LOWER RECREATION POND
Fisheries Management
Sport Fish Restoration Document F-111-R-16
April 1, 2007 to March 31, 2008

Who is responsible for fisheries management at Lower Recreation Pond?
The fishing program at Lower Recreation Pond is co-managed by fisheries biologists from Dominion Resources in Richmond, VA and the Virginia Department of Game and Inland Fisheries (DGIF) in Verona, VA (540-248-9360).

What are the responsibilities of the fisheries biologists?
Fish stocking, fish sampling, water quality monitoring, habitat improvement, aquatic weed control, angler access, angler surveys, program development, fishing regulation proposals, coordination between Dominion Resources and DGIF staff, and public outreach.

Who owns Lower Recreation Pond?
Dominion Resources owns the 27-acre impoundment and manages it, the Upper Recreation Pond, and a reach of Back Creek as a public recreation complex. The ponds and renovation of Back Creek, completed in 1986, were mitigation items resulting from the construction of the Bath County Pumped Storage Station. A modern campground, complete with showers, flush toilets, drinking water, and a dump station are located next to the upper lake. A picnic pavilion, grills, and ball fields are also available to the public. A swimming beach is available at this lake. Use of boats is prohibited; only bank-fishing is permitted.

What kind of fish can I catch from Lower Recreation Pond?
Largemouth bass, bluegill, green sunfish, redbreast sunfish, redear sunfish, and channel catfish are the dominant warm water fish species in the lake. Limited populations of warmouth and rock bass are present. Only channel catfish are stocked on an annual basis; the remainder of the species found in the lake sustain populations without the need to stock.

Who needs a license to fish?
A state resident, non-resident, or 5-day trip license for those 16 years and older is required at all times.

Fishing Regulations

Species	Daily Limit	Length Limit
Largemouth bass	5/day	12-15 inch slot
Sunfish	50/day	no minimum size
Channel catfish	5/day	15 inches

How do the biologists check the fish populations in the lake?
Biologists sample fish populations in a variety of ways. Electrofishing is primarily used at Lower Recreation Pond to assess the fish population. Bass and panfish populations have been examined with electrofishing gear annually since 1987. Different types of nets are also employed to target sport fish that live in deep or open water. Channel catfish can be effectively monitored with gill nets, and this technique has been used periodically to study this species. Creel, or angler, surveys are an effective tool in keeping a pulse on the amount of fishing pressure and harvest (fish being removed) related to a water body.

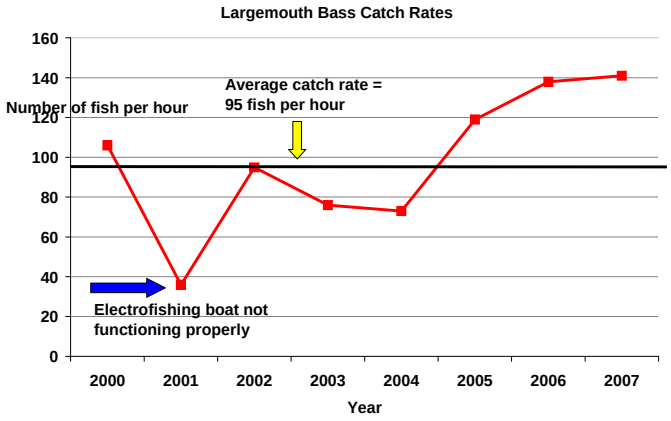
What kind of things do biologists do with the fish after they "shock" them?
Biologists usually target both predators and prey during routine surveys. As they work their way around the shoreline at night with their boat electrofisher, they "dip" whatever bass, panfish, and catfish that get stunned and can be easily netted. In a small lake like Lower Recreation Pond, usually one trip around the lake constitutes a sample. Because of the sheer volume of fish that can be collected in a "round trip", often sub-samples are pulled and then extrapolated to describe the whole population. The entire sampling trip is timed. Fish are identified, counted, measured, weighed, and released unharmed. In some studies, fish are tagged or marked, while others are taken back to the lab for age and growth analysis.

What do biologists do with the information?
First, density or relative abundance of target species is determined. This is calculated by taking the total number of an individual species and dividing by 3,600 seconds (1hour). By normalizing our count to one hour, we can compare the number of largemouth bass from sample to sample, from year to year, from lake to lake. Too many predators can result in an abundance of small, skinny fish. Too few can produce more trophy size fish, but a longer wait between bass bites. The same reasoning applies to prey species. The idea is to achieve balance in a fish population. Slow growth can be found by determining a fish's age and looking at its length at that age. This can be done by counting annuli, or growth "rings", on hard structures such as scales or otoliths (ear stones). Biologists also divide fish into size groups and use simple ratios to evaluate the balance of medium, keeper, and trophy size fish in the population. These are referred to as population indices, and they can be used to monitor species balance over time. Are fish too thin for their length? "Plumpness" can be measured using an index that compares the weight of an individual fish to those of the same size across the U.S. This is called relative weight and a fish scoring 100 would be considered the right weight for its length. Fishing regulations, such as length limits, are usually derived from periodic sampling and from harvest data generated through angler surveys. Often, a minimum length limit, such as 12 inches for bass, is imposed on a lake. Such a regulation is designed to make anglers "throw back the little ones". This type of regulation is fine if you are trying to maintain a large number of small bass. Another type of length regulation is a "slot size limit". A slot limit is meant to protect a group of fish (usually of quality size), and allows anglers to harvest younger fish and trophy fish. This regulation is used to "thin out" plentiful young fish while protecting substantial

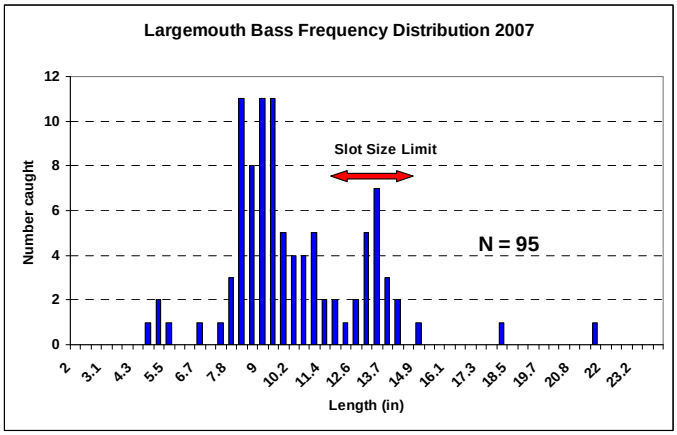
numbers of quality size fish. This is the regulation currently enforced at Lower Recreation Pond.

What does the fish population look like in Lower Recreation Pond?

Largemouth bass: The Lower Recreation Pond is sampled every spring with an electrofishing boat. The average catch rate for largemouth bass is 95 bass per hour. In 2007, it was 141 fish per hour. This rate is considered high. Look at the graph below to see how the largemouth bass catch has varied over time.



As you can see, this lake supports a high density of largemouth bass. But how is the size structure? The PSD, or proportional stock density, is an index used to get a quick glimpse of a fish species' size structure. By dividing the number of stock size bass (between 8 and 12 inches) into quality size (>12 inch) bass and multiplying by 100, a number is derived that allows biologists to further examine sport fish populations. Balanced largemouth bass PSD's should fall between 40 and 70. In 2007, the PSD for this lake was 27, indicating a population of small bass exists in the lake. Examine the following blue bar graph.



It shows the distribution of the catch according to size. Many of the bass are in the protected slot size, but few make it to trophy size. In 2007, the average size in the sample was 10 inches and the largest was 21 inches long. Past age & growth analysis shows that the bass in the Lower Recreation Pond are slow growing. Further, their "condition", or weight for a given length, is sub-par. This is probably due to the infertility of the lake, as well as its short retention time. A short retention time means a quick "flow through", clear water, and somewhat deficient in the area of primary production. Are they fat for their size? No. The average relative weight was 90 (out of 100), which is a bit lower than biologists like. Bass can be caught around any woody debris (brush piles and artificial structure), large rock, or drop-offs.

Panfish: Five types of panfish can be found at Lower Recreation Pond: bluegill, green sunfish, redear sunfish, warmouth, and redbreast sunfish. Bluegill were established as the main prey item in the lake, however populations of redbreast and green sunfish are also present. The bluegill density is high and the population structure is outstanding. The redear sunfish population continues to improve, with a solid PSD of 41. These sunfish grow to trophy proportions and can be located off shore in slightly deeper water than bluegill. Scattered warmouth can be caught as well.

Channel catfish: This popular sportfish has been stocked annually since 1991. Thirteen channel catfish, ranging from 10 – 22 inches long, were sampled in 2007. Channel catfish have done well in this impoundment, so more emphasis on catfish management will occur. In 2003, DGIF began to purchase and stock adult (>10 inch) channel catfish in an effort to improve this segment of the sport fishery. Spawning habitat for channel catfish is lacking, so continued annual plantings, as well as a good food supply, should maintain reasonable numbers of this species. Channel catfish have the reputation of being "trash" eaters. Not so. Channel catfish are very predacious and have been known to even take a fly on the surface. Use live minnows, night crawlers, or "stink bait" fished on the bottom (at night) for best results.

What other kinds of fisheries improvement work has taken place at Lower Recreation Pond?

Dominion Resource biologists and DGIF have used winter drawndowns and grass carp to control the amount of submerged aquatic vegetation (SAV) and algae. Due to the transparency of the water and the pond's relative shallowness, it is difficult to maintain SAV at fishable levels. Eurasian milfoil has recently established itself as the dominant waterweed in this impoundment. Structure, in the form of cedar tree/Christmas tree brush shelters and man-made fish attractors, has been deployed over time.

What does the future hold for fishing at Lower Recreation Pond?

Adult channel catfish will be stocked annually. DGIF will continue to work with the Dominion Resources on lake management issues, especially the development of habitat. We hope you enjoy your fishing experience at Lower Recreation Pond!

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