Update on the Walleyes

Otsego had an outstanding walleye fishery in the 1950's and 1960's. However, no walleye had been caught by any sampling method by the 1990's and they were believed extirpated. Concurrently, the exotic forage fish, the alewife, was illegally introduced reducing water clarity by decimating the large zooplankton that used to keep algal populations comparatively low. It was felt that if walleye were reintroduced, that in addition to providing good fishing, they might control the alewives thereby improving water conditions. We have stocked 186,000 walleye fry from NYSDEC's Oneida hatchery were provided to fish farmers each year. The fry were placed in fertilized ponds in early May and 2-1/2" walleye fingerlings were harvested in late June and early July each year. We then purchased them at roughly 33¢ each with grants from Lou Hager of the Gronewaldt Foundation and stocked them throughout the lake. Mr. and Mrs. Douglas Willies provided funds to monitor walleye growth, abundance, water quality and impacts on associated biota.

The stocking has been very successful. Gill netting coordinated by the Region 4 Fisheries office of the NYSDEC, set for walleye in September of 2002, yielded 124 walleye. This is an excellent catch rate and demonstrates that after only three years of stocking walleyes are abundant. Walleye are targeting alewife with most of their stomachs containing at least one or more.

Growth has been excellent with the largest fish now over 21 inches in length. Stocking continued this year with additional pond fingerlings added in June. Fifteen thousand advanced fingerlings were stocked in October. The Gronewaldt Foundation matched funds for this year's stocking given by OCCA, Otsego 2000, OLA and several interested citizens.

For the next five years, the NYSDEC Region 4 Fisheries Office has pledged 40,000 pond fingerling walleye annually to stock Otsego Lake. We would like to add 40,000 more each year if funds are available for this effort. The DEC and BFS will cooperate with other organizations to continue this project.

Located in Cooperstown and founded in 1968, the Biological Field Station is a unique facility serving the Upper Susquehanna Watershed, Otsego County and the immediate Cooperstown area. It is primarily a teaching and research center for undergraduate and graduate students from across New York, the United States, and Canada. Directed by Dr. Willard Harman and staffed with talented, experienced professionals, the Biological Field Station is presently the focal point for information about issues affecting Lake Otsego and the Susquehanna River.
Otsego Lake Trout

Graduate student Wesley Tibbits has documented lake trout successfully producing viable offspring in Otsego Lake. Hundreds of adult trout have been observed on the spawning grounds. Lake trout eggs were first found in the fall of 2002 and larval fish were caught in the spring of 2003, documenting a natural population growth of approximately 10,000 wild fry per year beyond NYSDEC’s annual stocking of about 5,000 yearlings. Wesley has documented the seasonal movements of lake trout using sonic-tagged fish are enabling us to determine their association with alewife populations and areas of varying water quality. Alewife are the dominate forage of trout in Otsego. Further studies of trout genomes through DNA analysis indicate that there are three strains present; the two historically stocked plus another that is probably our original native strain.

Moe Pond

For over 35 years the pond on the BFS Upper Site maintained populations of golden shiners and brown bullheads, both omnivorous forage fish. The shiners consumed huge quantities of crustacean zooplankters allowing the algae to flourish. The water quality was poor, dominated by one blue-green algal bloom after another which made the pond appear like peasoupe, too opaque to enable sunlight to penetrate and support rooted aquatic plants. Three years ago largemouth and small-mouth black bass were introduced. They decimated the golden shiners, the zooplankton have returned, pond waters are now clear and the bottom is covered with rooted aquatic plants. It’s a great example of how fish introductions can change the entire character of a body of water and is in many ways analogous with the situation in Otsego Lake regarding walleye, alewives and water clarity.

Winter Road Management

The abrasives, sand, commonly used to maintain safe winter driving conditions have long been suspected of causing environmental problems. Not only do they accumulate in lakes, sitting in areas, but they carry with them a number of other pollutants such as phosphorus. The Village of Cooperstown, as well as several other local municipalities, has currently been using rock salt which has been pre-wetted with Magic Minus Zero™, an organic byproduct of food processing which improves the performance of salt and makes the use of abrasives unnecessary. The BFS, with funding by the NYS Department of Transportation, and in cooperation with the Village, has documented a significant improvement in water quality in Willow Brook, a tributary to Otsego Lake that runs through the Village.

Septic Project

This summer, Holly Meehan (BFS intern 2000, '01, '02, '03) conducted research on phosphorus migration from a private septic system near Otsego Lake. The pilot work for her study was done by Joyce Green (BFS intern 2000, '01). The model Joyce used was developed by faculty at the University of Waterloo (Canada). They found that even at sites having appropriate characteristics, phosphorus plumes developed and ultimately reached nearby water bodies. In the area of this summer's work evaluation of ground water from multiple sites between the leach field and the lake revealed greatly elevated phosphorus levels, substantiating suspected concerns that lakeside systems can be significant sources of that pollutant. The Village of Cooperstown plans to initiate mandatory septic system inspections starting next year. The incorporation of phosphorus-removing technologies will be encouraged during system upgrades.

Goodyear Swamp Sanctuary

For years the beautiful but aggressive exotic flower, purple loosestrife, has dominated the vegetation in the Sanctuary out competing much of the native emergent vegetation. A few years ago, in a cooperative effort with Cornell University and the Cooperstown Lake and Valley Garden Club, we introduced Galerucella, a beetle that feeds exclusively on purple loosestrife. Although still present, loosestrife has not bloomed for the last two summers. Native plants, including the closely related swamp candles, a yellow loosestrife, now are returning. We are hopeful that the restored diversity will benefit the community by providing higher quality sources of food and cover. We have now found colonies of Galerucella around the lake on purple loosestrife more than four miles away from the swamp.
Walleyes, cont. from p. 1

to provide an intern who will perform creel censuses collecting information on fishing effort and biological data on the sport fishing catch. This cooperative effort should provide an assessment of the walleye fishery to see if anglers target walleye and if they are successful fishing.

Over the last two years water clarity has improved. Large zooplankton are more abundant and late summer deep water oxygen concentrations are higher than for the last several years. Although it’s too soon to tell, we hope that the trend is an effect of our efforts and that it continues. We will keep monitoring water quality and the biota to ascertain if further improvements can be attributed to the stocking efforts.

Local Wetlands Being Restored

In 2002, the BFS contracted with the U.S. Fish and Wildlife Service through the US Army Corps of Engineers to participate in the $1.6 million dollar Upper Susquehanna River Watershed-Coopers-town Area Ecosystem Restoration Feasibility Study and Integrated Environmental Assessment. Authorized by the U.S. Congress, this pilot program is to “use wetland restoration, soil and water conservation practices, and non-structural measures to improve water quality in the Upper Susquehanna River Basin”. BFS Research support specialist Scott Fickbohm has completed nine months of ‘pre-construction’ water quality monitoring at two of the eight wetlands selected as Field Assessed Benefit and Design Strategy sites (FABADS). Beginning in the spring of 2004, Scott will continue monitoring the two formerly degraded, now recently restored wetlands and one ‘pristine’ reference wetland. The objective of this monitoring effort is to demonstrate that the restoration techniques employed by the Army Corps foster the biological, physical, and chemical conditions necessary for effective nutrient retention. Results will show if the FABADS wetlands succeed in reducing nutrient, bacterial, and sediment concentrations to a level lower than existed before restoration; are sources or sinks of water contaminates; and if their ability to retain such contaminates equals that of the reference site. Additional monitoring at five sites along the Susquehanna will also show if changes in water quality resulting from wetland restoration can be detected at the watershed scale.

Greenwoods Deer Management

Greenwoods Conservancy, owned and managed by the Peterson Family Trust, is a 1,200 acre parcel in the Town of Burlington. There have been some concerns regarding an excessive population of white tail deer which have been devastating the forest understory as they browse for winter food. A study by Heather Burgess (BFS intern 2003) evaluated available browse throughout the Conservancy in order to estimate the sustainable herd population which would not over harvest understory plants. Using published models, she estimated this population to be about 20 individuals, clearly much lower than the current population.
Updates

- **Dave Warner**, Biology MA 99', BFS Visiting Researcher 02,03, has taken a position with the US Geological Survey, Great Lakes Science Center in Ann Arbor, Michigan.

- The **Thayer Boathouse** is now available for year around use. A furnace has been installed, hot and cold water are available. The bathrooms and adjoining spaces now have been heated and converted with the addition of a shower, kitchen facilities and a briefing room. The first floor is heated and includes work space and the diving locker, machines room, storage room and a faculty office. Work continues on winterizing areas of the building including class-room and lab space on the second floor.

- Because of funding problems with Otsego Lake patrols this summer the navigation buoys were not placed until late in the season.

- **Dale Webster**, leading the BFS volunteer divers, got the buoys out on the lake. After a brief presence they were then removed just before we hauled our boats for the season.

- Several graduate and undergraduate students were involved in individual course enrollments last summer Scott Holl and Tricia Getman enrolled in Biol 384, Aquatic biology; Todd Pater-noster enrolled in Biol 687, Topics in aquatic ecology.

The work of the Biological Field Station is strengthened and enhanced by private financial support from individuals, foundations, businesses, corporations and civic organizations. In fact, these contributions are necessary for the continued success of the Biological Field Station and all of the services provided to the community. For more information, call or write:

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As an academic program within the State University College at Oneonta, the Biological Field Station receives fund raising services through the College at Oneonta Foundation, a nonprofit charitable organization. All gifts and grants for the BFS are tax deductible. They are managed by the Foundation and used expressly for the purposes for which they were given. Estate planning gifts such as bequests and trusts are also sought and appreciated. More information is available by contacting:

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