Environmental Summary

MONTANA
Natural Heritage Program

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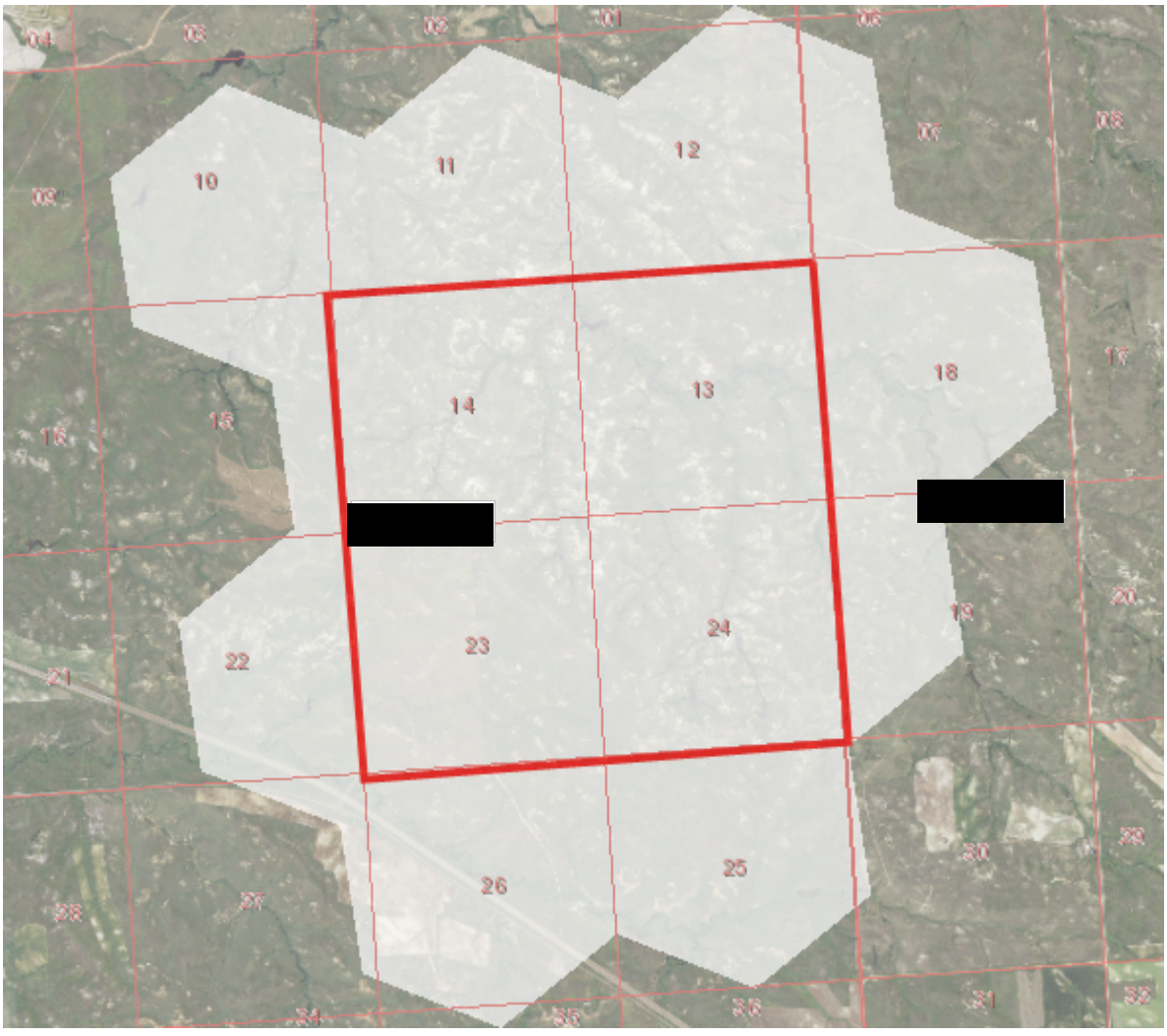
Latitude [redacted] Longitude [redacted]



Suggested Citation

[redacted]tural Heritage Program. Environmental Summary Report.
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The Montana Natural Heritage Program is a program of the Montana State Library's Natural Resource Information System. It is operated as a special program under the Office of the Vice President for Research and Creative Scholarship at the University of Montana, Missoula.

The Montana Natural Heritage Program is part of NatureServe – a network of over 80 similar programs in states, provinces and nations throughout the Western Hemisphere, working to provide comprehensive status and distribution information for species and ecosystems.

Montana Natural Heritage Program | Montana State Library | University of Montana | NatureServe

Table of Contents

Introduction to Environmental Summary Report

The Environmental Summary report for your area of interest consists of introductory and related materials in this PDF and an Excel workbook with worksheets summarizing information managed in the Montana Natural Heritage Program's (MTNHP) databases for: (1) species occurrences; (2) other observed species without Species Occurrences; (3) other species potentially present based on their range, presence of associated habitats, or predictive distribution model output if available; (4) structured surveys (organized efforts following a protocol capable of detecting one or more species); (5) land cover mapped as ecological systems; (6) wetland and riparian mapping; (7) land management categories; and (8) biological reports associated with plant and animal observations. In order to do this in a consistent manner across Montana and allow for rapid delivery of summaries, we have intersected this information with a uniform grid of hexagons that have been used for planning efforts across the western United States (e.g. Western Association of Fish and Wildlife Agencies - Crucial Habitat Assessment Tool). Each hexagon is one square mile in area and approximately one kilometer in length on each side. Summary information for each data layer is then stored with each hexagon and those summaries are added up to an overall summary for the report area you have requested. Users should be aware that summaries do not correspond to the exact boundaries of the polygon they have specified, but instead are a summary across all hexagons intersected by the polygon they specified.

In presenting this information, MTNHP is working towards assisting the user with rapidly assessing the known or potential species and biological communities, land management categories, and biological reports associated with the report area. We remind users that this information is likely incomplete and may be inaccurate as surveys to document species are lacking in many areas of the state, species' range polygons often include regions of unsuitable habitat, methods of predicting the presence of species or communities are constantly improving, and information is constantly being added and updated in our databases. **Field verification by professional biologists of the absence or presence of species and biological communities in a report area will always be an important obligation of users of our data. Users are encouraged to only use this environmental summary report as a starting point for more in depth analyses and are encouraged to contact state, federal, and tribal resource management agencies for additional data or management guidelines relevant to your efforts. Please see the Appendix for introductory materials to each section of the report, additional information resources, and a list of relevant agency contacts.**

MONTANA Natural Heritage Program

A program of the **Montana State Library's Natural Resource Information System** operated by the **University of Montana**.

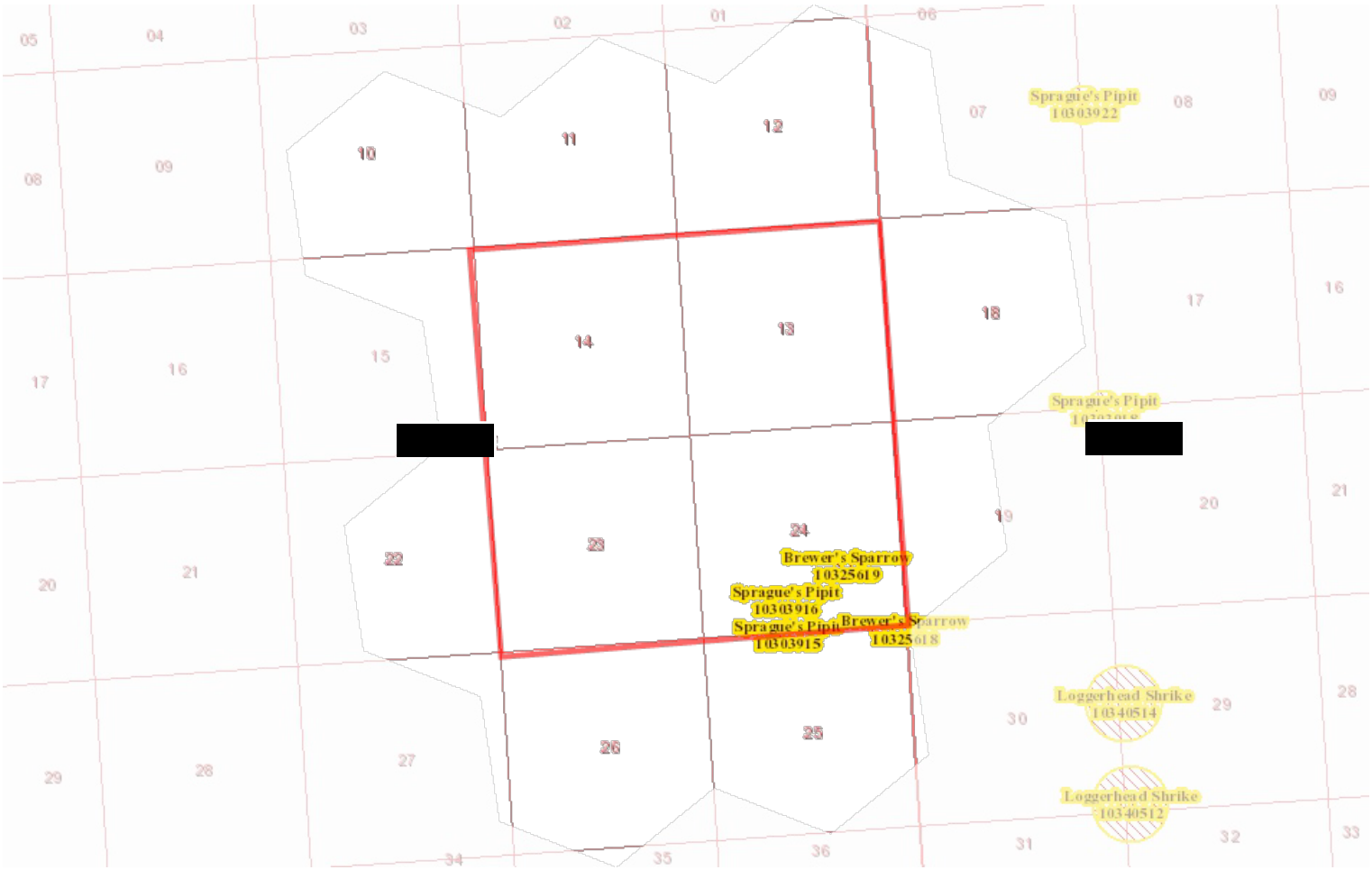
Legend

Model Icons	Habitat Icons	Range Icons
N Suitable (native range)	C Common	I Introduced Range
O Optimal Suitability	O Occasional	Y Year-round Range
M Moderate Suitability		S Summer Range
L Low Suitability		W Winter Range
I Suitable (introduced range)		M Migratory Range
		H Historic Range

Num Obs
Count of obs with 'good precision' (<=1000m)
+ indicates additional 'poor precision' obs (1001m-10,000m)

Species Summary

Filtered by:
MT_Status='Species of Concern','Special Status','Important Animal Habitat','Potential SOC'



Species Occurrences

	# SO	# Obs	Predictive Model	Associated Habitat	Range
B - Sprague's Pipit *(Anthus spragueii)* SOC	2	2			S M

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps

Species of Concern Global: **G3G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 115 meters in order to encompass the maximum breeding territory sizes reported for the species in Montana and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Dec 28, 2016)

Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 30% Common, O 45% Occasional

	# SO	# Obs	Predictive Model	Associated Habitat	Range
B - Brewer's Sparrow *(Spizella breweri)* SOC	2	2			S M

View in Field Guide | View Predicted Models | View Associated Habitat | View Range Maps

Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**

Delineation Criteria Confirmed breeding area based on the presence of a nest, chicks, or territorial adults during the breeding season. Point observation location is buffered by a minimum distance of 100 meters in order to encompass the maximum territory size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters. (Last Updated: Apr 03, 2017)

Predictive Models: L 100% Low (inductive) **Associated Habitats:** O 2% Occasional

Other Observed Species

	# Obs	Predictive Model	Associated Habitat	Range
B - Sharp-tailed Grouse *(Tympanuchus phasianellus)* SOC	1	Not Available		Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **SX,S4** FWP SWAP: **SGCN1** PIF: **2**
Associated Habitats: C 87% Common, O 8% Occasional

M - Swift Fox *(Vulpes velox)* **SOC** 1 Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G3** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Associated Habitats: C 30% Common, O 47% Occasional

Other Potential Species

Predictive Model | Associated Habitat | Range

B - Loggerhead Shrike *(Lanius ludovicianus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: M 100% Moderate (inductive) **Associated Habitats:** C 90% Common, O 8% Occasional

R - Greater Short-horned Lizard *(Phrynosoma hernandesi)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** USFS: **Sensitive - Known on Forests (CG) Sensitive - Suspected on Forests (HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**
Predictive Models: M 100% Moderate (inductive) **Associated Habitats:** C 77% Common

B - Bobolink *(Dolichonyx oryzivorus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: M 100% Moderate (inductive) **Associated Habitats:** C 40% Common, O 1% Occasional

M - Merriam's Shrew *(Sorex merriami)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: M 91% Moderate (inductive), L 9% Low (inductive) **Associated Habitats:** C 74% Common, O 3% Occasional

A - Northern Leopard Frog *(Lithobates pipiens)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S1,S4** USFS: **Sensitive - Known on Forests (CG, HLC, KOOT) Sensitive - Suspected on Forests (BRT, FLAT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN1**
Predictive Models: M 82% Moderate (inductive), L 18% Low (inductive) **Associated Habitats:** C 2% Common, O 13% Occasional

M - Hoary Bat *(Lasiurus cinereus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G3G4** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: M 55% Moderate (inductive), L 45% Low (inductive) **Associated Habitats:** C 44% Common, O 54% Occasional

M - Silver-haired Bat *(Lasionycteris noctivagans)* **PSOC** Y S W M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern Global: **G3G4** State: **S4**
Predictive Models: M 45% Moderate (inductive), L 55% Low (inductive) **Associated Habitats:** C 44% Common, O 8% Occasional

M - Eastern Red Bat *(Lasiurus borealis)* **PSOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Potential Species of Concern Global: **G3G4** State: **SU**
Predictive Models: M 45% Moderate (inductive), L 55% Low (inductive) **Associated Habitats:** C 14% Common, O 75% Occasional

R - Plains Hog-nosed Snake *(Heterodon nasicus)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2, SGIN**
Predictive Models: M 18% Moderate (inductive), L 82% Low (inductive) **Associated Habitats:** C 77% Common, O 1% Occasional

M - Dwarf Shrew *(Sorex nanus)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S2S3** FWP SWAP: **SGCN2-3**
Predictive Models: M 18% Moderate (inductive), L 82% Low (inductive) **Associated Habitats:** C 34% Common, O 1% Occasional

B - Long-billed Curlew *(Numenius americanus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: M 18% Moderate (inductive), L 82% Low (inductive) **Associated Habitats:** C 30% Common, O 45% Occasional

B - Yellow-billed Cuckoo *(Coccyzus americanus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **PS: LT; MBTA; BCC10** USFS: **Threatened on Forests (BRT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN** PIF: **2**
Predictive Models: M 18% Moderate (inductive), L 82% Low (inductive) **Associated Habitats:** C 14% Common

B - Burrowing Owl *(Athene cunicularia)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC17** USFS: **Sensitive - Known on Forests (CG)** **Sensitive - Suspected on Forests (HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predictive Models: M 9% Moderate (inductive), L 91% Low (inductive) **Associated Habitats:** C 33% Common, O 43% Occasional

M - Little Brown Myotis *(Myotis lucifugus)* **SOC** Y S W M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G3** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 90% Common, O 8% Occasional

A - Plains Spadefoot *(Spea bombifrons)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** USFS: **Sensitive - Known on Forests (HLC)** **Sensitive - Suspected on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 90% Common, O 1% Occasional

B - Ferruginous Hawk *(Buteo regalis)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 90% Common, O 1% Occasional

M - Preble's Shrew *(Sorex preblei)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 88% Common

A - Great Plains Toad *(Anaxyrus cognatus)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 77% Common, O 1% Occasional

M - Black-tailed Prairie Dog *(Cynomys ludovicianus)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 75% Common, O 10% Occasional

B - Chestnut-collared Longspur *(Calcarius ornatus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 75% Common, O 1% Occasional

B - Baird's Sparrow *(Ammodramus bairdii)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 74% Common, O 1% Occasional

B - Greater Sage-Grouse *(Centrocercus urophasianus)* **SOC** Y S W

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G3G4** State: **S2** USFS: **Sensitive - Known on Forests (BD)** **Sensitive - Suspected on Forests (CG, HLC)** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 31% Common, O 46% Occasional

B - Red-headed Woodpecker *(Melanerpes erythrocephalus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 14% Common, O 1% Occasional

B - Black-billed Cuckoo *(Coccyzus erythropthalmus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** FWP SWAP: **SGCN3, SGIN** PIF: **2**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** C 14% Common

B - Sage Thrasher *(Oreoscoptes montanus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 100% Low (inductive) **Associated Habitats:** O 2% Occasional

B - Golden Eagle *(Aquila chrysaetos)* **SOC** Y S W M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** USFWS: **BGEPA; MBTA; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: L 64% Low (inductive) **Associated Habitats:** C 90% Common, O 8% Occasional

M - Townsend's Big-eared Bat *(Corynorhinus townsendii)* **SOC** Y S W M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (BD, BRT, CG, FLAT, HLC, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Predictive Models: L 64% Low (inductive) **Associated Habitats:** C 44% Common, O 11% Occasional

B - American Bittern *(Botaurus lentiginosus)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **3**
Predictive Models: L 64% Low (inductive) **Associated Habitats:** C 2% Common

B - Veery *(Catharus fuscescens)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 36% Low (inductive) **Associated Habitats:** C 14% Common

B - Black Tern *(Chlidonias niger)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4G5** State: **S3B** USFWS: **MBTA; BCC11** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Predictive Models: L 36% Low (inductive) **Associated Habitats:** C 1% Common, O 2% Occasional

B - Great Blue Heron *(Ardea herodias)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3**
Predictive Models: L 18% Low (inductive) **Associated Habitats:** C 2% Common

M - Spotted Bat *(Euderma maculatum)* **SOC** S M

View in Field Guide View Predicted Models View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** USFS: **Sensitive - Known on Forests (BD, CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**
Predictive Models: L 9% Low (inductive) **Associated Habitats:** C 77% Common, O 21% Occasional

M - Hayden's Shrew *(Sorex haydeni)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S3S4**
Associated Habitats: C 98% Common

R - Western Milksnake *(Lampropeltis gentilis)* **SOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S2** USFS: **Sensitive - Known on Forests (CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN2**
Associated Habitats: C 90% Common, O 8% Occasional

B - Common Poorwill *(Phalaenoptilus nuttallii)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**
Associated Habitats: C 90% Common, O 8% Occasional

B - Eastern Bluebird *(Sialia sialis)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4B** USFWS: **MBTA**
Associated Habitats: C 87% Common, O 1% Occasional

M - Meadow Jumping Mouse *(Zapus hudsonius)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **SU** FWP SWAP: **SGIN**
Associated Habitats: C 87% Common

B - Short-eared Owl *(Asio flammeus)* **PSOC** Not Available Y S W M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4** USFWS: **MBTA; BCC11; BCC17** PIF: **3**
Associated Habitats: C 83% Common, O 13% Occasional

B - Dickcissel *(Spiza americana)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4B** USFWS: **MBTA; BCC11; BCC17**
Associated Habitats: C 75% Common, O 8% Occasional

M - Black-footed Ferret *(Mustela nigripes)* **SOC** Not Available H

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G1** State: **S1** USFWS: **LE,XN** USFS: **Endangered, Experimental Nonessential on Forests (CG)** BLM: **SPECIAL STATUS** FWP SWAP: **SGCN1**
Associated Habitats: C 75% Common

M - White-footed Mouse *(Peromyscus leucopus)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4**
Associated Habitats: C 53% Common

M - Porcupine *(Erethizon dorsatum)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4** FWP SWAP: **SGIN**
Associated Habitats: C 44% Common, O 43% Occasional

B - Mountain Plover *(Charadrius montanus)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G3** State: **S2B** USFWS: **MBTA; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **1**
Associated Habitats: C 33% Common

B - McCown's Longspur *(Rhynchophanes mccownii)* **SOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA; BCC10; BCC11; BCC17** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 30% Common, O 11% Occasional

B - Chimney Swift *(Chaetura pelagica)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G4G5** State: **S3S4B** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **3**
Associated Habitats: C 15% Common, O 84% Occasional

M - Grizzly Bear *(Ursus arctos)* **SOC** Not Available H

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S2S3** USFWS: **PS: LT; XN; DM** USFS: **Threatened on Forests (BD, CG, FLAT, HLC, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN2-3**
Associated Habitats: C 14% Common, O 30% Occasional

I - Polygonia progne *(Gray Comma)* **SOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S2**
Associated Habitats: C 14% Common, O 3% Occasional

B - Black-and-white Warbler *(Mniotilta varia)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4B** USFWS: **MBTA**
Associated Habitats: C 14% Common, O 1% Occasional

B - Eastern Screech-Owl *(Megascops asio)* **PSOC** Not Available Y S W M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S3S4** USFWS: **MBTA** PIF: **3**
Associated Habitats: C 14% Common

B - Ovenbird *(Seiurus aurocapilla)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S4B** USFWS: **MBTA** PIF: **3**
Associated Habitats: C 14% Common

B - Plumbeous Vireo *(Vireo plumbeus)* **PSOC** Not Available S M

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S3S4B** USFWS: **MBTA** PIF: **3**
Associated Habitats: C 14% Common

B - Bald Eagle *(Haliaeetus leucocephalus)* **SSS** Not Available Y S W M

View in Field Guide View Associated Habitat View Range Maps
Special Status Species Global: **G5** State: **S4** USFWS: **DM; BGEPA; MBTA; BCC10; BCC11; BCC17** USFS: **Sensitive - Known on Forests (BD, BRT, CG, FLAT, HLC, KOOT, LOLO)** BLM: **SENSITIVE** PIF: **2**
Associated Habitats: C 2% Common, O 73% Occasional

B - Peregrine Falcon *(Falco peregrinus)* **SOC** Not Available Y S W M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** USFWS: **DM; MBTA; BCC10; BCC11; BCC17** USFS: **Sensitive - Known on Forests (BD, BRT, CG, FLAT, HLC, KOOT, LOLO)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 2% Common, O 30% Occasional

B - Whooping Crane *(Grus americana)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G1** State: **S1M** USFWS: **LE; MBTA** BLM: **SPECIAL STATUS** FWP SWAP: **SGCN1**
Associated Habitats: C 2% Common, O 8% Occasional

B - Pinyon Jay *(Gymnorhinus cyanocephalus)* **SOC** Not Available Y S W M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** USFWS: **MBTA; BCC17** FWP SWAP: **SGCN3**
Associated Habitats: C 2% Common, O 1% Occasional

M - Bison *(Bos bison)* **SOC** Not Available H

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S2** FWP SWAP: **SGCN2**
Associated Habitats: C 2% Common, O 1% Occasional

R - Snapping Turtle *(Chelydra serpentina)* **SOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3, SGIN**
Associated Habitats: C 2% Common

R - Spiny Softshell *(Apalone spinifera)* **SOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3** BLM: **SENSITIVE** FWP SWAP: **SGCN3**
Associated Habitats: C 2% Common

I - Enallagma clausum *(Alkali Bluet)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S2S4**
Associated Habitats: O 2% Occasional

I - Gomphus externus *(Plains Clubtail)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S2S4**
Associated Habitats: C 2% Common

I - Stylurus intricatus *(Brimstone Clubtail)* **SOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S1**
Associated Habitats: C 2% Common

B - Black-crowned Night-Heron *(Nycticorax nycticorax)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Associated Habitats: C 2% Common

B - Common Tern *(Sterna hirundo)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 2% Common

B - White-faced Ibis *(Plegadis chihi)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 2% Common

B - Franklin's Gull *(Leucophaeus pipixcan)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common, O 40% Occasional

I - Arigomphus cornutus *(Horned Clubtail)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G4** State: **S2S4**
Associated Habitats: C 1% Common, O 2% Occasional

I - Coenagrion angulatum *(Prairie Bluet)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S1S3**
Associated Habitats: C 1% Common, O 2% Occasional

I - Enallagma civile *(Familiar Bluet)* **PSOC** Not Available Y S W

View in Field Guide View Associated Habitat View Range Maps
Potential Species of Concern Global: **G5** State: **S2S4**
Associated Habitats: C 1% Common, O 2% Occasional

I - Gomphus graslinellus *(Pronghorn Clubtail)* **PSOC** — Not Available — Y S W

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S3S5**
Associated Habitats: C 1% Common, O 2% Occasional

B - Black-necked Stilt *(Himantopus mexicanus)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Associated Habitats: C 1% Common, O 2% Occasional

B - Caspian Tern *(Hydroprogne caspia)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S2B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN2** PIF: **2**
Associated Habitats: C 1% Common, O 2% Occasional

B - Forster's Tern *(Sterna forsteri)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common, O 2% Occasional

B - Hooded Merganser *(Lophodytes cucullatus)* **PSOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Associated Habitats: C 1% Common, O 2% Occasional

B - Horned Grebe *(Podiceps auritus)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA; BCC11; BCC17** FWP SWAP: **SGCN3** PIF: **2**
Associated Habitats: C 1% Common, O 2% Occasional

I - Sympetrum madidum *(Red-veined Meadowhawk)* **PSOC** — Not Available — Y S W

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S2S3**
Associated Habitats: C 1% Common, O 1% Occasional

I - Aeshna constricta *(Lance-tipped Darner)* **PSOC** — Not Available — Y S W

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S1S3**
Associated Habitats: C 1% Common

I - Argia emma *(Emma's Dancer)* **PSOC** — Not Available — Y S W

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S3S5**
Associated Habitats: C 1% Common

I - Enallagma praevarum *(Arroyo Bluet)* **PSOC** — Not Available — Y S W

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S3S5**
Associated Habitats: C 1% Common

B - Evening Grosbeak *(Coccothraustes vespertinus)* **SOC** — Not Available — W

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S3** USFWS: **MBTA** FWP SWAP: **SGCN3**
Associated Habitats: C 1% Common

B - American White Pelican *(Pelecanus erythrorhynchos)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G4** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Associated Habitats: C 1% Common

B - Barrow's Goldeneye *(Bucephala islandica)* **PSOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Potential Species of Concern Global: **G5** State: **S4** USFWS: **MBTA** FWP SWAP: **SGIN** PIF: **2**
Associated Habitats: C 1% Common

B - Clark's Grebe *(Aechmophorus clarkii)* **SOC** — Not Available — M

View in Field Guide | View Associated Habitat | View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** FWP SWAP: **SGCN3** PIF: **3**
Associated Habitats: C 1% Common

B - Common Loon *(Gavia immer)* **SOC** — Not Available — M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G5** State: **S3B** USFWS: **MBTA** USFS: **Sensitive - Known on Forests (FLAT, KOOT, LOLO)** FWP SWAP: **SGCN3** PIF: **1**
Associated Habitats: C 1% Common

B - Piping Plover *(Charadrius melodus)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G3** State: **S2B** USFWS: **LT; MBTA** BLM: **SPECIAL STATUS** FWP SWAP: **SGCN2** PIF: **1**
Associated Habitats: C 1% Common

B - Trumpeter Swan *(Cygnus buccinator)* **SOC** Not Available M

View in Field Guide View Associated Habitat View Range Maps
Species of Concern Global: **G4** State: **S3** USFWS: **MBTA** USFS: **Sensitive - Known on Forests (BD, CG)** BLM: **SENSITIVE** FWP SWAP: **SGCN3** PIF: **1**
Associated Habitats: C 1% Common

Latitude Longitude
[redacted]

Structured Surveys

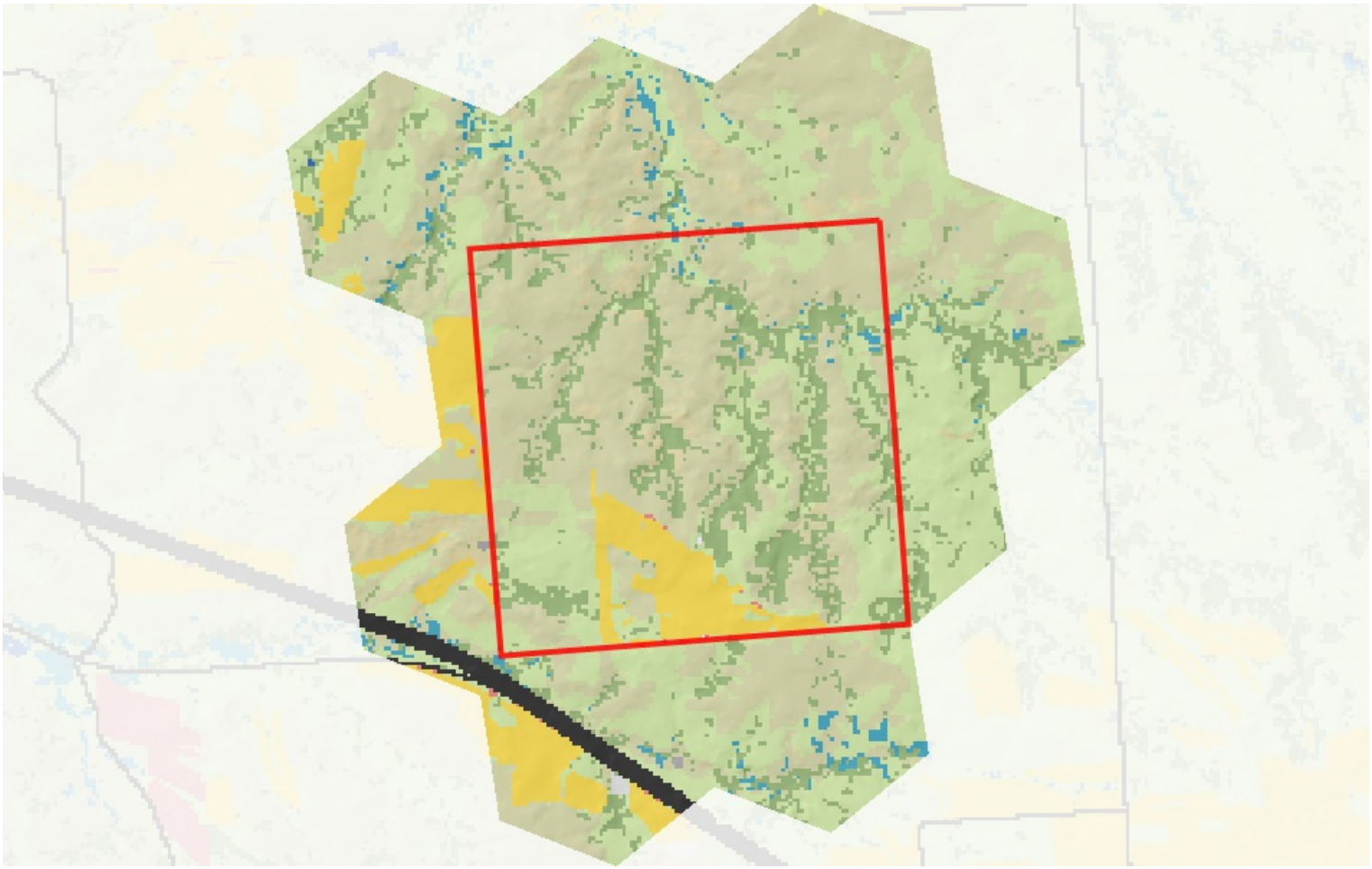
The Montana Natural Heritage Program (MTNHP) records information on the locations where more than 80 different types of well-defined repeatable survey protocols capable of detecting an animal species or suite of animal species have been conducted by state, federal, tribal, university, or private consulting biologists. Examples of structured survey protocols tracked by MTNHP include: visual encounter and dip net surveys for pond breeding amphibians, point counts for birds, call playback surveys for selected bird species, visual surveys of migrating raptors, kick net stream reach surveys for macroinvertebrates, visual encounter cover object surveys for terrestrial mollusks, bat acoustic or mist net surveys, pitfall and/or snap trap surveys for small terrestrial mammals, track or camera trap surveys for large mammals, and trap surveys for turtles. Whenever possible, photographs of survey locations are stored in MTNHP databases.

MTNHP does not typically manage information on structured surveys for plants; surveys for invasive species may be a future exception.

Within the report area you have requested, structured surveys are summarized by the number of each type of structured survey protocol that has been conducted, the number of species detections/observations resulting from these surveys, and the most recent year a survey has been conducted.

B-Grid-based Point Count *(RMBO Generalized Random-tesselation Stratification)*	**Survey Count**: 22	**Obs Count**: 104	**Recent Survey**: 2010
B-Point Count *(Bird Point Count)*	**Survey Count**: 1	**Obs Count**: 5	**Recent Survey**: 2008
B-Raptor nest *(Raptor Nest Survey)*	**Survey Count**: 2	**Obs Count**: 2	**Recent Survey**: 2016

Land Cover Summary



7,028 Acres (0.01% of Montana)

Notes on and Appropriate Uses of Land Cover

The Land Cover data used in Map Viewer are based on classifications of 30-meter Landsat satellite imagery. The base data were classified as part of the national ReGAP project, using imagery from the late 1990s and early 2000s. Classification accuracy varies from system to system, but statewide and local assessments have not been completed to-date. Generally, systems occurring as small patches (e.g., fens, mountain mahogany shrublands) or those making up smaller percentages of various administrative boundaries (e.g. all of those listed under the Additional Limited Land Cover folder below) will be less accurately classified than systems occurring as matrices or large patches (e.g., mixed grass prairie, lodgepole pine forests). Similarly, areas where land use and land cover has changed significantly over the past decade may not be correctly classified. Users are cautioned that the appropriate scale for use of the data is 1:100,000. Accuracy improvements are ongoing. To submit updated information, please email **mtnhp@mt.gov**.

43% (*3,015 Acres*)

Grassland Systems

Lowland/Prairie Grassland

Great Plains Sand Prairie

The sand prairies constitute a very unique system within the western Great Plains. The unifying and controlling feature for this system is that coarse-textured soils predominate and the dominant grasses are well-adapted to this condition. In the northwestern portion of the systemâ€™s range, stand size corresponds to the area of exposed caprock sandstone, and small patches predominate, but larger patches are found embedded in the encompassing Great Plains Mixed Grass Prairie, and usually occupy higher positions in local landscapes where former caprock formations have eroded into more subdued and planar topography. In most of eastern Montana, substrates supporting this system have weathered in place from sandstone caprock. Soils can be relatively thin or deep due to varying amounts of downslope movement of weathered sands. Needle and thread (*Hesperostipa comata*) is the dominant grass species. Other frequent species include little bluestem (*Schizachyrium scoparium*), often occurring with threadleaf sedge (*Carex filifolia*) and dominating both sandy sites and actively eroding sites. Prairie sandreed (*Calamovilfa longifolia*), sand bluestem (*Andropogon hallii*) and big bluestem (*Andropogon gerardii*) are sporadically distributed and found generally on the coarsest-textured sands. Other graminoids include bluebunch wheatgrass (*Pseudoroegneria spicata*), sun sedge (*Carex inops ssp. heliophila*), and purple threeawn (*Aristida purpurea*). Characteristic forbs differ by occurrence, but species of

scurf pea (*Psoralidium* species) and Indian breadroot (*Pediomelum*) species are common. Communities of silver sage (*Artemisia cana* ssp. *cana*) or skunkbush sumac (*Rhus trilobata*) can occur within this system. Wind erosion, fire and grazing constitute the other major dynamic processes that can influence this system.

30% (*2,100 Acres*)

Grassland Systems
Lowland/Prairie Grassland

Great Plains Mixedgrass Prairie

The system covers much of the eastern two-thirds of Montana, occurring continuously for hundreds of square kilometers, interrupted only by wetland/riparian areas or sand prairies. Soils are primarily fine and medium-textured. The growing season averages 115 days, ranging from 100 days on the Canadian border to 130 days on the Wyoming border. Climate is typical of mid-continental regions with long severe winters and hot summers. Grasses typically comprise the greatest canopy cover, and western wheatgrass (*Pascopyrum smithii*) is usually dominant. Other species include thickspike wheatgrass (*Elymus lanceolatus*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and needle and thread (*Hesperostipa comata*). Near the Canadian border in north-central Montana, this system grades into rough fescue (*Festuca campestris)* and Idaho fescue (*Festuca idahoensis*) grasslands. Remnants of shortbristle needle and thread *(Hesperostipa curtiseta)* dominated vegetation are found in northernmost Montana and North Dakota, and are associated with productive sites, now mostly converted to farmland. Forb diversity is typically high. In areas of southeastern and central Montana where sagebrush steppe borders the mixed grass prairie, common plant associations include Wyoming big sagebrush-western wheatgrass (*Artemisia tridentata* ssp. *wyomingensis/ Pascopyrum smithii*). Fire and grazing are the primary drivers of this system. Drought can also impact it, in general favoring the shortgrass component at the expense of the mid-height grasses. With intensive grazing, cool season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicus*) increase in dominance; both of these rhizomatous species have been shown to markedly decrease species diversity. Previously cultivated acres that have been re-vegetated with non-native plants have been transformed into associations such as Kentucky bluegrass (*Poa pratensis*)/western wheatgrass *(Pascopyrum smithii)* or into pure crested wheatgrass (*Agropyron cristatum)* stands.

13% (*907 Acres*)

Forest and Woodland Systems
Deciduous dominated forest and woodland

Great Plains Wooded Draw and Ravine

This system is typically associated with highly intermittent or ephemeral streams. It may occur on steep northern slopes or within canyon bottoms where soil moisture and topography produce higher moisture levels than are common throughout most of the area. In some areas of the western Great Plains, in higher elevation draws and ravines, Rocky Mountain juniper (*Juniperus scopulorum)* can dominate the canopy. Aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), or boxelder maple (*Acer negundo*) are commonly present in portions of the northwestern Great Plains. In central and eastern Montana, green ash (*Fraxinus pennsylvanicus*) or chokecherry (*Prunus virginiana*) are the usual dominants. Douglas hawthorne (*Crataegus douglasii*) is occasionally seen as a dominant in south-central Montana, especially around the Pryor Mountains. This system is found in ravines formed by ephemeral and intermittent streams, and on toeslopes and north-facing backslopes. Generally, these systems are less than 50 meters (165 feet) wide, although the linear extent may be considerable. Soils are usually deep and loamy. Flooding is very short in duration when it occurs, as water is rapidly channeled downslope.

8% (*577 Acres*)

Human Land Use
Agriculture

Cultivated Crops

These areas used for the production of crops, such as corn, soybeans, small grains, sunflowers, vegetables, and cotton, typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.

3% (*187 Acres*)

Sparse and Barren Systems
Bluff, Badland and Dune

Great Plains Badlands

The Western Great Plains Badlands ecological system occurs within the mixed grass and sand prairie regions of eastern and southeastern Montana, where the land lies well above or below its local base level, shaped by the carving action of streams, erosion, and erosible parent material. It is easily recognized by its rugged, eroded, and often colorful land formations, and the relative absence of vegetative cover. In those areas with vegetation, species can include scattered individuals of many dryland shrubs or herbaceous taxa, including curlycup gumweed (*Grindelia squarrosa*), threadleaf snakeweed (*Gutierrezia sarothrae*) (especially with overuse and grazing), greasewood (*Sarcobatus vermiculatus*), Gardnerâ€™s saltbush (*Atriplex gardneri*), buckwheat (*Eriogonum* species), plains muhly (*Muhlenbergia cuspidata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and Hookerâ€™s sandwort (*Arenaria hookeri*). Patches of sagebrush (*Artemisia* spp.) can also occur. Climate is typical of mid continental regions with long severe winters and warm summers. Precipitation ranges from 7 to 14 inches per year, with two-thirds of the precipitation falling during the summer, and a third falling in the spring. The sedimentary parent material of exposed rocks and the resultant eroded clay soils are derived from Cretaceous sea beds and are often fossil-rich. Dominant soil types are in the order Entisols. These mineral soils are found primarily on uplands, slopes, and creek bottoms and are easily erodible. The growing season is short, averaging 115 days, with a range from 100 days on the Canadian border to 130 days on the Wyoming border. Land use is limited, except for off-highway vehicle recreation and incidental grazing.

2% (*110 Acres*)

Human Land Use
Developed

Interstate

National Highway System (NHS) limited access highways and their shoulders and rights of way.

2% (*109 Acres*)

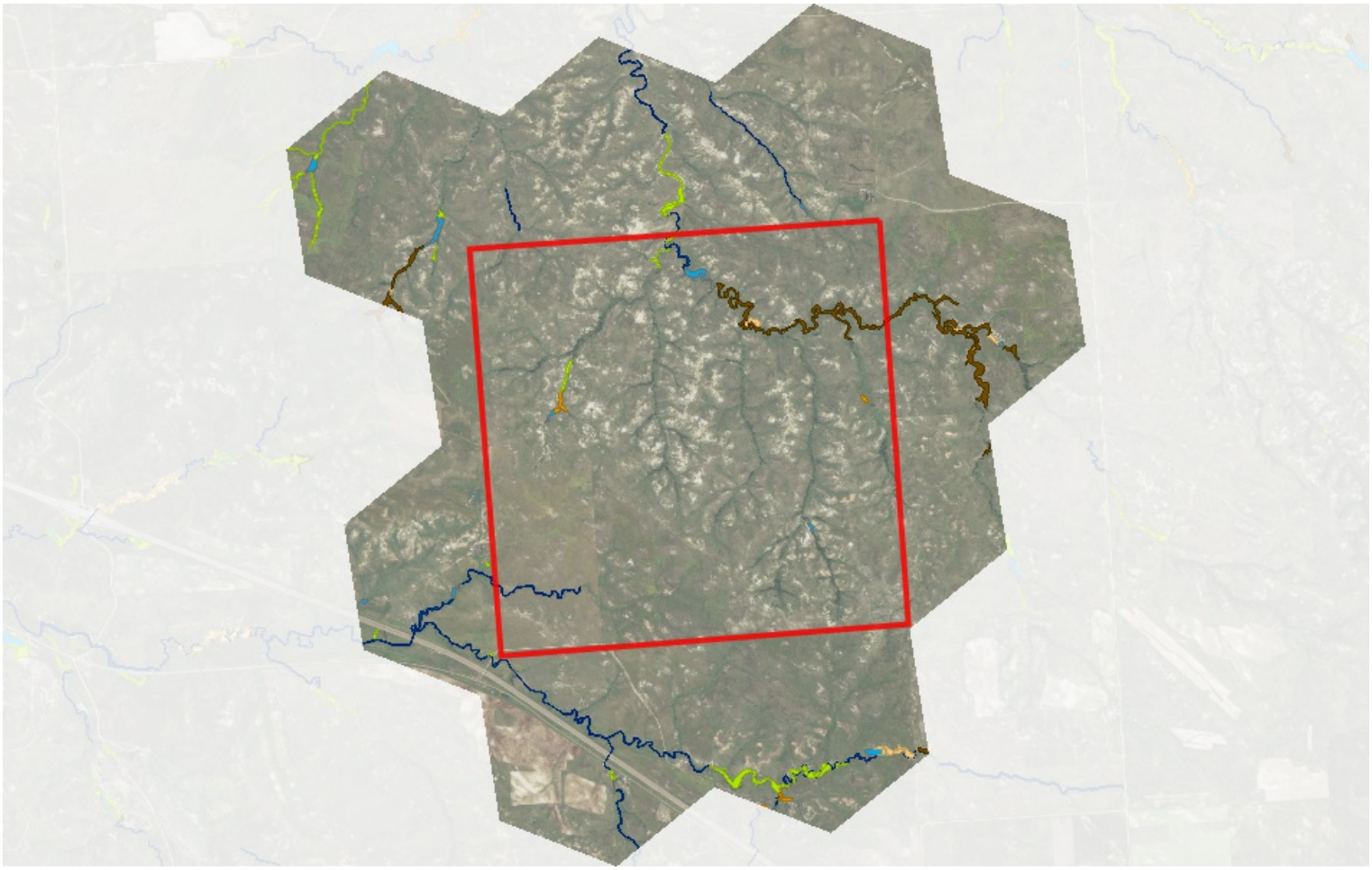
Wetland and Riparian Systems
Floodplain and Riparian

Great Plains Riparian

This system is associated with perennial to intermittent or ephemeral streams throughout the northwestern Great Plains. In Montana, it occurs along smaller tributaries of the Yellowstone and Missouri rivers, as well as tributaries to the large floodplain rivers that feed them (e.g. the Milk, Marias, Musselshell, Powder, Clarkâ€™s Fork Yellowstone, Tongue, etc). In areas adjacent to the mountain ranges of central and southeastern Montana, and near the Rocky Mountain Front, it grades into Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland systems. This system is found on alluvial soils in highly variable landscape settings, from confined, deep cut ravines to wide, braided streambeds. Channel migration occurs in less-confined areas, but within a more narrow range than would occur in broad, alluvial floodplains. Typically, the rivers are wadeable by mid-summer.

The primary inputs of water to these systems include groundwater discharge, overland flow, and subsurface interflow from the adjacent upland. Flooding is the key ecosystem process, creating suitable sites for seed dispersal and seedling establishment, and controlling vegetation succession. Communities within this system range from riparian forests and shrublands to tallgrass wet meadows and gravel/sand flats. Dominant species are similar to those found in the Great Plains Floodplain System. In the western part of the systemâ€™s range in Montana, the dominant overstory species is black cottonwood (*Populus balsamifera ssp. trichocarpa*) with narrowleaf cottonwood *(Populus angustifolia)* and Plains cottonwood (*Populus deltoides)* occurring as co-dominants in the riparian/floodplain interface near the mountains. Further east, narrowleaf cottonwood and Plains cottonwood become dominant. In wetter systems, the understory is typically willow (*Salix spp*.) and redosier dogwood (*Cornus stolonifera*) with graminoids such as western wheatgrass (*Pascopyrum smithii*) and forbs like American licorice (*Glycyrrhiza lepidota*). In areas where the channel is incised, the understory may be dominated by big sagebrush (*Artemisia tridentata*) or silver sagebrush (*Artemisia cana*). Like floodplain systems, riparian systems are often subjected to overgrazing and/or agriculture and can be heavily degraded, with salt cedar (*Tamarix ramosissima*) and Russian olive (*Eleagnus angustifolia*) replacing native woody vegetation and regrowth. Groundwater depletion and lack of fire have resulted in additional species changes.

Wetland Summary



7,028 Acres (0.01% of Montana)

Notes on Appropriate Uses of Wetland and Riparian Mapping

Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. MTNHP Wetland and Riparian Mapping data are intended for use in publications at a scale of 1:12,000 or smaller. Historic wetland mapping is intended for use in publications at a scale of 1:24,000 or smaller. Mapped wetlands do not represent precise wetland boundaries, and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.

Wetland and Riparian Mapping

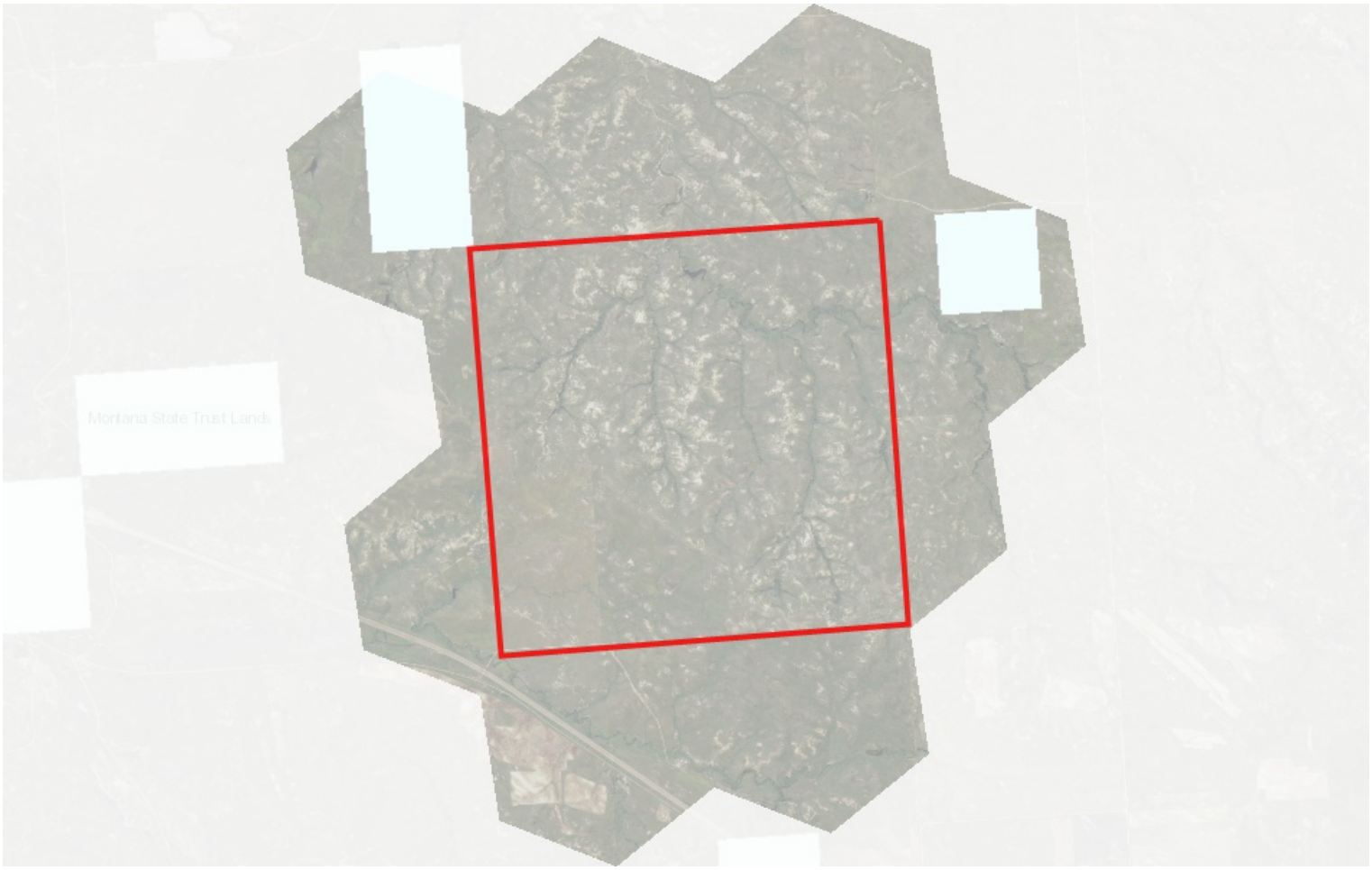
Explain

		Acres	
Palustrine			
PAB	Aquatic Bed	11	Wetlands with vegetation growing on or below the water surface for most of the growing season.
PUS	Unconsolidated Shore	<1	Wetlands with less than 75% areal cover of stones, boulders, or bedrock. AND with less than 30% vegetative cover AND the wetland is irregularly exposed due to seasonal or irregular flooding and subsequent drying.
PEM	Emergent	22	Wetlands with erect, rooted herbaceous vegetation present during most of the growing season.
Riverine (Rivers)			
Intermittent			
R4SB	Streambed	24	Active channel that contains periodic water flow.
Riparian			
Lotic			
Rp1SS	Scrub-Shrub	3	This type of riparian area is dominated by woody vegetation that is less than 6 meters (20 feet) tall. Woody vegetation includes tree saplings and trees that are stunted due to environmental conditions.

Rp1FO Forested	36	This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.
Rp1EM Emergent	4	Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.
Lentic		
Rp2FO Forested	<1	This riparian class has woody vegetation that is greater than 6 meters (20 feet) tall.
Rp2EM Emergent	2	Riparian areas that have erect, rooted herbaceous vegetation during most of the growing season.

Latitude Longitude [redacted]

Land Management Summary



7,028 Acres (0.01% of Montana)

Land Management Summary *Explain*

	Ownership	Tribal	Easements	Other Boundaries (possible overlap)
Public Lands	**422 Acres (6%)**			
State	422 Acres (6%)			
Montana State Trust Lands	422 Acres (6%)			
MT State Trust Owned	422 Acres (6%)			
Private Lands or Unknown Ownership	**6,606 Acres (94%)**			

Latitude Longitude
[redacted]

Biological Reports

Within the report area you have requested, citations for all reports and publications associated with plant or animal observations in Montana Natural Heritage Program (MTNHP) databases are listed and, where possible, links to the documents are included.

The MTNHP plans to include reports associated with terrestrial and aquatic communities in the future as allowed for by staff resources. If you know of reports or publications associated with species or biological communities within the report area that are not shown in this report, please let us know: mtnhp@mt.gov

- Knowles, C. J., P. R. Knowles, B. Giddings, and A. R. Dood. 1995. ***Status of the Swift fox in Montana***. [document submitted for publication]. FaunaWest Wildlife Consultants, Boulder, MT, and MT Dept. of FWP, Helena, MT. 16 pp.
- Reagan, Katy and Dan Fillipi. 2016. ***Wibaux Wind Aerial Raptor Nest Survey. Proposed Wibaux Wind Energy Facility. Wibaux County, Montana***. Prepared for Wibaux Wind, LLC. 7 pp + appendices

Introduction to Montana Natural Heritage Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.0241 • mtnhp.org

Introduction

The Montana Natural Heritage Program (MTNHP) is Montana's source for reliable and objective information on Montana's native species and habitats, emphasizing those of conservation concern. MTNHP was created by the Montana legislature in 1983 as part of the Natural Resource Information System (NRIS) at the Montana State Library (MSL). MTNHP is "a program of information acquisition, storage, and retrieval for data relating to the flora, fauna, and biological community types of Montana" (MCA 90-15-102). MTNHP's activities are guided by statute (MCA 90-15) as well as through ongoing interaction with, and feedback from, principal data source agencies such as Montana Fish, Wildlife, and Parks, the Montana Department of Environmental Quality, the Montana Department of Natural Resources and Conservation, the Montana University System, the US Forest Service, and the US Bureau of Land Management. The enabling legislation for MTNHP provides the State Library with the option to contract the operation of the Program. Since 2006, MTNHP has been operated as a program under the Office of the Vice President for Research and Creative Scholarship at the University of Montana (UM) through a renewable 2-year contract with the MSL. Since the first staff was hired in 1985, the Program has logged a long record of success, and developed into a highly respected, service-oriented program. MTNHP is widely recognized as one of the most advanced and effective of over 80 natural heritage programs throughout the Western Hemisphere.

Vision

Our vision is that public agencies, the private sector, the education sector, and the general public will trust and rely upon MTNHP as the source for information and expertise on Montana's species and habitats, especially those of conservation concern. We strive to provide easy access to our information in order for users to save time and money, speed environmental reviews, and inform decision making.

Core Values

- We endeavor to be a single statewide source of accurate and up-to-date information on Montana's plants, animals, and aquatic and terrestrial biological communities.
- We actively listen to our data users and work responsively to meet their information and training needs.
- We strive to provide neutral, trusted, timely, and equitable service to all of our information users.
- We make every effort to be transparent to our data users in setting work priorities and providing data products.

Confidentiality

All information requests made to the Montana Natural Heritage Program are considered library records and are protected from disclosure by the Montana Library Records Confidentiality Act (MCA 22-1-11).

Information Managed

Information managed at the Montana Natural Heritage Program includes: (1) lists of, and basic information on, plant and animal species and biological communities; (2) plant and animal surveys, observations, species occurrences, predictive distribution models, range polygons, and conservation status ranks; and (3) land cover and wetland and riparian mapping and the conservation status of these and other biological communities.

Data Use Terms and Conditions

- Montana Natural Heritage Program (MTNHP) products and services are based on biological data and the objective interpretation of those data by professional scientists. MTNHP does not advocate any particular philosophy of natural resource protection, management, development, or public policy.
- MTNHP has no natural resource management or regulatory authority. Products, statements, and services from MTNHP are intended to inform parties as to the state of scientific knowledge about certain natural resources, and to further develop that knowledge. The information is not intended as natural resource management guidelines or prescriptions or a determination of environmental impacts. MTNHP recommends consultation with appropriate state, federal, and tribal resource management agencies and authorities in the area where your project is located.
- Information on the status and spatial distribution of biological resources produced by MTNHP are intended to inform parties of the state-wide status, known occurrence, or the likelihood of the presence of those resources. **These products are not intended to substitute for field-collected data, nor are they intended to be the sole basis for natural resource management decisions.**
- MTNHP does not portray its data as exhaustive or comprehensive inventories of rare species or biological communities. **Field verification of the absence or presence of sensitive species and biological communities will always be an important obligation of users of our data.**
- MTNHP responds equally to all requests for products and services, regardless of the purpose or identity of the requester.
- Because MTNHP constantly updates and revises its databases with new data and information, products will become outdated over time. Interested parties are encouraged to obtain the most current information possible from MTNHP, rather than using older products. We add, review, update, and delete records on a daily basis. Consequently, we strongly advise that you update your MTNHP data sets at a minimum of every three months for most applications of our information.
- MTNHP data require a certain degree of biological expertise for proper analysis, interpretation, and application. Our staff is available to advise you on questions regarding the interpretation or appropriate use of the data that we provide. Contact information for MTNHP staff is posted at: http://mtnhp.org/contact.asp
- The information provided to you by MTNHP may include sensitive data that if publicly released might jeopardize the welfare of threatened, endangered, or sensitive species or biological communities. This information is intended for distribution or use only within your department, agency, or business. Subcontractors may have access to the data during the course of any given project, but should not be given a copy for their use on subsequent, unrelated work.
- MTNHP data are made freely available. Duplication of hard-copy or digital MTNHP products with the intent to sell is prohibited without written consent by MTNHP. Should you be asked by individuals outside your organization for the type of data that we provide, please refer them to MTNHP.
- MTNHP and appropriate staff members should be appropriately acknowledged as an information source in any third-party product involving MTNHP data, reports, papers, publications, or in maps that incorporate MTNHP graphic elements.
- Sources of our data include museum specimens, published and unpublished scientific literature, field surveys by state and federal agencies and private contractors, and reports from knowledgeable individuals. MTNHP actively solicits and encourages additions, corrections and updates, new observations or collections, and comments on any of the data we provide.
- MTNHP staff and contractors do not cross or survey privately-owned lands without express permission from the landowner. However, the program cannot guarantee that information provided to us by others was obtained under adherence to this policy.

Suggested Contacts for Natural Resource Agencies

As required by Montana statute (MCA 90-15), the Montana Natural Heritage Program works with state, federal, tribal, nongovernmental organizations, and private partners to ensure that the latest animal and plant distribution and status information is incorporated into our databases so that it can be used to inform a variety of planning processes and management decisions. In addition to the information you receive from us, we encourage you to contact state, federal, and tribal resource management agencies in the area where your project is located. They may have additional data or management guidelines relevant to your efforts. In particular, we encourage you to contact the Montana Department of Fish, Wildlife, and Parks for the latest data and management information regarding hunted and high profile management species and to use the U.S. Fish and Wildlife Service's Information Planning and Conservation (IPAC) website http://ecos.fws.gov/ipac/ regarding U.S. Endangered Species Act listed Threatened, Endangered, or Candidate species.

For your convenience, we have compiled a list of relevant agency contacts and links below:

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Lee Nelson leenelson@mt.gov (406) 444-2447
American Bison Black-footed Ferret Black-tailed Prairie Dog Bald Eagle Golden Eagle Common Loon Least Tern Piping Plover Whooping Crane	Lauri Hanauska-Brown LHanauska-Brown@mt.gov (406) 444-5209
Grizzly Bear Greater Sage Grouse Trumpeter Swan Big Game Upland Game Birds Furbearers	John Vore jvore@mt.gov (406) 444-5209
Managed Terrestrial Game and Nongame Animal Data	Adam Messer – MFWP Data Analyst amesser@mt.gov (406) 444-0095
Fisheries Data	Bill Daigle – MFWP Fish Data Manager bdaigle@mt.gov (406) 444-3737
Wildlife and Fisheries Scientific Collector's Permits	http://fwp.mt.gov/doingBusiness/licenses/scientificWildlife/ Merissa Hayes for Wildlife merhayes@mt.gov (406) 444-7321 Beth Giddings for Fisheries begiddings@mt.gov (406) 444-7319
Fish and Wildlife Recommendations for Subdivision Development	Renee Lemon RLemon@mt.gov (406) 444-3738 and see http://fwp.mt.gov/fishAndWildlife/livingWithWildlife/buildingWithWildlife/subdivisionRecommendations/
Regional Contacts  	Region 1 (Kalispell) (406) 752-5501 Region 2 (Missoula) (406) 542-5500 Region 3 (Bozeman) (406) 994-4042 Region 4 (Great Falls) (406) 454-5840 Region 5 (Billings) (406) 247-2940 Region 6 (Glasgow) (406) 228-3700 Region 7 (Miles City) (406) 234-0900

United States Fish and Wildlife Service:

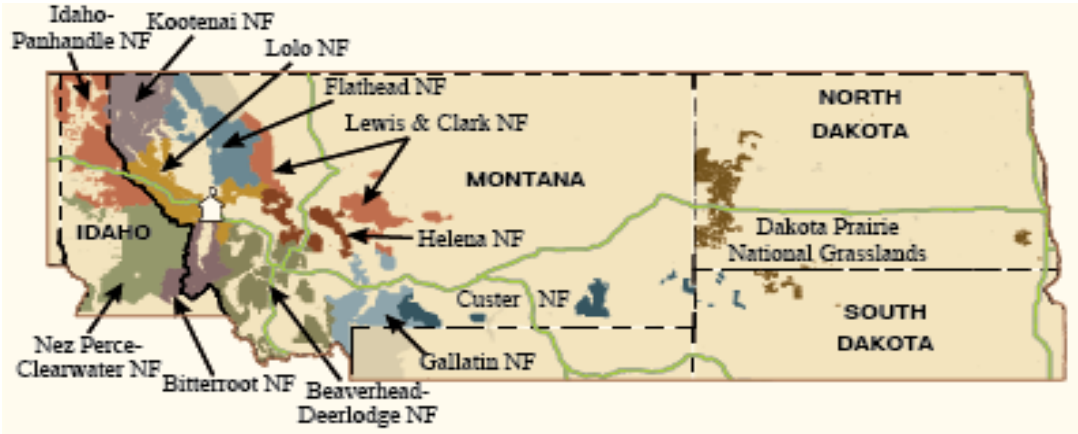
Information Planning and Conservation (IPAC) website: http://ecos.fws.gov/ipac/

Montana Ecological Services Field Office: http://www.fws.gov/montanafieldoffice/ (406) 449-5225

Bureau of Land Management

Montana Field Office Contacts:		
	Billings	(406) 896-5013
	Butte	(406) 533-7600
	Dillon	(406) 683-8000
	Glasgow	(406) 228-3750
	Havre	(406) 262-2820
	Lewistown	(406) 538-1900
	Malta	(406) 654-5100
	Miles City	(406) 233-2800
	Missoula	(406) 329-3914

United States Forest Service



Regional Office – Missoula, Montana Contacts

Wildlife Program Leader	Tammy Fletcher	tammyfletcher@fs.fed.us	(406) 329-3588
Wildlife Ecologist	Cara Staab	cstaab@fs.fed.us	(406) 329-3677
Fish Program Leader	Scott Spaulding	scottspaulding@fs.fed.us	(406) 329-3287
Fish Ecologist	Cameron Thomas	cathomas@fs.fed.us	(406) 329-3087
TES Program	Lydia Allen	lrallen@fs.fed.us	(406) 329-3558
Interagency Grizzly Bear Coordinator	Scott Jackson	sjackson03@fs.fed.us	(406) 329-3664
Regional Botanist	Steve Shelly	sshelly@fs.fed.us	(406) 329-3041

Tribal Nations

Assiniboine & Gros Ventre Tribes – Fort Belknap Reservation

Assiniboine & Sioux Tribes – Fort Peck Reservation

Blackfeet Tribe - Blackfeet Reservation

Chippewa Creek Tribe - Rocky Boy's Reservation

Crow Tribe – Crow Reservation

Little Shell Chippewa Tribe

Northern Cheyenne Tribe – Northern Cheyenne Reservation

Salish & Kootenai Tribes - Flathead Reservation

Introduction to Species Summary

Within the report area you have requested, separate summaries are provided for: (1) Species Occurrences (SO) for plant and animal Species of Concern, Special Status Species (SSS), Important Animal Habitat (IAH) and some Potential Plant Species of Concern; (2) other observed non Species of Concern or Species of Concern without suitable documentation to create Species Occurrence polygons; and (3) other non-documented species that are potentially present based on their range, predicted suitable habitat model output, or presence of associated habitats. Each of these summaries provides the following information when present for a species: (1) the number of Species Occurrences and associated delineation criteria for construction of these polygons that have long been used for considerations of documented Species of Concern in environmental reviews; (2) the number of observations of each species; (3) the geographic range polygons for each species that the report area overlaps; (4) predicted relative habitat suitability classes that are present if a predicted suitable habitat model has been created; (5) the percent of the report area that is mapped as commonly associated or occasionally associated habitat as listed for each species in the Montana Field Guide; and (6) a variety of conservation status ranks and links to species accounts in the Montana Field Guide. Details on each of these information categories are included under relevant section headers below or are defined on our Species Status Codes page. In presenting this information, the Montana Natural Heritage Program (MTNHP) is working towards assisting the user with rapidly determining what species have been documented and what species are potentially present in the report area. We remind users that this information is likely incomplete as surveys to document native and introduced species are lacking in many areas of the state, information on introduced species has only been tracked relatively recently, the MTNHP's staff and resources are restricted by declining budgets, and information is constantly being added and updated in our databases. **Thus, field verification by professional biologists of the absence or presence of species and biological communities will always be an important obligation of users of our data.**

If you are aware of observation datasets that the MTNHP is missing, please report them to the Program Botanist apipp@mt.gov or Senior Zoologist dbachen@mt.gov. If you have observations that you would like to contribute, you can submit animal observations using our online data entry system at http://mtnhp.org/AddObs/, plant and animal observations via Excel spreadsheets posted at http://mtnhp.org/observations.asp , or to the Program Botanist or Senior Zoologist.

Observations

The MTNHP manages information on more than 1.8 million animal and plant observations that have been reported by professional biologists and private citizens from across Montana. The majority of these observations are submitted in digital format from standardized databases associated with research or monitoring efforts and spreadsheets of incidental observations submitted by professional biologists and amateur naturalists. At a minimum, accepted observation records must contain a credible species identification (i.e. appropriate geographic range, date, and habitat and, if species are difficult to identify, a photograph and notes on key identifying features), a date or date range, observer name, locational information (ideally with latitude and longitude in decimal degrees), notes on numbers observed, and species behavior or habitat use (e.g., is the observation likely associated with reproduction). Bird records are also required to have information associated with date-appropriate breeding or overwintering status of the species observed. MTNHP reviews observation records to ensure that they are mapped correctly, occur within date ranges when the species is known to be present or detectable, occur within the known seasonal geographic range of the species, and occur in appropriate habitats. MTNHP also assigns each record a locational uncertainty value in meters to indicate the spatial precision associated with the record's mapped coordinates. Only records with locational uncertainty values of 10,000 meters or less are included in environmental summary reports and number summaries are only provided for records with locational uncertainty values of 1,000 meters or less.

Species Occurrences

The MTNHP evaluates plant and animal observation records for species of higher conservation concern to determine whether they are worthy of inclusion in the Species Occurrence (SO) layer for use in environmental reviews; observations not worthy of inclusion in this layer include long distance dispersal events, migrants observed away from key migratory stopover habitats, and winter observations. An SO is a polygon depicting what is known about a species occupancy from direct observation with a defined level of locational uncertainty and any inference that can be made about adjacent habitat use from the latest peer-reviewed science. If an observation can be associated with a map feature that can be tracked (e.g., a wetland boundary for a wetland associated plant) then this polygon feature is used to represent the SO. Areas that can be inferred as probable occupied habitat based on direct observation of a species location and what is known about the foraging area or home range size of the species may be incorporated into the SO. Species Occurrences generally belong to one of the following categories:

Plant Species Occurrences

A documented location of a specimen collection or observed plant population. In some instances, adjacent, spatially separated clusters are considered subpopulations and are grouped as one occurrence (e.g., the subpopulations occur in ecologically similar habitats, and their spatial proximity likely allows them to interbreed). Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Plant SO's are only created for Species of Concern and Potential Species of Concern.

Animal Species Occurrences

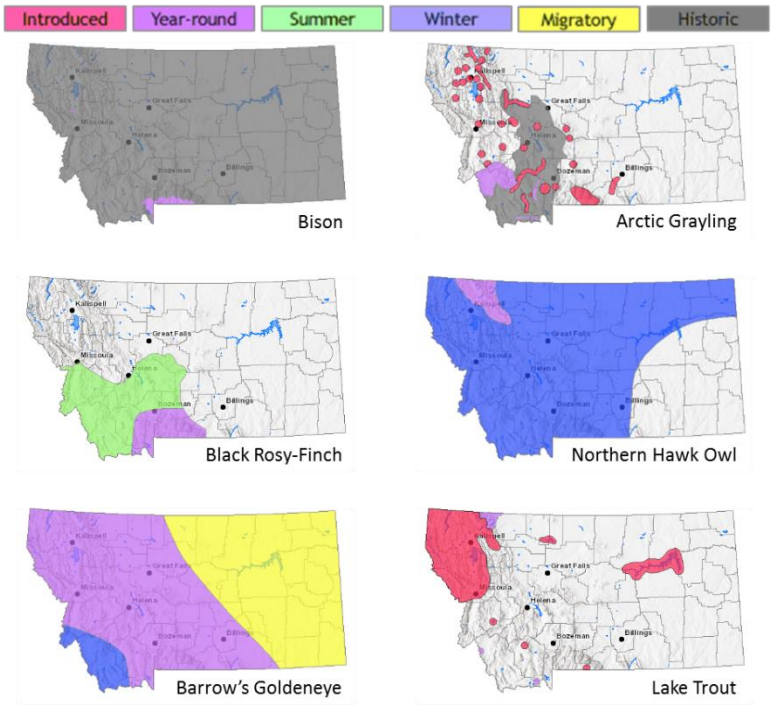
The location of a verified observation or specimen record typically known or assumed to represent a breeding population or a portion of a breeding population. Animal SO's are generally: (1) buffers of terrestrial point observations based on documented species' home range sizes; (2) buffers of stream segments to encompass occupied streams and immediate adjacent riparian habitats; (3) polygonal features encompassing known or likely breeding populations (e.g., a wetland for some amphibians or a forested portion of a mountain range for some wide ranging carnivores); or (4) combinations of the above. Tabular information for multiple observations at the same SO location is generally linked to a single polygon. Species Occurrence polygons may encompass some unsuitable habitat in some instances in order to avoid heavy data processing associated with clipping out habitats that are readily assessed as unsuitable by the data user (e.g., a point buffer of a terrestrial species may overlap into a portion of a lake that is obviously inappropriate habitat for the species). Animal SO's are only created for Species of Concern and Special Status Species (e.g., Bald Eagle).

Other Occurrence Polygons

These include significant biological features not included in the above categories, such as Important Animal Habitats like bird rookeries and bat roosts, and peatlands or other wetland and riparian communities that support diverse plant and animal communities.

Geographic Range Polygons

Geographic range polygons have not yet been defined for most plant species. Native year-round, summer, winter, migratory and historic geographic range polygons as well as polygons for introduced populations have been defined for most animal species for which there are enough observations, surveys, and knowledge of appropriate seasonal habitat use to define them (see examples to left). These native or introduced range polygons bound the extent of known or likely occupied habitats for non-migratory and relative sedentary species and the regular extent of known or likely occupied habitats for migratory and long-distance dispersing species; polygons may include unsuitable intervening habitats. For most species, a single polygon can represent the year-round or seasonal range, but breeding ranges of some colonial nesting water birds and some introduced species are represented more patchily when supported by data. Some ranges are mapped more broadly than actual distributions in order to be visible on statewide maps (e.g., fish).



Predicted Suitable Habitat Models

Recent predicted suitable habitat suitability models have not yet been created for most plant species. For animal species for which models have been completed, the environmental summary report includes simple, rule-based, associations with streams for fish and other aquatic species and mathematically complex Maximum Entropy models (Phillips et al. 2006, Ecological Modeling 190:231-259) constructed from a variety of statewide biotic and abiotic layers and presence only data for individual species contributed to Montana Natural Heritage Program databases for most terrestrial species. For the Maximum Entropy models, we reclassified 90 x 90-meter continuous model output into suitability classes (unsuitable, low, moderate, and optimal) then aggregated that into the one square mile hexagons used in the environmental summary report; this is the finest spatial scale we suggest using this information in management decisions and survey planning. Full model write ups for individual species that discuss model goals, inputs, outputs, and evaluation in much greater detail are posted on the MTNHP's Predicted Suitable Habitat Models page. Evaluations of predictive accuracy and specific limitations are included with the metadata for models of individual species. **Model outputs should not be used in place of on-the-ground surveys for species. Instead model outputs should be used in conjunction with habitat evaluations to determine the need for on-the-ground surveys for species.** We suggest that the percentage of predicted optimal and moderate suitable habitat within the report area be used in conjunction with geographic range polygons and the percentage of commonly associated habitats to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning.

Associated Habitats

Within the boundary of the intersected hexagons, we provide the approximate percentage of commonly or occasionally associated habitat for vertebrate animal species that regularly breed, overwinter, or migrate through the state; a detailed list of commonly and occasionally associated habitats is provided in individual species accounts in the Montana Field Guide. We assigned common or occasional use of each of the 82 ecological systems mapped in Montana by: (1) using personal knowledge and reviewing literature that

summarizes the breeding, overwintering, or migratory habitat requirements of each species; (2) evaluating structural characteristics and distribution of each ecological system relative to the species' range and habitat requirements; (3) examining the observation records for each species in the state-wide point observation database associated with each ecological system; and (4) calculating the percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system to get a measure of numbers of observations versus availability of habitat. Species that breed in Montana were only evaluated for breeding habitat use, species that only overwinter in Montana were only evaluated for overwintering habitat use, and species that only migrate through Montana were only evaluated for migratory habitat use. In general, species were listed as associated with an ecological system if structural characteristics of used habitat documented in the literature were present in the ecological system or large numbers of point observations were associated with the ecological system. However, species were not listed as associated with an ecological system if there was no support in the literature for use of structural characteristics in an ecological system, even if point observations were associated with that system. Common versus occasional association with an ecological system was assigned based on the degree to which the structural characteristics of an ecological system matched the preferred structural habitat characteristics for each species as represented in the scientific literature. The percentage of observations associated with each ecological system relative to the percent of Montana covered by each ecological system was also used to guide assignment of common versus occasional association.

We suggest that the percentage of commonly associated habitat within the report area be used in conjunction with geographic range polygons and the percentage of predicted optimal and moderate suitable habitat from predictive models to generate lists of potential species that may occupy broader landscapes for the purposes of landscape-level planning. Users of this information should be aware that land cover mapping accuracy is particularly problematic when the systems occur as small patches or where the land cover types have been altered over the past decade. Thus, particular caution should be used when using the associations in assessments of smaller areas (e.g., evaluations of public land survey sections).

Introduction to Land Cover Summary

Land Use/Land Cover is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The layer records all Montana natural vegetation, land cover and land use, classified from satellite and aerial imagery, mapped at a scale of 1:100000, and interpreted with supporting ground-level data. The baseline map is adapted from the Northwest ReGAP (NWGAP) project land cover classification, which used 30m resolution multi-spectral Landsat imagery acquired between 1999 and 2001. Vegetation classes were drawn from the Ecological System Classification developed by NatureServe (Comer et al. 2003). The land cover classes were developed by Anderson et al. (1976). The NWGAP effort encompasses 12 map zones. Montana overlaps seven of these zones. The two NWGAP teams responsible for the initial land cover mapping effort in Montana were Sanborn and NWGAP at the University of Idaho. Both Sanborn and NWGAP employed a similar modeling approach in which Classification and Regression Tree (CART) models were applied to Landsat ETM+ scenes. The Spatial Analysis Lab within the Montana Natural Heritage Program was responsible for developing a seamless Montana land cover map with a consistent statewide legend from these two separate products. Additionally, the Montana land cover layer incorporates several other land cover and land use products (e.g., MSDI Structures and Transportation themes and the Montana Department of Revenue Final Land Unit classification) and reclassifications based on plot-level data and the latest NAIP imagery to improve accuracy and enhance the usability of the theme. Updates are done as partner support and funding allow, or when other MSDI datasets can be incorporated. Recent updates include fire perimeters and agricultural land use (annually), energy developments such as wind, oil and gas installations (2014), roads, structures and other impervious surfaces (various years): and local updates/improvements to specific ecological systems (e.g., central Montana grassland and sagebrush ecosystems). Current and previous versions of the Land Use/Land Cover layer with full metadata are available for download at the Montana State Library's Geographic Information Clearinghouse.

Within the report area you have requested, land cover is summarized by acres of Level 1, Level 2, and Level 3 Ecological Systems.

Literature Cited

Anderson, J.R. E.E. Hardy, J.T. Roach, and R.E. Witmer. 1976. A land use and land cover classification system for use with remote sensor data. U.S. Geological Survey Professional Paper 964.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. Ecological systems of the United States: A working classification of U.S. terrestrial systems. NatureServe, Arlington, VA.

Introduction to Wetland and Riparian Summary

Within the report area you have requested, wetland and riparian mapping is summarized by acres of each classification present. Summaries are only provided for modern MTNHP wetland and riparian mapping and not for outdated (NWI Legacy) or incomplete (NWI Scalable) mapping efforts; described here. MTNHP has made all three of these datasets and associated metadata available for separate download on the Montana Wetland and Riparian Framework MSDI download page.

Wetland and Riparian mapping is one of 15 Montana Spatial Data Infrastructure framework layers considered vital for making statewide maps of Montana and understanding its geography. The wetland and riparian framework layer consists of spatial data representing the extent, type, and approximate location of wetlands, riparian areas, and deepwater habitats in Montana.

Wetland and riparian mapping is completed through photointerpretation of 1-m resolution color infrared aerial imagery acquired from 2005 or later. A coding convention using letters and numbers is assigned to each mapped wetland. These letters and numbers describe the broad landscape context of the wetland, its vegetation type, its water regime, and the kind of alterations that may have occurred. Ancillary data layers such as topographic maps, digital elevation models, soils data, and other aerial imagery sources are also used to improve mapping accuracy. Wetland mapping follows the federal Wetland Mapping Standard and classifies wetlands according to the Cowardin classification system of the National Wetlands Inventory (NWI) (Cowardin et al. 1979, FGDC Wetlands Subcommittee 2013). Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands differently than the NWI. Similar coding, based on U.S. Fish and Wildlife Service conventions, is applied to riparian areas (U.S. Fish and Wildlife Service 2009). These are mapped areas where vegetation composition and growth is influenced by nearby water bodies, but where soils, plant communities, and hydrology do not display true wetland characteristics. **These data are intended for use in publications at a scale of 1:12,000 or smaller. Mapped wetland and riparian areas do not represent precise boundaries and digital wetland data cannot substitute for an on-site determination of jurisdictional wetlands.**

A detailed overview, with examples, of both wetland and riparian classification systems and associated codes can be found at: http://mtnhp.org/help/MapViewer/WetRip_Classification.asp

Literature Cited

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 103pp.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, D.C.

U.S. Fish and Wildlife Services. 2009. A system for mapping riparian areas in the western United States. Division of Habitat and Resource Conservation, Branch of Resource and Mapping Support, Arlington, Virginia.

Introduction to Land Management Summary

Within the report area you have requested, land management information is summarized by acres of federal, state, and local government lands, tribal reservation boundaries, private conservation lands, and federal, state, local, and private conservation easements. Acreage for "Owned", "Tribal", or "Easement" categories represents non-overlapping areas that may be totaled. However, "Other Boundaries" represents managed areas such as National Forest boundaries containing private inholdings and other mixed ownership which may cause boundaries to overlap (e.g. a wilderness area within a forest). Therefore, acreages may not total in a straight-forward manner.

Because information on land stewardship is critical to effective land management, the Montana Natural Heritage Program (MTNHP) began compiling ownership and management data in 1997. The goal of the Montana Land Management Database is to manage a single, statewide digital data set that incorporates information from both public and private entities. The database assembles information on public lands, private conservation lands, and conservation easements held by state and federal agencies and land trusts and is updated on a regular basis. Since 2011, the Information Management group in the Montana State Library's Digital Library Division has taken an increasingly active role in managing layers of the Montana Land Management Database in partnership with the MTNHP.

Public and private conservation land polygons are attributed with the name of the entity that owns it. The data are derived from the statewide Montana Cadastral Parcel layer. Conservation easement data shows land parcels on which a public agency or qualified land trust has placed a conservation easement in cooperation with the land owner. The dataset contains no information about ownership or status of the mineral estate. For questions about the dataset or to report errors, please contact the Montana Natural Heritage Program at (406) 444-5354 or mtnhp@mt.gov. You can download various components of the Land Management Database and view associated metadata at the Montana State Library's GIS Data List at the following links:

Public Lands
Conservation Easements
Private Conservation Lands
Managed Areas

Map features in the Montana Land Management Database or summaries provided in this report are not intended as a legal depiction of public or private surface land ownership boundaries and should not be used in place of a survey conducted by a licensed land surveyor. Similarly, map features do not imply public access to any lands. The Montana Natural Heritage Program makes no representations or warranties whatsoever with respect to the accuracy or completeness of this data and assumes no responsibility for the suitability of the data for a particular purpose. The Montana Natural Heritage Program will not be liable for any damages incurred as a result of errors displayed here. Consumers of this information should review or consult the primary data and information sources to ascertain the viability of the information for their purposes.

Additional Information Resources

Home Page for Montana Natural Heritage Program (MTNHP)

MTNHP Staff Contact Information

Montana Field Guide

MTNHP Species of Concern Report - Animals and Plants

MTNHP Species Status Codes - Explanation

MTNHP Predicted Suitable Habitat Models (for select Animals and Plants)

MTNHP Request Information page

Montana Cadastral

Montana Code Annotated

Montana Department of Environmental Quality

Montana Fisheries Information System

Montana Fish, Wildlife, and Parks Subdivision Recommendations

Montana GIS Data Layers

Montana GIS Data Bundler

Montana Greater Sage-Grouse Project Submittal Site

Montana Ground Water Information Center

Montana Legislative Environmental Policy Office Publications
(Including Index of Environmental Permits required in Montana and Guide to the Montana Environmental Policy Act)

Laws, Treaties, Regulations, and Permits on Animals and Plants

Montana Spatial Data Infrastructure Layers

Montana State Historic Preservation Office Review and Compliance

Montana Water Information System

Montana Web Map Services

National Environmental Policy Act

U.S. Fish and Wildlife Service Information for Planning and Conservation (Section 7 Consultation)

Web Soil Survey Tool

MONTANA
Natural Heritage
Program
1515 East 6th Avenue
Helena, MT 59620
(406) 444-5354
mtnhp.org

Species Occurrences From Environmental Summary

Suggested Citation Format: Custom Field Guide from http://mtnhp.org/MapViewer for (insert the title text above to indicate the filters you selected). Retrieved on 8/29/2017.

Offline Field Guide

Note: This PDF version of the Montana Field Guide is intended to assist in offline identification and field work. It is not intended to replace the online Field Guide, as that version contains more information and is updated daily. For the most up-to-date information on Montana species, please visit **FieldGuide.mt.gov**

The Montana Field Guide is a collaborative effort between the Montana Natural Heritage Program and Montana Fish, Wildlife and Parks.

The Montana Natural Heritage Program is a program of the Montana State Library's Natural Resource Information System. It is operated as a special program under the Office of the Vice President for Research and Creative Scholarship at the University of Montana, Missoula.

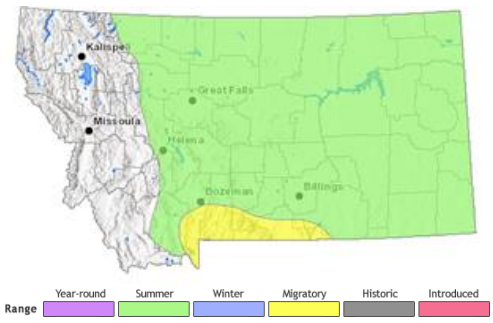
The Montana Natural Heritage Program is part of NatureServe – a network of over 80 similar programs in states, provinces and nations throughout the Western Hemisphere, bringing to Montana the "big picture" information on the true status of species and habitats.

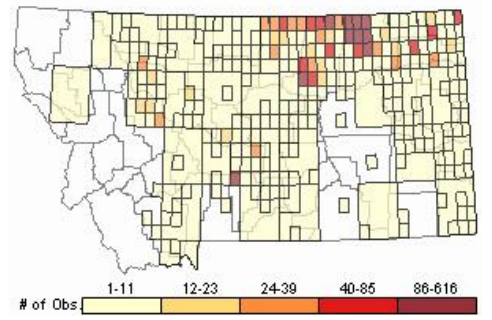
Sprague's Pipit
Anthus spragueii

Species of Concern
View in Field Guide

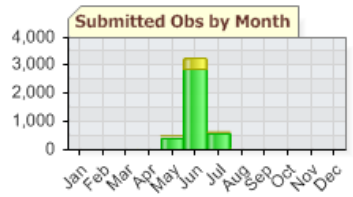
Global Rank: G3G4
State Rank: S3B

Agency Status
USFWS: MBTA; BCC11; BCC17
USFS:
BLM: SENSITIVE
FWP SWAP: SGCN3
PIF: 1





 # Observations: 4539



General Description

The adult Sprague's Pipit is a pale, slender, sparrow-sized bird with white outer tail feathers, a thin bill, pale legs, and a heavily streaked back. Adults reach a length of 6.5 inches (16.5 cm), with a wingspan of 10 inches (25.4 cm), and a weight of 23.7 to 24.0 grams. The sexes are alike. The sides of the head and indistinct buffy eye-rings are pale. The lores contrast with dark brown eyes and the ear coverts are plain brownish-buff, usually with a slight reddish tinge. The crown, sides and rear of neck are buffy with sharply defined black streaks. The back is light sandy-brown with broad black streaks, with a paler more prominent buffy stripe down each side. The wings, 7.7 to 8.5 cm long, have blackish-brown feathers with whitish to buffy-brown edging, and two whitish wing bars. The rump and upper tail coverts, paler than the back, are sandy-brown with narrow black streaks. The blackish-brown feathers of the tail have buffy edging and the outer two pairs of feathers are white. The breast is a bright dark buff with a necklace of narrow black streaks. The flanks are brownish-buff and without streaks. The legs of the adults are pale brown, flesh or yellowish-brown, while they are pinkish in the juveniles (Godfrey 1966, Maher 1979, King 1981, Robbins and Dale 1999).

On the ground, the bird is extremely secretive and flies away in a long, undulating flight when approached. It walks instead of hops and usually only lands on the ground. The bird is most easily detected by its unique flight song given high overhead (as high as 75 meters); a high-pitched, thin "jingling" sound that can continue for as long as an hour (Peterson 2002, King 1981). Johnsgard (1992) notes that the species' spectacular circular song-flight display around its territory, during which its white outer tail feathers are conspicuously spread, compensates for its particularly inconspicuous plumage.

For a comprehensive review of the conservation status, habitat use, and ecology of this and other Montana bird species, please see Marks et al. 2016, Birds of Montana.

Habitat

An endemic grassland bird, the Sprague's Pipit prefers native, medium to intermediate height prairie (Casey 2000) and in a short grass prairie landscape, can often be found in areas with taller grasses (Samson and Knopf 1996). The Sprague's Pipit is significantly more abundant in native prairie than in exotic vegetation (Dechant et al. 2001). Dechant (2001) also notes that the species has been shown to be area sensitive, requiring relatively large areas of appropriate habitat; the minimum area requirement in a Saskatchewan study was 190 hectares (470 acres). This pipit is also known to utilize and breed in alkaline meadows and around the edges of alkaline lakes (Johnsgard 1992).

Brewer's Sparrow

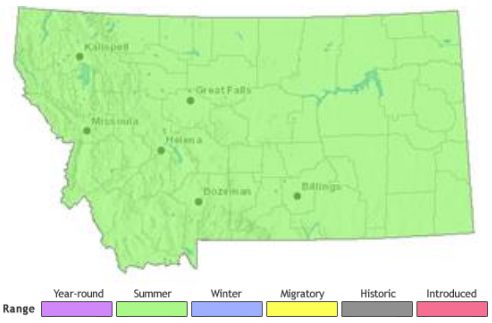
Spizella breweri

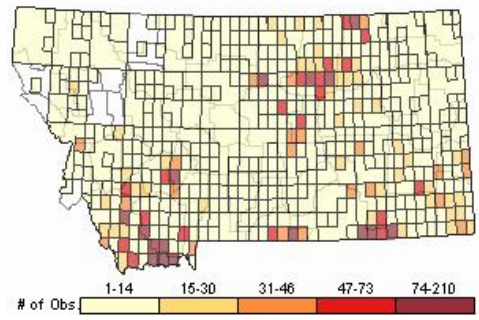
Species of Concern

View in Field Guide

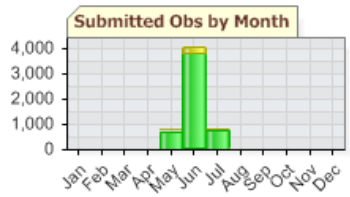
Global Rank: G5
State Rank: S3B

Agency Status
USFWS: MBTA; BCC10; BCC17
USFS:
BLM: SENSITIVE
FWP SWAP: SGCN3
PIF: 2





 # Observations: 6006



General Description

The Brewer's Sparrow is a nondescript sparrow of sagebrush habitats. In suitable habitat, the Brewer's Sparrow can be the most abundant species present. Its song, a series of distinctive long and short buzzy trills, can be heard throughout the breeding season (Rotenberry et al. 1999).

For a comprehensive review of the conservation status, habitat use, and ecology of this and other Montana bird species, please see Marks et al. 2016, Birds of Montana.

Habitat

The Brewer's Sparrow typically breeds in shrubsteppe habitats dominated by sagebrush. Densities of Brewer's Sparrow correlated with some aspect of total shrub cover (Rotenberry et al. 1999). In sagebrush areas in central Montana, Brewer's Sparrows nested in sagebrush averaging 16 inches high (Best 1970).

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Other Observed Species From Environmental Summary

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Offline Field Guide

Note: This PDF version of the Montana Field Guide is intended to assist in offline identification and field work. It is not intended to replace the online Field Guide, as that version contains more information and is updated daily. For the most up-to-date information on Montana species, please visit **FieldGuide.mt.gov**

The Montana Field Guide is a collaborative effort between the Montana Natural Heritage Program and Montana Fish, Wildlife and Parks.

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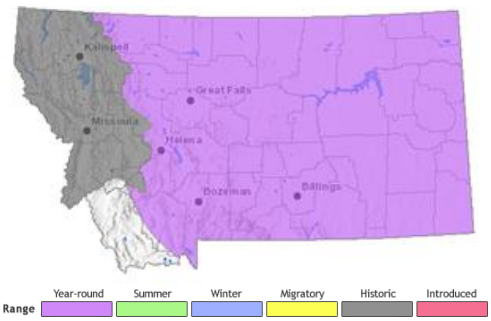
The Montana Natural Heritage Program is part of NatureServe – a network of over 80 similar programs in states, provinces and nations throughout the Western Hemisphere, bringing to Montana the "big picture" information on the true status of species and habitats.

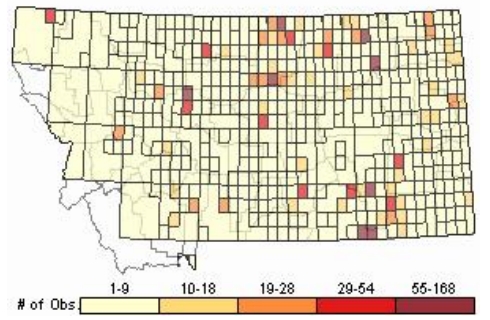
Sharp-tailed Grouse
Tympanuchus phasianellus

Species of Concern
View in Field Guide

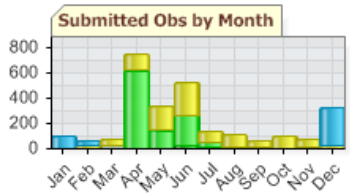
Global Rank: G5
State Rank: SX,S4

Agency Status
USFWS:
USFS:
BLM:
FWP SWAP: SGCN1
PIF: 2





 # Observations: 2847



General Description

Sexes are similar, although males have inconspicuous yellow eye combs and pale violet air sacs on the neck. Both sexes have feathered legs and upper parts mottled with white, buff, brown, and black. The wings have conspicuous white spots, and the breast and flanks have V-shaped brown markings on a snow-white background. Adult males and females average from 16.5 to 18.5 inches in length; adult males average 33 ounces and adult females 29 ounces in weight. Populations west of the Continental Divide that are thought to have been extirpated were, until recently, believed to be a smaller subspecies, the Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*). These populations tended to have grayer plumage, more pronounced spotting on the throat, and narrower markings on the underparts (Hoffman and Thomas 2007). However, nuclear and mitochondrial DNA of populations east and west of the Continental Divide overlap almost completely, indicating that Columbian Sharp-tailed Grouse likely never inhabited western Montana and that the declines observed in that region were in populations genetically similar to those on the Great Plains (Spaulding et al. 2006, Wood et al. 2010).

For a comprehensive review of the conservation status, habitat use, and ecology of this and other Montana bird species, please see Marks et al. 2016, Birds of Montana.

Habitat

The habitat is primarily grasslands interspersed with shrub and brush-filled coulees. They prefer stands of inter-mixed tree and shrub grasslands. With high population, they spread into islands of native grassland, usually along drainages surrounded by grainfields. Sharp-tailed Grouse persist only on native bunchgrass-shrub stands. In Idaho, Saab and Marks (1992) found birds selected big sage habitat types during summer. They appeared to prefer range habitats that were in good condition.

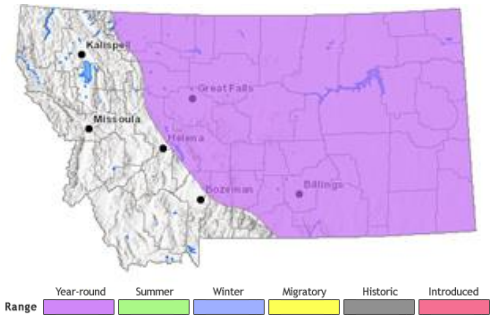
Until recently, Sharp-tailed Grouse in Montana were found west of the Continental Divide in larger mountain valleys with extensive native bunchgrass-shrub stands. However, they have now apparently been extirpated, or nearly extirpated, from this historic range (Hoffman and Thomas 2007).

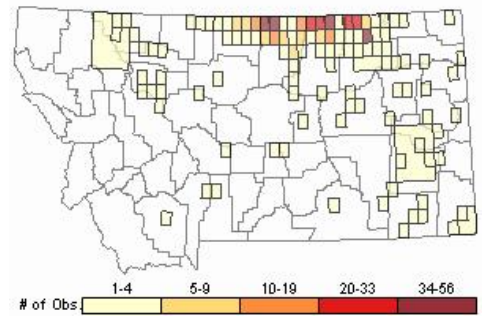
Swift Fox
Vulpes velox

Species of Concern
View in Field Guide

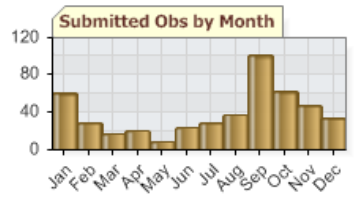
Global Rank: G3
State Rank: S3

Agency Status
USFWS:
USFS:
BLM: SENSITIVE
FWP SWAP: SGCN3





 # Observations: 550



General Description

Swift foxes are North America's smallest native canid (Foresman 2012), weighing 1.8 to 3.0 kilograms, with males averaging larger than females. The winter pelage is dark buffy-gray above, and orange-tan on the sides, legs, and lower surface of the tail. The chest and belly are buff to white and the tail is tipped with black. In summer the coat is shorter, harsher, and more reddish. The length of the head and body is 38 to 53 centimeters and tail length is 23 to 35 centimeters. The length of the ear of adults is 56 to 78 millimeters (Clark and Stromberg 1987, Nowak 1991).

Habitat

Swift foxes inhabit open prairie and arid plains, including areas intermixed with winter wheat fields in north-central Montana. They use burrows when they are inactive; either dug by themselves or made by other mammals (marmot, prairie dog, badger). The burrows are usually located in sandy soil on high ground such as hill tops (Pruss 1999) in open prairies, along fence rows, or occasionally in a plowed field. An individual may use several different dens throughout the year.

A statewide assessment of swift fox habitat was conducted by the Department of Fish, Wildlife, and Parks in May 1994 to identify large blocks of prairie grassland. Suitable swift fox habitat was generally defined as extensive in size (preferably over 100,000 acres), with relatively level topography, and with greater than 50% of the area undisturbed by agriculture. A total of 8,000,000 suitable acres were identified in Montana (Giddings and Knowles 1995). In Canada and northern Montana, Moehrenschlager et al. (2006) found that swift foxes were more likely to be present in relatively dry areas with gently sloping terrain, and less likely to be found in cropland or in edges, roads and other features related to habitat fragmentation.