

## Lake Herring (Cisco) Sampling Protocols

Until recently lake herring were likely thought to be extirpated in Lake Michigan but in recent years, small numbers of herring have been caught by recreational and commercial fishers, and in assessment surveys. We are asking for your help to obtain genetic samples (a finclip) to assess the origin of lake herring recovered around Green Bay and surrounding waters. Please use the following protocols to collect data on any lake herring encountered. Please record as much information as you are able (commercial fishers are required to return the live fish to the water so handling time should be minimized). If you are authorized to retain the fish, please keep the fish and freeze it in a ziplock bag full of water.

### Basic Instructions

**Genetic Sample** – please remove 1 square cm (approximately 1/2 inch by 1/2 inch) of the pelvic fin (see below), wipe off slime (as it will contain other genetic material from other fish) and place it in the envelope to air dry. **DO NOT freeze sample or seal envelope!**

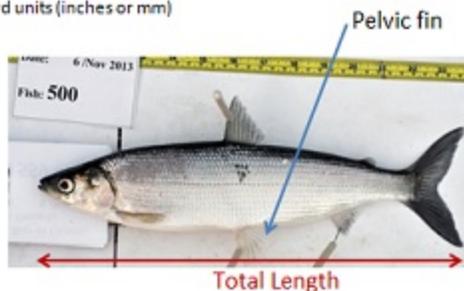
**Date & Location** – Record the date, location (grid number or latitude/longitude if possible), and collector name on envelope.

### Additional data (if possible)

**Length** - measure the total length of the fish, and record units (inches or mm)

**Weight** – weigh the fish, record units (g, kg, lb, oz)

**Photos** – photos of the herring are very useful. Take multiple clear photos of a clean specimen if possible. If you have a way to include the sample number and length reference in the picture, please do so. This can be done by writing the sample number in large numbers on the back of the sample envelope and setting the envelope near the fish. If the fish is dead, pinning the fins in the outward position would be helpful for people that are compiling morphometric information (see photo at right).



**Sample Submission:** Once you have collected samples, please contact one of the people below to facilitate pick-up your samples. The lab doing the genetic testing is able to process samples as they come in so we would like to get them from you as soon as possible.

Ted Treska (ted\_treska@fws.gov or 920-866-1764)

Scott Hansen (scott.hansen@wi.gov or 920-746-2864)

**Thanks for your cooperation! Results of the study will be shared once they are finalized.**

**-Ted Treska and Scott Hansen**

Tissue Samples collected by commercial fishers for this study will be collected under the **WIDNR Scientific Collector's permit held by the USFWS - Green Bay office (SCP-NER-055).** **Authorized commercial fishers must carry a copy of this letter on board vessels that will collect samples!**

### Lake Whitefish Identification Characteristics

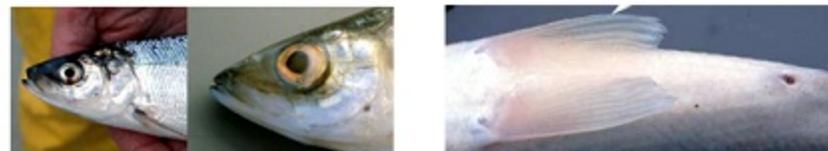
*Down turned overhanging mouth, lower jaw under snout Pelvic fins end far from anus, dark pigmentation*



### Lake Herring Identification Characteristics

*Lower jaw not overhanging by snout*

*Pelvic fins ending further from anus than on bloater*



### Bloater Identification Characteristics

*Lower jaw generally extending forward of upper jaw*

*Pelvic fins ending closer to anus*

