Lake Anna Advisory Committee
State Of Lake Anna Report 2018

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Christopher C. McCotter | LAAC Chairman

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LAAC MEMBERS
C.C. McCotter– Chairman/Louisa County Citizen Representative
Greg Benton – Vice Chair/Spotsylvania County Citizen Representative
Dick Shrum – Treasurer/Louisa County Citizen Representative
Kevin Marshall/Spotsylvania County Supervisor
Jim White/Orange County Supervisor
Duane Adams/Louisa County Supervisor
Robert Egan/Spotsylvania County Citizen Representative
Sarah Perkinson/Dominion Energy Representative
Open/Orange County Citizen Representative
Christian Goodwin – Louisa County Administrator
Bryan David – Orange County Administrator
Mark Taylor – Spotsylvania County Administrator

LAAC STATE OF LAKE ANNA 2018

Purpose of Lake Anna Advisory Committee

LAAC's purpose, according to the cooperative agreement and Bylaws, is to address matters of joint interests pertaining to Lake Anna and the adjacent shorelands governed by the surrounding counties. The stated purposes are:

1. To promote cooperation and coordination among the local governing bodies and Virginia Power on issues concerning Lake Anna;
2. To develop recommendations for new or revised ordinances/legislation specifically addressing the needs, issues, and/or problems involving Lake Anna, its shoreline, it shore land area behind the lake, and the watersheds of Lake Anna, as designated by the local governments:
3. To promote planning and management for land, water and other natural resources and environmental quality maintenance;
4. To administer the on-lake marker program (to include no-wake, hazard and similar buoys).;
5. To promote research, control and/or eradication of undesirable aquatic weeds in Lake Anna and to improve the quality of the water and to control pollution in and around Lake Anna; and
6. To initiate discussions with all local, state and federal agencies concerned with quality of human life, water, pollution, recreation, wildlife, fish and fishing conditions, in and around Lake Anna and to pass on to all governmental agencies on the local, state or federal level any recommendations believed feasible and necessary to accomplish the purposes of this advisory committee.

Goal of Annual Report

Per the articles of formation, the goal of this report is to return to the stated duty of annually advising Louisa, Orange and Spotsylvania Counties on Lake Anna. To accomplish this goal, reports from nine subcommittees have been compiled to convey a sense of how LAAC perceives lake issues and would advise how to generally proceed on such matters.

Environmental & Water Quality – Doug Smith/Chair of Environmental & Water Quality Subcommittee

Environmental issues at Lake Anna in the 2018 season included record high E-coli counts, Virginia Department of Health and Dominion Energy issued cyanobacteria advisories, record high water levels due to heavy rainfall and hydrilla management issues.

E-coli
E.coli levels are monitored by the Lake Anna Civic Association (LACA) in conjunction with the Virginia Department of Environmental Quality (DEQ). Record high levels for Lake Anna were encountered in the April testing event – especially in the upper portions of the lake. Likely cause was a combination of winter drought with very little runoff followed by hard rains in early April that washed down a months-long accumulation of bacteria containing water and sediment. LACA posted results on web site and Facebook and performed a special retest for E.coli prior to Memorial Day, which showed a return to safe levels in all but two of the lakes upper bays. Regular tests in June confirmed the results of the special test.

High Water
In late June an extremely heavy rainfall over a short period resulted in record high lake levels. Dominion increased outflow over the dam to a max of 12,000 cu ft/sec. Owners recorded as much as 27 inches above normal for the high water mark and floors of boathouses, common area docks, and piers were under water.

Hydrilla
Management of hydrilla has been the primary focus of the Environmental Committees work for FY2018. Special thanks go to Allan Lassiter, coordinator for the main lake and Chris Shultis, coordinator for the Waste Heat Treatment Facility (WHTF). The committee:

- Conducted a general survey of hydrilla on the entire lake in Aug 2017
- Contracted for herbicide treatment of hydrilla infestations that were impacting navigation (Freshwater Creek only)
- Conducted a post – treatment survey of Freshwater Creek
- Developed options to deal with he recurring issues at Freshwater caused by the reseeding of the Freshwater Cove by flats and shallows with heavy hydrilla in the upper portion of the Freshwater area
- Met with Dominion and DGIF to discuss options and assess possible impact of the cold dry winter on hydrilla.
- Consulted with herbicide contractor on cost and feasibility of treating shallows at Freshwater Creek including a trial run on a flatsboat.
- Engaged residents in monitoring the rate resurgence of hydrilla at Freshwater in May June and July

Aquatic herbicide treatment of Freshwater Creek was implemented in July. Treatment of the Freshwater Creek shallows was also completed in hopes of stopping the hydrilla from reseeding. A general, lake-wide survey of hydrilla was conducted in September by trained volunteers. Potential stocking of sterile grass carp to account for attrition, as conceived in the 2016 management plan, was considered, however, with less than an acre of hydrilla surveyed remaining after treatment there was no need for more grass carp. *See Lake Anna Hydrilla Management Plan Addendum.*

Cyanobacteria
On August 18 the Virginia Department of Health issued the first of several advisories for Lake Anna based on potentially harmful toxins present in samples of lake algae that contained cyanobacteria. On September 26, Dominion Energy did the same for areas on the WHTF. While this marked the first such health advisory in the history of the lake, we anticipate the possibility of future advisories, per Margaret Smigo, VDH Waterbourne Hazards Communicator.
It is our belief that the Virginia Department of Environmental Quality can offer advice on how to reduce potentially harmful algae blooms in the lake that could affect user safety, lake businesses and ultimately, County tax collections. We advise that Louisa, Orange and Spotsylvania Counties prepare for such advisories and make plans to reduce known factors that induce such occurrences.

Finance – Dick Shrum/LAAC Treasurer

When established in the mid-1990s, LAAC received and was tasked to oversee a Virginia General Assembly grant of $50,000 "for hydrilla control and removal at Lake Anna". Subsequent legislation expanded the use of this grant to include water quality monitoring, and further expanded its use to any and all lake issues related to health, safety and welfare of Lake Anna, such as the buoy program. Due to the generous support from Dominion to handle the initial hydrilla issue, grant funds grew over the years, while at the same time, funding support from counties began in the 2014 timeframe to handle a portion of annual costs for buoy maintenance and growth. As of October 2018, LAAC's financial resources and account balances are on the order of $74,000.

LAAC has submitted regular funding applications to all three Counties in recent years, requesting and receiving support from Louisa and Spotsylvania Counties for a portion of our annual program expenses, while drawing from existing resources to fund all of the hydrilla-related costs and the remainder of other expenses. With the return of hydrilla to Lake Anna in 2015, there was a spike in costs drawn from our accounts, while at the same time, LAAC believed it must maintain a substantial balance in the event there is a major new outbreak – we cannot guarantee another Commonwealth grant. At the same time, there was a growing opinion on the part of some members that LAAC should spend down its existing resources rather than requesting funds from the Counties, and for this reason, Louisa County chose to not fund LAAC for FY-19.

At its September 2018 meeting, LAAC decided to designate a large portion of its resources as an "emergency reserve fund" and utilize the remainder to cover annual expenses for FY-20 and beyond, until the latter disappears. Hence, LAAC has chosen to NOT submit a funding request for the upcoming year, but will resume-in the future and would like to continue to receive your funding application information each year.

Navigation & Safety – Jean McCormick/Chair of Navigation & Safety Subcommittee

An unusually cold winter/spring with high, gusty winds, record rainfall, and flooding made this our most challenging season ever to maintain the buoy system on Lake Anna. The calls started coming by early April about buoys adrift, damaged, or missing. Bad weather hampered our efforts to get out to investigate and weather has continued to be a factor all season.

The last couple of years, mild winters allowed the buoys to remain in place with minimal replacements necessary. The addition of lights and decals on all buoys that identify ownership has greatly helped recovery and rehab efforts. We also have benefitted from many friends around the lake who have retrieved errant buoys, call us, or drop off buoys for reuse.

In April, we started working with DGIF, Spotsylvania Dive Team and Tow Boat to help assess the damage, and to use their resources to help get buoys back on station.

April

- Checked a hazard identified by several law enforcement and fire & rescue units near the docks at the State Park. Installed a "Rock" buoy to mark it. Tow Boat assisted.
- Reinstalled a tidal buoy and light at Conway Point. Tow Boat assisted.
- Moved a No Wake buoy at Contrary Creek and placed back on station
- Assessed a damaged tidal buoy with missing light near Maple Springs common area but could not retrieve due to high winds. Spotsylvania Dive Team removed at our request. (Dive Team uses these situations as training opportunities.)

May

- Installed three tidal buoys with lights at Riverbend Island to replace wooden structure that had marked that very shallow, very dangerous area for years. It was destroyed during the winter. Assisted by Spotsylvania diver who volunteered his time.
- Replaced tidal buoy and light on huge stump near Tyler View.
- Replaced anchor buoy and light on major rock pile off Wayne's Trail near Dukes.

June

- Worked on private side to install No Wake buoys with lights at Coleman Bridge, which were the last WHTF buoys approved by VDGIF several years ago.
- Replaced "Rock" buoy with light near Elk Creek Bridge
- Did a quick look at existing buoys, which are still standing. Have heard from a resident who would like a hazard buoy reinstalled at our earliest convenience.

July

- Replaced "Rock" buoy with light south of Kelly's Landing.
- Reinstalled one tidal buoy at Riverbed. It was recovered by an individual off of Moody Town Road. Buoy & light still functioning. Needed new pole.

August

- Installed seven hazard or No Wake lights that have been vandalized or taken

September

- Installed four HAB advisory buoys in the upper portion of the lake in support of Louisa County request and VDH.

Buoy installation and maintenance keeps LAAC's volunteers very busy. There are 40 total Hazard Buoys on the lake; 21 are in Louisa County (11 main lake and 10 WHTF), 19 are in Spotsylvania County. There are 24 LAAC No Wake Buoys, 10 in Louisa County waters and 14 in Spotsylvania County waters. It takes no less than $1,600 per year to responsibly maintain and plan to maintain this system of marker buoys on the lake. Additional County buoy requests will affect the above figure.

Fishing – Carlos Wood/Owner High Point Marina

Fishing is an economic multiplier for Lake Anna and the counties that surround it. Protecting and enhancing fishing is a wise investment. After consulting with numerous marina owners/managers, lake guides, and Virginia Department of Game and Inland Fisheries (VDGIF) District Biologist John Odenkirk, the consensus is: fishing on the lake is very good and has been for several years.

Rain and cooler than normal temperatures during the spring changed typical fish patterns and delayed the yearly spawn 2-4 weeks. It took anglers some time, but once they figured this out catches increased substantially. There is very little aquatic cover on the lake (grass, lily pads, hydrilla, etc.) In areas where there is cover the water appears clearer and has higher oxygen content. Fish thrive in these areas and live and spawn in the cover year round. It's understandable that aquatic plants that interfere with waterways need to be addressed, however, these plants provide great habitat for largemouth bass and other species of fish as well. The cleansing effect of the water is an added bonus, especially significant this year.

Largemouth bass are one of the most sought after species with scores of clubs and marinas holding tournaments almost every weekend of the year as well as some tournaments during the week. Those tournaments along with many more individuals fishing for bass make Lake Anna a popular location. Although some fish are harvested, most are released back into the water where they can be re-caught and reproduce. Surveys show that the total number of fish being caught has slightly decreased while the actual size and quality of the fish is increasing. The northern (upper) end of the lake is the more attractive to anglers. There is a higher concentration of aquatic plants, plenty of manmade structure and oxygen levels are usually higher. Bottom line, typically more and better quality fish.

Striped bass are the second most sought after fish (slightly behind bass). These fish do not reproduce in the lake but are stocked annually by VDGIF. Striper catches are below average, however wiper catches have increased substantially. Wipers (a hybrid cross between a striped bass and a white bass) were introduced into the lake 2014 and again in 2017. Since both species are stocked VDGIF has reduced the number of striped bass to coincide with the wiper stockings. There is a minimum size limit of 20". Many undersized fish are being caught so the population and catch rates for future years should be good.

Black crappie is another sought after fish. Their sheer numbers and ease of catching help make them a popular species. The catch rate on these fish dropped considerable over the past year, however, many believe (including myself) that has more to do with the adverse weather conditions this spring than anything else. They are targeted year round, but the majority of anglers fish for them March through May. It is expected their numbers will increase next season.

Somewhere, every day of the year, someone is fishing on the lake. Most days there are more anglers on Lake Anna than any other enthusiast. All businesses benefit from Lake Anna being a great fishery and some would not survive without it. The VDGIF has done a fabulous job managing the fish populations of the lake. Their advice and recommendations should always be considered.

Government Affairs – Christian Goodwin/Louisa County Administrator

The purpose of the Lake Anna Advisory Committee is to address matters of joint interest pertaining to Lake Anna, and effective regional cooperation among our governmental entities is critical in this regard. During the warmer months of 2018, a number of items underscored success and/or the need for continued focus from a governmental affairs standpoint.

Law enforcement and emergency services personnel from localities, the Department of Game and Inland Fisheries, and others undertook significant advance planning efforts and stepped up their presence on the lake this season. Increased enforcement activities sent a clear message of intolerance for irresponsible behavior to those enjoying the lake, leading to a safer summer on the water. Associated entities will debrief and continue to collaborate as we look to next year's busy season on the water.

This year's Harmful Algae Bloom (HAB) advisories highlighted the need for the lake's surrounding localities to maintain open lines of communication and be prepared to work together on issues of mutual concern. While health issues fall under the purview of the Virginia Department of Health (VDH), this situation required joint input from our localities due to the lake's non-local usage. In the case of most public health advisories, communication is somewhat more easily facilitated (local signage, web updates, targeted communications, etc.). However, a significant number of those using the lake come from outside of our communities - they may rent houses rather than use public access points, do not necessarily review local media, and in general may be less aware of issues of local significance. As such, the Lake Anna Advisory Committee (and particularly the Navigation/Safety Subcommittee) played a crucial role, working under the direction of localities and the VDH to place buoys in critical locations on the water. These buoys were intended to notify lake users of VDH's "No Swim" advisory and the availability of additional information online. Area localities are working in conjunction with VDH to enhance future HAB notification efforts.

Weather is rarely predictable, and rainfall in the region was extremely significant this summer, even prompting Dominion to open the radial gates on the dam during one early-summer event. Higher water levels exceeded seawall and riprap heights in some situations, giving rise to citizen concerns. Managing the height of the lake during significant rain events is a priority for Dominion, which closely monitors such situations to achieve optimal results. The company must balance regulatory requirements with property owner concerns both on the lake and downstream, and the effort can be challenging – Hurricane Florence's forecast impact versus actual rainfall was an example of a situation where opening the gates too early could have excessively lowered the lake level. Dominion continues to work with the lake's localities to ensure adequate communication and planning efforts, which maximize awareness and minimize risk.

The placement of navigational and marker buoys on the lake is a process which involves concerned citizens, their localities, Dominion and the VDGIF. While the process on the main lake has been relatively straightforward, buoy placement on the WHTF has taken place on a somewhat less formal basis. In 2018, Dominion worked with Louisa County and LAAC to craft protocol, which formalizes such efforts. The resulting policy provides much-needed clarity and is available on Louisa County's website.

The situations detailed above (and others) dictate a clear need for effective communication and collaboration with localities and state agencies charged with governance on the lake. For 2019, the Governmental Affairs Subcommittee is prepared to serve as directed in any effort, which further enhances regulatory, intergovernmental and related issues on Lake Anna.

Recreation – Steve Harler/Board Member Lake Anna Business Partnership

To say that 2018 was an anomaly for recreation at Lake Anna would be an understatement. Between going from ten-year record low water levels in 2017 to record high water levels in 2018, the elevated E.coli levels, widespread algae bloom, stricter law enforcement on the lake; Lake Anna has seen one of its strangest years. Recreation at the lake is the number one attraction for tourists and vacationers. If 2018 taught us one important lesson, it is that every decision, announcement, and media interaction will have a powerful impact on recreation.

Once the announcement hit the airways and public media about E.coli and later the algae bloom, it became very evident that any recreation involving swimming would be impacted. Watersports like paddle boarding, skiing, wakeboarding saw a decrease in activity. Tourists stayed home, and residence on the north end of the lake went as far as to take their boats to the south end just to enjoy swim-safe water conditions. This went on for several weeks, until the lake was retested and deemed safe to swim in. This did not seem to effect leisure activities at the lake, such as fishing, boating, or relaxing at many of Lake Anna's attractions but it could next year as public perception changes with more education.

Perhaps the uptick in the economy gave a strong buffer to Lake Anna businesses, regardless of the negative news about the lake. However, we need to be sensitive to the possible negative impact in future years. Although retesting the water may be expensive, it is critical that swift retesting occur. It is this reassurance that the average tourist will need to make the decision to take a day or weekend trip to the lake. Greater communication by all parties involved on water quality testing including what it includes, the information it provides, and the results it provides can help further educate the public how to make such decisions.

After earning the title of Virginia's waterway with "the most reportable incidents" in 2017 (12 incidents), Lake Anna residents, special interest groups and County law enforcement providers determined it was time to change the trend in 2018. Thankfully, as of this writing (the end of November 2018) Lake Anna had registered under six incidents. While not empirically connected it appears a combination of more visible patrolling and more enforcement of existing boating regulations worked to reduced boating incidents on the lake.

If Lake Anna gains a reputation as the place where families cannot safely enjoy any number of recreational pursuits, people will stop coming and the economic engine sputters. Remembering this potentially damaging correlation going into future boating seasons is critical to good management of the Lake Anna resource. Law enforcement patrols should be maintained at the level they were in 2018 to ensure taxpayers' dollars are being used to protect them and their investments. Better communication of special operations and holiday operations is also recommended to make lake users aware of increased law enforcement and therefore deter users from risky behavior.

In 2018, Lake Anna held another gold level wake surfing event known as the Lake Anna Wake Surf Open. Competitors from five different countries, including the top five riders in the world were in attendance. Tim's Restaurant and The Cove both saw an influx of over 80 customers per night for three straight nights. Wake surfing like fishing, boating and triathlons are part of the lake's economic engine, however wakesurfing is not something everyone agrees is good for the lake. It is quite possible that the crimp in the hour-glass is the connection between the wake boat community and the local residents. This narrative is causing folks in the water-sports community consternation and some residents to push for restrictions on wake surfing (No Wake Surfing Zone in the Pamunkey Branch.). Continued user safety, erosion and other environmental concerns could require further regulatory measures to resolve wakesurfing and resident issues.

State Park - Dan Quesenberry/Lake Anna State Park Manager

Lake Anna State Park is still experiencing seasonal capacity issues due to its popularity and a lack of redevelopment or upgrades since the picnic area was opened in the late 80's. During the 2018 calendar year, entry to the park was denied to visitors on at least nine days. On the Sunday prior to Labor Day the park reached capacity at 8:45 am and did not reopen until after 5pm. The park's current master plan, adopted in 2011, identifies the need for an expanded parking and picnic area to accommodate day use visitors within phase I of the park's development plan. Cost of the project is estimated to be in the 2-3 million dollar range, but would also include storm water management controls utilizing the current best management practices for handling storm water runoff. The project would include a restroom, alternative septic system and additional parking.

Algae blooms did not have an effect on this year's swimming season, however they did impact the second of our two fall triathlons, the Virginia Single, Double and Triple Anvil. As a result of the significant algae blooms that appeared upstream from the parks swimming beach, Virginia State Parks and the VDH instituted a rigorous monitoring plan and when the algae made its way downstream we promptly issued the swimming advisories throughout the park. With no prior history of algae issues around the park to use as a reference, it is unknown if this will be a continuing problem or was a one year occurrence. With park use primarily focused into the three main months of summer the economic impact from future algae blooms could be detrimental to the parks attendance as well as the economic impact the park has within the communities. The park itself does not apply fertilizers and utilizes alternative septic systems to reduce nutrient runoff.

In the spring of 2019, the park will be offering the opportunity for visitors to stay in the parks new Yurts. The yurts were completed this year as part of the funding appropriated by the Virginia General Assembly to provide a new camping experience to our guests. As part of a pilot program the yurts were constructed under a building permit issued by Spotsylvania County and inspected by Spotsylvania County building officials.

Utilizing funding from Dominion Energy and volunteer labor from the "blue crew" the park is almost finished with our adaptive paddling boat launch in Picnic Area B. Installed near the mouth of Ware creek within the no wake zone that encompasses the entire creek, the adaptive paddling launch allows for car top launch of canoes or kayaks and includes a floating dock for disabled persons to slide into the water.

The cost of the dock and materials was covered by a grant from the Dominion Foundation and additional funding from Lake Anna's own North Anna Power Station. The North Anna station's crew and engineers have been out several times to design and build the parking area, access road and ramp.

Hiking continues to be in the top five outdoor recreation activities according to the Virginia Outdoors plan. Along with the adaptive paddling area we will officially open Ware creek trail and fitness loop.

The fitness loop consists of 20 exercise stations that were upgraded and relocated by Dominion's blue crew. The trail does a complete loop of 1.5 miles with approximately 15% of the trail adjacent to the lake, it also incorporates the Ware Creek overlook that was put in many years ago for interpretive programming. The trail has been completed for most of the year except for the portion of the trail that is adjacent to the adaptive paddling parking lot.

In 2017, Lake Anna State Park was the fifth most visited of the Virginia's 38 state parks. Attendance in 2018 dipped a bit because of the extended rain periods during the year and because the park had to eliminate one of its overflow parking lots early in the year. Even so, the park weighed in as the seventh most visited of the 38 parks. In both years, the

attendance demand caused the park to close on several days and, in some instances, to open and close multiple times during a given day due to infrastructure limitations that could not satisfy the demand imposed.

While available parking is certainly a limiting factor, simply expanding parking lots to allow more visitors to simultaneously occupy the park is not a panacea that will solve the park's capacity problem. Simply put, the existing infrastructure cannot accommodate additional visitors and the natural resources currently available are already severely degraded by overuse. A combination of additional facilities including bathrooms and picnic shelters , equipment, staffing, operational funding, and developing additional acreage for day use are desperately needed to address the existing capacity issues.

Transportation – Teresa Madison/Spotsylvania Resident, Lawyer's Rd.

The current method of reporting road repairs is to contact VDOT via the online portal or via phone. To speed the process of repair during peak seasonal usage better communication of how the public can report road damage is recommended.

Annual citizen meetings with VDOT representatives, or at least an outreach effort, to hear from citizens about roads around the Lake might be a good way to augment the current process.

Existing dangerous road conditions (due to recurring accidents) such as the intersection of Rt. 522/208, Rt. 652/208, the lack of turning lanes into Food Lion off Rt. 652 and on Rt. 208 in front of Dollar General, the narrowness of certain high traffic roads (Ridge Road and Rt. 601 in Spotsylvania) and the traffic back-up from the entrance of Lake Anna State Park to Lawyer's Rd. should all be noted in a locally generated assessment report and distributed to VDOT for consideration.

Most of Lake Anna's road system was not originally constructed to handle the traffic it now receives during the tourist season (Memorial Day to Labor Day). Recurring trouble spots should be addressed and amended where possible. Also, excessive rains have exacerbated deterioration in many areas. We are approaching a critical threshold where the road repairs will go beyond simple pothole and edging remediation. This is an important part of the local infrastructure that allows for the safety of Lake Anna community residents, its visitors, and the economic engine of the lake to function that cannot be overlooked.

Communication – Sarah Perkinson/Dominion Energy LAAC Representative

The purpose of the Lake Anna Advisory Committee (LAAC) is to address matters of joint interests pertaining to Lake Anna and the adjacent shore lands governed by the surrounding counties. Throughout 2018, and especially during the months of April-October, several joint interest matters arose causing LAAC to create a subcommittee focused on communication. These matters included increased presence of law enforcement on Lake Anna and in the surrounding area and environmental concerns such as E.coli, treatment of hydrilla, harmful algae bloom (HABs) advisories, and lake water levels.

For all of these matters and others that may arise, communication between the counties of Louisa, Orange and Spotsylvania, as well as Dominion Energy and (as applicable) Departments of the Commonwealth of Virginia, can assist in promoting a sound and concise message to officials, interested parties, and the public. Timely and coordinated communication between all parties is key.

In addition, communication to external audiences has been shown by the matters listed above to be of utmost importance. Communication can promote the positive impact of safety initiatives and remind residents and visitors of the laws and guidelines that are meant to keep them safe at Lake Anna and in the surrounding communities. Communication can also promote correct awareness of potential unfavorable conditions and how residents and visitors may best continue to experience the lake area during times of unfavorable conditions. Lack of communication can lead to frustration, confusion, and the spread of incomplete information, which can exacerbate situations beyond their original scope.

For 2019, the newly formed Communications Subcommittee plans to provide to LAAC a communications plan for recommendation to Louisa, Orange, and Spotsylvania Counties and Dominion Energy that will work to enhance the coordinated communications efforts and messages between all parties involved for applicable matters. The Communications Subcommittee is focused on being prepared to serve as directed, under the provisions on the LAAC By-Laws, on matters of joint interest of Lake Anna.

Conclusions

The Lake Anna Advisory Committee (LAAC) was established in 1994 as a "joint administrative committee" by the three Counties surrounding Lake Anna (Spotsylvania, Louisa and Orange) along with Dominion Energy to address matters of

joint interest pertaining to the lake and adjacent shore lands. Its purposes are spelled out in the three-County Cooperative Agreement and LAAC By-Laws. To accomplish these objectives and oversee operations, the Board includes nine members: a Supervisor from each County; two citizen representatives from Louisa and Spotsylvania and one from Orange; and a Dominion Energy representative.

Lake Anna is a major economic engine for Louisa County and does its part for Orange and Spotsylvania Counties through visitor and resident spending. All three counties would be wise to keep this "golden goose" well-tended to and healthy. Safety risks and environmental issues, as well as local government, transportation, communications and recreation factors noted here, should be addressed. LAAC can act as a liaison, buffer, manager, etc. for the Counties as long as communication is open and timely.

This report not only demonstrates how LAAC is serving as an advisory body, it also displays a serious commitment by its volunteers and appointees to watch over and administer to Lake Anna that should reassure counties funding LAAC of how taxpayer monies can be spend prudently and save the counties money. It is our hope that all three counties, through this report, will take notice of LAACs continued and growing efforts in supporting the positive impact Lake Anna has on the communities that surround it. Buoys aren't bought and placed for free. Hydrilla isn't managed for free. When LAAC acts, County staff and elected officials can note the problems constituents contact them with are being addressed. If LAAC does not act, the counties will have to take over costly and time-consuming duties.

Furthermore, if one county unfunds, or chooses not to fund at all, the remaining county or counties funding LAAC may need to direct funds to be used solely in the waters of those providing funding. Now while LAAC does have sufficient funds to operate at the current level for an estimated 12-24 months based on current budget projections, the anticipation of further duties and increasing costs make it prudent to continue to request annual funding for buoy maintenance and environmental monitoring.

Recommendations and Requests

LAAC recommends Louisa, Orange and Spotsylvania Counties work in a more coordinated and equitable fashion to help LAAC administer to Lake Anna issues and needs. LAAC will attempt to work more closely with county officials, when appropriate, to communicate lake issues.

LAAC recommends Louisa, Orange and Spotsylvania Counties work together to prepare for issues such as HAB and E.coli advisories and implement changes to reduce known factors that could induce such occurrences.

LAAC recommends Louisa, Orange and Spotsylvania Counties continue to seek and consider the advice and recommendations of VDGIF on environmental matters.

LAAC recommends Louisa, Orange and Spotsylvania Counties continue law enforcement patrols in the Lake Anna communities and on Lake Anna at the same level as in 2018.

LAAC requests a stand-alone website to assist Louisa, Orange and Spotsylvania Counties better communicate and listen to the region's residents.

Sources

This report was compiled by LAAC Chairman C.C. McCotter and reviewing by the members of LAAC. Sub Committee Chairs provided much of the information including Doug Smith/Chair of LAAC Water Quality & Environmental Sub Committee, Jean McCormick/Chair of LAAC Navigation & Safety Sub Committee, Dick Shrum/Chair of LAAC Finance Committee, Carlos Wood/Chair of LAAC Fishing Sub Committee, J.C. Bane/Chair of LAAC Development Sub Committee, Dan Quesenberry/Chair of LAAC State Park Sub Committee, Steve Harler/Chair of LAAC Recreation Sub Committee, Christian Goodwin/Chair of LAAC Government Affairs Sub Committee and Sarah Perkinson/Chair of LAAC Communications Subcommittee.

Hydrilla Management Plan Addendum

VDGIF Lake Anna Submersed Aquatic Vegetation Management and Grass Carp Fact Sheet, 12-3-19

Mike Isel – VDGIF District Biologist
John Odenkirk – VDGIF District Biologis
Paul Bugas – VDGIF Regional Fisheries Manager

The Virginia Department of Game and Inland Fisheries (VDGIF) was never supportive of the massive sterile (triploid) Grass Carp (TGC) stocking of Lake Anna in the early 1990's. Dominion Power requested a permit, and VDGIF honored the request. The resulting stocking denuded the reservoir of all submersed aquatic vegetation (SAV), both non-native and native, for decades. Only recently has some SAV returned – this is regarded as a positive for the health of the lake and its aquatic resources.

SAV is a valuable component of any healthy aquatic ecosystem and performs many vital functions including, but not limited to: providing fish and invertebrate nursery areas, providing fish foraging and spawning habitat; assisting in reservoir nutrient cycling (reducing algal blooms); providing waterfowl habitat; reducing shoreline erosion; reducing turbidity; and stabilizing subaqueous surfaces. Recent VDGIF surveys suggest the fish community in Lake Anna is in excellent condition with Largemouth Bass size structure and abundance at or near record levels, depending on the metric.

Since 2015, the Lake Anna Advisory Committee (LAAC) has worked with landowners, VDGIF and Dominion Power using a mutually approved Hydrilla Management Plan focused on the best interests of the lake, its users and its aquatic resources. Entering a fifth year, the plan appears to be working quite well.

Proper use of aquatic herbicides labeled for aquatic use by the U.S. EPA is safe and condoned by VDGIF. In fact, the integrated pest management technique of using both biological control (TGC) and chemical control (herbicides) is the most practical solution to treat areas of greatest need (TGC don't necessarily stay where stocked), maintain aquatic health of the lake, and is a good financial compromise. Herbicides do not cause algae blooms. Algae blooms are frequently caused by excessive nutrients entering a waterway following flooding and/or high runoff. 2018 was the wettest year ever recorded in much of Virginia, and it is very likely this unusual precipitation pattern triggered highly publicized algae blooms in Lake Anna.

There is no environmental or human health risk from properly used, approved aquatic herbicides. Diquat bromide, the primary herbicide used at Lake Anna, requires a one-day closure for drinking, livestock watering, and irrigation when spot treating SAV. There is no closure requirement for swimming or fishing. Diquat is rapidly absorbed by green plant tissue and interacts with the phytosynthetic process to produce compounds which destroy plant cells. When Diquat is applied to open water, it disappears rapidly because it binds to suspended particles in the water. These particles are then taken up by plants.

Diquat dibromide's half-life, or the period of time that it usually takes for half of the amount of the material to be broken down by natural processes, is less than 48 hours in water. Many products can be harmful when label directions are not followed, hence the importance of herbicide application by a certified applicator and not the general public.

All applications of any chemical into Lake Anna must be pre-approved by Dominion.

Use of Carp and Herbicide to Control Hydrilla at Lake Anna, November 2018

Doug Smith, Chairman LAAC Environment and Water Quality Subcommittee

The history of managing hydrilla in Virginia has been to wait until the hydrilla was a major problem and then overstocking with thousands of sterile grass carp. Some states prohibit the introduction of grass carp and treat hydrilla only with herbicides. In the early 1990s hydrilla was a major problem and was treated with 6180 grass carp introduced at three locations. As those died off, by 2013, hydrilla was again being sighted at Lake Anna. In 2015 a pilot program was developed in conjunction with VDGIF and Dominion Energy to try to manage the hydrilla by very limited use of grass carp and the use of herbicide in problem areas. To date that plan, documented in the 19 Nov 2015 Lake Anna Hydrilla Management Plan, has been successful. Hydrilla can be found only in a few small areas, none of which currently pose a problem.

A total of 521 certified sterile 10-12 inch grass carp were introduced in Spring of 2016 mostly on the warm side with about 25 stocked at Freshwater Cove and a like number at two other sites near the State Park and on upper Terry's Run. They have been effective in controlling hydrilla on the WHTF, but the effectiveness of carp stocked in low numbers in the open lake, main lake is inconclusive. Concerns about grass carp include:

1. Carp are not exclusive to hydrilla. They also eat native grasses that are essential to native habitat. We use them in limited numbers and introduce them as close as possible to known hydrilla outbreaks.
2. Although certified sterile, they are an invasive species that could endanger the native fish if a non-sterile fish managed to be included. We use VDGIF approved importers of certified carp.

Herbicide has been used to combat hydrilla in 2015 and again in 2017 and 2018. Herbicide is applied by a licensed contractor. The selected contractor uses a combination of DiQuat and Cutrine Plus, which is sprayed from a boat directly onto the plants. The selected herbicide is rated highly effective on hydrilla. It has NO restrictions for swimming which means you can swim immediately after application. It has NO restrictions on fish, which means that you can eat fish that have been in the area of application.

Concerns about the use of herbicide include:

1. We use herbicide around docks. Residents may have hidden water intakes to irrigate their lawns. Homeowners Associations have been used to notify residents about planned herbicide application.
2. The licensed appliers use plastic rain suits to protect clothing from overspray. This has alarmed some residents who erroneously see the gear as hazmat suits and conclude the herbicide is dangerous when properly applied.
3. Concerns about repeated use. Actually the herbicide dissipates within 48 hours. It adheres to other particles in the water, precipitates to the bottom, and degrades naturally.
4. It is very effective in killing large concentrations of hydrilla which, if spread over a large area, can rob the water of oxygen as the plants die and cause a localized fish kill. In order to prevent this the contractor limits the area to be applied in a single day. De-oxygenation from rotting plants has only been a potential problem at Freshwater Creek where the area treated was divided into two separate days of treatment to avoid any negative effects.

History of Hydrilla Management on Lake Anna

Lake Anna Advisory Committee
Environmental Committee
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Since the introduction of the invasive plant, hydrilla, in the 1960s water bodies throughout the country and especially in the south have dealt with managing its growth. Hydrilla is easily spread by a variety of methods, including propagation from bits left attached to boat trailers or in holding bins. Hydrilla was first reported at Lake Anna in the late 1980s and by the early 1990s became a concern for navigation on the lake, particularly on the WHTF.

By 1993 hydrilla was an issue at Lake Anna. Fishermen pointed out the benefits of hydrilla in providing habitat and reducing turbidity while others complained about the fouling of props and inability to use their waterfront or dock.

Options for stopping the hydrilla invasion were mechanical (raking it out), killing it with aquatic herbicide by a licensed applier or stocking sterile grass carp.

Grass carp are also an invasive, non-native species and must be certified to be sterile and stocked by VDGIF permit only.

All methods tend to destroy native submerged growth as well as the hydrilla, reducing habitat for various aquatic organisms.

The use of carp was decided to be the preferred method at the time but paying for it was a problem. Eventually Dominion Energy obtained a permit to stock over 6,000 carp on the WHTF of Lake Anna at their expense. Delegate V. Earl Dickinson managed to get $50,000 of state funds appropriated to LAAC too late to pay for 1993. The funds established a reserve at LAAC for hydrilla management and proceeds paid other operating expenses for LAAC over the years. Many of the WHTF carp migrated to the main lake as well having a devastating effect on native aquatic plants. The result is that for many years there was essentially no hydrilla on the lake and native grasses took a hit as well. Fish studies by Dominion Energy do not show a related reduction in fish counts but clearly the ecology of the lake was upset for several years.

The life span for grass carp is 12-15 years and Lake Anna did not see a return of hydrilla until about 2013. By 2014 lake watchers were aware of about three acres of hydrilla. The Lake Anna Advisory Committee began discussions of how to prevent a repeat of the early 90s infestation.

In April of 2015, after many meetings and discussions, the LAAC decided to implement a pilot program of control that included the use of aquatic herbicide to attempt to stamp out the few known sites and to develop a long range plan for managing hydrilla on the lake.

In August, 2015 Lake Anna Civic Association volunteers, trained to accurately identify hydrilla, conducted the first lake-wide survey. They found 23 sites (five acres) on the WHTF and 16 sites (3.1 acres) on the cold side. In the meantime, the request for licensed herbicide appliers got three responses and an LAAC team selected a contractor.

In late August the contractor was tasked to do two days of treatment on sites of highest priority. There had been substantial additional growth and some sites were left untreated. The result was successful reduction of hydrilla but our hope to "nip hydrilla in the bud" was dashed by the extent of the actual hydrilla already at the lake.

Despite their concern about potential damage to native vegetation, VDGIF approved introducing 521 sterile grass carp in to the lake in the spring of 2016. The limited number was based on the observed actual acreage of hydrilla. Most were introduced in the WHTF with a few introduced at Freshwater Creek and two other sites across from the State Park and upper Terry's run.

In 2016 LAAC focused on developing a long-range plan to manage hydrilla. The plan was unique in Virginia. The standard way to combat hydrilla has been to do what we did at Lake Anna in the early 1990s – wait until the hydrilla is a major problem and then overstock with large numbers of grass carp. A plan was developed in conjunction with Dominion and VDGIF that seeks a balance between minimizing impact on native habitat and uncontrolled growth of hydrilla.

The repeat of the lake-wide survey was conducted in late August and found only 1.62 acres primarily at Freshwater Creek, Pleasant Run, and Millpond Creek. Plans to treat hydrilla with herbicide were cancelled. We concluded that the weather conditions, the introduction of grass carp, and the herbicide success of 2015 obviated the need for additional treatment.

The Lake Anna Hydrilla Management Plan was completed and approved by the LAAC in Nov 2016. It called for the replenishment of grass carp due to attrition to maintain current levels and the use of herbicide to treat areas that were either navigation problems or prevented use of the lake. It called for annual lake-wide surveys and adjustments to the plan as needed.

In 2017 we began implementation of the plan. The August survey found 8.3 acres of hydrilla at 16 sites, four of which were deemed problem areas needing treatment. On 11 September 2017 we treated Freshwater Creek, Tara Woods, Tara Shores and Pine Harbor. While treatment was successful it was felt that it happened so late in the year that its benefits were not fully realized for the current high use months. Late treatment was due to a combination of weather, contractor schedules, and pushing the survey to late August to fully gauge the growth of hydrilla. It became clear that earlier surveys and treatment should be the goal. Our post-treatment survey found 10 sites with 5.86 acres, none of which posed problems to navigation or lake use.

The winter of 2018 brought early drought with low water levels exposing shallow water hydrilla plants. It also brought severe cold with subzero nights. It was hoped that the combination would kill back hydrilla in the upper Freshwater Creek area where most of the 5.86 remaining acres were found at the end of 2017. We enlisted local residents to help in monitoring for hydrilla.

By mid- June we got reports of hydrilla reappearance. By July we concluded that treatment would be needed and that the situation at Freshwater was that an upper un-navigable area, the flats, were “seeding” the rest of the creek and beyond into Contrary Creek. In order to control Freshwater and Contrary Creek hydrilla we would need to deal with both the cove and the flats.

On 9 and 16 Aug 2018 we treated eight acres in the upper Freshwater flats and 6.8 acres around docks and cove. The October survey found a total of only 0.79 acres at seven very small sites around the lake. None at Freshwater Creek.

In conclusion, the LAAC has been successful in managing hydrilla with a combination of grass carp and herbicide treatments. Critical to success has been funding and support of the LAAC Board, participation and support from Dominion and the VDGIF, and the work on the lake by the many volunteers, especially coordinators Allan Lassiter and Chris Shultis. There have been lessons learned:

1. The plan developed in late 2016 has been generally followed, but replenishment of carp to account for attrition has not taken place. It may eventually become necessary, but it is hard to justify adding carp now with only 0.79 acres of hydrilla for them to devour.
2. Our plan to treat only areas directly impacting lake use was deviated from to treat the Freshwater flats. Other sites on the lake could become similar problems.
3. Surveys done too early do not find submerged growth but done too late impact our ability to treat in a timely manner. Surveys should complete by the end of July and treatment should be completed by 15 August.
4. Use of herbicide (combination of DiQuat and Cutrine Plus) has been very successful with no adverse effects reported. The main concern has been lakefront homeowners with water intakes in the lake possibly getting herbicide into their irrigation systems resulting in damage to lawns. This has been mitigated by notifications using Homeowners Associations.

LAAC is the body tasked with managing hydrilla in the lake and is has been doing so safely, effectively and affordably for the past four years. Treatment of hydrilla by a licensed aquatic herbicide applicator is preferable to homeowners

dumping unmonitored amounts of possibly unapproved or ineffective herbicides into the lake that could do more harm than good. The course of action when observing hydrilla anywhere on the lake should be to report it to LAAC. LAAC will verify it and treat it where warranted.