LAKE TAMS
Fisheries Management
Sport Fish Restoration Document F-111-R-10
April 1, 2001 to March 31, 2002

Who is responsible for fisheries management at Lake Tams?
The professionals responsible for fishing programs at Lake Tams are fisheries biologists at 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 with City of Staunton staff, and public outreach.

Who owns Lake Tams?
The City of Staunton owns the 3.0-acre storm-runoff impoundment. Located in historic Gypsy Hill Park, Lake Tams was much larger during the early 1900's, when a race track and fairgrounds dominated the river bottom. Lake Tams was drained, dredged and rebuilt in 1978. At that time the City of Staunton contacted DGIF, who informally agreed to manage the small lake. The lake is primarily managed as an urban fishery, where families, children, and senior citizens can enjoy angling in their own backyard. Boating and swimming are prohibited.

What kind of fish can I catch from Lake Tams?
Largemouth bass, bluegill, carp, and channel catfish are the primary warm water fish species found in Lake Tams. Rainbow trout are stocked five times from October – May. Other odd fish species that have been found in the lake are smallmouth bass, goldfish, black crappie, bullhead catfish, longnose gar, and golden shiner. All of these fish have been introduced by well-meaning anglers or by people unloading their aquariums or bait buckets.

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. A trout license is required from October 1 through June 15. **No trout license is needed from June 16 – September 30**. A five-day trip license is valid from June 16 – September 30.

Fishing Regulations

Species	Daily Limit	Minimum size
Largemouth bass	5/day	12 inches
Sunfish	50/day	None
Channel catfish	3/day	15 inches
Trout	6/day	7 inches
Carp	None	None

How do the biologists check the fish populations in the lake?
Biologists sample fish populations in a variety of ways. Electrofishing is used at Lake Tams to assess the warm water fish population. Bass and panfish populations have been examined with electrofishing gear periodically from 1981 to 2001. Different types of nets can be employed to target sport fish that live in deep or open water. Channel catfish can be effectively monitored with gill nets, but this technique has not been utilized here due to the size of the lake and the presence of trout.

What kind of things do biologists do with the fish after they "shock" them?
Biologists target both predators and prey. As they work their way around the shoreline with their boat electrofisher, they "dip" whatever bass, panfish, catfish, and trout that get stunned and can be easily netted. In a small lake like Lake Tams, usually one trip around the lake constitutes a sample. The entire sampling trip is timed. Fish are identified, counted, measured, weighed, and released unharmed. In specific studies, some fish are tagged and 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 (1 hour). By normalizing our count by 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 longer waits between catching a bass. The same reasoning applies to prey species (like sunfish). 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 look at size class balance in the lake. 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 that is 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 larger size), and allows anglers to harvest younger and trophy fish. This regulation is used to "thin out" plentiful young fish while protecting substantial numbers of quality size fish.

What does the fish population look like in Lake Tams?
Largemouth bass: The 2001 catch rate for this predator was around 137 fish per hour. This rate is considered high. In contrast, the lake was sampled in 1999 to see if any of the original stocking survived. The catch rate in 1999 was 30 fish per hour.
The average size bass in 2001 was 11 inches, with the largest measuring 15 inches. Is this level of predator too high? Only if it slows down growth and reduces the food supply in the lake. Although there are plenty of bass in the lake, most are small. Since the average size stocked bass in 1998 was 9 inches, it is

probable that the our predators (largemouth bass) are growing slow. Are they "fat" for their size? Not really. The average relative weight was 90 (out of 100). This is another sign that the lake may be "predator heavy". Bass can be caught near weed beds, rocky outcrops, and around tree limbs that have fallen into the lake.

Panfish: Three types of panfish were found in Cave Mountain Lake in 2001. Green sunfish are present, probably introduced by well-meaning anglers. Over 100 bluegill were stocked along with the bass in 1998. Bluegill are reproducing, thus providing good forage for the bass. However, quality size (over 6 inches) bluegill are not abundant at this time. Finally, redear sunfish, commonly known as "shellcrackers", were stocked into the lake in 2001, so they should start showing up on the end of lines in two years.

Channel catfish: This popular sportfish was stocked in fall, 2001 by the Forest Service. Channel catfish have the reputation of being a "trash" eater. No 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 for best results.

What other kinds of fisheries improvement work has taken place at Cave Mountain Lake?

Other than stocking and monitoring fish populations, little has been done to improve fishing. Future activities may include adding brush fish attractors and creating some trail access to the lake from the road.

What does the future hold for fishing at Cave Mountain Lake?

There now exists a thriving warm water sportfishery in Cave Mountain Lake, where there was none a few short years ago. In order to promote family fishing and keep license requirements to a minimum, trout stocking will not be a part of the fishing program at this time. DGIF will continue to work with the Forest Service on lake management issues that will benefit campers, day visitors, and local residents alike. We hope you enjoy your fishing experience at Cave Mountain Lake!

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