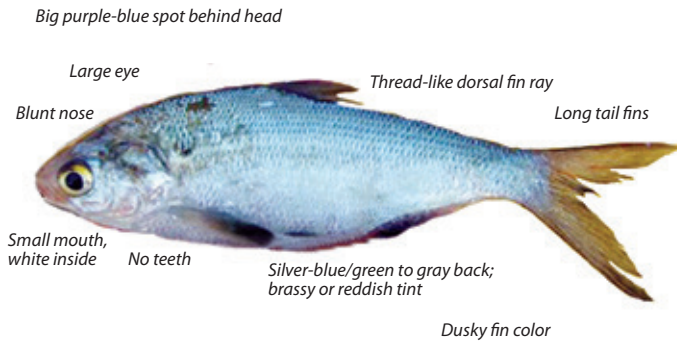
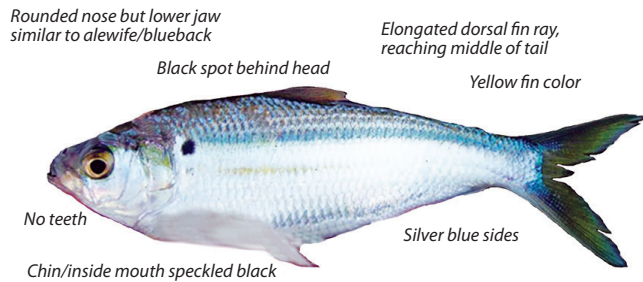


How to identify similar native species in the Great Lakes

Gizzard Shad *Dorosoma cepedianum* (native)



Threadfin Shad *Dorosoma petenense* (native)



Reference: Jim Negus, TN Wildlife resources http://www.tnfish.org/ReservoirFisheriesProgramPersonnel_TWRA/JimNegusBiosketch_TWRA.htm

How they affect the native species

Although the current distribution of these herring within the Great Lakes is unknown, there is concern because they may harm native fisheries. Detection of these herrings in the Great Lakes could be difficult because they are likely in small numbers, and are very similar in appearance to each other, and to two native species; gizzard shad (*Dorosoma cepedianum*) and threadfin shad (*Dorosoma petenense*). Anglers and boaters should report possible sightings to their local offices of Sea Grant and fisheries management agencies.

New York Sea Grant is part of a nationwide network of 33 university-based programs working with coastal communities through the National Oceanic Atmospheric Administration (NOAA). Sea Grant research and outreach programs promote better understanding, conservation, and use of America's coastal resources. Sea Grant is funded in New York through SUNY and Cornell University and federally through NOAA.



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Since their introductions at opposite ends of the Great Lakes, are their populations expanding?

While much attention has focused on the role of foreign shipping as a source of new invasive species, there are two closely related North American herring species (actually they are "shads") that have been introduced beyond their native range into the Great Lakes by canals. Skipjack herring, *Alosa chrysochloris*, and blueback herring, *Alosa aestivalis*, arrived to the Great Lakes at opposite ends in the late 1980s to early 1990s. Both species are "sea run" fish. Like their more familiar invasive relative the alewife, *Alosa pseudoharengus*, Skipjack and Blueback Herring can readily adapt to a complete freshwater lifestyle. Alewives were first observed in Lake Ontario during the 1870s and later spread into the remaining Great Lakes.

Blueback Herring (*Alosa aestivalis*)



Skipjack Herring (*Alosa chrysochloris*)



Blueback Herring

(*Alosa aestivalis*)

Although the native range of blueback herring is in the Hudson and Mohawk Rivers, bluebacks began moving into the Erie Canal system from the Mohawk River corridor reaching the Oswego River and Lake Ontario by the mid-1990s.

Ecologically, blueback herring are similar to alewife. However, blueback prefer living 50% closer to the surface in large lakes, in warmer waters, and spawn about a month later than alewife and in deeper, flowing waters of rivers and streams on hard substrate instead of the vegetation of shallow bays.

Both alewife and bluebacks feed heavily on zooplankton, freshwater shrimp and on eggs and larvae of other fish. Scientists believe that bluebacks could find suitable habitat in all of the Great Lakes except Lake Superior whose waters would be too cool for blueback herring.

Skipjack Herring

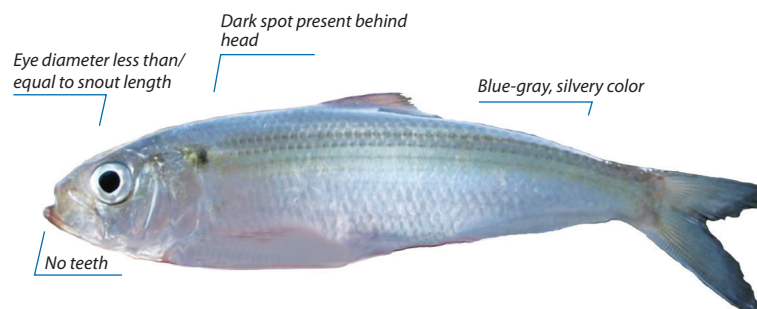
(*Alosa chrysochloris*)

Well known for their migratory behavior, Skipjack herring are native to the Ohio, Missouri and Mississippi and other large rivers. Skipjack herring prefer clear, deep, fast flowing waters of streams and rivers, where they school in the current over sand and gravel bottom areas.

Skipjacks likely entered the Great Lakes from the Mississippi River system via the Chicago Diversion Canal that connected the Mississippi River to Lake Michigan. Unlike other herrings, skipjacks switch over from plankton to insects and eventually to small fish. They are often seen chasing small fish near the surface in a skipping motion, hence the name. Skipjacks can reach 3- 6" during their first year and average 12"-16" in length as adults but have been caught up to 21" (over 3 lbs).

How to identify these similar invasive species

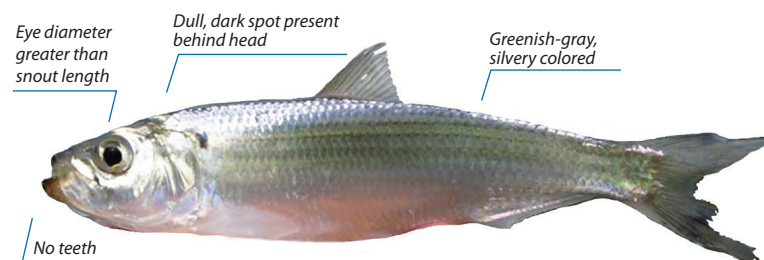
Blueback Herring (*Alosa aestivalis*) (invasive)



All photos courtesy of Jim Negus, TN Wildlife Resources, used with permission granted to NY Sea Grant, North American Native Fisheries Association (NANFA).



Alewife (*Alosa pseudoharengus*) (invasive)



Body cavity lining pale to cream color



Skipjack Herring (*Alosa chrysochloris*)

