Restoring Our Streams

By Patricia L. Hamilton, Principal Fisheries Biologist

How often have you admired the beauty of a stream as you drive along a scenic roadway? A traveler's gaze is drawn to the water, hoping to glimpse a fish jumping, a family of ducks playfully splashing, or some other interesting wildlife activity. Streamside landowners often intentionally create vistas by clearing vegetation along a stream bank. A neatly manicured lawn gives them (and us) a pleasant view of the stream and improves fishing and boating access. But is the creation of a park-like setting good for the health of the stream?

Despite its pleasing appearance, this type of landscaping often spells trouble for a stream and its aquatic inhabitants. Take a closer look at the point where land meets water. Still don't see a problem? It may not be obvious unless you stand in the middle of the stream (particularly during the summer, when stream flow is low) and look toward the bank. Inevitably it will be there and quite visible to the naked eye…bank erosion. Expanses of grass growing along stream do a rather poor job of holding soil in place. Its shallow root system is no match for the power of the water currents that result from heavy rainstorms. Little by little, the soil is worn away. In extreme cases, the stream may cut under the bank causing the top-heavy bank to give way as clumps of soil and grass tumble into the stream.

Where does this soil go? It is carried downstream by the currents and eventually settles out in areas where the stream is sluggish. Pools and the inside of river bends downstream from an eroding bank are often the unfortunate recipients of this unwanted material. When pools fill in with silt and sediment (fine soil particles) desirable fish habitat is damaged or lost. A fine layer of sediment blanketing the stream bottom can smother bottom dwelling aquatic insects (that fish depend upon for food) and suffocate incubating fish eggs.

How can the damaging effects of stream bank erosion be prevented? Native, wild-growing vegetation (shrubs, trees, and herbaceous plants) should be left to grow along the stream banks. In particular the root structure of shrubby plants (dogwoods, willows, alders) is more complex and holds the soil in place far better than that of grass or even trees. Streamside shade provided by shrubs and trees helps keep water temperatures cool during the hot summer months, a real plus for trout streams. Brushy banks also harbor terrestrial insects that drop into the water and are eaten by fish. When the riparian zone (land adjacent to the stream) is similarly vegetated, then the benefits are far greater. Runoff laden with suspended soil is filtered before it reaches the stream and the stream corridor becomes a more attractive pathway for wildlife (insects, birds, mammals, reptiles and amphibians) because of vegetative cover.

If erosion problems are evident you could opt to let nature take its course in hopes that suitable vegetation will grow and correct the problem. That may happen…but certainly not overnight. It may take years for a stream bank to recover on its own, if at all. In the meantime damage to downstream areas continues. Concerned landowners can undertake small-scale projects to help speed the recovery process. But rather than tackling the problem by yourself, it is far better to consult with experts from state or federal agencies who can advise you how to best solve the problem. The USDA's Natural Resource Conservation Service (NRCS) has field offices scattered throughout New Jersey with staff that can help develop a site-specific plan. Bio-engineered solutions, which involve the use of plant and other natural materials to stabilize eroding banks, are often used because the results are a more natural, biologically superior stream bank. Financial assistance for projects may be available through programs administered by government agencies (see box).

Photo by Author

Private landowners, fishing clubs, municipal and county environmental commissions and parks, watershed associations, and other nonprofit organizations often express interest in undertaking beneficial streamside projects. In response, the New Jersey Division of Fish and Wildlife and NRCS have teamed up with Trout Unlimited and other agencies and organizations to periodically offer a one-day workshop, aptly called "Restoring Our Streams". During the morning session participants learn from experts, through a series of mini-lectures, about stream ecology, techniques to stabilize stream banks and improve fish habitat, and potential funding sources. In the afternoon the group moves to a streamside location for a hands-on opportunity to apply some of the techniques learned earlier in the day.

In addition, the Division recently created a Fish Habitat Improvement Program (for both streams and lakes) to provide guidance to those interested in improving fish habitat. Educational materials are available and technical assistance may be provided for small improvement projects.

Through a variety of programs and related workshops, individuals and organizations are educated and given the opportunity to contribute to the well being of the aquatic resource. So the next time your gaze is drawn to flowing water, will you see a healthy stream environment or one that needs your help?

Sources for Information/Technical Assistance/Funding in New Jersey:

N.J. Division of Fish & Wildlife
Fish Habitat Improvement Program
Streams: Freshwater Fisheries Lab
P.O. Box 394, 1255 County Rt. 629
Lebanon, NJ 08807
(908) 236-2118
Lakes: Southern Regional Office
220 Blue Anchor Rd
Sicklerville, NJ 08081
(856) 629-4950
Or visit the Division website at:
njfishandwildlife.com

USDA, Natural Resources Conservation Service
WHIP (Wildlife Habitat Incentives Program)
EQIP (Environmental Quality Incentives Program)
Conserve Reserve Program
CCSP (Conservation Cost Share Program)
Consult your local telephone directory under U. S. Government Offices for the location of the nearest field office. Or visit the NRCS website at: www.nj.usda.nrcs.gov.

U.S. Fish & Wildlife Service
Partners for Fish and Wildlife
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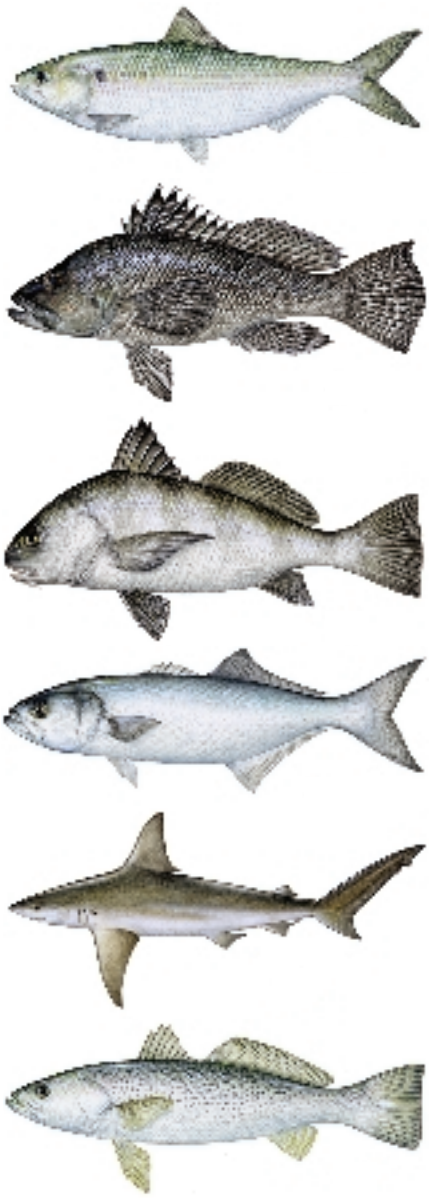

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Union Lake's Six Year Smallmouth Success Story

By Hugh Carberry, Supervising Fisheries Biologist

Smallmouth bass are considered by many to be, pound for pound, the hardest fighting freshwater fish. Known as "jumpers" and "red-eyed devils", smallmouth bass are respected for their leaping aerobatics when caught. When anglers think of smallmouth bass, their minds conjure images of mountain lakes, water supply reservoirs, and the Upper Delaware River; all of which are located in north and central New Jersey. However, anglers in the southern tier of the state are taking advantage of a quickly developing smallmouth bass fishery located in Union Lake, Cumberland County. The smallmouth bass fishery's success can be attributed to recommendations from a recent fisheries management plan and subsequent stockings of brood and fingerling smallmouth bass in Union Lake.

In 1993, Union Lake was chosen for a fisheries inventory and subsequent creation of a fisheries management plan. The expense for the investigation was paid for through fishing license sales and Wallop Breaux monies, the federal Sportfish Restoration fund. Union Lake was an excellent candidate for an inventory. The Division of Fish and Wildlife had recently purchased the 898 acre lake and surrounding properties. Following the purchase, the Division reconstructed the dam, installed a fish ladder, and introduced artificial fish habitats (1990–1992) in the lake.

The fieldwork began in the spring of 1994. One component of the fisheries investigation was to categorize the reproductive success of pan and gamefishes. During the fieldwork, a young-of-the-year smallmouth bass was collected. The Division had always known about smallmouth bass in the lake, as the Bureau of Freshwater Fisheries had collected these fish in the past. The population was considered small, a remnant from a one-time stocking done in the early 1900s. We received one or two anecdotal reports from anglers each year regarding this small population of fish.

Lake inventory data demonstrated an exorbitant forage base consisting of gizzard shad, white sucker, and alewife herring. Prior to 1992, alewife and gizzard shad were not found in the lake. The fish ladder addition allowed these species *new* access into the lake. The data collected also indicated a quality *largemouth* bass fishery. But it was the collection of those young smallmouth bass which prompted the Bureau of Freshwater Fisheries to look at the smallmouth bass fishery in a new light. A question was raised: Is there enough smallmouth bass habitat in Union Lake to sustain a recreationally significant smallmouth fishery? A habitat suitability index was examined for answers.

The smallmouth bass habitat in Union Lake consisted of an old dam at the north end of the lake ("The Gatehole"), the roadbed on the East Side of the lake, and new rocky habitat created during the1991–1992 dam reconstruction. When the dam was reconstructed, the lakeside earthen embankment was stabilized with riprap boulders. This reconstruction created a one-quarter mile stretch of *new* smallmouth bass habitat. Spawning

substrate (gravel) was also identified at the west side of the lake, adjacent to the steep sloping bluffs. Identifying an area with gravel was important as smallmouth bass require a gravel, stone, or rock substrate for spawning. The majority of Union Lake's shallow water substrate consisted of sand or muck.

Consequently, when the fisheries management plan was written, a recommendation was made to expand the lake's smallmouth bass fishery, justified by the additional habitat created during the dam reconstruction. A stocking request was made to our Hackettstown State Fish Hatchery for 8,000 fingering and 130 adult smallmouth bass which were float stocked during July 1995.

Immediately following the stocking, anglers caught many unwary brood fish (smallmouth bass between 1.5–3.0 pounds). These fish were susceptible to being caught due to their place of origin, Yards Creek Reservoir located in Warren County which is off limits to the public and prohibits all angling and boating activities. This impoundment had no fishing pressure; the resident smallmouth bass had no experience with fishing lures or other offerings. This lack of fishing pressure made the smallmouth bass easy to catch once they were placed in Union Lake. Although the brood fish were caught frequently, time would tell how the 8,000 fingerlings had fared.

Five years passed and it began to happen: anglers began to catch smallmouth bass more frequently, ranging between 11–12 inches, indicating they from the 8,000 fingerlings stocked. This was exciting, but our fisheries staff wanted to evaluate the smallmouth's reproductive success. During July, 2000, we conducted reproductive checks in Union Lake. To our surprise, *not one* fingerling smallmouth bass was collected. We would return next summer to reevaluate reproductive success.

A year passed and anglers again were catching more smallmouth bass. Bass anglers holding tournaments in Union Lake were weighing in smallmouth bass. Reports kept coming in on how well the smallmouth bass were doing. The Division contacted several anglers who fish the lake regularly. Anglers were asked to record the length of all the smallmouth bass they caught and collect a scale samples from each fish. From the scale samples we could determine the age of the fish, and therefore, which smallmouth bass were being caught: broods, stocked fingerlings, or naturally reproduced fish.

Only a few weeks passed before we received several smallmouth scale samples. From this, fisheries biologists determined the smallmouth bass were reproducing in the lake naturally. The smallmouth bass collected by the angler were five years old, resultant young from the 130 broods placed in the lake during 1995. This was the news we were waiting for!

To assure the complete establishment of the smallmouth bass fishery at Union Lake, in July, 2001, Hackettstown Hatchery provided another stocking of 119 additional brood smallmouth bass.

With all this talk of success you may be asking, "What are my chances of catching a smallmouth bass in Union Lake?" While there are no guarantees in fishing, if you put in a full day at Union Lake you'll probably catch plenty of largemouth bass and one or two smallmouth bass. The areas to key in on while angling include the gatehole, roadbed, and along the dam, all noted from our sampling efforts. The usual arsenal of artificial lures used for largemouth bass angling will suffice when fishing for smallmouth bass. Good luck, and let us know if you had a successful day with Union Lake's smallmouth bass.

The Bureau of Freshwater Fisheries Southern Field Office can be contacted at (856) 629-4950.

Brook Trout
By
Rich Infusino, 7th Grade

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Largemouth Fishing in New Jersey Comes Alive!

By Chris Smith, Fisheries Technician II

Bone chilling cold, frozen lakes and hours of watching fishing programs on the television are all in the past. Hours spent wishing you were fishing will soon become reality. It is now time to catch those fish you dreamt about all winter.

Spring marks the beginning of the fishing season for many anglers. Just like the anglers who pursue them, largemouth bass have been revitalized with energy after their winter slumber. Warming temperatures increase activity levels and feeding efforts. Spring is often recognized as "spawning time", which by many anglers is considered the best time of year to target largemouth bass.

Fishing for largemouth bass during the spawning season comes with some controversy, because anglers are targeting vulnerable spawning fish. To protect these fish New Jersey has a restricted harvest season on largemouth and smallmouth bass, effective from April 15th to June 15th. This allows anglers who choose to target bass during the spawn to catch these fish, however, they must immediately be returned to the water. Restricting the harvest of largemouth bass benefits the fishery by allowing the fish to reproduce before being taken.

For fishing strategies the spring can be broken down into three time periods: pre-spawn, spawn, and post-spawn. Each period requires distinctly different fishing techniques such as fishing site, lure type and presentation. The limiting factor during the spring is water temperature. The critical temperature which triggers largemouth bass to spawn is about 62 degrees. Bass will continue to spawn until the water reaches the mid 70's.

Pre-Spawn Period:

Where to Fish

This period is characterized by increasing water temperatures, not yet conducive to bass

spawning. Bass will position along areas of deeper water in close proximity to shallows. Bass will utilize migration routes and transitions areas from deeper water to spawning grounds. Transition areas are any region that the fish will stage or hold on for a short time while waiting for the water to warm. This time of year when the water warms and cools down, the fish will move out of the shallows again to the staging areas. These areas consist of points, creek channels or ditches, and breaklines.

When to Fish

The pre-spawn period is considered the time from ice-out until bass begin to spawn. Anglers should know all bass do not spawn at the same time; the spawn is actually staggered over a couple months. Naturally, an angler may see some bass on beds spawning, while other fish may still be in the pre-spawn phase. Weather conditions have a major influence on an angler's success at this time. Warm, sunny days increase water temperatures creating favorable fishing conditions. As the shallow areas are warmed by the sun, fish are attracted to the area. Windy days after warm sunny days will mix warm surface water with the entire water column, increasing the average lake temperature. Early season rains also increase lake temperatures, especially when air temperatures are greater than water temperature. During pre-spawn conditions, anglers should generally concentrate their efforts around the warmest parts of the day, around 10 a.m.–3 p.m. Night temperatures are still low which makes for poor early morning fishing.

What to Fish

Anglers can catch pre-spawn bass with a variety of lures which can actually be used throughout the spawn. Lures to try during this time include Carolina rigged lizards, lip-less rattling crankbaits, twitch baits (jerkbaits), and jigs. These different lures allow an angler to cover a wide range of water depths. Lure color selection also can be a critical factor depending on water clarity. In clear water more natural colors should be used. Stained or muddy water requires anglers to use colors more visible to the fish.

Anglers who prefer using live bait can find success with small minnows, shiners, and worms. These baits can be fished on small hooks 1/0 to 3/0, weighted with small split-shots, and floats to keep the bait off the bottom. Live bait rigs can be used through the entire spawn.

Spawning Period:

Where to Fish

As the water temperature approaches approximately 62 degrees, bass begin to spawn. Depending on the location of the waterbody this can occur anytime between April and June. The southern part of New Jersey usually warms to this temperature about two weeks before North Jersey. South Jersey lakes are typically shallow with stained water, which causes the water to warm faster by absorbing more of the sun's energy.

Largemouth bass prefer to spawn in areas with gravel substrate; however they are also known to spawn in areas of vegetation, roots, sand, mud, and cobble. Bass will mainly spawn in water depths of 1 to 4 feet, although they sometimes spawn deeper, mainly in tidal water and reservoirs which experience fluctuating water levels. Male bass will prepare the nest or "bed" for the female to spawn by fanning away sediment with his tail. In clear water these beds can be seen quite easily, but in stained or muddy water the beds can not be seen by anglers.

When to Fish

The prime time to target bass in the spawning phase is early morning to late afternoon. At this time water temperature is still a major factor on

(continued on page 26)

Largemouth Fishing in New Jersey Comes Alive!

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angler success, so warmer sunny days will cause bass to feed. Also, anglers who choose to fish for spawning bass on beds will find that sunny days and clear water are optimal conditions for visually targeting bass.

What to Fish

The angler seeking to catch a spawning bass can find success with a wide variety of lures and baits. The most important thing to remember is, just because you can see the fish doesn't mean you can catch the fish. Spawning bass often can be the most difficult to catch all year. Many anglers have spent hours trying to catch one fish. When fishing in clear water, where beds are visible, anglers should use lures that are small and subtle. Offerings including floating worms, tube lures, and Texas-rigged worms or lizards. These lures will often mimic the natural predators of the bass eggs. In waters where beds are not visible anglers can use bulky, more active lures including crankbaits, spinnerbaits, and jigs. These lures will produce reaction strikes from spawning bass. The fish will strike attempting to guard the nest from predators.

Post-Spawn Period:

Where to Fish

The post-spawn period is the time after the bass have spawned. This is not any definitive time period, since the spawning stages can overlap. Anglers can determine if the bass are in the post-spawn by searching the shallow spawning areas for schools of small fry, hanging close to vegetation. The male bass will guard the fry for up to 30 days, in close proximity to the spawning grounds. During this time the female bass will remain around the spawning areas and then begin to move to deeper water as the water warms.

The first place that anglers should concentrate on is the spawning areas. Male and female bass will remain here for a few weeks after they spawn. When the bass have left the spawning areas they return to the same areas that were productive during the pre-spawn. These areas include creek channels, points, drop-offs, and depressions.

When to Fish

Post-spawn bass are generally more active due to increased water temperatures. Prime fishing times can occur from dawn to dusk, depending on weather conditions. Bass naturally prefer to feed during low light conditions, so early mornings, evening, and cloudy days are productive times. Sunny days following a few cool ones can also be productive.

What to Fish

Anglers needs a wide variety of lures during this phase of the spawn. These fish can be either deep or shallow depending on the water temperature. Shallow fish can be caught using floating worms; Texas rigged worms, spinnerbaits, and crankbaits. Deep fish can be caught using Carolina-rigged lizards; Texas rigged worms, and crankbaits.

Largemouth bass fishing in the spring can be an exciting time for all anglers. Whether you are an experienced bass angler or a beginner, the feeling you get from seeing an enormous bass just feet from the shoreline is overwhelming. Persistence and patience are key to a successful trip. Following the movement of the bass through the stages of the spawn creates rewarding trips during the spring fishing season. Remember, spawning bass are the lifeline to the population; fish caught during this time should be photographed and released.

New Jersey's Accessible Fishing Sites for People With Disabilities

Visit www.njfishandwildlife.com/sites.htm

An Accessible Fishing Sites list is available to assist anglers whose mobility is impaired. All sites are wheelchair-accessible except for the Musconetcong River in Morris County, where vehicle access is to the shoreline.

Pike of the Passaic River

By Bob Papson, Principal Fisheries Biologist

The Passaic River played an integral role in the development of the first planned industrial city in the nation, Paterson, New Jersey. The river, which later became infamous as one of the most polluted rivers in the country, is now home to a popular sport fish commonly found in pristine waters of northern United States and Canada, the northern pike. The Division began the northern pike stocking program in 1981 at Spruce Run Reservoir and Budd Lake, providing angling opportunities for this popular sportfish including a chance for a trophy size fish. This stocking program became very popular and was expanded over the last 20 years. Currently, the Division stocks 9 waters in the northern section of the state.

Several years following the 1989 stocking of pike in Pompton Lake and the Pompton River, the Division received reports of northern pike being caught in the Little Falls area of the Passaic River. These reports of pike moving downstream taking up residence in sections of the Passaic River was a pleasant surprise and a tribute to the greatly improved water quality in the river. In the last few years there have been numerous reports from local tackle shops of angler success and increased interest in the pike fishery. Northern pike weighing upwards of 20 lbs. have been reported.

The section of the Passaic River where northern pike have been caught extends from the confluence with the Pompton River at Two Bridges downstream below Dundee Dam in the tidal section to the confluence with the Saddle River in Garfield. To reach the lower section of the river these pike had to survive the 80 foot drop over the Great Falls.

Since the river flows through a highly urbanized area, locating suitable access points may be difficult, especially for anglers not local to the area. Local hot spots and access areas can be found at Two Bridges, behind Willowbrook Mall, Little Falls and Paterson areas off McBride Ave., behind Kennedy High School (Paterson), Ryle Ave. below the Great Falls and below Dundee Dam off River Drive in Garfield. Informal small boat access is available at Two Bridges at the confluence with the Pompton River. A more formal boat access exists at Elmwood Park's River Park, providing access to several miles of river known as Dundee Lake. A boat ramp is also located off Park Ave. in Nutley that provides access to the freshwater tidal section of the river.

As a result of the Passaic River's developing fishery from upstream stockings of the Pompton River, the Division has included the Passaic River to our stocking program since 2000. Approximately 5,000 fingerling pike (7 inch average length) were stocked in 2000 and again in 2001 from Horse Neck Road, Fairfield to Elmwood Park. These stockings are expected to expand the fishery upstream into the Great Piece Meadows area and improve the overall fishery by increasing the size of the population of northern pike in the river.

Standard northern pike fishing techniques can be utilized in the river such as live bait particularly large golden shiners and artificial lures like large spinners, spoons and minnow imitation crank baits. The cooler weather periods of the year, spring and fall, are the most productive for this coolwater fish species, especially the larger fish. Local tackle shops can be a great help in recommending locations and proven techniques.

The waters of the Passaic River which once powered mills in Paterson will now, through improved water quality and the Division's stocking program, contribute to another type of business in the area: the recreational angling for one of the most popular game fish in the northern United States and Canada, the northern pike.

Warm Water Fishing: New Jersey's Got It All

By Jim Sciascia, Chief, Office of Information and Education

The New Jersey Division of Fish and Wildlife stocked more than 600,000 fingerling and advanced fingerling warmwater fish in selected ponds, lakes, rivers and reservoirs throughout the state last season. The stockings are part of the Division's new and improved warmwater fisheries program, which is starting to pay dividends from several years of extensive renovations to the Hackettstown Hatchery.

The Hackettstown Hatchery is now a state-of-the-art facility comparable to the Pequest trout hatchery. Warmwater fish that were previously raised in small indoor tanks are now raised in large modern tanks inside a newly constructed aquaculture building that includes a complex system of pumps, filters, heat exchangers and water temperature control systems. The renovations were the result of Green Acres Bond funding.

The Division annually hatches more than 1.6 million warmwater and coolwater fish at the Hackettstown hatchery of which over 600,000 are released as fingerlings and advanced fingerlings in New Jersey's lakes, ponds and reservoirs throughout the year. Starting in the year 2000, the facility reared and released record numbers of game fish fingerlings and advanced fingerlings including 165,000 walleye, 30,000 muskies, 37,000 pike and 75,000 smallmouth, largemouth and hybrid striped bass.

The new aquaculture building at Hackettstown allows the Division to raise fish that are healthier and larger in the same amount of time it took using the old facilities. For example, tiger muskies raised at Hackettstown in 1999 were 8 inches when stocked. The tigers raised in the new building in 2000 were 37% percent larger (11 inches) when they were stocked. Stocking larger fish means more fish in the future for Garden State anglers because the size at stocking is a key factor in how many fish will survive and mature into adults.

Although the renovation of the warmwater and coolwater rearing facilities at the Hackettstown Hatchery are recent, the Division's expansion of its warmwater and coolwater fish program has taken place over the last 20 years. This has resulted in the establishment of five new game fish populations that include tiger muskies, pure strain muskies, northern pike, walleye and hybrid striped bass. The improvements at Hackettstown promise to make the excellent warmwater and coolwater fishing opportunities the Division has already established statewide even better in the near future.

Tiger muskie, a hybrid resulting from the cross of a pure-strain muskellunge and a northern pike, were experimentally reared and stocked by the Division in 1978 to learn the hatchery-rearing techniques for large esocids like the tiger's parents and to gauge how pike and muskies would fare in New Jersey waters. The introduction was successful and over the years tiger muskies have been stocked in eleven water bodies in New Jersey and annual stockings continue to maintain this fishery. Best chances for tangling with a trophy tiger are in the northern half of the Delaware River, at Furnace Lake in Warren County, Lake Hopatcong in Morris County, Rancocas Creek (North and South Branches) in Burlington County and Greenwood Lake in Passaic County. Tigers were stocked in the Manasquan Reservoir in Monmouth County in 1996 and a quality fishery for this species is expected to develop there also.

The northern pike program was initiated in 1981 by the Division of Fish and Wildlife with the stocking of Spruce Run Reservoir and Budd Lake after hatchery rearing techniques for the "northern" were developed from 1978 to 1980 using tiger muskellunge. A total of 15 waters have been stocked between 1981 and 1996. A number of these waters were stocked only once as "surplus production releases". Currently 9 waters (6 lakes and 3 rivers) are stocked on a regular basis. Waters that are currently stocked with northerns are Spruce Run Reservoir, Budd Lake, Farrington Lake, Deal Lake, Pompton Lake, Cranberry Lake, Pompton River, Millstone River and the Passaic River. Fisheries have developed in all these waters with Spruce Run Reservoir, Farrington and Budd Lakes being the most consistent for numbers caught and chances for a large pike over 15 lbs. A 22 lb. pike was captured by fisheries personnel in a trapnet at Budd Lake in the spring of 2000. Cranberry Lake, Pompton Lake, Pompton River and the Passaic River between Two Bridges and Dundee Dam are gaining popularity as northern hot spots.

The Division of Fish and Wildlife's pure strain muskellunge rearing and stocking program began in 1993 following the successful introduction of tiger muskies and northern pike. There are currently four major muskellunge fisheries in the state; Greenwood Lake, Monksville Reservoir, Echo Lake Reservoir and the Delaware River. Additional waters that have recently been stocked and have developing fisheries are Mercer Lake, Mountain Lake and Lake Hopatcong.

The construction of Monksville Reservoir in Passaic County in the late 1980's was the catalyst for developing New Jersey's walleye rearing and stocking program. It was determined early in the developmental stage that the reservoir would provide excellent habitat and water quality for developing a walleye fishery. Walleye fingerlings stocked in 1988 survived and grew at an excellent rate. Over 360,00 fingerlings have been stocked there to date resulting in a good population of walleyes in the reservoir. Population estimates conducted by a mark-recapture study in 1995 and 1996 gave a population estimate of 3,000 adult walleyes averaging 2.5 pounds in weight. A hatchery crew at Monksville Reservoir trapped a walleye weighing over 10 pounds and walleyes up to 8 pounds have been reported caught by anglers.

Through an aggressive stocking program the Division has expanded the number of walleye lakes from one in 1990 at Monksville to four others today, including Swartswood Lake, Greenwood Lake, Canistear Reservoir and Lake Hopatcong. Interest in walleye fishing has greatly increased in the last several years especially at Lake Hopatcong and Swartswood Lake where reports of angler success are routine and fish weighing up to 5 pounds are common. Division hatchery staff also caught a 10 plus pound lunker in trap nets at Swartswood this spring while collecting females that provide the eggs for the stocking program.

The hybrid striped bass, the cross of striped bass and white bass, was introduced by the Division in 1984 to fill a niche in deep lakes with open water not used by other game fish that have large populations of alewife herring and gizzard shad. The first waters stocked were Assunpink Lake (Monmouth), Cranberry Lake (Sussex) and Union Lake (Cumberland). The Division annually stocks this hard fighting hybrid in Lake Hopatcong (Morris), Spruce Run Reservoir (Hunterdon) and most recently, the Manasquan Reservoir (Monmouth).

Warmwater fishing in New Jersey is hot and the rearing and stocking program made possible by the renovations at Hackettstown promise to make it even hotter in the future.

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Winter Trout Stocked Lakes Program—A Success

By Bob Papson, Principal Fisheries Biologist

At this time of the year when many sportsmen are still planning hunting strategies, freshwater anglers "in the know" are planning winter trout fishing trips to freshly stocked lakes throughout the state. Winter trout fishing opportunities began last year with the initiation of the Division's Winter Trout Stocked Lakes Program. Twenty-four lakes geographically distributed throughout the state were stocked in late November in the north and early January in the south, with a total of 12,940 rainbow trout averaging 11 inches in length.

The stocking program was well received by anglers and a resounding success. Reports from anglers indicated that fisherman who took advantage of the winter trout fishing opportunities were very satisfied with the program, and many anglers amassed impressive catches. Harvest results from tag returns received from a subsample of 8 lakes were quite impressive. Six lakes had returns ranging from 38 to 45 percent of the fish stocked. The two largest lakes, Shepherd and Furnace, had lower returns as expected, 12 and 25 percent respectively.

North Jersey anglers enjoyed an early and extended ice fishing season, yet in the south, just having safe ice to fish was amazing enough; but to have an opportunity to ice-fish for trout close to home was a unique experience. In fact, most of the trout caught at Lake Ocquittunk and all trout at Furnace Lake were caught through the ice prior to the trout stocking closure period (March 18). In the south, Rowands Pond had safe ice the entire month of January and the trout were more than cooperative. As expected, trout not caught by the trout stocking closure were available during the normal spring trout fishing season. At several lakes the percentage of tagged trout caught after opening day was equal to or greater than that caught during the winter season. We greatly appreciate the effort of the anglers who returned tags from harvested trout this past year and look forward to continued cooperation this year.

This year's program will include the same 24 lakes (see list below) and possibly several additional lakes. In the north, lakes were stocked just prior to Thanksgiving weekend; in the south, stocking occurs the first week of January. This new time period will provide increased opportunity to anglers that are off from work and school during the Thanksgiving holiday. Tagged trout will be stocked at specific lakes to continue our evaluation of the program. Visit the Division's website at: www.njfishandwildlife.com for stocking dates and locations.

Overall, when winter conditions allowed for fishing, that is, either safe ice where ice-fishing is permitted or open water, anglers braved the winter chill and took advantage of these new trout fishing opportunities. They were well rewarded.

Winter Trout Stocked Lakes

Name	County	Name	County
Birch Grove Park Pond	Atlantic	Mt. Hope Pond	Morris
Mill Pond	Bergen	Speedwell Lake	Morris
Laurel Pond	Burlington	Lake Shenandoah	Ocean
Rowands Pond	Camden	Barbours Pond	Passaic
Shaws Mill Pond	Cumberland	Shepherd Lake	Passaic
Verona Park Lake	Essex	Riverview Beach Pond	Salem
Mullica Hill Pond	Gloucester	Aeroflex	Sussex
Woodcliff Lake	Hudson	Lake Ocquittunk	Sussex
Amwell Lake	Hunterdon	Little Swartswood	Sussex
Hook's Creek Lake	Middlesex	Silver Lake	Sussex
Spring Lake	Monmouth	Lower Echo Lake	Union
Topenemus Lake	Monmouth	Furnace Lake	Warren

Sea Run Brown Trout Program

By Jeff Matthews, Pequest Hatchery Superintendent

Paul Ripperger with a 28 inch, 8 1/2 pound sea run brown trout caught in the Manasquan River during December, 2000.

October, 2001 marked the fifth year of the sea run brown trout program. Numerous confirmed freshwater catches were reported this year between mid October, 2000 and March, 2001. The largest catch to date is a 28 inch 8 1/2 pound fish. After reviewing the catch data and considering the potential of the program the Division of Fish and Wildlife has extended the sea run stocking for another five years. The Pequest Hatchery will continue to raise approximately 30,000 eight-inch brown trout per year for the program. The fish will be stocked during the end of October at the lower end of the Manasquan in brackish water. Anglers are encouraged to report all sea run catches. The success and continuation of the program depends on you. To identify a sea run first check the coloration. Sea runs tend to develop a more silvery color masking most of the body spots after an extended period of time in salt water. Second, look for a fin clip (adipose, pectoral, pelvic). Most of the brown trout stocked for the program have one of these fins clipped. To report your catch call (908) 236-2118 or (908) 637-4173. Our thanks to the Ernest Schweibert Chapter of Trout Unlimited for their assistance with the program again this year.

SEA RUN BROWN TROUT

The New Jersey Division of Fish and Wildlife has stocked brown trout in the lower Manasquan River. Anglers are asked to report all catches of brown trout that exhibit characteristics of a sea run. These fish tend to develop a more silvery coloration, masking most of the body spots, after an extended time in salt water.

The future of this program depends on these fish being caught and reported.

Call Pequest State Fish Hatchery 908-637-4125

or

Lebanon Fisheries Laboratory 908-236-2118

WE NEED YOUR COOPERATION

NEW JERSEY DIVISION OF Fish and Wildlife

Wild Places & Open Spaces

The NJ Division of Fish and Wildlife is proud to announce the publication of ***Wild Places & Open Spaces—A Wildlife Enthusiasts Guide to Finding and Using Public Open Space in the Garden State.*** The publication, designed similar to a road map, offers the outdoors-person a wealth of information on locating and exploring New Jersey's open spaces in a compact and easy-to-read format.

Originally developed as an updated version of the familiar Guide to Wildlife Management Areas, the publication not only contains valuable information on Division Wildlife Management Areas and the variety of wildlife present, but includes state parks, forests and much more! Showcasing a full-color map of New Jersey, more than 700,000 acres of public open space are highlighted with an accompanying wildlife activity grid.

Order yours today by using the form below.

Send check or money order made payable to:
NJ Division of Fish and Wildlife
Wild Places Map
P.O. Box 400
Trenton, NJ 08625-0400
Attn: Carol Nash

Name _____

Address _____

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City _____

State _____ Zip Code _____

Quantity Ordered _____
(price per map: $4 includes shipping)

Total Enclosed $ _____

Sportfish Restoration Program

You probably don't have to be told what *fishing* means to you. You know how much you value time spent in the great outdoors, time with family and friends on the water, the thrill of battling a trophy.

But, you may not realize how much ***you*** mean to fishing. You see, your dollars go directly to help make fishing and boating better in the United States. Without the support of anglers and boaters, there would be a lot less opportunity to enjoy these activities.

And it's as simple as filling your boat with gas, buying your child a new rod, or stocking up on lures before your next trip. You support the Sport Fish Restoration Program through the tax you pay on recreational fishing equipment and boat fuel. Simply by purchasing the things you need for fishing, you are contributing to a partnership which has created one of the most successful conservation programs in the world; a program which has restored fisheries, improved habitat and created fishing and boating access.

Manufacturers pay the tax on the equipment before you purchase it, so you may not have realized your important role in these programs. The bottom line is, every time you buy fishing tackle or boating equipment, you are—in essence—improving fishing and boating.

These are some of the past and present projects funded by the Sport Fish Restoration Program related to freshwater fisheries in New Jersey:

- fish population surveys of dozens of lakes and preparation of fisheries management plans for those lakes
- evaluations of the introduction of alternative warm/cool water species i.e., hybrid striped bass, northern pike, tiger muskie, walleye and channel catfish
- surveys of streams and lakes to determine their trout classification for inclusion in, and protection under, the state's Surface Water Quality Standards
- aquatic education programs, including the AquaticWild Project
- better fishing access with the construction of numerous boat launching facilities such as Union Lake, Menantico Ponds, Tuckahoe WMA
- monitoring fish health in wild and hatchery-reared fish
- annual adult American shad population estimate, using sophisticated hydroacoustic technology, and juvenile shad out-migration index in the Delaware River
- development and implementation of a stream and lake fish habitat improvement program
- investigation of wild brook trout genetics to ascertain if heritage populations inhabit New Jersey streams
- nutrient and plankton study on Round Valley Reservoir to aid in the management of the trophy trout fishery

New Jersey anglers can be proud of the contribution they make to the enhancement and conservation of both our own and the nation's sportfish populations.

For more information go to the U.S. Fish and Wildlife Service's Federal Aid in Sportfish Restoration page at: <http://fa.r9.fws.gov/sfr/fasfr.html#A>.

Round Valley News

By Lisa Barno, Principal Fisheries Biologist

Initially when I sat down to write this article it was to cover the recent creel survey at Round Valley and how the results compared with the survey of 1999. However, as I began to jot down a few notes, a list began to form of everything that took place at Round Valley this past year. So instead of focusing just on the creel survey I decided to present an account of what occurred at the Valley. The first and perhaps most well known fact is the capture of a new state record lake trout. Carl Byrd's previous record of 24 lbs., 14 ounces was replaced by Walter Neuman's 26 pounder caught on July 16. This is also the first state record laker that was a result of natural reproduction and not a Division stocking. The reduced size on lake trout, from 24" down to 20", took effect January 1 of this year. The size change was a result of the 1999 creel survey which documented that over 40% of the lake trout captured were between 20" and 24". This substantiated data from the 1999 fall gill netting that lake trout between 19" and 25" were the most effected by the reduced herring population.

As for the herring, the Round Valley Trout Association (RVTA) found a supplier of 13,500 pre-spawned herring which were stocked this year. Through the cooperative efforts of the RVTA and the Bureau of Freshwater Fisheries more than 120,000 herring have been stocked into the reservoir over the last three years. During the summer bureau staff conducted plankton trolls at night; the number of herring larvae captured was promising. Only time will tell.

On January 18, 2001, Assembly Bill 2793 was adopted which alters the operating plan for both Spruce Run and Round Valley Reservoirs. The bill prevents the lowering of Spruce Run Reservoir beyond 8 feet in elevation from June 1 to August 30 of each year. The intent of the bill is to help reduce the extreme fluctuations in water level during the time period when the recreational use of the reservoir is highest. As a result though, Round Valley will be used more frequently to make up the water demand. In turn water would need to be pumped from the South Branch more often. In response to water from RVR being used more frequently, the DEP Division of Watershed Management, Bureau of Freshwater and Biological Monitoring instituted a nutrient monitoring program. The Bureau of Freshwater and Biological Monitoring is currently taking various nutrient measurements such as nitrogen, phosphorous and *chlorophyll a* at several locations within the reservoir on a monthly basis. The Bureau of Freshwater Fisheries will continue with routine monthly dissolved oxygen and temperature profiles. The Bureau of Freshwater Fisheries has also recently received $30,000 in Federal Aid funding to take a look at the plankton population within the reservoir. We anticipate this project to start sometime next year; it may eventually tie into the Bureau of Freshwater and Biological Monitoring nutrient work.

The rainbow trout tagging study is currently in its second year. The study's purpose is to compare the growth and returns on the kamloop strain of rainbows, stocked by RVTA, versus the Division's strain of rainbow trout. Anglers are reminded that if you release a tagged fish please DO NOT remove the jaw tag. Also, when returning a tag on a harvested fish, information such as the length of the fish and date captured is *imperative* for the data to be useful. Tag return boxes are found at each of the boat ramps. In addition to tagging 3,000 rainbow trout, the Division also tagged 2,000 brown trout in an effort to better document their returns. Angler returns on brown trout have been quite low over the last few years.

And finally we have the Round Valley creel survey. The 2001 survey mimicked the 1999 survey in that every Saturday and Sunday and one weekday was manned each week from May through July. All in all, 3,155 anglers were interviewed, logging in 15,937 hours of fishing at the reservoir. There, 9,926 fish were caught and all but 276 were released. Of the fish captured 2,157 were lake trout, 1349 smallmouth bass and 1052 largemouth bass. Brown trout returns have improved since the 1999 survey. In 1999, 388 browns and 606 rainbows were captured. In 2001, 544 brown trout and 529 rainbows were caught. During both studies anglers were more likely to harvest a rainbow trout than an elusive brown. Many thanks to all the dedicated volunteers who served as creel clerks.

It has been quite an interesting year at Round Valley. For next year the Division will continue to monitor the lake trout population through our fall gill netting program, the tagging study will enter its third year and we will continue with the monthly dissolved oxygen and temperature profiles. We plan to have the plankton study in place and our friends at the Bureau of Freshwater and Biological Monitoring will hopefully continue to monitor nutrient levels.

New Jersey's Innovative Home Study Hunter Education Program

The New Jersey Division of Fish and Wildlife's Hunter Education Unit is proud to announce a major program change scheduled to take effect January 1, 2002. The traditional program will now be offered as a modified home-study video based course, with testing and field sessions conducted at centralized teaching locations throughout the state. The Division recognizes that course scheduling, as currently conducted, can be difficult to fit into the hectic schedules of today's fast moving lifestyles. The Hunter Education student will be better prepared for the instructor-taught field course, resulting in new hunters who are ready to meet the serious responsibilities facing all hunters.

The Hunter Education Unit has developed a videotape/workbook series designed to cover the shotgun, muzzleloading/modern rifle and bow and arrow courses. The video will cover all information currently provided in the traditional course, with additional topics designed to stimulate thinking for situations where ethical, safe/unsafe and shoot/don't shoot decisions must be made. Videotapes and workbooks will be available at local license agents and all Division field offices. A schedule of course dates and testing sites for the entire year will also be available at these locations.

This innovative program change will allow students to learn the classroom material at their leisure and select the schedule for a one-day course, for archery, shotgun, rifle/muzzleloader or all three classes on a date which best suits their own schedule. A review of the home study material will be offered before the mandatory written test. After successful completion of the written exam, the student will be placed with an instructor to complete an extensive field walk and live-fire session where they will learn new information in addition to being tested on information covered in the video.

The Division is extremely proud that our program is continually recognized as one of the top programs in the country. This new program change will ensure the future of hunting in New Jersey will continue and will remain one of the safest outdoor recreational activities.

Look for further information concerning our new program on the Division's web page located at www.njfishandwildlife.com. Individuals interested in becoming instructors with this new Hunter Education program can download an application at our web site, or call 877-2HUNTNJ and request an application. Remember: Pass on the tradition; take a kid hunting.

Chain Pickerel
By Ryan Stainken, 5th Grade

Division's New Fishing Access Areas

By Walter S. Murawski, Supervising Biologist

New Jersey anglers have gained three new stream access sites and one new lake site during the past year through the Green Acres Program. The three stream sections will expand the stocked portions of these favorite north Jersey trout streams. The new lake acquisition will provide additional angling opportunities to the south Jersey angler.

On the South Branch Wildlife Management Area on the upper South Branch of the Raritan River, the Division has received an additional 28 acres of property, adding approximately 0.3 miles of stream frontage to this trout stocked section of the river. This new access is located in Mount Olive Township, Morris County on Bartley Road between Four Bridges and Bartley, approximately 1/4 mile upstream of the industrial complex.

Another parcel of land received by the Division, also on a trout stocked section of stream, is a 50 acre piece of land situated on the Musconetcong River below Beattystown, Warren County. Access to the site is in Mansfield Township on Rt. 57, opposite the intersection with Hazen Road.

Also on the Musconetcong River we received a 67 acre parcel of land that is downstream of our current access site in Bethlehem Township, Hunterdon County. The parking lot for that site can be reached from Valley Road in Hampton or from Shurts Road off Route 632 just north of Asbury.

Rainbow Lake, situated in Pittsgrove Township, Salem County is a 75 acre lake which has been obtained by the Division of Fish and Wildlife during this past year. A biological survey of the lake was done in 2001 by the Division, and information on the fish population as well as considerations for future management will soon be available. From initial appearances this should become a popular bass lake in the future. Currently there is a ramp with a small parking lot available for boaters. Electric motors only are allowed. Rainbow Lake is located on Rt. 56 (Landis Ave.) about 2 miles west of the Maurice River at Vineland.

Walleye
By Douglas Warren, 4th Grade

The new state record laketrout, 26 pounds, caught by Walter Neumann at Round Valley Reservoir.