



The Conservation Strip

CONSERVING NATURAL RESOURCES FOR A BETTER ENVIRONMENT

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Guess Who Came For Dinner?

Did you realize that the top aquatic predators of our local lakes, streams, and rivers are non-native? That's right, when Virginia was first settled by Europeans, there were no largemouth or smallmouth bass in Fauquier County. While they are not native, no one would consider them as invasive.

The topic of invasive and non-native species is quite common in the media these days. Gardening magazines are full of articles that promote native plant species. The metropolitan D.C. area is at the megacenter of the snakehead fish invasion, and almost every year, some new plant or animal becomes a serious threat.

Invasive species are usually defined as non-native species whose introduction does, or is likely to cause economic or environmental harm, or harm to human health. On the other hand, naturalized species are defined as non-native species that have adapted and grow or multiply as if they were native.

The waters of Virginia provide great examples of invasive and non-native fish species. Carp are considered invasive by most folks because their feeding habits disturb the bottom and cloud the water, however, hardcore carp fisherman may beg to differ.

The snakehead received a lot of attention when it was found in the Potomac. Though out of the headlines, it is being studied in depth by biologists from the Virginia Department of Game and Inland Fisheries. So far, they are finding that snakeheads have very specific, preferred habitat requirements and feed primarily on non-game fish. They haven't turned the Potomac into a biological desert, yet, but it will take years to determine their full effect.

Large-mouth and small-mouth bass were stocked throughout Virginia in the 1800's.

The large-mouth was originally a more southern species, and found only in extreme southeast Virginia, while the smallmouth was only found in the watersheds of southwest Virginia.



Believe it or not, the smallmouth bass is not native to the Rappahannock or Shenandoah River watersheds, where it is now the top predator and backbone of an economically important sport fishery.

In our mountainous areas, brook trout are the only native species of trout. However, most of the trout caught by fisherman in Virginia are rainbow or brown trout. Rainbows are from the West coast while brown trout are from Europe. Without the rainbow and brown trout, there would not be much of a trout fishery in Virginia. Though most of the fish are stocked, there are areas where they have established breeding populations. But most importantly for trout fisherman, the rainbows and browns can survive in waters that are not suitable for brook trout. In areas where they co-exist, the rainbows and browns are more competitive, and there are efforts to maintain pure brook trout populations in many headwater streams.

Soil and Water Conservation Districts in Virginia are eager to work with landowners to protect water quality, whether it is to enhance coldwater streams that are home to trout, or local farm ponds full of bluegill.

Pond Management Starts Now

By: Tim Mize, Extension Agent

The significant rainfall we have had this spring has raised hopes for an excellent growing season. Another benefit is that many of our local ponds are now fully charged. The down side is that the rain has deposited lots of nutrients into these same ponds. Many of the problems that may emerge this summer, will be the result of processes that started much earlier in the year. If this year is like any other, algae and aquatic weeds will once again be the number one management obstacle.

Just as on land, plants are a necessary and essential component of a healthy water environment. Aquatic plants photosynthesize just like their land counterparts, producing new growth and oxygen. Plants like algae form the base of the food chain, providing the forage for zooplankton, which are in turn eaten by small fish, small fish by larger fish, continuing on up the food chain. The problems arise when these plants produce excessive growth, causing barriers to recreational activities, irrigation use, or a worst case scenario like a fish kill. The goal to a healthy pond is achieving balance.

The first step in pond management should be prevention. Although, it may be too late for many pond owners, pond construction and design can play a significant role in controlling aquatic weed growth. Many submerged and emergent weeds arise because of shallow water levels. Deep ponds with steeply sloped edges prevent growth of rooted pond plants by preventing sunlight from reaching the bottom of the water column. Many of our ponds here in Fauquier can be quite fertile because of the amount of nutrients that enter the water. Maintaining a strong sod of grass around the perimeter can catch and trap those nutrients before they reach the water. The taller you allow the sod to remain the more effective it will be. Also, taller plants like sedges around the edge may discourage Canada geese from colonizing the pond. It is important that if you must mow around the pond that you prevent the grass clippings from entering the water, as the clippings will only add to the nutrient load. Livestock can also be a significant source of pond nutrients, and restricting their access will improve water quality and overall pond health. If the pond is the major water source for the animals, the John Marshall Soil and Water Conservation District can assist in the design and construction of alternative systems.

There is likely to come a time in the life of the pond when some form of treatment will become necessary. The most successful treatment programs will involve ponds that have low populations of actively growing target plants.

Water temperature should be 65 degrees or above, but the cooler the water the more dissolved oxygen it will contain. In Fauquier County, these conditions are usually present in late spring or early summer. If using a mechanical control method like pulling or raking, populations should be low enough to make the task much less daunting. If a chemical control method has been chosen, the lower plant population and lower water temperatures will increase the effectiveness of the treatment and will also greatly reduce the chance of a fish kill. As I stated earlier, rising water temperatures in the summer combined with high nutrient levels may cause aquatic plants like algae to take over the pond. While these plants are producing oxygen during the daylight hours through photosynthesis, oxygen is being depleted at night by the living biomass. Most fish kills are the result of oxygen depletion. The algae will eventually deplete the nutrient levels in the pond, most likely causing a die off. The dead algae become a nutrient source for other organisms like bacteria and fungi which use up the oxygen through their own respiration and we end up with an aquatic system that is low in oxygen, leading to a potential fish kill. This is the same scenario when we treat ponds with herbicides in the late summer. If the pond experienced a problem last year, prevention and treatment methods in the spring will be the safest and most effective. There are many herbicides labeled for aquatic use. Contact the Extension Office at 341-7950 for the proper chemical and rates.

Another effective method that tends to fall somewhere between prevention and treatment is the use of dyes. The goal of dyes is to simply reduce the depth of sunlight in the water column. They are very effective for submersed, rooted plants. They will have little to no effect on mat forming algae. They will also not effect emergent plants unless the dye is applied early while the plants are young and deep in the water column. For those looking for a more organic method of algae control barley straw may be an option. While results from research in this country have not been consistent, there are certainly many testimonials to its success. In studies that have shown algae control it appears to be algistatic rather than algicidal. Barley straw has never been registered as a pesticide so it can only be used as a home remedy by the owner of privately owned pond. To utilize barley, the bales should be broken apart and placed in netting to allow circulation of water through the straw. The recommended dosage is 225 pounds per acre of water. It appears to work best in ponds no deeper than 5 feet. Apply the straw early in the season before algae growth and replace it in 6 months.

District Manager Celebrates 25 Years

Jennifer Hoysa, District Manager of the John Marshall Soil and Water Conservation District recently completed 25 years of service. A lot of things have changed with the District over the year's, starting with the physical location of the office.

When she started work in April of 1984, the office was located on Culpeper Street. It then moved to Lee Highway on the by-pass (in the old DMV building, which was recently torn down). From Lee Highway, the office moved to the location of the current Sheriff's Office, then to its present location on Alexandria Pike.

In 1984, there were only two District employees, Mrs. Hoysa (formerly Mrs. Krick), and Jay Marshall, who now works for the Department of Conservation and Recreation. The District Conservationist was Harry Jones, a name familiar to long time farmers in the County. The District Conservationist is a federal position housed with the John Marshall SWCD District, and Mrs. Hoysa has worked with seven DC's over the years.

Mrs. Hoysa remembers that employees could still smoke in offices back when she started, and the sight of Mr. Jones blowing smoke rings from his ever present cigar is etched in her mind.

Working with farmers to install conservation practices has always been a priority of the District. In 1985, the District received and allocated about \$50,000 in cost share

incentive funds to help farmers install conservation practices. In the last fiscal year, the District received and allocated over \$400,000 for cost share practices.

In the 1980's, the District still worked with farmers to design and build farm ponds, and to install drainage tiles in wet fields. Neither practice is carried out today.

Computers have also revolutionized the way the District works. There are still old file folders full of hand drawn maps and black and white aerial images with hand drawn features.

In 1994, the District started doing Erosion and Sediment inspections for Fauquier County and the staff swelled to as many 12 people during the height of the building booms. In 2008, Fauquier County took back the E&S program, and currently there are six employees on staff, four full time and two part time.



The Conservation Strip is a quarterly publication of the **JOHN MARSHALL SOIL AND WATER CONSERVATION DISTRICT**, 98 Alexandria Pike, Suite 31, Warrenton, VA 20186

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The John Marshall SWCD District conducted the annual **Third Grade Farm Tours** for almost 800 students, teachers, and chaperones from nine elementary schools in the county on April 23 & 24. **Choice Longhorns** in Bealeton, owned by Lee and Debbie Sherbeyn, and **Baerback Farms** in Orlean, owned by Mack and Peggy Baer served as hosts. Both farms hosted about 200 students each day. Shown on the left is dairyman Morgan Ott who brought dairy cows to Choice Longhorns. On the right is Peggy Baer showing horses and tack to the students. Personnel and volunteers from John Marshall SWCD, Prince William SWCD, Fauquier Extension, Fauquier Master Gardeners, and the host farms assisted with the tour.

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