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ANIMALS OF THE FORT UNION TRADING POST
AND VICINITY

Entered.

The Historic and Contemporary Animal Species Present

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This report is in three parts:

1. Appendix 1 -- A checklist of animals of Fort Union compiled from the historic record.
2. Appendix 2 -- A checklist of current animals by habitat (vegetation type).
3. Appendix 3 -- A list of accepted common names of the animals with their scientific names.

The checklist (Appendix 1) of animals cited by the explorers, naturalists, railroad and military surveys, and fur company employees was developed from the historical literature in conjunction with modern accounts of the fauna of the area, both published and by personal communication. An attempt has been made to compile as complete a listing as the scope of this study would allow. No attempt has been made to show estimated numbers in the historical period. It is generally known from the many accounts of the animals of the Northern Plains that large numbers of bison, elk, and antelope roamed the plains, and that wolves and bears existed in great abundance. The Audubon's Mountain Sheep was abundant in the nearby cliffs and mountains. Many of these species are vanished from the area now, some extinct. Of the animals lesser in size and number, only conjecture based on an understanding of the vegetation communities and their condition during the period of operation of the Fort could be made. The naturalists who traveled in the area were concerned with the acquisition of new species, and with understanding the variations upon familiar ones that they encountered (such as the "curious flicker" -- the intermediate of the then-separate Red-shafted Flicker and the Yellow-shafted Flicker, now the Common Flicker). Their accounts of specimens taken and observed, then, are not indicative of relative abundance. They were selective in their observations.

Records of the birds and mammals are the most complete; lower vertebrates and the invertebrates are scarcely noticed. The insect fauna is barely mentioned, other than by reference to "mosquitos" and "gnats." Many species of biting Diptera, such as mosquitos (Culicidae), the biting midges (Ceratopogonidae), the biting flies (Simuliidae and Tabanidae) are indigenous to the area, and exist in great annoying abundance seasonally. The enormous numbers of carcasses occasioned by natural death, the fur trade, sport-shooting, and provisioning, must surely have been the cause for the abundant presence of many scavenging insects such as the Carrion Beetles (Coleoptera: Silphidae) and the Hide Beetles (Dermestidae) although no mention was discovered of reference to these. Interestingly, the only comment in reference to the garment-infesting insects that was found, was of the absence of clothes moths (Lepidoptera: Tineidae). One presumes that the incontinuity of domiciles and the severe winter temperatures prevented their establishment in the area until towns developed.

The historical lists are presented in taxonomic order, with the inferred correct scientific name accompanying each entry. The reference or references from which the record was obtained are given. In many cases several references listed the animal. Only one reference, the most definitive, is given unless comments of interest were made, in which case the more interesting or informative as to identity are given.

The checklist (Appendix 2) of current animal species is presented by vegetation type. Only the accepted common names of the animals are given on each list for brevity; Appendix 3 lists in taxonomic order the common name and the scientific name, for reference.

APPENDIX 1

A checklist of animals of Fort Union compiled from the historic record.

FISHES

1. "Stizostedion boreus." Sauger (S. canadensis). (The Walleye (S. vitreum) now present, is an introduced species.) (e)
2. "Scaphirhynchus platyrhynchus." Shovelnose Sturgeon (S. platyrhynchus). (e)
3. "Catfish." Channel Catfish (Ictalurus punctatus) or Stonecat (Noturus flavus). Both fish are native and present in the Missouri River. The Black Bullhead (I. melas) and the Yellow Bullhead (I. natalis) are introduced; the latter is primarily up in the Yellowstone River. (many references)

SALAMANDERS

1. "Siredon lichenoides, ? Baird. 'Ground puppy'; 'Four-legged Fish.'" ? Allusion to ground puppy usually meant mud puppy; size would suggest the Tiger Salamander (Ambystoma tigrinum.) (f)

TOADS

1. "Tapaya douglasii, Girard. The Oregon Horned Toad." ? This may refer to a specimen from elsewhere. The most likely collections from the Fort Union area would be: Great Plains Toad (Bufo cognatus); Plains Spadefoot (Scaphiopus bombifrons); and, least likely, Dakota Toad (B. hemiophrys). (f)

SNAKES

1. "Snake Colubar proximus. Racer (C. constrictor)." (d)
2. "(Audubon saw) ... Common garter (Snake)." Indeterminate. (Thamnophis spp.) Three Garter Snakes are found in the vicinity of Fort Union: Common Garter Snake (T. sirtalis), Western Garter Snake (T. elegans), and Plains Garter Snake (T. radix). (i)
3. "(Audubon saw) ... one copperhead." ? Copperhead (Agkistrodon mokasin). Ft. Union is very much beyond the range. (i)
4. "Crotalus confluentus (Say). Prairie Rattlesnake ... very numerous (at) Fort Union." Prairie Rattlesnake (C. viridis). (f)
5. "tortoise ... resembles Emys picta." Painted Turtle (Chrysemes picta). (d)

BIRDS

1. "California grebe. Podiceps californicus." Either Pied-billed Grebe (Podilymbus podiceps), Eared Grebe (Podiceps nigricollis); possibly Horned Grebe (P. auritus) or Western Grebe (Aechmophorus occidentalis). (c)
2. "Swans." Either Trumpeter Swan (Olor buccinator) (especially if nesting) or Whistling Swan (O. columbianus) (esp. if migrating). (b) (c)
 "trumpeter swan. Cygnus buccinator." (e)
3. "Wild geese." No description. Probably Canada Goose (Branta canadensis), Snow Goose (Chen caerulescens), or White-fronted Goose (Anser albifrons), in declining order of likelihood. (a) (c)
 "snow goose. Anser hyperboreus. (e)
 "white-fronted goose. A. gambeli." (e)
4. "Mallard. Anos boschos." Mallard (A. platyrhynchos). (e)
5. "gadwall duck." Gadwall (Anos strepera). (b)
6. "Pintails." Pintail (Anos acuta). (a)
7. "hooded merganser." Hooded Merganser (Lophodytis cucullatus). (e)
8. "goosander, sheldrake, fish duck. Mergus americanus." Either Common Merganser (M. merganser), Hooded Merganser (Lophodytes cucullatus) or Red-breasted Merganser (M. serrator). (e)
9. "buzzard" If vulture, then Turkey Vulture (Cathartes aura). May be a large buteo. (a)
 "Turkey Buzzard." (b)
10. "Swainson's buzzard." Swainson's Hawk (Buteo swainsoni). (e)
11. "hawk ... with white head and breast, differing entirely from the Fish Hawk...." Ferruginous Hawk (Buteo regalis). (a)
 "hawk, size of red-tailed, whole head white." (b)
12. "Golden eagle." (Aquila chrysaeton). (a) (b)
13. "White-headed eagle." Bald Eagle (Haliaeetus leucocephalus) (b) (c)
14. "Sparrow hawk." American Kestrel (Falco sparverius). (a) (b) (c) (g)

15. "Sharp-tailed grouse." Sharp-tailed Grouse (Pediacetes phasianellus)
(a) (e) (g)
"grouse with black breast and with a broad tail; usually near the margin of a wood." Description is contradictory; habitat description suggests Sharp-tailed Grouse, even though the tail, normally held, is pointed. The mountain grouse, ruffed grouse, and prairie chickens are not known from this area. (b)
16. "plain (Sage Grouse. Centrocercus urophasianus.)" Sage Grouse (C. urophasianus). (b)
"sage cock; cock of the plains." (e) (g)
17. "Common crane." Sandhill crane (Grus canadensis). (a)
"Sand-hill crane." (b)
18. "coat, poule d' eau, mud hen." American Coot (Fulica americana). (e)
19. "kill-deer. Aegialitis vociferus." Killdeer (Charadrius vociferus). (e)
20. "mountain plover. Aegialitis montanus." Mountain Plover (Charadrius montanus). (e) (h)
21. "Curlews." Long-billed curlew (Numenius americanus). The resident curlew in this area. (a)
22. "Bartram's Sandpiper." Upland Sandpiper (Upland Plover) (Bartramia longicauda.) (a)
"Bartram's sandpiper, field plover. Actiturus bartramius." (e)
23. "spotted sandpiper. Tringoides macularius." Spotted Sandpiper (Actitus macularia). (e)
24. "solitary sandpiper. Rhyacophilus solitarius." Solitary Sandpiper (Tringa solitaria). (e)
25. "Marbled godwit." Marbled Godwit (Limosa fedoa). (e)
26. "American avoset (sic)." American avocet (Recurvirostra americana). (e)
27. "large white gulls." Either California Gull (Larus californicus) or Herring Gull (L. argentatus) or, less likely (based on size) Ring-billed Gull (L. delawarensis). (c)
28. "Black tern." Probably Forster's Tern (Sterna forsteri). (b)
"least tern. Sterna frenata." Probably either Forster's Tern (S. forsteri) or Common Tern (S. hirundo). (c)

29. "Wild pigeons." Unclear. The Mourning Dove (Zenaida macroura) would have been familiar to the observers. Breeding of the Passenger Pigeon (Ectopistes migratorius) in this area is questioned (cf. Skaar). The Rock Dove (Columbia livia) is feral now in this area. (a)
- "pigeon." (c)
- "wild pigeon, passenger pigeon. E. Migratoria." (e)
- "... bird in immature plumage which I took to be this species...." (g)
30. "great Virginian long-eared owl." Probably Great Horned Owl (Bubo virginianus) rather than Long-eared Owl (Asio otus) based on vernacular usage and paucity of records of the latter in this area. (a)
- "great horned owl." (e)
31. "owl ... took for the barred one." Possibly Barred Owl (Strix varia); it has been moving into the West. (b)
32. "long-eared owl. Otus wilsoniaus." Identified by both the (old) scientific name and the vernacular name. No record from this exact locality, few from general area. (g)
33. "Goatsucker (Nuttall's whip-poor-will)." The Poorwill (Phalaenoptilus nuttallii) is not recorded from this area. The similar (in appearance when resting) Common Nighthawk (Chordeiles minor) is abundant. (a) (e)
34. "night hawk, bull bat. Chordeiles popetue." Common Nighthawk (C. minor). (f)
35. "Belted king fisher." Belted Kingfisher (Megaceryle alcyon). (e) (f)
36. "Yellow winged woodpecker with a red stripe on the cheek..."; "of intermediate color between the Yellow-shafted and the Red-shafted...." "Common Flicker (Colaptes auritus.) (a)
- "Curious flicker of the Upper Missouri region." (b)
- "hybrid ... (woodpecker). C. hybridus." (e)
- "Red-shafted flicker. C. mexicana." (f). "C. hybridus." (h)
37. "Black Wood Cock; log cock. Hylatomus pileatus." Pileated Woodpecker (Dryocopus pileatus.) (f)

There are no records of the pileated woodpecker from this area. The old name (Hylatomus) and the vernacular names (above), are such definite statements, and this large bird is so unmistakable, that we must include this as a sighting.

38. "Harris's woodpecker, or Canada woodpecker." Probably Hairy Woodpecker (Picoides villosus). The similar-sized woodpeckers of more northerly affinity, the Black-backed Three-toed (P. arcticus) and the Northern Three-toed (P. tridactylus) are not recorded here. (a)
39. "red-headed woodpecker." Red-headed Woodpecker (Melanerpes erythrocephalus). (c)
40. "Lewis's woodpecker. Melanerpes torquatus." The Lewis' Woodpecker (M. lewis) is distinctive and not recorded from this area. This observation is questionable. (f)
41. "Tyrannus carolinensis. King bird or Bee martin." Eastern Kingbird (T. tyrannus). (e) (f)
42. "Arkansas flycatcher." Probably Western Kingbird (Tyrannus verticalis.) (a) (b) (e) (f)
43. "Say's flycatcher." Say's Phoebe (Sayornis saya). (a) (e)
"S. sayus." (h)
44. "Empidonax pusillus." ? The only Empidonax flycatcher from this area is the Least Flycatcher (E. minimus). The Willow Flycatcher (E. traillii) may inhabit this area. (f)
45. "Skylark; shore lark. Eremophila cornuta." Either Horned Lark (Eremophila alpestris) or Sprague's Pipit (Anthus spragueii) often called "Sprague's lark" in these early journals. (e)
46. "black Prairie Lark Finch of the species brought from Columbia by Townsend and Nuttall." Horned Lark (Eremophila alpestris). (b)
47. "barn swallow. Hirundo horreorum." Barn swallow (H. rustica.)
48. "Cliff Swallows." Cliff Swallows (Petrochelidon pyrrhonata). (b)
49. "purple martin. Progne purpurea." Purple Martin (P. subis). (e)
50. "Magpies." Black-billed magpie (Pica pica). (a) (c)
"magpie. Pica hudsonica." (e) (f)
51. "Ravens." Common Raven (Corvus corax). (b)
52. "Clarke's crow. Picicorus columbianus." Clark's Nutcracker (Nucifraga columbiana). (e) (g)
53. "Titmouse, black-headed...; Titmouse, very similar to Northern Chickadee." Black-capped Chickadee (Parus atricapillus). (a)
54. "Short-billed Marsh Wren of Nuttall." Short-billed Marsh Wren (Cistothorus platensis). (b)

55. "Rock wren or Rocky Mountain anteater of Say." Rock Wren (Salpinctes obsoletus). (a) (b) (e)
 "Parkman's Wren. Troglodytes parkmanni." From comment on range of the bird sighted, Rock Wren. (h)
56. "Brown Thrush. Harporhynchus rufus." Brown Thrasher (Toxostoma rufum). (h)
57. "robin. Turdus migratorius." Robin (T. migratorius). (e) (f)
58. "varied thrush, painted robin. Turdus naevius." ? The Varied Thrush (Ixoreus naevius), to which this is clearly a reference, is not recorded from this area.
59. "gray-checked thrush. Turdus aliciae." Very unlikely. Probably Swainson's Thrush (Hylocichla ustulata) or Veery (H. fuscescens). (e)
60. "Arctic bluebird." Mountain bluebird (Sialia currucoides). (a) (b)
 "Rocky Mountain blue bird. Sialia arctica." (e) (h)
61. "Shore lark." "Anthus or Titlark (Missouri Titlark which Audubon named for Sprague here)." Either Sprague's Pipit (Anthus spragueii), the more likely, or Water Pipit (Motocilla spinoletta). (a)
 "Arctic ground finch." "Sprague's Lark. (b) "Missouri skylark, Neocorys spraguei (sic)." (e)
62. "cedar bird. Ampelis cedrorum." Cedar Waxwing (Bombycilla cedrorum). (e)
63. "Shrike." Probably Loggerhead Shrike (Lanius ludovicianus). (a) (b) "Loggerhead Shrike." (b) "White-rumped shrike, Callyrio excubitoroides." (e) (h)
64. "Bell's vireo. Vireo belli." Very unlikely. Probably either Red-eyed Vireo (Vireo olivaceus) or Warbling Vireo (V. gilvus). (e)
65. Tennessee warbler. Helminthophoga peregrina." Rather unlikely. More likely: Warbling Vireo (Vireo gilvus) or Red-eyed Vireo (V. olivaceus). (e)
66. "Yellow warbler. Dendroica aestiva." Yellow Warbler (D. petichia). (e)
67. "red start." American Redstart (Setaphoga ruticilla). (e)
68. "Bob-o-link." "Rice birds." Bobolink (Dolichonyx oryzivorus). (a).
69. "New meadow lark." Western meadow lark (Sturnella neglecta). (a)
 "western lark." (c) (g)

70. "Yellowheaded blackbird. Xanthocephalus icterocephalus." Yellow-headed Blackbird (X. xanthocephalus). (e)
71. "Common Red-winged Starling." Red-winged Blackbird (Agelaius phoeniceus). (b)
72. "Baltimore oriole. Icterus baltimore." Northern Oriole (I. galbula). (c)
73. "Rusty Grackle (Brewer's blackbird)." Either common Grackle (Quiscolus quiscola) or Brewer's Blackbird (Euphagus cyanocephalus). Rusty Blackbird (E. carolinus) unlikely. (a)
- "Blackbird. Quiscolus brewerii of Audubon = Scolecophagus cyanocephalus. Had already been described by Wagler from Mexico as Psarocolius cyanophalus. (b)
- "Brewer's blackbird. Scolecophagus cyanociphalus." (E. cyanocephalus). (e)
74. "Cow black bird. Cowbird. Molothrus pecoris." Brown-headed cowbird (M. ater). (e)
75. "Western tanager (Louisiana tanager) Piranga ludoviciana." Western Tanager (P. ludoviciana). (c)
76. "Blackheaded Grosbeak." Blackheaded Grosbeak (Pheucticus melanocephalus). (a) (b)
- "Black-headed grosbeak. Gueraca (sic) melanocephala." (e)
- "Pine finch. Chrysometris pinus." ?
77. "Lazuli finch." Lazuli Bunting (Passerina amoena). (a) (b)
- "Lazuli finch. Cyanospiza amoena. (e)
78. "robin. Pipilo arcticus." ? Possibly Rufus-sided Towhee (Pipilo erythrophthalmus) (e) "P. arcticus." (h)
79. "Lark bunting." Lark Bunting (Calamospiza melanocorys). (a)
- "Arctic ground finch." (b)
80. "Baird's Bunting." Baird's Sparrow (Ammodramus bairdii). (a)
81. "finch ... resembles Henslow's Bunting, its note similar to the short-billed Marsh wren of Nuttal." Probably LeConte's Sparrow (Passerberbulus caudacutus). (a)
82. "Bay winged Buntings." Vesper sparrow (Poocetes gramineus). (a)
- "grass finch; bay-winged bunting. P. gramineus." (c)

83. "lark finch. Chondestes grammaca." Lark Sparrow (C. grammacus). (e)
84. "Enberiza pallida." Clay-colored sparrow (Spizella pallida). (a)
"Clay-colored bunting." (e) (h)
85. "field sparrow." Field Sparrow (Spizella pusilla). (e)
86. "Harris' finch." Harris' Sparrow (Zonotrichia querula). (e)
87. "White-crowned sparrow." White-crowned Sparrow (Zonotrichia leucophrys). (e)
88. "Lincoln's finch." Lincoln's Sparrow (Melospiza lincolni). (e)
89. "Chestnut-collared Lark finch." Chestnut-collared Longspur (Calcarius ornatus). (a)
"Red-collared Ground Finch = Chestnut-collared Longspur (Calcarius ornatus)."
"Black-breasted Prairie Bunting." (b)
"Chestnut-collared bunting. Plectrophanes ornatus." Snow Bunting (Plectrophenax nivalis) unlikely. (e) (h)

MAMMALS

1. "Sorex cooperi. Hayden's Shrew (S. haydeni).\" Indeterminate. Most likely Masked Shrew (S. cinereus) or the more uncommon Merriam Shrew (S. merriami). (e)
2. "black bear on White Earth River ... 'rare' ..." Black Bear (Ursus americanus). (b)
3. "grizzly bear." Grizzly Bear (Ursus horribilus). (b)
"bear. Ursus ferox." (d)
(e)
4. "Putorius longicauda. ermine." Short-tailed Weasel (Mustela erminea). (e)
5. "Gulo luscus. Wolverine. Wolverine (G. gulo). (e)
6. "Mephitis mephitis. Skunk." Striped Skunk (M. mephitis). (e)
7. "badger." Badger (Taxidea taxus). (a)
"T. americana. American badger." (e)
8. "Otter." River Otter (Lutra canadensis). (b)
9. "Red Fox." Red Fox (Vulpes vulpes). (a)
"Red Fox. Vulpes utah or V. macrouris. W. variety of the Common Red Fox, V. fulvus (sic) macrouris." (b)
Possibly refers to Kit Fox (V. macrotis).
10. "Swift fox" Swift Fox (Vulpes velox). (a)
"Kit fox." "Kit or Swift Fox." (b)
"prairie fox." (d)
"Vulpes macrouris. Prairie fox. V. velox. Kit or swift fox." (e)
Swift and kit foxes are now rare, the latter possibly extinct.
11. "Canis latrans (Say). Prairie wolf, coyote." Coyote (C. latrans). (e)
12. "white wolf." Gray Wolf (Timber Wolf) (Canis lupus). (b)
"wolf." (d)
"Canis occidentalis var. griseoallius. gray wolf." "Canis occidentalis var. nubilus. dusky wolf." (e)

13. "Felis concolor. The American panther." Mountain Lion (F. concolor). (e)
14. "Lynx canadensis. Canadian Lynx (L. canadensis). (e)
15. "Spermophile." "Spermophilus hoodii of Richardson = S. tridecemlineatus or Federation spermophile; variety found at Fort Union is S. t. pallidus." Thirteen-lined Ground Squirrel (Citellus tridecemlineatus). (b)
- "S. tridecem-lineatus. Stripped (sic)prairie squirrel." (e)
16. "Cynomys ludovicianus. Missouri prairie dog. Blacktail Prairie Dog (C. ludovicianus). (e)
17. "Small Tamias." Least Chipmunk (Eutamias minimus.) (b)
- "Tamias quadrivittatus." Possibly E. minimus. The Colorado chipmunk (E. quadrivittatus) is not found in this area. (b) (d)
- "T. quadrivittatus." (e)
18. "Thomomys rufescens. Fort Union Gopher." Probably Northern Pocket Gopher (Thomomys talpoides). (e)
19. "beaver." Beaver (Castor canadensis). (d)
- "C. canadensis. American beaver. (e)
20. "mouse." Indeterminate. Most probably Harvest Mouse (Reithrodontomys megalotis) or Northern Grasshopper mouse (Onychomys leucogaster); possibly Deer Mouse (Peromyscus manicumlatus) or White-footed Mouse (P. leucopus). (d)
21. "Neotoma cinerea." Bushytail Woodrat (N. cinerea). (e)
22. "Muskrat." Muskrat (Ondatra zibethica). (b) (d)
23. "Jaculus hudsonius. jumping mouse." Probably Prairie (or Meadow) Jumping Mouse (Zapus judsonius). (e)
24. "porcupine. ... species entirely different from those of our northern states and Canada." ? Porcupine (Erethizon dorsatum) (a)
- "porcupine." (b)
- "E. epixanthus. Yellow-haired porcupine." (e)
25. "Townsend hares." Whitetail Jackrabbit (Lepus townsendi). (a)
- "Townsend's Hare." (b)
- "Lepus campestris. Prairie hare." (e)

26. "hare. ...less in size than the common rabbit, with short ears and legs and a slender head, its feet and claws are completely hidden in a strong covering of hairs...." Probably the Desert Cottontail (Sylvilogus auduboni). Possibly Eastern Cottontail (S. floridans) or Mountain cottontail (S. nuttalli). (a)
- "small hare. Lepus artemisia. Now generally rated as a subspecies of common cottontail, L. sylvaticus." (b)
- "L. sylvaticus. gray rabbit." "L. artemesia. sage rabbit." (c)
27. "elk." Elk (Wapiti) (Cervus canadensis). (d)
- "Cervus canadensis. American elk." (e)
28. "Long-tailed deer." Whitetail Deer (Odocoileus virginianus).
- "Cervus leucurus. White-tailed deer." (e)
29. "Common deer." "Mule or Black-tailed Deer." Mule Deer (Odocoileus hemionus). (a)
- "Cervus macroles. Mule deer." (e)
30. "antelope are called Kabri (or cabri)..." Pronghorn (Antilocapra americana). (a)
- Comment that: antelope (is) next in abundance to bison. (c) (d) (e)
31. "buffalo." Bison (Buffalo) (Bison bison). (d)
- "Bos americanus. American buffalo." (e)
32. "Bighorns." Bighorn Sheep (Ovis canadensis). This was the Audubon's Bighorn (O. c. auduboni). (a)
- "O. montana. mountain sheep, bighorn." (e)

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APPENDIX 2

A checklist of current animals by habitat (vegetation type).

BIRDS BY HABITAT

Hardwood Bottomlands and Shrub Communities

Great Horned Owl
Red-headed Woodpecker
Hairy Woodpecker
Downy Woodpecker
Western Wood Pewee
Tree Swallow
House Wren
Gray Catbird
Red-eyed Vireo
Warbling Vireo
Yellow Warbler
Rufous-sided Towhee

Mixed -- Prairies and Woods

Turkey Vulture
Red-tailed Hawk
Ferruginous Hawk
Golden Eagle
Bald Eagle
Marsh Hawk
Prairie Falcon
Merlin
American Kestrel
Rock Dove
Mourning Dove
Common Flicker
Eastern Kingbird
Western Kingbird
Black-billed Magpie
Common Raven
Common Crow
Black-capped Chickadee
American Robin
Mountain Bluebird
Bohemian Waxwing
Cedar Waxwing
Starling
House Sparrow
Northern Oriole
Lazuli Bunting
American Goldfinch
Chipping Sparrow
Song Sparrow

Prairie (Sagebrush)

Sharp-tailed Grouse
 Sage Grouse
 Ring-necked Pheasant
 Gray Partridge
 Sora
 Killdeer
 Upland Sandpiper
 Burrowing Owl
 Short-eared Owl
 Common Nighthawk
 Horned Lark
 Bank Swallow
 Rough-winged Swallow
 Barn Swallow
 Cliff Swallow
 Rock Wren
 Sprague's Pipit
 Loggerhead Shrike
 Bobolink
 Western Meadowlark
 Lark Bunting
 Savannah Sparrow
 Grasshopper Sparrow
 Vesper Sparrow
 Lark Sparrow
 Chipping Sparrow
 Clay-colored Sparrow
 Brewer's Sparrow

Shore (Including Willow Bottomlands and Shrub Communities)

Killdeer
 Common Snipe
 Long-billed Curlew
 Upland Sandpiper
 Spotted Sandpiper
 Solitary Sandpiper
 Willet
 American Avocet
 Wilson's Phalarope
 Short-eared Owl
 Common Nighthawk
 Say's Phoebe
 Least Flycatcher
 Western Wood Pewee
 Tree Swallow
 Bank Swallow
 Rough-winged Swallow
 Barn Swallow
 Cliff Swallow

continued

Shore (cont.)

House Wren
Rock Wren
Gray Catbird
Red-eyed Vireo
Warbling Vireo
Yellow Warbler
Common Yellowthroat
Yellow-breasted Chat
American Redstart
Bobolink
Yellow-headed Blackbird
Red-winged Blackbird
Brewer's Blackbird
Common Grackle
Brown-headed Grackle
Chestnut-collard Longspur —

Water (Including ponds)

Eared Grebe
Western Grebe
Pied-billed Grebe
White Pelican
Double-crested Cormorant
Great Blue Heron
Black-crowned Night Heron
American Bittern
Canada Goose
Mallard
Gadwall
Pintail
Green-winged Teal
Blue-winged TEal
American Wigeon
Northern Shoveler
Redhead
Canvasback
Lesser Scaup
Common Goldeneye
Ruddy Duck
American Coot
California Gull
Ring-billed Gull
Belted Kingfisher

MAMMALS BY HABITAT

Hardwood Bottomlands

Masked Shrew
Little Brown Bat
Little Long-eared Bat
Say Bat
Big Brown Bat
Red Bat
Hoary Bat
Silver-haired Bat
Black Bear
Long-tailed Weasel
Least Weasel
Raccoon
Red Fox
Beaver
Ord Kangaroo Rat
Harvest Mouse
Deer Mouse
White-footed Mouse
Bush-tailed Wood Rat
Meadow Vole
Muskrat
Porcupine
White-tailed Deer

Willow Bottomland

Little Brown Bat
Little Long-eared Bat
Say Bat
Big Brown Bat
Red Bat
Hoary Bat
Silver-haired Bat
Black Bear
Long-tailed Weasel
Raccoon
Beaver
Ord Kangaroo Rat
Harvest Mouse
White-footed Mouse
Bush-tailed Wood Rat
Deer Mouse
Meadow Vole
Muskrat

Upland Hills

Merriam Shrew
Grizzly Bear
Black-footed Ferret
Badger
Swift Fox
Coyote
Gray Wolf
Bobcat
Richardson Ground Squirrel
Thirteen-line Ground Squirrel
Black-tailed Prairie Dog
Least Chipmunk
Ord Kangaroo Rat
Grasshopper Mouse
Prairie Vole
White-tailed Jack Rabbit
Desert Cottontail
Elk
Mule Deer
Pronghorn Antelope
Bison

Upland Prairie

Merriam Shrew
Grizzly Bear
Black-footed Ferret
Striped Skunk
Badger
Swift Fox
Coyote
Gray Wolf
Richardson Ground Squirrel
Thirteen-line Ground Squirrel
Black-tailed Prairie Dog
Least Chipmunk
Ord Kangaroo Rat
Grasshopper Mouse
Prairie Vole
White-tailed Jack Rabbit
Desert Cottontail
Elk
Mule Deer
Pronghorn Antelope
Bison

Lowland Prairies

Merriam Shrew
Little Brown Bat
Little Long-eared Bat
Say Bat
Big Brown Bat
Red Bat
Hoary Bat
Silver-haired Bat
Grizzly Bear
Long-tailed Weasel
Black-footed Ferret
Striped Skunk
Badger
Red Fox
Swift Fox
Swift Fox
Coyote
Gray Wolf
Bobcat
Richardson Ground Squirrel
Thirteen-line Ground Squirrel
Black-tailed Prairie Dog
Least Chipmunk
Ord Kangaroo Rat
Grasshopper Mouse
Harvest Mouse
Deer Mouse
Prairie Vole
White-tailed Jack Rabbit
Desert Cottontail
Elk
Mule Deer
Pronghorn Antelope
Bison

Hardwood Draws

Masked Shrew
Least Weasel
Striped Skunk
Coyote
Mountain Lion
Bobcat
Porcupine
White-tailed Deer

River Edge

Little Brown Bat
Little Long-eared Bat
Say Bat
Big Brown Bat
Red Bat
Hoary Bat
Silver-haired Bat
Long-tailed Weasel
Mink
Otter
Raccoon
Beaver
Muskrat

APPENDIX 3

A list of accepted common names of the animals with their scientific names.

TOADS

Canadian Toad	<u>Bufo hemiophrys</u>
Great Plains Toad	<u>Bufo cognatus</u>
Rocky Mountain Toad	<u>Bufo woodhousii</u>

SNAKES

Racer	<u>Coluber constrictor</u>
Hog-nosed Snake	<u>Heterodon nasicus</u>
Bull Snake	<u>Pituophis catenifer</u>
Plains Garter Snake	<u>Thamnophis radix</u>
Common Garter Snake	<u>Thamnophis sirtalis</u>
Prairie Rattlesnake	<u>Crotalus viridis</u>

TURTLES

Common Snapping Turtle	<u>Chelydra serpentina</u>
Painted Turtle	<u>Chrysemys picta</u>
Western Spiney Softshell	<u>Trionyx spiniferus hartwegi</u>

BIRDS

✕ Eared Grebe	<u>Podiceps nigricollis</u>
✓ Western Grebe	<u>Aechmophorus occidentalis</u>
✕ Pied-billed Grebe	<u>Podilymbus podiceps</u>
✓ White Pelican	<u>Pelecanus erythrorhynchos</u>
✕ Double-crested Cormorant	<u>Phalacrocorax auritus</u>
✓ Great Blue Heron	<u>Ardea herodias</u>
✓ American Bittern	<u>Botaurus lentiginosus</u>
✓ Canada Goose	<u>Branta canadensis</u>
✓ Mallard	<u>Anas platyrhynchos</u>
✓ Gadwall	<u>Anas strepera</u>
✓ Pintail	<u>Anas acuta</u>
✓ Green-winged Teal	<u>Anas crecca</u>
✓ Blue-winged Teal	<u>Anas discors</u>
✓ American Wigeon	<u>Anas americana</u>
✓ Northern Shoveler	<u>Anas clypeata</u>
✕ Redhead	<u>Aythya americana</u>
✓ Canvasback	<u>Aythya valisineria</u>
✓ Lesser Scaup	<u>Aythya affinis</u>
✓ Common Goldeneye	<u>Bucephala clangula</u>
✓ Ruddy Duck	<u>Oxyura jamaicensis</u>
✕ Turkey Vulture	<u>Cathartes aura</u>
✓ Red-tailed Hawk	<u>Buteo jamaicensis</u>
✓ Ferruginous Hawk	<u>Buteo regalis</u>
✕ Golden Eagle	<u>Aquila chrysaetos</u>
✓ Bald Eagle	<u>Haliaeetus leucocephalus</u>
✓ Marsh Hawk	<u>Circus cyaneus</u>

✓ Prairie Falcon	<u>Falco mexicanus</u>
✓ Merlin	<u>Falco columbarius</u>
✓ American Kestrel	<u>Falco sparverius</u>
✓ Sharp-tailed Grouse	<u>Pediocetes phasianellus</u> <i>Pediocetes</i>
✓ Sage Grouse	<u>Centrocercus urophasianus</u>
✓ Ring-necked Pheasant	<u>Phasianus colchicus</u>
✓ Gray Partridge	<u>Perdix perdix</u>
✓ Sora	<u>Porzana carolina</u>
✓ American Coot	<u>Fulica americana</u>
✓ Killdeer	<u>Charadrius vociferus</u>
✓ Common Snipe	<u>Capella gallinago</u>
✓ Long-billed Curlew	<u>Numenius americanus</u>
✓ Upland Sandpiper	<u>Bartramia longicauda</u>
✓ Spotted Sandpiper	<u>Actitis macularia</u>
✓ Solitary Sandpiper	<u>Tringa solitaria</u>
✓ Willet	<u>Catoptrophorus semipalmatus</u>
✓ American Avocet	<u>Recurvirostra americana</u>
✓ Wilson's Phalarope	<u>Steganopus tricolor</u>
✓ California Gull	<u>Larus californicus</u>
✓ Ring-billed Gull	<u>Larus delawarensis</u>
✓ Rock Dove	<u>Columba livia</u>
✓ Mourning Dove	<u>Zenaida macroura</u>
✓ Great Horned Owl	<u>Bubo virginianus</u>
✓ Burrowing Owl	<u>Athene cunicularia</u>
✓ Short-eared Owl	<u>Aegolius funereus</u>
✓ Common Nighthawk	<u>Chordeiles minor</u>
✓ Belted Kingfisher	<u>Megasceryle alcyon</u>

X Common Flicker	<u>Colaptes aur^aatus</u>
X Red-headed Woodpecker	<u>Melanerpes erythrocephalus</u>
X Hairy Woodpecker	<u>Picoides villosus</u>
X Downy Woodpecker	<u>Picoides pubescens</u>
X Eastern Kingbird	<u>Tyrannus tyrannus</u>
X Western Kingbird	<u>Tyrannus verticalis</u>
X Say's Phoebe	<u>Sayornis phoebe</u>
X Least Flycatcher	<u>Empidonax minimus</u>
X Western Wood Pewee	<u>Contopus sordidulus</u>
Horned Lark	<u>Eremophila alpestris</u>
X Tree Swallow	<u>Iridoprocne bicolor</u>
X Bank Swallow	<u>Riparia riparia</u>
X Rough-winged Swallow	<u>Stelgidopteryx ruficollis</u>
X Barn Swallow	<u>Hirundo rustica</u>
X Cliff Swallow	<u>Petrochelidon pyrrhonota</u>
X Black-billed Magpie	<u>Pica pica</u>
X Common Raven	<u>Corvus corax</u>
X Common Crow	<u>Corvus brachyrhynchos</u>
X Black-capped Chickadee	<u>Parus atricapillus</u>
X House Wren	<u>Troglodytes aedon</u>
Rock Wren	<u>Salpinctes obsoletus</u>
X Gray Catbird	<u>Dumetella carolinensis</u>
X American Robin	<u>Turdus migratorius</u>
X Mountain Bluebird	<u>Sialia currucoides</u>
X Sprague's Pipit	<u>Anthus spragueii</u>
X Bohemian Waxwing	<u>Bombycilla garrulus</u>
X Cedar Waxwing	<u>Bombycilla cedrorum</u>

✓ Loggerhead Shrike	<u>Lanius ludovicianus</u>
× Starling	<u>Sturnus vulgaris</u>
× Red-eyed Vireo	<u>Vireo olivaceus</u>
✓ Warbling Vireo	<u>Vireo gilvus</u>
✓ Yellow Warbler	<u>Dendroica petechia</u>
× Common Yellowthroat	<u>Geothlypis trichas</u>
✓ Yellow-breasted Chat	<u>Icteria virens</u>
× American Redstart	<u>Setophaga ruticilla</u>
✓ House Sparrow	<u>Passer domesticus</u>
× Bobolink	<u>Dolichonyx oryzivorus</u>
× Western Meadowlark	<u>Sturnella neglecta</u>
✓ Yellow-headed Blackbird	<u>Xanthocephalus xanthocephalus</u>
✓ Red-winged Blackbird	<u>Agelaius phoeniceus</u>
✓ Northern Oriole	<u>Icterus galbula</u>
✓ Brewer's Blackbird	Euphagus <u>Euphaga cyanocephalus</u>
✓ Common Grackle	<u>Quiscalus quiscula</u>
✓ Brown-headed Cowbird	<u>Molothrus ater</u>
✓ Lazuli Bunting	<u>Passerina amoena</u>
✓ American Goldfinch	<u>Carduelis tristis</u>
✓ Rufous-sided Towhee	<u>Pipilo erythrophthalmus</u>
✓ Lark Bunting	<u>Calamospiza melanocorys</u>
✓ Savannah Sparrow	<u>Passerculus sandwichensis</u>
✓ Grasshopper Sparrow	Ammodramus <u>Passerculus savannarum</u>
✓ Vesper Sparrow	<u>Pooecetes gramineus</u>
✓ Lark Sparrow	<u>Chondestes grammacus</u>
✓ Chipping Sparrow	<u>Spizella passerina</u>
✓ Clay-colored Sparrow	<u>Spizella pallida</u>

+ Brewer's Sparrow

Spizella breweri

X Song Sparrow

Melospiza melodia

Smith's Longspur

Calcarius pictus

MAMMALS

✓ Masked Shrew	<u>Sorex cinereus</u>
✓ Merriam Shrew	<u>Sorex merriami</u>
✓ Little Brown Bat	<u>Myotis lucifugus</u>
✗ Little Long-eared Bat	<u>Myotis evotis</u>
✓ Say Bat	<u>Myotis subulatus</u>
✓ Big Brown Bat	<u>Eptesicus fuscus</u>
Red Bat	<u>Lasiurus borealis</u>
✓ Hoary Bat	<u>Lasiurus cinereus</u>
Silver-haired Bat	<u>Lasionycteris noctivagans</u>
Black Bear <small>not entered into n species</small>	<u>Ursus americanus</u>
Grizzly Bear	<u>Ursus arctos</u>
Long-tailed Weasel	<u>Mustela frenata</u>
Least Weasel	<u>Mustela rixosa nivalis</u>
✓ Mink	<u>Mustela vison</u>
✗ Black-footed Ferret <small>not entered into n species</small>	<u>Mustela nigripes</u>
Striped Skunk	<u>Mephitis mephitis</u>
✗ Badger	<u>Taxidea taxus</u>
✓ Otter	<u>Lutra canadensis</u> <i>Lutrinae</i>
✓ Raccoon	<u>Procyon lotor</u>
✓ Red Fox	<u>Vulpes vulpes</u>
Swift Fox	<u>Vulpes velox</u>
Coyote	<u>Canis latrans</u>
✓ Gray Wolf	<u>Canis lupus</u>
✓ Richardson Ground Squirrel	<u>Citellus richardsonii</u> <i>Spermophilus</i>
Thirteen-line Ground Squirrel	<u>Citellus tridecemlineatus</u> <i>Spermophilus</i>

✕ Black-tailed Prairie Dog	<u>Cynomys ludovicianus</u>
✕ Least Chipmunk	^{Tamias} Eutamias <u>minimus</u>
✕ Beaver	<u>Castor canadensis</u>
✕ Ord Kangaroo Rat	<u>Dipodomys ordii</u>
✕ Grasshopper Mouse	<u>Onychomys leucogaster</u>
✕ Harvest Mouse	<u>Reithrodontomys megalotis</u>
✕ Deer Mouse	<u>Peromyscus maniculatus</u>
✕ White-footed Mouse	<u>Peromyscus leucopus</u>
✕ Bush-tailed Wood Rat	<u>Neotoma cinerea</u>
✕ Meadow Vole	<u>Microtus pennsylvanicus</u>
✕ Prairie Vole	<u>Microtus ochrogaster</u>
✕ Muskrat	<u>Ondatra zibethica</u>
House Mouse	<u>Mus musculus</u>
✕ Porcupine	<u>Erethizon dorsatum</u>
✕ White-tailed Jack Rabbit	<u>Lepus townsendii</u>
✕ Desert Cottontail	<u>Sylvilagus audubonii</u>
Elk	<u>Cervus canadensis elaphus</u>
✕ White-tailed Deer	<u>Odocoileus virginianus</u>
✕ Mule Deer	<u>Odocoileus hemionus</u>
✕ Pronghorn Antelope	<u>Antilocapra americana</u>
✕ Bison	<u>Bison bison bison</u>

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