Association for the Preservation of Clear Lake

Lake Association News

A newsletter for the Association for the Preservation of Clear Lake

SPRING 2012

ICE FISHING LIMITED IN 2012

Ice anglers experienced an abbreviated season this last winter on Clear Lake. The mild winter temperatures and early ice-out resulted in 37% fewer angler trips onto the lake when compared to the 2011 ice fishing season.

The thin ice impacted the number of permanent ice shelters placed out on the lake. Each year on January 15th permanent ice shelters are counted by the Iowa DNR. The average over the last 12 years has been 42 shelters on the lake by the 15th of January. In 2012, there were only 2 permanent shelters out on January 15th.

Even with less than ideal ice conditions, there were 3,750 angler trips to the lake in January and February. These anglers caught an estimated 7,300 fish. Similar to previous years, yellow bass dominated the harvest at 93% of the catch. Crappie and white bass ranked second in the harvest at 2% each. Walleye and yellow perch each contributed 1% of the winter harvest.

Anglers interviewed are asked how far they travel to fish Clear Lake. The majority of anglers travel less than 30 miles to ice fish on Clear Lake. This past winter there were more anglers (37%) traveling a distance greater than 30 miles than we have seen since the late 1990's. This is because many anglers were traveling north in Iowa due to poor ice conditions in the central and southern portions of the state.

Photo by: Lowell Washburn

Clear Lake Carp and Zebra Mussel Research Completed

Article submitted by Mike Colvin - Research Assistant - ISU

It has been my pleasure to study Clear Lake for the past four years. During that time, I developed several models of the system and its components. In particular, as part of my dissertation research I developed three models that I believe are of interest to the future management of the system. Before I get a head of myself, let me explain how I use models. Basically, models are a representation of a real world thing, like Clear Lake. For example, I used a population model to assess the common carp population in the lake. What did I learn from this model? Well, I learned that common carp biomass is increasing and has potential to increase at a very fast rate. In fact, in the absence of commercial carp harvest, the population could potentially double its biomass in as little as 3 years! It should be noted that the number of predatory fish in the lake and recent efforts to reduce recruitment of carp from Ventura Marsh are also important factors in controlling the carp population.

Despite increasing carp biomass, modeling indicated that the lake may be in a transitional state between a turbid and clear water state. Zebra mussel invasion appears to be beneficial, in terms of keeping the system moving towards improved water clarity. However, zebra mussels are a detriment to zooplankton because they compete with them for food (algae). Zooplankton play an important role in the lake ecosystem as they are food items for the young fish (fry) in Clear Lake such as walleye and yellow bass.

Results of simulation modeling were pretty clear, or probably more aptly put, rather murky, with continued common carp biomass increases. If common carp biomass increases significantly, model simulations indicate that the lake would likely return to a turbid system like it was back in the early 2000's despite the positive impact zebra mussels appear to have on water clarity. This is primarily due to the large amount of phosphorous bound in the Clear Lake benthos (bottom material) that carp resuspend into the water column. In calculating an in-lake nutrient budget as part of the ecosystem simulation model, it was very apparent that resuspension of nutrient rich benthos contributed significantly to nutrient dynamics. So, not only does this resuspended material contribute to murky water, it also contributes to the phosphorous pool that may be used for phytoplankton (algae) production.

Shallow lakes are rich with biological interactions and representing all of those interactions in a model is impossible. So the results of the modeling performed on Clear Lake should be taken with a grain of salt. Just like predicting the weather, ecosystem model forecasts may be right or they may be just flat out wrong. That does not mean they are not valuable to increasing the understanding of the system.

Common carp in Clear Lake tributary

Aquatic Plants ID: Slender Naiad

Slender Naiad, also known as bushy pondweed, is a relatively common native plant found in Clear Lake. It is a submersed plan, which means it only grows to the water surface. One of the major distinguishing features of slender naiad are the leaves. The leaves are opposite, 1 - 1 1/2 inches long with finely serrated edges that taper to a fine point. The sheath from which the leaves grow is also toothed on either side. Bushy pondweed spreads rapidly because it can spread by both fragmentation and seed production. It can be various colors from gray to green to brown. The plant often forms dense bushy clusters when it grows in shallow water. The plant is a valuable food source for waterfowl, especially mallards. Slender naiad also provides cover for young fish. Bushy pondweed somewhat resembles chara and sago pondweed because the leaf shape is similar. However, sago pondweed leaves are alternate and chara leaves are whorled. Slender naiad also resembles brittle naiad, which is an invasive species. Brittle naiad is distinguishable by the noticeably toothed edges. More information on slender naiad can be found at the following site:

http://www.dnr.state.mn.us/aquatic_plants/submerged_plants/bushy_pondweeds.html

Source: Aquatic Plants of Wisconsin - Paul Skawinski

BMP FOCUS: TERRACES

Terraces are earthen structures that intercept runoff on moderate to steep slopes. They transform long slopes into a series of shorter slopes. Terraces reduce the rate of runoff and allow soil particles to settle out. The resulting cleaner water is then carried off the field in a non-erosive manner.

Terraces are used to reduce erosion and prevent gully development. They are most effective when used in combination with other practices such as conservation tillage. Terracing reduces sediment pollution of lakes and streams. Grassed frontslopes and back-slopes of some terraces provide cover for wildlife. Cost share is available for installing terraces, for more information contact CLEAR Project at: 641-923-2837 Ext.3

Drought Conditions Have Some Advantages

According to the National Weather Service, much of north central Iowa experienced a drought categorized as severe last fall and winter. While there are several negative consequences of a drought, there are also silver linings. One advantage of a drought can be discovered by learning about our area wetlands.

Wetlands are among nature's most productive ecosystems, and much of that productivity can be attributed to their dynamic nature. Extended wet and dry cycles, where water levels fluctuate over time, are vital components of maintaining wetland productivity. This is true for all wetlands, but is especially important for the prairie potholes of the northern plains.

Plants are key features of all wetlands. They are a primary source of food and cover for ducks and other wildlife that depend on wetlands. As these plants grow and die, they deposit leaves, stems, and other material in wetland basins. This plant matter is attacked by decomposers (microbes and insects), and the leftover organic material gradually accumulates on the bottom of wetland basins. Nutrients get trapped in this "organic soup" where a lack of oxygen inhibits further decomposition.

Under these conditions, the productivity of wetlands gradually declines. Over time, the plant community shifts from annual species that produce an abundance of seeds to perennials like cattails. The bottom also becomes increasingly soft, making it difficult for plant roots to hold. As plant growth declines, open water increases, reducing habitat quality. Fortunately, water levels in most wetlands draw down naturally at some point, and this is where drought plays a beneficial role in rejuvenating wetlands.

When a wetland dries out and bottom sediments are exposed to air, the loose organic soup that has accumulated over time finally has a chance to consolidate and firm up. Oxygen reinvigorates decomposition and fuels a rapid breakdown of organic matter. Nutrients are released, having the same effect on vegetation as fertilizing a lawn. Plant seeds that have been dormant in the soil have a chance to germinate and grow. The clock on the natural aging process is turned back, and the wetland is rejuvenated. Water quality is also often improved as the newly established plants take up nutrients that would otherwise feed algae growth. The firm bottom sediments also are less likely to be stirred into the water column by wind and wave action on the wetland.

The prairie wetland cycle has several successional phases, ranging from dry marsh, where the basin is almost entirely filled with standing vegetation, to wetter phases where plant growth is interspersed with areas of open water, and ultimately, to an open marsh condition with limited emergent vegetation. Through this wetland cycle, the most productive for waterfowl is the "hemi-marsh" phase, where open water and emergent vegetation are interspersed in relatively equal proportions. During periods of prolonged high water, most of the emergent vegetation in wetlands disappears, except for a narrow band of bulrushes or cattails along the water's edge (similar to Ventura Marsh). Wetlands remain in this unproductive state until they are once again reinvigorated by drought. Mimicking a natural drought cycle is the goal of the Ventura Marsh Project.

Unfortunately, severe drought often results in a decline in waterfowl populations. Fortunately, droughts are temporary. When the water comes back, wetlands will be teeming with waterfowl, and have improved water quality.

Adapted from article prepared by David Brakhage - Ducks Unlimited

Dried wetland sediment

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The publication of this document has been funded in part by the Association for the Preservation of Clear Lake, the Division of Soil Conservation, Iowa Department of Agriculture & Land Stewardship, and by the Iowa Department of Natural Resources through a grant from the U.S. Environmental Protection Agency under the Federal Nonpoint Source Management Program (Section 319 of the Clean Water Act).