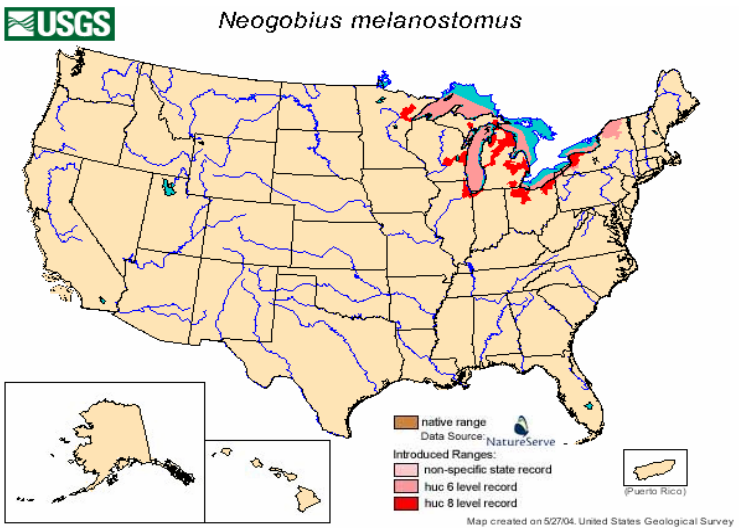
ROUND GOBY

Photo by: Eric Engbretson courtesy of the U.S. Fish & Wildlife Service

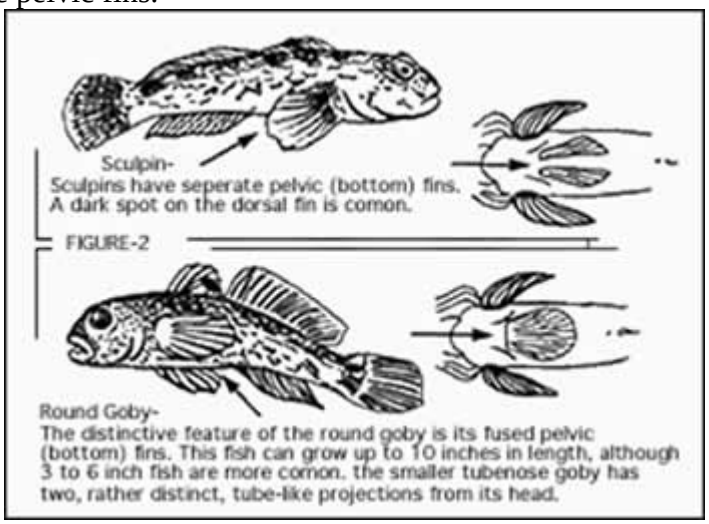
COMMON NAME: Round Goby
Sometimes this fish is referred to as just goby.

SCIENTIFIC NAME: *Neogobius melanostomus*
The round goby is in the family Gobiidae. Its genus *Neogobius* comes from the Greek word "neos" meaning "new" and the Latin word "gobius" meaning "gudgeon" or small fish. Pallas named the round goby in 1814.



DISTRIBUTION: The round goby is natively found in parts of Eurasia including the Black Sea, Caspian Sea, and the Sea of Azov. Round gobies can now be found in all of the Great Lakes and some of their tributaries.
Indiana: The first round goby found in Indiana was in the Grand Calumet River in 1993. In 1994, round gobies were found in Hammond Harbor. The next findings were in the Port of Indiana and East Chicago as well as Wolf Lake in 1996.

DESCRIPTION: Round gobies have large heads with protruding eyes. They have soft bodies that are slate gray when they are young. Adults are mottled with black and brown spots. Round gobies can reach up to 10 inches in length, however most are usually less than 6 inches. Round gobies may be confused with our native sculpins, but they are easily distinguished by the fact that round gobies have fused pelvic fins while sculpins have two separate pelvic fins.



Images by Jude and Marsden, 1995 courtesy of ANS task force and U.S. Fish and Wildlife Service.
http://www.protectyourwaters.net/hitchhikers/fish_round_goby.php#prevent

LIFE CYCLE BIOLOGY AND LIFE HISTORY: Round gobies can live in marine or freshwater environments, preferring brackish water. They spawn frequently, about once every 20 days, from April through September. The eggs are laid in nests on rocks, logs or other hard substrates. They forcefully defend their spawning sites. Round gobies have the highest densities in rocky areas and have exceeded densities of more than 20 per square meter. Gobies are voracious predators and will eat other fishes' eggs and fry as well as aquatic insects, zebra mussels and snails. This is helped by their well-developed sensory system that enables them to detect water movement even in complete darkness. Round gobies are resilient and are able to live in depleted oxygen situations for several days. The maximum age reported for a round goby is 4 years.

PATHWAYS/HISTORY: The first sighting of a round goby in the United States was in the St. Clair River in 1990. They most likely arrived through the ballast water of freighter vessels. The round goby found its way into Lake Erie and Lake Michigan by 1993. In only a year, these populations became established. By 1995, round gobies were found in Lake Superior and other parts of Lake Erie and Lake Michigan. Due to the disjunctive populations found in the early years, it is likely that these populations represented different introductions. One population in Lake Michigan was found 12 miles east of the Grand Calumet River. This river is connected to the Mississippi River meaning that there is the potential for the gobies to spread into America's largest watershed.

DISPERSAL/SPREAD: Round gobies likely hitchhiked in the ballast water from ships coming from the Black and Caspian Seas. Once in the Great Lakes, they were able to establish a dense population very rapidly. Just as with their initial introduction pathway, round gobies could be picked up in ballast water from the Great Lakes and taken to other

locations in the United States. Most at risk is the Mississippi River due to the Chicago Sanitary and Ship Canal that links the Great Lakes vessels with the Illinois River (Mississippi River drainage).

Round gobies have already spread to one Indiana inland lake, Wolf Lake. There is a waterway connection between Lake Michigan and Wolf Lake that allowed the gobies to swim into the inland lake. The round goby can also swim into the Mississippi River drainage through the Chicago Sanitary and Ship Canal. An electric dispersal barrier has been installed in the canal to prevent fish migration between the two watersheds. At this time, no gobies have made their way into the Mississippi basin.

Anglers and aquarium hobbyists are also a possible mode of dispersing this species to other bodies of water. However, it is illegal to possess a live round goby in Indiana. If a goby is caught, it must be killed immediately and not returned alive.

RISKS/IMPACTS: Round gobies eat the eggs and fry of other fish including lake trout, darters, and sculpins. They also out compete many of our native benthic fish. As a result sculpin populations are being reduced where gobies are established. Adult gobies aggressively defend their nests and may take up the best sites to spawn, which drive the natives out. One beneficial impact of the round goby is that it eats large quantities of the exotic zebra mussel. One laboratory study observed one round goby eating 78 zebra mussels in a day. Zebra mussels are so abundant that it is unlikely that round gobies alone will have any impact on them.

Some sport fish feed upon round gobies such as smallmouth bass, trout, walleye, and yellow perch. Any fish that feeds on gobies is at risk of containing a high level of contamination from mercury and PCBs. Zebra mussels, a preferred food for gobies, filter large amounts of water that causes high levels of contamination.

MANAGEMENT/PREVENTION: One way to try to stop the spread of round gobies is to create better federal or regional regulations regarding ballast water exchange. It is virtually impossible to eradicate a species once it has become established. All we can do now is try to prevent any further expansion. There are some things you can do to help stop the spread of round gobies.

- ✓ Learn to identify the round goby and know the difference between gobies and sculpin.
- ✓ If you catch a goby, do not release it alive. IT IS THE LAW!
- ✓ Do not transfer live fish from one body of water to another.
- ✓ Always dispose of unused bait in the trash or on land, never in the water.

- ✓ If you catch what you suspect to be a goby outside of its current range, preserve or freeze the fish and contact the district fisheries biologist for identity verification. http://www.in.gov/dnr/fishwild/fish/fishing/fishbiol.htm

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Updated 4/05