

Wood is Good for Brook Trout

Prepared by Jud Kratzer, Fisheries Biologist - 12/28/2018



A rare natural wood jam in northeastern VT.

brook trout are delicious baked, fried, or grilled, and I think that our many feathered and furred predators would add that they are good raw, wet, and wriggling. Deep water and overhead cover, in the form of surface turbulence, overhanging banks, or large pieces of woody material provide brook trout with relatively safe places to watch for passing meals while reducing the chance of becoming a meal themselves.

New England has been blessed with thousands of miles of cold, clean streams that support self-sustaining populations of wild brook trout. Many of these streams offer deep water and overhead cover, while others have room for improvement. Past land and water use practices have severely degraded brook trout habitat in some streams. For example, brook trout habitat was intentionally destroyed for log driving purposes. Actually, the loggers and river men had nothing against brook trout, but the large boulders and downed trees that provided good habitat were not conducive to floating large rafts of logs from the region's highlands to the saw mills downstream, so they removed many of these obstructions, even dynamiting boulders that were too big to move. The log driving days have long since passed, but some streams have been slow to heal. The big boulders will not be growing back any time soon, and the streamside forests are still recovering from repeated rounds of clearcutting, a practice which outlived the log drives. We now know that we should not be harvesting trees from the stream bank, partly because we want these trees to get big and fall into our streams, where they can provide habitat for brook trout and other aquatic species.



Electrofishing around a constructed wood jam.

Several streams in northeastern Vermont were especially affected by past logging practices and now have long reaches that are unnaturally wide, shallow, and lacking in cover. The good news is that these streams don't have to remain like this forever. With a unified goal of reversing some of this legacy damage, the Vermont Fish and Wildlife Department and Trout Unlimited began a partnership in 2009 and have since been joined by the US Fish and Wildlife Service, Weyerhaeuser Company, the Vermont Land Trust (VLT), and the Vermont Housing and Conservation Board (VHCB). The early years of this partnership were spent identifying and prioritizing opportunities to improve brook trout habitat, and since 2012, the partners have been actively implementing habitat improvement.



Using the grip hoist to position a tree in the stream.

Progress has been good. To date, the partners have improved brook trout habitat in over 17 stream miles by using chainsaws to strategically fell streamside trees into the streams. The intent is nearly always to have the trees remain in place, even during floods. If the trees are short relative to the width of the stream (i.e. less than 1.5x stream width), the partners use a machine called a grip hoist to lock felled trees into secure positions. While it would be much faster to perform this work with an excavator or other heavy equipment, the use of muscle power and small machines minimizes impacts to the streambed and banks.



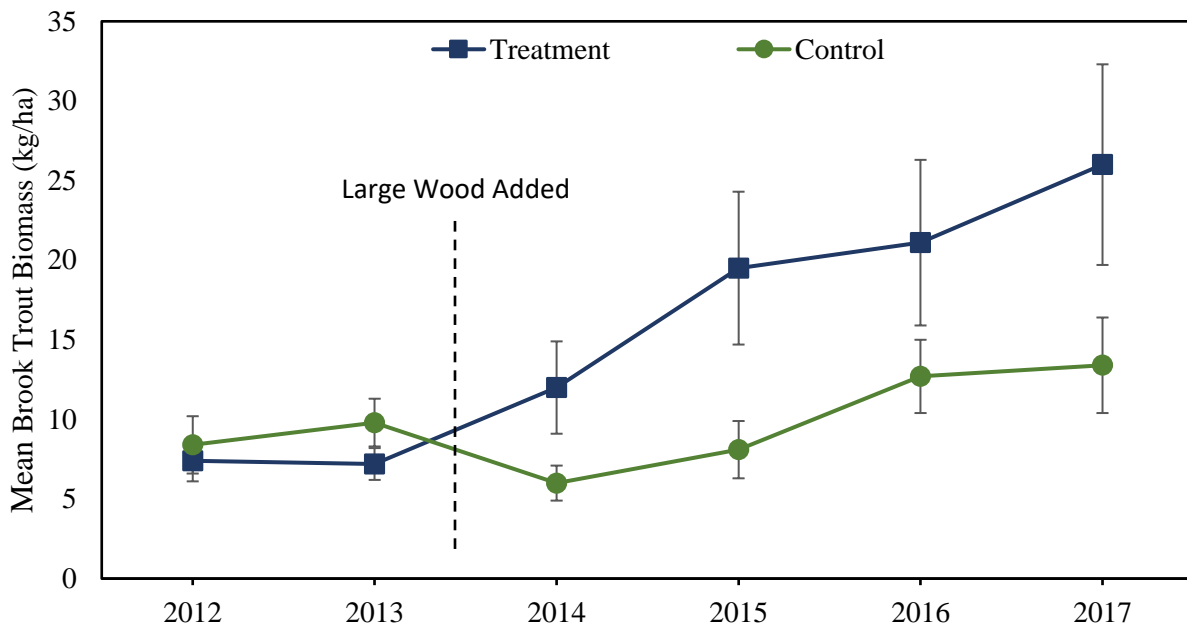
The author standing in a deep plunge pool created by a constructed wood jam.



A spawning pair of brook trout caught near a constructed wood jam.

The brook trout are responding. Six years of electrofishing data have revealed that brook trout biomass (total weight of the population) has increased an average of 150% at treated sites, and the number of brook trout over six inches in length has nearly quadrupled. Brook trout abundance has also increased slightly at untreated sites, which suggests that the woody cover is not just concentrating fish but may be contributing to increased numbers and size of brook trout beyond the areas where habitat

has been improved. But, before you ask your local fisheries biologist to start adding wood to your favorite stream, consider that this type of habitat improvement work is not appropriate everywhere. Before adding a stick to any of these streams, the Vermont Fish and Wildlife Department and Trout Unlimited spent years determining whether woody habitat was limiting brook trout abundance in these streams. We also worked very hard to ensure that felled trees would stay in place, and that if they did move, they would not be likely to damage downstream property. A willing landowner, like Weyerhaeuser, is also a must for this type of project. Ultimately, what we anglers should really want are mature streamside forests that will naturally add wood on their own, and once the wood is in the water, we need to leave it there.



Average brook trout biomass at nine control and 9 treatment sites in the East Branch Nulhegan River watershed. Large wood was added to the treatment sites in 2013.

Jud Kratzer is a fisheries biologist with the Vermont Fish and Wildlife Department and a well-rounded angler who enjoys fishing for a variety of species in a variety of locations.