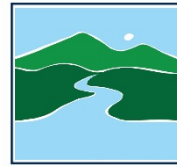


Aquatic Nuisance Control Individual Permit

Under 10 V.S.A. § 1455



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
WATERSHED
MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Permittee: Solitude Lake Management

Permit Number: 2015-H07

Control Activity: Powered Mechanical Devices
(Mechanical harvester & hydro-rake)

Waterbodies: Lake Champlain (South Lake)

Based upon the Findings contained in this permit, the Secretary of the Agency of Natural Resources has determined that the proposed aquatic nuisance control activities will comply with 10 V.S.A. § 1455, and is hereby approved under the following conditions and specifications.

a. Specific Conditions

1. **Powered Mechanical Devices.** All harvest activity (mechanical harvesting and/or hydro-raking) shall only occur with equipment approved by the Secretary. All mechanical harvesters and transporters shall have at least 200 cubic feet of capacity.
2. **Locations.** All harvest activity shall occur in accordance with the following location conditions:
 - Mechanical harvesting shall occur only in Lake Champlain south of the Chimney Point Bridge (a.k.a. Champlain Bridge) in authorized locations in Vermont waters, as indicated on annual harvest site maps.
 - Mechanical harvesting shall not take place in any location without approval from the Secretary.
 - Hydro-raking shall only occur at the authorized location demarcated within Section e. – Authorized Hydro-raking Area.
3. **Dates.** Harvest activity shall only occur between June 15th and October 15th of any calendar year during the effective period of this permit, unless otherwise authorized by the Secretary.
4. **Technique.** To minimize water chestnut spread, all mechanical harvesting activity shall be conducted in accordance with Section d. – Harvest Technique Diagram.
5. **Maintenance.** All powered mechanical devices shall be maintained and in sound working order.
6. **Daily Recording.** All harvest activity shall be recorded daily on a Powered Mechanical Device Report Form (Report Form), or on an equivalent approved by the Secretary.
7. **Reporting.** An annual harvest activity report shall be submitted annually to the Secretary by October 15th and shall include at a minimum the following information:
 - Date(s) each site is harvested;
 - Number of harvester loads removed from each site;
 - Number of hours spent harvesting from each site;
 - Disposal location; and,
 - A summary of hydro-rake activity.
8. **Professional Operation.** Only qualified professionals or individuals under the supervision and guidance of qualified professionals shall operate the authorized powered mechanical device while other, unauthorized individuals are not in the immediate harvest area.
9. **Nontarget Impact Mitigation.** All powered mechanical device use shall occur in accordance with the following condition to mitigate non-target impacts:
 - All Operators shall be trained to identify four rare/uncommon aquatic plant species: slender naiad (*Najas gracillima*), gaudalpe naiad (*Najas guadalupensis*), and Nutall's waterweed (*Elodea nuttallii*). A professional plant survey for the aforementioned species shall be performed at the Secretary's request if deemed necessary. The Permittee shall be advised that extant records exist for lake-cress (*Neobeckia aquatica*), a threatened species, along the northern shoreline of Catfish Bay, in lower East Creek, and in Beadles Cove. Harvesting of any lake cress is prohibited.

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- All Operators shall be trained identify the common musk turtle (*Sternotherus odoratus*). Harvest activity shall not result in any injured or killed turtles. All turtles found shall be safely and immediately returned to the water outside of the immediate activity area.
 - Any encounters with any other rare, threatened, or endangered aquatic species shall be reported to the Secretary immediately.
10. Disposal. All harvested vegetation shall be disposed at upland, non-wetland locations where it cannot return to any waterbody, except for transport authorized separately under 10 V.S.A. § 1454(b).
11. Transport. Any vehicles transporting harvest spoils (e.g. vegetation, mud, etc.) to a disposal location shall be covered and shall not lose any material during transport.
12. Annual Meetings & Surveys. The Permittee shall meet with representatives from the Secretary regularly while the work is ongoing to discuss sites to be targeted, equipment combinations to be used, and routine reporting requirements. In cooperation the Secretary, the Permittee shall conduct surveys annually to determine water chestnut locations and densities, to evaluate previous harvest locations, to detect any new infestations, and to note adjacent non-target plant species, including the presence of rare, threatened, or endangered species.

b. Standard Conditions

1. Reporting & Correspondence. All aforementioned, requisite correspondence directed to the Secretary pertaining to this permit, including notifications, surveys and reports, shall be (preferably) submitted via email to ANR.WSMDShoreland@vermont.gov or mailed to the following address:
- Lake & Shoreland Permitting
Watershed Management Division
One National Life Drive, Main 2
Montpelier, VT 05620-3522
2. Aquatic Invasive Species Spread Prevention. Prior to any control activity occurring, all equipment, including but not limited to boats, trailers, vehicle, and gear, that has been in or on any other waterbody, shall be decontaminated in accordance with the [Voluntary Guidelines to Prevent the Spread of Aquatic Invasive Species through Recreational Activities](#), Aquatic Nuisance Species Task Force, November 2013, or its replacement.
3. Decision-makers & Operators as Permittees. A Permittee is defined to mean any person associated with aquatic nuisance control activities (activity) (1) who performs the activity or who has day-to-day control of the activity; or, (2) any person with control over the decision to perform the activity including the ability to modify those decisions. Permittees identified as (1) are referred to in this permit as Operators while Permittees identified as (2) are referred to in this permit as Decision-makers. More than one Operator may be responsible for complying with this permit. Permittees are defined as a Decision-maker, as an Operator, or as both. When a Permittee is both a Decision-maker and an Operator, the Permittee must comply with all applicable requirements.
4. Authorization Modification or Amendment. This permit may be modified or amended upon request by the Permittee or by the Secretary. Any modification under this condition shall be performed in accordance with the [Public Review and Comment Procedures for Aquatic Nuisance Control Permit Applications and General Permits](#), January 30, 2003, or its replacement.
5. Rare, Threatened, or Endangered Species. Encounters with any rare, threatened, or endangered species shall be reported to the Secretary immediately. If determined necessary by the Secretary, an Endangered & Threatened Species Taking Permit, per 10 V.S.A. § 5408, shall be obtained prior to commencement or continuance of activity.
6. Compliance with Other Regulations. This permit does not relieve the Permittee from obtaining all other approvals and permits prior to commencement of activity, or the responsibility to comply with any other applicable federal, state, and local laws or regulations.

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7. Access to Property. By acceptance of this permit, the Permittee agrees to allow representatives of the state of Vermont access to the property covered by the permit, at reasonable times, for the purpose of ascertaining compliance with Vermont's statutes, regulations, and permit conditions.
8. Legal Responsibilities for Damages. The Secretary, by issuing this individual permit, accepts no legal responsibility for any damage direct or indirect of whatever nature and by whoever suffered arising out of the approved activity.
9. Rights & Privileges. This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
10. Duty to Comply & Enforcement. The Permittee shall comply with all terms and conditions of this permit. Any permit noncompliance shall constitute a violation of 10 V.S.A. § 1455 and may be cause for any enforcement action and revocation, modification, or suspension of the permit. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit.
11. Duty to Reapply. If the authorized activity is anticipated to continue after the expiration date of this permit, the Permittee shall reapply for coverage under a new permit sixty (60) days prior to the expiration date of this permit.
12. Twenty-four Hour Non-compliance Reporting. Unless provided otherwise by this permit, the Permittee shall report any noncompliance which may endanger public health or the environment. Any such information shall be provided within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance, its cause; the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; as well as steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
13. Official Duties. This permit shall not restrict law enforcement of emergency operations or the performance of official duties by a government agency.
14. Public Access Area. In accordance with Fish and Wildlife Board Rule 641, pursuant to 10 V.S.A. § 4145(a), Vermont Department of Fish & Wildlife Access Areas shall not be used for this activity without proper authorization from the Secretary.
15. Reopener. If after granting this permit the Secretary determines, at his or her discretion, that there is evidence indicating that an authorized activity does not comply with the requirements of 10 V.S.A. Chapter 50, the Secretary may reopen and modify this permit to include different limitations and requirements.
16. Appeals. Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. The appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings available at www.vermontjudiciary.org. The address for the Environmental Division is: 32 Cherry Street; 2nd Floor, Suite 303; Burlington, VT 05401 Telephone: 802-951-1740.

c. Findings

1. Application Receipt & Review. A permit application submitted by Solitude Lake Management (SLM), formerly Aquatic Control Technologies, LLC, was received on August 3, 2015, for an Aquatic Nuisance Control Permit for the use of a powered mechanical devices, and was reviewed in accordance with the

Department of Environmental Conservation's *Permit Application Review Procedure*, adopted May 22, 1996.

2. Background. Water chestnut (*Trapa natans*) is a non-native invasive aquatic plant that was first identified in Vermont in Lake Champlain in the 1940s. This species currently infests Lake Champlain and many associated tributaries. The extent of water chestnut has spanned eight Vermont towns: Addison, Benson, Bridport, Ferrisburgh, Orwell, Panton, Shoreham and West Haven, as well as at least 27 inland waterbodies. Water chestnut forms dense surface mats and has great reproductive capability. It can negatively impact native habitat, out-compete native plant species, and interfere with recreation and navigation. Water chestnut is an annual aquatic plant that overwinters entirely by seed. Published studies and experience in Vermont indicate that if the seed cycle is interrupted, water chestnut can be effectively controlled with the use of mechanical devices. The cooperative management of water chestnut in Lake Champlain and its associated tributaries has occurred in both Vermont and New York waterways since 1983, in partnership with the United States Army Corps of Engineers, the Lake Champlain Basin Program, the United States Fish and Wildlife Service, New York State Department of Environmental Conservation, and The Nature Conservancy. In Lake Champlain, annual management has begun at the northern edge of the infestation and progressed south in an effort to prevent its spread. Methods used for management have consisted of controlling the plant via mechanical harvesting supplemented with hand-pulling. ANC Permit #2014-H05 was issued in 2014, which superseded prior permit #2005-H01. This authorization now supersedes #2014-H05. The project focus is to remove all water chestnut from South Lake Champlain between July and early September each year before the plants drop their nutlets (seeds).

SLM conducts mechanical harvesting to remove dense populations of water chestnut from areas of Lake Champlain south of Benson Landing, targeting water chestnut plants before they reach maturity. The number of harvesters employed seasonally is dependent upon annual funding. The mechanical harvester targets plants no more than five feet below the water's surface. Once a harvester is full it either off-loads via shore conveyor into a dump truck or into a high-speed transport vessel that then transports collected material to same shore conveyor for disposal in upland, non-wetland location.

Water chestnut harvesting during the last 32 years has totaled 2,458,600 pounds wet weight. Successful mechanical harvesting has resulted in moving harvesting activity approximately one mile south of the Narrows of Dresden, on both sides of Lake Champlain. For the past several years, the shore-based disposal operations have occurred from the Red Rock Bay Access site on the eastern shoreline. The bay is separated from the main channel of the lake by an occasionally submerged "island" comprised of emergent and wetland vegetation that runs north-to-south and is approximately 2400 feet long, 250 feet wide at its widest point and less than 100 feet wide at the southern end. The primary access to Red Rock Bay is at the northern end, where there is a 250-foot-wide channel opening. During high water conditions channels at the southern end of Red Rock Bay are navigable. However, when the water level is low, the harvesters and transport barges cannot pass through the primary southern channel due to the extensive growth of primarily cattails (*Typha latifolia*). Now that the majority of the water chestnut harvesting activity occurs to the south of Red Rock Bay, maintaining an open channel enhances the efficiency of the harvesting operation by reducing the travel distance and time to the shoreline off-loading location.

The proposed hydro-raking project will involve the removal of cattails, other aquatic vegetation and accumulated sediment from the channel area at the southern end of Red Rock Bay. The area to be hydro-raked is estimated to be less than 4,000 square feet (25 feet wide by 160 feet long). The work is expected to require 1-2 workdays to complete. The hydro-rake is essentially a floating backhoe that is propelled by paddle wheels. There is a York/landscape rake attachment on the front of the hoe that digs through the sediment and removes aquatic plants, its root structure and soil. Each rake-full of material will be deposited onto a harvester or the transport barge. The raked material will then be transported to the shoreline off-loading point in Red Rock Bay, transferred into dump trucks, and will ultimately be deposited at the dewatering and final composting location. In total, an estimated maximum of 150-200

cubic yards of vegetation, root structures and attached hydro-soils will be removed from the channel area.

NYSDEC conducts a mechanical harvesting program independently aiding in the overall north to south management effort. The NYSDEC program is operated by the Town of Dresden.

The Lakes & Ponds Program will manage the proposed program in cooperation with SLM who will conduct the water chestnut removal, transport and disposal authorized under this permit.

3. 10 V.S.A. § 1455(f)(1) – Nontarget Environment. The mechanical harvesters will both cut and collect the plant material. The greatest risk to the nontarget environment from mechanical harvesting is habitat alteration resulting from the direct removal of plants, fish, macro-invertebrates, periphyton, reptiles and amphibians. Most aquatic animals should be able to escape from the harvester, so it is not anticipated that large numbers of animals will be affected. Dense water chestnut growth can be impenetrable to navigation; create aquatic plant monocultures out-competing native aquatic plants including rare, threatened and endangered species; deplete oxygen levels increasing the potential for fish kills; restrict water circulation patterns; and reduce light penetration.

Mechanical harvesting occurring along the northern shoreline of Catfish Bay, in lower East Creek, and in Beadles Cove may threaten extant or historic populations of the State-threatened species, water-cress (*Neobeckia aquatica*) - a threatened species. To accommodate this possible threat, the harvesting of any water-cress has been prohibited under this permit. It also cannot occur without a Threatened or Endangered Species Takings Permit from the Secretary. Four rare/uncommon submerged species have been identified: slender naiad (*Najas gracillima*), guadalupe naiad (*Najas guadalupensis*), and Nutall's waterweed (*Elodea nuttallii*), all submerged species may exist in the harvest areas. To mitigate the risk to these species, the Operators are required to be capable of identifying these species in order to avoid harvesting them if/when they are observed. The common musk turtle (*Sternotherus odoratus*) and other aquatic turtle species are known to exist in the areas proposed for harvesting. The injuring or killing of any turtles is prohibited by permit condition.

There are no adverse impacts to fisheries. However, the harvest activity is to adhere to a June through October timeframe in order to minimize disturbance to fish spawning.

To minimize water chestnut spread, all mechanical harvesting will be conducted using the technique sketched within Section 4 – Authorized Harvest Technique Diagram.

There have been no reports of adverse impacts on the lakeside wetlands. Nonetheless, harvest activity is prohibited within designated wetland areas without review from the Secretary. If determined necessary, a Wetlands Determination, per 10 V.S.A. § 914, shall be obtained prior to commencement or continuance of activity.

To mitigate the risk of introduction or transport of non-native, aquatic invasive species proper spread prevention measures must be taken. Thus, prior to any control activity occurring, all equipment (such as a boat, trailer, vehicle, and gear) that has been in or on any other waterbody, will be decontaminated in accordance with the Voluntary Guidelines to Prevent the Spread of Aquatic Invasive Species through Recreational Activities, Aquatic Nuisance Species Task Force, November 2013, or its replacement.

The use of the Fish and Wildlife Access Area for purposes other than launching boats and fishing requires a Special Use Permit from the Vermont Department of Fish and Wildlife.

The area proposed for harvesting is a relatively small area of Lake Champlain. After approximately three decades of control via powered mechanical device, no significant adverse nontarget impacts have been reported or observed. Water chestnut control is essential for the well-being of the native ecology in the areas proposed for control. While some impacts are unavoidable, the Secretary has received no information indicating that the harvesting would pose unacceptable risk to the nontarget environment.

The Secretary has determined that there is acceptable risk to the nontarget environment.

4. 10 V.S.A. § 1455(f)(2) – Public Health. At the request of the Secretary, the Vermont Department of Health, Division of Health Protection has reviewed and provided general recommendations pertaining to the risk of the proposed activity to public health. The control activity should result in negligible risk to

public health as long as it is performed by qualified professionals, proper precautions are taken to ensure that other, unauthorized individuals are not in the area during operation, and all equipment is properly maintained in sound, working order.

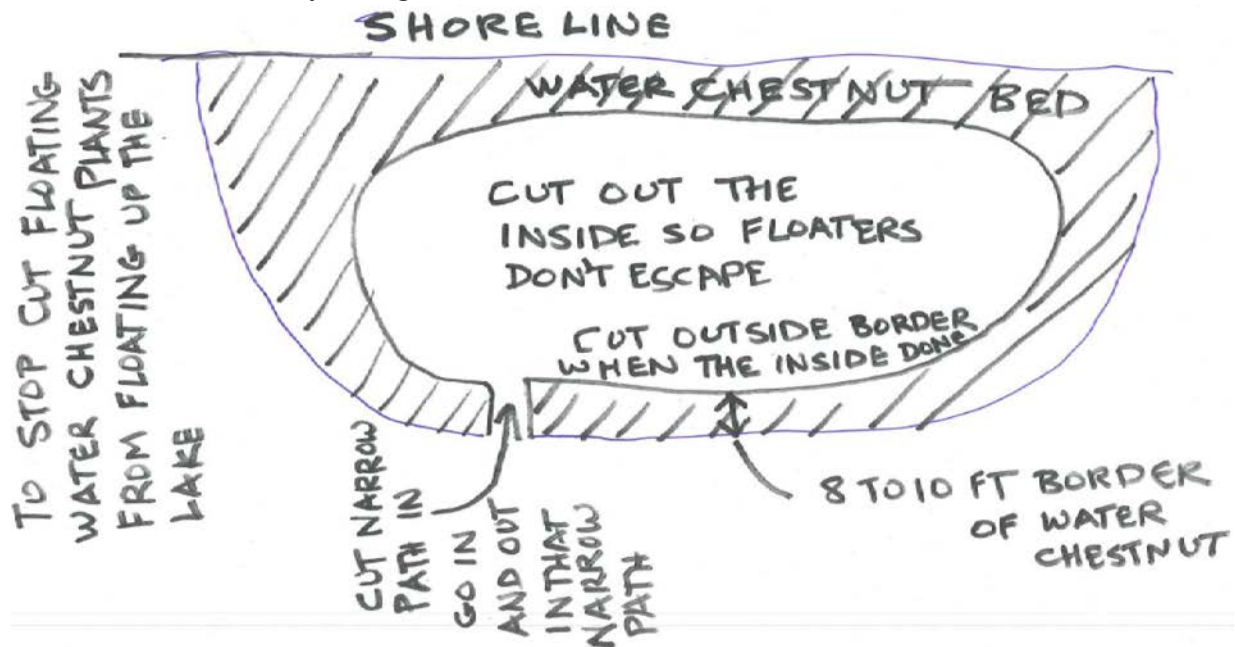
The Secretary has determined that there is negligible risk to public health.

5. 10 V.S.A. § 1455(f)(3) – Public Good. No information was received to indicate undue adverse impacts upon the public good. Recreational pursuits are being negatively impacted in southern Lake Champlain due to water chestnut growth. Specifically, water chestnut interferes with boating, fishing and swimming. Without control, the presence of water chestnut in southern Lake Champlain could spread north and threaten the recreational use of the rest of the lake and other waters throughout the state. The proposed mechanical management program aimed at removing water chestnut and preventing northward spread provides the public with the improved, prolonged recreational benefits of these waters. Mechanical harvesting of nuisance aquatic plants from Lake Champlain will temporarily control nuisance plant growth, enhance water quality, and improve water-based recreation and, aesthetics, and navigation for shoreland property owners and the general public.

The Secretary has determined that there is a benefit to the public good.

6. 10 V.S.A. § 1455(h) – Public Notification. An opportunity for the public to review and comment on this application was provided in accordance with the Department of Environmental Conservation’s [Public Review and Comment Procedures for Aquatic Nuisance Control Permit Applications and General Permits](#), adopted per 3 V.S.A. Chapter 25, on January 30, 2003.

d. Authorized Harvest Technique Diagram



e. Authorized Hydro-raking Area



 - Authorized location of hydro-raking mid-point (N43.6756389 and W73.40526389)

f. Authorization

By delegation from the Secretary, the Vermont Department of Environmental Conservation has made a determination that the above activity qualifies for an individual aquatic nuisance control permit. The Permittees are authorized per 10 V.S.A. § 1455(i) subject to the conditions herein specified.

This permit shall be effective on the day of signing, and expire ten years thereafter.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

By: _____
Perry Thomas, Manager
Lakes & Ponds Management and Protection Program
Watershed Management Division