

**LAKE MINNEWAWA
ASSOCIATION**

**HARVESTING OPERATIONS
REPORT FOR 2016**

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PERMIT TO DESTROY AQUATIC VEGETATION

Permit No.: 16F-2B0489
Device No.:

The Commissioner of the Natural Resources, pursuant to authority by law, hereby grants this permit to the person whose name appears below, for the purpose specified, dates inclusive as shown, in the conditions hereinafter set forth:

Permittee's Name DALE KRATOCHWILL LAKE MINNEWAWA ASSN PO BOX 58 MCGREGOR MN 55760	Fire Number Lake Address (if different) LAKEWIDE TREATMENT MCGREGOR MN 55760	Telephone Number 612-803-7247
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INCLUSIVE DATES OF PERMIT:

FROM: May 31, 2016	TO: September 01, 2016	TYPE OF PERMIT: 1 Season
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THIS PERMIT APPLIES ONLY TO THE WATER AREA AS DESCRIBED AS FOLLOWS:

Name of Lake Minnewawa	01003300	Acres 2451	County AITKIN
Extending _____ feet along shore and lakeward a maximum distance of _____ feet and <u>188.2</u> acres.			
Treatment by permittee or: <u>Location of Treatment Area:</u> As per the Lake Vegetation Management Plan. All harvesting will occur more than 150 ft offshore.			

Type of Control:

Submerged vegetation.

Means and Methods Allowed:

Cutting and pulling with immediate removal of the vegetation as per attached vegetation management plan. **All vegetation removed must be disposed of in a pre-determined approved location. DNR office must be contacted prior to vegetation removal with location of disposal.**

THE PERMITTEE OR AGENT SHALL GIVE NOTICE OF COMMERCIAL MECHANICAL CONTROL OR CHEMICAL TREATMENT DATE TO THE FOLLOWING PERSON WHICH SHALL BE RECEIVED BEFORE BEGINNING ANY WORK HEREUNDER. FAILURE TO NOTIFY PRIOR TO BEGINNING WORK OR VIOLATION OF OTHER TERMS AND CONDITIONS OF THIS PERMIT SHALL BE GROUNDS FOR REVOCATION OF THIS PERMIT OR REFUSAL TO RENEW.

Aquatic Plant Specialist: Wayne Mueller, 1601 Minnesota Dr, Brainerd, (218)203-4342

"By obtaining this permit {DNR's Aquatic Plant Management Permit}, dischargers of pesticides are granted coverage under the National Pollutant Discharge Elimination System (NPDES) / State Disposal System (SDS) Pesticide General Permit for the control of Nuisance Aquatic Animals (MNG87C0000) and Vegetative Pests and Algae (MNG87D0000) administered by the Minnesota Pollution Control Agency (MPCA). Compliance with this permit will satisfy the requirements of the NPDES/SDS permit. More information and copies of MPCA's permit can be found at www.pca.state.mn.us/pesticidepermit."

The Minnesota Department of Natural Resources does not vouch for the effectiveness of any control method or operation nor does it stand as arbiter whether or not any such method or operation has been satisfactory. This permit is permissive only and no liability shall be incurred by the State or by any of its offices, agents, or employees by reason of the issuance of it or by reasons of acts or operations of the permittee. The permittee shall be solely responsible for any damage or injury to persons, domestic or wild animals, waters, or property, real or personal of any kind, resulting from the permittee's acts or operations, and at all times the State of Minnesota, its officers, agents, and employees, shall be held harmless from any liability for such damage or injury.

AFS: 310 AITKIN
CO: 277
Other:

Authorized Signature for Commissioner <i>Wayne Mueller</i>	Date <i>4-28-16</i>
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MINNESOTA DEPARTMENT OF NATURAL RESOURCES
AQUATIC PLANT MANAGEMENT PERMIT

EXPIRATION DATE: 09/01/2016

Permit Number
2016-1486

The Commissioner of the Natural Resources, pursuant to authority by law, hereby **GRANTS THIS PERMIT** to the person whose name appears below, for the purpose specified, dates inclusive as shown, in the conditions hereinafter set forth:

Project Name: (N/A)		Control Method: Bog Removal		
County: Aitkin	Watershed: Mississippi River - Grand Rapids	Resource: Minnewawa (01003300)		
Permittee: LAKE MINNEWAWA ASSN CONTACT: KRATOCHWILL, DALE PO BOX 58 MCGREGOR, MN 55760-0058 (612) 803-7247 Lake Address (if different):		Authorized Agent: (N/A)		

Authorized Control Area:

Migrating floating bog(s) on Minnewawa (01003300).

Authorized Action:

Relocating and/or removing of migrating floating bogs.

Relocated migrating bogs must be secured to prevent further movement using wooden stakes. If the bog is to be removed from the lake, this permit allows for the use of heavy equipment provided operation removes only floating bog material and does not disturb the bottom substrate. This permit authorizes the transport of aquatic plants and prohibited invasive species during bog relocation or removal activities.

Before transporting the bog for disposal you must: (1) drain excess water from the bog material before leaving the water body, for example by parking the truck on an incline; (2) transport the bog material directly from the water body to the disposal site; (3) dispose of bog material at least 300 feet from any waters of the state or seasonally flooded lands; and (4) clean all aquatic plants, sediment and prohibited invasive species from all equipment with each load – no vegetation should be on the outside of the transport truck/trailer before using public roads. If you intend to remove the floating bog via a public access, make sure you contact the owner of the access (an access permit may be necessary).

Removal of floating bog fragments that are blocking the channel between Minnewawa and Horseshoe lakes. Staking of bog fragments is not required. Use of aquatic plant harvesting machine is authorized under this permit.

Authorized Issuer:	Title:	Issued Date:	Effective Date:	Expiration Date:
Wayne Mueller	Aquatic Plant Management Specialist	8/9/2016	8/9/2016	09/01/2016

This permit is granted subject to the following **CONDITIONS**:

ANNUAL SURVEY: The permittee or their agent must complete an annual survey indicating the actual treatment dates no later than December 31st. The survey will be sent to you in the fall.

ENFORCEMENT: Impacts to aquatic plants outside permitted area or without valid permit may result in enforcement action.

Conditions (Continued):

CONTROL EFFECTIVENESS: The Minnesota Department of Natural Resources does not vouch for the effectiveness of any treatment method or operation nor does it stand as arbiter whether or not any such method or operation has been satisfactory. This permit is permissive only and no liability shall be incurred by the State or by any of its offices, agents, or employees by reason of the issuance of it or by reasons of acts or operations of the permittee. The permittee shall be solely responsible for any damage or injury to persons, domestic or wild animals, waters, or property, real or personal of any kind, resulting from the permittee's acts or operations, and at all times the State of Minnesota, its officers, agents, and employees, shall be held harmless from any liability for such damage or injury.

PERMIT EXPIRATION: This permit is only valid until the expiration date listed at top of the permit and must be renewed if you want to continue plant control in future years.

NON-TRANSFERABLE: This is a non-transferable permit. If property ownership changes, this permit is invalid.

cc: Amber Ladd, Conservation Officers, McGregor; amber.ladd@state.mn.us

Lake Minnewawa Association

Aquatic Plant Mechanical Harvesting Policy, June 2016

Lake Minnewawa is classified by the Minnesota Department of Natural Resources (MN DNR) as a eutrophic type lake. One characteristic of this type of lake is an abundant level of aquatic vegetation. Mechanical harvesting has proven to be an effective and environmentally safe means by which to control excessive aquatic vegetation growth. It is also one of the few options to remove the nutrients, which are bound in plants from the lake.

LMA seasonal harvesting operations are conducted through a permit issued by MN DNR authorizing the destruction of aquatic vegetation and is subject to all terms and conditions put forth by MN DNR. The seasonal permit allows harvesting of submerged vegetation in offshore areas that are greater than 150 feet from shore and is the primary mission of LMA harvesting operations. The permit allows operations to begin on June 1st and expires on September 1st. The actual start and end dates are dependent on seasonal growth variations that rely on several environmental factors and harvesting budget.

The lake is divided into five harvesting zones. LMA staff will perform regular reconnaissance surveys of the five zones to evaluate when and to what extent mechanical harvesting is appropriate. Initially, each zone will be evaluated on the bases of where the greatest public use is impaired by offshore emergent vegetation. The primary method used for gauging vegetation density is comparing time spent on a respective area to the amount tonnage (loads) removed. Harvesting effectiveness is dependent on vegetation density and lake access location for the shoreline trailer and truck. The closer the access point is to the area being cut, the more effective the harvesting operation will be. Therefore, duration of time spent in a zone will not be the sole factor used to determine harvesting efficiency or completion of a zone. Harvesting operation employs a crew that work Monday through Friday so as not to conflict with weekend enjoyment of the lake. The Harvesting Manager has the day to day authority and responsibility for the coordination and operation of harvester and the associated equipment. For reasons of insurance limitations and liability only LMA board of directors and harvesting employees are allowed to operate and service harvester, or drive vehicles. Riding along on harvester or truck is not allowed.

Reporting of harvesting operations will be posted on LMA Website (www.lakeminnewawa.org) and updated every two weeks starting on the first of June. This will provide interested parties a convenient way to access information regarding LMA seasonal harvesting operations. LMA seasonal harvesting permit is for offshore control of aquatic vegetation to provide clear passage in public areas of the lake and does not include cutting vegetation for individual riparian owners to gain access to open water. Individual riparian owners that feel they need assistance in gaining access to open water must contact MN DNR www.dnr.state.mn.us/shorelandmgmt/apg/regulations.html to apply for a permit to destroy aquatic vegetation for that purpose. If the MN DNR grants the riparian owner a permit allowing the removal of vegetation to gain access to open water, it is the riparian's responsibility for the removal of the vegetation and maintaining the channel to open water. The riparian may remove the vegetation themselves or hire a private company to remove the vegetation.

LMA will endeavor to assist riparian owners that request vegetation removal by the harvester machine to gain access to open water; however mechanical limitations or navigation hazards may limit the ability or effectiveness of vegetation removal. Delays may also be experienced due to primary mission of harvesting operations or work schedule.

Lake Minnewawa Association

Aquatic Plant Mechanical Harvesting Policy, June 2016

The riparian owner must submit a signed copy of the required DNR permit with the property owner's first and last name, and property I.D. number to LMA P.O. Box 58 McGregor, MN. 55760 Attention Harvesting Operations before any work will be performed. The harvesting crew will make every effort to be at the riparian owner's property within two (2) weeks of confirmation of proper DNR permitting. The riparian owner is responsible to make a sign using 3 or 4 inch tall characters displaying the required DNR permit number attached to the riparian owners dock. LMA harvester will cut a path that is consistent with DNR regulations and no closer than 15 feet to the front of riparian owners dock. Each riparian owner will be limited to a maximum of two (2) clearing passes per season.

Criteria which determines when and where aquatic vegetation is to be harvested includes:

Operating Budget: Based on funds held by LMA and funds available from other sources a harvesting budget is established. The budget will determine the length of the harvesting season. Harvesting season will not be expanded beyond the established seasonal budget.

Weather: Harvesting operations will be delayed if weather conditions jeopardize the safety of the crew members or risk damage to harvesting equipment.

Seasonal Climate Trend: Increased light penetration in the water column, high water temperatures and low water levels increase the likelihood of excessive vegetation growth. Under these conditions the planned harvesting schedule will be adjusted as needed to prioritize areas to maximize coverage based on remaining operating budget.

Mechanical Limitations: The mechanical harvester is designed to cut aquatic vegetation. However, the harvester is not able to cut some type of plants. Server damage to mechanical harvester will result from dredging mud from bottom of lake. Dredging is an illegal act and will not be allowed.

No-Cut Areas:

5.1) **Critical Native Plants** – These areas are classified by MN DNR to have significant populations of beneficial or protected native plants.

5.2) **Navigation Hazards** – These are areas of rock/rocky structure and shallow areas where the mechanical harvester cannot operate due to barge draft.

5.3) **Undeveloped Shoreline** – These are undeveloped areas and harvesting will not be done.

5.4) **Shoreline Docks** – Areas around riparian owned docks and boat lifts including swimming area and floating rafts.

5.4) **North End Bay** – The east side of this area is an imaginary line that extends from Warner's Point in a north easterly direction to the western most property line of parcel number 29-0-045903 on the north shore of the bay.

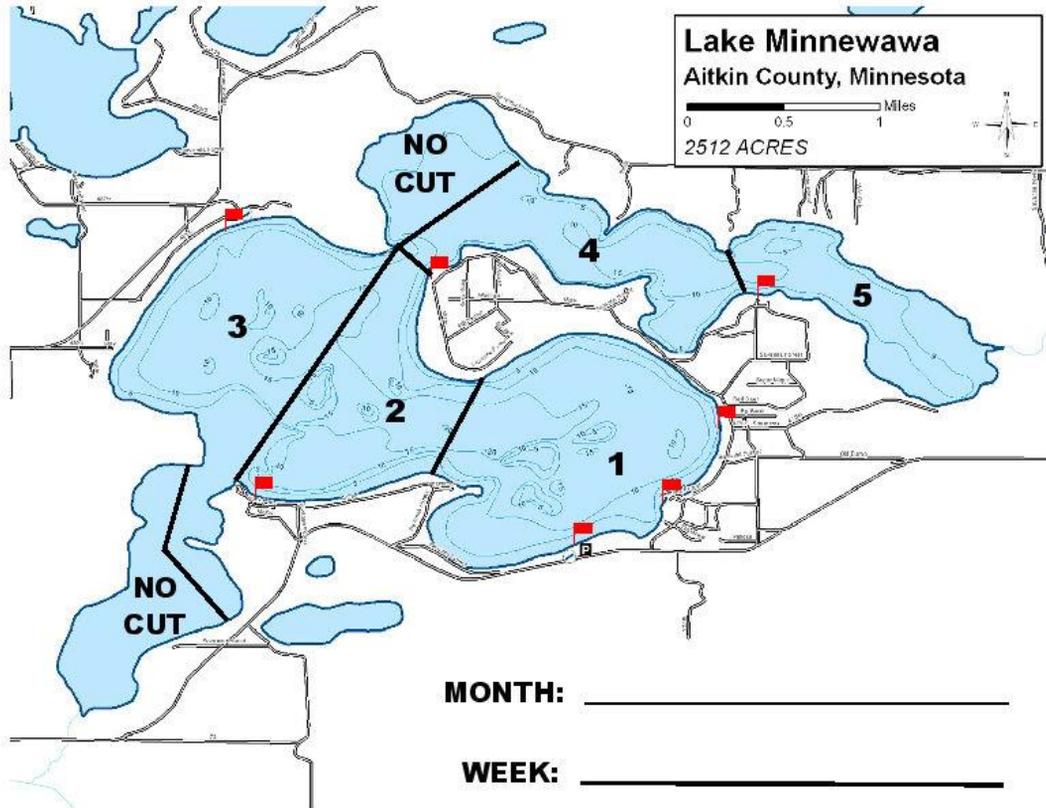
5.5) **South End Bay** – The south bay area that lies to the west and south of an imaginary line that extends from western shoreline to the eastern shoreline just south of Minnewawa Sportsman's Club.

5.6) **Sensitive Habitat** – These are designated by MN DNR as important fish spawning and/or juvenile fish cover areas.

Approved On 7/15/2016

Lake Zone Map

The lake is divided into five harvesting zones. Lake Minnewawa Association (LMA) staff performs regular reconnaissance surveys of the five zones to evaluate when and to what extent mechanical harvesting is appropriate. Initially, each zone is evaluated on the bases of where the greatest public use is impaired by offshore submerged vegetation.

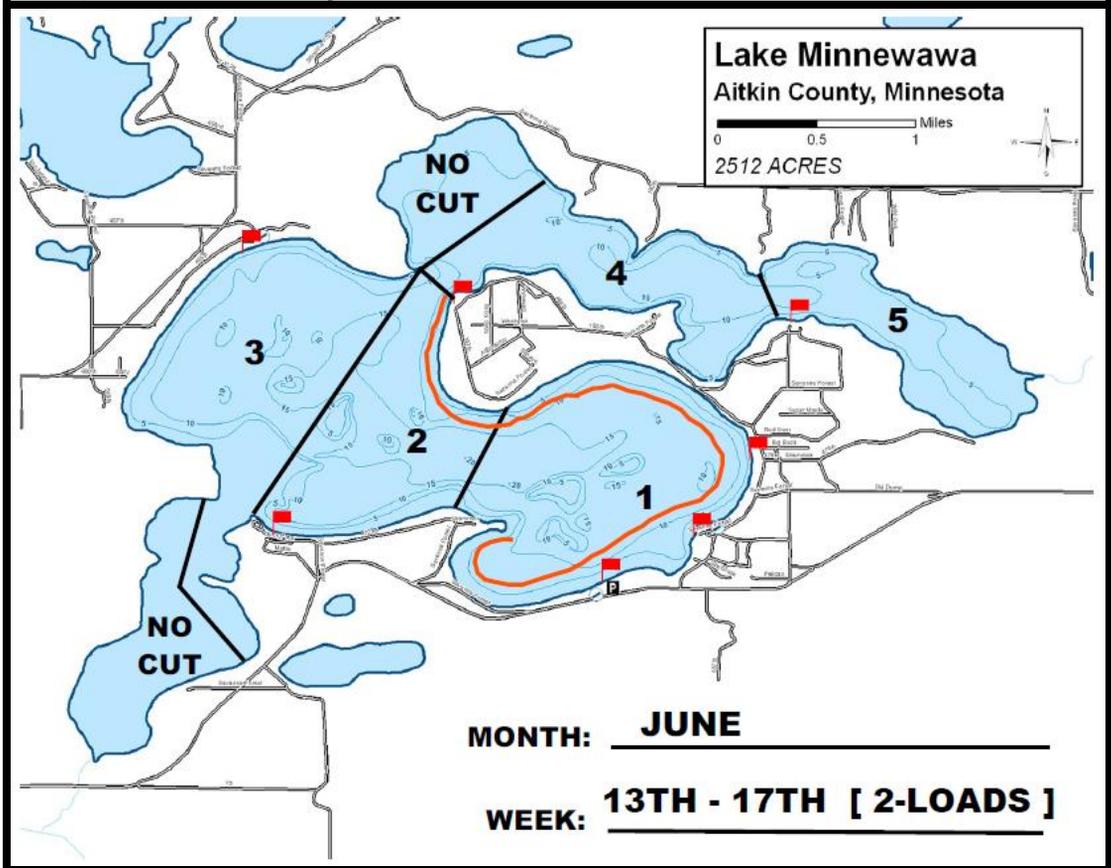
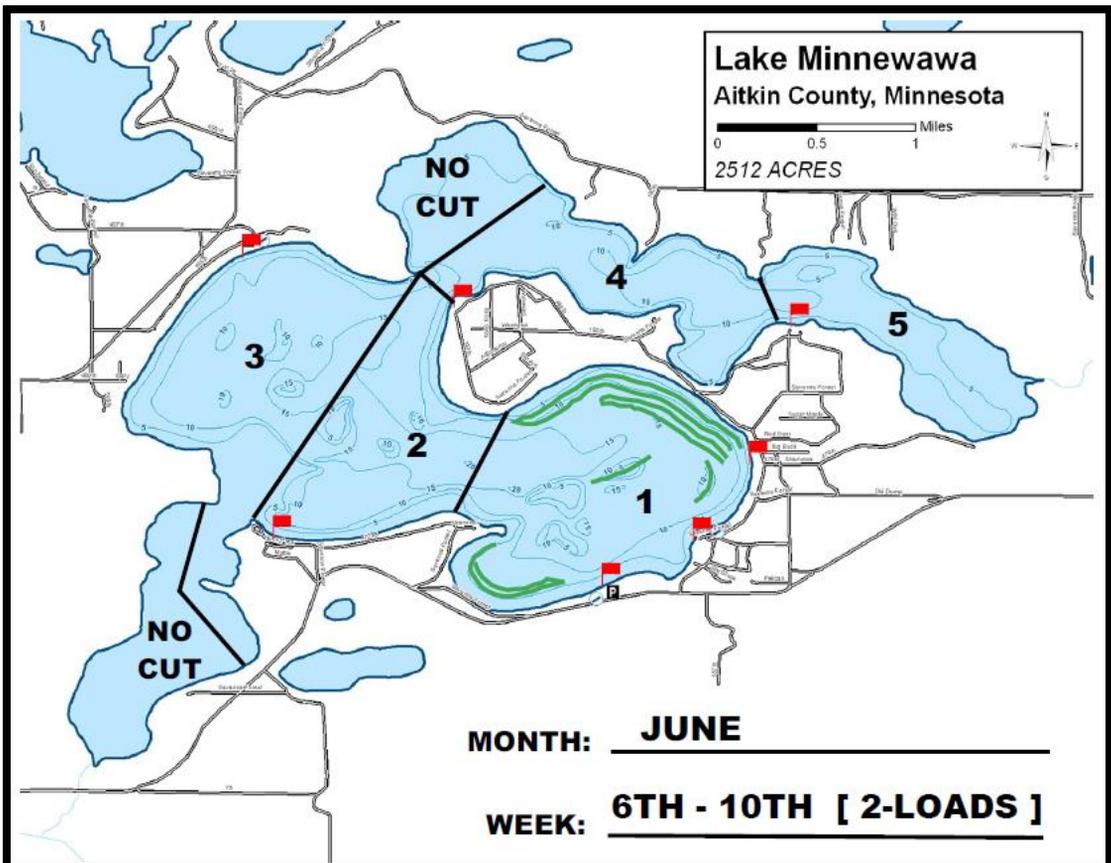


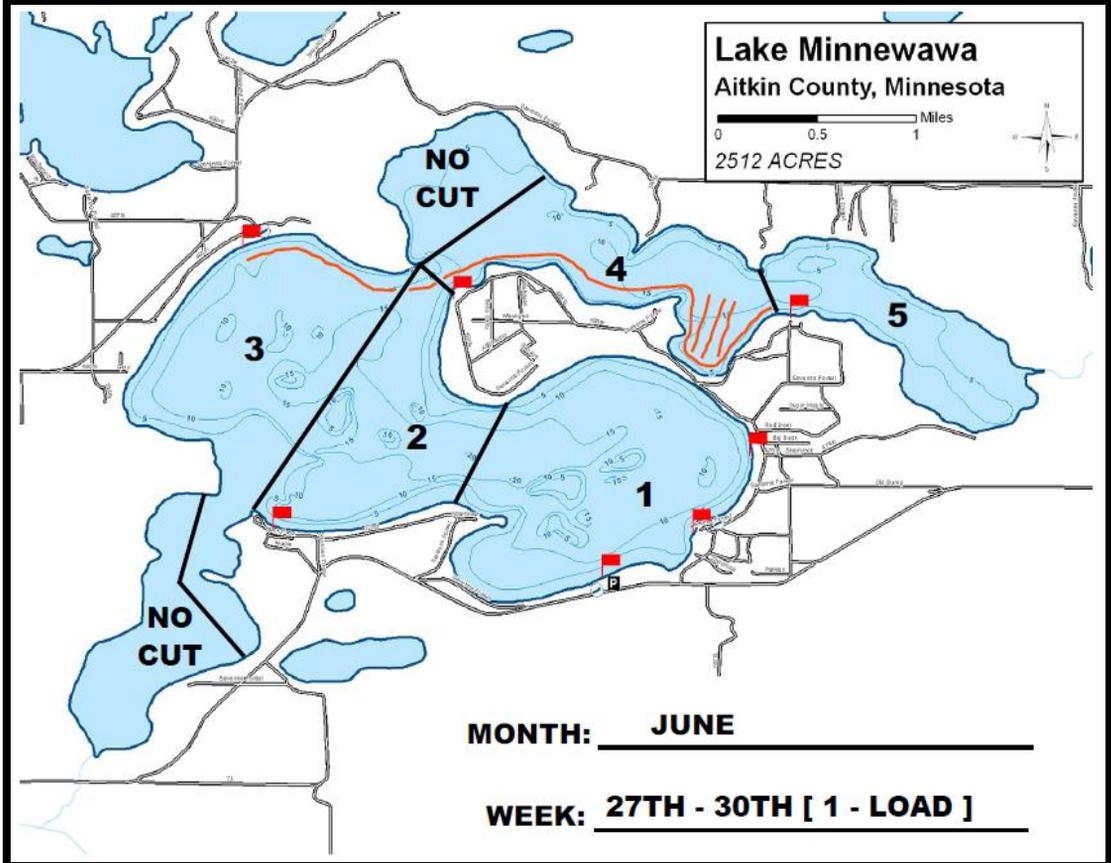
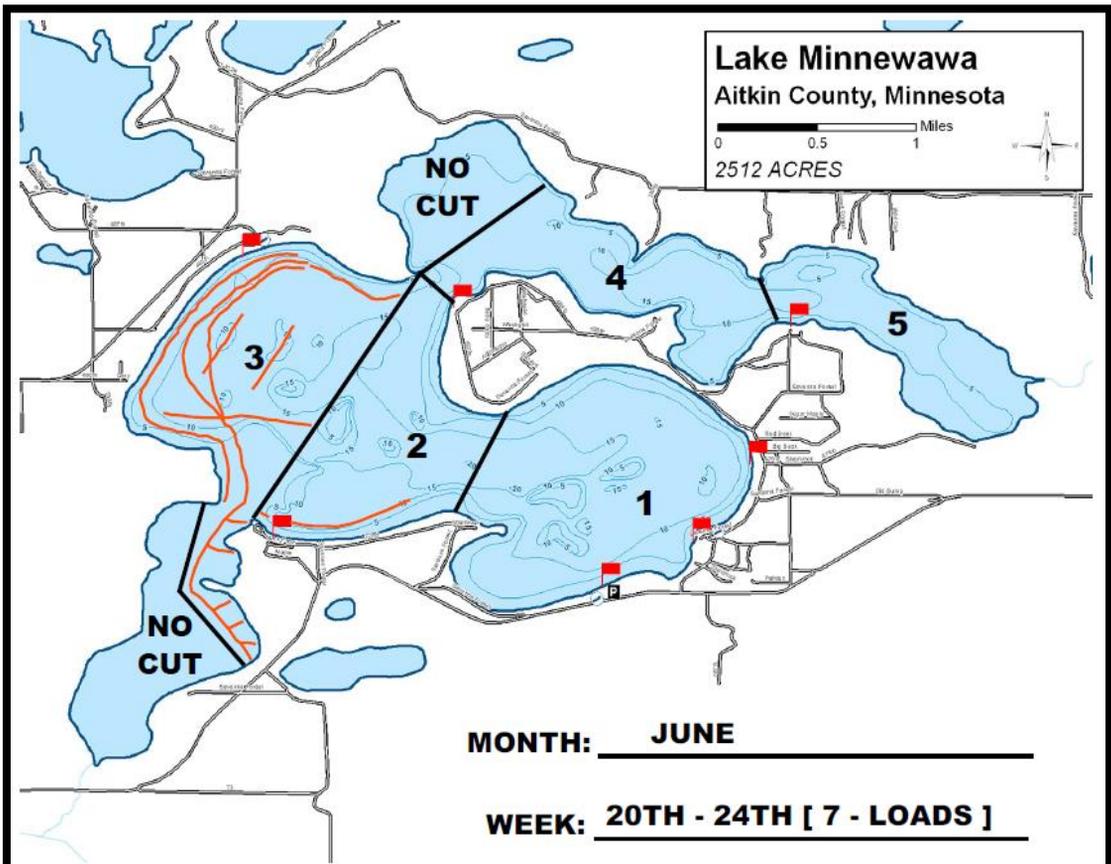
June Harvesting Report

LMA began 2016 harvesting operations on Monday, June 6th. As expected for the beginning of the season aquatic vegetation conditions on the lake were low. This condition was consistent for the first two weeks of operation. The rate of harvesting in zone [1] and [2] was slow, taking most of the day to accumulate a full load. Zone [3] proved to have a higher concentration of vegetation resulting in a higher percentage of loads than zone [1] and [2] combined. Zone [4] was harvested the last week of June and produced one full load. This was in part due to only part of zone [4] being harvested that week. A total of 12 loads were taken from the lake during the month of June. Each load has an average weight between seven and eight tons.

A total of twenty work days were possible in the month of June. Nine days were spent harvesting, nine days were canceled due to high wind and/or rain, and two days were lost because of trailer brake problem.

Month of June	Work Days	High Wind Days	Rain Days	Break Down Days	Vegetation Full Loads
Week #1	3	0	2	0	2
Week #2	2	0	1	2	2
Week #3	2	3	0	0	7
Week #4	2	2	1	0	1



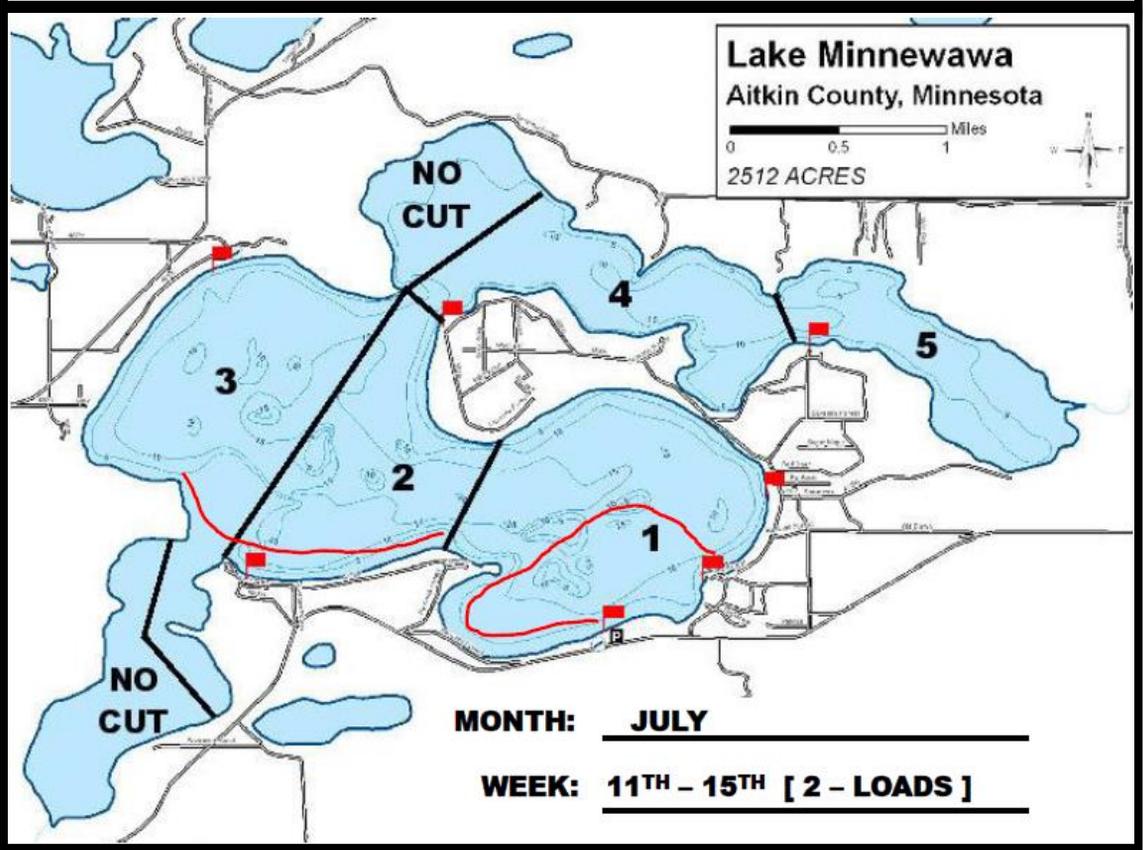
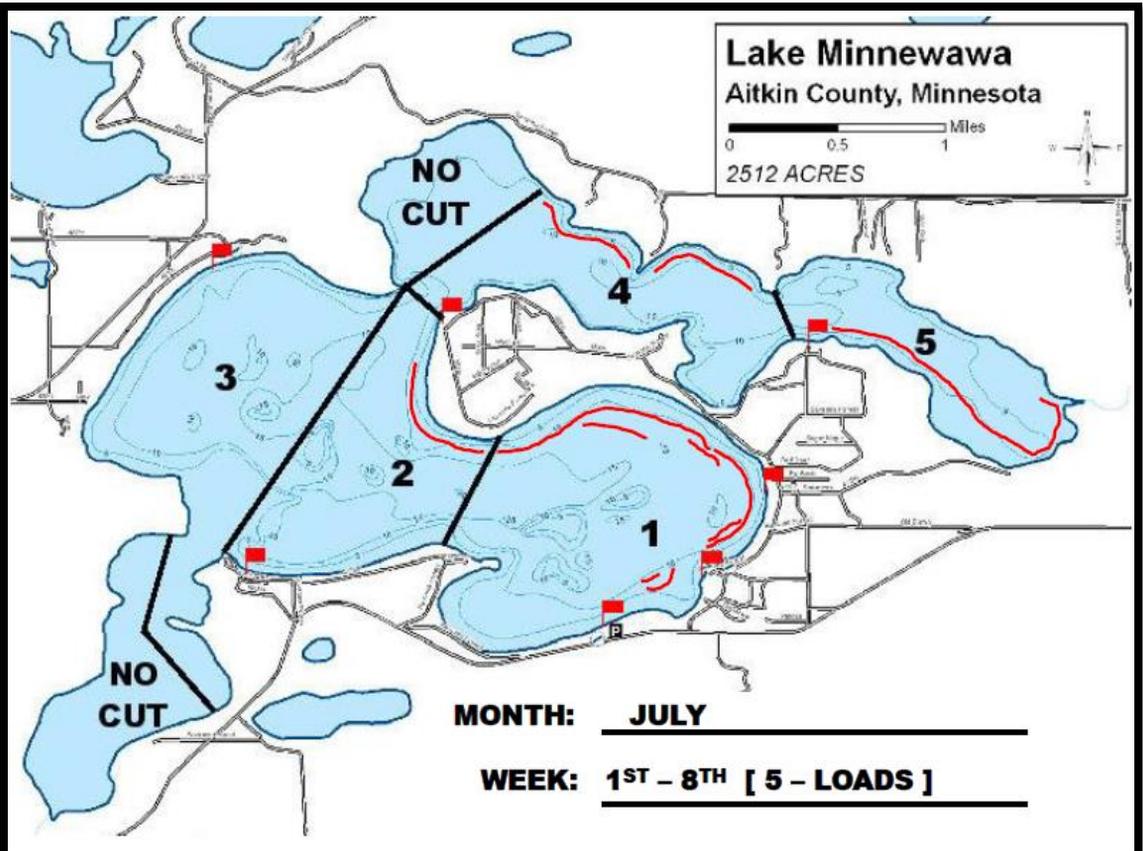


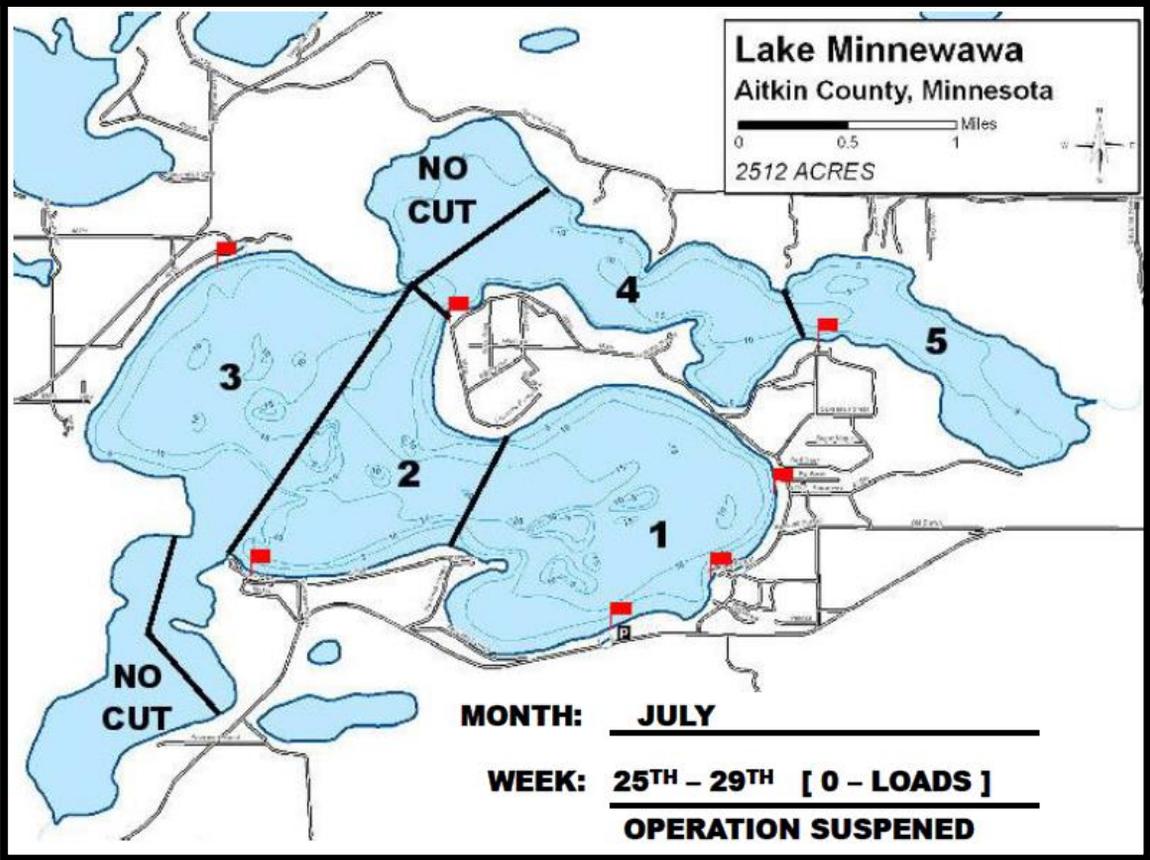
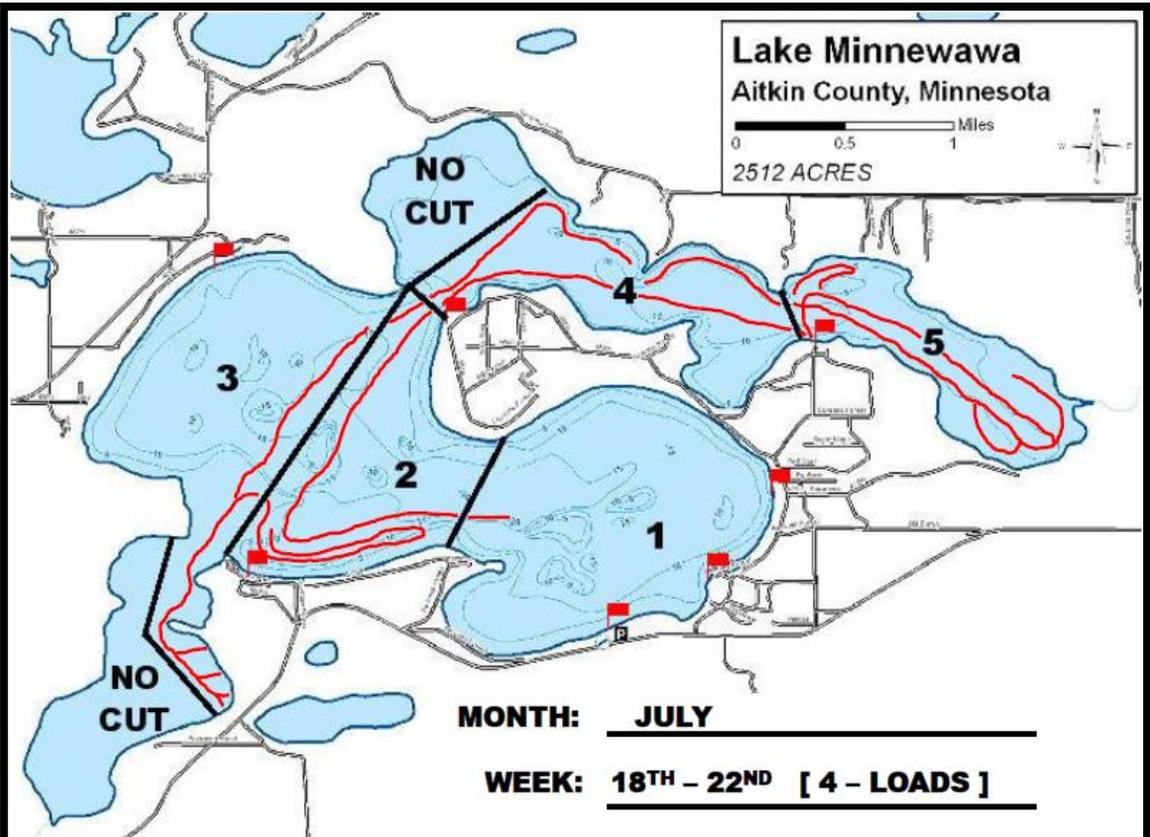
July Harvesting Report

Weather was a significant factor in the number of harvesting days this month. The amount of precipitation during the month resulted in the lake level raising but also caused the water clarity to diminish to a point that made it difficult to identify submerged vegetation in areas allowed to be cut. Despite these conditions the harvester has completed two trips around the lake. Overall vegetation density in the lake appears to be lower this year. By the start of the fourth week of July four hours of work produced only 1/8 of a full load on the harvester machine. Harvesting operations were suspended for the remainder of the week. Harvesting crew monitored the lake during the week but navigation on the lake remained very good. Harvesting operations will resume the first week of August if conditions change. A total of 11 loads were taken from the lake during the month of July. The season total is now 23 loads. Each load has an average weight between seven and eight tons.

A total of twenty work days were possible in the month of July. Seven and one half days were spent harvesting, six and one half days were canceled due to high wind and/or rain, and one day not worked due to holiday. The last week of July harvesting operation was suspended.

Month of July	Work Days	Holiday Day	High Wind & Rain Days	Break Down Days	Vegetation Full Loads
Week #1	2.5	1	1.5	0	5
Week #2	2	0	3	0	2
Week #3	3	0	2	0	4
Week #4	0	0	0	0	0





August Harvesting Report

Harvesting crew did a survey of the lake during the last few days of July. Navigation on the lake remained very good so harvesting operation was suspended for the first week of August. Harvesting operations resumed on Monday, August 8th, however, shortly into the first day the harvester was shut down due to hydraulic motor shaft seal and adapter fitting leaking. Received Minnesota DNR permit Tuesday, August 9th for moving vegetation bog that is blocking entrance to channel. Harvester put back into service after replacing failed parts on Tuesday. Weather conditions continue to be a significant factor in the daily harvesting operations. A storm that moved through the area on Tuesday night, August 9th produced strong winds out of the east. This storm adversely affected the Wild Rice beds and vegetation in East Bay. Various size portions have broken loose and were driven by the strong wind westward into the lake. Other factors contributed to this condition; the lake level is still high especially for this time of year and boat traffic. The vegetation bog blocking the channel entrance has been broken in to smaller portions by boats ramming a path through the vegetation bog in an effort to travel between the two lakes.

The harvester operated only three days during the second week of August. The third week of August the harvesting operations focused on collecting floating vegetation bogs pieces that broke off and moved out of East Bay under special permit granted by Minnesota DNR permit. Additionally, vegetation bog pieces that broke off and floated out of North Bay and drifted in to the north shore in various places. Two north shore lake shore property owners had filed permit application with Minnesota DNR to remove vegetation bog from their shore, but were dropped by the DNR because the special permit granted by Minnesota DNR already existed.

A total of 21 loads were taken from the lake during the month of August. The season total is now 44 loads.

A total of twenty three work days were possible in the month of August. Eight days were spent harvesting, three days were canceled due to high wind and/or rain, and nine days not worked. The first week of August harvesting operation was suspended. The last three days of August harvesting operation will be suspended.

Month of August	Work Days	No Work Day	High Wind & Rain Days	Break Down Days	Vegetation Full Loads
Week #1	0	5	0	0	0
Week #2	3	0	2	0	3
Week #3	3	1	1	0	15
Week #4	2	3	0	0	3
Week #5	0	0	0	0	0

