

Fishery Region B

Fisheries and Wildlife Divisions Team up to Improve Stream Habitat

The Jamies Pond Wildlife Management Area in Kennebec County comprises almost 600 acres in the towns of Hallowell, Farmingdale and Manchester. Located only minutes from the Greater Augusta-Gardiner area, it is a gem, providing a variety of outdoor recreational opportunities. In addition to several miles of multiple use trails, the centerpiece of the area is Jamies Pond and its watershed. Also known locally as Jimmie Pond, this 107-acre pond has very little human development on its shores.

The major inlet to the pond is Meadow Brook. It drains a large forested watershed north of the pond and has water cool enough to sustain brook trout. The lower portion stream is also important as spawning habitat for rainbow smelt. Additionally, several freshwater mussel species are found in the pond and throughout the watershed.

Formerly, the gravel-surfaced Meadow Hill Road provided a 'back way' between Manchester and Hallowell and led to the Jamies access road. The road was in poor shape and constantly eroding, adding an unnaturally large amount of sediment to the stream. Furthermore, an undersized stone culvert existed where the road crossed the Meadow Brook. The culvert had partially filled in, effectively blocking any passage of aquatic organisms. In past floods, large parts of the structure had washed into the stream, altering the stream channel.



Working with the towns of Manchester and Hallowell, Department biologists were able to secure partial closure of the road. With funding from the Department's access program and the Maine Department of Environmental Protection, staff from Wildlife and Fisheries teamed with the Department's Engineering Division to remedy the eroding road and fish passage issues at the culvert.

We began the project by isolating our work area near the stream with hay bale cofferdams, silt fencing and mulch-berms. Once our protection was in place, we got out the big equipment, removing the culvert causeway and most of the culvert. All of the material that was removed from the culvert fills was recycled into the construction of eight water bars on the closed section of the road.

One of our goals was to restore the riparian area or floodplain of the stream so that future floodwaters could flow in the natural stream channel. Once excavation got to about two feet above the brook, we faced a major decision. If we removed any more of the culvert, slope work would require removing a number of large trees that were stable and provided important shading to the brook. It would also result in a much larger impact area. Our other alternative was to leave the trees and a remnant of the culvert. Floodwaters would be confined to a degree, but once above the remaining structure, the water would have a stable floodplain to flow over. To minimize our impacts, we chose the latter option.

Leaving a part of the structure in place required us to make sure that the rehabilitated floodplain would be able to withstand the energy of more intense flood flows. To do that, we used boulders as a base to build up a rough slope. The rocks were covered with geo-textile fabric and then soil. With the assistance of some Boy Scouts, we seeded and planted the area with sturdy vegetation that was similar to plants found along the stream in adjacent areas. Any area of exposed soil remaining was covered with reinforced jute mat and mulched with hay.

We then turned our attention to the closed portion of the road. Water bars were constructed and modified for bicycle access. Eroded areas were stabilized, seeded and mulched. Two gates were constructed and installed for seasonal access.

Our final effort involved replacement of the bridge. Since many hikers and bikers would be using the former road as a trail, we needed some sort of crossing. Our solution was to build a structure supported by retired telephone poles, well above the stream. This project was ably undertaken and completed by a young man working for his Eagle Scout rank.



Our results look great so far. The area has stabilized well. Many users of the area have agreed that both the stream and the road, now a trail, are more in keeping with a wildlife management area while still providing for a variety of uses. Two hikers even reported seeing three brook trout at the former culvert site. By working together and with limited funds, the Department was able to work cooperatively with other organizations in completing a project that is showing positive benefits in a number of ways.

Nequasset Lake Rainbows

Nequasset Lake is an attractive 425-acre body of water in a region of low wooded hills in the town of Woolwich. In recent years, the lake was stocked with 400 brown trout and 400 brook trout. However, investigations by regional staff showed that the brown trout were not providing the expected returns to anglers. This year, the Department began a stocking program in Nequasset Lake with an initial plantings of 400-spring yearling and 400 fall yearling rainbow trout. The intent of the stockings is to provide improved angling opportunities.

Rainbows are not really 'new' to Nequasset. From 1974 to 1979, the fish were stocked in the lake. During that time our data indicates that rainbows provided a good fishery. Unfortunately, the IFW's statewide rainbow program was terminated in 1980, because we had difficulty obtaining rainbow eggs from disease-free stock. After the successful completion of a recent Department study on rainbows, biologists began searching for potential waters to stock. Given its past success, Nequasset Lake was a clear choice as a home for the fish.

Rainbow trout are the most widely successful stocked fish in the world. Their success comes from their abilities to survive in diverse habitats and exploit a wide variety of prey. They are superb fighters when hooked, making them a favorite of anglers. In many cases, they take a line well into the warmer months when angling for other trout species slows down.

A variety of other fish species live in the lake, providing fishing opportunities for almost any angling interest. These species include largemouth bass, smallmouth bass, white perch, brown trout, brown bullhead, yellow perch, American eel, banded killifish, golden shiner, rainbow smelt, chain pickerel, white sucker, pumpkinseed, redbreast sunfish, and, of course, stocked brook trout. One northern pike was caught and confirmed in February 2005, but none have been reported since then.

Biologists will evaluate the fishery by conducting a creel survey during the winter of 2008. If you happen to see a biologist out on the ice, please take a moment to let them know how your fishing is going. Your angling information provides important data for fisheries management programs.

Regulations on Nequasset Lake, 2008 Fishing Season

- **Open Water:** General Law, motorboats w/ > 10 H.P. prohibited;
- **Ice Fishing:** General Law, Open January 1, No vehicles allowed on the ice. The lake can be accessed at Nequasset Brook off of Old Stage Road, at the Bath water district off Nequasset Road, or from George Wright Bridge off of US Route 1.

Stream Habitat use by Juvenile Pike

Most anglers are well informed of the effects exotic fish species can have on our native fish populations. To give you an example of how these exotic fish species can effect even the smallest of brooks and streams, let's look at a situation we observed in some brooks in the town of Mt. Vernon.

In August, Region B biologists were working on some small tributaries to Long Pond in the Belgrade Lakes. Almost all of these tributaries exhibited typical stream habitat types such as pocket water, riffles, runs and small plunge pools, along with a key survival factor for brook trout survival, cool water temperatures. In a brook with these conditions present, one may come to the conclusion that at least some brook trout should be there. Electro-fishing confirmed that indeed wild brook trout still do inhabit some of these waters. However, all those we caught were larger, older-aged brook trout.

Streams with these characteristics are more often than not loaded with other fish species besides trout. Black nose dace, creek chubs and white suckers are just three species that one would expect to encounter. We did eventually find some of these other fish species, but they were located in isolated pools of water, these often not connected to the main channel. It should also be mentioned that biologists did not capture any young of the year brook trout, in either the main channel of the brook or the isolated pools. What was caught mystified observers, not only because of their abundance, but because these species are not commonly found in stream habitats. The fish we caught were northern pike! A total of thirty-seven young northern pike were caught in what might be termed unusual habitat for pike. These young pike were holding in the fastest riffles and runs, just above some of the plunge pools, much like young trout. Unfortunately, our finding of no young trout in this same habitat implied that the pike may have eaten the young trout or forced them out of the local habitat.

Once back at the office, we did a literature search for any references to pike in stream habitats. We didn't find any, but based on what we know of pike biology, we did develop somewhat a hypothesis on why we found pike in the brooks.

It is well known that larger pike will prey on smaller ones. So the smaller fish will, of necessity, avoid the big ones. Also, as water temperatures warm in the summer, the larger pike tend to move into the best available habitat, that is, cool water conditions. As they are forced into more and more marginal habitats, the young fish will search for areas that have the conditions they need to survive. In Long Pond, we surmised that the cooler water in some of the lake's tributaries provided this habitat. It came down to a question of their survival. The young pike could either remain in the pond and potentially die, or they could move into the brooks and improve their chances of survival.

On a longer time scale, the impact of young pike utilizing stream habitats on salmonids is less clear. For instance, if pike are consuming the younger trout, the trout population will diminish. As the larger older trout die off, there will be lower recruitment of younger age classes and there will be fewer adult salmonids for anglers to catch. However, as pointed out above, a number of other fish species are found in these streams. Furthermore, a number of these species compete with and even prey on trout. If the pike prey sufficiently on all of these other stream dwelling fish species, the impact of their competition with and predation on trout might be reduced, thus "balancing out" the direct impact of pike on trout. In these circumstances, the trout population might not be so severely impacted.

By Scott Davis and Robert VanRiper