



LAKE COUNTY FOREST PRESERVES

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Preservation, Restoration, Education and Recreation

December 16, 2011

WEST LOON LAKE SOUTH SHORE HOMEOWNERS

RE: AQUATIC PLANT MANAGEMENT OF WEST LOON LAKE AT SUN LAKE FOREST PRESERVE

Dear Homeowner:

The Lake County Forest Preserve District (District) would like to update you on the agreement process for the management of aquatic plants in West Loon Lake at the District's Sun Lake Forest Preserve. Over the past two years, the Loon Lakes Management Association (LLMA) has been working with the Lake County Health Department (LCHD) and the Illinois Department of Natural Resources (IDNR) to finalize the IDNR Incidental Take Authorization (ITA) and develop a Conservation Plan for the control of various aquatic species at East and West Loon Lake. Due to the presence of endangered and threatened fish species in the lake, an ITA is required by the IDNR prior to aquatic plant removal.

It is the District's understanding that the LLMA Board approved signing the ITA on February 18, 2010. Evidently, there was some delay in executing the document because the LLMA wanted to modify some of the agreed-upon conditions, and there may have been some processing issues at IDNR. However, the District now understands that Mike Clifton, LLMA President, signed the ITA on December 12, 2011. IDNR is now in the process of signing the ITA. As noted on page 7 in the enclosed ITA, removal of aquatic vegetation on the District's area of the lake will be allowed in 15 foot-wide U-shaped channels in water greater than 4 feet deep to allow boats access to the main body of the lake. In areas shallower than 4 feet, hand removal of aquatic plants is allowed. It was agreed by the LLMA, IDNR, LCHD and the District that these measures will allow safe and useful access to the lake, while protecting native aquatic plants and the threatened and endangered fish species. Any changes to the document would have to be approved by the LLMA and IDNR.

The District has signed the Bottom Owners Agreement with the LLMA and, upon receipt of a fully executed copy of the ITA and proof of insurance from the LLMA to cover the District as an additional insured entity, the District will forward the Bottom Owners Agreement to the LLMA. The LLMA will then be free to implement the aquatic plant management program in 2012 on the District lake property, in accordance with the conditions of the signed ITA.

If you have any questions or concerns, please contact Jim Anderson, the District's Natural Resource Manager, at (847)968-3282 or [janderson@LCFPD.org](mailto:janderson@LCFPD.org), and the District will address them. If there is a need for a meeting between the District and the South Shore homeowners to discuss any issues with the aquatic plant management on District lake property, we will be happy to arrange it.

Sincerely,

Thomas E. Hahn  
Executive Director

TEH/dbr

Attachment:

cc: Linda Pedersen, Lake County Commissioner

Mike Adam, LCHD

Mike Clifton, LLMA

Michael Fenelon, LCFPD

Jim Anderson, LCFPD



**Illinois**  
Department of  
**Natural Resources**

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March 16, 2011

Mr. Vince Mosca  
Hey and Associates, Inc.  
26575 West Commerce Drive - Suite 601  
Volo, Illinois 60073

**RE:** *Incidental Take Authorization - Conservation Plan Review (Various Aquatic Species)  
East and West Loon Lakes, Lake County, Illinois*

Dear Vince:

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the Loon Lakes Management Association's (LLMA) authorization for the incidental take of the State threatened Banded killifish (*Fundulus diaphanus*); the State threatened Starhead topminnow (*Fundulus dispar*); State threatened Blackchin shiner (*Notropis heterodon*); the State endangered Blacknose shiner (*Notropis heterolepsis*); the State endangered Pugnose shiner (*Notropis anogenus*); the State threatened Iowa darter (*Etheostoma exile*); and the State threatened Mudpuppy (*Necturus maculosus*) in Lake County, Illinois [associated with LLMA's activities at/in East and West Loon Lakes in Lake County, Illinois] is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the LLMA's activities in East and West Loon Lakes in Antioch, Illinois in Lake County.

Please have an authorized LLMA Official(s) sign the last page of both copies of the Authorization and Implementing Agreement and return both copies to my attention. Upon receipt, I will have the agreements signed and return one (1) fully executed copy to you for your official records. This authorization shall be effective once signed by the Department.

Thank you for your cooperation and assistance during the incidental take preparation and review process. Please do not hesitate to contact our office at (217)782-6384 with any questions or comments you may have regarding this authorization agreement.

Sincerely,

Joseph A. Kath  
Endangered Species Manager  
IDNR-Office of Resource Conservation

Enclosures

## Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) LLMA's authorization for the incidental take of the State threatened Banded killifish (*Fundulus diaphanus*); the State threatened Starhead topminnow (*Fundulus dispar*); State threatened Blackchin shiner (*Notropis heterodon*); the State endangered Blacknose shiner (*Notropis heterolepsis*); the State endangered Pugnose shiner (*Notropis anogenus*); the State threatened Iowa darter (*Etheostoma exile*); and the State threatened Mudpuppy (*Necturus maculosus*) in Lake County, Illinois (as described/shown in the conservation plan received by the Department on 02 March 2010) is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the LLMA's activities in East and West Loon Lakes in Antioch, Illinois in Lake County.

### Procedural History

The Loon Lakes Management Association (LLMA) (acting through its environmental consultant, Hey and Associates, Inc.) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and LLMA's request for authorization for incidental take of the State threatened Banded killifish (*Fundulus diaphanus*); the State threatened Starhead topminnow (*Fundulus dispar*); State threatened Blackchin shiner (*Notropis heterodon*); the State endangered Blacknose shiner (*Notropis heterolepsis*); the State endangered Pugnose shiner (*Notropis anogenus*); the State threatened Iowa darter (*Etheostoma exile*); and the State threatened Mudpuppy (*Necturus maculosus*) were received by the Illinois Department of Natural Resources (Department) on 02 March 2010. Public notice of LLMA's request for authorization of incidental take of the above listed aquatic species was published in the Arlington Heights Daily Herald (Official State newspaper) and the "general" Daily Herald (widespread Northeastern Illinois Suburban distribution) on March 22, 23, and 24 2010, as well as on April 1, 2010 and April 8, 2010. Public comments on LLMA's conservation plan were accepted by the Department until April 14, 2010. No comments were received by the public during the period of March 22, 2010 through April 14, 2010.

### Compliance with the Endangered Species Protection Act

The Illinois Endangered Species Protection Act includes six (6) criteria which must be met for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each criteria are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

East and West Loon Lakes are natural glacial lakes in the Fox River watershed. Both lakes are widely used for recreation. East Loon Lake is the larger of the two and it includes the watersheds of West Loon Lake, Cedar Lake, Deep Lake, and Sun Lake. West Loon Lake is connected to East Loon Lake via a shallow channel and East Loon Lake then drains to Lake Marie and eventually to the Fox River via Sequoit Creek. The two lakes have been extensively researched and surveyed over the years by the LCHD, by the IDNR and its predecessor agency (Department of Conservation), and by private consultants.

The lakes provide habitat for several fish species that are listed as threatened or endangered by the IDNR and the Illinois Endangered Species Protection Board. The IDNR also has advised that the lakes could potentially host the mudpuppy (*Necturus maculosus*), which is an aquatic salamander and a newly State-listed (2009) amphibian species.

The LLMA is mindful of the need to protect listed species and is committed to doing so in recognition of the special natural resource distinction the species lend to the lakes. The lakes and their surrounding environs also host listed aquatic plants and terrestrial plants as well as listed birds.

The two lakes are located in Sections 20 and 21, Township 46 North, Range 10 East, 3<sup>rd</sup> P.M., in unincorporated Lake County, Illinois. The lakes lie east of IL Rt. 83 and south of IL. Rt. 173 and are near the Village of Antioch. The lakes are physically connected via a shallow channel.

The majority of the shorelines on both lakes are owned by private individuals in single family residences or by subdivisions which provide community beaches for their residents. A portion of the shoreline and lake bottom on each lake is owned by the Lake County Forest Preserves. There is no public access on either lake although fee-based access does currently exist at a private launch on West Loon Lake.

The LLMA currently conducts aquatic weed harvesting, contracts for aquatic herbicide applications, and performs other management activities to maintain and improve the quality of the lakes and the recreational uses of the lakes. There also is the potential for additional management activities in the future such as dredging sediment-clogged channels, and shoreline protection. Existing and future management projects and impacts associated with each include:

- A. Mechanical harvesting of aquatic plants: The LLMA owns and operates a mechanical aquatic plant harvester. Operation of that equipment could potentially result in taking of listed fish species or *Necturus maculosus* through injury or death by cutter heads or by removal from the water by the harvester's conveyor. Harvester operation can also result in removal of aquatic vegetation that may be consumed as food or used as shelter or spawning substrate by listed species and may also cause temporary turbidity in the area of operation (especially if operated at very shallow depths).
- B. Hand harvesting of aquatic plants: Hand harvesting will result in the removal of minor quantities of aquatic vegetation in near-shore areas and is not likely to cause adverse impact on the listed fish or amphibian species.
- C. Herbicide applications to aquatic plants: Use of aquatic herbicides will result in mortality of plants susceptible to the herbicide. Treating too large an area of a lake with herbicide at one time can also cause oxygen deficits with harmful repercussions for aquatic organisms, especially if done during summer months. In the extreme, complete eradication of rooted aquatic vegetation would negatively impact lake water quality and also adversely affect the shelter and spawning requirements of the listed fish species.
- D. Lake aeration would be expected to have beneficial effects on the listed species.
- E. Use of bacterial pellets: This technique purports to control sludge, muck, and nutrients in lakes through application of aerobic and anaerobic bacteria. It typically is applied to only small areas and is not expected to have adverse effects on listed species. This management technique has been used in limited fashion at beaches and boat launches on both lakes in the past. No adverse impacts would be expected since the treatment does not cause turbidity or result in oxygen deficits.

- F. Dredging maintenance: Dredging has been discussed as a means to restore depths in the connecting channel between the two lakes and in channels in East Loon Lake. This would result in short-term turbidity in the water column during dredging operations as well as disruption of benthic habitat in the dredged areas. Depending upon season and areas dredged, dredging could disrupt the spawning of listed species and could adversely affect reproductive success. Either mechanical or hydraulic dredging would be expected to result in injury or mortality to *Necturus maculosus* if any are encountered.
- G. Fish stocking: The lakes already contain predator fish such as largemouth bass, northern pike, walleye, channel catfish, and muskellunge and stocking efforts have taken place in the past. Adding to the population of gamefish as is typically done in lake stocking programs might adversely affect the population of listed species since some individuals likely become part of the forage base for predators. However, the listed fish species may have very well adapted to co-exist with predators, although this is not proven. Large predator fish such as muskellunge or muskellunge hybrids potentially could adversely affect *Necturus maculosus* if that species is present in the lakes. All fish stocking at Loon Lakes should only be done in accordance with and guidance from IDNR Fisheries Staff.
- H. Shoreline restoration: The LCHD estimates that 19 percent of the West Loon Lake shoreline and 30 percent of the East Loon Lake shoreline has some degree of erosion. Past shoreline protection efforts by the LLMA have included installation of geo-fabric, rip rap, and native shoreline plantings. Shoreline restoration involving native vegetation or installation of cobble, rip rap, or boulders would be expected to have beneficial impacts on the listed species. Conversely, shoreline protection with sheetpile armoring would reduce habitat for macroinvertebrates and other aquatic life. The only plans currently being considered involving sheetpile stabilization relate to the need to protect the banks and shore of the connecting channel with replacement sheetpile if and when the channel is dredged.
- I. Boat launch restoration and creation: This could result in lake bottom and shoreline disturbances although the area affected would be minimal. Minor turbidity increases might also result during construction.

2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking.

The two lakes collectively comprise over 350 surface acres. The LLMA is aware that it has responsibilities regarding listed species when conducting management activities on the lakes. The LLMA is also aware that aquatic vegetation is an essential life requirement of many of the fish species. The LLMA is not at all interested in eliminating aquatic vegetation from the lakes, but rather in controlling the large monotypic stands of invasives through managed herbicide applications and through managed harvesting so that traditional recreational activities on the lakes can continue.

The LLMA plans to minimize the risk of taking listed species by minimizing the areas targeted for application of management measures. Of all the management measures now employed or being considered, mechanical weed harvesting is believed to pose the most direct threat to the species of interest because harvesters are known to gather small fish along with the cut weeds that are collected. LLMA will implement a plan that will restrict the harvester to cutting several narrow navigational lanes that will allow recreational boats to pass from launch ramps, private piers, and

near-shore moorings to the open waters of the lake. In addition to limiting the area of harvester operation, efforts also will be made to educate operators to recognize listed species so individuals that might be brought on board by the harvester's conveyor can potentially be returned to the water. Nonetheless, it is believed that even with precautions, possibly as many as 100 individuals of all species may be taken, and that is why incidental take authorization is being sought. In addition, in order to reduce potential impacts on reproductive recruitment of listed fish, LLMA will not initiate harvesting until late-June of each year, by which time it is believed that these fish will have completed initial spawning. Also, large blocks of aquatic vegetation will be left unmanaged in each lake.

Eurasian watermilfoil/EWM (in late spring and throughout summer) is the aquatic macrophyte posing the greatest problems for residents and recreational users. Of these, EWM is the most invasive and problematic, and East Loon Lake is the lake most impacted by its presence with large areas of infestation. The LCHD's plant density surveys conducted in 2008 found EWM at 62 percent of the East Loon Lake sample sites in June, increasing to 73 percent presence in August 2008. In West Loon Lake, EWM was found at about 18 percent of sites in June and at 33 percent of sites in August.

**With the cooperation of and assistance from the LCHD, the LLMA shall:**

- a. Prioritize harvesting to occur in areas where Eurasian watermilfoil is most densely concentrated. LCHD will approve the aquatic plant management plan each year prior to implementation.
- b. Establish standard operational procedures so the harvester does not cut in shallow, near-shore waters (other than perpendicular lanes for specific piers and boat ramps) where the listed fish typically occur or at speeds that disturb substrate, create turbidity problems, or not allow time for fish to evade.
- c. Under the Annual Memorandum of Agreement between LLMA and LCHD, the LLMA will submit monthly reports to LCHD, mapping and documenting how many loads of biomass are cut and removed from the lakes by the harvester.

With respect to herbicide treatments, only spring applications of 2, 4-D to concentrations of Eurasian watermilfoil are currently being considered. However, with time, use of other approved aquatic herbicides also may be warranted for spot treatments of specific problem areas. Please note that any and all herbicides considered for treatment at any time during this project must first be approved in writing by the IDNR District Fisheries Biologist for Region II - no herbicide applications what so ever shall be made without prior written approval of the local IDNR Fisheries Biologist. As noted, the current greatest infestations of EWM are in East Loon Lake, minimizing the need for applications in West Loon.

Experience has shown that 2, 4-D is moderately to highly effective on Eurasian watermilfoil and expectations are that herbicide applications can be reduced with time as the EWM is controlled and beneficial native plants re-colonize areas now occupied by EWM. It is important to note that 2, 4-D does not affect aquatic monocots including many of the beneficial native pondweeds that occur in the lakes. **If 2, 4-D is used per this Incidental Take Authorization, then only the AMINE formulation shall be used as there is less chance for toxic effects upon aquatic organisms.**

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

The LLMA is a not-for-profit (NFP) corporation responsible for lake management in and around East Loon Lake and West Loon Lakes in unincorporated northern Lake County, Illinois. The LLMA is comprised of the property owners that are on the tax assessment roll for Lake County Special Service Area No. 8, which itself was created for the specific purpose of providing funding for lake restoration and maintenance in the Loon Lakes watershed.

The LLMA's management activities are coordinated by the Lakes Management Unit of the Lake County Health Department (LCHD). The LLMA has existed since 1983 and the Special Service Area has been in existence for 20 years.

Unlike most other lakes in Lake County where homeowner or subdivision dues, user fees, or voluntary donations are relied upon to pay for management, East and West Loon Lakes benefit from having earmarked annual property tax revenues available for LLMA utilization. The tax levy for the Special Service Area has been established by ordinance to produce \$50,000 annually. This assures that the management and monitoring activities established by this *Conservation Plan* can be funded.

By ordinance, the LCHD coordinates the activities of the Special Service Area and oversees the disbursement of funds for lake management activities. The LCHD shall ensure that provisions of the *Conservation Plan and Incidental Taking Authorization* are observed.

Overall, the *Conservation Plan and subsequent Incidental Taking authorization* will allow the LLMA to continue to conduct lake management activities within the watersheds of the two lakes while avoiding or minimizing risk to several listed animal species known or believed to reside in the two lakes or adversely affecting the habitat of those listed species.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of the survival or recovery of the endangered species or threatened species in the wild in Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois:

The most intensive management activities planned for the lakes and the ones most likely to directly interface with the listed species will be aquatic plant control through mechanical harvesting and herbicide treatment of EWM.

As stated, mechanical harvesting will be limited to that necessary to open and maintain boat access lanes and will be primarily conducted in depths greater than those favored by the listed fish species (1.5 meters or less). The harvester currently used by LLMA has a cutting width of 5 feet and a maximum cutting depth of 8 feet. Standard operating procedure will be for the equipment operator to harvest only in water depths greater than 4-feet and keeping the cutter head no closer than 3-feet above the lake bottom in order to avoid fish seeking shelter in and along the substrate and also the bottom-dwelling *Necturus maculosus*.

Depths shallower than 4 feet are encountered only in near-shore areas where harvesting needs to be done to create lake access for specific piers, launches, or channels. For example, in Laguna Channel at the north end of East Loon Lake, the harvester will need to operate 2-feet above the channel bottom in order to provide boating access to the lake. These specific areas will be proposed by LLMA and submitted to LCHD for approval prior to each harvesting season.

