

LAKE NEWS

and Shoreline Views



88 Years Old and Still Looking Good

Known for its beautiful rustic setting and nearly 10-mile views, thousands of lake residents and visitors step back in time each year when they visit **Willmore Lodge**. The 6,500-square-foot lodge, listed on the National Register of Historic Places, occupies a place of prominence on a hill overlooking the lake. Its history runs deep, and it stands today as part of the rich history of our beautiful Lake of the Ozarks. The lodge was constructed as an administration and recreational retreat by Union Electric (UE) in the 1930s. The same firm, Stone and Webster Engineering, which oversaw the

construction of Bagnell Dam, was responsible for the construction of the lodge.

A St. Louis architect named Louis La Beaume designed the 29-room lodge for UE to use as its administrative building during the construction of the dam. Since it was a corporate retreat for one of the most important businesses in the country, the plans naturally included several luxuries — such as five bedrooms with separate baths, a beautiful terrace patio and a grand fireplace.

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The building's construction actually started in Oregon, where Western white pine logs were not only cut, but also completely assembled into an Adirondack-style lodge. Only after inspection and approval by UE president Louis A. Egan, in 1930, were the logs transported by rail to the Ozarks and reassembled. Assembly only required three months. Square wooden pegs and overlapping corner saddle notchings held the logs together. Completing the rustic look, beautiful stones came from nearby quarries for the terrace patios and fireplace. The cost came to \$135,000, and the lodge was known as Egan Lodge for many years.

In 1945, UE sold the lodge and 40,000 acres (including 800 miles of shoreline) to Cyrus Crane Willmore for \$320,000, and the site became known as the Willmore Lodge at that time.

After changing hands two more times, the lodge finally returned to the ownership of UE, now Ameren Missouri, in 1996. UE and the Lake Area Chamber of Commerce ran with the idea of turning it into a visitor's center and museum, and the Chamber still occupies it while Ameren Missouri maintains the beautiful historic structure.

Keeping the Lodge In Shape

Ameren Missouri's strong commitment to the Lodge and rich history of the lake is exemplified in several projects that have been recently completed and more planned for this year to keep this important structure in great shape while maintaining its original historic character. The HVAC system, patio/terrace, hand rails and basement windows were replaced last year. Future projects include replacing chinking and some of the original logs that have deteriorated. Ameren Missouri works closely with the State Historic Preservation

office in making these improvements in such a way that it preserves and actually enhances the look and longevity of the structure for all of us to enjoy for many years to come.

For visitor information regarding the lodge check out the Lake of the Ozark Section of the Ameren Missouri's website at AmerenMissouri.com/lake or the Lake Area Chamber of Commerce at LakeAreaChamber.com.



New concrete decking installed in 2018.

Project Boundary

Ameren's project boundary is an important elevation based line that defines where shoreline improvements are managed by Ameren

Missouri. Although it can be higher in some areas, the project boundary is most commonly at the 662' elevation. Although the 662' elevation may occur on the face of a seawall, the project boundary is never located directly at the seawall; it will always be behind the wall a minimum of 3 feet or more. There are many shoreline activities permitted within the boundary; however, it is very important to note that all structures located within

the project boundary must be in compliance with Ameren Missouri's approved shoreline management plan (SMP).



What needs a permit?

- Dock and dock permit modifications
- Bank Stabilization: Seawall, Rip-Rap, Stacked Stone, Vegetation
- Accessory Structure: Pier, Steps, Patio, Deck
- Dredging / Excavation / Soil Disturbance
- Lake Water Pump
- Geothermal Heat Coil
- Boat Ramp
- Any structure, improvement or work performed within the project boundary



You should know where the boundary is or have it marked prior to planning any shoreline projects. If you have questions about the project boundary or allowable constructions along the Lake's shoreline, contact Ameren Missouri's shoreline management office at **1.573.365.9203** or visit AmerenMissouri.com/lake.

Adopt • the • Shoreline

Are you interested in becoming one of over 14,000 individuals that have volunteered and kept the Lake of the Ozarks clean for the past 27 years? Do you have a section of shoreline that you would like to adopt and ensure it is free of trash and litter? If so, you should contact the Adopt-the-Shoreline program at 1.573.365.9252 and see how you can become involved with making the Lake of the Ozarks a better place for everyone to enjoy.



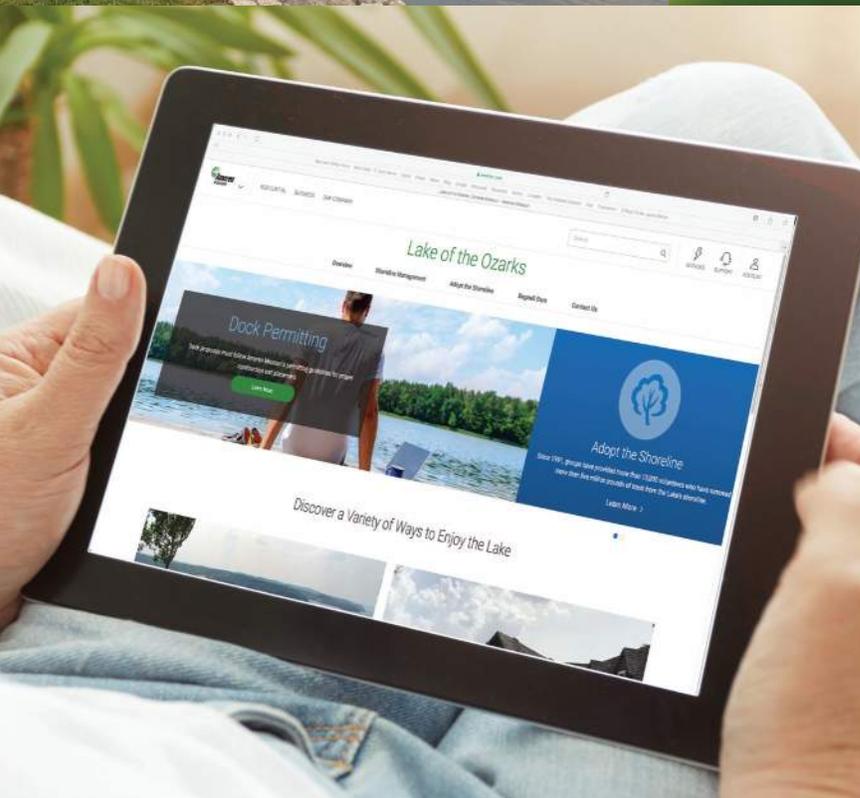
Expect an Inspector

The shoreline management teams workload encompasses much more than processing permit applications. Not counting denied or returned applications, the Shoreline Management Office processed 4,807 permits in 2018. The 2019 Annual Shoreline Assessment and Compliance Inspections are slated to start in early Spring. Our inspection team will be placing eyes on all 1,150 miles of shoreline and performing more than 1,000 compliance inspections this year. Scheduled compliance inspections help ensure newly permitted facilities such as docks and bank stabilization projects are installed as approved.

Keep in mind, all structures located within the project boundary are subject to inspection at any time. Additional site inspections are performed throughout the year, as needed, due to requests by property owners, concerned citizens, partner resource agencies and others. See our website for contact information at AmerenMissouri.com/lake.

Inspectors may arrive at your property by boat or vehicle. Ameren inspectors are always able and willing to identify themselves. Although field time is at a premium, our inspectors look forward to interacting with the public by answering any questions you may have.

So remember if someone is looking at your dock, shoreline or other structures in the project boundary, it may be us.



New Shoreline Website

With upgrades to Ameren.com, that include mobile enhancements, Lake of the Ozarks information is literally at your fingertips. Older links may need to be updated to AmerenMissouri.com/lake.

The new website is a streamlined information portal to many topics of interest to Lake of the Ozarks property owners and visitors alike. You can check on Lake Levels, learn about programs like Adopt-the-Shoreline, read up on the permitting process, review the latest safety tips or learn about historic properties at the lake. Contact information for Ameren services as well as resource partners can also be found on the site.

With upgrades to Ameren.com that include mobile enhancements all of this and more is easier to access than ever before.



Go Native! Landscaping and Shoreline Gardens

So why is the vegetation along the project boundary so important to Ameren Missouri? Our Shoreline Management Plan (SMP) was developed for enjoyment of the Lake today and ensure it continues for generations to come. The SMP establishes how shoreline activities can occur with the goal of protecting the environmental, scenic and recreational amenities of the Lake. Accordingly, any work or improvement within the project boundary must be in compliance with the SMP and approved by Ameren Missouri before commencement of activity. Vegetation on and adjacent to the shoreline plays an important role in meeting that goal.

Management of vegetation is important to the aesthetic qualities and environmental health of the Lake of the Ozarks. In addition to enhancing the natural beauty of the lake, terrestrial and aquatic vegetation helps prevent water pollution and provide habitat for birds, mammals, and fish. Native plants can reduce the amount of time, money and resources required to keep them healthy since they are adapted to thrive in our environmental conditions.

Appropriate native trees include dogwood, redbud, serviceberry, persimmon, mulberry, native Missouri oaks or hickories, sugar maple and green or white ash. Suitable native grasses and perennial plants include big and little bluestem, Indiangrass, switchgrass, and the full assortment of wildflowers, sedges and ferns that are native to Missouri.

So remember when you begin to dream up an outdoor improvement project such as a themed garden or comprehensive landscape plan, Go Native.



Electrical Safety: Land and Water

Many dock owners have learned that inspecting and upgrading the electrical wiring and fixtures on their dock shouldn't stop at the shoreline. And we have learned the importance of this since many of the harmful electric shocks that occur on the water come from faulty grounding or wiring on the land. We must inspect our land and water systems to ensure the dock does not present a hazard to you, your family or other lake users. It is very important to understand the power source is your utility provider's transformer, not the disconnect box at your seawall or near your dock ramp. It's also very important to know the ground rod at the seawall is not the ground rod that will save you from electric shock – it's the grounding conductor back to the transformer that is the most important. We also know this entire land and water system can be damaged by external factors including digging without locating utilities, damage to wires and conduit during lawn care, wave action, faulty installation and a host of other factors. Ameren Missouri strongly recommends having your entire system inspected and tested by a qualified electrician. This inspection must include all of the components between the power source (transformer) and the dock with special attention placed on the grounding system between the dock and the utility transformer.



In order for your docks electrical system to function in a safe manner, the grounding system must be connected all the way back to the utility transformer. This is accomplished by testing the grounding system between the dock and the house panel box, not to the ground rod or shoreline disconnect near the seawall. This test should show that there is less than 1 ohms resistance on the grounding system.

Are you an electrician or looking for one?

The importance of electrical safety on your dock cannot be understated. In fact, it is such an important issue, several lake area electricians have formed an organization to ensure their members have completed training on proper installation of electrical systems on docks. Additionally, their members agree to complete continuing education training, do all their work according to the codes and ordinances and to have their work inspected when an inspecting authority is in place. If you are an electrician looking for training or a dock owner needing electrical work, you can find additional information about the LOZ Association of Electrical Contractors at lozaec.org.

Protect Your Boat and Your Lake

With the recreational boating season right around the corner, boat owners will soon be rushing to clean and de-winterize their boats and get them ready for the summer season. State and Federal resource agencies don't consider marinas and boat owners to be major contributors of nonpoint pollutants that contribute to water quality problems, but boat cleaning and maintenance can introduce harmful pollutants into the lake. Some substances released by boats and marinas can include metals, petroleum hydrocarbons, solvents, antifreeze, acids, and detergents. These harmful chemicals are much more likely to be released during cleaning and maintenance. De-winterization is a good time for cleaning and maintenance, and many times boats at Lake of the Ozarks are not removed from the lake, increasing the potential for pollutants to enter the water. Below are a few helpful facts and tips to prevent boat-related pollutants from entering your lake:

- Spilled oil products are immediately toxic to water quality, aquatic life and fuel/oil sheens on the water surface look and smell terrible. If de-winterization of your boat includes draining such fluids, consider using a non-spill vacuum-type system to perform spill proof oil and fuel removal. Properly contain and dispose of all oil products. Marinas may collect and recycle oil, but be sure that the waste oil is safely stored inside away from the lake and shoreline.
- A light rinse and dry on the water is OK, but deep cleaning and rinsing soaps, detergents and associated boat surface muck into the lake can be harmful to water quality and aquatic life. Remove your boat from the lake for a thorough cleaning away from the lake or shoreline.
- When you purchase cleaning supplies make sure they are bio-friendly and phosphate-free
- Paints and painting solvents are carcinogens and can kill aquatic life. Never paint, stain or remove paint on your boat near the water.
- Batteries contain lead and toxic acid and can become pollutants if not properly handled near the water. Old batteries are valuable and recyclable. Check with local marinas and other battery dealers if you need to dispose of old boat batteries
- The best way to winterize your boat is to completely drain water from the engine and prevent freezing with no addition of anti-freeze.
- If you must use anti-freeze, Ethylene glycol is the traditional, more toxic antifreeze; propylene glycol is a less toxic alternative. Propylene glycol is always the preferred antifreeze for boats, but should still be properly collected and reused or disposed. Bilge socks are recommended; it is an absorbent device that removes any liquid pollutants from the bilge area. It is also helpful to store boats with a bilge sock in place to collect pollutants while the boat is not in use.
- If you use a marina or service person to winterize, de-winterize, service or clean your boat, make sure they follow these rules before you hire them.
- Remember to follow similar pollution prevention tips both winter and spring to protect your boat and your lake.





Don't Pour Money In the Lake

*Tips from Tony Thorpe with the
Lakes Of Missouri Volunteer Program*

Homeowners can have a direct impact on the quality of water in their lake. One significant effect is in the way they manage their lawns.

Many homeowners “farm” their lawns to maximize the growth of grass and decorative plants. Management techniques may include pesticide application (herbicides, insecticides, fungicides) to minimize damage to plants and fertilization to promote vigorous growth. These chemicals, when used properly, often produce great results. Over-applying these chemicals, however, is akin to pouring money in the lake and can have very negative effects on lake health.

Pesticides (herbicides, insecticides, fungicides):

Pesticides should be a last resort. Strategies are different for various pests, but it can't hurt to try a couple of different approaches before jumping straight to the toxic substances. If you absolutely have to use pesticides, do your wallet (and your lake) a favor and follow a couple of guidelines.

- Read the label. This is where you will learn how to apply the pesticide, at what rate, and safety concerns for yourself and the animals around you.
- Don't spray pesticides right before a rain. The rain can wash the pesticide into the lake where aquatic animals (including the fish you eat) live.
- Don't apply too much. It doesn't work any better if you spray at twice the dose. You are simply wasting money and endangering aquatic life.

Fertilizer:

Just as fertilizer helps your grass and other plants grow, it also helps algae grow in the lake. Our lake has enough naturally occurring algae; we don't need any more. Applying too much fertilizer, or applying just before a rain, will result in fertilizing the lake. Before applying fertilizer, consider getting a soil test. The results of the test will tell you what nutrients your soil needs and can help you understand how much to apply. You can tailor your fertilizer to help your soil meet the requirements of your plants.

For soil tests, contact your county extension office. The tests are usually less than \$20 each and the cost per test often gets cheaper if you bring in several samples from different areas of your lawn.

Native plants:

Plants adapted to the area will require much less maintenance than plants adapted to other soils and climates. Rather than fighting Mother Nature, give native plants a chance. Check out grownative.org for some local plant vendors and sales near you.

The Lakes of Missouri Volunteer Program operates out of the University of Missouri and involves citizens in lake monitoring. The program has been measuring algae and nutrients in the Lake of the Ozarks for over 25 years. For more information visit LMVP.org or email info@LMVP.org.

Fish Kills at Lake of the Ozarks

by Greg Stoner,
Fisheries Biologist Missouri Department of Conservation

Nobody likes to see dead fish. From the standpoint of the angler it means lost recreational opportunities. To the business community it may mean lost revenue. To the shoreline homeowner it can be an unsightly (and smelly) flotilla of carcasses floating around their dock. To a fisheries biologist it generally means that something, ecologically, has gone wrong.

At Lake of the Ozarks, the reason for most of the fish kills we experience are due to either dissolved oxygen issues and/or water borne pathogens. In many instances, the two are inter-linked. For the most part, these kills are the result of natural, biological processes. Over the years, only a handful of fish kills at the lake have been attributed to pollution.

The air we breathe contains approximately 21% oxygen, or 210,000 parts per million (ppm). Most lakes and streams generally contain less than 10 ppm of dissolved oxygen (D.O.). Although fish are very good at extracting oxygen from the water, they do have their limits. In general, if the D.O. levels fall to 5 ppm, fish start to experience stress. If D.O. levels hover around 3-4 ppm for an extended time, or if they fall extremely low (1-2 ppm), the probability of having a fish kill increases.

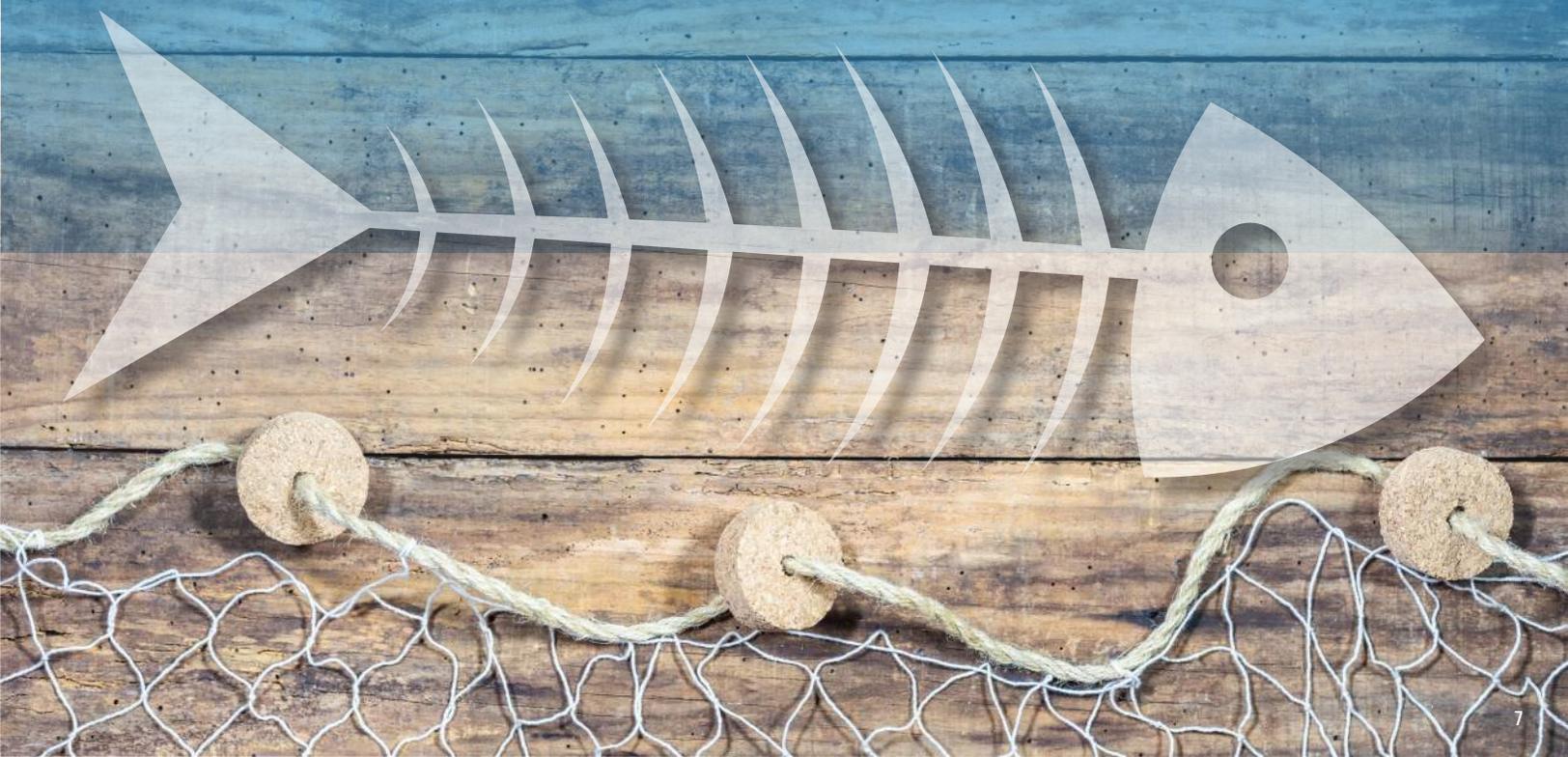
What determines how much D.O. is in the water? A physical characteristic of water is the warmer it gets, the less oxygen it can hold. This is unfortunate for fish which require more oxygen to survive in warm water than they do in cold water because their metabolism is higher. As water temperatures climb in the summer, it becomes increasingly difficult for fish to extract sufficient D.O. from the water. There really is no specific water temperature that we can say a fish kill is likely to occur. We have had summers when

the water temperature climbed above 90 degrees with no observed fish mortality.

But temperature alone is not always the cause of low D.O. Many times, other biological processes going on at the same time can drive D.O. levels lower than what we would expect based only on water temperature. A good example of this occurred in June of 2018 producing fish kills on the Glaize, Gravois, and Lower Osage Arms. We were experiencing a dry spell with very little inflow entering the lake. As a result, the water was very clear which allowed for greater than normal growth of tiny plant-like organisms called algae. Algae is important to the ecology of the lake. It provides food for microscopic animals called zooplankton which in turn support the food chain all the way up to the largest sportfish. But with algae, like most things in life, you can get too much of a good thing. Living algae produces oxygen during the day just like plants through a process called photosynthesis. However, when algae dies, the decomposition process uses a great deal of oxygen. In this case, the combination of high water temperatures and an algae die-off resulted in a fish kill.

Not all fish kills happen in the summer. During the winter, homeowners will sometimes see thousands of small dead gizzard shad. These small fish, which feed on zooplankton, have a limited amount of fat reserves going into the winter. During an extended period of cold weather, plankton levels can drop to a point where there is simply not enough food to get these small fish through until spring.

To end on a humorous note, not all "fish kills" turn out to be a bad thing. I was once notified that there were dead fish at the mouth of a creek entering the lake. On inspection, I found several dead crappie (15 to be exact). The person that reported the kill failed to mention (or did not notice) that the fillets from each of these carcasses had been neatly removed!





P.O. Box 993
Lake Ozark, MO 65049

Website:
AmerenMissouri.com/lake

Important Phone Numbers:

Lake Protection Hotline
1.573.365.9203

Lake Level
1.573.365.9205

Adopt-the-Shoreline
1.573.365.9252

Water Patrol Division (Buoy)
1.573.751.3313 ext.1036

Benton County (Emergency Management)
1.660.438.8412

Camden County (Planning & Zoning)
1.573.346.4440

Miller County (County Commission)
1.573.369.1900

Morgan County (County Commission)
1.573.378.4643

Shoreline Management Staff is here to assist you with your next Lakeside project and to help answer your questions about Ameren Missouri's role at the Lake:

Osage Arm – Bagnell Dam to 16-mile marker and Gravois Arm

Josh Friedrich — 1.573.365.9247
Chris Korsmeyer — 1.573.365.9209

Osage Arm – 16 to 26-mile marker, Glaize Arm, commercial docks, and docks 3,000 square feet or larger

Heidi Shewmaker — 1.573.365.9216

Osage Arm – 26 to 32-mile marker and the Niangua Arms

Chuck Van Bebber — 1.573.365.9215

Osage Arm – 32-mile marker to Truman Dam

Joe Daly — 1.573.365.9207

Dredging, wetlands, shoreline vegetation or other environmental questions

Bryan Vance — 1.573.365.9252
Brian Spencer — 1.573.365.9217



EVERY STRUCTURE ALONG THE LAKE SHORELINE MUST BE COVERED BY A VALID PERMIT. Do you have copies of yours?

To obtain copies of your permits, you will be asked to submit a permit request form. The permit request form can be downloaded from our website or by contacting the shoreline management office at **1.573.365.9208** or **1.573.365.9212**.