

**LAKE MINNEWAWA
ASSOCIATION**

**HARVESTING OPERATIONS
REPORT FOR 2017**

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MINNESOTA DEPARTMENT OF NATURAL RESOURCES
 - AMENDED -
AQUATIC PLANT MANAGEMENT PERMIT
 EXPIRATION DATE: 09/01/2017

Permit Number 2017-0598
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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: Aquatic Harvesting Permit 2017		Control Method: Mechanical Control	
County: Aitkin	Watershed: Mississippi River - Grand Rapids	Resource: Minnewawa (01003300)	
Permittee: LAKE MINNEWAWA ASSOCIATION CONTACT: KRATOCHWILL, DALE PO BOX 58 MCGREGOR, MN 55760-0058 (612) 803-7247		Authorized Agent: (N/A)	
Lake Address (if different):			

Authorized Control Area: Offshore mechanical control of submersed plants up to 189.0 acres is allowed. Must stay 150-ft away from non-consenting properties. As per the Lake Vegetation Management Plan. All harvesting will occur more than 150 ft offshore. T49N-R23W-S28 Meandered water body; UTM zone 15N, 479180m east, 5172868m north
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Authorized Action: Mechanical control of submersed plants by permittee or a licensed commercial harvester. All plants cut and pulled must be immediately removed from the water body and deposited above the ordinary high watermark. Mechanical removal must be done in a manner that does not alter the course, current, or cross-section of the lake bottom. This permit does not authorize work to be done with draglines, bulldozers, excavators, suction dredges, hydraulic jets or other power-operated earth-moving equipment. Cutting and pulling with immediate removal of the vegetation as per 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.

Authorized Issuer: Kevin Martini	Title: Aquatic Plant Management Specialist	Issued Date: 3/21/2017	Effective Date: 5/31/2017	Expiration Date: 09/01/2017
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This permit is granted **subject** to the following **CONDITIONS**:

NOTICE OF CONTROL DATES: The permittee or their agent must notify the DNR of the planned treatment date(s) at least 48 hours prior to treatment. Failure to notify prior to beginning work or violation of other terms and conditions of this permit, including failure to remove signs in a timely manner, shall be grounds for revocation of this permit or refusal to renew. Notify: Kevin Martini, Kevin.Martini@state.mn.us, 218-203-4344.

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.

Lake Minnewawa Association

Aquatic Plant Mechanical Harvesting Policy, July 2017

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. The harvesting machine and operators(s) are restricted from navigating in close to shore for the purpose of picking up aquatic vegetation collected by a riparian property owner. Delays may also be experienced due to primary mission of harvesting operations or work schedule.

Lake Minnewawa Association

Aquatic Plant Mechanical Harvesting Policy, July 2017

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.

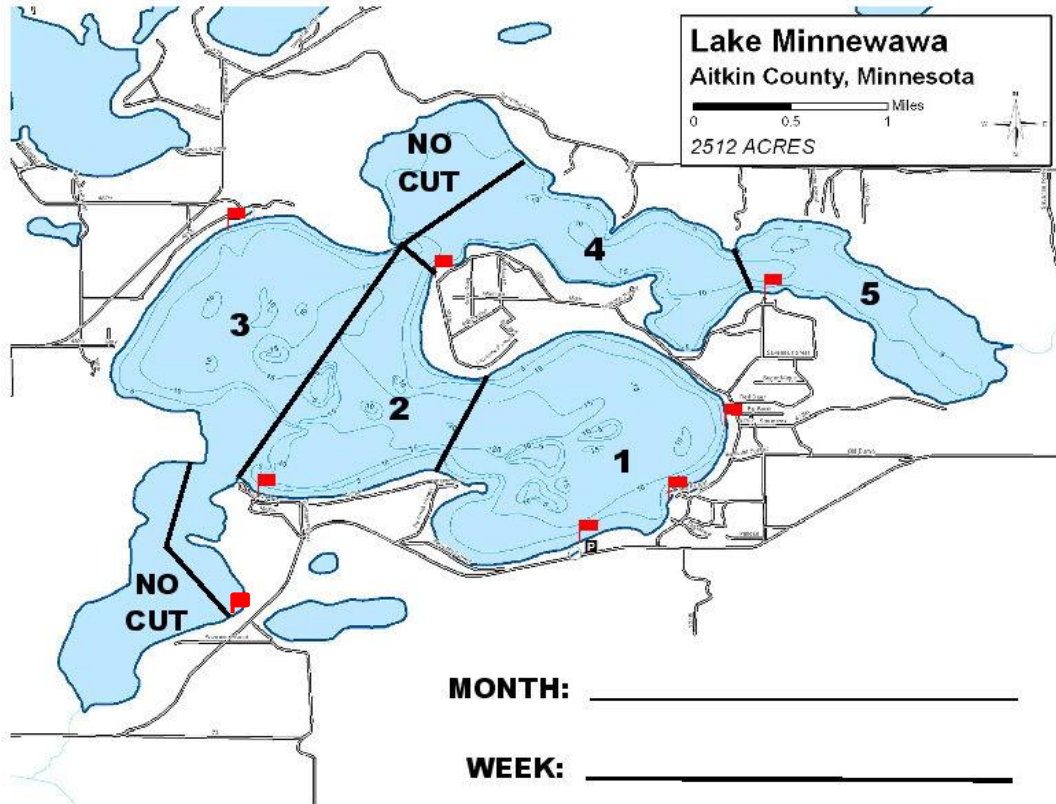
5.5) **South End Bay** – The south bay area that lies to the west and south of an imaginary line that extends from western shoreline to the eastern shoreline just south of Minnewawa Sportsman's Club.

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

Approved On 7/8/2017

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.



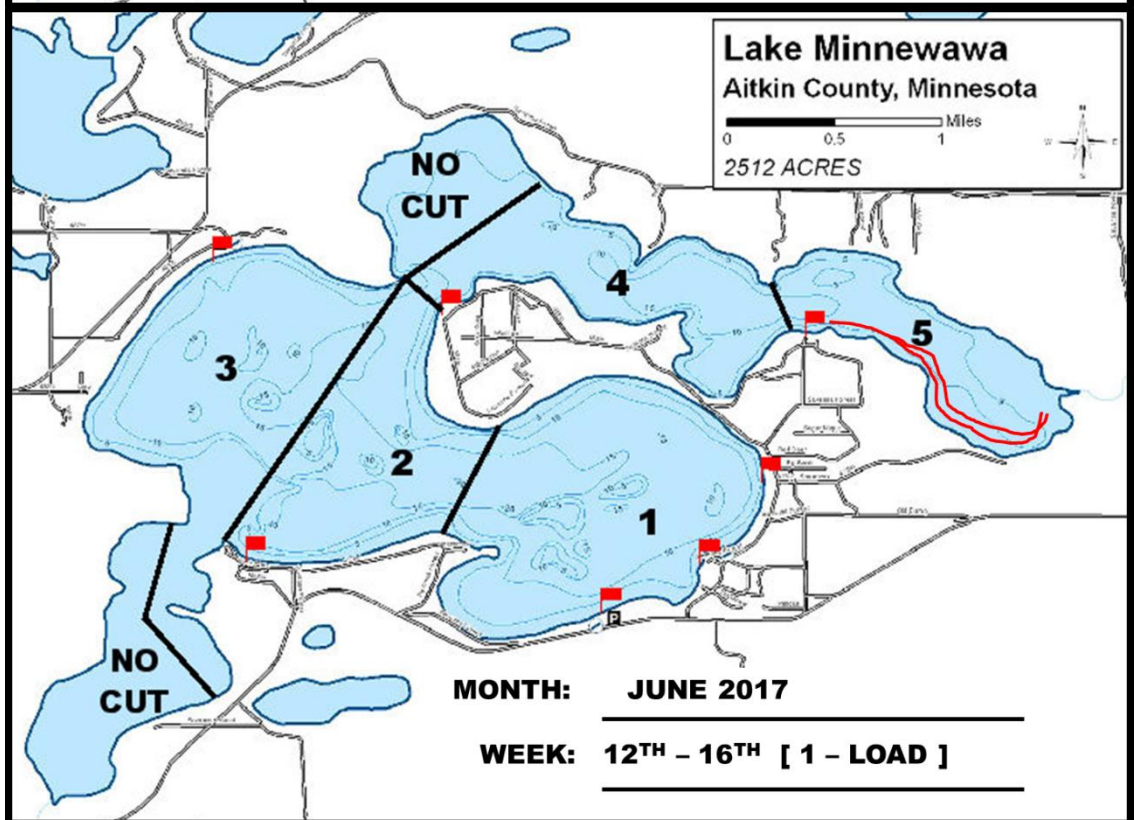
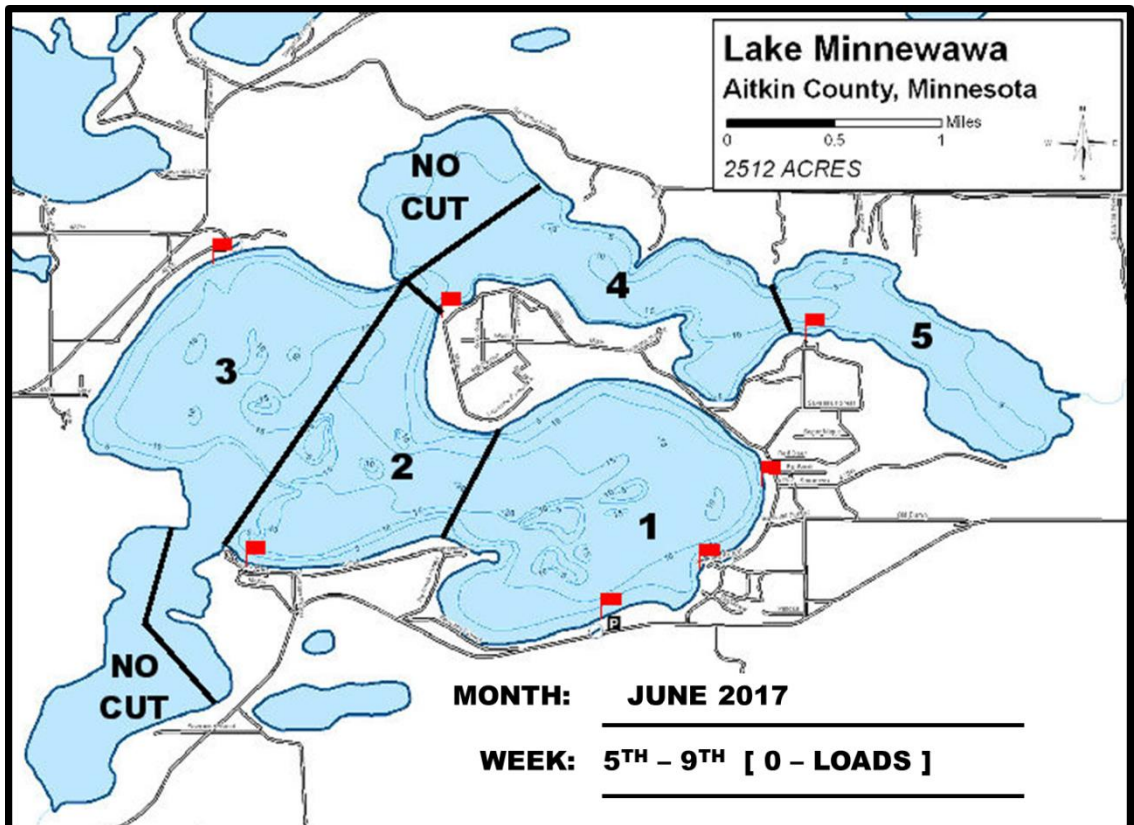
June Harvesting Report

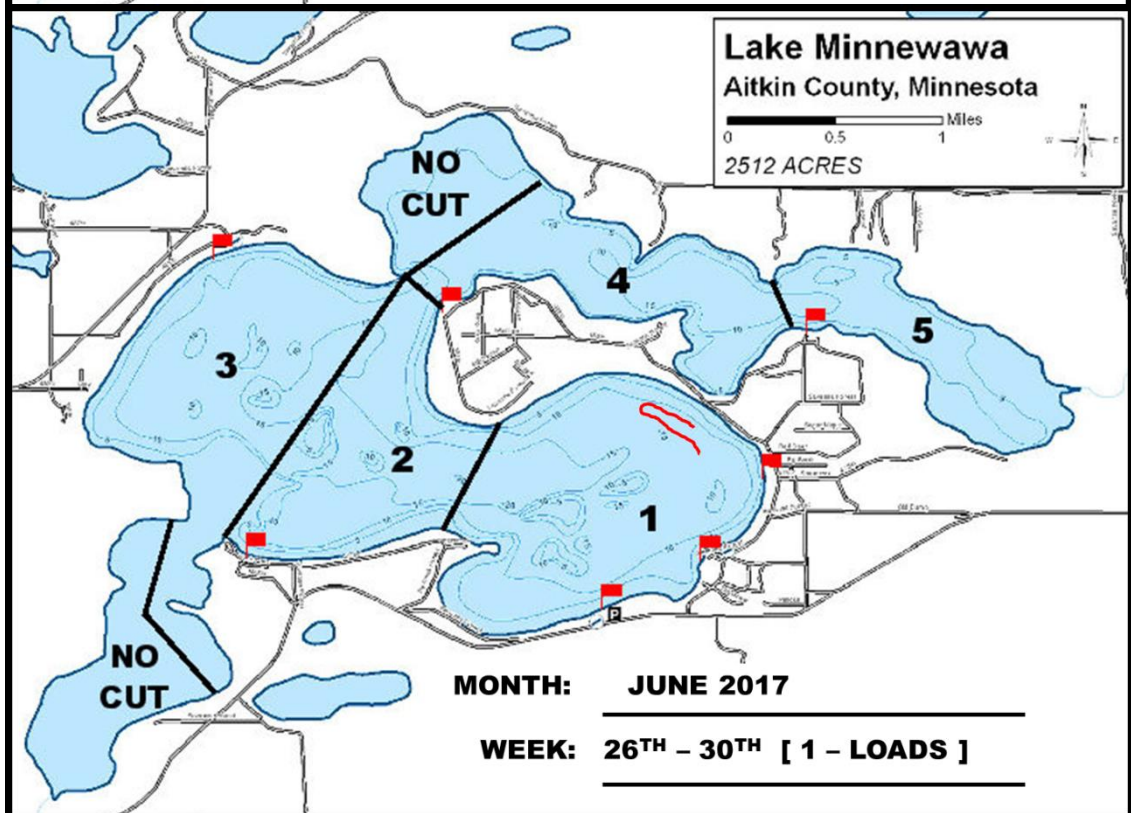
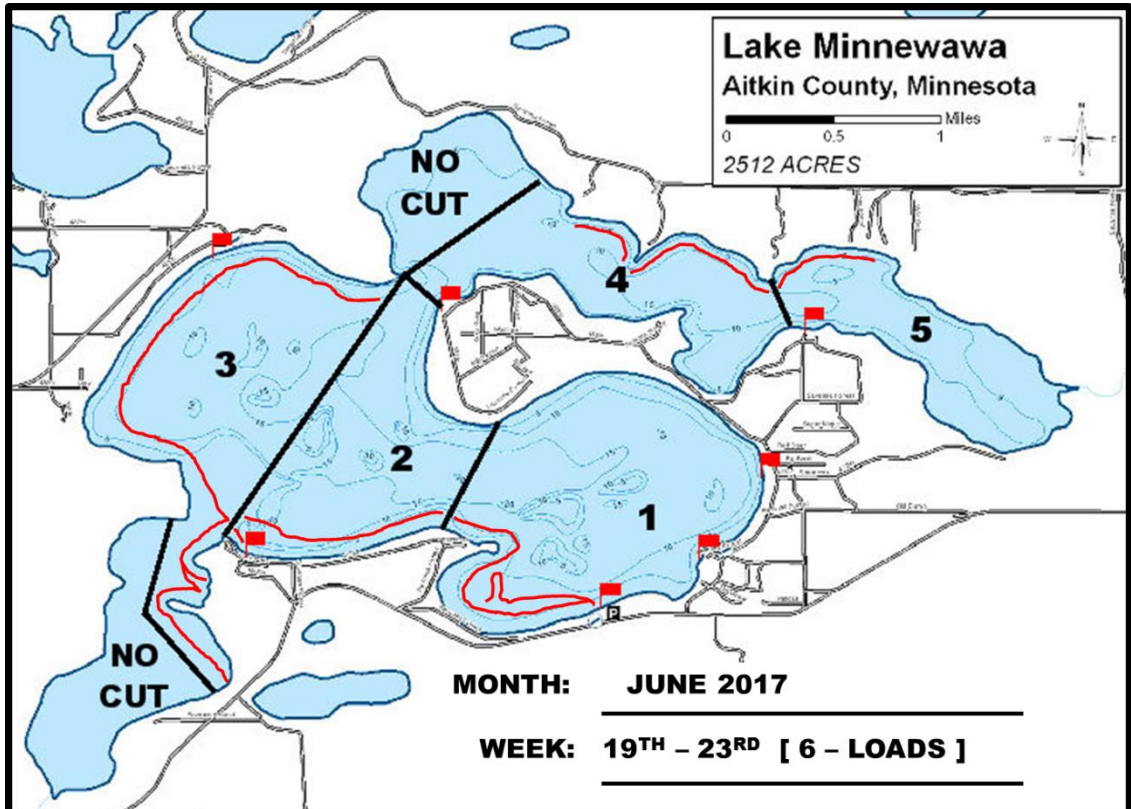
The lake is divided into five harvesting zones. Lake Minnewawa Association (LMA) staff performs regular reconnaissance surveys of the five zones to evaluate when and to what extent mechanical harvesting is appropriate. Initially, each zone is evaluated on the bases of where the greatest public use is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

LMA 2017 harvesting operations were postponed the first week of June due to survey of lake indicated marginal aquatic vegetation growth. Harvesting machine was launched into lake on June 10th. Harvesting operations began on Monday June 12th in Zone [5]. Aquatic vegetation in Zone [5] showing signs of growth, but conditions still light. A total of seven hours spent harvesting vegetation in Zone [5] produced only one load.. The harvester operated in Zone [1], [2], [3], and [4] during the third week of June. Vegetation conditions were light overall in these zones. Zone [1] and [2] produced one load, Zone [4] produced one load, and Zone [3] produced four loads. A total of 21 hours spent harvesting vegetation in Zones [1] through [4]. The harvester operated in Zone [1] during the fourth week of June. A total of ten hours spent harvesting vegetation in Zone [1] produced only one load.

A total of 8 loads were taken from the lake during the month of June. Each load has an average weight between seven and eight tons. Twenty two work days were possible in the month of June. Six days were spent harvesting, thirteen days operations were cancelled due to marginal aquatic vegetation growth in permitted areas, and two days were lost due to harvester hydraulic system problem that prevented operation.

Month of June	Work Days	Cancelled Days	High Wind & Rain Days	Break Down Days	Vegetation Full Loads
Week #1	0	2	0	0	0
Week #2	0	5	0	0	0
Week #3	1	4	0	0	1
Week #4	3	2	0	0	6
Week #5	2	0	1	2	1



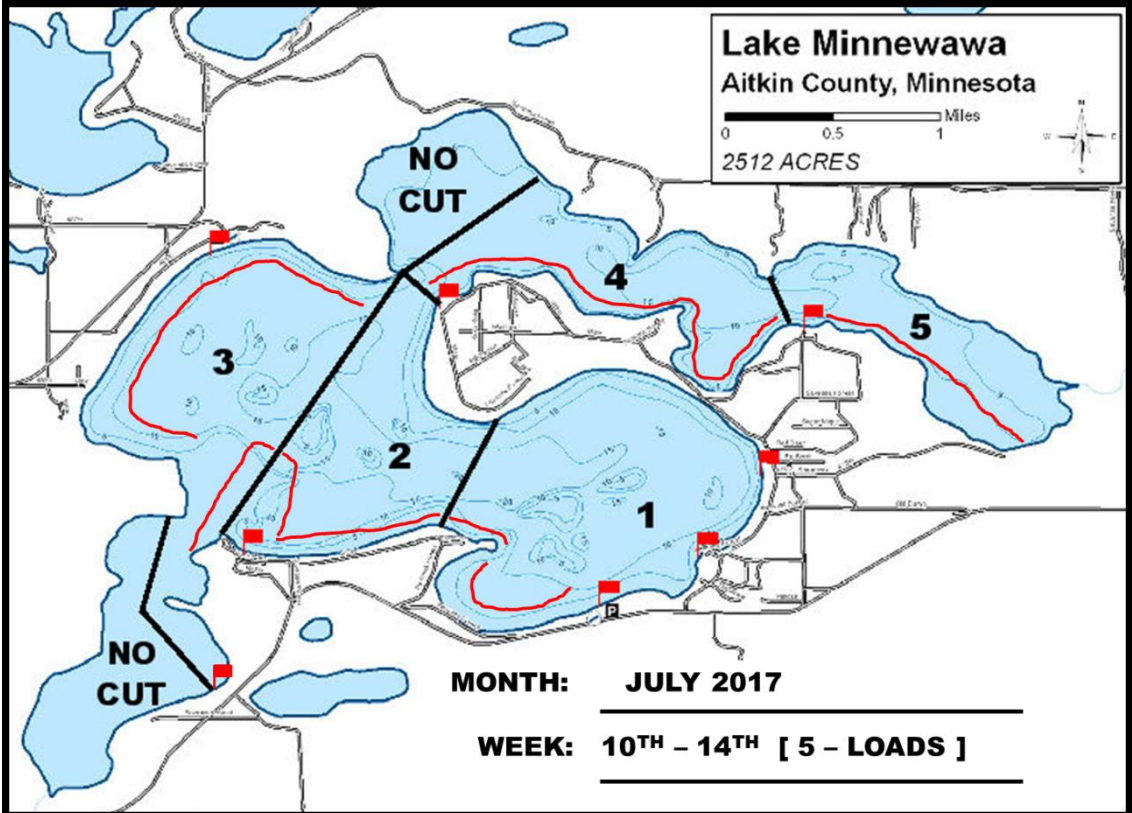
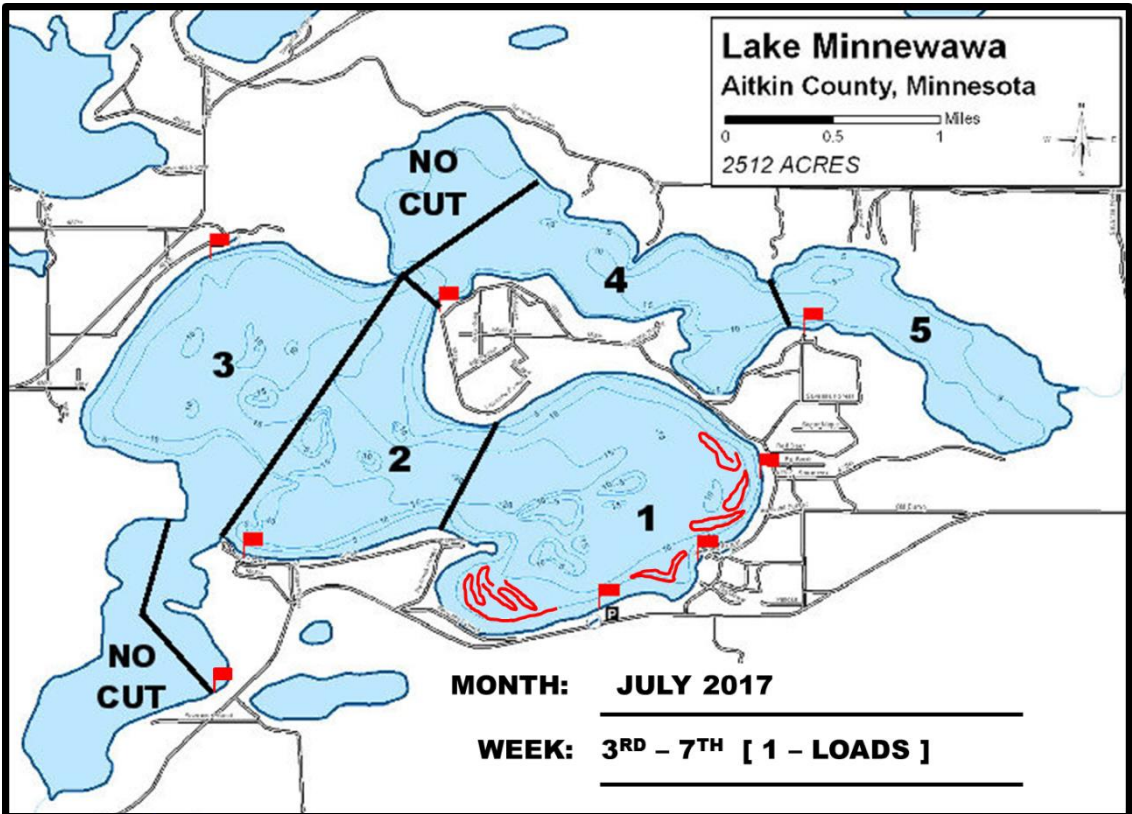


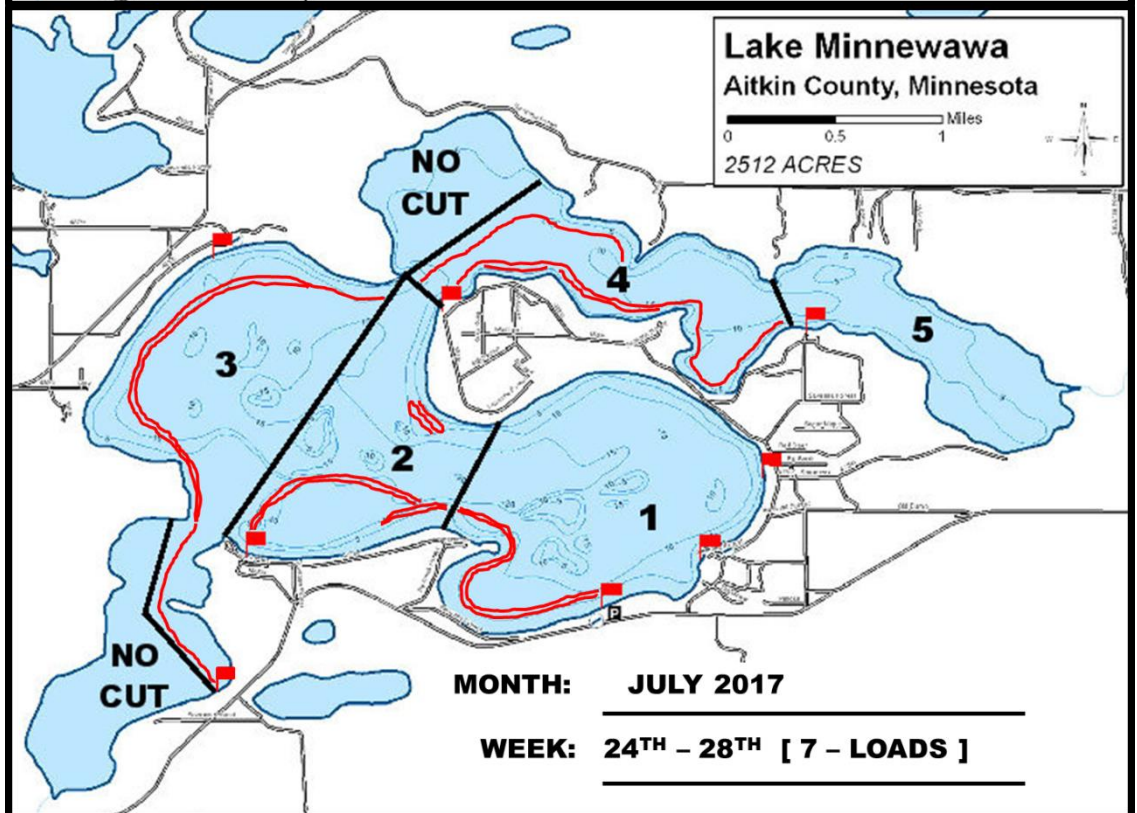
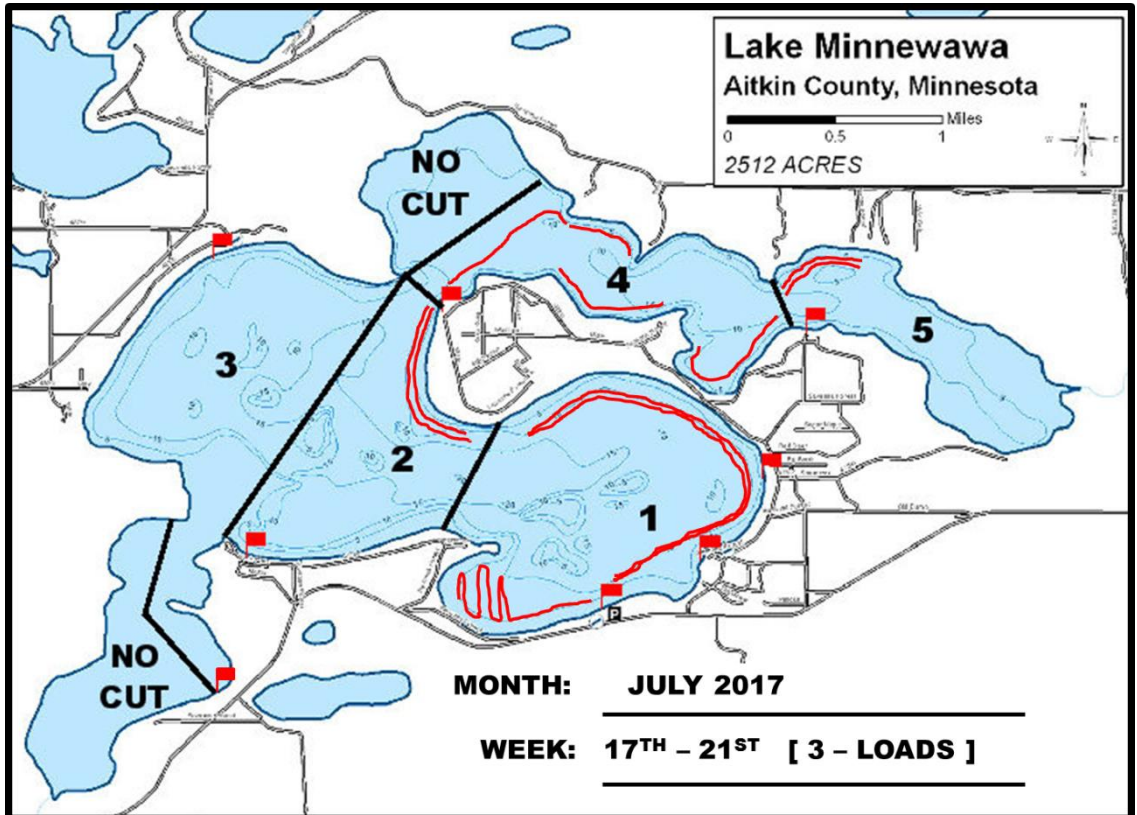
July Harvesting Report

Aquatic vegetation density in the lake appears to be similar to 2016 at this point in the harvesting season. The harvester operated in Zone [1] the first week of July and collected one load. The harvester operated in all five zones during the second week of July with a total of five loads. During week three the harvester operated in zone [1], [2], [4] with a total of three loads. The harvester operated in Zone [1], [2], [3], and [4] during the fourth week and collected seven loads. The harvester covered a significant amount of area on the lake for the number of loads taken, indicating that aquatic vegetation is low.

A total of 16 loads were taken from the lake during the month of July. The season total is now 24 loads. Each load has an average weight between seven and eight tons. Twenty work days were possible in the month of July. Seventeen days were spent harvesting, two days of operation were suspended due to national holiday, one day of operations were cancelled.

Month of July	Work Days	Cancelled Days	High Wind & Rain Days	Break Down Days	Vegetation Full Loads
Week #1	3	2	0	0	1
Week #2	5	0	0	0	5
Week #3	4	1	0	0	3
Week #4	5	0	0	0	7





August Harvesting Report

August is typically the month when vegetation concentration on the lake is the heaviest, so the harvesting crew hours and loads of vegetation would increase. This harvesting season is running xx percent below last years harvested loads. Although this season total loads of vegetation fit a downward trend over the past five years several more years with low season vegetation total loads are required before this can be confirmed.

The harvester operated in Zone [5] the first week of August and collected six loads. The harvester operated in Zones [1], [2], and [4] during the second week with a total of two loads. During week three the harvester operated in zone [1], [2], and [3] with a total of three loads. The harvester operated in Zone [3], [4] and [5] during the fourth week and collected two loads.

Harvesting season will conclude at the end of August. Some areas of the lake are already showing signs that vegetation is starting to drop to the bottom of the lake. This condition makes it more difficult to locate areas with aquatic vegetation, but also signals a reduced need to operate the harvester machine to maintain navigation on the lake.

A total of 13 loads were taken from the lake during the month of August. The season total is now 37 loads. Each load has an average weight between seven and eight tons.

A total of twenty four work days were possible in the month of August, which includes the last day in the month of July. Ten days were spent harvesting, five days were canceled due to high wind and/or rain, and five days not worked. The last four days of August harvesting operation are pending.

Month of August	Work Days	No Work Day	High Wind & Rain Days	Break Down Days	Vegetation Full Loads
Week #1	2	1	2	0	6
Week #2	2	3	0	0	2
Week #3	2	1	2	0	3
Week #4	4	0	1	0	2
Week #5	0	0	0	0	0

