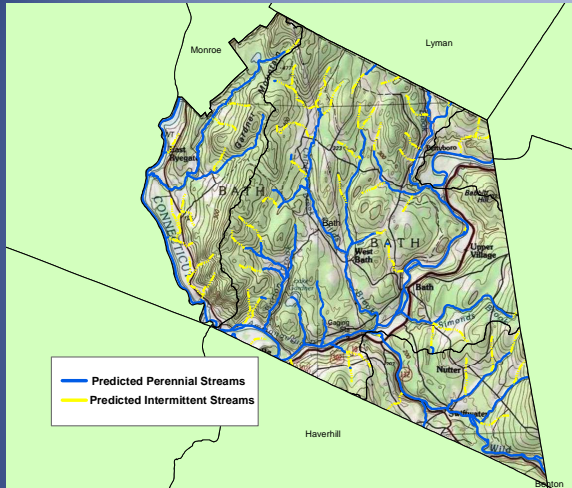
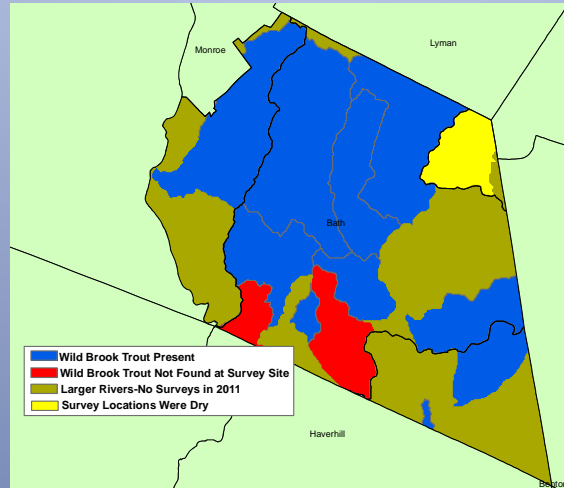


Wild Brook Trout Populations Within Bath, New Hampshire



Stream and River Systems and Their Watersheds Within the Town of Bath



The Current Distribution of Wild Brook Trout in the Town of Bath

Background

Brook trout are the only native stream dwelling trout species in New Hampshire, having a historic range that extended from Georgia to eastern Canada. It is believed that wild brook trout were once present throughout all watersheds in New Hampshire. Increased stream temperatures, changes to water chemistry, habitat fragmentation, increased rates of predation and competition, loss of spawning locations, and the loss of stream habitat complexity have led to reduced and isolated populations of wild brook trout both in New Hampshire and throughout the species native range in the eastern portions of the United States.

Recognizing the reduction in the distribution of wild brook trout, the Eastern Brook Trout Joint Venture (easternbrooktrout.org/) was established as part of the National Fish Habitat Action Plan. This public and private partnership of state fish and wildlife agencies, federal natural resource agencies, academic institutions, and local conservation organizations is working to protect existing wild brook trout habitat, enhance and restore impacted habitat, and raise public awareness about their current status. These efforts will also benefit other native stream dwelling species, because brook trout serve as an indicator for healthy aquatic ecosystems as well as good water quality. Fortunately, New Hampshire has more intact populations of brook trout (meaning more than 50% of a sub-watershed's habitat is occupied by wild brook trout) when compared to the southern portions of the species eastern U.S. range. However, information to quantitatively describe the status of brook trout populations in New Hampshire is limited.

To assess the status of brook trout within the town of Bath, the New Hampshire Fish and Game Department (NHFGD) and members from the Bath Conservation Commission conducted electrofishing surveys during the summer of 2011.

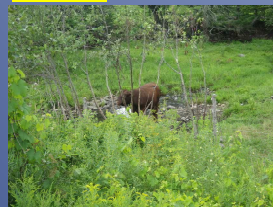
Results

A total of 14 different fish species were captured at 14 locations within the watersheds found in Bath. Wild brook trout were the most frequently encountered species being found at 86% of the survey sites. Wild brook trout were also found to be the most abundant species representing 47% of the total fish captured while blacknose dace were second most abundant species (32% of total fish caught). Other species captured within the watersheds of Bath include: Atlantic salmon, hatchery brook trout, creek chub, common sunfish (pumpkinseed), common white sucker, fallfish, longnose dace, longnose sucker, hatchery rainbow trout, slimy sculpin, smallmouth bass, tessellated darter, and yellow perch.

Wild Brook Trout Captured in 2011



Observations



Livestock having free access to streams can increase erosion rates, nutrient loading, and loss of essential riparian vegetation



Perched crossings prevent fish from reaching more desirable locations. Brook trout were found below this crossing but not above it. This crossing isn't designed to handle high flows, forcing the stream to overtop the road. This increases sedimentation rates in this stream



When trees are removed from shorelines, bank stability is reduced. These rock walls were needed to prevent the undermining River Road during high flows. The roots of mature trees may have reduced the need for these structures. A forested canopy keeps water temperatures lower while providing habitat when trees are allowed to fall in streams.

Summary

The surveys show habitat quality for wild brook trout is suitable in the majority of rivers and streams in Bath.

Potential impacts to wild brook trout were recorded at every survey location. Perched stream crossings, livestock having free access to streams, and the lack of riparian vegetation, as a result of logging, lawns, or adjacent road proximity, were the most common impacts recorded. Impacts associated with erosion (scouring, sediment deposition, etc.) were routinely observed at these locations.

Local Conservation Strategies

- Work with local conservation groups to increase public awareness of the importance of brook trout and water quality
- Promote protection of headwater and smaller streams
- Reduce barriers to dispersal (i.e. perched stream crossings, dams)
- Consider the effects of stormwater and sedimentation in future development

The opportunity to protect intact populations of wild brook trout is uncommon, even in New Hampshire. Land conservation and guidance on land use practices are essential to protecting brook trout habitat. Land and water use guidance should be given for streams of all sizes within a watershed as smaller streams are often used for spawning and nursery areas. Presumably minor human impacts to these streams can be additive throughout the watershed and create problems that are not readily apparent until further downstream. The cost to restore a population of any species is always higher than the cost to protect them. Restoration actions require a great deal of effort and may not always guarantee self-sustaining populations would return.

