

# Glenwood Area Fisheries Newsletter

Minnesota Department  
of Natural Resources

Fall/Winter 2010

*Season's Greetings!*

## Area cisco populations— are they in decline?

The cisco, or tullibee as they're commonly known, are as Minnesotan as hot-dish and Paul Bunyan. Ciscoes are a shiny, silvery-colored species of fish related to salmon. They are generally found in lakes restricted to the northern half of Minnesota but can also be found in some high water-quality lakes in central Minnesota, including several lakes around the Alexandria/Glenwood Area. Their habitat is the open, deepwater or *pelagic* zones of lakes that ideally provide cold temperatures and plenty of oxygen. As ciscoes cruise the mid depths of the lake, they feed on tiny plankton and convert this food energy into high-protein fish flesh that is a favorite of predators like big northern pike, walleye and muskellunge.

In the fish world, ciscoes represent the great "northness" of our State. However, as summers become longer and warmer, and average annual tem-



**Cisco** *coregonus artedii*

peratures increase, one wonders if there are changes taking place with our fisheries, just as is occurring with our terrestrial wildlife. For example, twenty years ago, people in Alexandria would've thought you nuts if you told them you saw a cardinal at your bird feeder or an opossum in your garbage can. These critters were normally thought to be southern dwellers, but now it seems you hear about or see them with at least occasional regularity. Obviously, terrestrial wildlife and birds have an advantage over fish since they're able to walk or fly overland in order to

reach desirable habitat. Fish do not have this capability so when habitat declines, so do the fish. High nutrient runoff and hotter than normal summer weather negatively impacts the amount of cold, oxygenated water in lakes, and therein lies a potential problem for Minnesota's cisco populations.

The DNR assesses the quality of habitat for cold-water species like ciscoes using a *temperature/oxygen profile*. During the summer months, dissolved oxygen and temperature are measured in 1 foot intervals with a special meter that's

lowered down into the water at the deepest location on the lake. At each interval, temperature and dissolved oxygen are recorded to obtain a "profile". In July and August, many lakes contain cold water down deep and, years ago, oxygen was in good supply down there too. As nutrient runoff from surrounding development increases however, so does algae, and when they die off, precious dissolved oxygen is used as they decompose.

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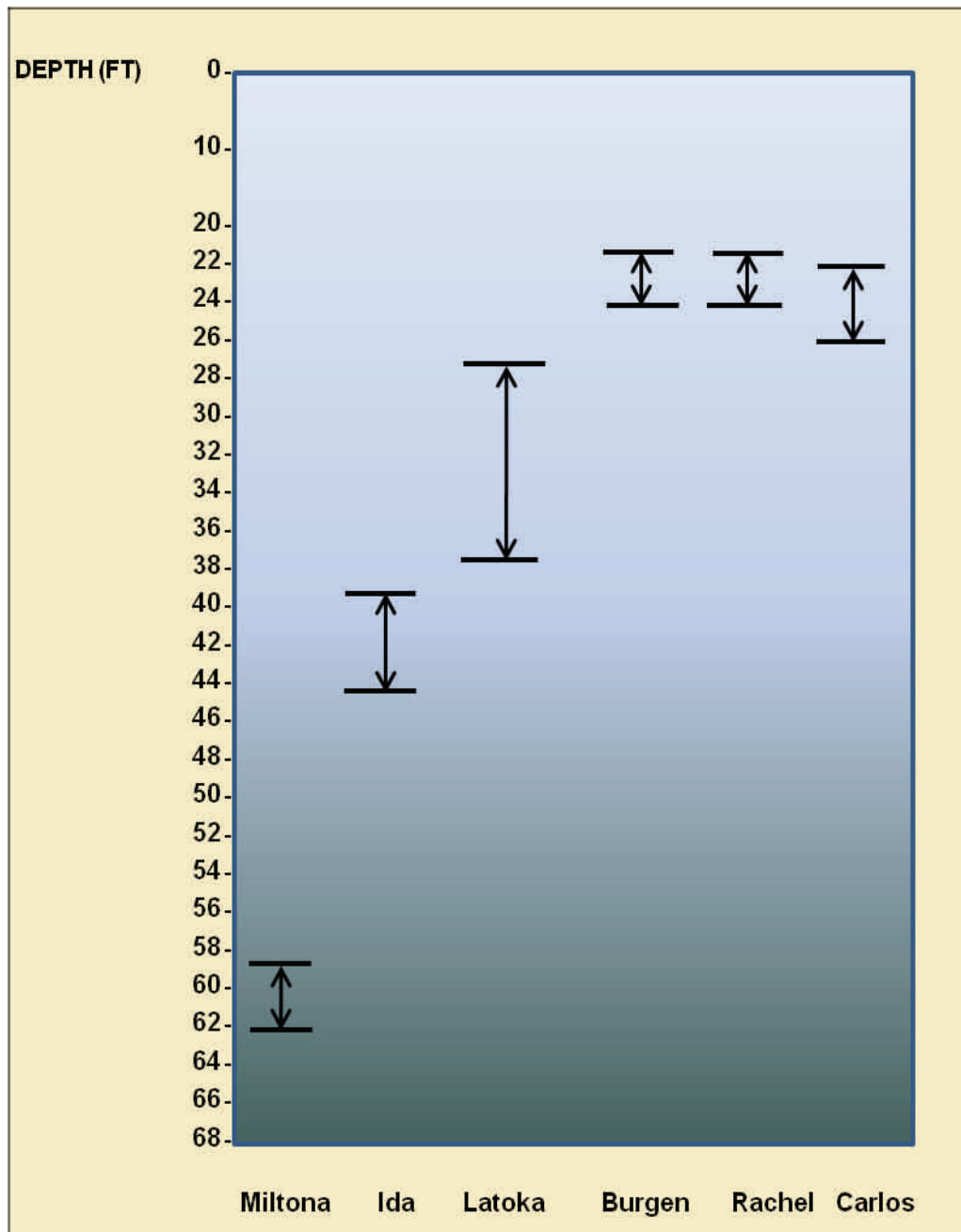
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### Ciscos, (cont'd)

Fisheries field biologist Al Schmidt oversees an annual monitoring schedule of cisco habitat on lakes in the Alexandria/Glenwood Area. A simple graph illustrating the results from the summer 2010 sampling of 6 lakes known to contain cisco populations is presented below. Depths containing mid-summer water temperatures below 68 degrees and dissolved oxygen concentrations no less than 3 ppm (parts-per-million) are considered opti-

mal cisco habitat. Arrowed zones indicate habitat meeting these criteria. The wider apart the horizontal boundaries are (larger volume), the better the habitat. Results are merely a snapshot for 2010, however, temperature/oxygen profiles over the long term are one way to measure changes in our climate and land use practices— ultimately these factors may determine whether cisco populations in our area sink or swim.



## DNR sponsors outdoor kids event at Lake Carlos State Park

Using dedicated dollars from the newly enacted Outdoor Legacy Fund, DNR staff from several Area Offices organized and sponsored a 1-day outdoor event for local 6<sup>th</sup>-grade students at Lake Carlos State Park. This “Gateway Initiative” as it’s been named, was held on September 28, 2010, and is one example of how the DNR is using revenue derived from the new statewide 3/8ths of 1 percent sales tax.



safety measure Conservation Officers accompanied the pontoons.

**Geocaching** — This increasingly popular activity builds on the desire to use technology by this generation of students. This station taught the basics of geocaching, including how to use a hand-held GPS unit, and learning that they need satellites to triangulate. The use of technology and “hide &

seek” quality of this station in a natural setting proved to be a hit with the students.

The day of the event was ideal with clear skies, mild temperatures and very little wind. The backdrop of peak fall colors and glass-smooth water was a beautiful setting for participants and presenters. The event ran from 9:00 am to 1:30 pm. This included a briefing at the beginning of the day to introduce the days events to participants and explain logistics. Activities were scheduled for 45 minute blocks beginning at 9:15 am. Transfer time between activities was 10 minutes. The event was designed to encouraged students to “Login to Lakes” instead of technology. The program theme “Login to Lakes” calls attention to our children’s ever increasing reliance on technology in their spare time, instead of outdoor recreation. This event drew over 120 sixth graders plus their teachers and parent volunteers.

Activities included: **Safety & Fishing** — This station was staffed with a DNR educational professional and local vol-

unteers who presented an introduction to fishing for all students. This included basic fishing & safety lessons, casting practice, and actual fishing. Many students caught sunfish and perch from shore or from the fishing dock.

**Fish Identification** — This station was led by Section of Fisheries staff. Students learned basic fish biology and fisheries management. Students learned how the DNR manages various local lakes. Kids were shown how to identify and hold game and non-game fish species that were in fish tanks. Students also observed how to fillet and prepare fish to eat. The Viking Sportsmen fried fish for all to sample these tasty morsels.

**Pontoon Tour of Lake Carlos** — Students were given a boating safety lesson and taken out for a tour of Lake Carlos on pontoons donated by the “Let’s Go Fishing” organization and Lake Carlos Marina. Each pontoon had a biologist onboard to lead an aquatic lesson which included water quality and invasive species. As an additional

At the end of the day, all groups were brought back together for a wrap up of the day’s events and to tie all the activities together, leaving the group with a lasting impression. As one teacher stated, “Overall these kids learned many things to help them gain more knowledge of our natural resources. They learned that since we all own these lakes, it is very important to keep them healthy.” On the way back to school, students were given free gift bags that included a starter fishing tackle kit, a poster of Minnesota fishes, and other aquatic themed items.

As the future stewards of our natural resources, the DNR feels it is very important to introduce and educate children about the importance of our lakes and watersheds. The decisions they make will ultimately determine the health, beauty and enjoyment of the environment they’ll live in.

## Glenwood State Fish Hatchery upgrades water supply

In response to deteriorating water lines and potential future increases in walleye rearing capacity, the Glenwood Hatchery received improvements to its primary water-delivery system this past October. Work completed included new water lines, collection tiles and a central collection well. Water flow to the hatchery increased roughly 30 percent, from approximately 160 gallons per minute (gpm) to about 220 gpm. The hatchery's egg capacity potential has correspondingly increased from 710 quarts to 1100 quarts. Improvements are a pre-cursor to future hatchery modifications that will include an isola-



**Construction work at the DNR's 1-acre lot, October 2010**

tion/egg treatment room to better prevent the introduction of viral pathogens, and a third battery to better isolate genetic strains of walleye. Water heaters, plumbing fixtures and flow regulators, much of it original from the 1920's, will either be replaced or upgraded where possible. After completion, a newer hatchery facility will be better equipped to meet the growing demands of Minnesota's anglers for more and more walleye fingerlings.

**Trivia question:** What are Minnesota's only 2 native trout species?

**Answer:** Lake trout and brook trout

## DNR fall 2010 walleye stocking effort

<i>Lake</i>	<i>Pounds stocked</i>	<i>Number stocked</i>
<i>Agnes</i>	118	2,023
<i>Amelia</i>	740	12,913
<i>Brophy</i>	342	3,502
<i>Carlos</i> <sup>1</sup>	910	6,224
<i>Cowdry</i>	176	2,640
<i>Darling</i> <sup>1</sup>	479	4,929
<i>Devils</i>	300	5,025
<i>Elk (Upper, Hoffman)</i>	161	2,349
<i>Geneva</i>	304	3,362
<i>Henry</i>	240	2,143
<i>Ida</i> <sup>1</sup>	1,670	29,359
<i>Latoka</i>	312	1,048
<i>LeHomme Dieu</i> <sup>1</sup>	765	8,186
<i>Leven</i>	326	861
<i>Little Chippewa</i>	251	1,634
<i>Maple</i>	780	12,831
<i>Mill</i>	571	6,709
<i>Mina</i>	369	1,280
<i>Minnewaska</i>	2,357	28,779
<i>Moses</i> <sup>1</sup>	399	5,343
<i>Osakis</i> <sup>1</sup>	3,416	58,038
<i>Oscar</i>	805	12,381
<i>Stowe</i> <sup>1</sup>	737	15,005
<i>Vermont</i>	414	687
<i>Victoria</i>	122	1,878
<i>Villard</i>	999	7,672
<i>Whiskey</i>	146	2,416

<sup>1</sup> Includes fish stocked by the private sector under mandatory contract.

## New for 2010— using an IBI to evaluate the health of Area lakes

The DNR uses several gear types to evaluate fish communities. Most folks are familiar with gillnet sampling which targets open-water species such as walleye, northern pike and yellow perch and trap-net sampling which targets near-shore species such as bluegill, pumpkinseed and black crappie. These sampling efforts traditionally aim to assess the status of gamefish populations— those species of interest to anglers. There's an entirely



**Seine haul**

different near-shore fish community however that goes largely unsampled by standardized sampling methods. What kind of fish comprise these communities? Small, non-gamefish such as minnows, darters, shiners and dace. These species may not be of much interest to anglers, but they are important indicators of overall lake health.

A new sampling protocol was initiated in the Glenwood Area during the summer of 2010 to gain a better understanding of these near-shore fish communities. Spe-



**Mottled sculpin**

cial sampling efforts on a select group of lakes consisted of shoreline seining and backpack electrofishing at predefined stations approximately 100 feet in length and equally spaced around the perimeter of each lake. At each station, seine and backpack electrofishing samples were sorted by species and total number of each species was determined. These data will be used to generate metrics such as species richness, community assemblage, and trophic composition. For example, 20 individual seine hauls containing a total of 15 different species of minnows may be an indication that a lake is healthier than if 20 hauls were made and only 3 species were found. No one metric is used to define a lake's health, but rather a combination of all.

The DNR plans to use the results of this new sampling together with other standard survey data to determine an Index of Biotic Integrity (IBI) for each lake. An IBI is a widely used biologically based

method for measuring the integrity or "health" of aquatic systems.

Lakes with completed IBI sampling in 2010 as well as proposed lakes for 2011 are listed below:

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### 2010

Lake	County
Aaron	Douglas
Ann	Pope
Emily	Pope
Irene	Douglas
Malmedal	Pope
Moses	Douglas
Oscar	Douglas
Pelican	Pope
Pocket	Douglas
Red Rock	Douglas
Strandness	Pope

### 2011

Agnes	Douglas
Barrett	Grant
Gilchrist	Pope
Hattie	Stevens
Henry	Douglas
Linka	Pope
Long	Stevens
Moon	Douglas
Page	Stevens
Scandinavian	Pope

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### New rules for winter spearing:



**Using an artificial light to see fish when spearing is unlawful. Lighted decoys are legal to use. Any battery that is used in lighted decoys must not contain mercury.**

## Employee Spotlight— Lindy Ekola



**L**indy Ekola is the Glenwood Area's Shoreland Habitat Specialist. Her geographical work area covers northwestern Minnesota. Lindy's primary responsibility is to promote native plant buffers along shorelines. As she puts it, "Shoreland owners today overlook the importance of natural vegetation when instead they maintain manicured lawns, with fertilizing and watering schedules, as part of their lakeshore management. I work to help people understand that these kinds of changes adversely affect fish and wildlife habitat, decrease water quality, and increase shoreline degradation. When trees, shrubs, and other deep rooted native plants are removed, shorelines can erode significantly in a relatively short time. Shorelands with existing native vegetation can withstand high water and wave action better than exposed shorelines."

In addition to the educational aspects of the job, Lindy logs many hours of hands-on guidance in the establishment of native plant buffer projects. Site preparation, native plant selection and placement, weed identification and removal are all important components of a successful project. As natural plant communities develop they provide many benefits— better habitats, improved water quality, and more varied and colorful landscapes. Lindy's enjoyment of natural shorelines goes back to her childhood. "When I was a kid, summer vacations included a trip to my grandparents' cottage, on Lake Gogebic near Bergland, in the Upper Peninsula of Michigan. Summer wildflowers grew along the road, the edges of the woods, and near the water. By the lake my grandfather kept a small beach area open for water access and play, but most of the shoreline was covered with natural vegetation that attracted frogs, butterflies, and other kinds of wildlife. We thought it was a great place to explore, play, and swim! "

Lindy is one of 3 field specialists employed with the DNR's Shoreland Habitat Program (SHP). "I've been working with the MN DNR's Lakescaping Demonstration Program and the SHP since

October of 2002. Prior to this position, I was with the MN Conservation Reserve Enhancement Program (CREP). Through CREP I helped private landowners establish buffer strips, wetland restorations, wildlife habitat, and native vegetation with conservation easements. Before that, in 1998-99, I was a field technician for the Minnesota Arsenic Research Study (MARS), a ground water study of arsenic levels in private wells in West Central Minnesota. These experiences have helped me realize how important natural areas and resources are in the Minnesota landscape. I believe we live better, healthier lives when the air, land, and water resources that we depend on are clean, renewable, and sustainable. There's a growing emphasis on being "green" in popular culture, but I think we miss one of the most important points of sustainability when we don't realize that what we do every day as individuals can make a difference. To me, it's important to find ways to help preserve and create natural areas because that's better for fish and wildlife, for the environment, and for our own quality of life".

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