>	
CHCA	3	snow goose	
CHRO	3	Ross' goose	
AYMA	3	greater scaup	
BUCL	3	common goldeneye	
BUALBE	14	bufflehead	
SOSP	3	king eider	
CLHY	3	oldsquaw	
LOCU	14	hooded merganser	
MESE	3	red-breasted merganser	
BULA	4	rough-legged hawk	
HALE	12	bald eagle <sup>1</sup>	
FAPE	4	peregrine <sup>1</sup>	
FACO	11	merlin <sup>1</sup>	
CHSEM	3	semipalmated plover	
CHMO	3	mountain plover <sup>1</sup>	
TRSO	7	solitary sandpiper <sup>1</sup>	
TRFL	3	lesser yellowlegs	
CASE	3	willet <sup>1</sup>	
CAMEL	3	pectoral sandpiper	
CABA	3	Baird's sandpiper <sup>1</sup>	
CAM1	3	least sandpiper	
CAMAU	3	western sandpiper	
LISC	3	long-billed dowitcher	
LIFE	3	marbled godwit	
LOLO	3	northern phalarope	
LAAR	3	herring gull	
LADE	3	ring-billed gull	
LAPH	3	Bonaparte's gull	
ARAL	7	black-chinned hummingbird	
SEPL	7	broad-tailed hummingbird	

Letter code	Life form	Common name
MAMMALS		
LANO	14	silver-haired bat
LACI	9	hoary bat

<sup>1</sup> Species of special interest; see appendix 13

## Appendix 6. Wildlife orientation to plant communities by life form. Life form I: reproduces in water; feeds in water. (2 species)

## Appendix 6 Life form 2: reproduces in water; feeds on ground, in shrubs, and/or in trees (6 species)

Appendix 6. Life form 3: reproduces on ground around water or on floating or emerging vegetation; feeds in water, on ground, in shrubs and trees. (44 species)

Letter code	Species	crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/bunchgr.	curlleaf mountainmahogany/pinegr.	juniper/sagebrush/bunchgr.	curlleaf mountainmahogany/shrub	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian	Number of plant communities used by each species for:	R	F	
<b>REPTILES</b>																					
THST	common garter snake	•	•	•	•	•	•	•	•	•	•	•	F	F	•	12	14				
THEL	wandering garter snake	•	•	•	•	•	•	•	•	•	•	•	F	F	•	7	9				
<b>BIRDS</b>																					
POAU	horned grebe																		•	1	1
PONIGR	eared grebe																		•	1	1
AEOC	western grebe																		•	1	1
POPO	pied-billed grebe																		•	1	1
PHAU	double-crested cormorant																		F	2	1
BOLE	American bittern	f																	•	1	1
IXEX	least bittern	f																	•	1	1
BRCA	Canada goose																		•	1	1
ANPL	mallard	F	f	0			0	0										•	1	2	
ANSTR	gadwall	F	f	0			0	0										•	1	2	
ANAC	common pintail	F	f	0			0	0										•	1	2	
ANCR	green-winged teal	F	f	0			0	0										•	1	2	
ANDIS	blue-winged teal	F	f	0			0	0										•	1	2	
ANCY	cinnamon teal	F	f	0			0	0										•	1	2	
ANAMEO	American wigeon	F	f	0			0	0										•	1	2	
ANCL	northern shoveler	F	f	0			0	0										•	1	2	
AYAM	redhead																	•	1	1	
AYCO	ring-necked duck	F	f															.	1	2	
AYVA	canvasback																	.	1	1	
AYAF	lesser scaup																	•	1	1	
OXJA	ruddy duck																	•	1	1	
GRCA	sandhill crane	.		F														•	2	3	
RALI	Virginia rail	F	f															.	1	2	
POCAR	sora	F	f															.	1	2	
FUAM	American coot	f	f															•	1	1	
CHALE	snowy plover	F	F															F	0	3	
CHVO	killdeer	.		•														•	3	3	
CAGA	common snipe	•	•															•	3	3	
ACMA	spotted sandpiper	f	f															.	1	1	
TRME	greater yellowlegs																	.	1	1	
REAM	American avocet	•	•															•	3	3	
HIME	black-necked stilt	f																•	1	1	
STTRI	Wilson's phalarope																	•	1	1	
LACA	California gull	F	F															•	1	3	
LAPI	Franklin's gull	F	F															•	1	3	

Letter code	Species	crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/pinegr.	juniper/sagebrush/bunchgr.	curlleaf mountainmahogany/shrub	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian	Number of plant communities used by each species for:
STFO	Forster's tern		f	f												R	F
STCAS	Caspian tern		f	f												1	1
CHNI	black tern		f	f												1	1
CIME	dipper															1	1
CIPA	marsh wren		f	f												1	1
GETR	common yellowthroat		f	f												1	1
XAXA	yellow-headed blackbird		f	f												1	1
								0									
		R	0	1	6	5	1	2	2	3	1	1	2	1	0	0	38
		F	0	120	9	1	1	1	2	1	1	1	2	1	2	2	39

Appendix 6. Life form 4: reproduces in cliffs, caves, talus, rims and/or talus; feeds on ground or in air. (33 species)

crested wheatgrass (seeded)  
subalpine bunchgrass  
perm. wet meadows  
seasonally wet meadows  
shadscale saltbush/bunchgr.  
low sagebrush/bunchgrass  
black greasewood/grass  
tall sagebrush/bunchgrass  
squaw apple/bunchgrass  
curlleaf mountainmahogany/bunchgr.  
curlleaf mountainmahogany/pinegr.  
quaking aspen/grass  
curlleaf mountainmahogany/shrub  
juniper/sagebrush/bunchgr.  
riparian

Number of plant communities used by each species for:

	BIRDS																		R	F
CAAU	turkey vulture	F	F	F	F	F	.	F	.	F	F	F	F	.	F	F	F	F	3	16
BUREC	ferruginous hawk	0	f	f	F	F	.	.	.	F	f	f	f	.	F	f	F	•	7	10
FAME	prairie falcon	.	f	F	F	F	•	•	F	•	f	f	f	F	f	f	F	F	3	10
ALCH	chukar	.	.	.	F	•	F	•	F	•	F	F	F	f	F	f	F	F	3	9
COLI	rock dove	F	.	f	F	F	f	•	f	R	•	F	F	f	F	f	F	•	3	3
CYNI	black swift	.	f	F	F	f	•	f	•	f	f	f	f	f	f	f	f	F	3	6
AESA	white-throated swift	.	f	F	F	f	.	f	.	f	f	f	f	f	f	f	f	4	6	
SASA	Say's phoebe	f	.	F	F	f	F	f	f	f	•	•	•	.	.	.	F	6	10	
HIRU	barn swallow	F	f	F	F	f	f	f	•	F	F	F	F	F	F	F	.	4	12	
PEPY	cliff swallow	F	f	F	F	f	f	f	•	F	F	F	F	F	F	F	•	2	12	
COCOR	common raven	.	.	•	.	.	•	.	•	.	.	.	•	.	•	•	.	16	16	
CAMEXO	canyon wren	F	.	.	•	•	•	•	f	.	f	f	f	.	.	.	F	3	5	
SAOB	rock wren	F	.	.	•	•	•	•	•	f	f	f	f	.	.	.	F	3	5	
LEAT	black rosy finch	f	•	f	f	f	f	f	.	.	.	.	.	.	.	.	f	1	1	
	MAMMALS																			
MYLU	little brown myotis	f	f	.	.	.	.	.	•	.	.	0	0	.	.	0	0	.	3	3
MYTH	fringed myotis	f	f	.	.	.	.	.	.	•	.	.	.	.	0	0	•	.	2	2
MYCA	California myotis	f	f	.	.	.	f	•	.	•	.	.	.	.	0	0	.	3	3	
MYLE	small-footed myotis	f	.	.	.	.	.	•	.	.	.	.	.	.	.	.	.	•	2	2
PIHE	western pipistrelle	f	f	f	.	.	f	•	.	f	f	•	f	•	•	•	•	2	2	
EPFU	big brown bat	f	f	f	.	.	f	•	.	f	f	•	f	0	0	•	•	3	3	
EUMAC	spotted bat	f	.	.	.	.	0	.	.	.	.	.	.	.	.	.	•	2	2	
PLTO	western big-eared bat	f	f	f	f	f	f	•	.	f	f	•	f	•	•	•	•	2	2	
ANPA	pallid bat	f	f	f	f	f	f	•	f	•	•	•	•	•	•	•	•	3	3	
MAFL	yellow-bellied marmot	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	12	12	
PECR	canyon mouse	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	.	3	3	
NELE	desert woodrat	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	4	4	
NECI	bushy-tailed woodrat	F	F	F	F	F	.	F	F	F	F	F	F	F	F	F	F	2	9	
ERDO	porcupine	f	f	f	f	f	f	•	•	•	•	•	•	•	•	•	•	6	6	
SPPU	spotted skunk	f	f	f	f	f	f	•	•	•	•	•	•	•	•	•	•	3	3	
FECO	cougar	F	.	.	.	.	.	•	•	•	•	•	•	•	•	•	•	5	9	
LYRU	bobcat	F	F	F	•	•	•	•	•	•	•	•	•	•	•	•	•	12	15	
	R	4	3	2	1	6	14	8	27	6	8	8	18	8	6	6	6	20		
	F	10	6	10	9	11	16	11	27	11	13	13	21	14	9	10	10	28		

**Appendix 6. Life form 5: reproduces on ground without specific water, cliff, rim or talus association; feeds on ground. (45 species)**

Letter code	Species															R	F
		crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/bunchgr.	curlleaf mountainmahogany/pinegr.	juniper/sagebrush/bunchgr.	curlleaf mountainmahogany/shrub	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian
<b>REPTILES</b>																	
CRWI	leopard lizard						●	●	●	●	●						4
SCGR	sagebrush lizard						0		0	0	0						5
UTST	side-blotted lizard					●	.	.	.	.	.						5
PHPL	desert horned lizard	0				●	●	●	●	●	0	0	0	0			5
PHDO	short-horned lizard	0				0	●	0		0	0	0	●	0			3
EUSK	western skink						●		0		0	0	0				3
CNTI	western whiptail						.	.	0		0	●	●	0			6
CHBO	rubber boa						0		0		0						2
COCONS	yellow-bellied racer					□			□		●		●		●	●	4
MATA	striped whipsnake								●								1
PIME	gopher snake		●	0	0	●		●		0	0	●	0	0	●	●	5
HYTO	night snake						●		●		●		●				4
CRVI	western rattlesnake	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	14
<b>BIRDS</b>																	
CICY	northern harrier	f	f	●	●	f	f	f	●	F	f	f	f	f	f	●	4
DEOB	blue grouse									f	f	f	f	●	●	●	5
BOUM	ruffed grouse									F	F	F	F	●	●	●	8
CEUR	sage grouse						F	●	F	●	f	f	f		FF		2
LOCA	California quail									●	●	●	●	●	●	●	8
ORPI	mountain quail									f	F	F	F	●	F	F	6
PEPER	gray partridge	f		F	F		●	f	●	f	f	f	f	f	f	●	3
PHCOL	ring-necked pheasant		f	f	f		f		●	f	f	f	f	f		●	2
NUAM	long-billed curlew	f		F	F	●	●	f	●	●	●	●	●	●	●	●	6
ASFL	short-eared owl		f	●	●	f	f	f	●							●	8
ERAL	horned lark	●	f	F	F	f	●	0	●	0	F	F	F	F		●	7
CAFU	veery		f	f	f	f				f	f	f				●	1
WIPU	Wilson's warbler		f	f	f				f	f	f				●	3	
DOOR	bobolink		.	.	.				f	f	f				●	3	
STNEG	western meadowlark	F	f	F	F		●		0	.	0	0	.	0	.	F	6
PASA	Savannah sparrow	f	f	f	●			0	F	F	F	f	f	f	f	1	4
AMSA	grasshopper sparrow	f	f	f	●			0	F	F	F	f	f	f	f	1	4
POGRA	vesper sparrow	f	f	f	.			0	F	F	F	f	f	f	f	1	4
CHGR	lark sparrow	f	F	F	.		●	f	F	F	F	F	●	●	●	5	11
JUHY	northern junco		F	F	.	.										12	14

Number of plant communities  
used by each species for:

Letter code	Species																R	F
		Number of plant communities used by each species for:																
<b>MAMMALS</b>																		
SYID	pygmy rabbit																	
SYNU	mountain cottontail	F	F	F	f	0											●	8 (8)
LETO	white-tailed jackrabbit	F	F	F	F	F	.										1	10
LECA	black-tailed jackrabbit	F	F	F	F	.	F	.									2	14
RARA	black rat																●	4
RANO	Norway rat																●	4
FECA	feral house cat																●	5
EQUA	feral horse				●	●	0	0	F	●	0	0	0	●	0	0	4	
CEEL	elk										F	F	F	F	●	●	3	
ODHE	mule deer	f	F	F	F	F	F	F	●	F	●	●	●	●	●	●	5	
ANAMER	pronghorn	.	F	F	F	F	●	F	.	F	F	F	F	F	F	F	3	
OVCA	bighorn sheep	f	F	F	F	F	F	f	F	f	●	●	f	●	f	F	11	
		R	3	1	6	5	9	22	13	31	5	7	6	19	11	11	22	
		F	6	5	16	14	14	24	18	32	14	19	15	29	17	13	30	

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## **Appendix 6. Life form 6: reproduces on ground; feeds in shrubs, trees, or air. (4 species)**

		Letter code	
		Species	
BIRDS			
P	HNU	poorwill	f
C	HMI	common nighthawk	F
M	YTO	Townsend's solitaire	F
V	CE	orange-crowned warbler	F
R	0	0	0
R	0	0	0
R	2	0	0
R	0	3	0
R	0	1	0
R	1	0	2
R	1	1	0
R	1	3	1
R	3	1	3
R	3	3	1
			R F
			2 8
			5 14
			12
			3
			Number of plant communities used by each species for:

## **Appendix 6. Life form 7: reproduces in shrubs; feeds on ground, in water or air. (29 species)**

Letter code			
Species			
BIRDS			
BUST	green heron	F	
BUIB	cattle egret	f	
NYNY	black-crowned night heron	F	
BUSW	Swainson's hawk	f	
STCAL	calliope hummingbird	F	
CAAN	Anna's hummingbird	f	
TYTY	eastern kingbird	F	
EMTR	willow flycatcher	f	
EMWR	gray flycatcher	F	
APCO	scrub jay	f	
PIPI	black-billed magpie	F	
			crested wheatgrass (seeded)
			subalpine bunchgrass
			perm. wet meadows
			seasonally wet meadows
			shadscale saltbush/bunchgr.
			low sagebrush/bunchgrass
			black greasewood/grass
			tall sagebrush/bunchgrass
			squaw apple/bunchgrass
			curlleaf mountain mahogany/bunchgr.
			curlleaf mountain mahogany/pinegr.
			juniper/sagebrush/bunchgr.
			curlleaf mountain mahogany/shrub
			quaking aspen/grass
			quaking aspen/mountain big sagebrush/bunchgrass
			riparian
		R	Number of plant communities used by each species for:
		F	

## Letter code

## Species

		crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/bunchgr.	curlleaf mountainmahogany/grass	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian	Number of plant communities used by each species for:		
																R	F	
DUCA	gray catbird			f	f	F	F	F	F	F	●	●	●	3	9			
TORV	brown thrasher			f	.	F	F	F	F	.	●	F	.	.	6	11		
ORMO	sage thrasher				F	F	●	F	f	f	●	●	f	4	7			
TUMI	American robin		F	F		f	F	F	F	F	●	●	●	3	9			
CAUS	Swainson's thrush				f	f	●	f	F	F	●	●	●	4	8			
PACAE	blue-gray gnatcatcher					●		f	f	f	*	F	F	.	F	S		
LALU	loggerhead shrike			F	F	●	.	F	F	F	.	F	F	.	5	12		
AGPH	red-winged blackbird			.	.	F	F	F	F	F	F	.	.	.	6	14		
EUCY	Brewer's blackbird	f	●	●	F	F	F	●	F	F	●	F	●	.	7	14		
MOAT	brown-headed cowbird	f	.	.	F	F	F	●	F	F	●	●	●	●	7	14		
PAAMO	lazuli bunting						f	f	f	f	F	●	●	●	3	4		
CAPS	lesser goldfinch						f	F	F	F	F	●	●	●	4	8		
PICH	green-tailed towhee		F	F	F	●	●	●	F	●	F	●	F	.	6	11		
PIER	rufous-sided towhee		f	f	f	●	F	F	F	●	●	●	●	●	6	9		
AMBE	sage sparrow			●			f	.	f	f	f	.	f	.	f	5		
SPPA	chipping sparrow					f	F	F	F	F	●	●	●	●	5	9		
SPBRE	Brewer's sparrow					●	f	o	f	f	f	.	F	f	.	f		
NEMEL	song sparrow			F	.	F	.	F	F	.	F	F	.	F	●	11		
		R	O	O	3	3	0	4	1	18	2	4	4	18	14	19	25	23
		F	1	1	10	10	9	14	12	21	15	19	19	25	26	24	28	25

Appendix 6. Life form 8: reproduces in shrubs; feeds in shrubs, trees, or air. (5 species)

	Species	Letter code	crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/bunchgr.	juniper/sagebrush/bunchgr.	curlleaf mountainmahogany/pinegr.	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian	Number of plant communities used by each species for:
	BIRDS																R	F
COAM	yellow-billed cuckoo																1	1
PSMI	bushtit						F	F	F							5	12	
DEPE	yellow warbler						f	f	f	f						8		
ICVI	yellow-breasted chat						f	f	f	F	F					3	7	
CATR	American goldfinch									F	F					4	9	
			R 0 0 0 0 0	0 1	0 1	0 1	1 4	0 4	0 4	0 4	1 3	3 4	1 2	4 4	5 5			
			F 0 0 0 0 0															

Appendix 6. Life form 9: reproduces primarily in deciduous trees; feeds in shrubs, trees, or air. (3 species)

	Species	Letter code	crested wheatgrass (seeded)	subalpine bunchgrass	perm. wet meadows	seasonally wet meadows	shadscale saltbush/bunchgr.	low sagebrush/bunchgrass	black greasewood/grass	tall sagebrush/bunchgrass	squaw apple/bunchgrass	curlleaf mountainmahogany/bunchgr.	juniper/sagebrush/bunchgr.	curlleaf mountainmahogany/shrub	quaking aspen/grass	quaking aspen/mountain big sagebrush/bunchgrass	riparian	Number of plant communities used by each species for:
	BIRDS																R	F
BOCE	cedar waxwing																5	
ICGA	northern oriole															3	4	
CAMEXI	house finch						f	f	f	F	F	F	F	F	F	5	9	
			R 0 0 0 0 0	0 0	0 0	0 0	0 1	0 1	0 1	0 1	0 1	1 3	1 2	3 3	3 3			
			F 0 0 0 0 0															