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Trout Fishing in Massachusetts: How to Support Sustainable Fishing

In the fall and spring, fishermen of Massachusetts flock to rivers, brooks, and ponds to test their luck at catching one highly coveted fish, the trout. Both youthful and seasoned anglers alike wake up at the crack of dawn to buckle up their waders, grab their fishing rods, and pack a variety of flies or spinners before traveling to freshly stocked bodies of water. Upon arrival at their favorite spot, anglers are greeted by the crisp morning air, the rising sun, and a beautiful forested landscape. All the while, feeling an exciting anticipation of what the morning will bring. This routine is a lifestyle for so many people who enjoy immersing themselves in nature and chasing the thrill of catching these fish.

Trout fishing is done either for food or for sport. There are many theories on the reason why they are such a popular fish, but it is undeniable that trout hold a certain appeal to the fishing community. In Massachusetts, Brook trout are the only native species. But, through stocking, Brown, Rainbow and Tiger trout have all been introduced to ecosystems throughout the state. Despite the clear visual differences in these fish, they are all equally sensitive. Many factors contribute to this such as their protective slime coating, the heightened stress they experience, and their particularly fragile organs. All of these characteristics make them a difficult species for beginner and even intermediate fishermen to handle properly. For that reason, it is of the utmost importance to develop an understanding of how to treat these fish in order to keep this sport sustainable.

So, what is sustainable fishing? According to the Marine Stewardship Council, “[f]ishing is sustainable if it leaves enough fish... and minimises impacts on habitats and ecosystems” (“What is Sustainable Fishing?”). In the context of trout fishing, this concept focuses on preventing over-fishing, reducing our impact on fish’s habitats, and practicing proper catch-and-release. As responsible anglers, these are all things that we should be conscious of. So, how can we practice sustainable fishing? Considering things such as what equipment to use, what state regulations are in place, buying a fishing license, and proper handling techniques are all integral to supporting this practice. By making an effort to support sustainable fishing, you are helping extend the longevity of trout fishing so it can be enjoyed by many generations to come.

I remember the very first time I went trout fishing. I was visiting family friends in New Hampshire around my birthday. One of the people we were visiting with was an Eagle Scout and a big advocate of immersing yourself in the outdoors. As a gift for my birthday, he gave me my very first fly fishing rod. It was a traditional Japanese style rod called a Tenkara Rod. He took me to the river that ran alongside their house to teach me the casting motion. After some practice, I had learned the motion and decided to try to catch a Brook trout on my own. I jumped from spot to spot, letting my fly drift down the current to little areas of rapids. After about an hour and many casts later, I felt a tugging on my line. I frantically started to work the fish towards me, being ever so careful as to not break it off. I still remember the excitement I felt to this day. Upon landing the fish, I was so excited to take a picture. I first struggled to remove the barbed hook, then took the time to set up my phone, and then finally held up the fish for a photo. After watching the fish weakly swim off, I knew I had done something wrong. By making that

mistake, I was motivated to learn and promote the correct practices around this amazing kind of fishing.

When fishing for trout, you want to pay special attention to the type of equipment you use. Some things you want to take into consideration regarding equipment include hook type, bait type, net material, and gloves. When deciding on what kind of hook to use, studies show that “treble hooks can increase handling time and air exposure, both of which negatively affect fish survival” (Kerr et al.). So it is in the best interest of the fish for you to use a single hook. However, “...neither fishing gear nor fish size influenced the occurrence of internal hooking, bleeding, reflex impairment, or mortality” (Kerr et al.) so once you can confidently handle your catch with care, you are safe to use whatever hook type you prefer. A good piece of advice for whatever type of hook you choose is to de-barb the hooks. “Not only do barbless hooks cause less damage to a fish’s mouth, but they are also much easier and quicker to remove” (“Tips”). If the hooks you are currently using are barbed, you can crush the barb down with a pair of pliers until it is flush with the rest of the hook.

Next, when contemplating whether to use live or artificial bait, consider that “[t]he number one cause of mortality for fish that are caught-and-released is hooking injury – usually from deep or foul hooking. Fish are much more likely to swallow live and natural baits leading to injury and mortality. If you intend to only catch-and-release fish (and not to keep), consider using artificial baits and/or circle hooks (which also decrease rates of deep hooking)” (“Tips”). When it comes time to land a trout, nets are a great tool for fishermen. At first glance, they may all seem the same, however, the material of the net’s basket is more important than you may think. Try to look for a basket made out of rubber instead of regular thread. Rubber will help preserve a fish’s slime layer better than a traditional net. This material also helps reduce hook

snags which is an added bonus for fishermen. For those considering whether or not to wear gloves for trout fishing, evidence shows that gloves can cause more harm than good to the fish. So while they may help you hold the fish better, they wipe off their delicate slime layer. When this slime layer is removed, fish are more susceptible to infections and diseases.

Species	Open Season (all dates inclusive)	Number of fish you can keep per day (daily creel limit)	minimum length (in inches)
Trout			
Lakes, ponds, major rivers	Jan. 1 to Dec. 31	3	—
Housatonic River	Jan. 1 to Dec. 31	1	20
All other rivers and brooks	Apr. 1 to Sept. 10	8	—
	Sept. 11 to Mar. 31	3	
Lake Trout			
Wachusett Reservoir	(see note 6)	3	—
Quabbin Reservoir	(see note 6)	2	18

Following Massachusetts' rules and regulations is also a very important way to practice sustainable fishing. Each state's rules and regulations are different, so make sure to take the time to learn the rules if you go fishing elsewhere. Some information on trout fishing regulations in Massachusetts is shown here, but for more information, visit the Mass.gov website. The limitations on the number of fish that can be kept are called a "creel limit." The purpose of a creel limit is to allow time for bodies of water to be stocked, maintained, and to ease fishing pressures. For those who do rely on fishing to provide them with a source of food, it is important to be mindful of how many trout you can legally take. This number is important to adhere to because you are decreasing the population that can reproduce within a given ecosystem. By

staying within the creel limit, you are respecting the health of the ecosystem and the other fisherman targeting trout in that area. Over-fishing has been, and often still is, a common problem trout populations face. This is why being mindful of this limit is especially important.

Another way fishing is regulated is by enforcing a minimum size regulation. The purpose of this kind of regulation is to restrict the size of fish you can keep to above a certain size. These rules are put in place to allow for fish to mature and repopulate before you take them out of the ecosystem. It is important to understand that all of these rules are in place to promote a sustainable form of fishing that can support a healthy cycle of stocking and the natural reproduction of trout. The people in charge of enforcing these rules are Game Wardens, Natural Resource Officers, and (one that many people do not know) even Police Officers.

An often overlooked way to support sustainable fishing is by buying your fishing license. While it may seem like just another expense, fishing licenses provide much-needed funds to the organizations responsible for up-keeping parks/recreation areas, stocking fish, scientific studies of fish, habitat management, and educational programs. With increased costs for running wildlife conservation programs and a decrease in funding in Massachusetts, it is more important than ever to support the high-quality maintenance of state-funded areas where fishing occurs. A direct benefit to you as an angler is that it funds the stocking of local bodies of water. This ensures a healthy amount of fish in supply for fishermen like you to catch, making your fishing experiences much more enjoyable. Another use of our license fees is the funding of scientific studies. These studies monitor things such as fish behaviors, population, and migration. This information helps anglers identify where fish will be most abundant and when. Lastly, by paying our dues, we help pay to keep recreation areas clean and well maintained. The quality of maintenance an area receives can greatly affect our fishing experience. If an area is litter-free and

has many public facilities, we are much more likely to enjoy our time in nature and less likely to be disturbed by poor environmental conditions.

Now that you know how to protect trout without even taking a cast, here is a step-by-step process on how to safely catch these fish. Once you hook your fish, you are going to want to reel it in efficiently, but without harming it. The reason for this is “once hooked, a fish is essentially vigorously exercising when fighting on the end of your line. By landing a fish quickly and without over-playing it to exhaustion, you can reduce the physiological and muscular stress the fish incurs” (“Tips”). At this point, you should have your net ready to land the fish. Nets are not only helpful for fishermen to ensure your catch doesn’t get away, but they actually also benefit the trout. By using a net, you can keep it in the water longer, greatly decreasing both handling time and time out of the water. By doing this, you are significantly increasing the fish's chance at recovery after release. Now that your catch is in your net, it’s time to remove the hook from its mouth. If possible, keep the trout in the water while you use a pair of needle nose pliers to remove the hook. If you need to use your hands to handle the fish, make sure to wet them first and only apply gentle pressure when holding them (try to avoid holding the gills). Once you have unhooked your fish, you can take a picture with it if you would like, but make sure not to remove the fish from the water for more than 10 seconds. Any longer than that can cause illness, or even damage to the fish. When handling a trout, there are a few important things to keep in mind, “Fish have sensitive internal organs, so hold them gently without squeezing. Avoid placing your hand over their mouth and gills since this obstructs breathing. If a fish is bigger than your hand, use both hands to hold it. With larger fish, grip the base of the tail with "A-Ok" finger formation and gently support the body close to the pelvic fins. Consider keeping very large fish in the water – for their safety and yours” (“Tips”). A proper handling technique is depicted here:



Image caption: Someone handling a trout.

This YouTube video by “Keep Fish Wet” also provides a great visual demonstration of the process of catching and handling a trout: <https://youtu.be/eEFnrSfKXX0?feature=shared>.

Once the time comes to let the fish go, you need to determine if revival is necessary or not. In many cases, reviving a fish will not be necessary and can actually have little to no benefit. “Despite our best intentions, letting fish go as soon as possible is probably the best thing we can do for them. Any fish that can swim away should be released and doesn’t need to be revived” (Danylchuk). If you place your fish back in the water and it does not try to swim off on its own, this is an indication that reviving it will be beneficial. Typically, people just push and pull the fish through the water in an attempt to flow water through its gills; but this is not the best practice. Since gills filter oxygen out of water flowing in one direction (through their mouths and out their gills), face your fish upstream into a light current and allow the water to flow in one direction through the fish’s gills. An helpful step in this process is to find an area where the water is more aerated. By reviving a fish in more aerated water you aid the flow of oxygen through their gills. Once you feel it try to swim away, you can release it to swim off on its own. The diagram below as well as this YouTube video

(<https://www.youtube.com/watch?v=vrpy4OugyNo>) demonstrates the technique behind how to do this properly.

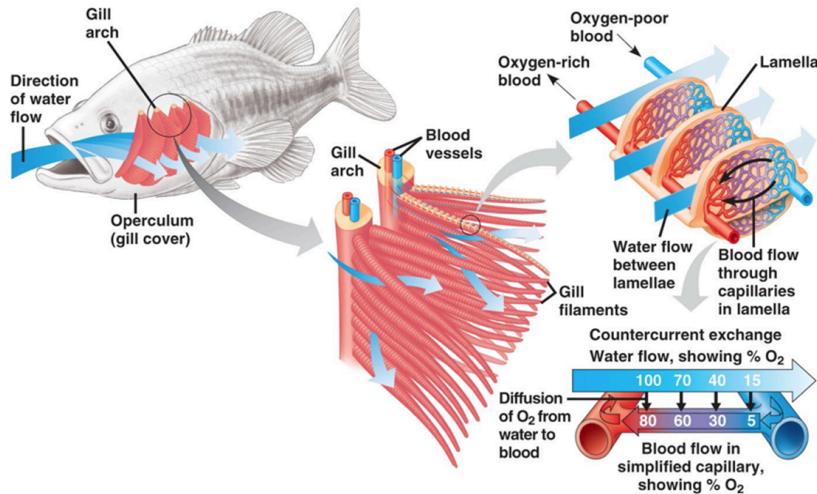


Image caption: Scientific illustration of a fish with the labels “Direction of water flow,” “Gill arch,” and “Operculum (gill cover).” Zooming in to the gill arch, “Blood vessels” are within the gill arches, and “Gill filaments” are nearby. Within the gill filaments, there is “Oxygen-poor blood,” “Oxygen-rich blood,” “Lamella,” “Water flow between lamellae,” and “Blood flow through capillaries in lamella.” Also shown is “Countercurrent exchange Water flow, showing % O₂,” “Diffusion of O₂ from water to blood,” and “Blood flow in simolified capillary, showing % O₂.”

All of this information may seem impossible to remember if you are a beginner angler, and it may be very tempting to just get out there and try to figure it out. While experience is important, by taking it slow and allowing yourself to learn these practices, you will be doing the fish, and other fishermen, a great service. Following the information available both in this essay and online ensures you will be doing your part in keeping this sport accessible for a long time. So I implore you to ease into it, and move at a slow pace. With enough experience, all of these

practices will become second nature to you. And remember, respecting other fishermen near you and being conscientious of others goes a long way. You may even pick up a tip or two from a more seasoned angler this way. Eventually, you can buckle up your waders, grab your rod, and pack your gear as usual. You can step out into the crisp morning air, the sun rising over the tree line, but now you know you will be prepared to tackle any situation with confidence. Happy fishing!

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