

LANDOWNER CERTIFICATION PROGRAM

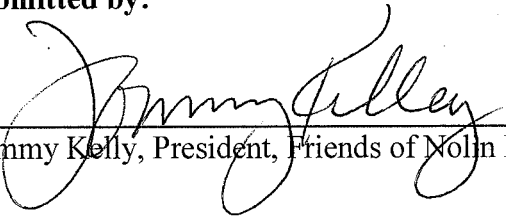
**Project Closeout Report
Friends of Nolin Lake**

August 2016

Project Closeout Report for the Nolin Lake Landowner Certification Program

FFY 2014 Performance Partnership Grant PPG 95469714
Nolin Lake Lakefront Property Certification Program
Application Number - 14-03
Contract Number# PON2 129 1500001112
Project Period - February 15, 2015 to August 22, 2016

Submitted by:



Tommy Kelly, President, Friends of Nolin River Lake

Date: 9-12-16

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Funding for this project was provided in part by a grant from the U.S. Environmental Protection Agency (USEPA) through the Kentucky Division of Water, Nonpoint Source Section, to Friends of Nolin Lake as authorized by the Clean Water Act Amendments of 1987, §319(h) Nonpoint Source Implementation Grant #(insert your grant number here). Mention of trade names or commercial products, if any, does not constitute endorsement. This document was printed on recycled paper."

Table of Contents

1. PROJECT SUMMARY.....	
2. OUTPUTS/MILESTONES.....	
3. FISCAL CLOSEOUT	
4. PROJECT STATUS	
5. LESSONS LEARNED	
6. APPENDICES	
a. Grant Coordinator Job Description	
b. Landowner Certification Program Description	
c. Landowner Certification Program Application	
d. Point System Evaluation	
e. Program Description Powerpoint	

1. Project Summary

Nolin River Lake is a 5,795 acre Corps flood control project, and as such the Corps owns the land inundated at summer pool level (515' msl) and additional lands above summer pool. Land was intended to be purchased to elevation 544' msl, but the property line is not consistent at that elevation. At summer pool, there are 7,618 acres of Government property surrounding the lake.

The Lake is surrounded by over 140 Subdivisions. These lakefront developments have negative impacts on the waters of Nolin River Lake. Impacts include: bacteria, excess nutrients, sedimentation, litter, shoreline erosion, and introduction of invasive terrestrial plant species.

This project will focus on the lands and waters of Nolin River Lake and the private property immediately surrounding it. Some attention will be given to education and monitoring in upstream areas, but these activities will be minimal.

It is the goal of this project to:

- 1. Reduce the presence of fecal bacteria in the lake, especially near public swimming access points;*
- 2. Combat invasive plant species*
- 3. Reduce nutrient and sediment contributions*
- 4. Identify, prioritize, and reduce shoreline erosion*
- 5. Reduce litter along the shoreline*

The primary means for obtaining these goals will be the implementation of a Certification Program. Through implementing BMP's, lakefront property owners will gain credit toward certification. If an adjacent property owner implements BMP's in each of the four categories (Bacteria, invasive species, Nutrients and sediment, and shoreline erosion) and attends the applicable educational class, the property will be considered a "Friends of Nolin Certified Property". Groups of property owners can also apply for certification (all the members of a group boat dock, all the members of a permitted pathway, etc.).

Recognition will also be given to subdivisions where numerous properties are certified.

Neighborhoods could obtain "Friend of Nolin Certified Community" status by meeting targets set for percent of properties certified.

Bacteria- Septic tank pumping, septic system repair, septic tank access retrofits, attend an educational class

Invasive Species- removal of invasive species from private property and public property below landowners homes, removal of invasive landscaping plants, planting of suitable native plants on private property, attend an educational class

Nutrients and sediment – Attend educational class, install check dams or silt fencing, agree to discontinue fertilizer use or test soil and apply only at appropriate rates and times, plant suitable groundcover.

Shoreline Erosion – Enter into an erosion control permit at a permitted boat dock or other area along the shoreline at Nolin. Erosion control would include stone placement and vegetative plantings per USACE guidelines. Erosion control workshops would be provided to teach technique and assist with design of projects.

Other project activities:

Trash Clean-up: In addition to the certification program, the annual shoreline clean-up day will be continued and bolstered during this project.

Invasive Species Removal: Groups of volunteers will be utilized to map and remove invasive species from public lands at Nolin River Lake.

Harmful Algal Blooms: In addition to above activities, provide assistance to Upper Green River Watershed Watch to increase sampling for nutrients in upstream areas. We also hope to partner with agencies to provide education concerning BMP's and Incentive programs to reduce nutrient run-off into upstream tributaries.

Education: Partners will provide education to program participants as described above. The Friends of Nolin Lake will utilize their website, sponsors, and public events to educate the public concerning non-point source pollution and encourage lakefront property owners to participate in the Certification Program.

Project Partners:

Friends of Nolin Lake, Kentucky Division of Water, Kentucky Waterways Alliance, Edmonson County Health Department, Local UK Cooperative Extension Service offices, Kentucky Watershed Watch, USDA – NRCS, and Southwest Kentucky Mountain Bike Association.

2. Outputs/Milestones

Project Guidelines: Friends of Nolin Lake hired Justin Smith as the program coordinator for the grant in March 2015. He developed the draft certification guidelines prior to accepting a new position with a federal agency in California in April 2015. The guidelines were sent to EEC/DEP/DOW-Watershed Management Branch for review in June 2015.

Boundary Inspections: Inspections started in October. Nolin River Lake Park Rangers began to look for concentrated nutrient and sediment sources and potential candidate properties for aspects of the Lakefront Certification program. Findings will be reported to Friends of Nolin River Lake as inspections are conducted through the fall and winter season. 45 miles of boundary line inspected as of 2/29/16.

Volunteer Tree and Stake Planting: 4,000 live stakes planted along eroding Nolin Lake Shorelines on March 28 and 31, 2015. 16 volunteers worked a total of 61 hours.

Lakeshore Cleanup: Friends held the annual lakeshore cleanup on September 9, 2015. 147 volunteers participated with the event volunteering 735 hours of time. 145 bags of trash, 2,565 pounds of garbage collected, cleaning 45 miles of shoreline.

3. Fiscal Closeout

Original Budget as Outlined per Memorandum of Agreement:

Budget Categories	319(h) Dollars	Match	TOTAL
Personnel	\$18,000	\$33,333	\$51,333
Supplies	\$9,000	\$0	\$9,000
Equipment	\$0	\$0	\$0
Travel	\$700	\$0	\$700
Contractual	\$22,300	\$0	\$22,300
Operating Cost	\$0	\$0	\$0
Other	\$0	\$0	\$0
TOTAL	\$50,000	\$33,333	\$205,713

Final Cumulative Billing:

Budget Categories	319(h) Dollars	Match	TOTAL
Personnel	\$4143.10	\$11,154.35	\$15297.45
Supplies	\$417.09		\$417.09
Equipment			
Travel			
Contractual			
Operating Cost			
Other			
TOTAL	\$4560.19	\$11,154.35	\$15,714.54

Final Budget Expenditures:

Personnel Expenses: Gross pay to Justin Smith for services performed as the Lakefront Property Certification Program Coordinator totaled \$3780.00. Workers compensation insurance for the position totaled at \$363.10. From March 28 – 31, 2015, 16 volunteers planted 4,000 live stakes along the Nolin River Lake shoreline, valued at \$1407.27.

Volunteers participated in the annual lakeshore cleanup on September 19, 2015. 145 bags of trash that cumulatively weighed 2,565 pounds were collected from 45 miles of Nolin Lake's shoreline.

We had 147 volunteers that collectively worked 422.5 hours. That's what we have documented through our volunteer agreement forms with Friends. The 2015 Federal Government rate of \$23.07 to derive the personnel expenses for this billing period.

Supply Expenses: Bank checks for the program account totaled at \$37.10. Laptop computer purchased for the coordinator position cost \$379.99.

4. Project Status

The Friends of Nolin Lake Landowner Certification Program has been indefinitely suspended at this time. Currently there is only one active board member with the Friends of Nolin Lake group, activity within the organization is at an all-time low. The project failed to meet many of the outputs and milestones set in the original program agreement due to a lack of support and manpower within the group. Friends of Nolin has requested to terminate the project early so that funds dedicated to this program may be allocated somewhere else. Work with the project has been stagnant since October 2015. Attempts to find assistance outside the group to manage the program have not been successful.

5. Lessons Learned

Ultimately this program failed to see completion due to a lack of direct leadership with oversight and management. During the time this program was brought into inception, the Friends Group was doing well and had members that were able to oversee aspects of the program including recruiting a grant administrator, managing finances involved with the program, and supervising schedules and outputs from the grant agreement. Family issues, a lack of interest with volunteering, and poor transition planning with filling vacated positions, led to the Friends of Nolin Lake having very little support and almost caused a collapse with all group functions. The Nolin Lake Landowner Certification Program suffered directly from these events taking place.

The intent with this program was to find a qualified person with a natural resource related background to manage this program through part time work. Nolin Lake is situated in a rural setting and finding a person with minimal qualifications willing to commute for part time pay was challenging. The person that was hired to manage the program was selected for a full time job out of state within six weeks of accepting the job. Subsequent efforts to find a suitable replacement failed. Friends of Nolin Lake reached out to the Geography and Geology Department at Western Kentucky University to see if they would be interested in managing the program. Discussions about managing the program with graduate students seemed promising, but the program had fallen significantly behind in achieving milestones and Friends of Nolin Lake was still lacking a volunteer to help manage the grant.

FONL Water Quality Coordinator - Job Description

Work with Board of Directors to draft Lakefront Property Certification Program. Develop forms necessary to support applications for assistance/certification through the Lakefront Property Certification Program. Work with partners to develop forms, training materials, and workshops to provide education sessions as outlined in the Program. Organize and promote volunteer events related to the goals outlined in the Non Point Source Pollution Project Plan (Attached). Promote Lakefront Property Certification Program to lakefront property owners and other property owners in the immediate vicinity of Nolin River Lake. Meet with applicants applying for certification. Coordinate with vendors to design and supply signs indicating certified lakefront properties. Represent the Friends of Nolin Lake in the community and local media (TV, Radio, and Newspaper).

If necessary, this position may require solicit of donations from individuals and businesses in conjunction with the Friends of Nolin Lake Sponsorship Program.

This position is part time and seasonal in nature. The position will require an average of 10 hours per week, though initial workload will be heavier and some weeks once the program is established, could require little or no work. This position shall not anticipated to exceed 31 Dec 2016, but could be extended or shortened due to changes in funding or changes in project scope.

A 60 day probationary period will apply to this position.

Location:

Office space will be provided at the US Army Corps of Engineers office at 2150 Nolin Dam Road, Bee Spring, KY. In general, work will be performed at this location. In some circumstances, work may be performed at other locations, including a home office. Work performed at other locations will be reviewed on a case by case basis and will require supervisor approval.

Transportation:

The applicant must possess a valid driver license and privately owned transportation to perform site visits, meet with partners, etc. This travel in performance of official duties will be reimbursed at a prevailing rate.

Job Duties

Develop Lakefront Property Certification Program:

- Assign point values to a number of actions listed below.

- Designate the number of points required to become a certified lakefront property
- Develop signage to recognize certified properties
- Educate developers and realtors concerning the program and promote the program through the real estate market.
- Engage lakefront property owners and property developers in the process.

Lakefront Property Certification Program should contain the following:

- Process to cost share septic tank pump outs at properties adjacent to Nolin River Lake
- Provide Septic Tank Maintenance workshops for homeowners
- Cost Share septic system upgrades/repairs
- Provide educational workshop to educate adjacent property owners on the impacts invasive species have on natural ecosystems and alternative native landscaping plants
- Cost Share Planting of native alternatives in landscaping and removal of invasive species.
- Remove invasive species on public property in the vicinity of boat docks and other permitted/licensed facilities and improvements. (through certification program)
- Provide workshops to educate lakefront property owners concerning sustainable lawn care and demonstrate simple solutions to reduce nutrient run-off.
- Provide fact sheet to guide lakefront property owners concerning fertilizers and their correct application.
- Promote soil testing
- Incentivize re-vegetation of “buffers” between lakefront properties and Nolin River Lake. Buffer can be on private property or can be through reducing/relinquishing USACE issued vegetation alteration permit.
- Develop and provide to lakefront property owners a property self evaluation brochure/form to evaluate current water flow from their property toward the lake.
- Promote landowner involvement in removing organic material / stabilizing erosion.
- Encourage Lakefront Property owners to plant trees and live stakes along shoreline
- Encourage Lakefront property owners to stabilize shoreline through a combination of earthwork, rock placement, and re-vegetation.

- Develop a webpage on the Friends of Nolin site dedicated to the Certification Program.

Coordinate the FONL effort for the following events:

2015 and 2016 Great Nolin Stake Out

- Organize volunteers
- Solicit donation of food for the event
- Publicize thru local and social media

Shoreline Clean up 2015 and 2016

- Organize Volunteers
- Solicit monetary donations and items for prize give-a-ways
- Publicize thru local and social media.

Coordinate the following group volunteer activities:

Invasive species removal

Planting of native vegetation

Mapping of invasive species, eroded shoreline, illegal dumps, and yard waste.

Stabilization of shoreline, removal of excess yard waste, and installation of educational signs.

Desired Qualifications:

High School Diploma and a minimum of 64 hours of college course work.

General understanding and some coursework related to environmental principles.

Ability to work with partners to achieve a common goal

Ability to promote events and activities to the general public and lakefront residents

High energy, positive, “can-do” attitude, flexibility, teamwork, self-starter, attention to detail, high degree of initiative, and ability to work as home based employee.

Ability to maintain a professional appearance which reflects appropriately on the Friends of Nolin River Lake.

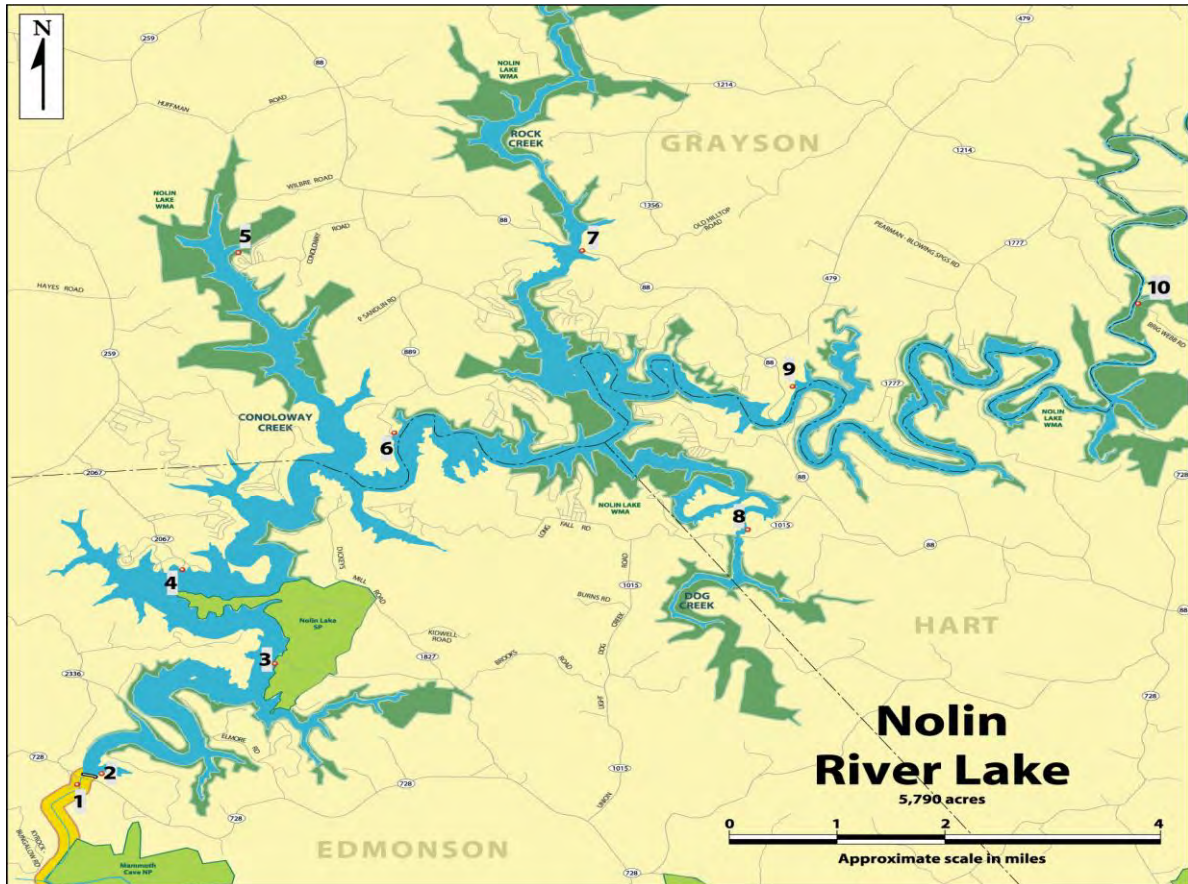
FRIENDS OF NOLIN LAKE

PROMOTE

PRESERVE

ENHANCE

LAKEFRONT PROPERTY CERTIFICATION PROGRAM



P.O. BOX 184

CLARKSON, KY 42726

PHONE: 270-282-1256



**US Army Corps
of Engineers**
Louisville District

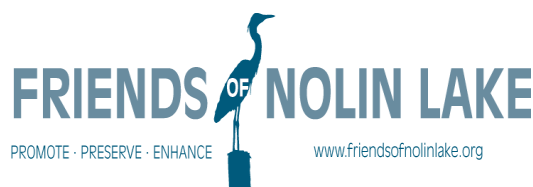
Lakefront Property Certification Program

The Friends of Nolin Lake are working in conjunction with U. S. Army Corps of Engineers and the Kentucky Division of Water to promote best management practices for residents of Nolin Lake. The Friends of Nolin Lake is a non-profit, public service organization with a goal to promote, preserve, and enhance Nolin Lake. We have developed a Lakefront Property Certification Program to encourage residents to do their part in protecting the lake and surrounding property. We will inform and educate the community members of Nolin about what can be done to reduce pollution so residents can continue to enjoy the beauty and serenity of living near the lake. The Certification Program includes: bacteria, invasive species, nutrients and sedimentation, shoreline erosion and restoration. The steps being taken are known as best management practices or BMP's that help secure the protection of our lake, wildlife, and residents. Many of these categories have cost-share opportunities allowing the Friends of Nolin Lake to allocate limited funds to assist residents. We hope that community members will help us preserve the lake so our children are able to enjoy it as much as we have.

The Lakefront Property Certification Program will consist of a short application process including name, address, and areas of concern. After this information is collected we will send a Friends member to do a preliminary evaluation of the residence. Upon completion of the evaluations we will discuss areas that need to be addressed and best management practices suggested. The Friends and USACE will review applicants to decide the availability of cost-share funding and to whom is under consideration. It is in the best interest of the resident to apply as soon as possible to receive full consideration for the cost-share program due to limited funding. The categories have a required number of points in each section along with the four educational workshops that must be completed to receive certification. Many residents will earn points in several categories for proper septic tank function, no invasive species, and becoming a member of the Friends of Nolin Lake. These are points that require no work and will be applied to the Certification Program.

Bacteria-

Septic tank maintenance is one of the largest concerns in the Nolin Lake area. Many people have a septic tank that has never been pumped out, and there are several homeowners who are unaware of where their tanks are located. These tanks need to be pumped out every 3-5 years to keep septic systems maintained and running properly. When these systems fail it introduces bacteria to our ecosystem, which leads to spreading of disease. Fecal coliform bacteria and fecal streptococci are specific to fecal matter from humans and warm blooded animals. They are indicators of pathogenic (disease causing bacteria) viruses and protozoans usually from sewer contamination. We are on a mission to make sure no pollutants are seeping in to the groundwater which are detrimental to wildlife populations and human health. We also have an educational workshop developed to help lakefront property owners keep their septic systems running properly.



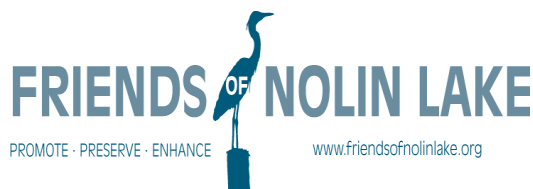
Lakefront Property Certification Program

Invasive Species-

Invasive species in Kentucky have a huge impact on areas around the lake. It is sometimes difficult to identify plants that are invasive to Kentucky, these plants can be aesthetically beautiful but their impact on native species is very detrimental to our fragile ecosystem. A couple of common invasive species in the area are Kudzu and Autumn Olive, they are taking over large areas around the lake and will continue to expand rapidly unless action is taken. These plants have no natural predators and no natural diseases which allow them to thrive, leading to little biodiversity. We are trying to replace invasive species with native species that are tolerant to our ecosystem. The Friends of Nolin Lake and members of the U.S. Army Corps of Engineers will assist residents in identification of invasive species and make suggestions for similar native replacements. We have developed an educational workshop to help residents identify invasive species, process for removal, and general planting guidelines.

Nutrients-

The soil is full of nutrients that are beneficial and necessary for all types of flora and fauna to grow. Sometimes people assume that applying excess fertilizer to plants or grass will help it grow, this is false and can actually have the opposite effect on them. When soils reach the maximum capacity for nutrients it inhibits the availability of other nutrients making them inaccessible for the roots to uptake. These nutrients cannot bond to other ions in the soil leaving them susceptible for displacement. When these nutrients are displaced they are drained to the extensive cave systems in our karst landscape. The polluted water is drained in to our creeks and streams, leading to the lake. When nutrients are drained in excess it creates the perfect environment for phytoplankton to multiply. Asexual reproduction happens rapidly creating what we know as algae, sometimes known as blue-green algae, cyanobacteria, or red tide. These different types of algae can be green, blue, red or brown. The continual process of algae growth can lead to algal blooms, after time these can develop harmful algal blooms (HAB's). The continual process by which excess nutrients cause increased algal growth is known as eutrophication. When the algae reaches the end of its life cycle it sinks to the bottom of the body of water, the microbes responsible for breakdown of algae require large amounts of oxygen to sustain the process, this depletes the dissolved oxygen which has detrimental effects on organisms in the water. When dead algal blooms deplete dissolved oxygen in the water it creates a hypoxic zone (no air) or dead zone that no fish or invertebrates can live. This algae can become so prevalent that the gills of a fish can be clogged, discolor the water, creates offensive odor, produce unsightly beach waste, cause drinking water and fish to have an unpleasant taste. One way to combat this problem is to set up tree and plant barriers to uptake excess nutrients and prevent them from polluting our waterways. Another way we can reduce nutrient runoff is limiting fertilizer amounts and only using organic fertilizers. Organic fertilizers are produced using peat, animal matter, human excreta or vegetable matter, such as compost and manure. These fertilizers have a far lower impact on the ecosystem and reduce nutrient runoff. We have established an educational workshop to show steps we can take to reduce nutrient runoff, proper fertilizer application, and a soil testing guide.



Lakefront Property Certification Program

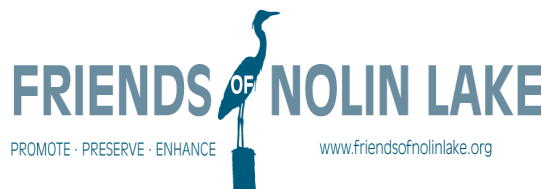
Sedimentation-

Sedimentation occurs when stone, sand, or silt is displaced from rain, drainages, washes, creeks and rivers. After heavy rains in the spring, multiple tributaries draining to the watershed contribute to the lake turning brown. We can reduce sedimentation and nutrient runoff by planting live stakes, trees, bushes, and plants. The roots serve as a binder to hold the soil in place and uptake excess nutrients. Sedimentation can be slowed down with the use of rock walls and barriers. These barriers hold the soil in place, especially effective in drainages and steep slopes. Barriers are also used to displace water, if the water is divided in multiple streams the water carries less energy therefore doing less damage to the soil. We have an educational workshop depicting proper construction and placement of rock walls and placement of vegetation. With these BMP's we can reduce the amount of sedimentation occurring at residences around the lake.

Shoreline erosion and Restoration-

Shoreline erosion is caused by outside forces on soil such as wind, rain, or other natural agents that carry soil from one area to another. All areas around the lake are impacted by erosion, especially areas with little vegetation which provides a windbreak and stability through roots. Planting trees, live stakes and other vegetation in shoreline areas will reduce the amount of erosion taking place. Steep areas make erosion more detrimental, these areas have low nutrient availability making it inhospitable for vegetation. Wind also plays a large role in erosion, the lake has strong wind gusts that remove soil and rock from the shoreline and can be combated by using barriers and vegetation. Shoreline restoration involves picking up litter and debris that have been washed on shore. The educational workshop was designed to implement BMP's for shoreline erosion and restoration and shows easy ways we can preserve our shoreline.

The Friends of Nolin Lake, along with the U. S. Army Corps of Engineers and Kentucky Division of Water are excited to bring you the Lakefront Property Certification Program, we hope that all of the residents around Nolin Lake are as excited as we are. Following the categories outlined above will be a great start for a bright future for Nolin Lake. We have an opportunity to set a precedence for the Certification Program for other lakes and communities to get involved in the preservation of the natural ecosystem surrounding the lakes. Becoming a Lakefront Certified Property Owner is a great way to lead by example and have peace of mind that you are involved in preserving our environment and way of life



Application for Lakefront Property Owner Certification-Nolin River Lake

Friends of Nolin Lake
P.O. Box 184
Clarkson, KY 42726
Phone: 270-272-8003

U.S. Army Corps of Engineers
2150 Nolin Dam Road
Bee Spring KY 42207
Phone: 270-286-4511

Cost share of 50/50 will be applied to septic tank pumping for residents completing certification,
Example: cost of septic tank pumping is \$150, the resident will pay \$75 and the Certification Program will pay \$75
The maximum allowed for cost share funding will be set at \$200

Print or type information requested below.

NAME OF APPLICANT _____

HOME TELEPHONE _____ LAKE TELEPHONE _____ CELL _____

Permanent Mailing Address:

STREET _____ CITY _____ STATE _____ ZIP _____

Lake Address:

STREET _____ CITY _____ STATE _____ ZIP _____

Email address _____

SUBDIVISION ON LAKE _____ LOT NO. _____

DATE OF LAST SEPTIC SYSTEM MAINTENANCE AND/OR PUMPING _____

TANK LOCATION KNOWN? YES / NO LOCATION (APPROXIMATE) _____

ABOVE GROUND SEPTIC HOLDING TANK? YES / NO

PLEASE DESCRIBE AREAS YOU MAY HAVE CONCERN WITH AND BEST MANAGEMENT PRACTICES YOU WOULD LIKE TO IMPLEMENT: SHOULD INCLUDE SEPTIC SYSTEM, INVASIVE SPECIES AT RESIDENCE OR BOAT DOCK, SEDIMENTATION, AND SHORELINE EROSION, PLEASE DESCRIBE IN AS MUCH DETAIL AS POSSIBLE:

FRIENDS AND USACE USE ONLY:

BACTERIA
INVASIVE SPECIES

NUTRIENT AND SEDIMENTATION
SHORELINE EROSION/RESTORATION-

Lakefront Property Certification Program

Each home being certified must meet point standards set within each category. Must have a total of no less than 22 cumulative points, all educational workshops are mandatory for certification. Friends of Nolin Lake membership is required for certification.

<u>Categories</u>	<u>Points</u>
Friends of Nolin Lake Membership (Memberships can be submitted at www.friendsofnolinlake.org/membership)	2
Total	<input type="text"/>

Bacteria- must have 4 out of 8 possible points for this category

Complete educational workshop for properly maintaining septic system	2
Have certified personnel pump out existing septic system	2
Have certified personnel maintain septic system including: access, leachfield, and tank	2
Septic system has recently been examined for proper function and pumped out (must have documentation)	2
Total	<input type="text"/>

Invasive Species- must have 4 out of 8 points for this category

Take educational workshop for identifying invasive species and replacing with non-invasive species	2
Have residence examined for identification of invasive species at home or dock by the Friends of Nolin Lake and/or USACE	2
Replace invasive species with non-invasive species at dock and shoreline*	2
Replace invasive species with non-invasive species at residence	2
Total	<input type="text"/>

***Any Alterations to areas on government property (red line) requires authorization from USACE before work can begin, i.e. removing or replacing vegetation, building of rock walls, earthwork, and spraying. All U.S. Army Corps of Engineers guidelines must be met in order to receive certification.**

Lakefront Property Certification Program

Nutrients and Sedimentation at residence- must have 6 out of 10 points for this category

Complete educational workshop about testing soil, proper application of fertilizer and creating buffers to prevent sedimentation	2
Test soil at residence to determine if fertilizer application is necessary	2
Create a rock buffer to prevent sedimentation	2
Create a plant or tree buffer to reduce sedimentation and nutrient pollution	2
Plant or tree buffers already present that will assist in nutrient run-off and/or sedimentation verified by Friends of Nolin Lake and/or USACE	2

Total

Shoreline Erosion Control and Restoration- must have 6 out of 12 points for this category

Take educational workshop about shoreline erosion and restoration	2
Plant trees, live stakes, other approved vegetation around shoreline*	2
Stabilize shoreline with rock buffers or earthwork*	2
Commit and execute shoreline/dock area clean-up of litter and debris	2
Adopt a section of shoreline to keep free of litter and debris (neighborhood or individual)	2
Volunteer in lake clean-up and restorations	2

Total

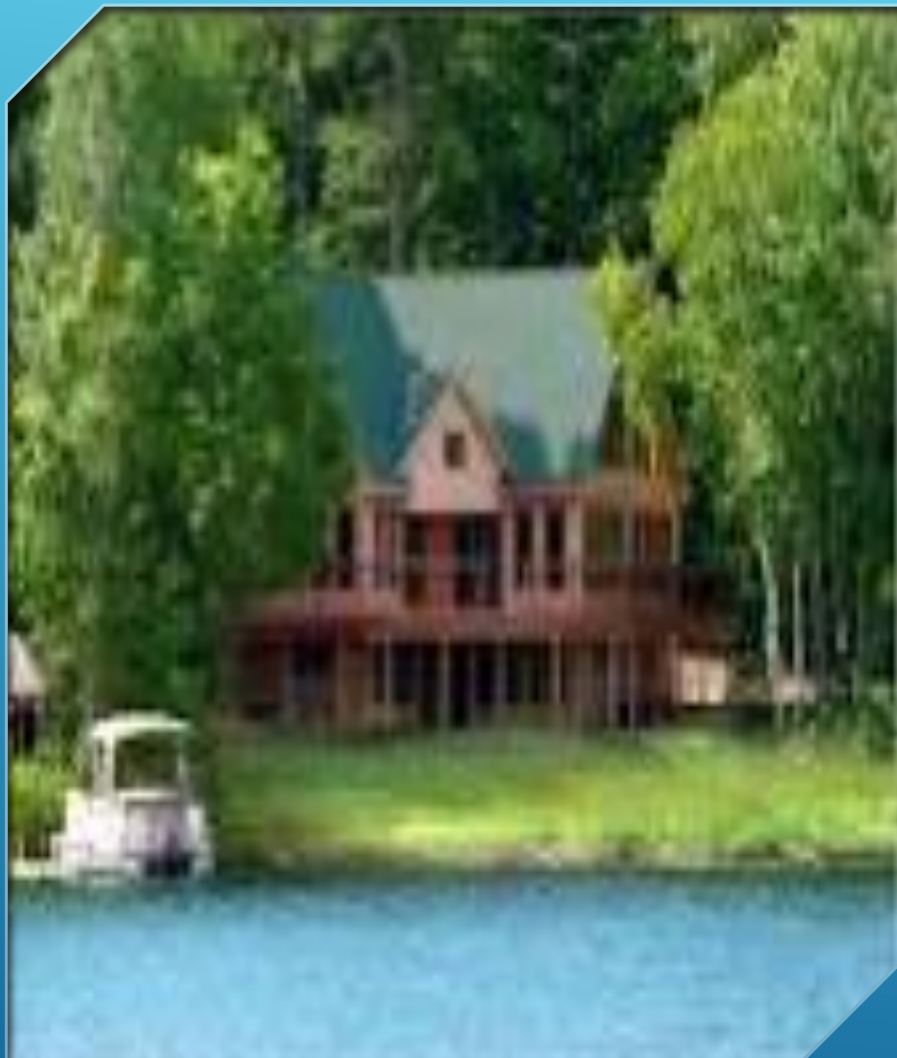


***Any Alterations to areas on government property (red line) requires authorization from USACE before work can begin, i.e. removing or replacing vegetation, building of rock walls, earthwork, and spraying. All U.S. Army Corps of Engineers guidelines must be met in order to receive certification.**

Lakefront Property Certification Program

LAKEFRONT PROPERTY CERTIFICATION PROGRAM





THE FRIENDS OF NOLIN LAKE IS A NON-PROFIT, PUBLIC SERVICE ORGANIZATION WITH A GOAL TO PROMOTE, PRESERVE, AND ENHANCE NOLIN LAKE

The Friends of Nolin Lake are working in conjunction with U. S. Army Corps of Engineers and the Kentucky Division of Water to promote best management practices for residents of Nolin Lake.

- ▶ We have developed a Lakefront Property Certification Program to encourage residents to do their part in protecting the lake and surrounding property.
- ▶ We will inform and educate the community members of Nolin about what can be done to reduce pollution so residents can continue to enjoy the beauty and serenity of living near the lake.
- ▶ The Certification Program includes: bacteria, invasive species, nutrients and sedimentation, shoreline erosion and restoration.
- ▶ The steps being taken are known as best management practices or BMP's that help secure the protection of our lake, wildlife, and residents.

- ▶ Many categories have cost-share opportunities allowing the Friends of Nolin Lake to allocate limited funds to assist residents
- ▶ The Lakefront Property Certification Program will consist of a short application process including name, address, and areas of concern
- ▶ After this information is collected we will send a Friends or USACE member to do a preliminary evaluation of the residence
- ▶ Upon completion of the evaluations we will discuss areas that need to be addressed and best management practices suggested
- ▶ The Friends and USACE will review applications and decide which would be cost- shared
- ▶ It is in the best interest of the resident to apply as soon as possible to receive full consideration for the cost-share program due to limited funding

POINTS

The categories have a required number of points in each section including four educational workshops that must be completed to receive certification. Many residents will earn points in several categories for:

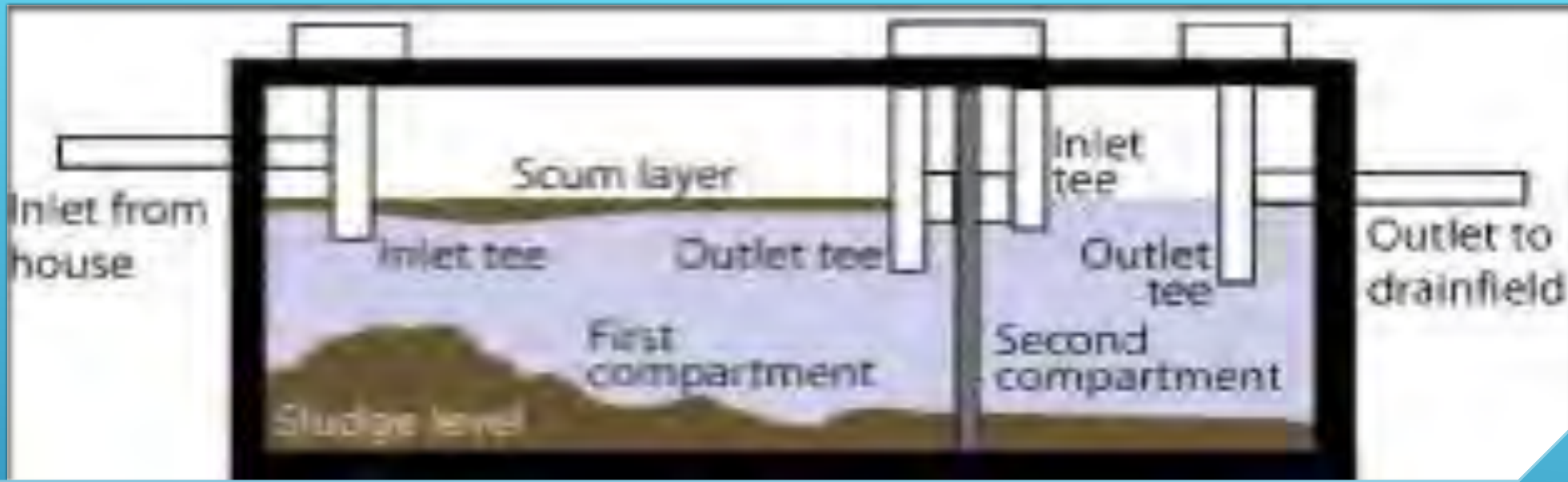
- Proper septic tank function
- No invasive species
- Becoming a member of the Friends of Nolin Lake

These are points that require no work and will be applied to the Certification Program.



BACTERIA

Septic tanks need to be pumped out every 3-5 years to keep systems maintained and running properly. When these systems fail it introduces bacteria in to our ecosystem, which leads to spreading of disease.



A septic tank's purpose is to separate solids from the wastewater, store and partially decompose as much solid material as possible, while allowing the liquid (or effluent) to go to the drainfield.

Wastewater from your toilet, bath, kitchen, and laundry flows into the tank and remains there for up to 24 hours (known as the retention time) before it passes to the drainfield. This helps prevent clogging of the drainfield, which can lead to failure and costly repairs.

KUDZU (*Pueraria lobate*)



AUTMN OLIVE (*Elaeagnua umbellata*)

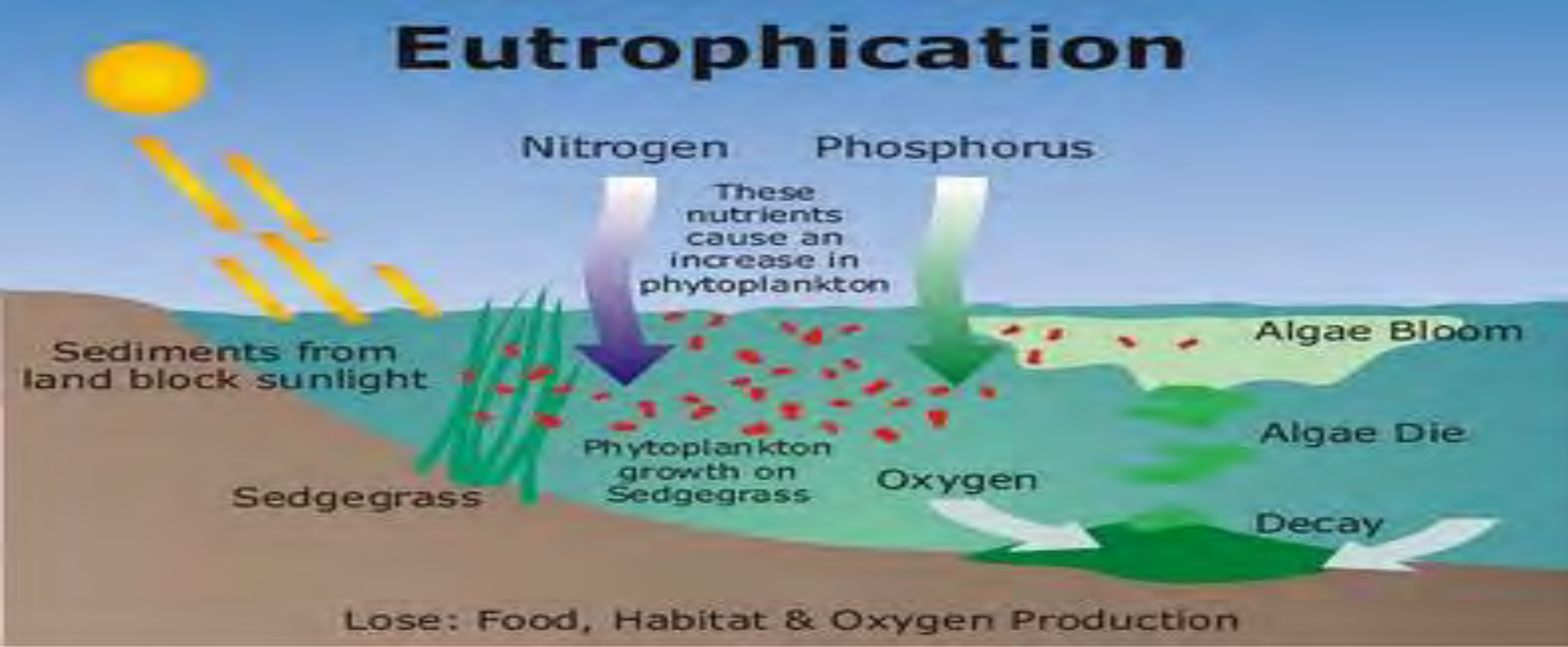


INVASIVE SPECIES

These plants can be aesthetically beautiful but their impact on native species are detrimental to our ecosystem.

- A couple of common invasive species in the area are Kudzu and Autumn Olive, they are taking over large areas around the lake and will continue to expand rapidly unless action is taken.
- These plants have no natural predators and no natural diseases which allow them to thrive, leading to little biodiversity.
- We are trying to replace invasive species with native species that are tolerant to our ecosystem.

Eutrophication



Nutrients

The continual process by which excess nutrients cause increased algal growth is known as eutrophication. When the algae reaches the end of its life cycle it sinks to the bottom of the body of water, the microbes responsible for breakdown of algae require large amounts of oxygen to sustain the process, this depletes the dissolved oxygen in the water (hypoxic zone). One way to combat this problem is to set up tree and plant barriers to uptake excess nutrients and prevent them from polluting our waterways. Another way we can reduce nutrient runoff is limiting fertilizer amounts and only using organic fertilizers.



SEDIMENTATION

Sedimentation occurs when stone, sand, or silt is displaced from rain, drainages, washes, creeks and rivers. After heavy rains in the spring, multiple tributaries draining to the watershed contribute to the lake turning brown.

- We can reduce sedimentation and nutrient runoff by planting live stakes, trees, bushes, and plants. The roots serve as a binder to hold the soil in place and uptake excess nutrients
- Another way sedimentation can be slowed down is with the use of rock walls and barriers. These barriers hold the soil in place, especially effective in drainages and steep slopes
- Barriers are also used to displace water, if the water is divided in multiple streams the water carries less energy therefore doing less damage to the soil



SHORELINE EROSION AND RESTORATION



- Shoreline erosion is caused by outside forces on soil such as wind, rain, or other natural agents that carry soil from one area to another
- All areas around the lake are impacted by erosion, especially areas with little vegetation which provides a windbreak and stability through roots.
- Planting trees, live stakes and other vegetation in shoreline areas will reduce the amount of erosion taking place.



- Steep areas make erosion more detrimental, these areas have low nutrient availability making it inhospitable for vegetation
- Wind also plays a large role in erosion, the lake has strong wind gusts that remove soil and rock from the shoreline and can be combated by using barriers and vegetation
- Shoreline restoration involves picking up litter and debris that have been washed ashore

The Friends of Nolin Lake, along with the U. S. Army Corps of Engineers and Kentucky Division of Water are excited to bring you the Lakefront Property Certification Program, we hope that all of the residents around Nolin Lake are as excited as we are. Following the categories outlined above will be a great start for a bright future for Nolin Lake. We have an opportunity to set a precedence for the Certification Program for other lakes and communities to get involved in the preservation of the natural ecosystem surrounding the lakes. This is a great way to lead by example by becoming a Lakefront Certified Property Owner and have peace of mind that you are involved in preserving our environment and way of life.

► References

► <http://www.co.thurston.wa.us/health/ehoss/tank.html>

<https://www.google.com/search?q=kudzu+pics>

Several white lines of varying lengths and thicknesses are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.