

MONTANA FISH, WILDLIFE & PARKS

# Bull Trout Identification Course



**Montana Fish,  
Wildlife & Parks**

in cooperation with:

Avista Utilities • Confederated Salish and Kootenai Tribes • Idaho Council of Trout Unlimited  
Idaho Fish and Game Department • U.S. Fish and Wildlife Service • U.S. Forest Service

# Welcome

For thousands of years, bull trout have traveled some of the longest migration routes of any trout in North America. Once common throughout the inland Pacific Northwest, bull trout now live in reduced numbers in five western states and two Canadian provinces. They no longer live in California. Montana and Idaho are the bull trout's strongholds, but even here bull trout face a chance of eventual extinction in some streams where they live.



One very important thing that you can do to help minimize the impact that we humans have on the bull trout, is to learn to correctly identify the fish that you catch, and also the fish that you see swimming in Montana's waters. Correct identification, both in and out of the water, will help you release the right fish and avoid hooking a bull trout by accident. Bull trout are protected by both state and federal law; there is no fishing season for them (except in northwestern Montana's Swan Lake) and they have been listed since 1998 as threatened by the U.S. Fish and Wildlife Service. Intentionally or accidentally "taking" a bull trout is illegal. It also creates an unfavorable public image of anglers and fishing.

We've prepared this educational web site to help you learn to responsibly fish Montana's lakes, streams, and rivers. It will help you tell the difference between the species of Montana's fish population, give suggestions on how to minimize damage to a caught and released fish, and provide a few angling tips that might increase your success with "legal" species, while minimizing the chance that you will accidentally catch a bull trout.

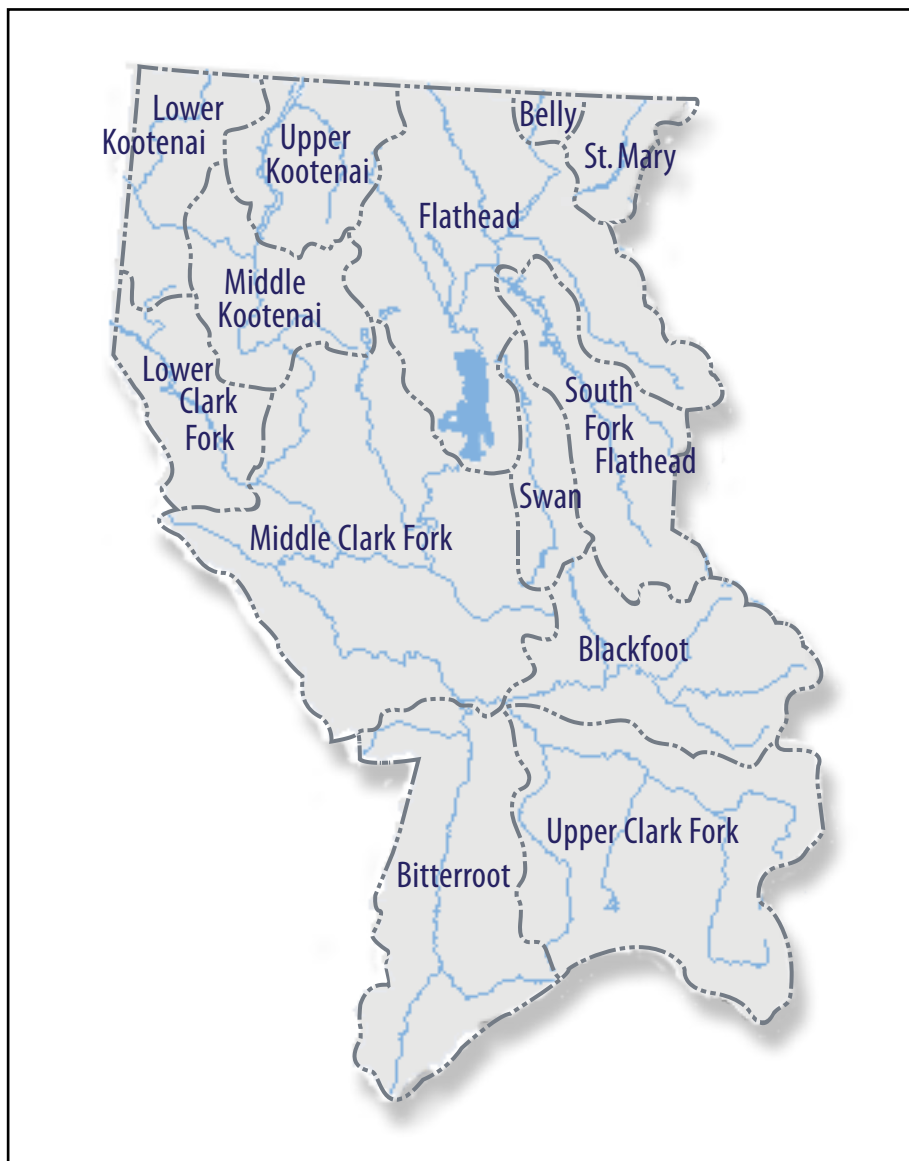
We all want Montana to provide our children and our grandchildren with the same sort of unique, nature-rich experience that we are enjoying. Conservation is not always easy, but it is important. We owe it to ourselves and to our environment to do our best to see that we are not the enemy of our environment, but part of it. Protecting the bull trout is something that will truly help Montana remain "the last best place on Earth."

Please take the time to study this information now for both your benefit and that of the bull trout.

If you have any questions, suggestions, or comments, please send email to [John Fraley](#), Information Officer, Montana Fish, Wildlife & Parks, or [Dave Hagengruber](#), Angler Education Coordinator, Montana Fish, Wildlife & Parks.

# Know where bull trout live.

The maps on this page show recovery areas for bull trout in western Montana. Knowing where bull trout live in the area you plan to fish is important if you want to avoid accidentally catching one. The maps also show that the range of bull trout extends east of the Continental Divide to the St. Mary and Belly River drainages (extreme upper right corner of the recovery area).



*Bull Trout Restoration/Conservation Areas in Western Montana*

# Why is it important to be able to identify the fish you catch?



Surveys have shown that about half of the anglers in western Montana can't accurately identify many fish species, particularly bull trout. Fishing regulations vary by species. Anglers must release bull trout, a native species of special concern, in all western Montana waters except Swan Lake, south of Bigfork. Montana fishing regulations state that anglers cannot even intentionally fish for bull trout in waters other than Swan Lake. Bull trout are also protected in other states where they live.

*Knowing key characteristics such as color, markings and tail shape, helps anglers follow regulations and promote a healthy fishery for years to come.*



*A brook trout has a squared tail, black "worm tracks" on the dorsal fin, and is typically small (under 14 inches).*



*In the photo above, note the deeply forked tail of the lake trout on the right compared to the tail of the bull trout on the left.*

One way to avoid catching bull trout is to use smaller lures and flies. Large spoons and plugs will often attract large bull trout. These fish are very difficult to release properly when they are caught on large treble hooks.

If anglers can accurately identify bull trout, they will be able to follow the regulations and release each bull trout that they catch. As anglers become better informed, the bull trout population will benefit. If anglers keep bull trout by mistake, for example, they may harm the bull trout population and violate state-fishing regulations unintentionally. The bull trout is also protected as "threatened" under the Endangered Species Act. So if you keep a bull trout where regulations forbid it, you are taking a threatened species and could be subject to federal penalties.

*The deeply forked tail of this boy's catch tells you it's a lake trout. In Flathead Lake, where this photo was taken, management focuses on reducing numbers of small lake trout, while maintaining a trophy fishery.*





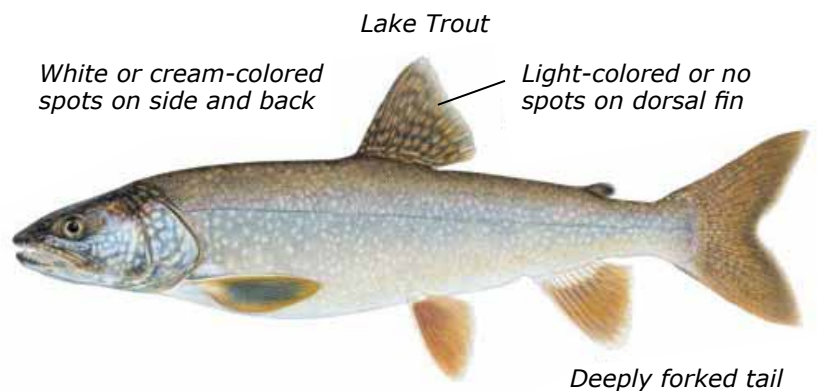
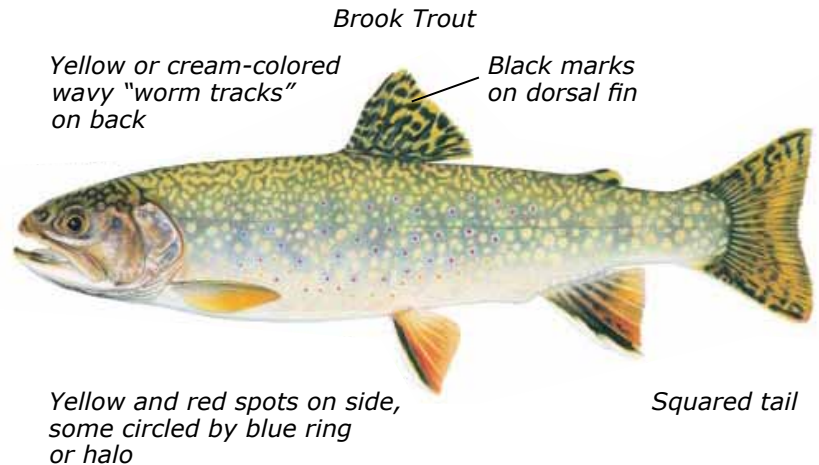
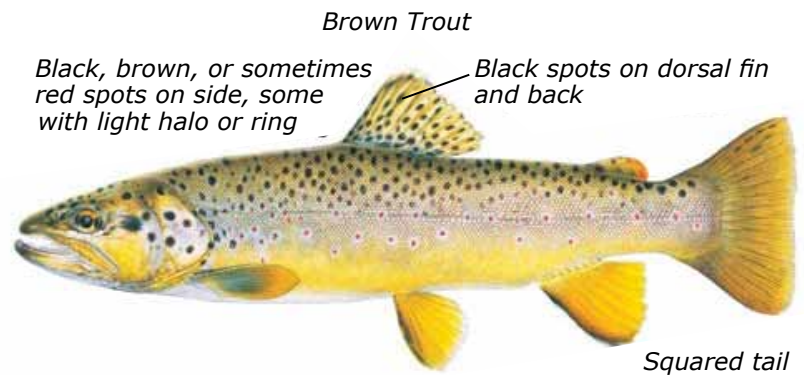
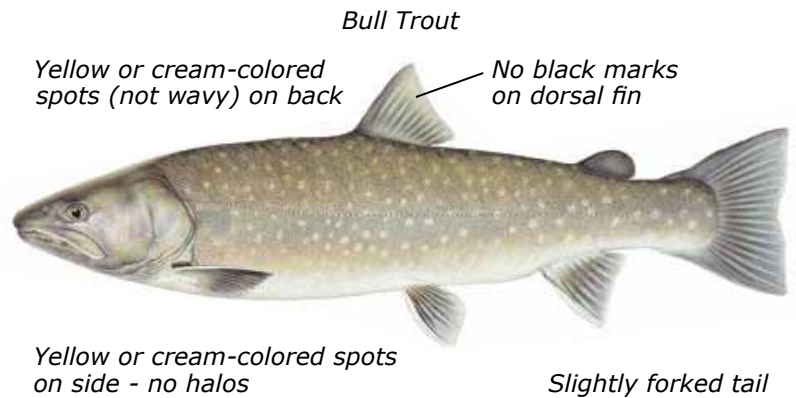
# Many anglers have a difficult time distinguishing bull trout from other fish species.

Fish species which can appear similar include the lake trout and brook trout. The bull trout, lake trout and brook trout are all chars: members of the trout family which generally have light spots on a dark background. The bull trout lacks black spots on the dorsal fin; the brook trout has these spots. That's the best way to tell these two species apart. The lake trout has a deeply forked tail. This separates the lake trout from the other species.

Another fish, the brown trout, can also be confused with the bull trout. However, the brown trout has dark spots on a lighter background.

Because these species are the most easily mistaken for bull trout and vice versa, this site will focus on training you to become an expert at distinguishing them from each other.

Here's an overall look at these four fish species. Study the diagrams closely. Notice how the spotting, dorsal fin, and shape of the tail fin are used to tell them apart.



# The bull trout has no black on its dorsal fin.

"No black, put it back." This phrase reminds you that if the dorsal fin on a trout you've caught is a clear or amber color with no black marks, it is probably a bull trout and it should be released. Also notice the white-edged fins on this mature adult.

You should also look for a slightly forked tail fin and a drab or olive coloration.

Study the illustration and photo below, along with the key characteristics indicated.

**TAIL** Slightly Forked (Center rays greater than half longest rays)

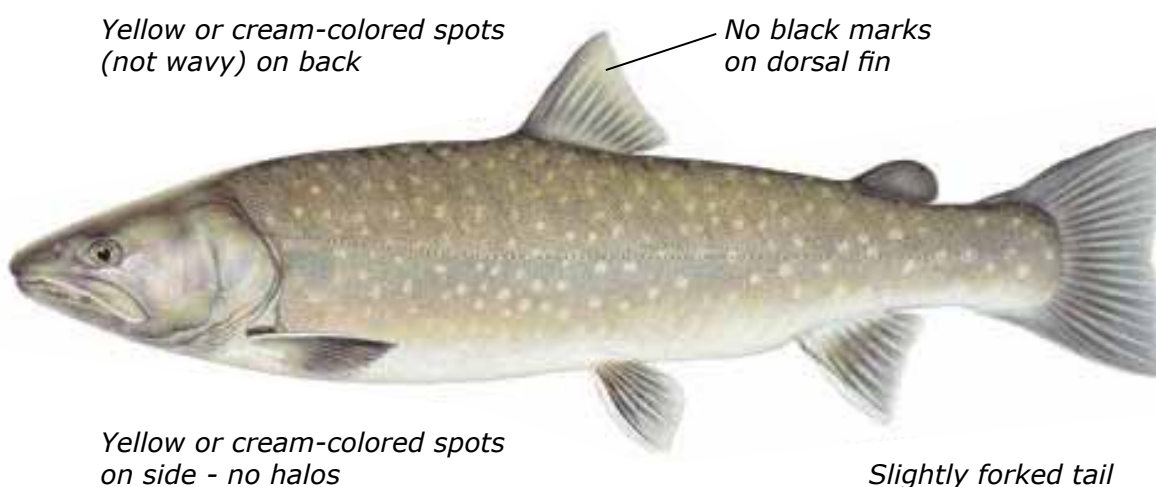
**DORSAL FIN** Without spots or other marks (NO BLACK - PUT IT BACK)

**BODY** Silvery to light olive with yellow, orange, or pink spots; darker olive-colored on back with yellow or cream-colored spots

**APPEARANCE** Usually drab coloration, but adult (usually over 14 inches) may have bright orange colors on belly and flanks, black on head, and white-edged fins during fall.



*Bull Trout*



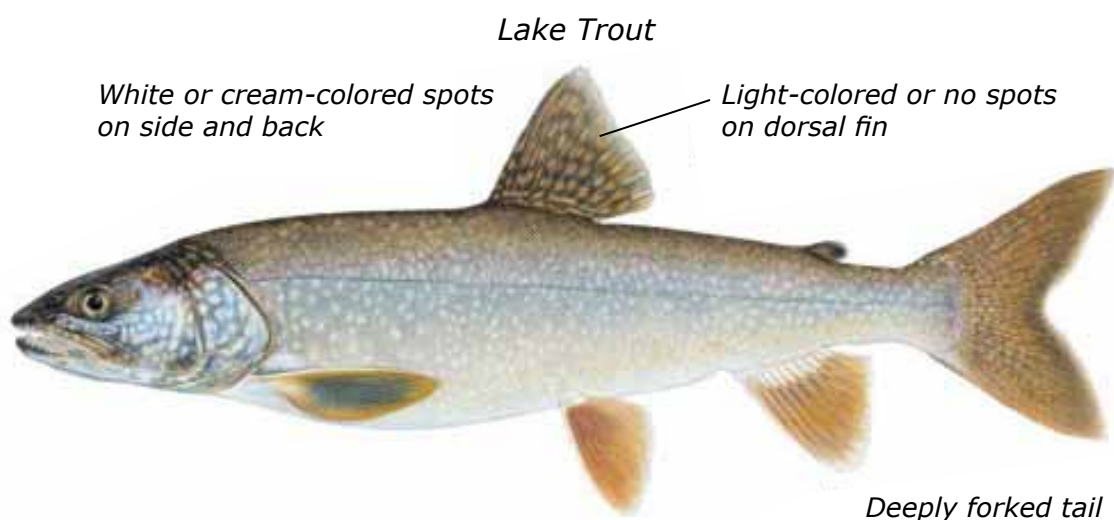
# The lake trout has a deeply forked tail.

You can distinguish the lake trout from the other trout by its deeply forked tail. Their dorsal fin may have white spots and their body sports white spots.

Lake trout are not native in western Montana, except for the St. Mary and Belly River drainages east of the Continental Divide. In fact, they compete with bull trout for space and food, and may prey on bull trout. In general, angling bag limits are very liberal for lake trout. In Flathead Lake in northwestern

Montana, anglers can keep 15 lake trout under 30 inches in length and one lake trout over 36 inches in length. FWP and the Confederated Salish and Kootenai Tribes have a management plan in place that seeks to control or reduce lake trout while increasing the native bull trout and westslope cutthroat trout.

Study the illustration and photo below, along with the key characters indicated.



**TAIL** Deeply Forked (Center rays less than half length of longest rays)

**DORSAL FIN** Without spots or sometimes with light-colored oval markings



**BODY** With white or cream-colored spots (never pink or red) on darker background

**APPEARANCE** Overall gray or nearly black/white coloration, sometimes with yellow tinge on fins.



# The brook trout has black marks on its dorsal fin.

The brook trout was introduced to the western United States and Montana from the eastern United States. Brook trout can hybridize with native bull trout. Brook trout have a nearly square tail fin and black worm tracks or marks on its dorsal fin. This is the best way to distinguish brook trout from bull trout.

Brook trout compete with bull trout for space and food. In particular, brook trout can out-compete bull trout in small streams where juvenile bull trout are rearing. Angling limits are very liberal for brook trout. In northwestern Montana, anglers may keep 20 brook trout per day in addition to other trout limits.

Study the illustration and photo below, along with the key characteristics indicated.

**TAIL** Nearly square

**DORSAL FIN** Black "worm tracks"

**BODY** Yellow and/or red spots on darker (typically greenish) sides and back, some circled by light blue rings or halos; squiggly yellow "worm tracks" or vermiculations on back.

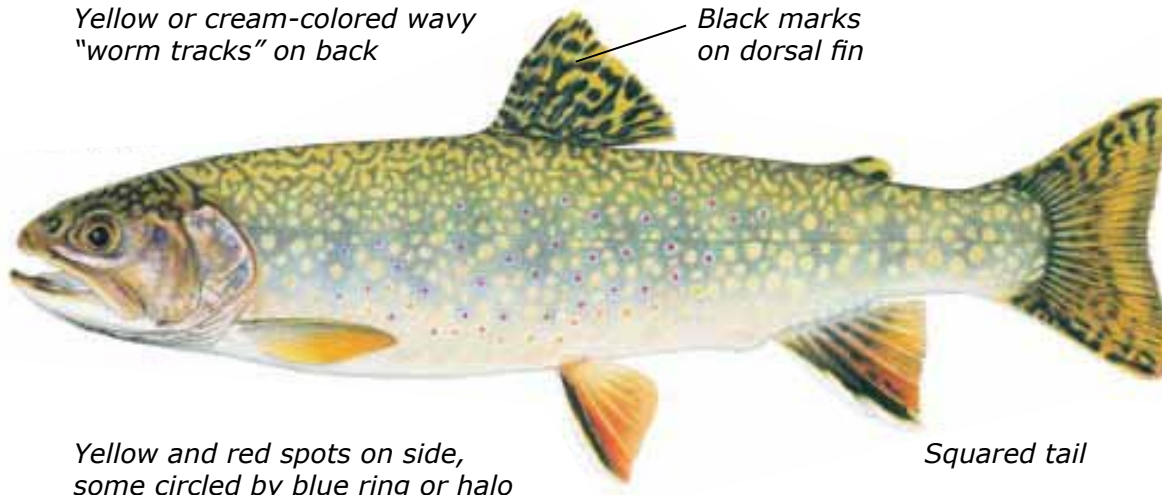
**APPEARANCE** Typically colorful and small (under 14 inches); often with red or orange on belly, black on head, and white-edged orange fins; adults more striking during the fall.



*Brook Trout*

*Yellow or cream-colored wavy "worm tracks" on back*

*Black marks on dorsal fin*



*Yellow and red spots on side, some circled by blue ring or halo*

*Squared tail*



*Black "worm tracks" on dorsal fin **BUT** yellow tracks on back.*



# The brown trout's body has dark spots on a lighter background, and has black spots on its dorsal fin.

The brown trout was introduced to the United States from Europe and was moved across the country to the west. Brown trout are found in only a few places in northwestern Montana, but they are common in the Clark Fork drainage in south and central western Montana. Brown trout, like bull trout, are fall spawners. They compete with bull trout for food, space, and in some cases, spawning areas.

Brown trout are true members of the trout family, having dark spots on a generally lighter background. Some spots can be circled by a "halo."

Study the illustration and photo below, along with the key characteristics indicated.

**TAIL** Nearly square

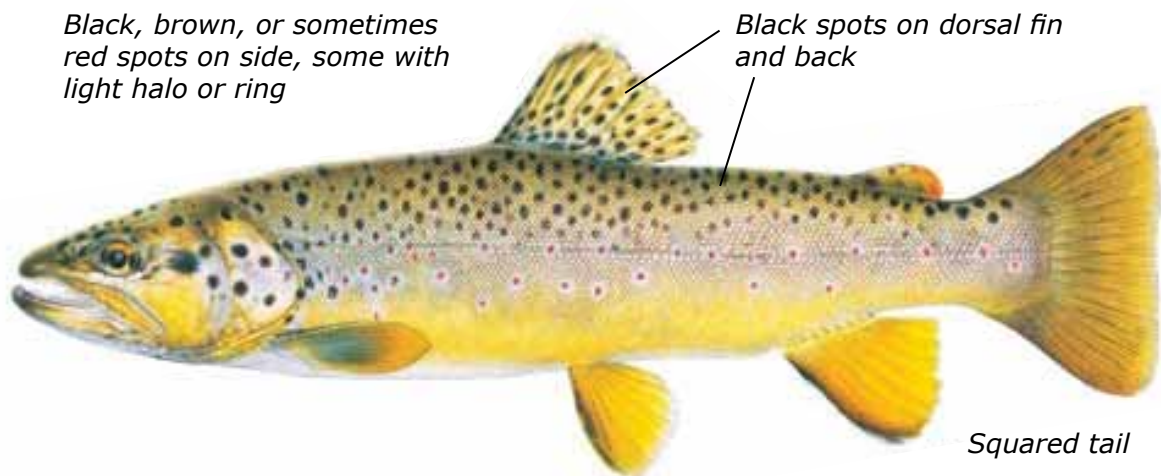
**DORSAL FIN** Black or Brown spots

**BODY** Dark spots (black or brown) on a light-colored background (ranging from golden brown to chocolate or sometimes silvery); some of which may be circled by a faint halo or light-colored ring.

**APPEARANCE** Typically "brown" as the name implies, may have red spots on side.



*Brown Trout*



*Black or dark brown spots on dorsal fin AND on back.*

The westslope cutthroat trout and rainbow trout are often confused with each other, but are more easily distinguished from bull trout.

Study the characteristics of these two trout illustrated below.



*The best way to distinguish the westslope cutthroat trout is by the red slash under the throat and black spots concentrated on the upper part of the body.*



*Rainbow trout can be distinguished from cutthroat trout by the red stripe and the more evenly distributed black spots all over the body.*

Westslope cutthroat trout are another true trout, sporting dark spots on a light background. The orange to red slashes under their throat distinguishes cutthroat from all other trout species. Westslope cutthroat trout are a state designated native "species of special concern" in western Montana. The cutthroat trout (including the westslope and Yellowstone subspecies) is the Montana state fish.



*Westslope cutthroat trout*



*Rainbow trout*

Rainbow trout can compete with westslope cutthroat trout for food and space, and may interbreed with them creating rainbow/cutthroat hybrids. Rainbow trout lack the cutthroat marks under the throat and usually have a red stripe on the sides of their body.



# Learn to use proper techniques in releasing trout you catch.

Many anglers enjoy releasing many of the fish they catch. In the case of bull trout it is a requirement that you release any that you catch, with the exception of one bull trout per day in northwest Montana's Swan Lake.

It is very important that you follow the correct steps in proper handling and release of fish. Study the proper steps below.

*Catch-and-release fishing can provide more than just the satisfaction anglers experience when they let their quarry go. It can benefit the future of the resource, but only if it is done correctly.*



## How to Catch-and-Release

- Avoid the use of bait. Artificial lures and flies cause far less mortality to released fish.
- Use barbless hooks that make the hook-removal fast and easy.
- Play the fish as rapidly as possible...not to its total exhaustion.
- Wet your hands before touching the fish.
- Keep the fish in water as much as possible when handling and removing the hook.
- Remove the hook gently. Don't squeeze the fish or put fingers in its gills.
- If deeply hooked, cut the line as close to the mouth as possible. Do not yank the hook out. Many fish survive with hooks left in them.
- Release the fish only after its equilibrium is maintained. If necessary, gently hold the fish upright facing upstream and move it slowly back and forth.
- Release the fish in quiet water close to the area where it was hooked.

# Bull trout have a unique life cycle.

Bull trout spawn in September and early October. They migrate up to 150 miles from lakes such as Flathead Lake in northwestern Montana, and spawn in small tributary streams (adfluvial lifestyle). Females bury their eggs in nests or "redds", about six inches deep in the streambed gravel. These redds can be as large as the bed of a full size pick-up truck.

Some bull trout live as adults in rivers like the Blackfoot River in western Montana (fluvial lifestyle). Others can live their entire lives in smaller streams, such as those in Bitterroot River tributaries (resident lifestyle).

After spawning, most bull trout return downstream to their natal lake or stream.



*This biologist is pointing out bull trout spawning redd (note the cleared area of the streambed).*

Adfluvial bull trout are thought to spawn about every other year, perhaps because they need a year of rest after such a long migration route. Most bull trout spawners are 5-9 years of age.



*It is very important that you do not disturb spawning bull trout, which are sometimes easily visible.*

## Juvenile bull trout differ in appearance from adults.

The eggs hatch in the winter, and in spring the young fry emerge. Young bull trout live among the streambed rocks for 1-3 years where they eat small aquatic insects, before migrating downstream to larger streams and lakes. Some bull trout remain in their natal streams for life.

Bull trout require very cold water temperatures to thrive (typically less than 60° F). That is why they are excellent indicators of water quality and stream health. The bull trout is like a “canary in a coal mine,” and will be among the first species to disappear when stream bottoms silt in and temperatures rise.

*Note how the appearance of these young bull trout compares to the adult on the next page.*





# The bull trout is Montana's largest native trout.



*This bull trout weighed nearly 22 pounds.*

The bull trout is Montana's largest native trout. It is closely related to the Coastal Dolly Varden; they were once thought to be the same species.

An angler caught this Flathead Lake bull trout in 1989. It weighed nearly 22 pounds. The recognized world record bull trout was caught in Idaho's Lake Pend Oreille. It tipped the scales at more than 32 pounds.

The bull trout is a predator, and as an adult eats almost exclusively other fish. It was

once called the "Cannibal of Montana's Streams" because of its predatory habits. The bull trout is now a state "species of special concern" and classified as a "threatened" species under the Endangered Species Act. Threats to the bull trout include loss of habitat and habitat damage, competition with introduced species, and illegal taking (poaching), either intentionally (poaching) or unintentionally (through misidentification).

# Fine sediment harms bull trout eggs and fry.

Studies have shown that when the amount of fine sediment (particles less than a quarter of an inch) amount to more than 40 percent of the stream bottom, less than one-quarter of the bull trout eggs will hatch and survive to viable fry. Sediment clogs pores in the gravel, reducing the flow of oxygen to eggs, preventing the outflow of waste products, and ultimately preventing fry from emerging from the gravel.

It is crucial that land managers and agency biologists work together to limit the input of sediments from road building, agriculture, land development, natural processes, and forestry practices in streams where bull trout live.



*Sediment events can deposit fine silt and other materials in stream gravels, harming bull trout eggs and fry.*

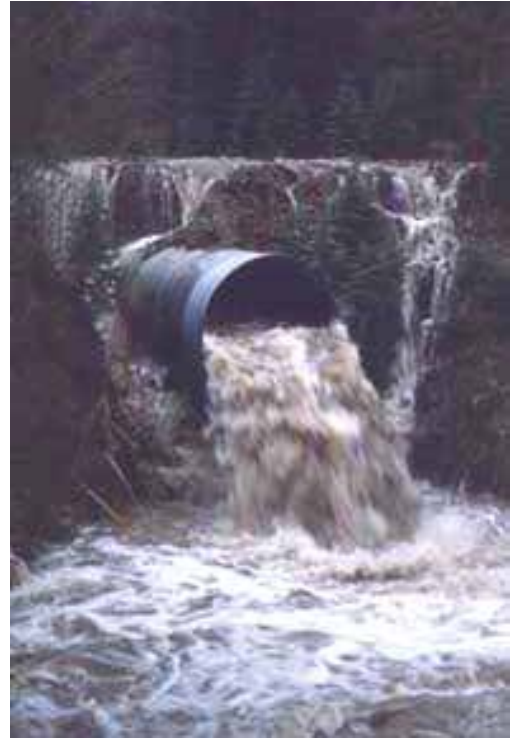
# Dams and culverts impact bull trout migration.

Dams and poorly placed culverts can block migration routes of bull trout. These obstructions remove spawning and nursery areas and “disconnect” part of the system. Connectivity is important for migrating fish such as bull trout.

Kerr Dam on the outlet of Flathead Lake and Cabinet Gorge Dam on the Clark Fork are examples of dams that blocked migration of bull trout and other species in the Columbia system.



*Kerr Dam near Polson, MT*



*Poorly placed culverts create a blockage for migrating bull trout.*



*Cabinet Gorge Dam on the Clark Fork River*



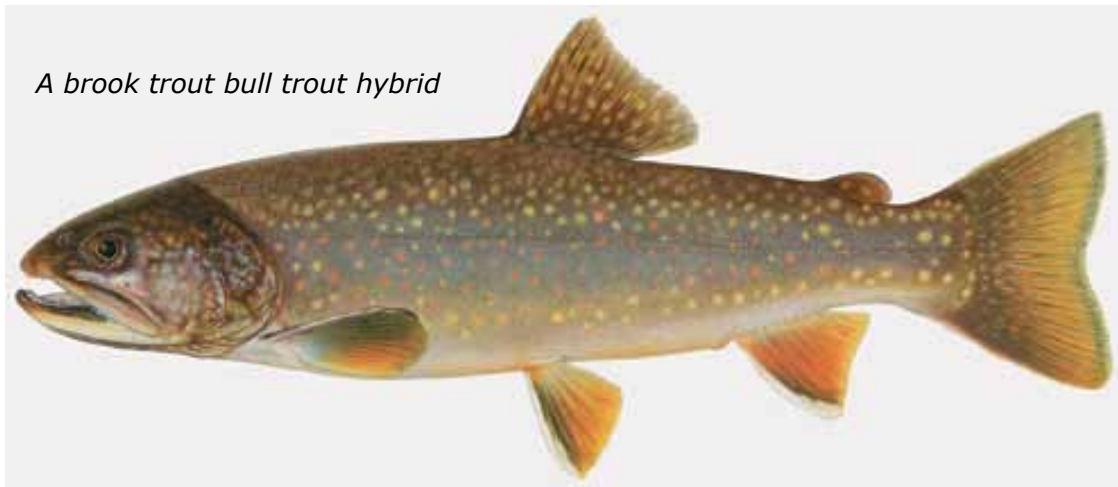
*This culvert was reconstructed to allow fish passage.*



# Bull trout suffer through competition from introduced fish species.

A number of trout species can compete with bull trout for food and space. Closely related brook trout and lake trout juveniles can push out young bull trout. Lake trout, a voracious predator, can prey on bull trout. Brown trout, pike, and bass can also compete with or prey on bull trout. And brook trout can interbreed with bull trout, creating mostly

sterile hybrids. This interbreeding saps reproductive energy from the bull trout population. Reducing nonnative fish in places where bull trout live will help the recovery of bull trout. In some cases, this could mean reducing sportfishing opportunities for these nonnative fish.



*The medium grey fish with the cream-colored spots (top of photo) is a bull trout; the fish below it with the dark back and lighter worm tracks is a brook trout bull trout hybrid.*

# Illegal harvest of bull trout harms the bull trout population.

Illegal harvest has posed a problem for bull trout, especially when it occurs in the spawning tributary. In the past, poachers have used pitch forks, spears, and even dynamite to illegally take bull trout which are highly visible in the small spawning tributaries. Some poachers snag bull trout with large lures. Through a vigorous enforcement and education program, this problem has been greatly reduced across the bull trout's range.

Another important and probably more common source of illegal harvest is unintentional. Many anglers keep bull trout,

thinking that the fish they've caught is a brook trout, brown trout, or lake trout. This is true because some anglers are unaware that bull trout are widely distributed in western Montana and other areas of the western United States. Also, many anglers don't know how to distinguish a bull trout from other species.

This training program is largely designed to reduce and to the extent possible eliminate this unintentional illegal take of bull trout by anglers.



*Wardens patrol hundreds of miles of streams in western Montana and across the bull trout's range to inform and educate anglers, and to look for illegal taking of bull trout.*

# Bull trout have a rich history.

Early anglers referred to bull trout as “salmon trout” because of their large size and migratory habits. For most of the 20th century, bull trout provided a very popular sport fishery in the Flathead, Clark Fork, Kootenai, and other drainages.

With careful stewardship, we can all enjoy this important native species for generations to come. Bull trout have been uniquely adapted to the cold headwaters

of the Columbia for thousands of years. As citizens, we have an inherent responsibility to conserve this key to our natural resource heritage.

In the words of Montana’s former Governor, we should conserve bull trout, not because we have to, but because it’s the right thing to do.



*Angler Dallas Eklund with a large bull trout caught in the North Fork of the Flathead River in the 1950s.*