



# Lake Association News

A newsletter for the Association for the Preservation of Clear Lake

FALL/WINTER 2011

## URBAN CONSERVATION PRACTICES CONTINUE

Urban conservation practices continue to be installed in the Clear Lake watershed. Previously, the majority of the urban conservation practices installed were grit collection chambers to treat runoff that had already entered into the storm water drainage system. In 2011, infiltration-based practices were focused on to help reduce the amount of runoff entering the storm drain system and then into Clear Lake. Practices installed in 2011 included three rain gardens, one permeable paver block driveway, one pervious concrete parking lot, and one storm water infiltration trench. As a result of the practices being installed, up to 21,000 gallons of contaminant-laden storm water runoff will no longer reach the lake during each rain event. The largest of the projects was the new parking lot behind the VFW. Strips of pervious concrete with a rock infiltration bed underneath were installed to infiltrate rain water that falls on the parking lot. The effectiveness of the system was tested this fall by rapidly releasing 2,000 gallons of water onto the parking lot. All of the water released was quickly infiltrated. A video of the demonstration is available at: <http://www.youtube.com/watch?v=eFzKquEEAwA>



Up-close view of pervious concrete installed in 2011.

## Ventura Marsh Restoration Project Completed

More than eight years after initial plans were made for the restoration of Ventura Marsh, the project has now been completed. The primary features of the project included renovation of the existing outlet structure, construction of a pump station, fish barriers, and dredging of a flow channel to the pump station. Overall, the construction of the project features were completed on schedule. The only exception was low water conditions in the marsh extended the time it took to complete dredging of the flow channel to the pump station.

The Ventura Marsh project is the first ever Aquatic Ecosystem Restoration Project completed by the Rock Island district of the U.S. Army Corps of Engineers. The pump station installed also has one of the largest capacities of any station on a marsh in Iowa. The pump station consists of two 10,000 gallons per minute

pumps. This equates to over 333 gallons every second. If both pumps were running 24/7, it would take a total of only 14 days to dewater the marsh from its crest elevation. The pump also has the capacity to pump from the lake to Ventura Marsh. While this option is not expected to be used very frequently, it does offer increased marsh management options.

Although the pump station is now operational, it did not have to be relied on heavily this fall. Dry weather this past summer and fall decreased water levels in the marsh significantly. This allowed the DNR to maintain low water levels in the marsh this fall and winter with minimal pumping.

The majority of the water currently visible in the marsh is only a couple inches deep. However, the dredged out flow channel area near the pump station has a depth of up to ten feet. This small area

can easily be treated with rotenone to kill any carp that may take refuge there.

A water level management plan has been developed by the DNR to guide the marsh management. The marsh will be kept in a low water state for one or two growing seasons, depending on the vegetation response. This will allow the marsh to naturally revegetate with perennial wetland plants. It will also allow the bottom sediment to consolidate. The management plan, as well as pictures of the project, are available on the CLEAR Project web site at: [www.clearproject.net/marsh.htm](http://www.clearproject.net/marsh.htm).



Ventura Marsh after drawdown in 2011

## Aquatic Plants ID: Wild Celery

Several lake association members have asked questions about plant identification in the past. Over the next few newsletters, we will focus on identifying some of the common plants you will find in Clear Lake. The first species we will discuss is *Vallisneria Americana*, or wild celery. Wild celery is a native plant and a desirable species to have present in the lake. It is relatively easy to identify because it is a unique looking plant in Clear Lake. The ribbon-like leaves are finely serrated, have a prominent central stripe, and a cellophane-like consistency. The leaves, which can reach a length of up to 6 feet and 1/2 inch wide, are mostly submersed with only the tips reaching the water surface. The leaves grow from a basal stem and the plant spreads through rhizomes. It is not uncommon to find leaves of this plant on the shoreline that have broken off the stem and washed ashore. The leaves are often bright green. Currently, wild celery is most abundant in the west end of Clear Lake. It is a species that had disappeared from the lake over the past 20 years and is now becoming re-established in the lake.

Wild celery is a premier source of food for waterfowl. All portions of the plant are consumed including foliage, rhizomes, tubers and fruit. Canvasback ducks are especially attracted to the plant. The plant also provides good spawning habitat for fish and cover for juvenile fish. Other common names for the plant are eel-grass and tape-grass.



## APCL ELECTS NEW OFFICERS

The Association for the Preservation of Clear Lake elected new officers to the Board of Directors at the annual meeting held on November 3rd. The officers for 2012 are listed below.

President:

Deb Tesar

Vice President:

Sarah Clausen Mooney

Secretary/Treasurer:

John Lundberg

We would like to thank each of them for their commitment to the APCL and look forward to the leadership they will provide in 2012. There are a number of ongoing activities that the APCL will continue to support in 2012. These include: the septic system improvement grant program, water monitoring, beach cleaning, and education.

If you have an interest in serving as a director, please contact one of the officers above, or call the CLEAR Project at 641-923-2837x3

## LAKE NEWS

# Clear Lake Water Clarity Returning to 1970's Levels

The first known recorded mention of Clear Lake is in a land survey of northern Iowa completed in 1832. That survey was performed by Nathan Boone, the son of Daniel Boone. The first white settlers, who arrived in 1851, were drawn to Clear Lake based on glowing reports of a beautiful lake. One can assume based on those early reports that the clarity of the lake was at one time exceptional, possibly 10 ft. or greater.

Very little water clarity data for Clear Lake was recorded until the first major limnological study was completed on the lake in 1951. The lake clarity was measured using a Secchi disk, a black and white round disk that is lowered into the water until it is no longer visible. The same method is still employed today. The average water clarity during the summer of 1951 was 58 inches, or nearly 5 feet.

A significant gap in water monitoring data exists for the next 25 years, when another study was completed on Clear Lake in 1975. Over those 25 years, the water clarity of the lake had decreased by almost two feet, to a level of 38 inches. A few years later, another study was completed in 1979 and found the water clarity to have

decreased by nearly another foot, to a level of 28 inches.

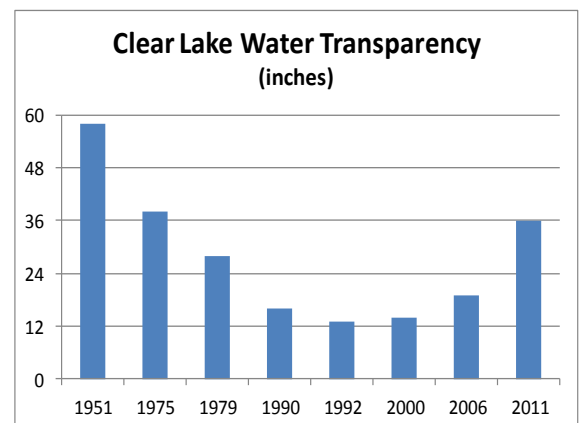
The declining water clarity levels continued to be documented by various studies that took place in the early 1990's. The lake appears to have reached a low point for clarity of about 13" during that time period. The low water clarity persisted for several years, as was recorded during the ISU/IDNR Diagnostic and Feasibility Study completed on Clear Lake in 2000.

However, over the last ten years, water clarity of Clear Lake has shown a steady rebound. By 2006, the clarity had increased by half a foot to 19". A more dramatic increase in clarity has continued to take place over the past 5 years with levels nearly doubling to 36 inches in 2011.

The recent monitoring data indicates that water clarity is returning to what was seen in the mid 1970's. Although it is certainly possible that water clarity will continue to

increase as lake restoration activities are implemented, it will likely be very difficult to achieve the levels seen in early 1950's. Several changes in the landscape have taken place since then that have allowed for more runoff from agricultural and urban sources to reach the lake. In the early fifties, very little farmland was tilled and the only surface water input to Clear Lake was Ventura Marsh. Also, there was much less development at that time.

Water monitoring of three sites on Clear Lake will continue to take place. The monitoring will be useful in tracking trends in water quality changes. For more detailed monitoring information, visit the CLEAR Project web site at [www.clearprojec.net/LearnMoore.htm](http://www.clearprojec.net/LearnMoore.htm)



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