

Riparian Buffers:

THE NATURAL AND COST-EFFECTIVE WAY TO PROTECT THE WATER SUPPLY FOR GENERATIONS TO COME.

There has been a lot of discussion about the maintenance of the “Riparian buffers” around the lakes. In fact, many have asked us questions about the purpose that these areas serve.

Riparian buffers are vegetated areas near streams and other water bodies that protect the water and streambanks from pollution, erosion, and sedimentation from stormwater runoff. The SWS property that surrounds all the reservoirs are the “Riparian Buffers.” That is why SWS is working with adjoining property owners to protect and enhance these vital areas.

Riparian buffers provide countless benefits to the water quality of our streams and drinking water reservoirs. They filter, regulate, stabilize, cool, condition, and house wildlife—all while providing a uniquely beautiful landscape aesthetic. Any buffer is better than no buffer, and the careful installation and maintenance of suitable native plant species can provide better-quality water for many years to come.

Around Lake Bowen, Lake Blalock, and Municipal Reservoir #1, the quality of our drinking water supply is directly related to not only the reservoirs themselves, but the streams and rivers that feed them. Maintaining vegetated buffers around the reservoirs and their tributary streams keeps excess sediment from shortening the life of the reservoir. Vegetation helps filter out the nutrients and chemicals from fertilizer and pesticide applications by nearby residential properties reducing the potential for algal blooms,

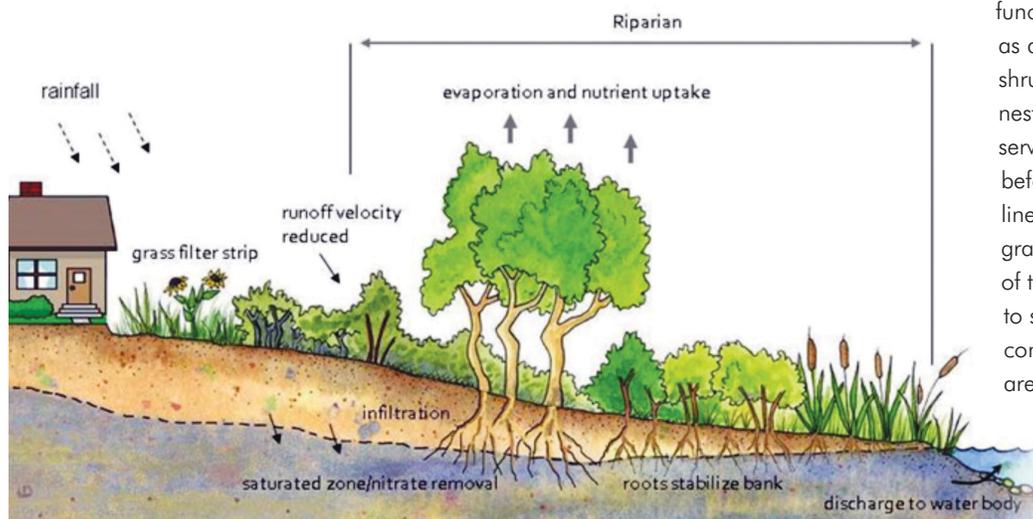
de-oxygenation of the water and taste-and-odor issues in the drinking water.

By reducing the erosion, riparian buffers help prevent the eventual sedimentation and siltation of the reservoirs—two factors that can have decidedly negative impacts on the useful life of the reservoirs and their dams. Sediment run-off due to soil erosion is one of the biggest challenges that water utilities such as Spartanburg Water face. Not only does turbid water make water treatment more challenging, it makes the cost of that treatment much more expensive for the community that we serve.

Riparian buffers intercept sediment, nutrients, pesticides, and additional potentially hazardous materials in stormwater runoff while simultaneously stabilizing the shoreline and providing habitat for aquatic species and birds. Wooded riparian buffers provide habitat and vital nutrient input for the stream/lake and surrounding ecosystem. These buffer areas can be natural or man-made, and provide—in addition to the water quality benefits outlined above—a number of additional habitat benefits to the surrounding areas as well. The maintenance of these riparian regions around source-water streams and drinking water reservoirs is a pivotal part in preserving the integrity not only of the water itself, but the adjacent wildlife populations and land as well.

The ideal riparian buffer consists of fully-developed and functioning zones. The area closest to the water is a forested area. This zone

functions mainly to provide shade and act as a bank stabilizer. In the next zone, native shrubs provides habitat for wildlife including nesting areas for birds. This zone also serves to slow and absorb contaminants before they reach forested area. The first line of defense against contaminants is a grass filter strip. This zone consists mostly of tall native grasses and acts primarily to slow water runoff and begin to adsorb contaminants. Wider, forested buffer areas are much more effective in the long run



CONTINUED INSIDE >>>

Lake Drawdown Continues

Spartanburg Water initiated a lake level drawdown project for both Lake Bowen and Lake Blalock on December 1, 2018. The drawdown period is scheduled to remain in place through the end of February 2019.

The drawdown provides our adjacent property owners an opportunity to examine the shoreline and perform other routine maintenance. Several property owners have

taken advantage of the opportunity to apply for a variety of permits during this drawdown period to work on their docks and/or work on some shoreline stabilization initiatives.

Recent periods of heavy rain and snow has caused the levels to fluctuate during the drawdown process. Any additional precipitation may require a longer period of time to reach our target level for Lake Bowen. Upgrades to the dam and water control structures at Lake Blalock make it easier to release water at higher rates compared to existing valve and pipe control structure at Lake Bowen.

While we are hopeful that the weather will break long enough for us to achieve and maintain a target drawdown level on Lake Bowen, we are keeping our eyes to the skies in anticipation of a wetter than normal precipitation pattern.

For more information on the lake drawdown project, visit www.spartanburgwater.org/or call our Lake Bowen Wardens' office at (864) 592-2240.

The target range is to lower the level 2.5 to 3 feet for Lake Bowen and Lake Blalock.

Although not required, we continue to recommend that any boats be moved from the water during the drawdown period. Our wardens can answer any specific questions regarding boats on the lake.

Making the Mark:

BENCHMARK STUDY WILL IMPROVE SURVEY ACCURACY

Our team has embarked on a project that will improve existing benchmarks and add a number of new benchmarks at various locations around Lake Bowen, Lake Blalock and Municipal Reservoir #1 to aid in survey accuracy and property line delineation. This project is a direct result of valuable feedback from lakeside residents, property owners and realtors related to questions concerning property line locations.

To complete this project, Spartanburg Water has contracted with Lavender and Associates Surveyors.

The term benchmark typically refers to any item utilized to mark a point as a surveyor's elevation reference—but it also ensures the height is related to verifiable data that is universally available, including Mean Sea Level. Usually, bronze or aluminum discs are set in stone or concrete to provide a permanent location for the benchmark.

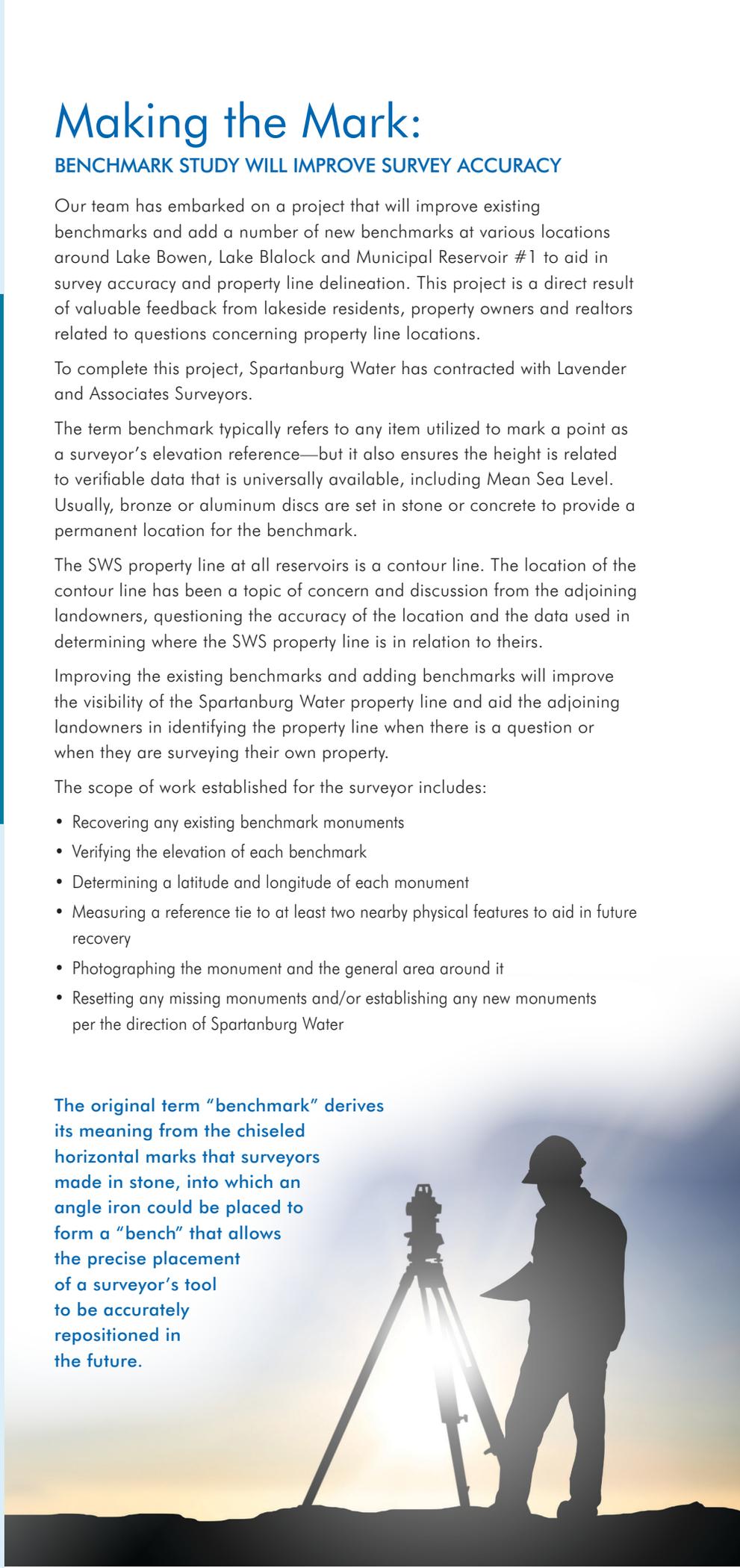
The SWS property line at all reservoirs is a contour line. The location of the contour line has been a topic of concern and discussion from the adjoining landowners, questioning the accuracy of the location and the data used in determining where the SWS property line is in relation to theirs.

Improving the existing benchmarks and adding benchmarks will improve the visibility of the Spartanburg Water property line and aid the adjoining landowners in identifying the property line when there is a question or when they are surveying their own property.

The scope of work established for the surveyor includes:

- Recovering any existing benchmark monuments
- Verifying the elevation of each benchmark
- Determining a latitude and longitude of each monument
- Measuring a reference tie to at least two nearby physical features to aid in future recovery
- Photographing the monument and the general area around it
- Resetting any missing monuments and/or establishing any new monuments per the direction of Spartanburg Water

The original term "benchmark" derives its meaning from the chiseled horizontal marks that surveyors made in stone, into which an angle iron could be placed to form a "bench" that allows the precise placement of a surveyor's tool to be accurately repositioned in the future.



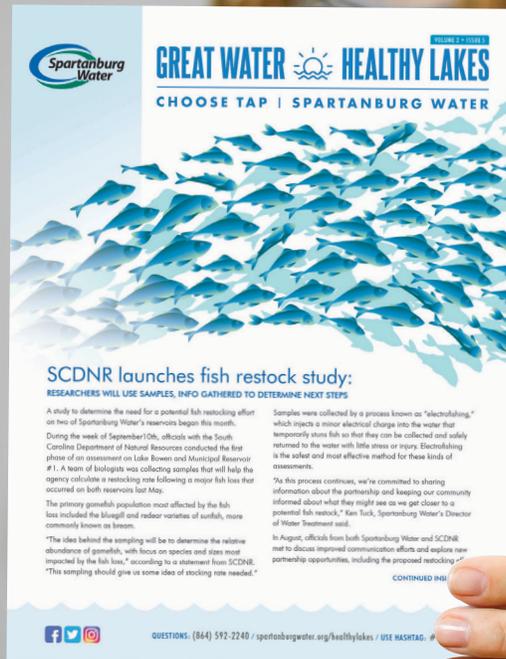
Consider the Source...

OF YOUR WATER, AND YOUR INFORMATION

We created the Healthy Lakes newsletter to keep our community informed about important happenings in the watershed.

Our number-one priority continues to be the fulfillment of our mission to provide quality water in a reliable manner, and this mission includes keeping you informed and sharing information to ensure accuracy and transparency. At times, others can share incorrect information, resulting in confusion and miscommunication about important issues.

If you ever have questions or are concerned about something you've heard about the lake or our watershed management practices, please reach out to our team. We dispense facts with the same care and quality that we dispense our drinking water to you and more than 200,000 in our community.



RIPARIAN BUFFERS CONTINUED...

than narrow, grassy regions. Tree roots reach deeper and wider than their shrub and grass counterparts, and thus are able to trap much greater quantities of pollutants and nutrients.

The presence of riparian buffers can also offer a number of habitat benefits. First and foremost, the vegetation serves as a source of crucial habitat for a number of species. By maintaining a naturally vegetated area around key water bodies, species that would otherwise not have enough habitat are able to persist even in the face of continued agricultural and residential development.

Lake Blalock has a fairly consistent wooded buffer around its banks, consisting of a healthy mix of trees, woody shrubs, and grasses providing significant stormwater runoff reduction and treatment and serves as an essential habitat for native wildlife such as the Bald Eagle or Osprey.

The well established riparian buffer that surrounds Municipal Reservoir #1 holds the banks in place and the trees, shrubs and grasses provide excellent stormwater runoff treatment for nutrients and sediments as well as wildlife habitat.

Lake Bowen, being the most heavily developed of our three reservoirs, has the least developed natural riparian buffer. However, through cooperative, strategic planting and planning, it is possible to create and sustain a healthy riparian buffer while also maintaining existing aesthetics. Selection of native tree and shrub species offers the greatest opportunity for native wildlife species to endure and establish successful populations, and also increases the likelihood of successful bank stabilization and nutrient filtration. Trees such as red maples, dogwoods, hickories, and elms offer excellent shade, beautiful fall foliage, and efficient nutrient filtration. Native shrubs and grasses such as azaleas, hydrangeas, and muhly grass, among others, provide beautiful landscaping aesthetics while also attracting a great number of birds, butterflies and other friendly wildlife.

SWS desires to simplify the processes, procedures and guidance to protect and enhance the natural vegetated buffers throughout the watershed.

PRESS PAUSE

The Press Pause program started October 1, 2018, and continues through December 1, 2019.

During this 14-month period, adjacent property owners may request to "Press Pause" and establish a baseline of permits for the improvements below the 827' Spartanburg Water property line.

Anyone who signs up before March 30, 2019 will receive a 25 percent discount on all associated permits, licenses and agreements. Adjoining landowners wishing to participate in this program may do so by registering in one of the following ways:

- **Email:** presspause@spartanburgwater.org
- **Voice mailbox:** 864-580-2095
- **Register online:** www.spartanburgwater.org
- **In person:** Stop by the Lake Bowen office and complete a form.

The Bald Eagle:

AMERICAN ICON MAKES ITS HOME ON OUR LAKES

Though the bald eagle is an American icon, many are unaware this majestic bird of prey can be found right outside their door.

The bald eagle lives throughout the majority of North America, including Canada, Alaska, and northern Mexico. A species of raptor, the bald eagle lives near large bodies of open water—including Lake Bowen and Lake Blalock—and can be seen swooping down to snatch fish from the water with its large talons.

The term “bald” is actually a misnomer; these birds are actually brown with a white head and tail and feathered across their entire body. Feather color and pattern is the same for both males and females, and the size is typically the only discerning factor between sexes with the female being the larger of the two.

Typically, bald eagles nest in trees, preferring tall pine trees that allow for good visibility. These nests are some of the largest of all avian nests—they can be up to 6’ wide and 4’ tall, or roughly the size of a Volkswagen Beetle.

Even with both parents contributing to their construction, these massive nests can take up to three months to build. Once constructed, however, these nests are utilized for many years by the same nesting pair and can be a great place to spot your local national birds.

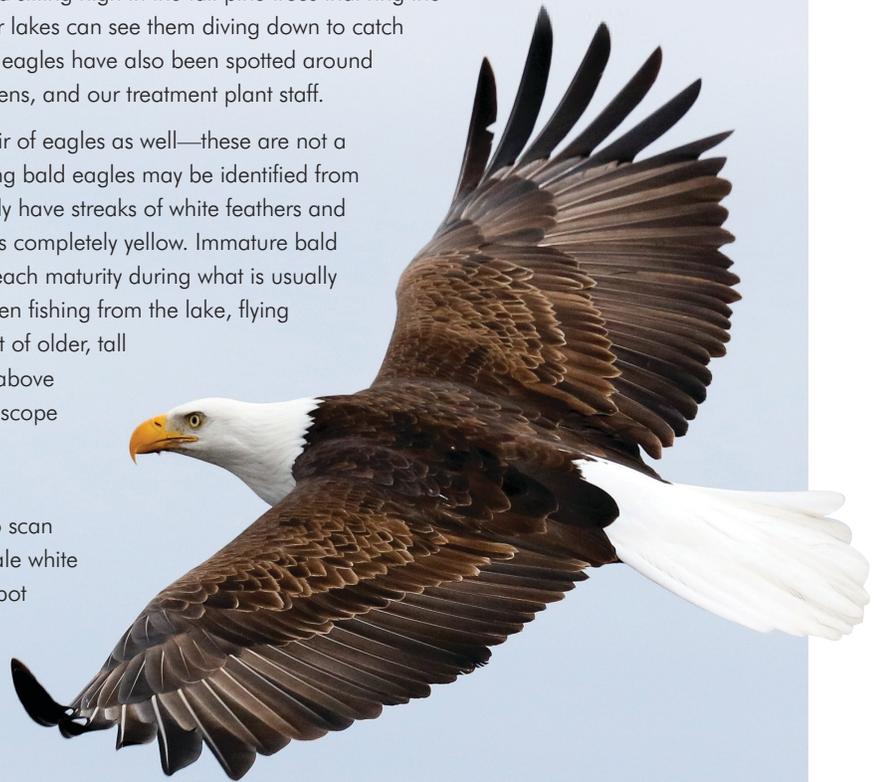
In the wild, the bald eagle typically lives around 20 years, with captive birds known to live up to twice that span. In the mid-1900s, the species suffered a severe decline due to abuse of pesticides such as DDT, loss of nesting habitat and tall trees and excessive shooting.

At one point, there were only 412 nesting pairs in the 48 contiguous states. In the years since, the population has made an impressive recovery, however, and was officially delisted from the U.S. Fish and Wildlife Service’s list of endangered and threatened wildlife in 2007. Now, bald eagles can once again be seen across the skies near large lakes, rivers and estuaries.

Locally, we have a few different bald eagles living around our reservoirs. There is at least one nesting pair living on Lake Blalock, and these birds can periodically be observed sitting high in the tall pine trees that ring the lake. Lucky landowners and recreational users of our lakes can see them diving down to catch fish from beneath the surface of the water, too. Bald eagles have also been spotted around Municipal Reservoir #1 by residents, our Lake Wardens, and our treatment plant staff.

On Lake Bowen, we have recently been seeing a pair of eagles as well—these are not a nesting pair, but rather a juvenile and an adult. Young bald eagles may be identified from their dark brown plumage and black beak—they only have streaks of white feathers and the barest yellow tip on their beak, while an adult’s is completely yellow. Immature bald eagles do not obtain their adult coloring until they reach maturity during what is usually their fifth year. The Lake Bowen eagles have been seen fishing from the lake, flying around the perimeter, and perching in an assortment of older, tall trees. Sometimes they can be seen high in the skies above the park, wheeling through the air overhead as they scope out their next meal.

Next time you are visiting one of our local lakes—or stepping outside your back door—take a moment to scan the skies and search the trees for a sign of that tell-tale white head and dark body. You may very well be able to spot one of the eagles going about its business—that is, if it doesn’t spot you first.





DAM SAFETY BARRIER

DID YOU KNOW THAT THE UNITED STATES DEPARTMENT OF HOMELAND SECURITY CONSIDERS DAMS AS ONE OF THE 16 CRITICAL INFRASTRUCTURE SECTORS IDENTIFIED IN THE NATIONAL INFRASTRUCTURE PROTECTION PLAN? SPARTANBURG WATER IS CONTINUALLY LOOKING FOR WAYS TO SECURE ITS CRITICAL INFRASTRUCTURE TO ENSURE UNINTERRUPTED WATER SUPPLY TO OUR COMMUNITY.

The South Carolina Department of Natural Resources (SCDNR) has installed and maintained “exclusion zone” buoys upstream of the Lake Bowen Dam for decades. Spartanburg Water recently installed a “second line of protection” for its Lake Bowen Dam. SWS installed an uninterrupted double cable barrier behind (downstream) the SCDNR buoys ahead of the Bowen Dam. The dam barrier buoys and signs were developed in compliance with US Coast Guard standards and guidelines, and each utilizes correct symbols as a navigation aid for waters in the United States and Canada:

- **Danger:** A diamond shape alerts boaters to hazards
- **Restricted Operations:** Markers with a circle indicate areas with regulated operations



- **Exclusion:** A diamond shape with a cross means boats are prohibited from the area
- **Information:** Markers with a square provide helpful information such as directions, distances and locations

Each year, our lake wardens retrieve a number of watercraft on the reservoirs that have drifted away from their dock, boat lift or mooring. Typically, these occurrences are higher during times when the levels of the reservoirs are fluctuating. Boat and Personal Watercraft owners are encouraged to always secure their watercraft properly to ensure they do not float away from their mooring.

For more information on boating safety on our lakes, or to sign up for a boating safety class, please contact the lake wardens’ offices.

Your Land Access Agreement Questions Answered

IN RESPONSE TO A HIGH VOLUME OF STAKEHOLDER FEEDBACK AND INPUT FROM ADJACENT LANDOWNERS, SPARTANBURG WATER HAS MADE A NUMBER OF IMPROVEMENTS TO THE PERMITTING PROCESS, INCLUDING THE INTRODUCTION OF THE LAND ACCESS AGREEMENT—A UNIVERSAL AGREEMENT THAT PROTECTS AND PRESERVES YOUR RIGHTS AS A PROPERTY OWNER ON BOTH LAKE BOWEN AND LAKE BLALOCK.

The Land Access Agreement is a new and improved approach to the Private Structure Agreement that served as the original paperwork to standardize and govern use of the buffer zone when partnerships for private structures, like docks, walkways and fire pits, were requested by one of our neighbors.

Because our lakes are the drinking water reservoirs for the community, there are rules and regulations that we must have in place to protect water quality. However, many of you and your neighbors shared a number of questions and concerns about how information is recorded, not to mention the efficiency of the permitting process itself.

While this agreement is newly structured to reflect improvements requested by you and your neighbors, signed agreements have been in place for decades. This ensures that clear terms and guidance exist in the management of property around the lakes—for both you and Spartanburg Water.

Improvements to this agreement were made at the request of property owners and based upon the useful feedback many lake-area residents provided in a number of listening sessions that were convened around the watershed in 2018.

Does everyone need to sign a new Land Access Agreement?

Yes—and this is to protect you and your investment, all while allowing Spartanburg Water to continue performing its responsibilities to manage the drinking water resources. This document is required of all individuals seeking permits around Spartanburg Water reservoirs and documents their understanding of Spartanburg Water’s ownership and management approach to the property below the 827’ and 720’ contour lines.

What is the purpose of the Land Access Agreement?

The agreement order clearly establishes the mutual rights and obligations of Spartanburg Water and adjacent property owners regarding use of Lake Bowen and Lake Blalock. Property owners are required to complete a (one-time) Land Access Agreement upon issuance of permits and licenses.

Spartanburg Water owns and controls all of the property around the shoreline of Lake Bowen, Lake Blalock and Municipal Reservoir #1. While it is “publically-owned property” SWS has a duty to manage and control all of its property. There is no implied “public access” to property that is not designated as

“public access property” and Spartanburg Water controls access to certain areas, which includes the property around each of the water supply reservoirs. Spartanburg Water is absolutely willing to give adjoining landowners access to certain “reservoir” property through the proper execution of a Land Access Agreement.

If Spartanburg Water is a public utility, why do I need permission to access public property?

Although Spartanburg Water System is a public utility, there is no implied access to the property owned by any public entity. Unrestricted access to utility property would mean that anyone—including outside lake interests—could access and even develop on the buffer property. The LAA protects you and Spartanburg Water from unauthorized usage.

How can the Land Access Agreement help me as a landowner?

The Land Access Agreement protects the adjoining landowners from other unauthorized public access to property that adjoins private residential property. Spartanburg Water recognizes that adjoining property owners have a vested interest in the lake as well as the SWS owned property that actually abuts these drinking water reservoirs. If all areas of the lake were designated as “public access property” it would be nearly impossible to control who accesses these areas. The LAA defines a clear agreement of terms and conditions regarding the use of these areas by adjoining property owners (by permission) and subsequently allows SWS to identify limited “public access property” in other areas of the lake for the general public to access—public landings, parks, etc.

For more information on Land Access Agreements or to apply for an LAA, please contact the Lake Bowen Warden’s Office at 864-592-2240 or the Lake Blalock Warden’s Office at 864-578-5442. Additional information, including a downloadable pdf of the Land Access Agreement is available at <https://www.spartanburgwater.org/>.



Property Lines:

MUNICIPAL RESERVOIR #1 AND LAKE BLALOCK



Spartanburg Water is tasked with the responsibility to protect and preserve water quality in our drinking water reservoirs—and that includes understanding and defining property lines.

Locations of a property line are recorded in the legal description of a piece of land. Both Municipal Reservoir #1 and Lake Blalock reservoirs have property boundaries defined by contour elevations above Mean Sea Level (MSL).

The elevation above Mean Sea Level (MSL) that constitutes the property line for SWS around the reservoirs is 780 feet above MSL for Municipal Reservoir #1 and for 720 feet above MSL for the Lake Blalock reservoir.

In 1926, construction of a dam was completed on the South Pacolet River and Municipal Reservoir #1 was formed. The Lake Blalock reservoir was created in 1983 to be an additional drinking water source for the Spartanburg community. Between 1973 and 1977, Spartanburg Water System purchased property along the Pacolet River up to the 720' MSL contour line.

Many people are familiar with establishing a property boundary through what is termed "meets and bounds," but using an MSL elevation is a more common method when bodies of water and flood levels are identified. Unless the physical condition of the land changes, either through erosion or grading, the original property line for SWS Municipal Reservoir #1 and Lake Blalock reservoir does not move. The 720' MSL contour at Lake Blalock reservoir was established by professional survey at the time SWS purchased the parcels of property. This was accomplished using the "Sea Level Datum of 1929," the standard for all surveys conducted during that time period.

The **Sea Level Datum of 1929** was established for surveying work in the United States. The datum was used to measure elevation above mean sea level (MSL). This was the Datum used by SWS when it acquired/purchased all of the original. The Sea Level Datum of 1929 is used as the basis for determining the location of the SWS property line today. The Sea Level Datum of 1929 was renamed the National Geodetic Vertical Datum of 1929 (NGVD 29) in 1973; it was superseded by the North American Vertical Datum of 1988 (NGVD 88). However, when determining the location of a property boundary that was established prior to the NGVD 88 it is critical that the datum used in the original land transfer be used to avoid erroneous findings.

In some instances, surveyors working for an adjoining landowner may identify a property line by simply connecting the lower lot property pins to create a lower (lake side) property line. If the plat with a lower property line is in conflict with the 720' or 780 MSL, the 720' or 780' MSL will prevail as the property line for SWS, even if the other plat is recorded on public record. Spartanburg Water System has original documentation that demonstrates the formation of specific MSL contour lines as the boundary for SWS property.

In the event you as an adjoining landowner need to survey your property, it is critical to make sure the independent surveyor locates and confirms the accurate location of the 720' MSL contour line for Lake Blalock reservoir or 780' MSL contour line for Municipal Reservoir #1 using the NGVD 29 datum. Surveying benchmarks and/or monuments have been installed by the federal government and by SWS that can provide a baseline or starting point. SWS can assist you or your surveyor in locating a benchmark if needed.

If you have any questions, please contact the lake wardens' offices. Additional information about the lakes and specific requirements related to Spartanburg Water System-owned property is available at www.spartanburgwater.org.

II PRESS PAUSE UPDATE

Launched last October, the Press Pause program continues through December 1, 2019. During this 14-month period, adjoining property owners may request to "Press Pause" and establish a baseline of permits for the improvements below the 827' Spartanburg Water property line. By Pressing the Pause Button, SWS Watershed Management staff will perform an inventory of the uses and structures on SWS property which adjoins your property so that we can establish a current status of any existing and needed permits for any improvements. Anyone that signs up before March 30 will receive at 25 percent discount on all associated permits, licenses and agreements required. Adjoining landowners wishing to participate in this program may do so by registering in one of the following ways:

- **Email:** presspause@spartanburgwater.org
- **Voice mailbox:** 864-580-2095
- **Register online:** www.spartanburgwater.org
- **In person:** Stop by the Lake Bowen office and complete a form.

If you chose not to participate in Press Pause, please remember that without a current permit or license (which would allow a structure or other item to remain on Spartanburg Water property for the duration of its useful life), property owners will be required to remove the non-conforming structure or item at the end of the Press Pause program.

Have you purchased a new watercraft or made any mechanical changes by adding a new or modified motor?

If so, your watercraft must be inspected by a lake warden prior to the purchase of an access permit.

- Please trailer your new or modified watercraft to the lake offices
- To ensure a safe inspection process, all inspections will take place at the lake offices
- We will be unable to perform any inspections on the water
- Inspections will cover necessary checks for horsepower and motor restrictions required by SC Code of Laws (50-25-1320) and safety equipment that state law dictates must be on board your watercraft.

FOR MORE INFO, CALL:

- **Lake Bowen:** (864) 592-2240
- **Lake Blalock:** (864) 578-5442

Beginning March 15, office hours for the wardens' offices will be 8 a.m. to 4 p.m.

Boating Season Has Arrived:

TIME FOR BOAT PERMIT, ACCESS PERMIT RENEWALS

We are excited to announce that the 2019 boating season has arrived. As we look forward to warmer temperatures, please remember that your 2018 watercraft access permits/stickers will expire on March 31.

Our teams at Lake Bowen and Lake Blalock are preparing renewal letters to be sent out to your homes no later than March 15. These letters will provide information on the renewal process, as well as outlining rules and regulations for boating and boating safety on Lake Bowen and Lake Blalock reservoirs. Watercraft access stickers can be purchased by mail utilizing the renewal letter or at the lake wardens' offices.

If you have a watercraft that has previously

been permitted or a new watercraft, a current access sticker must be purchased and placed on your vessel no later than April 30.

Permits can be purchased year round for access to Lake Bowen and Lake Blalock reservoirs. Be sure to inspect your vessel prior to conducting any type of water activities during the year. Safety is extremely important to all. Spartanburg Water System hopes you have a safe and fun boating season and we hope to see you out on the water very soon.

If you have any questions about boat permits, boating requirements/regulations or laws regarding boating safety, please feel free to contact the wardens' offices.



Gulls Return for Winter Vacation:

MIGRATORY BIRDS ARE COMMON BEYOND THE COAST

Every winter, a large number of gulls return to Lake Bowen reservoir. Although gulls may be most closely associated with the coastal region more than 200 miles from Spartanburg County, there are many different types of this migratory bird, and two varieties of this species are common in our own watershed each winter: ring-billed gulls and herring gulls.

They are travelers, and actually prefer inland waters for their habitat, at least for part of the year. These birds live year-round near the Great Lakes and northeastern North America, but migrate south for the winter, passing through the Piedmont of South Carolina in route to the Gulf and Atlantic coasts. They often return to the same location each year, which means that the gulls in Lake Bowen reservoir are likely

the same gulls that have been coming for many years past.

Both ring-billed and herring gulls are scavengers, and can survive and flourish with any type of diet. They primarily eat fish, insects, earthworms, grain and garbage. Some larger birds will also eat rodents, when they can get them.

Distinguishing between our winter visitors can be difficult. The ring-billed gull is roughly the size of the typical laughing gull (the stereotypical "seagull"). It has a white head and yellow legs, light gray wings with black tips, and a tell-tale black ring near the tip of its bill. The herring gull is slightly larger, but with similar coloring. However, it lacks the black ring of the ring-billed gull, and instead has a red dot on the underside of its bill.

Ring-billed and herring gulls are remarkably graceful in the air, and can skim along the water at over 40 miles per hour. They will often space themselves about three to six feet apart and lounge around on the water, having a good time and giving passing boaters a disdainful stare.

Take a few moments and look to see if you can spot some of our winter visitors. Lately they have been seen loitering around the park landing in the open water between the point and the Highway 9 Bridge. Soon enough, they will be moving along toward more coastal waters and will not return until next year.



THE MARK OF RESPONSIBLE FORESTRY

A Natural Solution to a Lake Nuisance

OUR LAKES GIVE LIFE TO ALL KINDS OF CREATURES AND PLANT SPECIES, BUT NOT ALL OF THEM ARE A WELCOMED PRESENCE IN OUR DRINKING WATER SUPPLY, ESPECIALLY IN LARGE QUANTITIES. SUCH IS THE CASE WITH AN AQUATIC PLANT KNOWN AS BLADDERWORT.

Not only can this species become a nuisance that may affect the navigation of boats and recreation on our lakes, but more importantly, it can potentially impact the long-term sustainability of our drinking water and treatment efforts. That's why Spartanburg Water, along with the South Carolina Department of Natural Resources, is continuing a natural approach to control the growth of this invasive aquatic plant.

So what is Bladderwort? It is a rootless, free-floating aquatic plant that is sometimes noticeable by its small, yellow flowers protruding from the surface of the water. It gets its name from the bladder-like structures connected to the submerged segments of the plant. The plant is carnivorous and uses these bladders to capture tiny, aquatic organisms such as insect larvae and aquatic worms.

Despite its reputation as an invasive plant, Bladderwort is not harmful to the lake, its wildlife, or those who live on the lake. In fact, biologists say it is an indication of good water quality; but we all know there can be too much of a good thing.

Bladderwort is nothing new to our lakes, and neither is the approach Spartanburg Water and the SCDNR are taking to stop its growth. In the late 1980s, Lake Bowen was one of the first lakes in South Carolina to feature this method to control invasive plants.

Here's what it entails: Spartanburg Water and the SCDNR will release more than 2,100 Triploid Grass Carp into Lake Bowen and Municipal Reservoir #1. These vegetarian fish feed on aquatic plants and are an effective biological tool to control nuisance vegetation and algae. Triploid

Grass Carp are used around the world and are one of the approved methods used by the SCDNR.

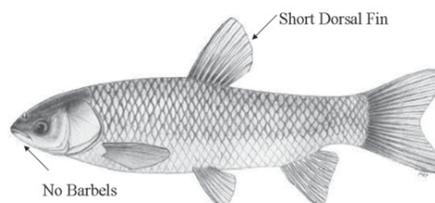
If this sounds familiar, it's because Spartanburg Water has successfully used Triploid Grass Carp to control the growth of invasive plants in Lake Bowen in the past. In 2016, Bladderwort was also discovered in Municipal Reservoir #1. Since then, Spartanburg Water has been using sonar equipment to map the areas seeing the heaviest presence of Bladderwort.

Based in part on the data collected, the South Carolina Aquatic Plant Management Council recently approved the treatment of Lake Bowen and Municipal Reservoir #1 with Triploid Grass Carp.

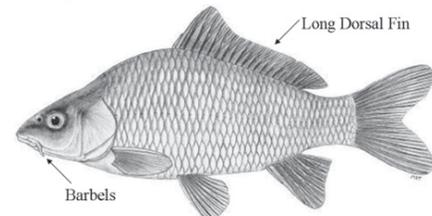
The plan calls for 1,750 fish to be stocked in Municipal Reservoir #1 as an initial stocking and 400 fish to be stocked in Lake Bowen as a maintenance stocking.

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THIS WATERBODY IS STOCKED WITH **STERILE TRIPLOID GRASS CARP** FOR THE CONTROL OF AQUATIC WEEDS



Triploid Grass Carp



Common Carp

State Law Section 50-13-1630(D): It is unlawful to take grass carp from waters stocked as permitted by this section. Grass carp caught must be returned to the water immediately. Any bow hunting of grass carp will be classified as "take".

SCDNR
Aquatic Nuisance Species Program
www.dnr.sc.gov/invasiveweeds/





Boating Safety Certification:

IT CAN SAVE MONEY ... AND LIVES

Boating safety certification is required by law for many South Carolina boaters. But even if certification, in your instance, is not required, it may save you money on boat insurance and, most important, your life or those who are entrusting you with the safe operation of a watercraft.

There are two paths to certification—attending an instructor-taught class or completing a safety course online.

Consider these important aspects of boating:

- All vessels (including kayaks, canoes, and paddleboards) must have at least one Type I, II, III, or V personal flotation device (life jacket) that is U.S. Coast Guard–approved, wearable, and of the proper size for each person on board or being towed. South Carolina law requires all children under 12 years of age to wear a U.S. Coast Guard–approved Type I, II, III, or V PFD while on board a Class A (less than 16 feet long) vessel.
- The life jacket must be fastened and of the proper size for the child. One U.S. Coast Guard–approved Type IV PFD must be on board vessels 16 feet or longer and readily accessible in addition to the above requirements.
- Type V PFDs may not be substituted on children weighing less than 90 pounds. Each person riding on a PWC **MUST** wear a U.S. Coast Guard–approved Type I, II, III, or V personal flotation device. Each person being towed behind a vessel **MUST** wear a U.S. Coast Guard–approved Type I, II, III, or V PFD.

- All PFDs must be in good and serviceable condition and must be readily accessible. In certain situations, paddleboards must carry a U.S. Coast Guard-approved PFD for each person on board. Secondly, the required navigation lights must be displayed between sunset and sunrise and during periods of restricted visibility.
- Nearly all vessels are required to have a Type B fire extinguisher on board if one or more of the following conditions exist; closed compartments under seats where portable fuel tanks may be stored; closed storage compartments in which flammable or combustible materials may be stored; closed living spaces; permanently installed fuel tanks.
- Sound-producing devices are required for all vessels less than 65.6 feet (20 meters) in length, including PWCs, to carry on board a whistle, horn, or some other means to make an efficient sound to announce intentions or positions.

What about skiing?

- It is illegal for vessels to tow persons on water skis, or any other device between sunset and sunrise. Additionally, those being towed must wear a U.S. Coast Guard-approved PFD.
- Any vessel towing a person on water skis, or other device, must have on board a person, in addition to the boat operator, observing the towed person(s) with a wide-angle, rearview mirror mounted in such a way that the operator can observe the towed person(s) at all times.
- If an observer is used when towing a person behind a PWC, the PWC must be rated for three people—the operator, the observer, and the retrieved skier.

What about paddleboarding?

- The US Coast Guard does classify paddleboards as vessels.
- The operator must have onboard a PFD, sound producing device, visual distress signals, and navigation lights such as a flashlight to use when operating between sunset and sunrise or periods of poor visibility.

BOATING SAFETY: AGE RESTRICTIONS

Anyone 16 years of age or older may operate any boat or Personal Water Craft (PWC) without any restrictions. Those younger than 16 years of age can operate a boat or PWC powered by less than 15 horsepower without restriction. They can also operate a boat or PWC powered by 15 horsepower or more only if they are accompanied by an adult at least 18 years of age or they have passed a boating safety course approved by the South Carolina Department of Natural Resources.

To sign up for boater education classes, go to www.spartanburgwater.org and click on "events."

For more information, email or call Jon Morgan, jonmorgan@spartanburgwater.org or 864-592-2240.

BLADDERWORT CONTINUED...

There's no need to worry about these fish dominating or disrupting the ecology of our lakes and the current aquatic life found there. Triploid Grass Carp are a sterile species and therefore cannot reproduce. Also, they feed primarily on plants and algae and do not consume other fish.

Triploid Grass Carp live an average of 10 years. When they are between the ages of one and five and we experience warm conditions, these fish can eat up to six to 10 percent of their body weight each day.

Remember, it is illegal to take Triploid Grass Carp from public waters. If you hook one while fishing, you must release it back into the same body of water or risk facing penalties.

There are a few ways to tell the difference between the common carp and the stocked Triploid Grass Carp. The major difference is the length of the dorsal fin. The Triploid Grass Carp has a significantly shorter fin than the common carp. They also do not have barbels around the mouth.

SCDNR-approved signs will be posted at public fishing areas and boat ramps to remind you before the project begins. You'll also want to visit www.spartanburgwater.org and sign up to receive lake alerts. We will send an alert to our stakeholders in advance of the Triploid Grass Carp Stocking.

Why does the lake look muddy after a hard rain?

A DEEPER DIVE INTO EROSION, GEOLOGY AND SOIL

It's a common sight throughout the year: Following heavy rain, our lakes can look, well, muddy. The big question is, why?

The short answer is soil erosion. Rain and wind can cause rocks along the banks to crumble and stir up sediment below the waters' surface. At times, the process can be slow and go relatively unnoticed, but it can also happen at an alarmingly fast rate, causing a serious loss of topsoil.

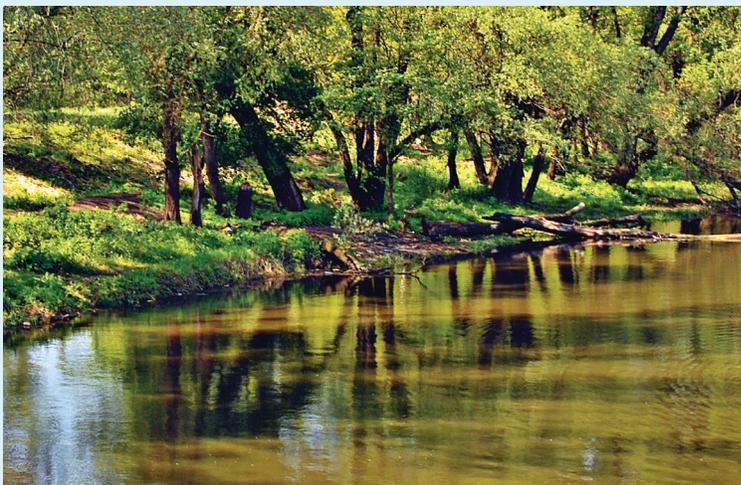
Soil and rock contain a variety of natural minerals. Some of the most common are iron and manganese, which can cause water to range in color from red to orange to green and blue. When a rock is weathered down over time, the minerals are dissolved and small pieces are released into the water. Oftentimes, these elements are bound in clay, which can also add to the murky appearance.

The Pacolet River Watershed lies within the Inner Piedmont Belt, which consists of a considerable amount of rocks and steep slopes. Heavy rain can loosen the soil and create run-off that cannot be absorbed and flows into our lakes. The longer and more intense the rainstorm, the greater the potential for erosion and resulting muddy looking water.

The erosion process can be expedited by land disturbing activities, including certain farming practices, land grading, development and other human activities.

There are also ways to help control erosion. Plants and tree canopies can intercept rapidly falling raindrops and protect the soil. Plants also allow more water to be absorbed into the ground, and their roots better hold the soil in place.

Soil erosion and its impact on our community's natural resources remains a key challenge within our watershed, but we are committed to working with our partners and stakeholders at all levels to ensure our water supply reservoirs can provide quality drinking water for many years to come.



Shoreline Stabilization:

THE BEST WAY TO MANAGE EROSION

In order to combat the bank erosion, adjacent property owners may create a plan for bank stabilization and apply to Spartanburg Water for a Shoreline Stabilization permit. Work of this nature and development of an appropriate plan requires an understanding of what causes erosion and how best to address it.

Wave action, stormwater runoff, and inadequate vegetation are all leading causes of shoreline erosion around Lake Bowen and Lake Blalock. Loose soils can creep down steep slopes, drawn by gravity and the pull of water against the incline. Waves from fast-moving watercraft and rough water conditions can knock into the bank and remove a considerable amount of soil and other material in a relatively short amount of time. Additionally, clearing of natural vegetation to expand views and/or increase recreational potential exposes additional soil to the effects of runoff and wave action, and cases of extreme erosion or degradation of this shoreline require additional measures to prevent sediment from washing away into the lake.

All instances in which a property owner wishes to install shoreline stabilization along the banks of Lake Bowen or Lake Blalock will be evaluated on a case-by-case basis by SWS staff. Property owners wishing to submit an application for installation of a seawall or natural stone/riprap will first need to contact Watershed Management Staff at their local lake office to set up an on-site consultation. Watershed Staff will meet with the property owner to assess the condition of the shoreline and work with the property owner to develop a suitable plan to best protect that section of the shoreline. Following the consultation, the property owner may come forward with an application for the method of shoreline stabilization discussed with the SWS Agent.

Existing and appropriately constructed shoreline stabilization mechanisms may remain as constructed and may be repaired, replaced, or maintained through the application and approval of the appropriate permits. No work may be conducted on existing shoreline stabilization without a valid permit issued by SWS.

Existing structures are eligible for maintenance provided the property owner submits the appropriate application to SWS for review and approval. The only instance in which a property



owner will be required to remove an existing seawall is if that wall is in such a state of disrepair, or is constructed of such a material that it proves a hazard to lake users and/or water quality. In these cases, Spartanburg Water will work with the property owners to establish a new shoreline stabilization plan to supplement the removal of the seawall and protect the bank from any additional erosion.

In those instances where removal is the only option, a replacement seawall may not always be the best option. Each application submitted for consideration will be assessed on a case-by-case basis by Spartanburg Water staff to ensure the most efficient protection and retention of the Lake Bowen and Lake Blalock shorelines.

For those individuals whose shorelines are better-suited to a natural stabilization plan, some combination of live plantings and placement of natural stone or other barriers is ideal. Most successful shoreline stabilization techniques incorporate live plantings in addition to some human-imposed structural components and modifications. This technique creates a “living system” that allows vegetation to become established over time.

These are the systems that truly benefit the lake the most. The stone or other natural material laid along the shoreline allows

water to break along the bank without stealing soil, and the plants interspersed amid or just above the rocks anchor the soil in place with their roots. Additionally, the plantings serve to filter nutrients from the soil and groundwater that might prove detrimental to the quality of the drinking water drawn from Lake Bowen.

When submitting an application packet, the more information you can provide to support your proposal the better chance you will have of having that plan considered. A drawing of some capacity is required for all shoreline stabilization applications: ideally, this drawing will include a sketch of the intended work from the shoreline as well as a cross-section of the selected methods to demonstrate the height, depth, etc. Always include the types of materials involved such as plant species to be installed, stone type (natural color or riprap), material of the seawall, etc.

All shoreline stabilization applications must be accompanied by a suitable planting plan to supplement any hard armament. Some applications will already include plantings in the form of live staking and additional methods; others, such as placement of riprap or installation of a wall, will require substantial plantings in addition to the placement of the stone and/or structure itself.

SEAWALLS

Spartanburg Water does permit the application for and installation of seawalls. Not all areas around the reservoirs will meet the criteria for a seawall, but in instances where the SWS agent determines a seawall to be an adequate means of shoreline defense the structure will be permitted.

Typical cases where a seawall is considered an acceptable means of shoreline stabilization are when it is connecting adjacent walls on either side, when the bank is particularly steep or undercut, and in exposed areas with minimal vegetation and facing considerable wave action. However, areas of heavily vegetated shoreline that would otherwise meet the criteria for a seawall but would require substantial removal of established vegetation will not be considered eligible for installation of a seawall.

Osprey Return from Winter Vacation:

MIGRATION FROM CENTRAL AND SOUTH AMERICA TO LOCAL LAKES BEGINS EACH SPRING

Have you seen the white raptors fishing lately? It's that time of year again—when Osprey are returning from Central and South American wintering grounds to their North American breeding areas. Unlike the common Great Blue Herons and Red Tailed Hawks or even the less common Bald Eagles, our Ospreys aren't winter residents. This migration practice may lead you to believe they have abandoned the region; however, they always return to their summer habitat on our very own lakes.

Keep eyes peeled for a bird swooping down and snagging a fish in its talons; most likely it will be the "Fish Hawk," a name often associated with Osprey. The talons on osprey and owls include a "toe" that is reversible and can swivel, thus allowing the bird to grasp a fish with two toes forward and two toes behind. In fact, this unique flexibility actually inspired a popular yoga pose known as the "Diving Osprey!"

Ring-billed and herring gulls are remarkably graceful in the air, and can skim along the water at over 40 miles per hour. They will often space themselves about three to six feet apart and lounge around on the water, having a good time and giving passing boaters a disdainful stare.

Take a few moments and look to see if you can spot some of our winter visitors. Lately they have been seen loitering around the park landing in the open water between the point and the Highway 9 Bridge. Soon enough, they will be moving along toward more coastal waters and will not return until next year.

Osprey facts:

- A wild osprey may live 20 – 25 years.
- Osprey are also the only raptor that can completely submerge going after the fish. They have been known to reach 80 miles per hour in a dive.
- The size of the ospreys is similar to that of Red Tailed Hawks and Red Shouldered Hawks. Their plumage, however, often causes confusion with the considerably larger Bald Eagle.
- In our area, the Bald Eagle may be the only significant predator of both chicks and adult osprey.
- Osprey are very widespread in their range and can be found on every continent except Antarctica.
- Osprey are 20 to 26 inches in length and their wingspan can exceed five feet.
- The Osprey diet is virtually exclusive to fish.
- They tend to remain as a mating pair for life. The 2 – 4

eggs hatch in 35 – 43 days and the chicks remain in the nests 8 – 10 weeks.

You may also be familiar with this bird from seeing their large nests on power poles or nesting poles near the coast. There is a very large population of osprey in the ACE Basin section of our State. Even though they fish all three Spartanburg Water reservoirs, osprey nests are not likely to be found in residential developments surrounding the lakes. If you do see a nest, you won't likely forget it. They like to use the same nest and make it bigger every year. Some nests have approached 10 feet in height.

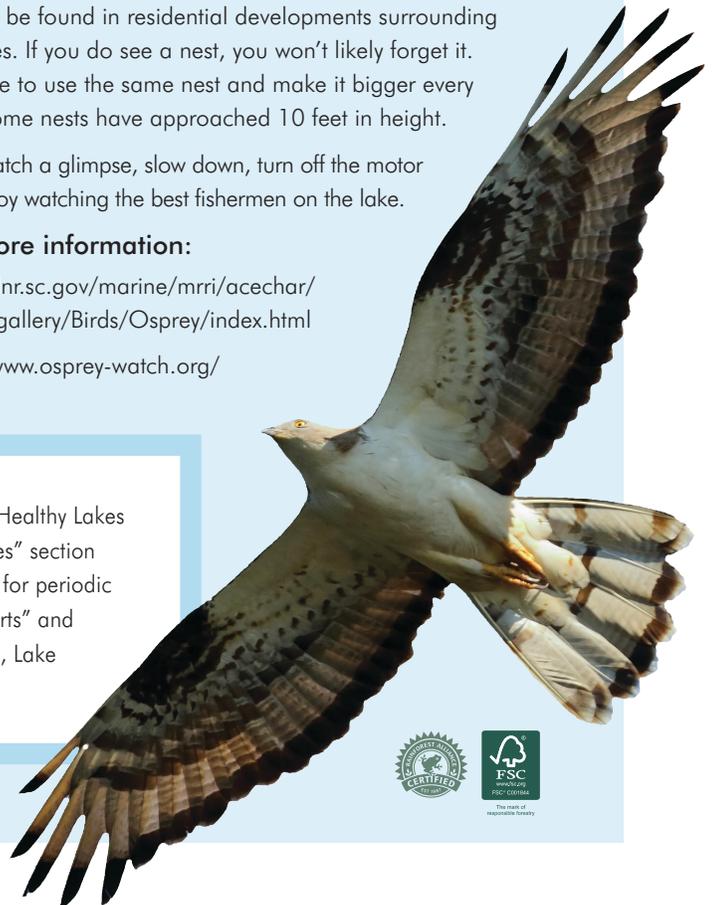
If you catch a glimpse, slow down, turn off the motor and enjoy watching the best fishermen on the lake.

For more information:

<http://dnr.sc.gov/marine/mrri/acechar/speciesgallery/Birds/Osprey/index.html>

<http://www.osprey-watch.org/>

DON'T FORGET! Now you can quickly and easily access our Healthy Lakes newsletters online at spartanburgwater.org. Just go to the "our lakes" section on the homepage and click "our newsletter." You can also sign up for periodic lake alerts under the "our lakes" tab. Choose "sign up for lake alerts" and click "sign up here" to get valuable information about Lake Bowen, Lake Blalock, and Reservoir #1.



Portable Fire Ring Policy

ON JANUARY 22, 2019, THE COMMISSION OF PUBLIC WORKS APPROVED A NEW SET OF POLICIES FOR THE USE OF FIRE RINGS ON SWS-OWNED PROPERTY SURROUNDING LAKE BOWEN AND LAKE BLALOCK.

We know it's a favorite pastime for a lot of you: nights spent sitting around a fire ring/pit with family and friends. Spartanburg Water wants to make sure everyone can enjoy those memories safely and without putting nature and the reservoirs that supply our community's drinking water at risk.

It is important to remember Spartanburg Water maintains ownership of our drinking water reservoirs, including shoreline property above the water's edge. Protecting this land is a responsibility we take seriously because the long-term health and quality of our drinking water reservoirs are at stake.

The new fire ring/pit policies and procedures serve two main purposes: to protect you and your surroundings. In order to prevent an accidental fire and resulting property damage, fire rings/pits are not allowed in any natural vegetated buffer area. We suggest staying at least 15 feet away from tree branches and other vegetation at all times. We also require your fire ring/pit have a screen cover to keep embers contained, and we recommend you always keep a fire extinguisher or hose nearby.

Here are a few other requirements if you plan to use a portable fire ring on SWS property:

- Must be easily moveable
- Legs at least 4 inches in height so it does not touch the surface it's sitting on
- No larger than 30 inches in diameter
- Must have annual renewable permit

It is imperative to monitor the conditions for safe burning. Always be aware of alerts, advisories, or bans on burning that may be issued by the Department of Forestry or the Fire Marshall, and stop all burning activity until such bans are lifted. During periods of drought or when officials issue High Fire Conditions alerts, permits are considered temporarily suspended. The burning of leaves, garbage, and other rubbish is not allowed on SWS property.

HAVE YOU PRESSED PAUSE?

The program ends December 2019. Details available inside. >>>



Personal safety is also a priority. Be sure to follow all the manufacturer's guidelines and abide by regulations for the safe use and operations of a fire ring/pit. Spartanburg Water is not responsible or liable for any personal injury or damage to personal property resulting from the use of a portable fire ring/pit.

It's not just important to practice safe habits while a fire ring/pit is in use, but also once the fire is out. The permitted user must properly cool the ashes and put them in a container suitable for proper disposal. Ashes are not allowed to be placed on SWS property or dumped into the water. We take great pride in our lakes and in the drinking water we provide to nearly 200,000 people, and we ask that you do your part to keep waste and pollution out.

So start enjoying those summer nights gathered around a fire with good company; but before you strike a match, remember these safety policies and our common goal to protect and preserve the beauty – and purpose – our lakes have to offer.

Clock Winding Down on “Press Pause” Program

WE’RE ANOTHER MONTH CLOSER TO THE END OF LAKE BOWEN’S “PRESS PAUSE” PROGRAM. THIS IS A FRIENDLY REMINDER...YOU HAVE UNTIL **MIDNIGHT ON DECEMBER 1, 2019**, TO HAVE THE SWS PROPERTY ADJACENT TO YOUR PROPERTY INVENTORIED FOR IMPROVEMENTS WHICH CURRENTLY DO NOT HAVE A PERMIT OR LICENSE FROM SWS.

Since the program was first implemented on October 1, 2018, Spartanburg Water has been working with adjoining property owners to approve authorizations. Throughout the 14-month “Pause” window, adjoining property owners on Lake Bowen have had the opportunity to establish a baseline of permits, licenses, and/or agreements for improvements and structures below the 827’ MSL Spartanburg Water property line.

All existing improvements, semi-permanent or permanent structures, that existed on SWS property as of October 1, 2018, and are in good condition, will receive an authorization from Spartanburg Water to be able to remain on SWS property after December 1, 2019. Any improvements placed after October 1, 2018, do not qualify for the program, as they should have been properly permitted.

Why are these permits important?

As of midnight on December 1, 2019, all planned or future investments below the 827’ MSL contour will be subject to the rules and regulations in place at the time. Spartanburg Water is partnering with adjoining property owners to offer this opportunity so you can keep prior

improvements on SWS property after the December 1, 2019, deadline.

All you have to do is visit our website or call our staff and request a “Press Pause Review.” Our staff will assess Spartanburg Water’s records with you directly to ensure all permits, licenses, and agreements have been filed and reflect the current owner.

Please note some permanent or semi-permanent structures on SWS property may not have been permitted by a past owner. This is your opportunity to ensure all authorizations are in place so the items may remain. The adjacent property owner will be responsible for paying all applicable fees associated with additional permits, licenses, and agreements that are issued during this period.

The program is voluntary, but remember, it’s your chance to get improvements below the 827’ contour authorized and placed under your name before they are subject to any current or future rules and regulations.

We know the improvements you have made are important to you. That’s why it is important to us to work together to reach a resolution that will make

allowances for improvements, while also protecting the integrity of our watershed.

Take action today and sign up at www.spartanburgwater.org/pause.

Do you have any of these? They are some examples of what may be included in “Press Pause!”

- Sea walls, in good condition
- Docks, in good condition
- Sitting area
- Planters
- Boat ramps, in good condition
- Playground equipment and structures
- Fire pit structures
- Walkways
- Decks
- Outbuildings
- Retaining walls
- Benches
- Lawn furniture
- Picnic tables
- Flagpoles
- Beaches
- Recirculating fountains
- Fences, in good condition



Aquatic Hitchhikers

BOATS AND PERSONAL WATERCRAFT MAKE FOR A FUN DAY ON THE LAKE, BUT DID YOU KNOW YOU COULD BE TRANSPORTING AQUATIC HITCHHIKERS?

What exactly are these unwanted guests tagging along?

They are aquatic invasive species – organisms that live in bodies of water, like lakes or oceans, and have been spread to locations where they do not naturally occur, causing harm to the environment, the economy, and even human health. Additionally, they negatively impact the quality of outdoor recreation experiences.

Behind habitat destruction, the number-one reason for threatened and endangered species is loss caused by introduced invasive species. Introduced species are a greater threat to native plants and animals than pollution, harvest, and disease combined. They are also a leading factor in freshwater fish extinctions and endangerments.

In recent years, an aquatic invasive plant species known as Hydrilla has plagued lakes across the Southeast. While largely under control, this plant is dubbed “South Carolina’s Most Wanted” and poses the biggest threat to waters statewide.

Through rapid spread and growth to 25 feet long, this submersed plant clogs water intakes, blocks boat access and navigation, displaces beneficial native vegetation, and impairs recreational

water activities and water quality. In 1991, this “aquatic Kudzu” caused the shutdown of the St. Stephen hydroelectric plant on Lake Moultrie in Berkeley County, South Carolina.

Aquatic hitchhikers can be transported to other waterbodies by recreational activities, including fishing, boating, and even swimming. Some aquatic invasive species can attach to boats themselves, while others can cling or get tangled on propellers, anchor lines, and boat trailers. Aquatic invasive species can hide in the mud, dirt, and sand that cling to nets, buckets, anchors, and waders. Some organisms may even be unknowingly released with the dumping of bait.

So how can the spread of aquatic invasive species be stopped?

It only takes a few simple steps to reduce the risk. Most species can be stopped by the “Clean, Drain, Dry” procedure.

Clean off visible aquatic plants, animals, and mud from all equipment before leaving water access. Rinse equipment and boat hulls with high pressure, hot water, and rinse interior compartments with low pressure, hot water. Don’t forget to also flush the motor

with hot water for about two minutes.

Drain the motor, bilge, live well, and other water-containing devices. Many species can survive in these parts that collect water.

Dry everything for several days, or wipe with a towel before the next use. Drying times vary depending on the type of equipment, temperature, and humidity. The outside of a boat can dry relatively quickly, but bilge, live wells and other parts of the boat not reached by the sun or lacking good air circulation will take longer. The general rule of thumb is to let equipment dry at least five days in dry, warm conditions, but the key is to make sure all equipment is completely dry before using it in a new water body. Wiping all areas with a towel will also help prevent the spread of aquatic invasive species.

You can take these precautions one step further and also dispose. Get rid of unwanted bait, worms, and fish parts in the trash. When keeping live bait, drain bait containers and replace with spring or de-chlorinated tap water. Never dump live fish or other organisms from one body of water into another.

Our reservoirs are a great place to spend time with family and friends, but it's important to remember that they contribute far more than just fun memories – they supply the drinking water to nearly 200,000 people in our community, and preserving the water quality is critical. Learn to recognize these aquatic hitchhikers and familiarize yourself with where to look for them. Follow the “Clean, Drain, Dry” method on all watercraft, trailers, motors, and gear every time, everywhere; and report sightings of aquatic invasive species to the appropriate authorities.

Rules and Regulations Public Comment Period

THE WINDOW TO WEIGH IN ON A DRAFT SET OF WATERSHED AND RESERVOIR MANAGEMENT RULES AND REGULATIONS IS NOW CLOSED, AND SPARTANBURG WATER WANTS TO THANK EVERYONE WHO PARTICIPATED DURING THE PUBLIC COMMENT PERIOD. YOUR FEEDBACK IS NOW UNDER REVIEW, AS WE WORK TO ESTABLISH A FRAMEWORK THAT WILL GOVERN ALL THREE OF OUR DRINKING WATER RESERVOIRS WITH ONE PRIORITY IN MIND – PROTECTING THE INTEGRITY OF THE WATER QUALITY AND SUSTAINING A LONG-TERM SUPPLY OF SOURCE WATER. THIS IS CRITICAL TO THE PROSPERITY AND ECONOMIC GROWTH OF SPARTANBURG COUNTY AND THE SURROUNDING AREA.

In a continued effort to work with our customers and our community, Spartanburg Water opened a window of opportunity to submit public comments on a draft set of Rules and Regulations between August 1, 2019, and August 30, 2019.

These draft Rules and Regulations were a compilation of existing SWS policies into a single, comprehensive document. To encourage maximum participation, we made this document available in digital flip and print-ready formats on our website, at the wardens' offices at both Lake Bowen and Lake Blalock, and distributed hard copies to five Spartanburg County Public Library branches (Downtown, Boiling Springs, Chesnee, Inman, and Landrum) for your review. We accepted comments both electronically and by mail.

Now that the 30-day period is over, all comments that included a name and address are under consideration. Following approval by the Commission, the final Rules and Regulations will supersede all previous policies and

apply to all SWS-owned property along Lake Bowen, Lake Blalock, Municipal Reservoir #1, the North Pacolet River, the South Pacolet River, and the Pacolet River.

The Watershed and Reservoir Management Rules and Regulations serve as a framework to manage the reservoirs and the SWS property surrounding them. These policies will give adjoining landowners – and the general public who wish to enjoy these resources – guidelines on allowed activities, as well as the required permits and the permitting processes.

When it comes to these guidelines, we want you to know we are listening, and we value your feedback. Spartanburg Water is confident that with the insight so many of you provided, we will be able to establish a set of Rules and Regulations that will encourage the responsible use of these valuable natural resources, while continuing to help us achieve our mission – to provide quality water and wastewater services to our region in a reliable manner.





Update to the Land Access Agreement

BACKGROUND

Originally, the Land Access Agreement (LAA) was designed as a mechanism to ensure that future adjoining property owners on Lake Bowen, Lake Blalock and Municipal Reservoir #1 were made aware of the Spartanburg Water System Rules and Regulations prior to the purchase of property, and so they fully understood that Spartanburg Water System owns and manages the land immediately adjacent to the reservoirs.

The LAA would be added to a property's deed and recorded by Spartanburg County.

WHY WAS THE LAND ACCESS AGREEMENT (LAA) CREATED IN THE FIRST PLACE?

In the listening sessions with adjoining property owners conducted by Spartanburg Water in the summer of 2018, it was expressed by many that they "did not know" about Spartanburg Water's ownership and management of the land immediately adjacent to the reservoirs, and that their realtors had not disclosed this information. By recording this information through the LAA on a property's deed, this would ensure all information was disclosed to a buyer.

WHY ARE WE REMOVING/DROPPING THE LAND ACCESS AGREEMENT (LAA) REQUIREMENT?

The requirement to obtain a signed LAA, prior to acquiring any permit from Spartanburg Water System has been a point of concern for many adjoining landowners. Many of the comments received during the recent public comment period in August for the draft Watershed and Reservoir Management Rules and Regulations pointed to an issue with the LAA.

WHAT HAPPENS NOW?

Rather than wait for the full Watershed and Reservoir Management Rules and Regulations document to be approved by the Commission, on September 6, 2019, the Commissioners of Public Works of the City of Spartanburg announced that Spartanburg Water System would no longer require the Land Access Agreement as a prerequisite to any action, permitting or enforcement.

Spartanburg Water System will begin the process of removing the LAA's that have been recorded, and returning the agreements to property owners that have not been recorded with the County.

For adjoining property owners on Lake Bowen, the LAA will no longer be a component of the "Press Pause program."

For questions and additional information, please contact the Lake Blalock or Lake Bowen Wardens' offices.



Park Amenities and Hours

ON THE LAKE OR ON LAND, SPARTANBURG WATER HAS PLENTY OF OPTIONS THE WHOLE FAMILY WILL ENJOY – FROM BOATING TO FISHING TO A FENCED-IN PLAYGROUND.

SWS operates two parks which are adjacent to the two Lake Warden Offices. Both parks are open daily from 6 a.m. until midnight.

The first is Lake Bowen Park, which is located just off Highway 9 in Inman. There are two boat ramps and parking you can access for a day on the water. If you plan to take out a boat, jet skis, or any other type of water craft, be sure to stop



at the Warden's office and pick up a permit.

There are also a number of benches and an open green space that's perfect for setting up games. The kids can also hit the swings or slides at Anchor Park. The play area is divided into two age-appropriate sections and is completely fenced.

Picnics or parties? We've got the perfect place! Grab a seat at one of the eight large, family size picnic tables under the picnic shelter, or fire up one of the two charcoal grills. For a more intimate experience, you can rent the whole picnic shelter for \$50.

Visitors can also enjoy Lake Blalock Park, located at 1925 Sandy Ford Road in Chesnee. It features a boat ramp, parking, and a fishing pier. There are also three covered pavilions available to rent for \$25 each.

And that's not all... SWS also has a large, enclosed lodge-type facility that accommodates about 125 people. Pavilion #1 has a kitchen equipped with a refrigerator and microwave, restrooms, and a large meeting room with a fireplace. There are 15 round tables and 125 chairs available to use. This facility is located next to the R.B. Simms Water Treatment Facility at the end of Spartanburg Water Works Road. The full reservation fee of \$500 must be paid at the time you book. The cost includes a \$400 rental fee and a \$100 refundable damage deposit. This gives you full use of Pavilion #1 for 14 hours (10 a.m. – 12 a.m.)

Reservations:

You can reserve any of our pavilions by calling the Spartanburg Water Administrative Office at 864-583-7361.



“Press Pause” ... while you still can!

LAKE BOWEN “PRESS PAUSE” PROGRAM: THE OFFER TO PERMIT STRUCTURES BELOW SPARTANBURG WATER’S PROPERTY LINE IS COMING TO A CLOSE.

The “Press Pause” program began October 1, 2018. Since then, we’ve been working with residents who have applied, but this 14-month window will soon end. The deadline is December 1, 2019.

The “Press Pause” program gives every adjoining property owner on Lake Bowen the chance to establish a baseline of permits for all existing improvements below the 827’ MSL Spartanburg Water property line. All you have to do is call our staff and say “Let’s Press Pause,” or sign up on our website.

Our staff will work with each property owner to review and establish a baseline of permits, licenses, and/or agreements. All existing improvements, semi-permanent or permanent structures in existence as of October 1, 2018, and in good condition, will receive an authorization from Spartanburg Water. Any improvements placed after October 1, 2018 do not qualify for the program.

During the “Pause” timeframe, adjoining property owners can request a review of Spartanburg Water files to ensure all permits, licenses, and agreements have been filed and reflect the current owner. Once you request a “Press Pause Review,” the staff will review the records with you directly. The adjoining property owner will be responsible for paying all applicable fees associated with additional permits, licenses, and agreements that are issued during this period.

The program is entirely voluntary, but is an excellent opportunity for all property owners with structures below the 827’ MSL contour to get all of these improvements approved, permitted, or licensed, and placed under your name.

As the deadline approaches, keep in mind all planned or future investments below the 827’ MSL contour will be subject to the rules and regulations in place at the time; so take action now! Sign up at www.spartanburgwater.org/pause.

EXAMPLES OF WHAT MAY BE INCLUDED ARE:

- Sea walls, in good condition
- Docks, in good condition
- Sitting area
- Planters
- Boat ramps, in good condition
- Playground equipment and structures
- Fire pit structures
- Walkways
- Occupied residences
- Decks
- Garages
- Outbuildings
- Retaining walls
- Benches
- Lawn furniture
- Picnic tables
- Flagpoles
- Beaches
- Recirculating fountains
- Fences, in good condition



The Great Blue Heron

YOU MAY HAVE SEEN ONE OF THESE MAJESTIC BIRDS GLIDING THROUGH OUR SOUTHERN SKIES OR EVEN SCOURING THE SHALLOW WATERS OF OUR LAKES FOR THEIR NEXT MEAL. THERE ARE SIX TYPES OF HERONS IN NORTH AMERICA, BUT ONLY ONE CALLS SOUTH CAROLINA HOME – THE GREAT BLUE HERON.

It's no wonder where the Great Blue Heron gets its name; it reflects the colors of their beautiful plumage. Their feathers are a blue-grey color with chestnut legs, a white belly, and a white cap that sits atop their black eye stripe.

Just as the Great Blue Heron is aptly named for its color, it is also appropriately named for its "great" size. These birds can grow up to four-and-a-half feet tall with a six-and-a-half foot wingspan!

If you catch them in action as they soar the skies, you'll notice the Great Blue Heron has a distinct flight; their necks curl up in a tight "S" shape as their broad and rounded wings flap slowly and their long legs trail behind them. The Great Blue Heron usually moves very slowly, but when needed, it can snap into action quickly, with recorded flying speeds up to 30 miles per hour.

When the Great Blue Heron isn't taking flight, you'll likely find it wading in shallow waters. Often times, they stand motionless, waiting for prey to come to them. They have also been known to stand still and wiggle their toes under the mud to fool fish into thinking there are worms to eat. When prey comes near, the Heron uses its razor-sharp beak to strike – piercing its game and then swallowing it whole. Great Blue Heron are carnivores, with fish making up most of their diet, but they will also eat crustaceans, small reptiles and rodents, as well as insects.

Our drinking water reservoirs are the ideal habitat for the Great Blue Heron. They prefer an environment with slow-moving or standing fresh water and tall trees nearby. The Great Blue Heron

is not considered a threat to humans, and they are not known to cause damage to property.

If your concern is the Heron scaring away your catch, you can attempt to frighten these birds off, but remember, all fish-eating birds are protected; it is illegal to shoot or trap these creatures without a permit. Instead, if you're lucky enough to catch a glimpse of a Great Blue Heron, take in this magnificent sight – and take notes from these master fishermen!





“Press Pause” Coming to a Close

TIME IS RUNNING OUT FOR LAKE BOWEN RESIDENTS TO PARTICIPATE IN OUR “PRESS PAUSE” PROGRAM! SPARTANBURG WATER INITIATED THE PROGRAM ON OCTOBER 1, 2018. NOW, WE’RE JUST DAYS AWAY FROM THE DECEMBER 1, 2019, DEADLINE.

This unique opportunity gives residents the chance to gain authorization for any existing improvements – including both permanent and semi-permanent structures around Lake Bowen – that currently exist on Spartanburg Water property below the 827’ MSL Contour Line. All existing improvements, as of October 1, 2018, that are in good condition, will receive an authorization to remain on SWS property.

The Press Pause program is voluntary, but remember, it’s your chance to get improvements below the 827’ contour authorized and placed under your name before they are subject to the Lake Bowen Policies and Procedures, effective now. The Commission passed a revised document at the October 30, 2019, meeting.

SWS wants to make sure our neighbors fully understand that by participating in the Press Pause program, you will be able to keep any improvements on SWS property after December 1. **Otherwise, after that date, nonconforming improvements are subject to removal. Please also note, with the new Lake Bowen Policies and Procedures, permits are now transferrable with the sale of property. If structures have not been properly permitted, nothing will transfer if the property is sold.**

The Press Pause program will end at midnight on December 1, 2019.

You may register for Press Pause by using one of the following methods:

- **Email:** presspause@spartanburgwater.org
- **Voice mailbox:** 864-580-2095
- **Register online:** <https://www.spartanburgwater.org/pause> and click on the link
- Stop by the **Lake Bowen Wardens’ Office** and complete a request form

Structures included in the program are:

- Sea walls, in good condition
- Docks, in good condition
- Sitting area/patios, benches, swings, lawn furniture, and picnic tables
- Planters
- Boat ramps, in good condition
- Playground equipment and structures
- Fire pit structures
- Walkways and/or pathways (concrete, wooden, stepping stones, gravel, mulch, pavers, etc.)
- Decks
- Garages**
- Outbuildings**
- Hot tubs**
- Retaining walls and/or stone/riprap shoreline stabilization
- 2 or more docks on 1 adjoining parcel
- Kayak racks
- Irrigation systems
- Light posts
- Gazebos/ pergolas
- Swimming pools
- Cement slabs
- Statues and other decorative accents
- Water spigots
- 3 or more boat/PWC lifts
- Flagpoles
- Beaches
- Recirculating fountains
- Fences, in good condition

**Garages, outbuildings, and hot tubs will require an Encroachment Agreement. Our watershed staff will be happy to help you with this during the inventory of all items you have requested to include in the Press Pause program.



Winterizing Your Boat

COOLER TEMPERATURES ARE COMING, BUT IS YOUR BOAT READY?

Winter weather can wreak havoc on a boat that's not prepared for hibernation. We have some tips to winterize that could spare you from damage and costly repairs once the weather warms back up!

- **Replace engine oil:** Moisture and acids in old oil will pit bearings and other engine parts while in storage, so be sure to drain it first. Warm up the engine while in water so more of the dirty oil will drain out. Then replace it using high-quality oil and filters.
- **Flush and drain cooling water:** Water will expand when it freezes and can cause damage to your engine. To prevent this, flush the engine with clean water for several minutes, making sure all drain holes and plugs are open.
- **Stabilize fuel:** Fuel can deteriorate in as little as 60 days, causing build up in your engine. This can ultimately cause hard starting, poor performance, and reduced engine life. The easiest way to prevent these problems is by adding a high-quality marine fuel stabilizer. Then fill the tank with fresh fuel to prevent water condensation, which can cause corrosion.
- **Protect internal engine components:** While in storage, engine oil drains away. This exposes internal engine components to harsh elements in winter and can lead to corrosion and metal-to-metal contact. To prevent these issues, use a fogging oil spray. This specially-formulated product will get deep into the engine and coat parts with a protective layer.
- **Replace gear oil:** Drain the lower unit of old gear oil and replace it with a fresh supply.
- **Grease and lubricate:** Use a quality marine lubricant on your engine's grease fittings to protect against rust, corrosion, and oxidation.
- **Tend to the inside:** Winter air can be problematic for vinyl interiors. Vinyl cleaners and protectants can prevent drying out and cracking. Invest in mildew sprays or chemical dehumidifiers that keep mildew-causing moisture out.
- **Remove electronics:** Moisture can also corrode on-board electronics and electrical systems. Remove any electronics you can, then spray all exposed electrical connections with a moisture-displacing lubricant.
- **Clean and wax:** Get rid of any unwelcome aquatic hitchhikers tagging along on the sides or bottom of your boat. Give it a good pressure washing and vacuum/wash all carpets and decks.
- **Cover:** Whether you choose to store your boat in or out of the water, you'll need to take this step to protect it from snow, ice, and UV rays all winter. You have a number of options from plastic tarps to canvas tarps to fitted boat covers.

Your boat is a big investment, so take these few simple steps to ensure it'll be ready to hit the water when spring rolls back around!

Water Quality Monitoring Technology

A LOT OF WORK – AND SCIENCE – GOES INTO CLEANING YOUR WATER. SPARTANBURG WATER TESTS THOUSANDS OF SAMPLES EACH YEAR TO ENSURE YOU’RE GETTING THE VERY BEST – STRAIGHT FROM YOUR TAP.

It’s an operation that runs 365 days a year, and it’s no small task. Drinking water monitoring starts with quality source water in our reservoirs and continues in the drinking water treatment process and through the hundreds of miles of pipes it travels to our customers.

To monitor water quality throughout this journey, frequent testing of the chemical, biological, and physical properties of water occurs at each step throughout the process. This also includes the strategic utilization of specialized online instrumentation at the drinking water treatment facility that can monitor critical parts of the water treatment process in real-time. It takes our dedicated Laboratory Services and Drinking Water Treatment operational staff, as well as state-of-the-art equipment to collect, transport, test, and report the results of numerous samples before water is distributed to our customers.

The lab is certified as an approved environmental testing laboratory by the South Carolina Department of Health and Environmental Control (DHEC) and must constantly undergo rigorous quality control testing. To give you some perspective, so far in 2019 alone, the lab has conducted more than 12,200 water quality tests on our lakes and watershed. That number is projected to exceed 24,000 by year’s end. Include drinking water and treated wastewater tests and the number can top 300,000 annually.

How does the lab staff collect and analyze so much data? The answer is with excellent technology and tools.

One of these tools is the Exo Sonde. This tool is taken out on each of our reservoirs and submerged into the water at a variety of depths. The water is analyzed every three feet – from surface to bottom – at a number of marked locations. Digital smart sensors on the end of the Exo Sonde measure an array of parameters right on site, including temperature, dissolved

oxygen, pH, and total chlorophyll – and wirelessly store that data. With this tool, our lab staff is able to gather data for longer periods of time and with fewer interruptions.

In the lab, experienced analysts turn to other technology to read the data collected. One such tool is the FlowCam. This device analyzes a very important component... algae, which can impact taste and odor.

The FlowCam is a flow imaging microscope that captures high-resolution digital images of microscopic particles. From each particle, more than 40 physical parameters are calculated and can be analyzed using visual spreadsheet software. Lab technicians are able to compare the images to this database to determine which types of algae are present in a given water sample. This is not the only technology used to detect algae, however. We will soon add the GC Mass Spec to our lab as an additional technological advantage.

This piece of equipment will allow our lab technicians to test for taste-and-odor-causing substances, such as MIB and Geosmin produced by Blue-Green Algae, in house. Because this test is time-sensitive, our lab technicians currently have to overnight water samples to Indiana in order to have them processed within the 48-hour timeframe. Not only will the GC Mass Spec

save our lab precious time, this is also an investment that will save money.

This equipment is just a glimpse at the tools and processes that go into ensuring the very best water quality. The other piece of the puzzle is the people – our dedicated and experienced team that run the water treatment facilities and lab 365 days a year.

Not only does the Lab Services Staff operate the lab, they also respond to calls from customers who may have a question or concern about their drinking water. In many cases, this results in a staff member going to the customer’s home and collecting a sample to test for water quality.

DHEC holds our lab to a high standard that our staff must work to uphold, but our team constantly goes the extra mile, conducting its own tests and analyses to make sure our customers are getting the very best every time they choose tap.

It’s thanks to our staff – and technology – that we’re able to achieve our mission: to provide quality water to our region in a reliable manner.



Surveying Project Now Complete

YOU MAY NOTICE SOME NEW SURVEY MONUMENTS AROUND LAKE BOWEN, LAKE BLALOCK, AND MUNICIPAL RESERVOIR #1. IF YOU'RE WONDERING WHAT THEY ARE, THESE CONCRETE AND METAL MONUMENTS SERVE AS BENCHMARKS TO HELP SURVEYORS ESTABLISH PROPERTY LINES.

Spartanburg Water commissioned a local surveyor to verify, replace, and install the markers around all three reservoirs. The six-month project wrapped up in September.

There are now 35 survey monuments around Lake Bowen, 20 around Lake Blalock, and nine around Reservoir #1. All of these markers are on Spartanburg Water property.

The survey monuments are an important tool for both Spartanburg Water and residents. They will help both our surveyors and surveyors hired by residents define property boundaries and prevent encroachments.

Spartanburg Water is pleased to have completed this project that will help ensure accuracy and provide clarity for all who share our drinking water reservoirs and the surrounding land.



Talks Result in Revised Policies and Procedures

AFTER SEVERAL PRODUCTIVE MEETINGS BETWEEN LAKE BOWEN RESIDENTS AND SPARTANBURG WATER – AND A REVIEW OF THE COMMENTS AND CONCERNS SHARED DURING THE RECENT PUBLIC COMMENT PERIOD – WE ARE PLEASED TO SHARE THE GUIDELINES THAT GOVERN OUR RESERVOIRS HAVE BEEN FINALIZED TO THE BENEFIT OF BOTH PARTIES.

One such success to come from this collaboration was the decision by the Commission of Public Works of the City of Spartanburg to move forward with separate policies and procedures documents for each of the three reservoirs.

The original Lake Bowen Policies and Procedures and the Lake Bowen Irrigation Plan have been combined into one document that takes into consideration and implements many of the concerns and comments from Lake Bowen residents. These include simple landscaping maintenance below the 827' MSL Contour Line and the transfer of permits following the sale of property.

The Commission voted in favor of moving forward with this

revised policies and procedures document, which took effect on October 31, 2019.

You can review a printable copy of the updated document on our website, www.spartanburgwater.org.

Over the coming months, commissioners plan meet with residents from Lake Blalock and Municipal Reservoir #1 to discuss their individual documents and concerns.

The positive results we've achieved so far are an example of what we can accomplish when we all work together. We value our neighbors who share the lakes – and the land – and look forward to continuing to build strong relationships.

