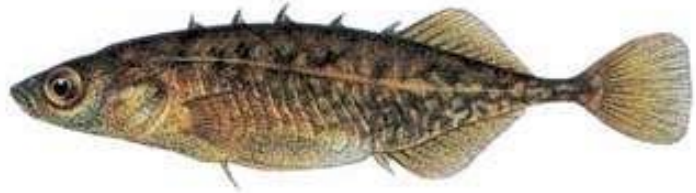


Brook Stickleback (*Culaea inconstans*) Predicted Suitable Habitat Modeling

Distribution Status: Resident Year Round

State Rank: [S4](#) (Potential Species of Concern)

Global Rank: [G5](#)



Modeling Overview

Data Source Last Updated: August 23, 2018

Model Produced On: July 11, 2019

Deductive Modeling

Modeling Process, Outputs, and Suggested Uses

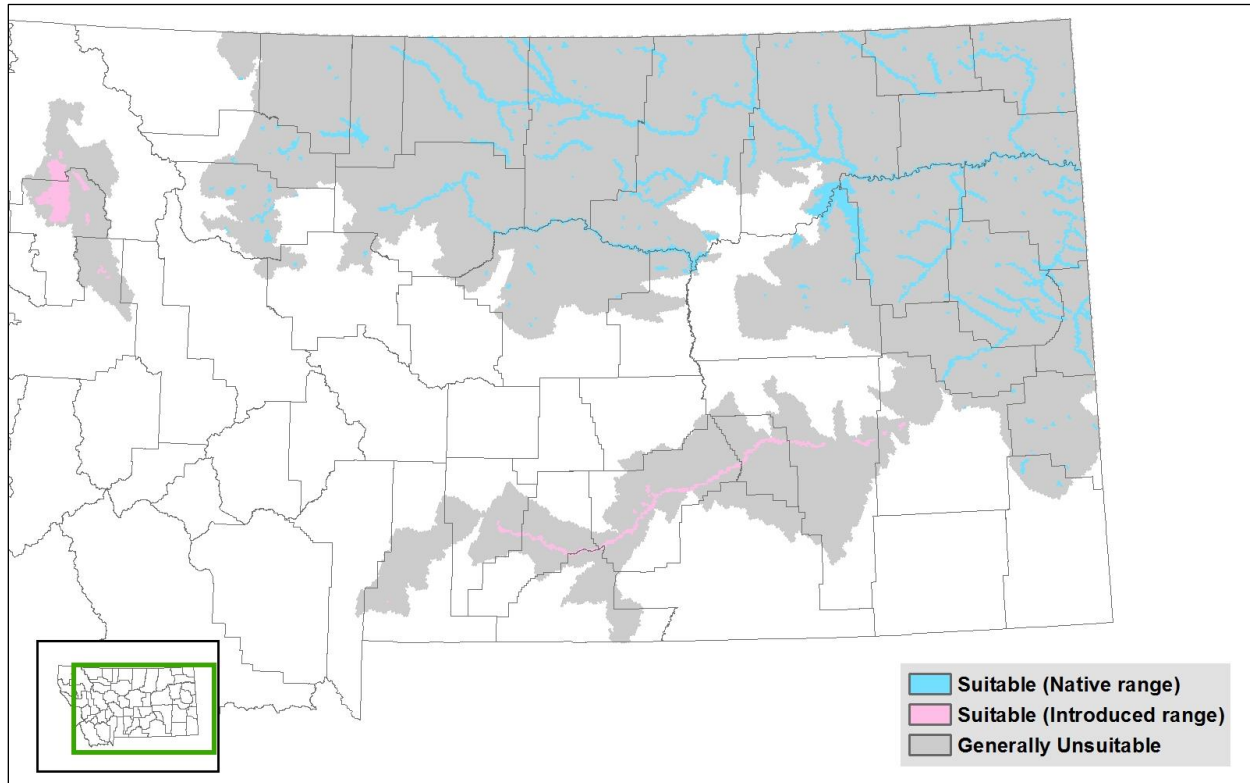
This is a simple rule-based model using stream reaches and standing waterbodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. See Montana fish distribution, survey, stocking, and genetic testing information from the Montana Department of Fish, Wildlife, and Parks at: <http://gis-mtfwp.opendata.arcgis.com/> For compatibility with other predictive distribution models the Montana Natural Heritage Program produces, we have intersected this fish presence 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. Any hexagon that intersected a waterbody evaluated as having a species present was classified as suitable habitat; native or introduced. Model outputs are not evaluated and we suggest they be used to generate potential lists of species that may occupy water bodies present 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 Natural Resource Agencies](#) attached to this document.

Suggested Citation: Montana Natural Heritage Program. 2019. Brook Stickleback (*Culaea inconstans*) predicted suitable habitat models developed on July 11, 2019. Montana Natural Heritage Program, Helena, MT. 4 pp.

Montana Field Guide Species Account: <http://fieldguide.mt.gov/speciesDetail.aspx?elcode=AFCPA02010>

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:


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	Smith Wells – MFWP Data Analyst smith.wells@mt.gov (406) 444-3759
Fisheries Data	Adam Petersen – MFWP Fish Data Manager apetersen@mt.gov (406) 444-1275
Wildlife and Fisheries Scientific Collector’s Permits	http://fwp.mt.gov/doingBusiness/licenses/scientificWildlife/ Karen Speeg for Wildlife kspeeg@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

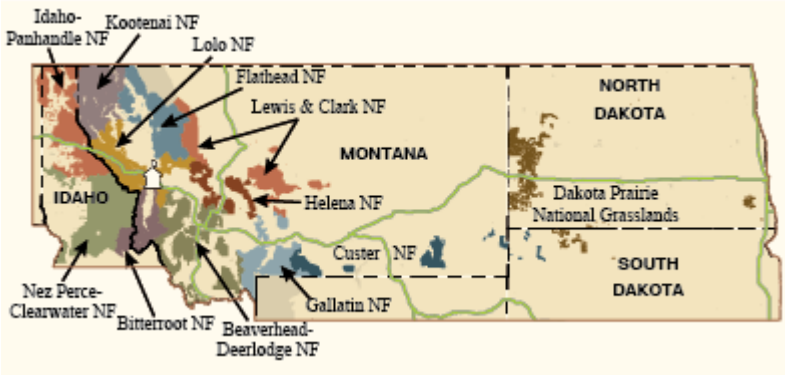
U.S. Fish and Wildlife Service

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
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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 Blackfoot Tribe - Blackfoot 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
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