Equisetum pratense (Meadow Horsetail)
Predicted Suitable Habitat Modeling

Distribution Status: Present
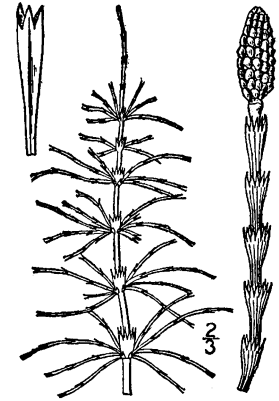**State Rank:** S2 (Species of Concern)
Global Rank: G5

Modeling Overview

Data Source Last Updated: September 9, 2021
Model Produced On: September 17, 2021

Deductive Modeling

**Modeling Process, Outputs, and Suggested Uses**

This is a simple rule-based model using species occurrences delineated for vascular and non-vascular plant species. These species could not be modeled with inductive methods, either due to limited observations or spatial extent or because an inductive model had poor performance. Species occurrences are discretely mapped polygons where the species has been documented. Plant species occurrence polygons are delineated by the MTNHP Botanist, and can be generated in two ways: 1) Polygons are hand-mapped and scaled to aggregate neighboring observation points and their adjacent habitat, while trying to exclude barriers, reduce known unoccupied habitat, and ignore management boundaries, or 2) Circular polygons are automatically generated by buffering the single observation point by its location uncertainty distance. For compatibility with other predictive distribution models the Montana Natural Heritage Program produces, we have intersected these species occurrences 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. Any hexagon that intersected a species occurrence was classified as suitable habitat. Model outputs are not evaluated and we suggest they be used to generate potential lists of species that may occupy lands within each hexagon for the purposes of landscape-level planning. Model outputs should not be used in place of on-the-ground surveys for species and wildlife and land management agency biologists should be consulted about the value of using model output to guide habitat management decisions for regional planning efforts or local projects. See Suggested Contacts for State and Federal Natural Resource Agencies attached to this document.

Suggested Citation: Montana Natural Heritage Program. 2021.*Equisetum pratense* (Meadow Horsetail) predicted suitable habitat models developed on September 17, 2021. Montana Natural Heritage Program, Helena, MT. 5 pp.

Montana Field Guide Species Account: http://fieldguide.mt.gov/speciesDetail.aspx?elcode=PPEQU01060

Deductive Model Map Output

Figure 1. Deductive habitat suitability model summarized into hexagons at a scale of 259 hectares per hexagon.
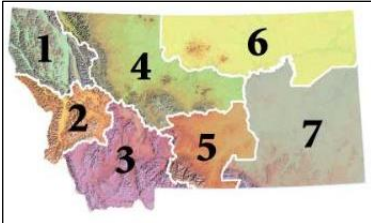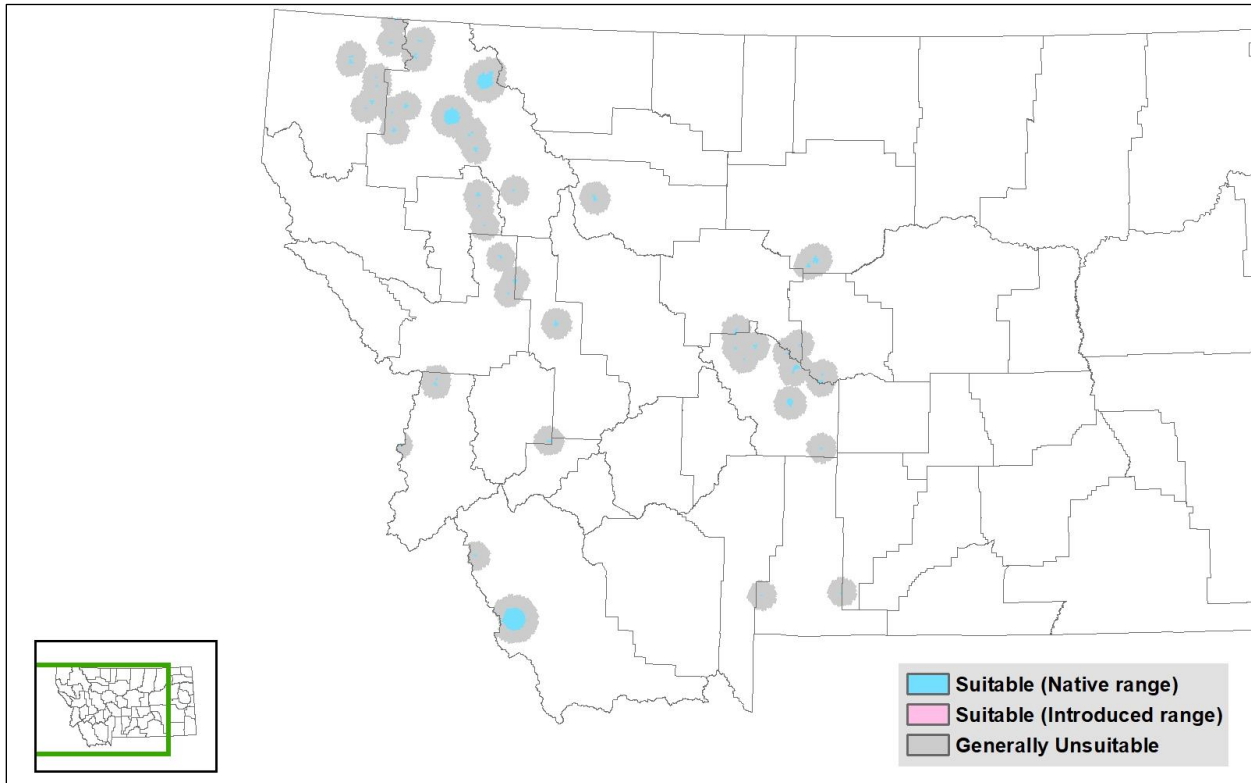
Suggested Contacts for Natural Resource Agencies

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; check our website for updates.

Montana Fish, Wildlife, and Parks

Fish Species	Zachary Shattuck zshattuck@mt.gov (406) 444-1231 or Eric Roberts eroberts@mt.gov (406) 444-5334
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	Smith Wells – MFWP Data Analyst smith.wells@mt.gov (406) 444-3759
Fisheries Data	Ryan Alger – MFWP Data Analyst ryan.alger@mt.gov (406) 444-5365
Wildlife and Fisheries Scientific Collector's Permits	http://fwp.mt.gov/doingBusiness/licenses/scientificWildlife/ Kammi McClain for Wildlife Kammi.McClain@mt.gov (406) 444-2612 Kim Wedde for Fisheries kim.wedde@mt.gov (406) 444-5594
Fish and Wildlife Recommendations for Subdivision Development	Renee Lemon RLemon@mt.gov (406) 444-3738 See also: 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
USFWS Information on Species Listed under the Endangered Species Act in Montana
https://www.fws.gov/montanafieldoffice/Endangered_Species/Species_information.html

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
Invasive Species Program Manager	Michelle Cox	michelle.cox2@usda.gov	(406) 329-3669

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

Natural Heritage Programs and Conservation Data Centres in Surrounding States and Provinces
Alberta Conservation Information Management System
British Columbia Conservation Data Centre
Idaho Natural Heritage Program
North Dakota Natural Heritage Program
Saskatchewan Conservation Data Centre
South Dakota Natural Heritage Program
Wyoming Natural Diversity Database

Invasive Species Management Contacts and Information

Aquatic Invasive Species

[Montana Fish, Wildlife, and Parks Aquatic Invasive Species staff](#)
[Montana Department of Natural Resources and Conservation's Aquatic Invasive Species Grant Program](#)
[Montana Invasive Species Council (MISC)](#)
[Upper Columbia Conservation Commission (UC3)](#)

Noxious Weeds

[Montana Weed Control Association Contacts Webpage](#)
[Montana Biological Weed Control Coordination Project](#)
[Montana Department of Agriculture - Noxious Weeds](#)
[Montana Weed Control Association](#)
[Montana Fish, Wildlife, and Parks - Noxious Weeds](#)
[Montana State University Integrated Pest Management Extension](#)
[Integrated Noxious Weed Management after Wildfires](#)