MONTANA

Statewide Fisheries Management Plan

2013–2018

Montana Fish, Wildlife & Parks

Montana Statewide Fisheries Management Plan

Montana offers a diversity of quality angling opportunities throughout the state. There are waters to please different types of angling interest, from cold water to warm water, and fly fishing to bait casting. There are places to harvest fish and places to pursue the trophy of a lifetime. Many of these attributes can be attributed to the quality of the fisheries habitat in Montana. Still, there are numerous challenges facing Montana's fisheries including climate change, habitat alteration and dewatering of streams. Montana Fish, Wildlife & Parks is tasked with managing the state's fishery resources and addressing these challenges. A Statewide Fisheries Management Plan, the first of its kind for Montana, provides the framework and directions for accomplishing this task.

— **Bruce Rich,** Fisheries Bureau Chief

— **M. Jeff Hagener,** FWP Director

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FWP STATEWIDE FISHERIES MANAGEMENT PLAN: PART I

Introduction and Purpose of the Plan

Montana is home to a wide variety of fish species that provide quality angling opportunities throughout the state. Montana Fish, Wildlife & Parks (FWP) is the primary steward of these resources and serves this role by managing the fish and their habitat. FWP does so for the enjoyment of anglers and in the interest of maintaining an assemblage of native and nonnative fish species across the landscape. To accomplish this, FWP is engaged in management decisions and implementation at a statewide, programmatic level and in the field for individual drainages and waterbodies.

Managing Montana's fisheries and the angling opportunities they provide is a complex and often challenging task. FWP must take into account the number and types of fish in a waterbody and how those species interact. Not all fish species cohabitate well and it is sometimes necessary to suppress some species in order to conserve others. Fish diseases, aquatic invasive species, and illegal introductions of fish are just a few of the many issues that confront FWP on a regular basis. There are numerous state and federal laws designed to protect threatened and endangered species, all of which affect management decisions. There are environmental challenges, such as drought and fire. There are landscapes altered from various types of use and development. There are increasing demands on water resources. FWP often must balance conflicting values and angling interests. These responsibilities and challenges occur within a complex socio-economic arena where fish and the angling opportunities they provide are incredibly important to the residents of this state, their visitors, and the many businesses that rely on angling-related tourism dollars.

To help meet these challenges, and in order to provide the public with the rationale behind its management approach and decisions, FWP developed a statewide fisheries management plan (this document). The plan describes the main fisheries programs, current operations or areas of work within these programs, and the management emphasis and priorities for all waters of the state. The plan will help guide regulation setting, budget and project prioritization, and routine management decision making. The plan provides enough flexibility to allow for adaptive management during implementation.

This is FWP's first statewide fisheries management plan. FWP relies on the experience of its staff, institutional knowledge, input from the public, laws and rules, and individual waterbody or species plans to form the basis of its management approach. The Statewide Fisheries Management Plan documents all of this knowledge in one document, which will serve as a valuable resource to the angling public and the FWP staff responsible for managing Montana's fisheries.

Scope and Organization of Plan

The plan provides management direction for all waters of the state, either specifically or categorically, that are under the jurisdiction of FWP. Notable exceptions include Montana waters in Yellowstone or Glacier National Parks, although FWP coordinates closely with the National Park Service (NPS) on fisheries management, protection, and restoration in these waters. Similarly, the plan does not apply to Montana waters within the boundaries of Native American Tribal Reservations (unless specifically stated in this plan) but FWP frequently coordinates with the Tribes regarding fisheries management.

There are some large water-bodies in the State that have separate fisheries management plans. Most of these are high use fisheries or waterbodies with native fish conservation programs. The statewide plan does not override those plans but defers to them and provides guidance for managing adjacent waters in a manner that complements and coordinates with those individual plans. Examples are the Fort Peck Reservoir Fisheries Management Plan, the Upper Missouri River (Helena Area) Reservoirs Fisheries Management Plan, and the Flathead Lake Fisheries Co-Management Plan (to be collaboratively developed and administered by FWP and the Confederated Salish and Kootenai Tribes). Similarly, there are numerous waterbody-specific native fish species and/or aquatic habitat restoration strategies (e.g., An Integrated Stream Restoration and Native Fish Conservation Strategy for the Blackfoot River Basin, and the Native Salmonid Restoration Plan for the lower Clark Fork River reservoirs and tributaries) and interagency agreements (e.g., Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout). The statewide plan does not supersede current plans but is meant to defer to them as appropriate.

The Statewide Fisheries Management Plan consists of two parts. Part One describes the overarching, statewide goals and objectives for the core Fisheries programs and areas of work within these programs. Part One also describes special management issues, challenges, and initiatives within each program and guidance for addressing them.

Part Two provides direction for fisheries management within 40 drainage basins of the state (boundaries derived for fisheries management purposes). For each drainage basin there is a short narrative that describes the fisheries, including fisheries potential, limiting factors, and special issues or challenges facing the drainage, as well as fishing access status and needs. There is also a table for each drainage basin that prescribes a management type (approach) and direction for principal fish species found in the drainage or waterbody.

Plan Evaluation and Adaptive Management

FWP anticipates that this plan will be in place for a six-year time period (2013 – 2018). A formal public review and revision process will take place during the final year of the plan (2018) for the purpose of producing a 2nd Edition. It may be necessary to make minor adjustments along the way (prior to the formal revision process) in response to changing biological or habitat conditions, or to reflect changes in laws or rules that mandate a change in the plan's management directions. FWP will conduct periodic reviews of the plan to assess implementation progress, e.g., a mid-term or biannual evaluation report. FWP will resist making frequent changes to the

plan, however, in the interest of continuity and making sure that there is sufficient time for the plan to serve its intended purpose.

The plan outlines the major fisheries management programs and the goals and areas of work within these programs. The intent of the plan is to provide overarching direction and guidance to managers and other decision-makers when implementing programs and projects. The plan allows for flexibility, however, in recognition of the fact that it is impossible to know all of the different variables and conditions that may be encountered when implementing this plan. This type of adaptive management is possible because the plan does not identify detailed objectives or mandate implementation priorities. Instead, those implementing the plan are expected to operate within the overarching sideboards for each program but are also given flexibility to adapt their decisions on a case-by-case basis. In future iterations of this plan FWP may include more measurable objectives in order to assess progress towards program goals. It will still be necessary to achieve a proper balance and allow for adaptive management to occur.

Introduction to the FWP Fisheries Program

According to its mission statement, Montana Fish, Wildlife & Parks, through its employees and citizen commission, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of life for present and future generations.

In support of this mission, the FWP Fisheries Division preserves, maintains, and enhances aquatic species and their ecosystems to meet the public's demand for recreational opportunities and stewardship of aquatic wildlife. FWP accomplishes this by: implementing policies and programs that emphasize the management of wild fish populations and the protection and restoration of their habitats; operating an efficient hatchery program to stock lakes and reservoirs where natural reproduction is limited or lacking and when needed, use the hatchery program to fulfill management objectives for conservation programs; monitoring and regulating angler harvests to maintain balanced ecosystems; and by providing educational programs and maintaining adequate public access to fisheries.

The Fisheries Division has its state headquarters in Helena, Montana. FWP also has seven geographic administrative regions with a regional headquarters in each region. Implementation of most policy and management activities occurs at the regional level.

The primary function of the Fisheries headquarters is to coordinate state-wide programs, budgeting, planning, and development of rules and policy. Headquarters staff includes a Fisheries Division Administrator, Section Supervisors, Program Coordinators and Specialists, and Administrative Support Staff. They provide overarching direction for the Division's three core administrative sections (primary areas of work): Fisheries Management; Fisheries Habitat; and Fishing Access and Recreation Management. More details are provided in subsequent sections of this plan.

Each region is staffed with a regional supervisor (supervises all Fisheries and Wildlife Division programs within a region), a regional fisheries manager, and a varying number of fisheries biologists, technicians, and fishing access and recreation management staff. The regional

fisheries staff is primarily responsible for implementing and administering the programs, goals and objectives of the Fisheries Division.

FWP Work Units that support the Fisheries Division

There are a number of divisions, bureaus, work units and programs within FWP that provide support to the Fisheries Division. For example, there are Wildlife Management Areas and State Parks that provide angling opportunities and fisheries habitat. The Legal Unit provides important guidance and support in the promulgation and interpretation of laws and rules. The Information Technology and Database Services units provide essential computer and database management services to fisheries management. The FWP Finance Division plays a key role in supporting Fisheries operations and ensuring fiscal accountability. Two divisions in particular warrant additional mention due to the critical support they provide to the Fisheries Division: the Communication and Education Division's Aquatic Education program, and the Enforcement Division.

Communication and Education: Aquatic Education

The Aquatic Education Program was developed to increase the awareness and appreciation of Montana's fisheries and aquatic resources. An important component of the program is the integration of aquatic and fish–related topics into Montana schools, along with promoting fishing among both children and adults.

The value of education programs has often been demonstrated to anglers, FWP staff, and fishing clubs. Through a variety of activities, including classroom educational programs, public fishing clinics, educational fishing license exemptions, and promoting fishing and outdoor recreation to children and adults, the Aquatic Education Program seeks to enhance the public understanding of the state's fisheries and water-quality issues and thereby cultivate safe, successful, and ethical behavior among those using these resources.

Law Enforcement

Law enforcement is essential for ensuring compliance with FWP rules, regulations and state laws that protect and enhance the state's fisheries. Direct field contact with anglers and recreational users is the primary method used to encourage compliance with fishing regulations and other rules. This is accomplished on streams, lakes, and at Fishing Access Sites. In-depth investigations are also used to address more complex problems such as: illegal importation, introduction and transplantation of non-native fish, and illegal fishing outfitting and guiding.

Investigations and monitoring occur as needed to follow up on reports of illegal taking of spawning fish, as well as the taking of fish from sensitive, protected fish populations. Wardens also detect and investigate unlawful commercial sale of game fish and sturgeon/paddlefish caviar. Other efforts include public and youth education, fish pond inspections, patrol and presence at fishing contests, cooperative efforts with Tribal authorities, compliance at boat check stations, assisting with fisheries surveys, license compliance, and efforts to support and expand stream and bridge access across the state.

Fisheries Program Funding Sources

The Fisheries Program is allocated a portion of the revenue earned from the sale of State fishing and hunting licenses, commonly referred to as “license revenue.” The Program also receives money from the federal government. The biggest portion of this money is derived from the Federal Aid in Sport Fish Restoration Act, commonly called the Dingell-Johnson Act or Wallop-Breaux Act. The Act imposes a ten percent excise tax on the sale of certain items of sport fishing tackle, a three percent excise tax on fish finders and electric trolling motors, import duties on fishing tackle, yachts and pleasure craft, interest on the account, and a portion of motorboat fuel tax revenues and small-engine fuel taxes.

Federal aid funds are collected in an account known as the Sport Fish Restoration Account and allocated to the states for management and restoration of fish having "material value in connection with sport or recreation in the marine and/or fresh waters of the United States." In addition, amendments to the Act provide funds to the states for aquatic education, wetlands restoration, boat safety and clean vessel sanitation devices (pump-outs), and a non-trailerable boat program. The Program also receives federal funds for native species conservation and restoration, and federal and private mitigation funds (mostly from hydroelectric generation).

Other sources of funding include permit fees, e.g., commercial-use permit fees paid by fishing outfitters and guides, and special use permit fees for some fishing contests. These types of fees are allocated to the FWP fishing access site program.

Montana's Fisheries Resources

Montana is home to 87 species of fish; 57 native to the state, 30 non-native (introduced), and a number of subspecies and hybrid crosses. Within the seven ecoregions of the state (see map at start of Part II of Plan for ecoregion boundaries), the lower Yellowstone and lower Missouri have the greatest number of total species (64 in lower Missouri, 61 in lower Yellowstone). By contrast, the ecoregions west of the Continental Divide are relatively species poor, with the Kootenai having 28 species, the Clark Fork having 38 species and the much smaller St. Mary River drainage having only 17 species. Statewide, there are almost 54,000 miles of streams and rivers that hold fish, and over 697,000 acres of lakes, ponds and reservoirs with fish. Refer to Table 1 below for a list of Montana fish species and their distribution.

Table 1. List of Montana Fish Species

Family	Species	Scientific Name		ECOREGION						
			Native to Montana? Yes or No	**Kootenai River**	**Clark Fork**	**St. Mary River**	**Upper Missouri River**	**Lower Missouri River**	**Upper Yellowstone River**	**Lower Yellowstone River**
Catfish	**Black Bullhead**	*Ameiurus melas*	No	X	X		X	X	X	X
Catfish	**Channel Catfish**	*Ictalurus punctatus*	Yes				X	X	X	X
Catfish	**Stonecat**	*Noturus flavus*	Yes				X	X	X	X
Catfish	**Yellow Bullhead**	*Ameiurus natalis*	No		X			X		X
Codfish	**Burbot**	*Lota lota*	Yes	X	X	X	X	X	X	X
Drum	**Freshwater Drum**	*Aplodinotus grunniens*	Yes				X	X		X
Gar	**Shortnose Gar**	*Lepisosteus platostomus*	Yes					X		X
Killifish	**Plains Killifish**	*Fundulus zebrinus*	No					X		X
Livebearers	**Green Swordtail**	*Xiphophorus hellerii*	No				X			
Livebearers	**Sailfin Molly**	*Poecilia latipinna*	No				X			
Minnow	**Brassy Minnow**	*Hybognathus hankinsoni*	Yes				X	X		X
Minnow	**Central Mud Minnow**	*Umbra limi*	No		X					
Minnow	**Common Carp**	*Cyprinus carpio*	No		X		X	X	X	X
Minnow	**Creek Chub**	*Semotilus atromaculatus*	Yes				X	X	X	X
Minnow	**Emerald Shiner**	*Notropis atherinoides*	Yes		X		X	X		X
Minnow	**Fathead Minnow**	*Pimephales promelas*	Yes		X		X	X	X	X
Minnow	**Flathead Chub**	*Platygobio gracilis*	Yes				X	X	X	X
Minnow	**Golden Shiner**	*Notemigonus crysoleucas*	No				X	X		X
Minnow	**Goldfish**	*Carassius auratus*	No					X		X
Minnow	**Lake Chub**	*Couesius plumbeus*	Yes				X	X	X	X

Family	Species	Scientific Name		ECOREGION						
			Native to Montana? Yes or No	**Kootenai River**	**Clark Fork**	**St. Mary River**	**Upper Missouri River**	**Lower Missouri River**	**Upper Yellowstone River**	**Lower Yellowstone River**
Minnow	**Longnose Dace**	*Rhinichthys cataractae*	Yes	X	X	X	X	X	X	X
Minnow	**Northern Pike Minnow**	*Ptychocheilus oregonensis*	Yes	X	X					
Minnow	**Northern Redbelly Dace**	*Phoxinus eos*	Yes				X	X		X
Minnow	**Northern Redbelly/ Finescale Dace**	*Phoxinus eos x phoxinus neogaeus*	Yes				X	X		X
Minnow	**Peamouth**	*Mylocheilus caurinus*	Yes	X	X					
Minnow	**Pearl Dace**	*Margariscus margarita*	Yes					X		X
Minnow	**Plains Minnow**	*Hybognathus placitus*	Yes				X	X		X
Minnow	**Redside Shiner**	*Richardsonius balteatus*	Yes	X	X		X			
Minnow	**Sand Shiner**	*Notropis stramineus*	Yes				X	X	X	X
Minnow	**Sicklefin Chub**	*Macrhybopsis meeki*	Yes					X		X
Minnow	**Spottail Shiner**	*Notropis hudsonius*	No				X	X		X
Minnow	**Sturgeon Chub**	*Macrhybopsis gelida*	Yes				X	X		X
Minnow	**Utah Chub**	*Gila atraria*	No				X			
Minnow	**Western Silvery Minnow**	*Hybognathus argyritis*	Yes				X	X	X	X
Mooneye	**Goldeye**	*Hiodon alosoides*	Yes				X	X	X	X
Paddlefish	**Paddlefish**	*Polyodon spathula*	Yes				X	X		X
Perch	**Iowa Darter**	*Etheostoma exile*	Yes				X	X		X
Perch	**Sauger**	*Sander canadense*	Yes				X	X	X	X
Perch	**Walleye**	*Stizostedion vitreum*	No		X		X	X	X	X
Perch	**Yellow Perch**	*Perca flavescens*	No	X	X		X	X	X	X
Pike	**Northern Pike**	*Esox lucius*	Yes[1]		X	X	X	X	X	X
Sculpin	**Clark Fork Sculpin**	*Cottus sp.cf.cognatus*[2]	Yes		X					
Sculpin	**Columbia Slimy Sculpin**	*Cottus cognatus*	Yes	X	X					
Sculpin	**Deepwater Sculpin**	*Myoxocephalus thompsonii*	Yes			X				
Sculpin	**Rocky Mountain (Mottled Sculpin)**	*Cottus sp.cf.bairdi*[32]	Yes	X	X	X	X	X	X	X

[1] Northern pike are native to a single drainage in Montana, the St. Mary River drainage.
[2]Species designation pending.

Family	Species	Scientific Name		ECOREGION						
			Native to Montana? Yes or No	**Kootenai River**	**Clark Fork**	**St. Mary River**	**Upper Missouri River**	**Lower Missouri River**	**Upper Yellowstone River**	**Lower Yellowstone River**
Sculpin	**Spoonhead Sculpin**	*Cottus ricei*	Yes			X				
Sculpin	**Torrent Sculpin**	*Cottus rhotheus*	Yes	X						
Smelt	**Rainbow Smelt**	*Osmerus mordax*	No					X		X
Stickleback	**Brook Stickleback**	*Culaea inconstans*	Yes		X		X	X	X	X
Sturgeon	**Pallid Sturgeon**	*Scaphirhynchus albus*	Yes				X	X		X
Sturgeon	**Shovelnose Sturgeon**	*Scaphirhynchus platorynchus*	Yes				X	X	X	X
Sturgeon	**White Sturgeon**	*Acipenser transmontanus pop.*	Yes	X						
Sucker	**Bigmouth Buffalo**	*Ictiobus cyprinellus*	Yes				X	X	X	X
Sucker	**Blue Sucker**	*Cycleptus elongatus*	Yes		X		X	X	X	X
Sucker	**Largescale Sucker**	*Catostomus macrocheilus*	Yes	X	X					
Sucker	**Longnose Sucker**	*Catostomus catostomus*	Yes	X	X		X	X	X	X
Sucker	**Mountain Sucker**	*Catostomus platyrhynchus*	Yes				X	X	X	X
Sucker	**River Carpsucker**	*Carpiodes carpio*	Yes				X	X	X	X
Sucker	**Shorthead Redhorse**	*Moxostoma macrolepidotum*	Yes				X	X	X	X
Sucker	**Smallmouth Buffalo**	*Ictiobus bubalus*	Yes				X	X	X	X
Sucker	**White Sucker**	*Catostomus commersoni*	Yes				X	X	X	X
Sunfish	**Black Crappie**	*Pomoxis nigromaculatus*	No		X		X	X	X	X
Sunfish	**Bluegill**	*Lepomis macrochirus*	No	X	X		X	X	X	X
Sunfish	**Green Sunfish**	*Lepomis cyanellus*	No					X	X	X
Sunfish	**Largemouth Bass**	*Micropterus salmoides*	No	X	X		X	X	X	X
Sunfish	**Pumpkinseed**	*Lepomis gibbosus*	No	X	X		X	X		X
Sunfish	**Rock Bass**	*Ambloplites rupestris*	No							X
Sunfish	**Smallmouth Bass**	*Micropterus dolomieu*	No	X	X		X	X	X	X
Sunfish	**White Bass**	*Morone chrysops*	No					X		X
Sunfish	**White Crappie**	*Pomoxis annularis*	No				X	X	X	X
Trout	**Arctic Grayling**	*Thymallus arcticus*	Yes	X	X	X	X	X	X	X
Trout	**Brook Trout**	*Salvelinus fontinalis*	No	X	X	X	X	X	X	X
Trout	**Brown Trout**	*Salmo trutta*	No	X	X	X	X	X	X	X

Family	Species	Scientific Name		ECOREGION						
			Native to Montana? Yes or No	**Kootenai River**	**Clark Fork**	**St. Mary River**	**Upper Missouri River**	**Lower Missouri River**	**Upper Yellowstone River**	**Lower Yellowstone River**
Trout	**Bull Trout**	*Salvelinus confluentus*	Yes	X	X	X				
Trout	**Chinook Salmon**	*Oncorhynchus tshawytscha*	No					X		
Trout	**Cisco**	*Coregonus artedi*	No				X	X		X
Trout	**Columbia Basin Redband Trout**	*Oncorhynchus mykiss gairdneri*	Yes	X						
Trout	**Golden Trout**	*Oncorhynchus mykiss aguabonita*	No	X	X		X		X	
Trout	**Kokanee**	*Oncorhynchus nerka*	No	X	X	X	X	X		
Trout	**Lake Trout**	*Salvelinus namaycush*	Yes[4]	X	X	X	X	X	X	
Trout	**Lake Whitefish**	*Coregonus clupeaformis*	Yes[5]		X	X		X		
Trout	**Mountain Whitefish**	*Prosopium williamsoni*	Yes	X	X	X	X	X	X	X
Trout	**Pygmy Whitefish**	*Prosopium coulteri*	Yes	X	X					
Trout	**Rainbow Trout**	*Oncorhynchus mykiss*	No	X	X	X	X	X	X	X
Trout	**Westslope Cutthroat Trout**	*Oncorhynchus clarki lewisi*	Yes	X	X	X	X	X	X	
Trout	**Yellowstone Cutthroat Trout**	*Oncorhynchus clarki bouvieri*	Yes	X	X	X	X	X	X	X
Trout-Perch	**Trout-Perch**	*Percopsis omiscomaycus*	Yes			X				

[4] Lake trout are native to only four lakes in Montana (Elk, Twin, Waterton, and St. Mary lakes).
[5] Lake whitefish are native to a single drainage in Montana, the St. Mary River Drainage.

FISHERIES MANAGEMENT PROGRAM

Fisheries Management Goals

1. Provide a diversity of quality angling opportunities for native and non-native fish through management of self-sustaining wild fisheries and the use of hatchery-reared fish.

2. Protect, maintain, and restore native fish populations, their habitats, life cycles, and genetic diversity to ensure stewardship of native species and to ensure angling opportunities whenever possible.

Background and Description

The central purpose for managing the state's fisheries is to provide a diversity of quality angling opportunities while protecting, maintaining and restoring populations of native and non-native species of fish. Generally, the activities needed to manage the state's fisheries include monitoring the life cycles of different fish populations in varied habitats, manipulating fish populations to meet management goals, operating a hatchery system to stock fish for anglers and for conservation purposes, understanding trends in angling pressure and preferences, and devising strategies to maintain sufficiently healthy and genetically diverse fish populations. The need to devise effective strategies for dealing with the illegal introduction of fish and other aquatic species into the state's waters is also crucial.

A central tenent of fisheries management in Montana is that of wild trout management. This was borne out of studies conducted in the 1960s and 1970s, which showed that catchable hatchery rainbow trout stocked into the Madison River reduced the numbers and biomass of wild-produced rainbow trout and brown trout in the river. There are probably several reasons for this, but the realization that there were no discernible benefits from the high cost of growing and stocking catchable hatchery fish led to FWP policy changes in 1976, which put a halt to almost all stream stocking of catchable fish. Once stocking was no longer viewed as a viable long-term management approach, the focus shifted toward optimizing the potential of each system through aggressive habitat protection and enhancement programs. This management paradigm continues to this day, and the emphasis optimizing habitat and aligning management objectives with this potential, has been extended to all fisheries across the state.

Monitoring activities such as netting and electrofishing provide managers with data on the size, composition, and trends of individual fish species, which is necessary to effectively manage a fishery. An analysis of these data may reveal a need to manipulate a population to meet management goals. Fisheries that are maintained by hatchery stocking (typically lakes and reservoirs) can be easily manipulated by changing stocking rates or sizes of fish that are stocked. Manipulation of wild fisheries (most streams and rivers, but also some lakes and reservoirs) is typically more difficult. Engaging anglers for this purpose through fishing regulations is the preferred method, but often may not be sufficient if the target species is not easily captured by hook and line, or if the angling pressure on the waterbody is insufficient to accomplish the desired changes.

Other methods used to increase the abundance of a managed species may include manipulating habitat to improve spawning or rearing habitat, providing fish passage at barriers that allow fish to access spawning grounds, or improving water flows or water quality to allow for greater numbers of fish. Often times the management goal may be to reduce or eliminate a certain species if it was illegally introduced, is a competitor with or a predator on a preferred species, or compromises the genetic integrity of the more-preferred species through hybridization. In such cases, liberal fishing regulations may help reduce or suppress the target species, but more aggressive means may be required such as electrofishing, commercial netting, biological control (introducing a predator or parasite), or removing important habitat such as spawning substrate. To eliminate all of the undesirable species in a waterbody is much more difficult, and chemical treatments with fish toxicants (rotenone or antimycin) are often used for this purpose. Dewatering a waterbody may also work if the fish are in a reservoir that can be drained, or are located in a side-channel that can be shut off from water.

Tradeoffs in fisheries management are sometimes necessary when two or more species exist in a waterbody. The tradeoffs become more difficult when the species assemblage includes both native and non-native species, when the species compete with, prey upon, or genetically hybridize with one another, or when there is a popular sport or commercial fishery involved. An example is managing a predator-prey type fishery that provides angling opportunity for both species, e.g., a fishery with yellow perch and pike or walleye.

It is FWP's goal to maintain viable populations of all native fish species in Montana. Some native species have high conservation value, including Endangered Species Act (ESA) listed species,e.g., bull trout, pallid sturgeon, Kootenai River white sturgeon, and species designated as Species of Concern (SOC), e.g., sauger, cutthroat trout, paddlefish. The goal is to maintain all populations of these species. Native species *with* sport fishing value, but with no special conservation status e.g., channel catfish, shovelnose sturgeon, mountain whitefish, are managed much like non-native species with sport-fishing value. This designation means that on a case-by-case basis their populations will be maintained or adjusted upward or downward depending on their popularity and interactions with other species. Native species *without* sport-fishing value or special conservation status e.g., longnose dace, mottled sculpins, fathead minnows, longnose suckers, are managed as forage fish (as appropriate) but individual populations are not protected as a general rule.

It is sometimes necessary to exclude one fish species in order to maintain a population of another species. This need for exclusion occurs most often when managing populations of native, resident cutthroat trout, which are often hybridized by rainbow trout or are outcompeted by brook trout (non-native species). In these situations, a refuge is created, often consisting of an artificial barrier or waterfall to prevent upstream invasion by non-native species. In these refugia, non-native species are typically suppressed or eliminated. FWP prefers to develop refugia in locations where there is not already a popular fishery for the native or a non-native sport fish. Typically, where a native species with conservation or sport fish value coexists with a non-native species with sport fish value (such as bull trout and lake trout), and there is potential conflict between the two species (usually non-native species preying on the native species), the management goal is to ensure stable populations of both species.

In situations where popular fisheries exist for two non-native species (such as walleye and rainbow trout), the decision to favor one over the other, or the decision to try to achieve a balance between the two, is based on a number of factors. These include but are not limited to the suitability of the habitat for the competing species, the biological capacity of the affected waterbody, historical precedent, and public sentiment.

Climate Change

Climate variability is currently increasing in Montana. Over a 20 year period beginning in 1992, 'extremely dry' conditions were reported in at least one and typically multiple adjacent Montana hydrologic sub-basins during 15 of those years. More recently, Montana's weather has varied from record flooding in the spring of 2011 to having the driest September in 188 years of record in September of 2012. With this variability in climate, FWP is observing thermal changes and streamflow reductions in many waterbodies across the state. The changing conditions can affect which fish species occupy a waterbody, as well as how those species use the waterbody.

Regardless of whether or not recent increasing climate variability is man-caused, it is important for FWP to take into account these changing habitat conditions when managing to meet the needs of a particular species and/or the desired angling opportunities. A trend towards warmer thermal conditions in a waterbody, for example, could mean a corresponding shift in distribution or prevalence of fish species more tolerant of warm water temperatures than in the historic condition.

Habitat Effects

If these climate changes and variability trends continue, especially with continued warming temperatures, we can potentially expect:

- changes in aquatic invertebrate growth and emergence;
- shifts in fish species distribution (with warm-water intolerant fish being restricted to more northward and/or higher elevations);
- shifts in peak stream flows to earlier and perhaps lower magnitude runoffs (leading to less streamflow in late summer);
- many possible lake changes (nuisance algae, less dissolved oxygen in deeper water, etc.); and,
- greater frequency of severe summer low flow conditions in streams, which means less habitat for fish, and habitat that is degraded by high temperatures and low dissolved oxygen (fish under these conditions may seasonally vacate these habitats or experience significant mortality).

In some cases high altitude cold water streams offer thermal refugia for extreme cold water obligates (e.g., bull trout), and reservoirs and their cold tailwaters can ameliorate thermal effects of warming climate at some levels.

Fish Distribution Effects

FWP has observed changes in fish distribution as a result of recent changing thermal conditions. The warming of surface waters will presumably favor persistence and distribution of fish species

(both native and non-native) that prefer, or are more tolerant of, warm water compared to other species.

For example, FWP has noted some fish distribution changes favoring a non-native fish species in the Yellowstone River. Smallmouth bass are generally found as far upstream as Huntley Diversion, but during warmer, drier years have been located 30 miles further upstream near Laurel. With continued warming, occasional incursions another 30 miles upstream to Columbus could occur.

Similarly, expansion of brown trout distribution, as evidenced by their increased use of higher elevation waters, is another example of fish responding to climate changes; specifically thermal changes. Historic and ongoing FWP fish community monitoring data will be an important source for documenting changes in species composition and distribution.

FWP will continue to apply the tools it has available, including:

- seeking instream-flow protection using all of the means described under that section of the plan;
- pursuing riparian protection and enhancement through stream-permitting requirements, restoration, and education efforts;
- ensuring fish passage to cooler reaches by removing barriers and impediments and providing fish ladders, etc.;
- focusing efforts more on healthy core populations of native coldwater fish (such as bull trout, Arctic grayling, and cutthroat trout) and less on marginal populations;
- protecting strong isolated populations that have discovered thermal refugia, for example in headwater streams;
- maintaining reservoir elevations to preserve resident fisheries and to provide late season releases as relief for downstream fisheries;
- continuing to participate in statewide drought management and response planning, including the use of fishing closures when warranted; and
- continuing to monitor Montana's stream and lake fisheries to determine the effects of climate variability along with a multitude of other changes and adaptations, along with a measurement of the effectiveness of the adjustments being made.

In summary, FWP is very conscious of weather and climate trends, and will continue to consider, at the appropriate level, the potential effects of climate change and variability, when making fisheries management and habitat decisions.

Monitoring Fish Populations and Ecological Health

FWP collects data on fish abundance, distribution, and trends to establish and maintain an understanding of the overall health and well being of the state's fisheries. Data collection and interpretation form the basis of FWP's understanding of fish resources in the state. These data allow FWP to do the best job possible of managing and protecting the resource for public use and enjoyment, including making management decisions about fishing regulations, making recommendations to other agencies and individuals, and solving fisheries problems, both biological and social. These data are used to monitor trends in populations and to understand

how changes, ranging from human-caused to natural changes, affect populations. Making informed, biologically sound, and ecologically defensible decisions is only possible through effective and comprehensive data collection and interpretation.

Information on the status and trends of fish populations is used to evaluate the suitability of hatchery stocking levels, the effect of existing fishing regulations, or the capacity of a population to respond to alternative regulations. Survey results and inventory work have been essential to the management of the resource and have helped to describe and quantify damages to natural resources over the last century, including highway construction, dam operations, and environmental disasters.

Results from survey and inventory activities are used in explaining fisheries and aquatic habitat information and providing technical assistance to the general public, angling groups and school children. Information is disseminated to the public through a variety of sources ranging from peer-reviewed publications in scientific journals to talks with sporting groups at a local level.

Description of current operations and/or areas of work

The *methods* used to sample fish and other components of the aquatic environment are similar in each FWP region but the *techniques* vary depending on the specific site, species sought, or monitoring question. Despite a large number of species present in a water body, biologists will often monitor an indicator fish species, aquatic invertebrates, and selected water quality parameters to detect adverse impacts from contaminants and alterations of habitat. Methods and techniques are constantly being refined and evaluated, and biologists rely on a combination of novel techniques (taking advantage of cost and accurate technologies) and techniques and methods that honor past traditions that make data comparisons possible. FWP provides training to its staff and others to maintain skills and adherence to FWP guidelines.

Special issues, challenges or initiatives

Whereas collecting and monitoring data is critical work and leads to an understanding and management of the considerable resources in this state, it is also a costly endeavor. It is therefore important to be thoughtful, efficient, and effective. FWP routinely analyzes its monitoring efforts for efficiency and effectiveness , and to ensure that goals are being met.

Applicable laws, rules and policies

None identified.

Regulation Setting Process

The FWP Commission has statutory authority to establish seasons, bag limits, possession limits and season limits for any species of game fish. It may also declare a closed season on any fish threatened with undue depletion for any cause. Collectively, these limits and seasons are referred to as “fishing regulations.”

The Commission may set new regulations or modify existing ones at any time deemed necessary. The normal regulation setting process, however, is conducted on a four-year cycle with annual changes made in special circumstances. Every fourth year FWP seeks ideas from the angling

public and fisheries staff about ideas and concerns that might be addressed by regulation changes. FWP then proposes regulation changes to the FWP Commission, which in turn decides which proposals will be advanced for public review. It is the Commission's prerogative to amend FWP's proposals before soliciting public comments. Regulation changes are typically initiated at the August Commission meeting. The Commission makes a final decision based on input from the public and FWP staff. With the exception of emergency or time-sensitive situations, the regulations adopted by the Commission in October go into effect on March 1 of the following year. These changes are captured in the Fishing Regulation booklet for that year, which is normally available at FWP offices and license agents beginning in mid-February.

FWP does not formally solicit ideas from the public during the other three years of the cycle (off-years), although the public is free to submit ideas throughout the four-year cycle. The reason for a four-year cycle with formal public involvement occurring every fourth year is to give new regulations time to work, and to reduce time that staff and the public must devote to the regulation setting process. During these off-years FWP may consider regulation changes generated by FWP fisheries and enforcement staff. There are rigid criteria, however, for the types of regulation changes that can be considered during off-years. Proposals that meet one or more of the following criteria are eligible for presentation to the Commission:

1) Clarifications (regulation change is needed to clarify intent of regulation or to correct typos or other errors that led to erroneous information in regulations);
2) Enforcement (regulation change is needed to improve enforcement efforts, to prevent illegal take, or to clarify intent to reduce innocent violations);
3) Conservation (regulation change is needed to conserve or protect the population of any species, but primarily Threatened and Endangered species);
4) Relevancy (regulation no longer has a real management purpose or value and there is little public following, constituency or controversy);
5) Management Plans (FWP has committed to implementing certain regulation changes if certain events transpire, e.g., changes in fish populations, angling pressure, catch rates, etc.)

Drought-related Fishing Restrictions

Low water flows and/or high water temperatures on trout-bearing streams can stress fish to the point of mortality. This effect can be exacerbated when fish are caught by anglers. It is during these conditions that FWP may implement the Angling Restrictions and Fishing Closure rule. This rule states that FWP can implement angling restrictions or closures with the approval of the FWP Commissioner in whose district the restriction or closure is proposed. An *angling restriction* prohibits fishing during the period of day when water temperatures are highest, usually between the hours of 2 p.m. and midnight. The criteria for implementing an angling restriction are: 1) daily maximum water temperatures that have reached or exceeded 73° F at any time during three consecutive days (60° F in the case of bull trout waters); or 2) where stream or river flows fall to or below the 95% daily exceedence level based on hydrologic records for that waterbody; or 3) water conditions meet criteria stated in a Drought Management Plan.

An *angling closure* prohibits fishing at all times of day, and the criteria to implement these closures include all of those mentioned above for angling restrictions, plus: 1) dissolved oxygen

in the water is less than 4 parts per million (ppm) when measured before sunrise; or 2) other biological or environmental conditions exist that FWP determines have the potential to adversely affect the fishery. A drought-related angling restriction or closure remains in effect until September 15 of that same year, although FWP has the discretion to reopen the stream earlier if stream conditions improve and meet criteria listed in the rule.

Applicable laws, rules and policies

Statute
87-1-304: Authorizes the Commission to close any water or area for a limited period of time when necessary to protect spawning fish or prevent undue depletion of fish and wildlife.

Administrative Rule
12.5.501-509: Authorizes the Commission to implement angling restrictions or fishing closures. Types of closures and criteria for implementing closures and reopening waters is described.

Hatchery System

FWP operates eleven fish hatcheries that produce a variety of sport and native fish. The eleven hatcheries are classified as either broodstock or production, with some of the facilities having a vital role in native species restoration efforts. *Broodstock facilities* maintain mature adults that are spawned on station. The eggs are either shipped to production facilities for hatching and/or rearing, kept on-station and raised for production, or go into future broodstock year classes. *Production facilities* typically do not maintain any spawning adults, and are primarily used for producing fish for stocking out as either fry, fingerlings or catchables.

FWP hatcheries maintain captive broodstocks for rainbow trout (Jocko River and Murray Springs), westslope cutthroat trout (Washoe Park), Yellowstone cutthroat trout (Yellowstone River), arctic grayling (Yellowstone River), and largemouth and smallmouth bass (Miles City). Other sources for eggs and fish include wild populations in specific rivers, lakes and reservoirs, and private, state or federal hatcheries within and outside of Montana. Ten of the hatcheries are owned and operated by FWP. The Murray Springs Trout Hatchery is owned by the US Army Corps of Engineers and operated by FWP.

A relatively new addition to the hatchery program has been the production of reproductively sterile fish using a technique known as triploidy. Triploid fish are used in situations where a sterile fish is needed to prevent hybridization with native fish species, and stocking triploid fish protects the genetic integrity of wild fish populations and prevents the establishment of new breeding populations. Triploids have three sets of chromosomes instead of two, with the addition of a third set of chromosomes rendering the fish unable to reproduce. Only a small proportion of rainbow trout, westslope cutthroat trout and walleye eggs produced by the hatchery system are triploids; by far the majority of fish produced are diploids which are reproductively capable. Producing triploids adds additional challenges over the production of the normal diploid fish. In order to create triploids, the fertilized eggs are given a pressure shock which interrupts cell division during early egg development and causes the cells to retain a third set of chromosomes. Because of the pressure shock treatment and the additional handling required, the success rate of triploid eggs is typically somewhat lower than that of diploids. Research is

ongoing to determine the relative performance of triploids in the hatchery environment and in the wild.

Description of current operations and/or areas of work

For ponds, lakes and reservoirs, hatchery-produced eggs and fish are used to provide or enhance recreational fisheries. Where there is no natural reproduction, or where there is no recruitment to support a fishery, hatchery fish of appropriate species are stocked to provide a fishery. In waters where natural recruitment is insufficient, hatchery fish are used to augment sportfish populations. Hatchery fish are frequently used to restore sportfish populations that have been locally extirpated by various causes (e.g., drought, winter or summer kill, or chemical removal). Montana hatcheries are crucial components in the restoration of many of Montana's native fish species. Restoration efforts for Yellowstone and westslope cutthroat trout, redband trout, pallid sturgeon, sauger, and arctic grayling rely on Montana hatcheries for eggs and fish from captive and wild broodstocks.

The Montana hatcheries are also a primary resource for informing and educating the public about fisheries issues. Many hatchery visitors do not participate in fishing or hunting, and their visit to a hatchery is their only contact with FWP. Additionally, a hatchery may be their only experience with fish in an environment where they can interface with, observe, and appreciate live fish. Hatchery displays and personnel provide information to visitors about FWP's fish and wildlife management activities and conservation issues. Visitor centers, aquariums, living stream displays and other exhibits educate the public about hatchery history, fish culture, species diversity, limnology, aquatic ecology, and environmental issues. Hatcheries are also important sites for educating school and civic groups.

Overview of the State Fish Hatcheries

Big Springs Trout Hatchery

Located seven miles south of Lewistown, Big Springs Trout Hatchery is currently the largest FWP salmonid production facility. The hatchery is composed of an upper unit on land leased from the City of Lewistown and a lower unit on FWP land. The current annual production of over 1.8 million fish includes five species: rainbow trout, brown trout, Yellowstone cutthroat trout, grayling, and kokanee salmon.

Bluewater Springs Trout Hatchery

Located on FWP land seven miles east of Bridger, Bluewater Springs Trout Hatchery is an FWP production facility, which produces up to 1.5 million fish annually. Species of fish produced typically include three strains of rainbow trout, Yellowstone cutthroat trout, and grayling.

Flathead Lake Salmon Hatchery

The Flathead Lake Salmon Hatchery is located on FWP land on the northwest shore of Flathead Lake, near Somers. The primary activity is the collection and incubation of wild kokanee salmon eggs to meet an annual statewide kokanee requirement of approximately 2 million salmon. It shares the production and distribution of these salmon with other hatcheries. Over 1 million fry are raised and distributed annually. The hatchery is also involved with the incubation and distribution of grayling and westslope cutthroat trout.

Fort Peck Fish Hatchery

The Fort Peck Fish Hatchery is owned by the U.S. Army Corps of Engineers but staffed and operated by FWP. Opened in the spring of 2006, this facility is capable of rearing a wide variety of warm-water and cold-water fish including walleye, northern pike, rainbow trout and Chinook salmon. The facility has 64 indoor rearing tanks and incubation capacity for up to 125 million walleye eggs and 500,000 Chinook salmon eggs. Forty outdoor ponds are used in the spring and summer for raising fingerling warmwater fish, and 8 outdoor concrete raceways are used for rearing fall-released Chinook salmon and rainbow trout. On average, annual production includes 125,000 rainbow trout, 144,000 Chinook salmon, 14 million walleye fry, 1.7 million walleye fingerlings (goal is 2 million), 5 to 10 thousand advanced walleye fingerlings, and 1.5 million northern pike.

Giant Springs Trout Hatchery

Located on FWP land adjacent to Giant Springs State Park north of Great Falls, Giant Springs Trout Hatchery is an FWP production facility. Annual production includes 3 strains of rainbow trout (about 600,000 total fish) and brook trout (about 41,000 fish).

Jocko River Trout Hatchery

Located on FWP land in Arlee, the primary activity at the Jocko River Trout Hatchery is to maintain the Arlee strain domestic rainbow trout broodstock. Triploid Arlee rainbows are also produced here. Production and distribution is shared with other FWP hatcheries. Annual rainbow production is typically 260,000 fingerlings and 1,350 depleted brood fish.

Miles City Fish Hatchery

The Miles City Fish Hatchery is located on FWP land 2 miles southwest of Miles City and is one of two FWP warm-water and cool-water hatcheries. On average, annual production includes 3,000 juvenile pallid sturgeon, 10 million walleye fry, one million walleye fingerlings, 5 to 10 thousand advanced walleye fingerlings, 350,000 northern pike fingerlings, and 325,000 largemouth and smallmouth bass fingerlings. The hatchery receives walleye and northern pike eggs from the Fort Peck hatchery and maintains resident largemouth and smallmouth broodstocks. The Miles City Hatchery is also a spawning facility for captured wild, adult pallid sturgeon.

Murray Springs Trout Hatchery

The Murray Springs Trout Hatchery near Eureka is operated as a State Fish Hatchery and is included in the Montana Hatchery System for planning purposes; however, Murray Springs Trout Hatchery is owned by the U.S. Army Corps of Engineers and is operated under contract by FWP. All funding for operating the hatchery comes from the Corps of Engineers. Its primary activities involve the production and distribution of rainbow, cutthroat, and kokanee salmon as partial mitigation for the loss of habitat associated with the impoundment of the Kootenai River into Lake Koocanusa by Libby Dam.

Rose Creek Hatchery

Rose Creek Hatchery (a satellite facility for Flathead Lake Salmon Hatchery) became fully operational in 2011/12. The primary activity is the incubation and production of kokanee salmon, grayling and westslope cutthroat trout.

Washoe Park Trout Hatchery
Located on FWP land adjacent to the city limits of Anaconda, the main function of the Washoe Park Trout Hatchery is to maintain and enhance Montana's captive westslope cutthroat trout broodstock and supply eggs to various in-state and out-of-state agencies (approximately 500,000 eggs are kept onsite and one million are shipped to other hatcheries). Production and distribution of cutthroat are shared with other FWP hatcheries. Annual westslope cutthroat production includes 165,000 fry, fingerlings and depleted brood. Washoe Park produces some triploid (sterile) westslope cutthroat trout for stocking situations where a sterile fish is preferred, mostly in areas of native species restoration efforts. Washoe Park is also involved with research efforts including the comparison of performance between diploid and triploid westslope cutthroat trout.

Yellowstone River Trout Hatchery
Located on FWP property adjacent to Big Timber, the Yellowstone River Trout Hatchery's main purpose is to maintain Montana's captive Yellowstone cutthroat and Big Hole river fluvial Arctic grayling broodstocks, and provide eggs and fish to meet fisheries management objectives. It shares production and distribution with other hatcheries. Approximately 100,000 fish are stocked annually.

There are two US Fish and Wildlife Service (USFWS) fish hatcheries in Montana, one in Creston and one in Ennis. The State Fish Hatchery Section works closely with the federal hatcheries to reach Montana production goals. The Federal facilities are primarily responsible for stocking federal waters. Ennis National Fish Hatchery is a brood facility that plays a critical role in providing state fish hatcheries around the country with rainbow trout eggs. The Creston National Fish Hatchery primarily provides trout for fisheries management activities on Tribal waters and for mitigation purposes. The hatchery also produces bull trout eggs and fry for research purposes.

There are multiple commercial, private fish hatcheries in the state. These operations have been permitted by FWP to sell live fish to authorized sources, primarily private fish ponds that have been permitted for fish stocking.

Special issues, challenges or initiatives

The annual production of fish by FWP fish hatcheries varies depending on spawning success and fisheries management requests, but typically 45 million warmwater fish and 8.4 million coldwater fish are produced. Most of the warmwater fish are stocked as fry, thus total warmwater production amounts to less than 11,000 pounds of fish. Annual total weight of coldwater species typically exceeds 160,000 pounds. Several factors limit the amount of fish that is produced including egg supply, quantity and quality of water, hatchery space and operating budgets. Additionally, many of the species are grown at lower densities than is possible to produce a higher quality of fish. Many of the "wilder" strains of fish, including westslope cutthroat trout, do not tolerate being grown at higher densities and therefore become more susceptible to disease outbreaks. The Hatchery System works closely with fish managers to meet requests, and operates from a 6-year Stocking Plan that is updated annually.

Applicable laws, rules and policies

Statute

87-1-201: The department shall supervise all the fish of the state and to enforce the fish and game laws for protection, preservation and propagation of fish. The department may spend for the protection, preservation, and propagation of fish.

87-1-301: The FWP Commission shall set the policies for the protection, preservation, and propagation of fish, nongame species, and endangered species of the state.

87-3-225: Provides FWP authority to inspect fish hatcheries or culture facilities for the presence of pathogens.

87-3-226: Requires hatchery and culture facilities to report the presence of fish pathogens.

87-3-227: Assigns liability for damages resulting from diseases to the violator. Damages may be recovered by a person, firm, corporation, or FWP.

87-3-201: Gives the department authority over hatcheries and for the taking of eggs.

87-4-606: Identifies the conditions for acquiring and renewing pond licenses.

87-4-601: Makes it unlawful for any person (other than FWP) to sell any game fish or the eggs or spawn from any game fish. Exceptions are identified in the statute.

Administrative Rule

12.7.506: Disease inspection and quarantine procedures for hatcheries and culture facilities.

12.7.901: FWP may sell eggs from its brood stock only when the eggs are surplus to its needs and when the eggs are certified disease free and are not available from private sources within the state. Eggs from natural runs will not be sold.

12.7.601: General Administrative Rules for fish planting.

12.7.602: Stream planting rules, including restrictions pertinent to impacts on wild fish populations.

12.7.701: Provides authorization for FWP and commercial fish planting (if approved by FWP) of specific fish species, lists specific species which are approved for introduction.

Departmental Policies

Hatchery Stocking, Policy. Provides direction regarding the stocking of excess or unallocated fish from the hatchery system.

Fish Stocking into Waters that Require an Environmental Assessment, Policy. Provides direction regarding fish stocking into waters that require an environmental assessment.

Walleye Stocking, Policy. Provides direction regarding walleye stocking beyond their existing range in Montana.

Fish Health

The introduction of potentially harmful fish pathogens and disease into both captive and wild fish populations within Montana can have long-lasting, detrimental effects. The goal of the fish health program is to prevent the introduction and spread of these dangerous organisms both into and within the state, and to help better understand and reduce the impacts of these diseases where they are present.

Description of current operations and/or areas of work

Any time that live fish, eggs, or dead fish parts are moved between waters there is a risk of inadvertently moving harmful disease causing organisms. In order to minimize those risks, hatchery and wild fish are routinely screened for certain pathogens to reduce the likelihood of moving them. Wild fish are tested before being moved to other waters, and all state, federal and private hatcheries are tested annually. Live fish imports from out of state are reviewed and import permits are issued to help reduce the risk of introducing pathogens with imported fish. The FWP Fish Health Committee reviews management actions that are considered high risk for spreading harmful pathogens. Diagnostic examinations are conducted where problems do occur to determine and document the cause and extent of the problem.

Special issues, challenges or initiatives

Myxobolus cerebralis, the parasite that causes whirling disease, was discovered in Montana in the mid-1990's. Since then it has become widespread in the state and has had significant impacts on numerous fish populations. Viral Hemorrhagic Septicemia (VHS) was discovered in the North American Great Lakes in 2004. While it has not been detected and is not believed to be present in Montana, it has had significant impacts on many FWP fisheries programs. The live transport of various fish species between states causes continued concerns that this devastating disease may become introduced at some point in the future.

Applicable laws, rules and policies

<u>Statute</u>
87-3-210 –26: Fish Importation Statutes

<u>Administrative Rule</u>

12.7.501 –7: Fish Disease Certification and Importation Rules

<u>Departmental Policies</u>
Fish Health Policy. Aids fisheries managers, biologists, hatchery managers, fish culturists and fisheries administrators in implementing fish health programs to insure fish health, prevent disease and reduce the spread of fish pathogens in Montana.

Wild Fish Transfer Policy. Provides direction to ensure that movement of wild fish by FWP personnel is compatible with overall stewardship of Montana's fishery resources.

Aquatic Invasive Species

Aquatic Invasive Species (AIS) are a serious threat to Montana. AIS are transported by humans, boats, gear and equipment, or are intentionally moved from one area to another. AIS of highest current concern are zebra/quagga mussels, Asian carp, Viral Hemorrhagic Septicemia Virus, and aquatic noxious weeds, e.g., Eurasian watermilfoil. Prevention is the key management tool. Unfortunately there are very few options available to control and manage AIS once established, and eradication is costly and often impossible. The impacts of AIS include clogging water conveyance systems, which can significantly impact agricultural irrigation and utilities. Other impacts include impairment or loss of recreational opportunities and ecological disturbance.

Description of current operations and/or areas of work

To date (July 2012), Montana does not have any established populations of the most damaging AIS, although Eurasian watermilfoil has become established in a number of locations. In order to prevent the establishment of these species in Montana, continued support of the AIS program is essential. The program needs to be multi-facetted, including the following components: Coordination, Outreach and Education, Prevention, Early Detection and Monitoring, and Rapid Response.

Montana's AIS Management Plan was approved by then-Governor Martz and the National Aquatic Nuisance Species Task Force in 2002. The first Statewide AIS Coordinator was hired in 2004. The program expanded greatly after the 2009 legislative session passed the first AIS Act, and expanded again after the 2011 legislative session authorized additional funding for the program. Currently the AIS effort in Montana is administered by FWP, the Montana Department of Natural Resources and Conservation (DNRC), and Montana Department of Agriculture (MDA). FWP coordinates the AIS program, leads the watercraft inspection program, and has the lead on any AIS that are animals or pathogens. MDA has the lead on aquatic noxious weeds along with the Counties.

Early detection and monitoring is a large part of the AIS program. In addition to monitoring streams, rivers and lakes for the presence of AIS, all state, federal and private hatcheries are required to have an annual AIS inspection prior to them being permitted to export any live fish. Imports and exports from hatcheries and private ponds are highly regulated because of their ability to spread invasive species, including fish pathogens. It is recognized that with the normal movement of fish and eggs into and out of these facilities, that invasive species such as fish pathogens, invertebrates or plants, could also be moved along with the fish and water. If an invasive species is detected on one of these facilities, the facility will be quarantined and actions taken to minimize the risk of the invasive species spreading from that facility.

Special issues, challenges or initiative

The Montana public is becoming increasingly aware of AIS and associated issues. Prevention strategies, such as watercraft inspection stations, can be viewed by some water recreationists as an inconvenience. The FWP AIS Watercraft Inspection Program inspects more than15,000 watercraft annually (more than 22,000 inspections in the 2012 field season). Angling organizations, such as Walleyes Unlimited and Trout Unlimited, have been very supportive of the FWP AIS Program. The FWP AIS Program recognizes the importance of gaining local and

statewide support and works closely with a variety of non-governmental organizations, private industry, local governments, state and federal agencies.

Applicable laws, rules and policies

Statute

87-1-207: Authorizes the use of check stations to check licenses and fish in possession.

87-3-105: It is unlawful to import for introduction or to transplant or introduce any wildlife into Montana except in accordance with 87-5-701 through 721.

87-3-210: A FWP permit is required to import live non-salmonid fish or eggs except when intended for use in home or office aquarium. A permit is always required to import salmonids (87-3-221).

87-3-221: Specifies the certification requirements for importation of salmonid fish or eggs.

87-3-222: Dead salmonid fish or eggs may be imported if they have been processed or prepared in a manner to kill those pathogens specified by FWP as posing a threat to fisheries.

87-3-223: Provides rulemaking authority for importation testing and inspection.

87-5-701: To protect native wildlife and plants, and agricultural production, the state can prohibit the importation for introduction and the transplantation or introduction of wildlife in the state unless it can be shown that no harm will result.

87-5-705: Allows the importation, possession, or sale of exotic wildlife only if it is allowed by law or commission rule. Provides rulemaking authority to designate lists of noncontrolled, controlled, or prohibited exotic wildlife.

87-5-721: Defines penalties for violation of importation and introduction

80-7-1001-14: Montana Aquatic Invasive Species Act. Establishes Departmental responsibilities, rulemaking authority, the ability to establish invasive species management areas and associated check stations, and includes a penalty section.

Administrative Rule

12.11.34: Aquatic Invasive Species Inspection Station Rule. Provides FWP with the authority to establish inspection stations for the purpose of inspecting watercraft for the presence of aquatic invasive species, and establishes protocols if an invasive species is found at an inspection station.

12.5.701-703: Restrictions for contaminated waters, includes bait use restrictions and transfer of fish and bait from contaminated areas.

Departmental Policies

Illegal and Unauthorized Introduction of Aquatic Wildlife, Policy. The purpose is to clearly state the approach for dealing with illegal and unauthorized introductions of aquatic species. For purposes of this policy aquatic species include any fish, insects, crustaceans, mollusks or other species requiring aquatic habitat to complete its life cycle.

Illegal Fish Introductions

Historic fish distribution in Montana was determined by the retreat of the glaciers about 10,000 years ago. When European man appeared in Montana 150 years ago they started introducing and moving fish for various reasons, primarily for food and commerce, much like the work of folk-hero Johnny Appleseed. Starting in the 1970s biologists started to recognize that many of these early introductions had significant negative impacts on existing and native fish populations. Introductions of fish are now tightly regulated by FWP and any fish plants have to be authorized by the Department. Unfortunately, the pioneer spirit lives on in some anglers who continue to illegally introduce fish through "bucket biology"—the illegal transfer of live fish into or between private or public waters of Montana.

Illegal fish can prey on or compete with native or other recreationally important fish. Due to biological carrying capacity, illegal introductions come at the expense of existing fisheries. Illegal fish can also be a source of disease pathogens and may alter aquatic habitat or water quality. The net effect is reduced fishing opportunity and increased cost for mitigation. Increased costs must be borne by anglers through license fees with funds going to try to repair damage instead of improving fisheries.

Some illegal introductions are accidental or unintentional. In addition to illegal introductions occurring through "bucket biology" with the intentional introduction of a sport or forage fish, other examples of illegal introductions include the release of bait fish or the escapement of fish from private ponds.

FWP has now documented more than 600 illegal fish introductions into more than 250 waters, involving every drainage in the state. Those are just the illegal introductions that have been detected, many more have probably occurred that have gone undetected. Fifty different species of fish have been illegally introduced.

Prevention is the best solution. Once an illegal fish population is established it may be very expensive or impossible to eliminate. Anglers need to police their own ranks and report illegal activities through programs like 1-800-TIP-MONT that allow tipsters to remain anonymous and receive rewards. Some bucket biologists have been apprehended, often through citizen tips. The 2011 Montana Legislature increased the penalties for illegal and unauthorized introductions of fish. Persons convicted now face a fine of not less than $2,000 or more than $10,000. They may also be liable for restitution for damages or restoration, or be sentenced to up to a year in prison and lose hunting and fishing privileges for at least 5 years.

FWP has adopted an Illegal Fish Introduction Policy that states that upon detection of an illegal introduction, the first response will be attempts at eradication if there is a realistic likelihood that

the effort will be successful. The policy also allows for the implementation of additional actions if eradication is not possible. Depending on the species, there may be "no limit" or "catch and release only" harvest regulations enacted as a disincentive to future illegal plants. Other strategies such as mandatory catch and kill or closing a water body to all fishing may be considered as well.

Proposals to manage an illegally introduced species can only advance through a planning process that allows public involvement. Until that time, in an effort to not reward bad behavior, fishing tournaments will not be allowed for new illegally introduced fish populations.

Applicable laws, rules and policies

Departmental Policies

Illegal and Unauthorized Introduction of Aquatic Wildlife, Policy. The purpose is to clearly state the approach for dealing with illegal and unauthorized introductions of aquatic species. For purposes of this policy aquatic species include any fish, insects, crustaceans, mollusks or other species requiring aquatic habitat to complete its life cycle.

Bait Regulations and Live Fish Transport

Live bait use is of particular concern to fisheries managers for the reason that it can serve as a vector for fish pathogens and AIS. The primary challenge with live bait use in Montana is providing clean sources of bait, i.e., minimizing the risk of either AIS or pathogen introductions. Another challenge is preventing the over-harvest of native minnows while also providing bait fish for the angling public. Due to the risk of importing pathogens or AIS from out of state sources, no live bait fish may be imported into Montana except by permit for use in Big Horn Lake and Afterbay Reservoir only. The majority of bait fish sold commercially is collected within the lower Yellowstone River drainage. Long-term this may not be a sustainable option due to the lack of adequate supply and the potential impact to native minnows.

Description of current operations and/or areas of work

FWP bait regulations allow for a diversity of fishing opportunities while providing protection to the aquatic ecosystems. The bait regulations are widely varied across the three fishing districts in the state, particularly for the use of live fish as bait and the transport of live fish.

Statewide restrictions include:

- It is illegal to release live bait of any kind into Montana waters;
- Live bait fish may not be imported into Montana, except by permit on Bighorn Lake and Afterbay Reservoir;
- Leeches can only be imported into Montana from FWP-approved out-of-state bait dealers;
- An FWP import permit is required to bring live fish of any kind into Montana.

The three fishing districts' bait regulations can be broadly summarized as follows:

Western Fishing District

- Possession of live fish or use of live fish as bait is prohibited;

- Live bait animals may be used on all waters except where restricted to artificial lures or flies.

Central Fishing District

- Possession of live non-game fish is prohibited on waters closed to using live fish as bait;
- Live fish may be used as bait on selected waters, and where allowed, legal non-game fish may be taken for use as bait;
- Live bait animals may be used on all waters except where restricted to artificial lures or flies;
- Live fish cannot be taken away from any body of water in which the fish were taken except where being transported for commercial purposes, or where allowed by bait regulations.

Eastern Fishing District

- Live bait fish are allowed for use on most of the waters throughout the Eastern Fishing District;
- Where live fish may be used as bait, legal non-game fish may be taken for use as bait;
- Live bait animals may be used on all waters, except where restricted to artificial lures or flies;
- Live fish can be transported away from the body of water from which they were taken within the boundaries of the Eastern Fishing District.

Special issues, challenges or initiatives

In 2012, additional bait restrictions, and restrictions on the movement of live fish, were adopted in some locations due to the presence of Eurasian watermilfoil (EWM), an invasive aquatic weed. Within EWM-contaminated areas, no collection of bait organisms can occur, and the transport of bait organisms and live fish from contaminated waters can only occur in clean water from an uncontaminated source. The new regulations were adopted to minimize the risk of transfer of EWM to new waters while still maintaining the use of bait minnows where currently allowed by fishing regulations.

Bait as a vector for AIS and fish pathogens has become an increasing concern throughout North America, especially with the spread of Viral Hemorrhagic Septicemia and Asian carp, both of which have been demonstrated to be moved around with live bait fish. Many states have changed bait regulations as a result of AIS or pathogen threats, including restricting where bait fish can be used, collected and transported. Many states are using “certified” bait fish from sources that have been tested for pathogens and AIS. Some states do not allow the transport of bait from the bodies of water where they were collected.

The concern in Montana is how to maintain the use of bait fish where currently allowed, while not increasing the risk of AIS or pathogen introduction or spread. An additional concern is the potential over-harvest of bait fish from the Yellowstone drainage. Additional restrictions, which could be considered in Montana, might require the use of certified bait fish and/or prohibit the transport of bait from the body of water where the bait was collected. Currently, there are two bait fish producers in the state that are considered certified for fish pathogens and AIS. A

preferred option would be to increase the in-state supply of certified bait fish. Another option is to import certified bait from out of state, although this would be considered a higher risk option.

Applicable laws, rules and policies

Statute

87-3-203: FWP may prohibit the use of small fish as bait. Gives rulemaking authority for FWP to insure an adequate supply of fish in waters regulated for the taking of bait fish, and to regulate fishing from boats or other floating devices and the use of fishing lures or baits in all waters of the state.

87-3-204: FWP may designate waters for the taking of minnows other than game fish variety by the use of a net (not to exceed 12 feet by 4 feet), and the taking of whitefish by nets or traps in the Kootenai River and tributaries (within one mile of the Kootenai River).

87-3-205: Makes it unlawful to possess any seine, net or other similar device for capturing fish unless authorized by FWP (pond license, seine license). FWP may designate waters where traps, seines, or nets may be used for taking nongame fish and Dolly Varden trout.

87-4-602: FWP shall keep a record of all seining licenses issued including the name, date of issue, and specified waters. A license may not be issued to a person whose license has been revoked.

87-4-608: Crayfish may not be taken from state waters (except private fish ponds) for sale or commercial distribution.

Administrative Rule

12.5.701-3: Restrictions for contaminated waters, includes bait use restrictions and transfer of fish and bait from contaminated areas.

12.7.201: Establishes the licensing requirements for seining any nongame fish (exceptions identified).

Management Planning

As warranted, FWP develops fisheries management plans for individual waterbodies and/or individual fish species. These plans identify the management direction for a species or collection of species within a waterbody or a broader geographic area such as a drainage or the entire state. The plans describe the resource being managed, the rationale (both biological and social) for management direction being taken, and specific actions that will be implemented to accomplish plan goals and objectives. There are two primary audiences for fisheries management plans: FWP and the public. The agency benefits because the effort ensures that staff must deliberate and evaluate management actions to ensure they are consistent with, and adequate to achieve stated goals and objectives. Through this process, a written record is created, which serves to provide continuity over time as fisheries management agency personnel changes. The public benefits from a well-constructed and transparent plan because it becomes a ready source of information, which helps them understand the rationale behind agency activities such as fishing regulations,

stocking practices and habitat restoration projects. The planning process also provides a venue or opportunity for the public to help shape management direction for that area or relevant species. Seeking input from the public also fulfills a legal obligation to ask the users of the resource for their opinion and ideas.

Description of current operations and/or areas of work

All management plans developed by FWP must respect and strive for consistency with other jurisdictions that have authority over fishery resources. Jurisdictions with exclusive authority over fishery resources include Glacier and Yellowstone National parks and the Montana Indian Reservations. Flathead Lake is a unique example of a shared jurisdiction requiring co-management with the Confederated Salish and Kootenai Tribes (CSKT) and development of a plan with goals and objectives agreed to by both parties. Another unique jurisdictional situation arises in the case of fisheries management in Wilderness Areas. Federal law and courts have acknowledged the primacy of states to manage waters in Wilderness Areas. There are certain management activities that were evaluated to accommodate restrictions on the use of mechanized equipment as provided for in the Wilderness Act. Through an Agreement with the U.S. Forest Service (USFS), the Bureau of Land Management (BLM), and the Association of State Fish and Wildlife Agencies, mechanized means (such as helicopters or all-terrain vehicles) to stock fish in waters within a Wilderness Area are permitted only if such practices were in effect prior to the creation of the affected Wilderness Area. In the case of lakes in the Absaroka-Beartooth Wilderness, for example, this agreement means that lakes stocked by airplane or helicopter prior to 1964 may continue to be stocked in such a manner. Stocking that was initiated post-Wilderness designation may continue but must be done on foot or through the use of pack animals.

Special issues, challenges or initiatives

This Statewide Fisheries Management Plan is the first of its kind for Montana. Prior to it, management plans have been developed for individual waterbodies (e.g., Flathead Lake Co-Management Plan, Fort Peck Reservoir Management Plan), collections of waterbodies (Upper Missouri River Reservoirs Fisheries Management Plan), or species groups (e.g., Warmwater Fisheries Management Plan). One drawback to the individual waterbody plans in Montana is that there are specific management actions and goals provided for species within the geographic area of the management plan, but no corresponding written goals or actions in waters immediately adjacent. An example of this would be the sections of the Missouri River above and below Fort Peck, which have no specific management goals for walleye, while goals do exist for the reservoir itself. While FWP strives to ensure consistent management between areas covered and not covered by plans, the statewide plan should help to rectify the potential for confusion by putting in writing, for the first time, management direction for all principal species in major waterbodies. This plan is intended to integrate the management direction already identified in the waterbody specific plans and waters not previously described.

Applicable laws, rules and policies

None identified.

Angler Surveys

The Statewide Angling Survey has been conducted by mail every other year since 1985 and provides an accurate biannual estimate of angling pressure on individual lakes and streams of the state. This survey provides fisheries managers, administrators, and the public a reliable measure of angling pressure (angler days) for use in making decisions about fishing regulations, fishing access sites, development of fisheries management plans, and allocation of funds. The survey also serves as a factor in determining the total economic value of an individual or composite fishery, and refines and updates FWP's net economic values for cold-and warm-water streams and lakes. It is also used to update information about the attitudes and preferences of anglers.

Description of current operations and/or areas of work

Angler success (catch and harvest rates, size and number of different species) is determined using standard creel census methods and mail/telephone surveys. Specific waters surveyed annually are selected according to management needs. Some waters are surveyed on an annual basis, while others may not be surveyed more than once every five or more years. The creel census involves creel clerks interviewing individual anglers, handing out questionnaires to anglers, and placing questionnaires at trailheads for use by backcountry anglers. Aerial surveys and car counters are sometimes used to count anglers using large or remote fishing waters. Mail and phone surveys are occasionally used to target either randomly selected anglers or a specific angling group. Currently, FWP conducts phone surveys of paddlefish tag holders and mail surveys of bull trout catch-card holders.

Special issues, challenges or initiatives

The next statewide angling survey is scheduled to begin in the spring of 2013. Efforts are currently underway to evaluate the potential to incorporate email or automated electronic survey techniques as a vehicle for gathering fishing patterns of licensed anglers. The impetus for this innovation is the need to find more economical approaches than mail, which increases in cost as the price of postage continues to rise.

Applicable laws, rules and policies

None identified.

Permitted Commercial and Private Activities

FWP regulates a number of commercial and private activities related to fish and other aquatic resources. The FWP website includes more details on the permitting process and the dollar amounts for those that are subject to a permit or license *fee*. The following is a summary of these activities and the license or permits required (see Fishing Access and Recreation Management section of the plan for more information on commercial use of fishing access sites and waterbodies).

Bait Collection (license and fee required)

FWP has the authority to regulate the use of fish as bait (87-3-203, MCA). Bait fish collection and use (for both private and commercial purposes) is allowed throughout the state but with varying restrictions depending on the fishing district, as described in the fishing regulations booklet. The FWP Commission (under authority of 87-3-204, MCA) may designate waters where commercial fishing (including bait collection) may occur. A license is required for bait collection (ARM 12.7.201 through 203). A bait fish seining license is required of someone who seines for, and has in his/her possession, more than 24 dozen non-game bait fish, and for persons 15 years of age and older who are seining and transporting bait fish for commercial purposes.

Commercial Fishing (license required)

The commercial sale of fish or spawn is authorized under 87-4-601 et seq. (MCA), including paddlefish roe, nongame fish, whitefish, crayfish and mysis shrimp. This statute and ARM 12.7.1001 et seq. describe the circumstances and process by which paddlefish roe can be obtained at the Intake Dam Fishing Access Site and sold by a nonprofit organization. The nonprofit corporation is currently the Glendive Chamber of Commerce. Whitefish may be taken commercially by hook and line for sale in the Flathead River north of Flathead Lake, in Flathead Lake north of the Flathead Reservation boundary, the Fisher River, Kootenai River and Whitefish Lake. Whitefish, along with nongame fish, may also be harvested for sale through the use of nets or traps from the Kootenai River or its tributaries within one mile of their mouths as authorized by ARM 12.7.101 et seq.

Fishing Contests, a.k.a. Fishing Derbies (permit required, fee varies)

A permit is required to conduct a fishing contest on Montana waters where FWP has jurisdiction (12.7.801 et seq., ARM). The rules define a “fishing contest” as any event where an entry fee is charged or where people are expected to, or do, compete for prizes or cash based on the capture of individual fish or combinations of fish. Contests involving fewer than 30 people or merchandise worth $500 or less do not require a permit but must comply with contest provisions. Contest applications may be denied for a variety of reasons including if there is significant public opposition, detrimental impacts on fish populations, or conflicts with other contests or management goals for host waters. FWP may also place conditions on permits to alleviate issues such as those described above. Contests involving species of special of special concern are prohibited, with the exception of lakes and reservoirs stocked with Yellowstone cutthroat trout or westslope cutthroat trout. Contests involving wild trout in rivers and streams are also prohibited, as are contests on holiday weekends. Fees may be applied to contests using FWP fishing access sites.

Hoop Net Fishing (permit required)

A permit is required to use hoop nets to capture fish, and this practice is only allowed in the Eastern Fishing District by licensed resident anglers. Permit applications and rules are available at the FWP Regional offices in Billings, Miles City and Glasgow. The rules specify the size and construction of allowable nets, the species and numbers of fish that may be kept, the seasons and locations of open areas to hoop net fishing, and reporting requirements.

Private Fish Ponds (permit and application fee required)

Based on state law first passed in 1945, (MCA 87-4-601 et seq.) FWP administers private fish pond licensing. This law and the accompanying FWP Private Pond Stocking Policy (approved August 30, 2002) allow the stocking of private fish ponds while ensuring that public resources are not adversely affected by unwanted fish or fish diseases, that nuisance aquatic species are not planted into ponds where they can escape or be introduced into state waters, and that the habitat of wild fish is not harmed.

Any person who owns an artificial lake/pond or a natural lake/pond smaller than 500 acres with a tributary that doesn't support fish may apply to FWP for a permit. FWP cannot issue fish stocking permits until it is certain that legal water rights exist (if needed) for the pond or reservoir. Owners are not permitted to stock fish ponds that are likely to flood, and on-stream ponds are not be permitted unless it can be demonstrated that there is no threat to game fish or native species of special concern in adjacent waters. FWP has the authority to designate the species of fish that may be stocked into the pond and may condition any permit to require construction and/or maintenance of devices to ensure there will be no escape of fish. The Pond Stocking Policy provides more specific guidance on circumstances where stocking of non-native trout species is permissible, under the general philosophy that such stocking is permissible if it is expected to have minor or no additional impact to native fish species, or important non-native sport fisheries. As an example, the stocking of rainbow trout in private ponds within tributary drainages that support or are connected to habitats that support westslope cutthroat trout will not be allowed due to the risk of genetic hybridization.

Scientific Collections (permit and fee required)

It is lawful, under Montana statute (87-2-806 MCA) and rule (12.7.1301 ARM) for a representative of a school, college, university, government agency, or an individual, to collect fish for the purpose of a scientific investigation. To do so, they must apply for a permit and in the application they must describe the purpose of the collection, collection methodologies, and qualifications of those who will be doing the collecting. Based on the application, FWP may issue a permit without restrictions or may place special conditions on the permit such as restrictions on the time or location of the collections. FWP may also deny a permit if the applicant is not qualified, the proposed collections are not necessary, the method of collection is not appropriate, or if the collecting may threaten the viability of the species. By December 31 of each year, the permittee is required to provide FWP with data collected under authority of the permit. In recent years, FWP has issued about 40 permits annually, mostly to Universities and state and federal agencies, but also to consultants. Collections are typically made using electrofishing to monitor fish populations in public waters.

Non-native Species Management

There are 31 non-native (introduced) species of fish in Montana. Seventeen of these species are game fish, which includes nine species in the sunfish family (largemouth bass, smallmouth bass, rock bass, white bass, black crappie, white crappie, green sunfish, bluegill, pumpkinseed), seven in the Trout/Char family (rainbow trout, brown trout, brook trout, golden trout, lake trout – native only to four lakes in MT, kokanee salmon, and chinook salmon) and two in the perch family (walleye and yellow perch). Most, if not all, of these game fish were originally brought to

the state by Fish, Wildlife and Parks (or its predecessor agency the Montana Fish and Game Commission) or the U.S. Fish and Wildlife Service for recreational purposes. The remaining 14 non-native species were brought in as forage fish (mostly by the agencies) for predatory game species or are the result of liberated aquarium fish. So pervasive has been the stocking and movement of these non-native species that there is not a single major drainage in the state without at least one non-native species.

The original purposes for importing the non-native species are varied. In some cases, species were imported that were familiar to or favorites of non-indigenous humans, who themselves were "not native" to Montana. Brook trout from Appalachia and brown trout from Europe are two classic examples. In other cases, fisheries managers imported species that were easy to culture and stock (e.g., rainbow trout), or species that added diversity to a fishery and fully utilized available habitats and the food base (e.g., kokanee salmon are planktivores and therefore fill a niche that a piscivore does not). Many aquatic habitats in Montana were fishless upon the arrival of European man, such as alpine lakes, and stocking them with grayling, golden trout, and brook trout provided recreation and a human food source where none previously existed. Finally, the middle of the 20th century was a period of intense dam building, creating "new" habitat that provided fish managers with opportunities to create fisheries that suited the needs of anglers. Because many of the newly created reservoirs created habitat not well suited to the original inhabitants of the system, managers took every opportunity to stock these waters with fish that would thrive in these new environments. As examples, warm-water reservoirs in the eastern part of the state have produced good walleye, crappie, northern pike or bass fisheries, while northwest Montana lakes reservoirs have generally done well with rainbow trout and sometimes kokanee.

Description of current operations and/or areas of work

Non-native game fish management focuses on providing a diversity of angling opportunities. In streams and rivers, wild fish management practices are emphasized, and fishing regulations are typically used to optimize angler catch rates for edible-sized fish. Restrictive harvest limits are usually imposed on the larger rivers, although many anglers practice partial or exclusive catch-and-release fishing. Hatchery production is used in many situations (high-mountain lakes, prairie ponds, reservoirs) to provide angling opportunities where natural recruitment is limited. Fishing regulations on lakes and ponds are usually more liberal than on streams, as the angler clientele is more typically interested in harvest opportunities. Many non-native fisheries have restrictive angling regulations (slot limits, minimum size limits, limited harvest on large fish) designed to produce quality or trophy-sized fish. Trophy fisheries that FWP is trying to develop include gerrard rainbow trout on Lake Koocanusa and tiger muskies in several lakes statewide. Catchable (>8 inch) rainbow trout or retired broodstock are frequently stocked in small urban ponds to provide "instant" angling opportunities for children.

Monitoring fish populations and angler success are crucial to providing quality angling opportunities for non-native species. Much of the time biologists and technicians spend in the field is devoted to collecting data to manage these species. Electrofishing and gillnetting are the two most frequently used methods to gather fish population data on both wild and hatchery-

stocked fisheries in Montana. Mail surveys of anglers establish usage levels on waterbodies statewide, while creel surveys of anglers on the water provide information on catch rates and sizes of fish captured. These data are used by fisheries managers to evaluate effectiveness of stocking programs, fishing regulations, and habitat enhancement programs.

Special Issues, challenges or initiatives

Reservoirs on major rivers provide huge recreational angling opportunities for both cold and warm-water fishing in Montana, and all but one (Flathead Lake) of the top flat-water fisheries in the state in terms of angling pressure are found in manmade reservoirs. Most of the large storage reservoirs are federal, operated by the U.S. Army Corps of Engineers or the Bureau of Reclamation, but the lower Clark Fork River reservoirs are owned by Avista Corporation and PPL Montana, and many of the Missouri River Reservoirs are owned by PPL. Many State of Montana reservoirs also provide important fisheries for non-natives. FWP works closely with the operators of these facilities to manage reservoir water levels to ensure recreationists have access to the water but also to provide the best conditions for fish spawning, growth and food production. FWP also works with operators to modify dam releases to provide best conditions for tailwater fisheries and migratory fish from further downstream. Mitigation programs at the private (FERC licensed) dams and also through BPA (for Libby and Hungry Horse dams) help maintain fisheries in (and below) many of these reservoirs.

Whirling disease (an infection of salmonids caused by the parasite *Myxobolus cerebralis*) was first discovered in Montana in 1994 and it was quickly identified as a cause of dramatic declines in rainbow trout populations in the Madison River. No cure for the disease has been found, and it has now spread to most river basins in the state. The life history of the organism is now better understood, and it does appear that conditions ripe for infection of newborn trout do not occur every year in every stream because the emergence of fry from the gravels does not always coincide with optimum temperatures for infection. As a result, impacts to rainbow trout populations are quite variable. One comprehensive study of many rivers in Montana attributed an average decline of 50% in densities of small rainbow trout to the disease, with larger (>12 inch) fish correspondingly showing no declines or actually increasing in numbers. Research has also shown that other salmonids are less susceptible to the disease for a variety of reasons, although there is uncertainty about the potential impacts of the disease on native mountain whitefish populations. Because most of the worst, initial impacts of this disease have already been realized, the whirling disease research and monitoring program which began in 1994 was discontinued in 2011 with the funding diverted to other programs.

Non-native trout populations need cold and well oxygenated water to flourish. In the future, if the climate continues to warm, the downstream extent of suitable habitat for these species will recede upstream toward the headwaters of major rivers. The trout may also be displaced by increased competition with warm-water species moving upstream. Some of these warm-water species will be natives, but non-native game species such as walleye and smallmouth bass will benefit. Climate changes are out of the direct control of FWP, but impacts to coldwater habitats can be mitigated to some extent through efforts to purchase or lease water to augment instream flows, and habitat improvements to increase riparian vegetation thereby increasing shading and

cooling the water. Tailwater fisheries below bottom-draw dams in a warming environment may play an increasingly important role in providing habitat for non-native trout.

Native Species Management

Montana is home to 57 native fish species and a number of subspecies that occupy streams, lakes and reservoirs in all regions of the state. The assemblage includes well-known sport fish like burbot (ling), channel catfish, cutthroat trout, sauger and paddlefish. Others native species, like the blue sucker, emerald shiner, and freshwater drum are not identified as sport fish, or even recognizable by most Montanans, but they are an equally important part of Montana's natural heritage and they fill essential biological roles in streams, rivers and lakes.

Montana is fortunate that many of its native fish species remain quite common, and if suitable habitat is maintained, they will continue to thrive for the foreseeable future. There are notable exceptions, however, and 23 species are listed as Montana Species of Concern (SOC), meaning they are "at-risk" due to declining or significantly reduced abundances, threats to their habitat, and restricted distribution. The list includes shortnose gar, redband trout, sicklefin chub, and westslope and Yellowstone cutthroat trout, which are collectively known as *Montana's State Fish*. Three Species of Concern have also been listed under the federal Endangered Species Act, including *threatened* bull trout, and *endangered* pallid and white sturgeon.

A primary goal of FWP's fisheries program is to protect, maintain, and restore native fish populations, life histories, and genetic diversity, and continue to provide angling opportunities for native species whenever possible. This goal is backed by FWP policy and state law, which require FWP to implement programs that manage sensitive native species in a manner that assists in the maintenance or recovery of those species, and that prevents the need to list the species under the federal Endangered Species Act (ESA).

Description of current operations and/or areas of work

Approaches to native fish management vary greatly by species and their status, region of the state, body of water, and management objectives. Native fish are often managed as part of larger fish assemblages that may include multiple native, non-native, game, and non-game species. The native components of these fisheries are maintained through standard management activities that include balancing predators and prey, habitat conservation and restoration, and harvest regulations. Management of Montana Species of Concern can also be more focused, and specific programs have been developed for those in greatest need.

Pallid sturgeon, paddlefish, sauger, burbot, Arctic grayling, and bull and cutthroat trout are among the native species that receive significant management attention and there are fisheries staff dedicated to their management, conservation and restoration. Three native species (bull trout, pallid and white sturgeon) are listed as threatened or endangered by the ESA, and a determination for Arctic grayling listing is scheduled to occur in 2013. Management of these species is often guided by collaborative agreements with other resource agencies, tribes and private organizations, which share common goals and resources to implement conservation and recovery programs. These programs vary greatly with respect to species focus, but all focus on promoting the long-term goal of self-sustaining persistence. Essential to these efforts is the

proper management, and restoration as necessary, of natural habitat systems that sustain the wide diversity of Montana's native species. Though ultimate recovery planning efforts for federally listed species are guided by the US Fish and Wildlife Service (USFWS), FWP and other resources agencies and organizations are crucial partners in the development, funding, and implementation of threatened and endangered species management programs. Several species-specific agreements and management plans have been developed by FWP, partner agencies, tribes, and private resource organizations for coordinated efforts to conserve Arctic grayling, bull trout, and westslope and Yellowstone cutthroat trout.

Special issues, challenges or initiatives

Alternation of the natural environment is a primary reason for the reduction in distribution and abundance of many native species, and it is a key consideration in all recovery efforts. Dams and impoundments have caused significant habitat changes to many rivers, and also impede necessary migrations of several species. Status and potential recovery of *endangered* pallid and white sturgeon are directly linked to dam construction and operation on the Missouri and Kootenai rivers. Arctic grayling, paddlefish, sauger and *threatened* bull trout are also among the numerous Montana Species of Concern impacted by dams and other impediments to movement. Size, design and operating mandates (e.g., flood control, power production and irrigation) of dams like Fort Peck, Libby and Intake are significant challenges to mitigating the damage of these structures on natural river ecosystems, and potential solutions to their impacts on native fish remain uncertain. Challenges aside, throughout Montana, projects are being implemented to provide better fish passage through the modification or removal of culverts, irrigation diversions and dams (e.g., Milltown), and the construction of fish ladders and by-pass channels.

Of equal importance, the presence of *non-native fish* in Montana (species that are not native to the state) has forever changed the status and management of many native species. Non-native fish can compete and hybridize with, prey on, and displace native fish, including game and non-game species. Challenges associated with non-native species are wide-spread, and include significant concerns like walleye (non-native) hybridization with sauger (native), competition between brook trout (non-native) and cutthroat trout (native), predation of bull trout (native) by lake trout (non-native[6]), and hybridization between rainbow trout (non-native) and cutthroat and redband trout (native).

In certain locations, the impacts of non-native species are addressed through liberalized harvest regulations, active suppression or eradication of the undesirable species, maintenance or placement of barriers to prevent invasions of non-native fish, and stocking of species native to that particular water. Assemblages of native and non-native species alike provide important fisheries in Montana, and balancing the management of sensitive native species with other fisheries management objectives is an important component of FWP fisheries management.

[6] Lake trout are native to Montana but not in lakes west of the Divide where they interact with bull trout.

Applicable laws, rules and policies

Statute

87-1-201: Directs FWP to implement programs that manage sensitive native species in a manner that assists in the maintenance or recovery of those species, and that prevents the need to list species under the federal Endangered Species Act (ESA).

Youth and Family Fishing

FWP has several programs designed to help expose young anglers to the sport of fishing and to provide locations for them and their families to enjoy fishing. The Aquatic Education Program (within the Communication and Education Bureau) sponsors the "Hooked on Fishing- Not on Drugs" (HOF) program, which was developed nationally by the Future Fisherman Foundation. Begun in 1996, HOF is conducted in nearly 200 Montana classrooms annually involving about 2,500 students. The primary objectives of this program are to: (1) help students develop awareness and appreciation for the fish and aquatic resources in Montana; (2) help students develop an interest in fishing and outdoor recreation; (3) teach safe and responsible outdoor skills; and (4) help teachers develop skills and interest in teaching natural resource topics. Students take part in a variety of activities, both inside and outside the classroom.

The role that families and parents play in teaching their children about fishing and fostering a lifetime interest in the out-of-doors cannot be over stated. To help facilitate and develop these interests and values, FWP has programs to provide fishing opportunities for children and families. The Free Fishing Weekend is based on a law passed by the Montana Legislature in 2011 which allows for anyone to fish for free (without a license) on Father's Day weekend every year, as a way of providing an inexpensive way for families to enjoy the weekend together. FWP also makes available two types of family-friendly fishing waters for young anglers. The first type is Children's Fishing Waters, which are ponds set aside exclusively for kids 14 years of age and younger to fish. The second type is Family Fishing Waters, where adults are allowed to fish as well, but only kids (14 years and younger) can harvest a fish. Usually FWP stocks these ponds annually with catchable sized rainbow trout.

FWP also recognizes the importance of having places for kids to fish close to town, and for this reason the Community Pond Program was developed during the 2003 Legislative session. The program provides funding that may be used to construct or improve public fishing ponds. Preference is given to projects that create or enhance opportunities for youth/family angling and youth/family angler education. Since its inception, this program has developed nearly 20 public-accessible projects in all corners of the state. Interested parties can apply through the FWP website and Community Pond Program funding may be used for costs of design, construction, repair, or enhancement of ponds for which public angling is a primary purpose. Improvements that enhance handicapped access or safety may also be funded.

Applicable laws, rules and policies

Statutes

87-2-103: FWP will allow a person to fish for any fish within the state without obtaining a fishing license each year on Father's Day weekend as long as the person does so in accordance with all other laws or regulations the department has in effect on that weekend.

Direction for Individual Species or Groups of Species

Arctic grayling (native; federal ESA candidate species; Montana Species of Concern)

Arctic grayling *(Thymallus arcticus)* are native to the Missouri River drainage in Montana and have been stocked in numerous lakes in the western third of the state. Native "fluvial" grayling, those that reside in rivers and streams, were historically widespread throughout the upper Missouri drainage upstream of Great Falls. Habitat changes and the introduction of nonnative fish have significantly impacted the distribution of fluvial grayling, and the lone remaining population in Montana (and the entire lower 48 states) occupies the Big Hole River. Though similar in appearance, "lacustrine" or lake dwelling grayling are genetically different from the fluvial form. Native populations of the lacustrine grayling persist in four lakes in Montana, including upper and lower Red Rock lakes in the Red Rock drainage, and Minor and Musigbrod lakes in Big Hole drainage. Other introduced lacustrine grayling populations in Montana (about 100) are the result of fish originating from Montana (e.g., Big Hole and Red Rocks) or Canadian populations and include a recent conservation effort to "replicate" Red Rocks grayling in Elk Lake near Lima, MT. Fluvial Arctic grayling are a Montana Species of Concern and are listed as a "candidate species" under the federal Endangered Species Act (ESA). The USFWS is expected to make a final ESA listing determination for Arctic grayling in 2013.

Arctic grayling management in Montana includes activities directed towards providing recreational angling opportunities, and conservation and recovery of native populations. Approximately 100 lakes and reservoirs in western and south central Montana support grayling populations. These waters provide the bulk of angling opportunities for grayling in Montana and harvest is generally allowed under standard combined trout regulations. Most of these populations are self-sustaining but several are supported by periodic stocking efforts. The Rogers Lake grayling population (a mixed Red Rock Lakes and Big Hole strain) near Kalispell provides a source for the recreational stocking program in several western lakes, and FWP personnel from Flathead Lake Salmon Hatchery (near Kalispell) collect and raise eggs and fry for these efforts. FWP has developed two conservation broods from aboriginal Big Hole River fluvial stock for fluvial grayling restoration purposes and occasional lake stocking in south-central Montana. The conservation broods, maintained in two lakes in the Madison and Gallatin river drainages, are to be used in efforts to reestablish native fluvial grayling in portions of their historic range, including most recently the Ruby River near Alder, MT. The reestablished Ruby River grayling population, like all populations occupying streams and rivers, are protected from harvest by catch-and-release regulations.

Habitat alterations are a key factor in the loss of fluvial Arctic grayling in most of their historic range in Montana. In an effort to conserve and recover the remaining fluvial grayling population in Montana, over the last decade FWP and numerous partners have engaged private landowners in the Big Hole Valley to aid grayling recovery through enhancement of habitat. Implemented

through a USFWS approved Candidate Conservation Agreements with Assurances (CCAA) program, the goal of the effort is to secure Arctic grayling in the upper Big Hole River by improving streamflow, protecting and enhancing stream habitat and riparian areas, increasing fish passage, and eliminating entrainment of fish in irrigation ditches.

An Arctic Grayling Work Group meets on an annual basis to develop grayling conservation strategies and work plans. The technical advisory group is chaired by FWP and includes participants from state and federal resources agencies, universities, and private interest groups. To formalize commitments to Arctic grayling conservation in Montana, in 2007, the *Memorandum of Understanding Concerning Montana Arctic Grayling Restoration* (MOU) was developed and signed by numerous state, federal and private stakeholders. The MOU commits the parties to a cooperative restoration program, and provides a means to obligate financial resources as they are available.

Bass (non-native)

There are two species of black bass in Montana: Largemouth bass *(Micropterus salmoides)* and smallmouth bass *(Micropterus dolomieu)* from the Sunfish (Centrarchid) Family. Both species are non-native and are considered cool water species, although largemouth are slightly more tolerant of warmer conditions. Both species are widely distributed throughout the eastern half of the state and locally in northwest Montana. Smallmouth are found in cool, clear lakes and streams while largemouth are more restricted to slower flowing water (backwaters) and lakes. Largemouth fisheries are best in northwest Montana in the lower Clark Fork reservoirs (Noxon Rapids, and Cabinet Gorge) and Echo Lake near Kalispell. Smallmouth bass fisheries are best in large rivers such as the lower Flathead River and Yellowstone River, as well as large reservoirs such as Fort Peck, Tongue River and Bighorn reservoirs. They are pursued by many sport anglers (2.4% of total angler days) but are also highly sought after by many tournament anglers. Their ferocity as a fighter under angling circumstances contributes to their popularity, but their prolific and predatory nature can lead to challenges managing them in balance with their forage base. The recent expansion of smallmouth bass in the Yellowstone River, upstream of the Powder River/Yellowstone River confluence, has raised concerns about potential effects that their predation may have on native fish populations.

Fishing regulations for bass are 5 daily and in possession for all Fishing Districts, although the Western District restricts harvest during the spawning period to 1 over 22 inches. FWP does raise largemouth and smallmouth bass at the Miles City State Fish Hatchery, and stocks them in numerous ponds and reservoirs in Eastern Montana, as well as Echo Lake in northwest Montana.

Common challenges to bass management are adequate recruitment, lack of cover and overharvest. Recruitment is limited initially by weather. Young of the year bass need to reach about 2” by fall in order to survive overwinter. Late spawned fish due to cold weather may not have sufficient growth to survive. Many waters have abundant predators and a lack of suitable hiding/rearing habitat in which to escape predation.

Northwestern Montana is at the northern end of the bass range, and many waters there are glacial relic lakes with simple bottom configurations, late weed growth and a lack of woody debris for cover. Bass stocking will not typically overcome the previous problems. It may require 8-10

years for a bass to reach 18" or 3 pounds and 15 years to reach 5 pounds. Under slow growth, it does not take much angling harvest to confound quality bass management.

Burbot (native)

Burbot (*Lota lota*), also known as "ling", are native to the Kootenai, Missouri, Saskatchewan, and Yellowstone river basins in Montana, and were introduced, with apparent minimal success, to the lower Clark Fork drainage in the 1970's and 80's. Burbot occupy many habitat types but are generally associated with larger rivers and cold water lakes and reservoirs. It is speculated that overall burbot abundance is currently greater in Montana than pre-European settlement times owing to the creation of cold water habitats within and below impoundments on traditionally warmer rivers (e.g., Nelson, Tiber and Fort Peck reservoirs). Though burbot populations are not closely monitored, the status of most is believed to be stable. An important exception includes the Kootenai River population, which has declined in Montana and Idaho due to habitat and flow regime changes resulting from the construction and operation of Libby Dam. The population was petitioned for federal ESA listing in 2000 but the petition was subsequently found unwarranted.

All Montana burbot populations are self-sustaining. Other than harvest regulations, the species is not actively managed. FWP fisheries biologists have recently devoted more attention to burbot and are evaluating methodologies to monitor their abundance in rivers, lakes and reservoirs. Although burbot angling pressure is relatively minor (about 0.1% of annual angler days), they are avidly pursued by some for harvest and consumption. The species provides popular winter fisheries in reservoirs like Clark Canyon, Fort Peck and Newlan Creek. The current angler record for burbot is 17 pounds (Missouri River), though fish typically weigh less than 5 pounds.

Channel Catfish (native)

The channel catfish (*Ictalurus puncatus)* is a native game species found primarily in lowland lakes and large rivers east of the Continental Divide. It thrives at water temperatures above 70°F and tolerates turbid water. Principally it is found in the Yellowstone River downstream of Billings, along with major tributaries such as the Bighorn, Tongue and Powder rivers. In the Missouri River, it is found downstream of the Great Falls and in major tributaries such as the Marias, Teton, Milk and Musselshell. At least some of the populations in the state are migratory, with mature fish moving many miles upstream to spawn. Notable among these populations are the catfish that move out of the Missouri into the Musselshell to spawn. During these movements, fish may congregate near the mouths of the tributaries, making them more vulnerable to angling.

Spawning takes place in nests built by the male in holes in undercut banks, log jams or rocks. Once hatched, and as the fish grow older, their preferred habitat includes waters with little velocity. Catfish achieve this in rivers by occupying backwaters, pools and sheltered habitat, and by orienting to the bottom where water is slower. It is from these lairs that the catfish pursues food sources, primarily at night. Channel catfish eat a variety of foods, including crayfish, insects, snails, clams, worms and fish.

Angling is most successful through the use of setlines with live or dead bait. Most fish are sought for consumption, although there is a small contingent of catch-and-release tournament anglers in Eastern Montana. Overall, angling pressure for this fish is low, although it can be seasonally high

where fish congregate. This has led to a change towards more restrictive regulations in 2012 due to largely anecdotal evidence that suggested populations may be declining. The change was from 20 daily and in possession to 10 daily and 20 in possession. This species is only occasionally cultured and the wild populations fluctuate as natural conditions allow. As such, FWP will endeavor to find means to monitor this fish species to ensure harvest is at levels that do not exceed natural production.

Crappie (non-native)

Montana has introduced populations of both white (Pomoxis annularis) and black (Pomoxis nigromaculatus) crappie. They prefer ponds, lakes, reservoirs and slower rivers and sloughs. Popular Montana crappie fisheries include: Tongue River, Fort Peck, Nelson, and Big Horn (Yellowtail) reservoirs, although crappie have recently been showing up as illegal introductions in the natural lakes of Northwestern Montana, which is very concerning for FWP.

These warm/coolwater panfish feed mainly on zooplankton and small fish. Like yellow perch, crappie tend to overpopulate and become stunted in small bodies of water and tend to have cyclical population structures where really good fishing for larger fish occurs only in occasional years. Size structure and abundance of crappie populations can be impacted by a combination of angler harvest, predation by other fish species, and competition for limited food resources with other species like yellow perch and sunfish.

FWP does not produce crappie in the hatchery system but does occasionally transfer wild fish from existing fisheries to ponds that have experienced winter kill, or to establish a new fishery. Crappie are very catchable at least seasonally, and are highly sought after as a food fish. They account for 0.53% of the total statewide fishing days. The standard Eastern District regulations are 15 daily and 30 in possession with the exception of Tongue River Reservoir that currently has a 30 daily and 60 in possession limit. There are no bag limits for crappie in the Central and Western fishing districts where they tend to be less common. Quality fish usually start at around 9-10 inches, but that can vary depending on fish condition factor (weight at length), which of course depends on forage quality and availability. The state records for crappie are 3.13 lbs for black and 3.68 lbs for white crappie.

Kokanee salmon (non-native)

The kokanee *(Oncorhynchus nerka),* also called bluebacks or silvers, is the landlocked form of the sockeye salmon. Historically, sockeyes never reached Montana due to natural barriers; all populations in Montana originated from stocking. The species is now found in several natural lakes and reservoirs in the western part of the state, primarily west of the Continental Divide. Spawning takes place along lake shorelines or in streams with good clean gravels. If born in streams, fry will migrate quickly upon hatching to still waters where they will grow to maturity in 3 or 4 years eating zooplankton almost exclusively.

Growth of this fish can be rapid and is density dependant. Where populations are dense, fish may mature at 10-12 inches, while low densities may produce 18-20 inch fish. In most circumstances, FWP uses liberal bag limits or a predatory species such as gerrard rainbow trout or tiger muskellunge to reduce densities of kokanee. Occasionally, FWP has struggled to maintain populations in some waters. The Upper Missouri River Reservoirs (Holter and Hauser) have lost

much of the kokanee fishery due to reservoir operations and flushing losses, compounded by walleye predation. The Flathead Lake population collapsed after *Mysis* shrimp both competed for food resources and helped predatory lake trout to increase dramatically.

Lake May Ronan has been used as the primary brood source for kokanee propagation for many years. The Flathead Lake Salmon Hatchery on Flathead Lake collects wild spawn and several state hatcheries hatch and rear fish to fry or fingerling size. These fish are stocked in lakes with poor natural recruitment, including most notably the Helena Regulating Reservoir, the Thompson Lakes, and Deadmans Basin Reservoir. Bitterroot Lake has a unique population of kokanee that achieves large sizes, and hatchery staff is currently attempting to culture this fish to determine if this trait is genetic or behavioral.

Lake whitefish (native to St. Mary River drainage, non-native otherwise)

Lake whitefish *(Coregonus clupeaformis)* are members of the salmonid family, and although uncommon in Montana, they are a popular sport fish for a small, but dedicated group of anglers. Lake whitefish generally prefer deep, coldwater lakes, but can also be found in relatively warmer lakes and reservoirs, and rivers during spawning migrations. In Montana, the species is believed to be native to the Saint Mary River drainage, including Saint Mary Lake and Upper Waterton Lake in Glacier National Park. Other populations, including Echo (near Big Fork), Flathead and Whitefish lakes, and Fresno and Fort Peck reservoirs, have been established through stocking and subsequent dispersal.

Though lake whitefish are a high quality sport fish (typically 18 – 22 inches; state record: 10 lbs), their limited distribution and often poor catchability result in only about 0.1% of the total fishing days in Montana spent pursuing the species. Flathead Lake provides the bulk of angling pressure for lake whitefish in Montana, although catch rates for this summer fishery can vary substantially year-to-year. Anglers also target lake whitefish through the ice on Echo and Whitefish lakes, during fall spawning migrations on the Flathead River near Kalispell, and spring through autumn in the Milk River tailwater below Fresno Reservoir.

Mountain whitefish (native)

The mountain whitefish (*Prosopium williamsoni)* is a common native species in relatively cold streams, rivers, lakes and reservoirs in the western half of Montana, including the Columbia, Missouri, Saskatchewan and Yellowstone basins. Mountain whitefish are abundant in many larger rivers and are commonly captured by anglers who are targeting trout (less than 1% of total angler days are spent directly pursuing the species). Typical adult mountain whitefish are 12 –16 inches in length and the state angling record is 5 lbs (Hauser Reservoir).

Although mountain whitefish remain present throughout their historic range in Montana, there are concerns of potential reductions in abundance in some locations (e.g., Madison River). Owing to their typically high abundances and active movement, mountain whitefish populations have not been historically monitored in rivers and population trends are generally not well documented. Cause of possible declines in some locations are currently only speculative, but may include disease (e.g., whirling disease), drought, or other habitat changes. FWP is developing monitoring protocols that will help to better understand current mountain whitefish status and future trends in abundance. Likewise, research efforts are underway to better

understand the ecology of the species, including its habitat needs, movements, and possible cause(s) of apparent declines in some waters. Despite some concerns, mountain whitefish remain one of the most widespread and abundant sport fish in Montana. The bag limit was reduced to 20 daily and 40 in possession (down from 100 daily and in possession) in 2008 as a result of concerns over their diminishing abundance.

Non-game fish (native)

Montana waters are home to 39 native species that are considered "non-game" fish. Many of these are small minnow (cyprinid) species that occupy a wide diversity of habitats throughout the state and include such common fish as long-nose dace and fathead minnows. The non-game group includes several sucker and sculpin species that are common and well known to most anglers, and eight Montana Species of Concern that can be quite rare including the blue sucker, northern redbelly x finescale dace, pearl dace, shortnose gar, sicklefin chub, spoonhead sculpin, sturgeon chub, torrent sculpin and the trout-perch. Native non-game fish range in size from the two-inch sand shiner to the bigmouth buffalo that can reach three feet in length. Although many anglers would classify native nongame fish as "bait fish," the group also includes predators like northern pikeminnow and shortnose gar.

The term "non-game fish" simply refers to the fact that the species have not been classified in Montana statute as "sport" fish (there are some sport fish, e.g., bluegills, that are not classified as game fish). Native non-game fish play essential ecological roles in Montana's streams, rivers, lakes and reservoirs, and as forage fish their presence adds stability and quality to recreational fisheries. Non-game fish are managed as part of larger fish assemblages where quality fisheries and species abundance are maintained through habitat protection and restoration, and predator-prey management.

FWP is giving greater management attention to several non-game Species of Concern, and recent studies have evaluated the status of sculpin species, as well as prairie stream fish assemblages including pearl dace and redbelly x finescale dace. Many prairie streams in the Eastern District have fish assemblages largely comprised of nongame/native fish which are adapted to intermittent and ephemeral stream conditions. Expanding oil and gas development in the Bakken and Powder River areas come with water demands, and FWP is devoting more attention to monitoring the viability of these fish populations.

Northern pike (native to the Saskatchewan drainage, non-native elsewhere)

Northern pike (*Esox lucius*) is the second largest species in the family Esocidae (behind only the muskellunge, *E. masquinongy*) and has the broadest distribution of any fish in that family. Its native range extends around the globe in the northern hemisphere in North America, the United Kingdom, Europe and Asia. Throughout its native range the northern pike has tremendous commercial, recreational and cultural importance.

Northern pike reach sexual maturity as early as age 1 for males and 2 for females, though most spawning aged fish are usually between 3 and 4. Spawning occurs in spring as water temperature exceeds 42° to 50º F, which may occur as early as March and even under the ice in some areas. Adhesive eggs are laid on emergent macrophytes, and hatching may occur rapidly (as early as a few days). After hatching, young northern pike feed on small invertebrates and their cohorts.

When their body length is 2-4" they start feeding on small fish almost exclusively. Northern pike are typically ambush predators; they lie in wait for prey for long periods and then rapidly swim forward to strike prey. However, in the winter and late-summer, they will feed in the open-water (pelagic) zone of lakes.

Northern pike are primarily piscivorous (fish-eaters) though they have been known to take rodents and even ducklings. The popularity of northern pike as a sport fish stems from their ability to attain large sizes, the relative ease in catching them, and they are considered good table fare. The Montana state record is 37.5 lbs from the Tongue River Reservoir. Popular pike fisheries are primarily in lakes, reservoirs, and large rivers in the western, north central, and eastern part of the state, including the Lower Clark Fork, Clearwater, and Flathead river systems, and Fort Peck, Tongue River, Tiber, Pishkun and Nelson reservoirs. Northern pike normally live 5 to 15 years, but can be as old as 30.

Because of its popularity as a sport fish and as a food fish, the northern pike has been introduced in many waters outside its native range and its range continues to expand through introductions (both illegal and authorized) to this day. In Montana, northern pike are only native to the upper Saskatchewan River drainage in extreme north-central Montana. The first northern pike scientifically documented in Montana was collected in 1874 from the St Mary River.

In the Columbia River drainage (to which the Clark Fork is a primary tributary) northern pike are not native and share no evolutionary history with fish fauna. As a result, prey species (sucker, minnows, and salmonids) are naïve to this predator. Within their native range, fish have evolved behavioral, chemical, and physical defenses, including sharp and stiff fin rays. When given a choice, northern pike will consume soft-rayed fishes. Northern pike are thus able to quickly exploit these prey. Furthermore, northern pike have no natural predators in these systems.

In general, outside of trout waters, northern pike are managed as a sport fish. Within trout waters (both east and west of the continental divide) the management goal is suppression, to limit increase in distribution, limit new populations, and even eradication in certain instances. Even outside of trout waters, recent concern over competition with sauger and their effects on native fishes in prairie streams has led to more monitoring.

In the Western Fishing District (west of the continental divide) regulations are generally structured to allow for liberal harvest of northern pike for suppression purposes. In the Clark Fork and Blackfoot drainages, regulations allow unlimited harvest and opportunities for spearing, while in the Flathead and Lower Clark Fork drainages, management reverts to district wide standards (15 fish daily and in possession) with some extended seasons to allow harvest during the winter in waters otherwise closed to winter fishing. In the Central and Eastern fishing districts, standard regulations allow for 10 northern pike daily and in possession. However, in the Missouri, Madison, Gallatin and Jefferson drainages, concern over the potential deleterious effects of feral, illegally-introduced northern pike on salmonids in particular, has led to more liberal harvest (no limits) and extended seasons. Aggressive management actions are currently being explored and undertaken on Toston Reservoir to limit northern pike at the headwaters of the Missouri River.

Paddlefish (native; Montana Species of Concern)

Paddlefish *(Polyodon spatula*) are an ancient, cartilaginous (not bony) fish and one of only two paddlefish species worldwide. They are also Montana's largest native fish with the state record being 77 inches in length and weighing 143 pounds. A more typical size for a harvested fish is between 20 and 100 pounds. This species was quite uncommon prior to the completion of Fort Peck Dam in Montana and Garrison Dam in North Dakota. Its abundance has increased markedly in the past 50 years due to the fact that the fry survive much better in the still water of reservoirs compared to the swift water of rivers. This is probably because the primary food for this species (zooplankton) is more abundant in reservoirs than rivers. The species is long lived, with older fish commonly reaching 50-60 years old. Current distribution of the fish in Montana is the Missouri, Milk, Marias and Yellowstone rivers. In the Missouri River they are found downstream of the Great Falls. Yellowstone River distribution is typically downstream of the Intake Diversion near Glendive; in high water years fish may use a side channel around the diversion and ascend the river as far as the Cartersville Diversion near Forsyth.

The fish are managed as two naturally-reproducing stocks: the Yellowstone River and Missouri below Fort Peck Dam, and the Missouri River above Fort Peck Dam. The Yellowstone stock is managed cooperatively through a joint management plan with the State of North Dakota. Harvest of this recreational fishery is accomplished by snagging, and targets for each stock are set on an annual basis. Since 2010 the target has been 1,000 fish for the Yellowstone/lower Missouri and 500 fish for the Missouri upstream of Fort Peck Reservoir. The harvest is closely monitored by biologists and creel clerks and can be closed immediately or with 24 hours notice, depending on the location. One unique aspect of the Yellowstone fishery is the presence of a caviar operation, which is run by the Glendive Chamber of Commerce. Proceeds from this operation are divided between the City of Glendive and FWP, with the State's share going to help fund research and management activities for the species.

The population and demographics of each stock is re-calculated annually for the purpose of evaluating the sustainability of the harvest. Details of the management goals and activities can be found in the Interstate Management plan *"Management Plan for Montana and North Dakota Paddlefish Stocks and Fisheries (2008)."*

Sauger (native; Montana Species of Concern)

The sauger *(Sander canadensis)* is a member of the perch family and a native game species in the Missouri and Yellowstone basins of Montana. Their historic distribution includes the Missouri River and its major tributaries downstream of Great Falls, and the Yellowstone River and its major tributaries downstream of the Clark's Fork River near Billings. Sauger prefer turbid and unimpeded rivers, which permit spawning migrations of up to several hundred miles. Sauger also occupy reservoirs with suitable habitat, and several in Montana support sizable populations (e.g., Yellowtail and Fort Peck). Sauger have become rare or absent in a number of larger rivers in Montana (e.g., Judith, Poplar, Big Horn and Tongue rivers), due in part to dams, diversions and impoundments that have altered temperature, flow regime and favored river habitats, and obstruct migrations. Additional management concerns include entrainment in irrigation canals, streambank alterations, and competition or hybridization with non-native species (e.g., smallmouth bass and walleye). Though it remains widely distributed in the Missouri and Yellowstone rivers, and is common in some locations, the sauger is listed as a Montana Species of Concern owing to an estimated 50% reduction in distribution and widespread threats.

The sauger has received considerable management attention since reductions in abundance were first noted in the drought years in the 1980's. Several studies have since been completed to better understand the species overall status, habitat needs, movement patterns and threats. These assessments have provided important information on the impact of habitat alteration on sauger and other prairie river species (e.g., blue sucker, sturgeon and paddlefish), and recent restoration efforts have been directed towards reducing entrainment in irrigation canals, and promoting movement in the Tongue River through construction of a by-pass channel around an irrigation dam. Modifying dam operations to promote more natural hydrographs and temperatures on mainstem and tributary rivers will continue to be important but difficult issue to address. Hybridization between sauger and non-native walleye is also a concern, and the issue is being preemptively addressed in the Bighorn River system through stocking of sterile walleye in Yellowtail Reservoir.

On larger rivers, spring and fall aggregations of sauger provide for popular fisheries, though overall, less than 0.2% of statewide angling pressure is targeted towards the species. Standard angling limits for sauger are 5 daily and 10 in possession, though to protect some populations from the potential stress of over-harvest, in many locations limits are reduced to 1 daily and 2 in possession. A draft version of a sauger conservation agreement was produced by FWP in 2004 (*Memorandum of Understanding and Conservation Agreement for Sauger (Sander canadensis) in Montana)* with the goal of enlisting the support and assistance from other agency partners to conserve this species.

Sturgeon: Pallid sturgeon (native; federal ESA endangered species; Montana Species of Concern)

The historic distribution of pallid sturgeon in Montana includes the Missouri River below the mouth of the Marias River, the lower reaches of the Milk River, and the Yellowstone River below the mouth of the Tongue River. Pallid sturgeon are long-lived (50+ years), highly migratory, and require large, turbid, relatively warm, and free-flowing rivers to successfully reproduce. The construction of dams and corresponding impoundments on the upper Missouri River beginning in the early 1900's, (e.g., Canyon Ferry and Fort Peck reservoirs, and North Dakota's Lake Sakakawea), Yellowstone River (e.g., Intake Diversion Dam), and associated dammed tributaries (e.g., Yellowtail, Tongue and Tiber reservoirs on the Bighorn, Tongue and Marias rivers) have impeded successful spawning and recruitment of pallid sturgeon in Montana. Dams and impoundments block migration routes, alter natural spawning cues such as discharge, temperature and turbidity, fragment populations (i.e., above Fort Peck Reservoir), and alter habitats necessary for survival of fry. It is currently estimated that fewer than 120 adult pallid sturgeon persist in the upper Missouri and Yellowstone rivers above Lake Sakakawea. The pallid sturgeon was listed as a federal endangered species in 1990, and is a Montana Species of Concern. Angling for pallid sturgeon is not allowed in Montana.

Management plans and conservation efforts for pallid sturgeon are developed and implemented through a USFWS-coordinated Recovery Team that includes state- and federally-appointed staff. Short-term management objectives for the species include preventing local extirpation through population supplementation with hatchery-propagated fish, providing adult upstream passage at Intake Diversion Dam on the Yellowstone River, and developing strategies to address impacts to spawning and recruitment related to Fort Peck and Sakakawea reservoirs. Long-term and natural

persistence of pallid sturgeon will require changes to reservoir operations that result in re-establishment of spawning cues and habitats necessary for fry survival.

Though pallid sturgeon will likely remain a federally listed and managed species for the foreseeable future, FWP will remain active participants in the development, promotion and implementation of conservation efforts that result in recovery and de-listing of the species.

Relevant management documents: *Pallid Sturgeon Recovery Plan* (USFWS, 1993); *Biological Opinion on the Operation of the Missouri River Main Stem Reservoir System, Operation and Maintenance of the Missouri River bank Stabilization and Navigation Project, and Operation of the Kansas River Reservoir System* (USFWS, 2000); *Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi System* (USFWS, 2000); *Pallid Sturgeon Range-wide Stocking and Augmentation Plan* (UFWS, 2006); *Memorandum of Understanding for Upper Basin Pallid Sturgeon Recovery Implementation* (Upper Basin Workgroup, 2008)

Sturgeon: Shovelnose sturgeon (native)

The shovelnose sturgeon (*Scaphirhynchus platorynchus)* is native to Montana with a current distribution that includes the Missouri River below Morony Dam near Great Falls, the Marias River below Tiber Dam, the Yellowstone River downstream of Cartersville Diversion Dam at Forsyth, and the lower reaches of the Milk, Powder, Tongue and Teton rivers. Shovelnose are also present in Bighorn, Fort Peck and Tiber reservoirs. Shovelnose and pallid sturgeon coexist in portions of the Missouri and Yellowstone rivers; but unlike their *endangered* cousin, shovelnose are less impacted by dams and impoundments and remain common to abundant in many locations. Like many prairie river fish species however, impediments to movement, entrainment in irrigation canals, and altered flow and temperature regimes have resulted in reduced distribution and abundance of shovelnose sturgeon in portions of their range, particularly tributaries to the major rivers. On-going efforts to address these issues will benefit shovelnose sturgeon as well as many other game and non-game species. Furthermore, the Pallid Sturgeon Recovery Team has supplemented the adult pallid sturgeon population with hatchery-propagated fish from 2000-2012. The densities of juvenile pallid sturgeon are reaching levels that shovelnose sturgeon anglers are beginning to catch hatchery released pallid sturgeon. The "Similarity of Appearance" provision needs to be watched closely by FWP since juvenile pallid sturgeon are the same size and similar in appearance to shovelnose sturgeon. Educational efforts to aid anglers with sturgeon identification, to eliminate accidental harvest, needs to be an increased component for FWP and the pallid sturgeon program.

Though they remain common in many portions of their range, including in Montana, shovelnose sturgeon are treated as a federally *threatened* species under "Similarity of Appearance" provision of the Endangered Species Act (ESA). This provision has been applied to shovelnose to protect *endangered* pallid sturgeon from inadvertent commercial "take" in areas where the species' range overlap. The ESA listing of shovelnose only applies to commercial activities, and while both species occupy the Missouri and Yellowstone rivers in Montana, recreational fishing is not impacted by the rule. Accidental angler harvest of pallid sturgeon is a concern in Montana, and to address the issue, fishing regulations require release of *all* sturgeon greater than 40 inches. The basis of this regulation is that pallid sturgeon adults are typically greater than 40 inches,

while shovelnose sturgeon rarely reach that length. Furthermore, the Pallid Sturgeon Recovery Team has supplemented the adult pallid sturgeon population with hatchery-propagated fish from 2000-2012.
Even though shovelnose sturgeon can reach more than 3 feet of length and 5 – 10 pounds, and are considered high quality table-fare, few Montana anglers specifically target the species and they account for only about 0.03% of the annual angler days in the state. An exception is the lower Marias River where a popular late spring fishery exists for adult shovelnose migrating from the Missouri River. Shovelnose are also occasionally captured by anglers targeting other species, particularly catfish. Central and Eastern district harvest limits for shovelnose sturgeon are 5 daily and in possession, with an exception being Bighorn Lake where the harvest limit is two daily and in possession. As previously noted, all sturgeon greater than 40 inches in length must be released.

Shovelnose sturgeon may be vulnerable to over exploitation as a result of their low recruitment. Surveys on the Middle Missouri River from 2007 – 2011 indicated a moderate harvest of shovelnose sturgeon with similar catch rates in 2007 and 2011, but the proportion of sturgeon that were caught and harvested was relatively high at 62% in 2007 and 65% in 2011. Total harvest could easily surpass 2,000 adult fish per year when total fishing pressure is factored in. Further study is needed to determine what harvest level will keep this high quality population at its present level.

Sturgeon: White sturgeon (native; federal ESA endangered species; Montana Species of Concern)

The historic range of the landlocked population of Kootenai River white sturgeon includes approximately168 river miles of the river from Kootenai Falls downstream through Idaho and into Kootenay Lake in British Columbia, Canada. Corra Linn and Duncan dams in British Columbia (completed in the 1930's and 1960's), Libby Dam in Montana (1970's) and levee construction in Idaho significantly reduced the quality and availability of sturgeon spawning and rearing habitat, resulting in very limited natural recruitment and a declining population of wild fish. Current estimates indicate fewer than1,000 wild, adult white sturgeon remain in the population, and very few occupy their historic range in Montana. The Kootenai white sturgeon was listed as an endangered species under ESA in 1994 and is a Montana Species of Concern. Angling for white sturgeon has not been allowed in Montana since 1979.

Management plans and conservation efforts for Kootenai River white sturgeon are developed and implemented through a USFWS-coordinated Recovery Team composed of state, federal, tribal and Canadian appointments. Short-term recovery objectives for the species include reestablishing successful natural recruitment and preventing extinction through population supplementation. Ultimately, the Kootenai white sturgeon population could be delisted if the population becomes naturally self-sustaining, a process that could take decades to realize because sturgeon do not become reproductively mature until about 30 years of age. The USFWS recovery plan (1999) for the Kootenai River Population of white sturgeon details management activities including release of hatchery sturgeon propagated in Idaho and British Columbia, manipulation of dam discharges and water temperature, and habitat restoration to improve spawning and rearing.

Though Kootenai River white sturgeon will likely remain a federally listed and managed species for the foreseeable future, FWP will remain active participants in the development, promotion and implementation of conservation efforts that result in recovery and de-listing of the species.

Relevant management documents: *Recovery Plan for the Kootenai River Population* (USFWS, 1999); *Critical Habitat Revised Designation for the Kootenai River Population of White Sturgeon (Acipenser transmontanus): Final* (USFWS, 2008); *Biological Opinion on the Effects of the Federal Columbia River Power System on Five Endangered or Threatened Species* (USFWS, 1995); *Biological Opinion on the Effects to Listed Species from Operations of the Federal Columbia River Power System* (USFWS, 2000). *Fish and Wildlife Service Biological Opinion Regarding the Effects of Libby Dam Operations on the Kootenai River White Sturgeon, Bull Trout, and Kootenai Sturgeon Critical Habitat* (USFWS, 2006). *Clarification of the 2006 Fish and Wildlife Service Biological Opinion Regarding the Effects of Libby Dam Operations on the Kootenai River White Sturgeon, Bull Trout, and Kootenai Sturgeon Critical Habitat* (USFWS, 2008).

Trout: Brook trout, brown trout, lake trout, rainbow trout, golden trout (non-native)

Since their introduction to Montana starting in the late 1800's, rainbow trout (*Oncorhynchus mykiss)*, brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis)*, golden trout *(Oncorhynchus mykiss aquabonita)* and lake trout (*Salvelinus namaycush)* have become the most common and widely dispersed fish assemblage in the state. Also referred to as "non-native trout," the origins of these species are as far away as Europe (brown trout). They have proven to be highly successful in Montana and they thrive in the traditional cold-water trout habitats in the western half of the state and in the historically warmer and turbid eastern waters where suitable trout habitats now exist, primarily in dam tailwaters as a result of reservoir construction.

Almost three quarters of all anglers in Montana identify trout as their target fish species. Much of this fishing is for rainbow trout, which exist throughout all cold water habitats in Montana, but primarily in rivers, stream, lakes and lowland reservoirs. Brown trout occupy similar habitat to rainbows although are slightly more tolerant of warmer water and less tolerant of large reservoirs. Brook trout do best in smaller rivers, streams, spring creeks and mountain lakes. Lake trout do best in deep lakes and reservoirs, and it is important to note that there are two lakes with native lake trout in southwest Montana (and two in Glacier National Park) that are apparently relicts from the time of the last glacial age. Finally, several dozen mountain lakes, primarily in southwest Montana, support unique golden trout fisheries that are self-sustaining or periodically supplemented with hatchery produced fish.

Management of non-native species of trout varies greatly by species, body of water, and management objectives. Since the 1970's, "wild trout" management has been a priority in Montana rivers and streams. The fundamental elements of wild trout management are to maintain populations through natural reproduction (i.e., no hatchery stocking) and the protection or restoration of high quality habitat. This management philosophy has been extremely successful and several rivers in Montana are among the most popular trout fisheries in the nation.

Harvest regulations for introduced trout in streams and rivers are based on both biological and social issues. More stringent regulations such as "catch-and-release only" are used to maintain

satisfactory trout densities in heavily fished reaches of some rivers. Regulations that limit the harvest of larger fish are also commonly used to help maintain trophy fisheries and sufficient number of reproducing adults. More liberalized harvest regulations are generally applied towards brook trout, which are very common in many smaller streams, and lake trout where their potential impacts on native species is a concern (e.g., Flathead River drainage).

Lake and reservoir trout fisheries are also managed on an individual basis for a variety of objectives (e.g., put-grow-take, trophy, self-sustaining). In most cases, flat-water harvest is generally less restricted (more liberal opportunities to harvest fish) when compared to streams and rivers. Rainbow trout provide the bulk of introduced trout fishing opportunities on many lakes and reservoirs and many of these fisheries are supported by hatchery efforts. Other introduced trout fisheries are generally self-sustaining through natural reproduction. Like regulations for streams and rivers, liberal harvest limits for brook trout are standard in mountain lakes to reduce issues of over abundance (e.g., stunted populations resulting in small fish size). Angler harvest of lake trout is encouraged in Flathead and Whitefish lakes to aid conservation of native bull and westslope cutthroat trout. Lake trout are uncommon in the central and eastern fishing districts (i.e., primarily Tiber and Fort Peck reservoirs) and limits are relatively restrictive. Georgetown Lake provides a unique trophy brook trout fishery and is an exception to typical liberal limits for the species. Finally, brown trout are generally managed under the combined trout limits for lakes and reservoirs, and are often a part of mixed fisheries with rainbow trout. The predatory nature of brown trout allows them to reach a relatively large size (5 – 10 lbs) in many waters, and though not commonly caught, these large fish occasionally provide anglers targeting other species with an unexpected trophy catch.

Trout: Bull trout (native; federal ESA threatened species; Montana Species of Concern)

Bull trout *(Salvelinus confluentus*) are native to rivers, streams and lakes in the Columbia River basin (Kootenai, Clark Fork, Bitterroot, Blackfoot, Flathead, and Swan drainages) and in the Saskatchewan River basin (St. Mary and Belly drainages) in Montana. Bull trout are actually a char and display a variety of life-histories strategies. Populations that reside entirely in small streams are classified as “resident” and rarely reach 12 inches in length. More common and well known are migratory bull trout populations (e.g., Flathead Lake and river system, and the Blackfoot River drainage) that use a combination of lakes, reservoirs (adfluvial) or large rivers (fluvial) as adults, and small streams for spawning and juvenile rearing. Migratory bull trout are the largest native salmonid in Montana and adults exceeding 10 lbs are common in these populations. The state record fish is over 25 lbs. For successful spawning, bull trout require near pristine habitat conditions, particularly cold headwater streams with clean gravel bottoms.

While bull trout remain widespread in Montana, significant declines in abundance have been observed in most populations. Major causes for these declines include changes in habitat that reduce spawning success, barriers that prevent movement of migratory fish, and non-native fish (e.g. lake and brown trout) that prey on or compete and hybridize (e.g., brook trout) with bull trout. Bull trout in the South Fork of the Flathead, above Hungry Horse Reservoir, remain a protected and robust population. Bull trout are a Montana Species of Concern and were listed as an ESA "threatened" species by the USFWS in 1998.

Because bull trout are a federally listed species, FWP and numerous state, federal and private partners are active participants in their management and conservation. Habitat protection and restoration, and restoration of migratory corridors (e.g., removal of barriers to movement) are among key elements to bull trout conservation and recovery. The large-scale habitat restoration program in the Blackfoot Valley and the removal of Milltown Dam are notable examples of these types of efforts. The presence of predatory nonnative fish, particularly lake trout, northern pike and walleye, is significant but difficult threats to address. An on-going experimental lake trout removal effort in Swan Lake has been implemented to not only aid in the conservation of Swan drainage bull trout, but also to determine whether suppression of nonnative species in certain locations can assist in bull trout recovery. Angling and harvest is closely regulated to prevent additional stress on bull trout populations. Currently (2012), intentional angling for bull trout is prohibited everywhere except in Hungry Horse and Lake Koocanusa reservoirs, Swan Lake, and the South Fork of the Flathead River upstream from Hungry Horse reservoir. At this time, Hungry Horse Reservoir is the only place in the state where a limited bull trout harvest is allowed.

Management of bull trout is guided by both state and federal documents. In 2000, a State of Montana sponsored effort with multiple stakeholders produced the planning document titled *Restoration Plan for Bull Trout in the Clark Fork River Basin and Kootenai River Basin in Montana.* This plan sets goals, objectives and criteria for bull trout restoration, outlines actions to meet those criteria, and establishes a structure to monitor implementation and evaluate effectiveness of the plan. Local plans provide direct guidance for local bull trout conservation efforts and include such documents as *An Integrated Stream Restoration and Native Fish Conservation Strategy for the Blackfoot River Basin* (FWP 2005), *Flathead Lake and River Co-Management Plan, 2001 – 2010* (FWP and Confederated Salish and Kootenai Tribes 2001), and Clark Fork River Native Salmonid Restoration Plan (Avista, 1998). As a listed species, the USFWS is responsible for developing federal bull trout recovery plans and designation of "critical habitats." Although critical bull trout habitat in Montana was designated by the USFWS in 2010, the Federal bull trout recovery plan is still in a draft stage and has yet to be finalized.

All major river systems in western Montana (except the Yaak River) are designated by the USFWS as Critical Habitat for bull trout. Critical Habitats are specific geographic areas that the USFWS considers essential for conservation and recovery of bull trout and may require special management and protection to meet recovery objectives. Non-native trout species that are popular sport fish can compromise bull trout use of these areas through predation, competition and hybridization. The extent of these impacts vary by water and non-native species present. Historically bull trout have declined in number and distribution, with non-native trout often playing some role in the decline. However, recent management efforts have shown that the presence of non-native trout does not necessarily mean that bull trout populations will decline. Recent harvest restrictions and habitat improvements to enhance bull trout populations have resulted in some populations continuing to decline, some remaining stable (or ceasing the historical decline) and some increasing, all in the presence of non-native trout. Reasons for this variability may include interactions between the non-native trout and bull trout, as well as food web dynamics, and habitat condition or type. Because non-native trout occupy portions of all of the drainages listed as Critical Habitat, a challenge for FWP is to continue to provide recreational fisheries for non-native trout while protecting and establishing viable populations of bull trout.

Balancing the two is particularly challenging because bull trout populations typically require open systems for migration and this makes them more susceptible to the negative impacts associated with non-native trout.

Management of non-native species using liberalized harvest limits or active suppression is not viewed as a necessary or practical approach to bull trout management in all waters designated by the USFWS as Critical Habitat. Many river reaches identified as Critical Habitat currently support few if any bull trout, or are only seasonally utilized as migratory corridors. Such waters may have substantial habitat alterations that make them unsuitable for viable bull trout populations for the foreseeable future (e.g., Upper Clark Fork River above Flint Creek), or a mix of habitat changes and established non-native trout populations which combined, limit the likelihood that non-native species can be effectively managed to benefit bull trout (e.g., lower Bitterroot River). These river reaches may also support recreationally and economically important trout fisheries that are highly valued destinations for Montanans and out-of-state visitors, and though FWP will continue to evaluate the issue and possible solutions, implementing management techniques (i.e., passive or active suppression) with uncertain benefit to bull trout is unwarranted at this time.

Trout: Redband trout (native; Montana Species of Concern)

Redband trout (*Oncorhynchus mykiss gairdneri)* are a subspecies of rainbow trout native to the Kootenai River drainage in northwest Montana. Historically redband trout were common in the Kootenai River and associated tributaries downstream of what is believed to have been a natural barrier near the present-day Libby Dam (near Libby, MT). Owing to habitat changes and competition and hybridization with non-native trout (e.g., brook trout and coastal rainbow trout), the subspecies has declined in abundance and distribution and is presently restricted to headwater streams, or streams with barriers that prevent invasion of nonnative trout. It is estimated that redband trout (> 90% genetic purity) currently occupy about 41% (306 miles) of their historic range in Montana. Due to this reduced distribution, and threats to many remaining populations, redband trout have been listed as a Species of Concern in Montana.

FWP and land managers (State, federal and private) are integral partners in the management of redband trout. Current management efforts include assessing and monitoring remaining populations; protecting important habitats; and developing long-term conservation strategies that may include removal of non-native trout and placement of barriers to prevent their return, and reintroduction of redband trout to streams where they have been lost. In addition, since 2002 FWP has been developing and testing a redband trout broodstock at FWP's Libby Isolation Facility and Murray Springs State Fish Hatchery. Established from a wild redband population, this brood is being developed to replace the stocking, for recreational purposes, of hatchery coastal rainbow trout or westslope cutthroat trout, in drainages where redband trout are native. The effort will reduce the likelihood of additional hybridization of the species.

In the near term, the management direction for redband trout includes maintaining the existing distribution and genetic diversity of remaining populations, and developing conservation plans and projects that ensure long-term, self-sustaining persistence of the subspecies in Montana. Though recreational angling opportunities for the redband trout are currently limited outside of small streams, the development of a redband trout brood stock should provide future

opportunities to establish recreational fisheries in closed-basin lakes in the Kootenai drainage. Likewise, efforts to secure and expand the distribution of existing populations and reintroduce them into streams where they have been lost will result in additional opportunities to pursue this unique native sport fish. Currently, FWP is in the process of developing a Redband Trout Management Plan.

Trout: Westslope and Yellowstone cutthroat trout (native; Montana Species of Concern)

Two sub-species of cutthroat trout are native to Montana: Westslope cutthroat trout (*Oncorhynchus clarki lewisi*) and Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*). Together they share the distinction as "Montana's State Fish." Westslope cutthroat trout (WCT) are native to the Clark Fork, Kootenai, Missouri (above and including the Judith) and St. Mary drainages. Yellowstone cutthroat trout (YCT) are native to the Yellowstone River and associated tributaries above the mouth of the Big Horn River.

Historically WCT and YCT occupied all accessible, cold water streams and lakes in their respective drainages, and resident (stream occupant), fluvial (migratory river fish) and adfluvial (migratory lake fish) forms were present. While WCT remain common in many waters west of the continental divide, and both WCT and YCT have been stocked in numerous lakes and reservoirs, their distribution and abundance has declined in many portions of their historic range. Major factors contributing to the sub-species' decline include competition with non-native species of trout (brook, brown and rainbow trout), hybridization with rainbow and YCT or WCT that were stocked outside their historic range, habitat changes and migratory barriers. In Montana it is currently estimated that genetically pure WCT occupy about 20% (5,950 miles) of their historic range and genetically pure YCT occupy about 16% (705 miles) of their historic range. Slightly hybridized populations (<10% level of hybridization) are also managed for their conservation value and when combined with genetically pure population, the current distribution of WCT and YCT increases to 30% (8,830 miles) and 28% (1,210 miles) of their respective historic ranges.

The status of WCT throughout its distribution in Montana is quite variable. Non-hybridized WCT populations on the west side of the continental divide are more widely distributed and represent the majority of the occupation percentage listed above. Non-hybridized WCT populations in the Upper Missouri River Basin presently only occupy 4% of their historic distribution, and are commonly limited to small headwater streams. Similar to WCT, YCT status and distribution varies spatially. Some areas exist where YCT have been isolated from non-native fishes, but many of the existing YCT populations overlap with non-native species and are therefore not secure. Non-hybridized YCT populations in the Upper Yellowstone River Basin presently occupy 26% of their historic distribution.

Owing to significant declines in WCT and YCT, each is listed as a Montana Species of Concern. In addition, WCT and YCT were petitioned for listing under the federal Endangered Species Act but these petitions were found "not warranted."

As a Species of Concern and sport fish, WCT and YCT receive considerable management attention and resources from FWP, federal land management agencies, and private organizations.

Though notable exceptions exist (e.g., Flathead Lake), cutthroat-occupied lakes and reservoirs are generally managed as recreational fisheries where harvest is allowed (standard limits), and if necessary, are periodically stocked with progeny from FWP's cutthroat broods maintained at Washoe Park Trout Hatchery (WCT; Anaconda, MT) and the Yellowstone River Trout Hatchery (YCT; Big Timber, MT). In most cases WCT and YCT populations residing in rivers and streams have been identified as "conservation populations," which indicates the need to manage the population for natural, self-sustaining persistence. Streams and rivers are not stocked with hatchery WCT or YCT, with the exception being restoration efforts where cutthroat brood or wild eggs are introduced in smaller streams to reestablish populations. Stream and river creel regulations vary based on strength of populations, with "catch and release" or limited harvest with size limits the most common types of regulation.

Management concerns for WCT and YCT vary by drainage and region of the state. Efforts to address threats are often developed specific to an individual body of water. In some waters, angler harvest limits and habitat protection are suitable management measures to ensure robust WCT and YCT populations remain. In all locations, biologists are actively monitoring and maintaining or improving habitat conditions necessary for robust cutthroat populations. Such efforts may include addressing concerns related to riparian condition, passage concerns at road crossings, entrainment in irrigation systems, and in-stream flow. In some drainages, non-native trout species are removed to reduce threats to "at-risk" populations, or to develop areas for cutthroat restoration. Barriers to upstream fish passage are often constructed at the lower end of these recovery areas to prevent re-invasion of non-native species. Projects to reestablish WCT and YCT populations for conservation purposes are common in the upper Missouri and Yellowstone drainages, and these efforts often include transferring eggs or live fish from existing threatened populations to preserve their genetic legacy.

Management of Montana's two cutthroat species is directed by regional and statewide management plans. The 2007 document titled "*Memorandum and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout in Montana"* (MOU; FWP 2007) is the principal document that sets objectives and goals for overall cutthroat conservation in Montana, and has been signed by numerous state, federal, tribal, and private stakeholders.

Conservation goals for westslope cutthroat trout. The conservation goal for WCT west of the Continental Divide (Columbia River drainage) is to maintain viable populations throughout their existing distribution in all drainages, primarily through angling regulations and habitat protection and restoration. Identified "conservation" populations include those that are non-hybridized or slightly hybridized, isolated resident populations, and populations that include a mainstem river migratory life-form that promotes connectivity between populations and provide angling opportunity for larger fish. If migratory bull trout are not present, the isolation (i.e., by placement of barriers) of some tributary WCT populations may be considered if hybridization or competition from nonnative trout threatens the population's persistence. Though not a current focus of WCT management west of the divide, on a limited basis some opportunities to expand the distribution of the subspecies into historically occupied habitat may be explored (e.g., upper reaches of the North Fork of the Blackfoot River). Where necessary and feasible, non-native trout may also be removed from isolated drainages to protect existing WCT populations from

competition or hybridization (i.e., the nearly completed South Fork of the Flathead WCT Conservation/Restoration Project).

The restoration goal for WCT east of the Continental Divide (Upper Missouri River Basin upstream from and including the Judith River) is to restore secure conservation populations of WCT to 20% of the historic distribution. Populations of WCT are considered secure by FWP when they are isolated from non-native fishes, typically by a physical fish passage barrier, have a population size of at least 2,500 fish, and occupy sufficient (5 to 6 miles) habitat to assure long-term persistence. The effect of non-native fish on WCT populations is well known for some species (rainbow trout and brook trout) and less well known for others (brown trout); thus, management actions will focus on known threats, including habitat concerns, and rely on future research to determine threats of other non-native fish species.

In the upper Missouri River Basin, all remaining populations with less than 10% non-native trout hybridization are considered "conservation" populations. Estimates of the historic distribution of WCT within the Upper Missouri River Basin are approximately 19,000 stream miles. Therefore, having 3,800 miles of secure conservation populations within the basin would satisfy this 20% goal. Conservation populations of WCT currently occupy approximately 8% of the historic distribution in the basin, this includes approximately 4% non-hybridized populations and 4% slightly hybridized populations. In satisfying the 20% conservation goal, existing conservation populations would be protected, and populations would be expanded or introduced into approximately 12% more of the historic habitat within the basin. Implementation of the 20% historic range goal for WCT would assure persistence of subspecies in the Upper Missouri River Basin for the foreseeable future, provide numerous fishing opportunities for Montana's State Fish, and leave unchanged the vast majority of fisheries that have developed for non-native trout. All conservation projects to expand WCT distribution would be vetted to the public through the MEPA process, and because of feasibility issues, are generally limited to small to medium sized tributary streams.

Logistically, the WCT conservation goal would be proportionally applied to all major drainages within the Upper Missouri River Basin. Having conservation populations spread out geographically within the basin is a prudent approach that prevents stochastic events (e.g., floods, fire, drought or disease) in a portion of the drainage from having an impact on all conservation populations. In some situations, a drainage may exceed the "20% of historic goal" due to opportunities, whereas other drainages may fall short due to logistic realities. As a general rule, the 20% goal would be applied in each drainage, unless the regional fisheries manager makes an exception based on logistics or opportunities.

Conservation goals for Yellowstone cutthroat trout. The estimated historic distribution of Yellowstone cutthroat trout in the Upper Yellowstone River (upstream and including the Stillwater River near the town of Absarokee, MT and excluding areas within Yellowstone National Park) is 2,336 stream miles. The estimated current distribution of YCT conservation populations (less than 10% hybridization) is approximately 48% of their historic distribution. Many of these populations of YCT coexist with non-native trout species (rainbow trout, brook trout and brown trout) and therefore are not considered secure, as defined above for WCT in the Upper Missouri River Basin.

FWP plans to implement management actions to secure YCT populations in the Shields River upstream from Chadbourne Diversion. Management actions underway to secure these populations include an effort to determine the distribution of brook trout, rainbow trout and hybridized YCT upstream from the diversion and a rebuild of Chadbourne Diversion to prevent upstream fish passage and ensure the structural integrity of the diversion. Future actions to secure the YCT population in the Shields drainage will be to remove and manage threats of non-native fishes (brook trout, rainbow trout, and hybridized YCT), and to research the long-term impacts of brown trout on YCT populations. These actions will be vetted to the public through MEPA prior to implementation.

In recent years, FWP has also implemented management actions to remove non-native fish in the Upper Boulder River drainage (upstream from the Hawley Falls). In 2012, only one remaining section of stream in this area continues to harbor non-native fish, and FWP plans to remove these fish in 2013.

If successful, conservation actions in the Shields and Boulder rivers would result in approximately 20% of the historic distribution of YCT in the Upper Yellowstone River Drainage having secure YCT populations. Further, these actions would result in monumental steps for the range-wide status of YCT. FWP will continue to look for conservation opportunities within the Yellowstone River Drainage to secure YCT populations and increase the percentage of the historic distribution where secure YCT populations exist. This is especially important in a spatial perspective, where stochastic events (drought, disease, forest fire, etc.) are less likely to impact localized strongholds such as the Shields or Boulder drainages. Conservation populations existing in open systems (coexisting with non-native trout) will be managed to conserve YCT and their migratory life histories, while accepting some levels of competition and hybridization with non-native species. Examples may include securing spawning tributaries and allowing selective passage of YCT during spawning runs.

Walleye (non-native)

Walleye *(Sander vitreus)* is a non-native species found widely in lakes, reservoirs and large rivers in Montana east of the Continental Divide. It is also found west of the Continental Divide in Noxon Rapids Reservoir, apparently a result of an unauthorized (illegal) introduction. Its range and abundance has increased in recent years in the Missouri River between Holter Dam and Great Falls, as well as in the Yellowstone River downstream of the Ranchers Diversion near Bighorn.

Walleye have achieved an avid following among anglers in Montana. According to the 2009 Statewide Angler Survey, over 7% of angler days in Montana were spent in pursuit of this species. Walleye are considered by many anglers to be a handsome fish with excellent flavor, and they also achieve impressive size when their forage is abundant. The current state record is 17.75 pounds from Tiber Reservoir.

Because walleye require rock, rubble or gravel substrates for successful spawning, natural reproduction is better at some lakes such as Canyon Ferry and Tiber reservoirs, while worse at others such as Fort Peck, Hauser and Nelson reservoirs where fine sediments will smother eggs

and reduce the successful hatch. In reservoirs, dam operations can be detrimental if water levels are dropping during spawning and incubation. Recruitment is also highly influenced by favorable weather conditions in the spring, probably more so than by the number of spawners present or the number of eggs laid. Walleye forage (small fish) is also influenced greatly by reservoir levels. Water levels rising during the time of forage spawning in the spring, combined with the availability of vegetation for spawning and cover, will also greatly influence forage success.

FWP stocks walleye as fry or fingerlings in reservoirs where habitat and/or dam operations limit natural production. Most of the hatchery capacity and staff at Fort Peck and Miles City hatcheries are devoted to collecting walleye spawn, hatching the eggs, and growing fish to a stockable size. Between 2000 and 2010, FWP stocked approximately 329 million fry and 27 million fingerlings into Montana reservoirs, with the bulk of them going to Fort Peck Reservoir. FWP Policy currently prohibits the stocking of walleye west of the Continental Divide

Walleye can, and sometimes do, hybridize with sauger, a native Species of Concern. A recent FWP study of sauger populations from 21 sites in the Missouri and Yellowstone drainages found low levels of hybridization (2%), with the greatest incidence (44%) of the hybrids detected in samples from the lower Yellowstone River near the mouth of the Powder River. Genetically, the hybrids were of three types: first generation crosses between pure sauger and walleye, second generation crosses between hybrids, or backcrosses between hybrids and pure sauger. In sum, a majority of the hybrids (ten of eighteen) were post second-generation, lending evidence that recombinant hybrids are to some extent capable of reproducing. Even with these low levels of introgression, another concern is for the wasted reproductive effort that can occur through matings that result in highly unfit offspring. Studies are ongoing to further understand the impacts of this hybridization on sauger populations. To avoid impacts of hybridization, FWP has begun to stock triploid (sterile) walleye into some systems. At the time of this writing, Bighorn Lake has received triploids for the past three years and other reservoirs (such as Tongue River Reservoir) may be considered in the future.

Yellow perch (non-native)

Yellow perch are among the most widespread and popular sport fish in Montana. They thrive in ponds, lakes and reservoirs, and are also common in sloughs and slower rivers. Perch were initially introduced to Montana waters more than a century ago, and through stocking efforts, natural dispersal and illegal introductions, are now present in most major drainages of the state. Perch are not propagated in Montana hatcheries for stocking efforts, but are occasionally transferred between ponds in eastern Montana to reestablish fisheries after periodic winter kills. Perch are an important forage species for predatory sport fish like bass, walleye, sauger, northern pike and burbot, and their presence is a key factor in the quality and stability of many fisheries. High reproductive rates also allow perch to overpopulate some waters, particularly ponds, resulting in poor quality fisheries of small fish and possible impacts to other game species. Unfortunately, perch have also been illegally introduced to numerous waters, resulting in significant changes to some fisheries.

Yellow perch are a highly valued sport fish in Montana, and based on angling days, only trail trout and walleye in statewide popularity. Perch are targeted by anglers in all seasons, and favored fisheries are those where quality fish (> 8 inches) are produced. Perch populations can

generally support high levels of angler harvest, and with the exception of reservoirs on the upper Missouri River (Canyon Ferry, Hauser, Lake Helena, and Holter), there are no daily or possession limits. On those reservoirs, the restrictive regulations are in place due to high angler pressure and walleye predation.

Perch management is a challenge. They are highly sought after for table fare but anglers are generally not interested in perch smaller than 7”-8”, which is the common adult size in most waters. Perch can provide forage for some other species but generally are not useful for prey past the yearling stage except for large predators like older walleyes and northern pike. Perch are also aggressive and can out-compete other sport fish for food and space. The common problem with perch is overabundance. Methods to decrease perch densities are limited, manpower intensive and costly. Importantly, perch are relatively slow growing in Montana, commonly requiring 4 years to reach 8 inches and 8 years to reach 10 inches. The key to quality perch management is to limit recruitment and/or maintain strong harvest/predation pressure on perch less than 8” while severely restricting harvest of perch longer than 8”.

FISHERIES HABITAT PROGRAM

Fish Habitat Goals

1. Preserve and protect aquatic habitats.
2. Restore and enhance degraded aquatic habitats.
3. Restore and maintain adequate water flow in streams and satisfactory water levels in lakes and reservoirs.

Background and Description

Generally speaking, fish thrive in diverse, healthy aquatic ecosystems. Good fish habitat consists of three essential elements: 1) *water quantity*—adequate water flow in streams throughout the year and satisfactory water levels in lakes and reservoirs to sustain healthy aquatic communities; 2) *water quality*—water of suitable quality for sustaining healthy populations of fish and other aquatic life; and 3) *physical habitat features*—landscape features such as streambeds and banks, riparian areas, and cover that, together, when functioning properly, provide a favorable environment for fish and other aquatic life to carry out all essential phases of their life cycles. All of the above require maintenance of a functioning floodplain, as well as judicious land management practices throughout the watershed, including upland areas. Some of the specific threats to fisheries habitat in Montana and how FWP responds to these include:

- *Climate change with its consequent water quantity and quality changes (in particular, thermal changes).* Refer to "Climate Change" in the Fisheries Management Program section of the plan for more information.

- *Increasing competition for a limited, and often diminished, supply of surface water, and its particular effect upon instream flows.* Refer to "Instream Flow Protection" section below for more information.

- *Increasing development that accompanies increasing human population growth, especially where it represents encroachment upon and demand for development of stream corridors and other important aquatic resources.* FWP addresses this through comments on proposed subdivisions, stipulations on stream and wetland permits, education and outreach, and expertise provided to other agencies for their permitting processes.

- *Development of natural resources, such as oil and gas, with accompanying impacts on groundwater and surface water quantity and quality.* FWP addresses this through comments on proposed new areas of development, stipulations on stream and wetland permits, education and outreach, and expertise provided to other agencies for their permitting processes.

- *Overgrazing of streamside vegetation and trampling of streambanks.* FWP addresses this through grants that fund riparian fencing and/or repair of damaged streambanks, by working with agencies that issue grazing permits to reduce impacts to streams and wetlands, and through landowner education about alternative grazing methods.

- *Fish passage obstruction and fish entrainment into irrigation ditches.* FWP addresses this by removing obstructions from streams, screening ditches, and informing irrigators about incremental headgate shut-down to allow fish to escape ditches.

- *Unmitigated dam operations.* FWP works with governmental and private entities to provide modeling and flow-release options that better emulate natural conditions or seek off-site mitigation.

Even in the examples cited above, achieving these goals often transcends the limits of FWP's own funding sources. Nearly all of what FWP is able to achieve relies upon the cooperation and collaboration of other agencies, non-governmental organizations, and the public.

Compared to the rest of the nation, the aquatic habitat in Montana rivers, streams and lakes is in good condition. As in other parts of the country, however, Montana has some portions of its rivers, streams and lakes where fish habitats have been degraded because of land-management practices and other human activities. Current and projected human uses of the environment have the potential for degrading existing habitats even further. FWP has the ability, technology, and obligation to protect and restore these habitats wherever possible. To address these needs, the Fisheries Program has established three broad goals and identified a number of activities for reaching each goal.

Instream Flow Protection

The purpose of FWP's Instream Flow Protection efforts is to physically and legally protect, restore, and manage the instream flows required to sustain Montana's aquatic species, their habitats, and related ecosystems with focus on the increasing competition for the water resources, limited supplies and changing hydrologic conditions. Associated goals include:

1. Restore and maintain adequate water flow in streams and satisfactory water levels in lakes and reservoirs.
2. Provide education and information to the public about the importance of instream flows and lake level protections and the policies used to provide for and protect them.
3. Conduct education and training for FWP staff regarding water measurement data collection and management and flow restoration strategies.

Description of current operations and/or areas of work

Goal 1 (Restore and maintain adequate water flow in streams and satisfactory water levels in lakes and reservoirs) is being realized by accomplishing the following objectives:

1. Protecting FWP's existing instream water rights and water reservations through active participation in the water adjudication process and the water right permitting process, and through enforcement of water right priorities;

2. Enhancing steam flow in priority, dewatered streams through water leasing, donations, purchase, market transaction, and other voluntary means;

3. Enhancing reservoir management procedures such that the regulation of water flow in streams and water levels in lakes and reservoirs meets not only the owner's purpose but also benefits, or minimizes impacts to, fish and other aquatic life;

4. Protecting and enhancing stream flows and lake levels in priority areas through collaborative community or watershed groups;

5. Implementing the instream-flow assessment program to validate native and ESA species recovery and obtain additional water reservations on priority streams and rivers; and

6. Acquiring senior water rights or new water reservations to maintain or protect water flow in streams and water levels in lakes or other water bodies.

Goal 2 (Provide education and information to the public about the importance of instream flows and lake level protections and the policies used to provide for and protect them) is being realized by dissemination of information via the FWP website and other forums such as watershed groups. Further information regarding the public understanding of instream flows and lake levels is needed to develop public educational programs.

Goal 3 (Conduct education and training for FWP staff regarding water measurement data collection and management and flow restoration strategies) is being realized by educating staff on water measurement data collection and analysis. Further education regarding flow restoration strategies is needed.

Special issues, challenges or initiatives

The greatest long-term challenge is the ever increasing demand for water in the arid west, coupled with increased variability in water supplies. FWP will face greater threats to instream flows and lake levels and must be well-positioned to meet this threat by defending FWP's water rights, while also actively working to help develop a strategy that meets the increasing demand for water and protects instream flows and lake levels.

Applicable laws, rules and policies

Statute

Title 85: The Montana Water Use Act governs water reservation, including the defining flow or lake levels, changes in water use that provide for instream flows (both temporary leasing and permanent), the general stream water-right adjudication, and permitting and development of new water rights.

Fisheries Mitigation

State and federal laws and policies were established to mitigate damages to fish and wildlife caused by dams, diversions or mining. Federal and private dams and water diversions control water elevations, flow patterns and environmental conditions (e.g. water temperature, oxygen, water velocity, gas saturation, etc.) needed for fish survival and growth. Dams and diversions often block fish migrations, isolating populations above, below, or between barriers. Fish and wildlife habitat is damaged when reservoirs are drawn down to a fraction of their capacity and/or

significantly on a regular basis, and when streams are dewatered, channelized or contaminated. Reservoirs fill with sediments, reducing storage capacity and recreational opportunities. Unnaturally fluctuating river flows cause stream banks to collapse, erode soils, and over-widen stream channels. Streamside vegetation may be left high and dry along many regulated river reaches, inhibiting new seedlings and causing a long-term loss of riparian habitat.

Mitigation programs use applied research to understand limiting factors, and implement on-the-ground actions to perpetuate self-sustaining fisheries, often with emphases on preserving native fish assemblages. Actions taken are designed to maximize system integrity and resilience, and to achieve a variety of specific mitigation goals, including modifying dam operations to restore more natural conditions in impoundments and streams, and improve fish passage to benefit the fisheries upstream and downstream of dams. Where mitigation cannot be accomplished onsite, projects may be implemented in surrounding areas (offsite mitigation). Progress toward mitigation goals is often tracked by first establishing a “loss statement” of habitat and fisheries impacts caused by the disturbance, such as construction and operation of a dam or mine, and then monitoring results as corrective measures are implemented.

Description of current operations and/or areas of work

Water control operations are dictated by potentially conflicting demands for power generation, flood control, navigation, irrigation, and other human concerns. Prior to dam installation, the natural hydrologic cycle (annual hydrograph) in Montana’s rivers included a high spring flow event during snow melt (typically May through June) and a stabilized, low flow period throughout the remainder of the year. Water regulation essentially reversed the natural flow pattern by storing water during spring runoff (to reduce flood risk) and releasing stored water later during the year for other purposes, such as irrigation, power generation, navigation or water supplies. In some cases, river discharges fluctuate unnaturally each day and from one day to the next. Reservoir drawdowns and refill failures impact biological productivity in the reservoirs. Fisheries and habitat are often affected negatively when the natural hydrograph is changed.

Fisheries can be improved by implementing operating rules for water regulation facilities to optimize potential benefits. Computer models of Hungry Horse, Libby and Yellowtail dams help FWP recommend dam operations that balance fisheries needs in the reservoirs (and rivers downstream) with power generation, flood control and irrigation. A similar model is being developed for Fort Peck reservoir and the Missouri River downstream to examine possible improvements to dam operations. Operating rules limit the duration and frequency of deep reservoir drawdowns, improve reservoir refill, and produce a more natural dam discharge patterns. Fish grow better when reservoirs remain near full pool during the most biologically productive period of the year, summer through fall. At full pool, reservoirs contain the maximum volume of optimal temperature water for forage and fish growth and a large surface area for the deposition of insects from the surrounding landscape, an important food source for fish during summer and fall. Food availability is reduced when the reservoir surface shrinks and water recedes from shoreline vegetation. Reduced reservoir drawdown protects aquatic food production, ensuring an ample springtime food supply for fish. The shallow areas near shore (littoral zone) are the most productive and, therefore, it is important that they remain wetted during the warm months.

Outflows from dams affect all aquatic life. Fisheries in rivers downstream of the dams can be enhanced by restoring a naturally-shaped flow pattern (hydrograph), including a spring run-off event, followed by gradually declining flows through summer and fall, and reduced flow fluctuation. Minimum flows can be established to support stream life and restore natural floodplain functions. Spring flushing flows sort river gravel, define channels, and remove tributary deltas, creating a healthy environment for fish and their food supply. Rapid flow reductions are especially damaging for the reason that a large portion of a river can become dewatered, resulting in stranding insects, zooplankton, and potentially fish and fish eggs. It takes over a month and a half for the aquatic community life to recover after a single low flow event.

Hydropower mitigation projects are underway in the Columbia River headwaters, including the Flathead and Kootenai subbasins. FWP and the Confederated Salish and Kootenai Tribes (CSKT) quantified fish and habitat losses attributable to the construction and operation of Hungry Horse Dam. A similar collaboration with CSKT and the Kootenai Tribe of Idaho (KTOI) documented losses attributable to the construction and operation of Libby Dam. Fisheries Mitigation and Implementation Plans, designed to correct these impacts, were approved by the Northwest Power and Conservation Council (NPCC). The Bonneville Power Administration (BPA) funds mitigation actions to offset fisheries impacts caused by inundation, deep reservoir drawdowns, refill failures, and unnatural flow fluctuations. Mitigation projects address fisheries loss statements for each federal dam, and projects are prioritized within the Flathead and Kootenai Subbasin Plans. Computer models of the reservoirs and rivers were built for the Kootenai and Flathead watersheds to examine the biological responses to various dam operation strategies and implement new operations to balance fisheries needs with flood control, power generation and other water uses.

In the Clark Fork Watershed, mine-related mitigation projects are remediating the harmful effects of mine wastes deposited in the upper Clark Fork Drainage, including removal of the Milltown Dam.

In the Missouri Watershed, FWP collaborated with the US Bureau of Reclamation (BOR) to implement new operating criteria for Yellowtail Dam to benefit fish and recreation in Bighorn Lake reservoir and Bighorn River downstream. There is good potential at Fort Peck Dam to control the water temperature in the dam discharge of by installing a selective withdrawal device. This would make the Missouri River below the dam generally more productive for both native and non-native fish.

FWP also provides recommendations concerning hydropower operations during the Federal Energy Regulatory Commission (FERC) relicensing negotiations, planning efforts and recommendations concerning activities of agencies other than FWP, comments on environmental documents and additional participation in various environmental stewardship collaborations.

Fisheries mitigation programs must be consistent with FWP’s fisheries management objectives and responsive to state constituents, while also complying with all federal, state, tribal, and local laws, and programmatic requirements from a number of external sources. Montana laws commonly followed in fisheries mitigation work include the Montana Environmental Policy Act (MEPA), the Montana Water Quality Act, the Montana Natural Streambed and Land

Preservation Act, the Montana Stream Protection Act, the Montana Floodplain and Floodway Management Act, the Montana Streamside Management Zone Law, and the Montana Lakeshore Protection Act. All actions using federal funds that might significantly affect the human environment must comply with the National Environmental Policy Act (NEPA), in addition MEPA before implementation. Other federal laws such as the Endangered Species Act (ESA) and Clean Water Act, the Federal Rivers and Harbors Act, and laws represented by the Federal Energy Regulatory Commission may impose additional requirements.

Special issues, challenges or initiatives

Dam operations are modified to recover fish species listed as endangered or threatened under ESA, and to benefit other important fisheries. The endangered Kootenai white sturgeon have prompted operating requirements (sturgeon-tiered flows) at Libby Dam. Seasonal flow restrictions were established at Hungry Horse and Libby dams to benefit threatened bull trout. Operations at Fort Peck dam have been modified to help recover endangered pallid sturgeon. New operating criteria were implemented at Yellowtail Dam to balance elevations in Bighorn Lake reservoir with river flows in the Bighorn River downstream.

The Reserved Water Right Compact Commission has nearly completed negotiating water right compacts with tribes in Montana. The final tribal compact with the Confederated Salish and Kootenai Tribes is currently being negotiated. Water rights associated with the tribal compacts are generally compatible with fisheries mitigation goals and past investments.

Use of external mitigation funding often entails extra negotiations, authorizations, and the reporting and fiscal accountability requirements of the funding source, in addition to the already rigorous requirements of existing state processes. These additional requirements add to the complexity of implementing mitigation programs in Montana. Depending on the source, funding is often earmarked for use in specific areas, or for specific tasks. Constraints on how different funding can be used directly influences program planning. As well as state and federal jurisdictional considerations, mitigation programs frequently involve a wide range of partnerships and collaborations, ranging from individual agreements with private landowners or non-government organizations to full-scale collaborations with Tribal governments. All of these factors add to the unique challenges of implementing fisheries mitigation programs in Montana.

Applicable laws, rules and policies

<u>Statute</u>

75-1-101 et seq.: Montana Environmental Policy Act. Provides for the adequate review of state actions in order to ensure that environmental attributes are fully considered in enacting laws to fulfill constitutional obligations and to ensure the public is informed of the anticipated impacts in Montana of potential state actions.

75-5-101 et seq.: The Water Quality Act is the primary basis for water quality protection in the state. It provides authority for the surface water and groundwater standards, the mixing zone rules, the nondegradation rules and the subdivision/on-site subsurface water treatment rules.

75-7-101-125: The Natural Streambed and Land Preservation Act intent is to provide adequate remedies for the protection of the environmental life support system from degradation and

provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.

*87-5-501 9:*The Montana Stream Protection Act provides that the fish and wildlife resources and particularly the fishing waters within the state are to be protected and preserved to the end that they be available for all time, without change, in their natural existing state except as may be necessary and appropriate after due consideration of all factors involved.

76-5-101 et seq.: The Montana Floodplain and Floodway Management Act provides the necessary authority to regulate development through adoption of local ordinances designed to minimize flood damage within specific areas identified by the state as prone to flood damage.

77-5-307-7: The Montana Streamside Management Zone Law establishes and maintains a streamside management area along surface waters, which is sufficiently wide and which includes a sufficient number of canopy species to buffer against detrimental changes in the temperature regime of the waterbody to provide bank stability, and to withstand wind damage.

Water Quality Protection

Water quality protection is being realized through collecting relevant information and field data, participating in and influencing decision processes that have implications to water quality, responding to public concerns related to degradation of water quality, and, where possible, facilitating corrective actions.

Description of current operations and/or areas of work

Current operations focus on coordinating FWP efforts related to water quality. This includes: reviewing Montana Pollutant Discharge Elimination System (MPDES) permits; new pesticide registrations; reviewing proposed mine plans; toxicity assessments related to coal bed methane and other extractive types of development; field reviews for forest Best Management Practices (BMP) ; and other actions that have implications to water quality and fish and wildlife. Fisheries staff represents FWP on the Upper Clark Fork River Basin Advisory Council, which is responsible for facilitating public dialogue, promoting public understanding, and advising the Governor with respect to issues involving remediation and restoration efforts in the basin.

FWP collects (or coordinates collection of) data related to residues of bio-accumulative materials in Montana fishes. This effort includes working with the Department of Health and Human Services (DPHHS) to publish health advisories needed to protect consumers of sport fishes, as well as publishing and updating a fish consumption advisory brochure.

FWP investigates pollution-related fish kills and hazardous-material spills and coordinates with state and federal regulatory agencies on water quality issues. This work includes monitoring superfund activities that have implications to fisheries resources.

Fisheries staff in Helena coordinates with regional staff to identify and solve water quality problems such as providing guidance and monitoring use of fish toxicants for management

purposes, e.g., rotenone and antimycin treatments. Staff also provides technical assistance to management biologists on water quality matters.

Special issues, challenges or initiatives

FWP is leading efforts to remediate polychlorinated biphenyl **(**PCB) contamination in Big Spring Creek near Lewistown. PCBs were discovered in fish in the creek in the early 1980s, and then in sediments in the early 1990s. It wasn't until 2003 that the Big Spring Creek State Fish Hatchery was determined to be the source of this contamination. Paint containing PCBs was applied to the raceways of the hatchery for many years, and over time the paint flaked off and entered Big Spring Creek, contaminating sediments, insects and fish. To protect human health, in 2004 a fish consumption advisory was adopted for the entire creek, as was a catch-and-release section on the creek above Lewistown. Cleanup of the hatchery included removing contaminated paint and re-coating the raceways in 2004-2005, followed by replacement of lower hatchery raceways in 2011-2012. Cleanup of the stream began in 2011 and will conclude in 2013, including removal of paint chips through suction dredging in the top six inches of streambed sediments over a 2.8 mile section of stream downstream of the hatchery. These cleanup measures should lead to significantly lower burdens of PCBs in fish flesh and ultimately the removal of fish consumption advisories for the creek. Removal of the catch-and-release regulation would require FWP Commission approval.

Applicable laws, rules and policies

None identified.

Habitat Restoration

Fisheries habitat restoration is accomplished through the initiative of FWP and federal fisheries biologists, non-governmental organizations, and private individuals who identify worthwhile projects and approach funding sources for help in accomplishing them. The key funding source within FWP is the Future Fisheries Improvement Program (FFIP). The Lake and Stream Enhancement and Community Pond programs are also available to fund worthy projects.

Prior to 1989, FWP was only occasionally involved with projects that restore fish habitat. This changed when the 1989 Montana Legislature passed the River Restoration Act. For the first time a portion of fishing-license-dollars was allocated specifically for fish habitat restoration work.

The FFIP, established by the 1995 legislature, incorporated funds from the River Restoration Act and provided an expanded funding source for projects that enhance habitat for wild fish populations in lakes, rivers and streams. The enabling legislation, HB 349, stated: *the department shall fund and implement a program regarding the long-term enhancement of streams and stream-banks, in-stream flows, water leasing, lease or purchase of stored water, and other voluntary programs that deal with wild fish and aquatic habitats.* Over the years, the appropriation of state fishing license dollars available to the program has varied. However, from Fiscal Year 1995 through 2012, $7.268 million has been earmarked for the Program.

Additionally, the 1999 legislature amended the FFIP to include a category of funding specifically earmarked for bull and cutthroat trout habitat enhancement. HB 647 stated that: *In order to*

enhance bull trout and cutthroat trout populations through habitat restoration, reductions in species competition, and natural reproduction, the department shall, through its future fisheries improvement program, restore habitats and spawning areas and reduce species competition in rivers, lakes, and streams for Montana's bull trout and cutthroat trout. Between FY-99 and FY–12, appropriations to the Bull Trout and Cutthroat Trout Enhancement Program have totaled $6.272 million.

Program funding currently comes from two sources: fishing license dollars earmarked for habitat restoration from the River Restoration Program; and Resource Indemnity Trust (RIT) funds earmarked specifically to the Bull Trout and Cutthroat Trout Enhancement Program.

Potential projects must accomplish one or more of the following goals: improve or maintain fish passage; restore or protect naturally functioning stream channels or banks; restore or protect naturally functioning riparian areas; prevent loss of fish into diversions; restore or protect essential habitats for spawning; enhance stream-flow in dewatered stream reaches to improve fisheries; improve or protect genetically pure native fish populations; and/or improve fishing in a lake or reservoir.

Projects that meet one of the goals listed above are evaluated based on the following criteria: public benefits to wild fisheries; long-term effectiveness; benefits to native fish species; expected benefits relative to cost; in-kind benefits or cost sharing; and importance of the lake or stream.

Description of current operations and/or areas of work

The Future Fisheries Improvement Program accepts proposals for funding of projects twice per year. Proposals are then evaluated by the 14-member citizen-review-panel. The make-up of the review panel is determined by the enabling legislation. Proposals from across the state are due by December 31 and June 30 of each year and the review panel meets in late January and late July, respectively. During each funding cycle, review panel members evaluate proposals, meet with project applicants, and determine which projects to recommend to the FWP Commission for funding. The FWP Commission makes final funding decisions for the Program.

Sponsors of approved projects must enter into a written agreement with FWP. Project funding may only be used for purposes described in the project agreement and the sponsor must ensure that the investment in restoration is protected for a minimum of 20 years.

From the onset of the program, FWP recognized that monitoring was essential to evaluate the success of various restoration treatments and to ensure that program dollars are being spent responsibly. FWP conducts three types of monitoring: *implementation*, *effectiveness* and *compliance*. Virtually all projects sites are reviewed shortly after construction to confirm that the project was completed as proposed. A subset of projects are monitored before, and for several years following, project completion, to determine if the goals of the project are being met. Finally, a subset of projects are monitored every three to five years to ensure land use activities remain in compliance with project agreements.

Special issues, challenges or initiatives

One challenge for the Future Fisheries Improvement Program is the lag time between project approval and project completion. Future Fisheries projects are often large, complex, and take several years to complete. Further, most applicants rely on multiple funding sources to cover project expenses. Because applicants need to secure all of their funding prior to initiating project construction, there are often delays as applicants work to secure funding. Additionally, funding is sought for many projects prior to completion of final project plans. Together, these factors often result in a lag between the time funds are committed to projects and the expenditure of committed dollars. Most projects are completed within 1-5 years from the time they are approved.

Applicable laws, rules and policies

Statute

87-1-257-259: River Restoration Program – Established a fund using earmarked license dollars and donations and directed FWP to administer a program to implement physical projects to improve rivers and their associated lands in order to conserve fish and wildlife habitat, including but not limited to a change in appropriation right or leasing of water rights.

87-1-272-273: Future Fisheries Improvement Program – Directed FWP to establish and implement a statewide voluntary program that promotes fishery habitats and spawning areas for the rivers, streams and lakes of Montana fisheries, with an emphasis on projects that enhance the historic habitat of native fish species. Re-directed River Restoration Program dollars and temporarily re-directed additional license dollars into the Program; and established a citizen review panel charged with formulating funding recommendations to the FWP Commission.

87-1-283: Bull Trout and Cutthroat Trout Enhancement Program – Directed FWP, through the Future Fisheries Improvement Program, to enhance bull trout and cutthroat trout populations by restoring habitats and spawning areas and reducing species competition in Montana's rivers, lakes and streams, with an emphasis on mine reclamation. Appropriated funding from Montana's Resource Indemnity Trust Fund and temporarily re-directed additional license dollars towards the Program (earmarked specifically for bull trout and cutthroat trout enhancement) and expanded the composition of the citizen review panel.

87-1-274: Emergency In-stream Flow Funding – Directed FWP to use available money from the Future Fisheries Improvement Program, the Bull Trout and Cutthroat Trout Enhancement Program, the River Restoration Program or other available department funds for voluntary water leases or other water augmentation measures to be used for emergency in-stream flows.

Stream Permitting

Under the Montana Stream Protection Act (SPA) and the Montana Natural Streambed and Land Preservation Act ("310 law"), FWP reviews proposed projects that may affect aquatic resources. The department uses hydrology, engineering and fish habitat principles to review projects proposed by government and private parties. Some, but not all, projects require field inspections. The department then recommends modifications or mitigation measures necessary to protect fisheries or fish habitat.

Description of current operations and/or areas of work

Regional fisheries personnel review proposals and conduct environmental reviews of land and water management activities planned by numerous federal and state agencies, and private entities including: U.S. Forest Service (USFS), Bureau of Land Management (BLM), National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), U.S. Bureau of Reclamation (BOR), Federal Energy Regulatory Commission (FERC), Montana Department of Natural Resources and Conservation (DNRC), Montana Department of Transportation (MDT), Montana Department of Environmental Quality (DEQ), public and private hydroelectric developers and operators, oil and gas pipelines, and private aquaculture operations.

FWP provides comments and technical advice as necessary to reduce or mitigate effects of projects on fish populations and aquatic habitat resources. It promotes proper aquatic habitat and fishery management by providing accurate and sound information on habitat and ecological principles, fish populations, aquatic resources, and economics to federal and state agencies, private landowners, special interest groups, and the general public.

Under the provisions of the SPA, state, county, municipal and political subdivisions must notify FWP about construction projects that may affect the bed or banks of any stream or its tributaries. FWP reviews the projects and makes recommendations to the applicant to eliminate or reduce any adverse impacts.

All applications from the MDT are handled by the FWP Fisheries Bureau in Helena. Through a Memorandum of Understanding (MOU) with the MDT, FWP reviews construction plans and erosion control plans for road construction, makes recommendations, and monitors the projects for compliance. Several federal agencies have also entered into a MOU with FWP concerning implementation of the SPA.

The Montana Natural Streambed and Land Preservation Act (310 law) requires fisheries staff to review proposed streambed or stream bank projects in cooperation with the local Conservation District Board of Supervisors. Staff also makes recommendations to reduce or eliminate impacts to the streambed or stream bank and thereby protect fish habitat.

In addition to the SPA and 310 Law, FWP has been granted the authority to issue a “318 authorization”, or short-term narrative water quality standards for total suspended sediment and turbidity resulting from stream-related construction activities or stream enhancement projects, as established by state law. DEQ developed a programmatic environmental assessment outlining project types and dimensions for which FWP can issue 318 authorizations.

Special issues, challenges or initiatives

Coordination with MDT on highway projects is important. FWP delivers presentations to MDT’s bridge, hydraulic, and project development engineers regarding the role of stream function and habitat in permitting decisions. This fosters working collaboratively with MDT to bring about improvements to the permitting process and restoration projects.

Applicable laws, rules and policies

Statute

87-5-501-9: The Montana Stream Protection Act provides that the fish and wildlife resources and particularly the fishing waters within the state are to be protected and preserved to the end that they be available for all time, without change, in their natural existing state except as may be necessary and appropriate after due consideration of all factors involved.

75-7-101-25: The Natural Streambed and Land Preservation Act intent is to provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.

75-5-318: Short-term water quality standards for turbidity, establishes standards for total suspended sediment and turbidity resulting from stream-related construction activities or stream enhancement projects.

FISHING ACCESS AND RECREATION MANAGEMENT PROGRAM

Fishing Access and Recreation Management Goals

1. Provide opportunities for people to access and enjoy the public waters of the State for fishing and other forms of water-based recreation. FWP will do so through the acquisition and development of new fishing access sites, the management of existing sites and recreation use, and through the protection of the public's right to access streams and other pubic waters.

2. Maintain good relationships with neighboring property owners. FWP will do so by responsibly managing the property and facilities, as well as the public that uses these sites. This includes maintaining boundary fences, addressing noxious weeds, and preventing trespass.

Background and Description

The FWP Fishing Access and Recreation Management Program encompasses a broad area of responsibility that in general facilitates access to public waters and management of recreational opportunities both on the water and at access sites.

There are a number of ways in which FWP helps to provide access to public waters. There are FWP-owned or managed public Fishing Access Sites (FAS) that provide fishing opportunities for virtually all of Montana's fish species. The number of FAS's has grown from a relatively few sites in the 1960's and early 1970's to 336 in 2012. The primary purpose of these sites is to provide access for angling (wade angling and boat/float angling). Many sites include a boat ramp. A fewer number of sites offer camping. Other types of recreation occur at these sites too, including non-angling boating, picnicking, swimming, bird watching, and in some places, hunting.

Another way that FWP helps to provide access is through agreements with private landowners. This access can be in the form of formal lease agreements through which FWP establishes an FAS on private land. There are also agreements where the landowner grants permission to the public to cross private land to gain access to a stream; these are typically walk-in, non-motorized access opportunities.

FWP works closely with other land management agencies, counties, municipalities, and other entities with authority over lands adjoining public waters, including communication and coordination, cooperative management agreements, and coordinated planning for the management of access sites and associated recreation. FWP takes into account the location of other public access sites on a waterbody when assessing the need for and placement of FWP fishing access sites.

FWP also manages water-based recreation and commercial use at fishing access sites and on some high-use rivers. This management includes special rules aimed at protecting the resources

and maintaining the quality of the recreation experience, and in some locations, a permit system to regulate commercial activities.

FWP also plays a role in advocating for and protecting the public's right to gain access to and use streams regardless of the ownership of the underlying land. This role entails guarding against undesirable changes to the Montana stream access law, proper interpretation and implementation of the law, and efforts to educate the public about complying with the law and showing respect for private property. Montana's strong stream access law provides Montana anglers with an abundance of opportunities to access the public waters of the state.

FWP Fishing Access Sites

As of 2012, FWP has 336 fishing access sites located throughout the state. The primary purpose for these sites is to provide angling access to public waters in Montana. Many sites include boat ramps; those without boat ramps provide wade or shore angling opportunities. Some sites offer camping. While angling is the primary purpose of these sites, there are other types of recreation occurring at fishing access sites including picnicking, swimming, camping, non-angling boating, wildlife viewing, and hunting.

The FAS Program is funded through the sale of fishing and hunting licenses and federal aid that comes from excise taxes on the sale of sporting goods equipment.

The FAS Program, combined with Montana's stream access law, ensures that anglers have many opportunities to enjoy rivers, streams, lakes and reservoirs throughout the state.

Description of current operations and/or areas of work

There are two primary areas of work within the Fishing Access Program: acquisition and development of new sites, and operation and maintenance of existing sites.

There are a number of factors that FWP considers when determining whether to acquire a new fishing access site. These include but are not limited to public demand for the new site, location and distance between existing sites, availability of property and willing sellers, available funding, and projected development and operation costs, and availability of resources to develop and maintain sites once acquired. The FWP regional staff is responsible for identifying sites for acquisition based on these factors., The Fisheries headquarters reviews each regional acquisition proposal based on overall access priorities and needs and available funding. The FWP Commission is the final decision-maker for FWP. All FWP land acquisitions are subject to approval by the Land Board.

The acquisition process can be described as a balance between a "needs-driven process" where FWP is actively searching for opportunities that meet a certain access need or priority, and an "opportunity-driven process" where FWP responds to opportunities that might not be available in the future, or may become cost-prohibitive in the future.

FWP coordinates the acquisition of new access sites and is responsible for the maintenance and operation of existing sites. The majority of the funding for the FAS site acquisition is generated

from anglers' license dollars and federal funding. Maintenance and enforcement budgets are being stretched to provide needed services to current sites because of increased use, more stringent environmental standards, inadequate sources of funding, and increased demands by the public for added services. The complexity of these conditions suggests that the acquisition of new access sites or development of existing sites must be linked to the availability of funds for maintenance, development, and enforcement.

After acquiring a site, FWP develops it to meet basic standards for an FWP fishing access site. This typically includes a gravel access road and parking area, vault latrine, and if applicable, a boat ramp. At some locations FWP develops primitive camping sites. Overall, FWP strives to limit development at FASs to a minimum that adequately supports the primary purpose of the sites: to provide angling access. For this reason, FWP fishing access sites typically do not have some of the amenities found at some state and federal parks, e.g., paved roads, flush toilets, and electrical or sewer hook-ups. Site development also takes into account recreation management needs, e.g., building additional boat ramps at a site to alleviate congestion and reduce launch time. In other cases, FWP may choose to limit the type and/or amount of development at a site as a means of managing use numbers and congestion on the water.

FWP is responsible for operating and maintaining the fishing access sites. Typical activities include fencing, facility and grounds upkeep, weed control, vandalism repairs, signs, latrine pumping, camping fee collection, maintenance of road/parking areas, landowner relations, and conflict resolution. It is important for FWP to serve as a "good neighbor" to adjoining property owners. This includes an emphasis on weed control, fire prevention, and responsible use and respect for private property.

Special issues, challenges or initiatives

The cost of acquiring and maintaining access sites is a challenge due to the limited resources available. As land values have increased over the past two decades, the cost of suitable FAS's has increased as well. Land values are expected to remain at the current (higher) levels, and future site acquisition costs will reflect that market trend. The demand for new fishing access sites exceeds the financial resources available for acquiring, developing and maintaining sites, meaning that FWP must carefully review and prioritize each request. This scrutiny includes consideration of which waterbodies are most in need of additional access versus those where it is desirable but not critical. This decision is also influenced by the real estate market and the presence of willing sellers; opportunities occur less frequently on some waterbodies compared to others. Not all acquisitions cost money. In some cases, private landowners will donate property to FWP for the purpose of providing fishing access. The department must still take into the account the cost of developing and maintaining these donated sites.

Another challenge is the increase in non-angling types of recreation at fishing access sites. The primary purpose of the sites is to provide access for angling. The availability of federal funding is predicated on meeting this purpose. There are other forms of recreation occurring at fishing access sites besides fishing, though, including hunting, boating, swimming, tubing, picnicking, camping, bird watching, and special events. This does not automatically pose a problem but FWP is attentive to the primary purpose of the sites (angling), and the potential for conflicts with other types of use.

Applicable laws, rules and policies

Statute

23-1-110: Improvements on developments at Fishing Access Sites. The FWP commission shall adopt rules establishing a policy whereby any proposed improvement or development of fishing access sites that significantly changes fishing access site features or use patterns is subject to notice of proposed modifications, both statewide and locally, and to opportunity for a public meeting and public comment on the advisability and acceptability of the proposal.

23-1-126: The good neighbor policy of public land use, as applied to public recreational lands, seeks a goal of no impact upon adjoining private and public lands by preventing impact on those adjoining lands from noxious weeds, trespass, litter, noise and light pollution, streambank erosion, and loss of privacy.

Administrate Rule

12.8.107: State fishing access sites, purpose is to provide permanent public access to high-quality rivers, streams, and lakes.

12.8.701-9: Designation of primitive fishing access sites.

FAS Rule (2013 – 2014:. The FAS Rule is scheduled to be adopted in the fall of 2012.

River Recreation Management and Commercial Use Permitting

The popularity of some rivers in Montana has led to conflicts between users, concerns over congestion on the water and at access sites, and in some cases, impacts on the resources. The FWP Commission has authority to adopt rules governing recreational uses of all public fishing reservoirs, public lakes, rivers, and streams that are legally accessible to the public (87-1-303(2) MCA). The public prefers to recreate without restrictions on their opportunities and, if restrictions become necessary, less restrictive management actions should be used before more restrictive management actions.

Under this authority, FWP more intensively manages angling and other forms of water-based recreation at some access sites and on some bodies of water. This is usually in response to concerns about the quality of the social experience and/or the volume of use having an undesirable impact on the resources. FWP uses a variety of management tools to address these concerns including greater staff presence at sites and on the water, information on ways users can minimize conflicts with other users, permit systems for commercial use, and in some situations, special rules aimed at reducing conflicts.

FWP may approve commercial use that helps FWP to achieve its resource management goals and/or provides desired services to the public. Commercial use is a privilege, not a right, and must be properly managed. Commercial use includes any person, group, or organization that makes or attempts to make a profit, vend a service or product, receive money, amortize equipment, or obtain goods or services as compensation from participants in activities occurring on land that is under the control, administration and jurisdiction of FWP. Examples of commercial use include trail rides, guided walks or tours, float trips, guided angling or hunting,

game retrieval, professional dog training, equipment rentals, retail sales, food concessions, filming, firewood cutting, construction related activities, and research when accompanied by paying clients.

Description of current operations and/or areas of work

The Commission adopted Statewide River Recreation Rules in 2004 to provide guidance and direction to FWP when managing recreation on rivers, including the development of management plans and rules. In 2012, there are six rivers that are managed under special management plans or rules and four of these (Beaverhead, Big Hole, Blackfoot and Madison rivers) are the responsibility of the FWP Fisheries Division (the other two, Alberton Gorge and Smith River State Park, are currently managed by the FWP Parks Division).

The Beaverhead and Big Hole rivers are managed under rules that restrict the number of licensed fishing outfitters and the number of client days they can conduct. There are also rules restricting float outfitting and nonresident float fishing on certain days of the week and certain sections of river. The Blackfoot and Madison rivers are managed under a Special Recreation Permit system in cooperation with the Bureau of Land Management. A permit is required to conduct commercial use, a competitive event, or organized group activity. There are no limits on the number of permits available. FWP adopted a recreation management plan for the Blackfoot River in 2010 and is currently developing a plan for the Madison River at the time of this writing (2012).

FWP manages commercial use through a permit system and fees. There are two types of commercial use permits: the Fishing Access Site Permit and the Restricted Use Permit. The FAS Permit is used to authorize water-based service providers (fishing outfitters and guides, whitewater guides, etc.) at the majority of fishing access sites. The FAS Permit is valid at the majority of FWP fishing access sites around the state. The Restricted Use Permit is available to water-based service providers on restricted rivers (Beaverhead, Big Hole, Blackfoot, Madison) and all other forms of commercial use occurring on FWP lands.

Special issues, challenges or initiatives

Fishing outfitters and guides provide a desired service to some members of the angling public. The outfitting industry is also important to the state's tourism economy. It is necessary to manage this type of commercial use to ensure that it is compatible with the general, non-guided angling public. On many waterbodies, compatibility is not an issue. There are some rivers, however, where the public has expressed concern over the impact of commercial use on the general, non-guided angling public. FWP has responded in a number of ways, including restrictions on the number of outfitters authorized to operate on a waterbody, a cap on the volume of use allocated to each authorized outfitter, and special rules that specify days of the week and/or sections of rivers where outfitting is restricted or prohibited.

Conflicts between user groups, e.g., between wade anglers and float anglers, and concerns about congestion on the water and at access sites, can require special management attention. FWP has special regulations on some rivers, e.g., regulations that prohibit angling from a boat, or regulations that prohibit nonresident float fishing on some sections of river. These types of regulations are intended to resolve social concerns and for the most part are not addressing

resource problems. The FWP Statewide River Recreation Rules are intended to guide development of management plans and rules for these purposes.

Applicable laws, rules and policies

Administrative Rule

12.11.401 –55: Statewide River Recreation Management Rules establish the policies and procedures for developing river recreation management plans and rules.

12.14.101 –70: Commercial Use Rules establish the policies and permit requirements for commercial use at state parks, fishing access sites, and wildlife management areas.

Commercial Use Permit Biennial Fee Rule (2011 – 2013). The Commercial Use Permit Biennial Fee Rule establishes the permit fees for commercial use at state parks, fishing access sites, and wildlife management areas.

Stream Access

The Montana Stream Access Law (23-2-301, MCA), originally adopted in 1985, allows the public to use all public waters for water-based recreation regardless of who owns the land underlying the water. In general, the law allows the public to use streams up to the ordinary high water mark. The public may also gain access to streams for recreational use by using a public bridge or county road. FWP promotes and defends the public's rights under this important law.

Description of current operations and/or areas of work

FWP uses various public outreach tools to educate the public and private landowners about the stream access law. It is important that people understand what the law legally allows and the importance of maintaining good relationships with private landowners. FWP encourages resource users to do so by respecting private property, being careful with campfires, and practicing good etiquette when recreating in the vicinity of private land.

FWP also works to uphold the public's right to use the public waters. In the field, FWP investigates reports of landowners or the recreating public abusing the law. FWP also investigates stream barriers and helps to establish reasonable and safe portage routes. Stream access issues frequently arise during the Montana legislative sessions and FWP often provides testimony on this topic.

Special issues, challenges or initiatives

Montana has a long history of embracing private property rights. There are some people who view the stream access law as an infringement on these rights and therefore advocate for laws that would diminish or eliminate the stream access law. FWP continues to monitor these efforts and advocates for the rights of sportsmen and sportswomen of Montana. FWP also emphasizes the importance of respecting private property and that the recreating public must play an active role in maintaining good relations with landowners. This responsibility includes attentiveness to private property boundaries, prevention of wildfires and the spread of noxious weeds, and recreating in a respectful manner when in the vicinity of private land.

Applicable laws, rules and policies

Statute

23-2-301: Montana Stream Access Law allows the public to use all public waters regardless of who owns the land underlying the water.

23-2-408: Rulemaking for access to the Smith River.