

Management information: *Neogobius melanostomus*

ANSRP (2003) suggest the use of electrical barriers, and piscicides to deter movement. The authors also state that prohibiting the transport of round goby for use as live bait is very important to limiting the spread of *N. melanostomus*. Steingraeber *et al.* (1996) report that, "Refinement of sampling techniques and continued monitoring of the distribution of *N. melanostomus* in the IWS is needed to enact appropriate management strategies in a prompt and precise manner to help control the North American distribution of this exotic nuisance species."

Charlebois *et al.* (1997) state that, "Standard fisheries sampling methods inadequately sample *N. melanostomus* populations. Angling can yield up to one goby per minute per angler using small hooks baited with worms or maggots (Marsden and Wolfe, unpubl. data). This method, however, generally is time intensive, spatially limited, and biased toward larger individuals. Bottom trawls permit sampling over a relatively large area, but optimal habitat for *N. melanostomus* (rocky cobble areas) is not optimal for trawling. Electroshocking is effective only in shallow water (<1 m) because *N. melanostomus* move downward when stunned, and thus are difficult to retrieve in deeper (>1 m) water (Thoma, Ohio EPA, pers. comm.). Seines are limited to use in nearshore areas, and minnow traps yield small catches per unit effort (Steingraeber *et al.* 1996; Marsden and Wolfe, unpubl. data). Goby densities can be estimated with quadrats by divers, but juveniles are difficult to see on complex substrata (e.g., cobble) and all ages likely hide under rocks (Ray and Corkum 2001). Quadrats can be used accurately on sand, but juveniles generally are more common than adults on this substratum (Marsden and Wolfe, pers. comm.). Nothing is currently known about responses of *N. melanostomus* to fish toxins. The possibility that *N. melanostomus* will spread downstream to the Mississippi River through the Illinois Waterway System (IWS) has stimulated efforts to create a dispersal barrier to prevent or restrict the downstream movement of *N. melanostomus*.

One dispersal barrier under consideration would attempt to confine *N. melanostomus* above the Des Plaines River (Keppner and Theriot, 1997). This barrier would consist of two electrical barriers (separated by < 0.4 mi) in the IWS. If *N. melanostomus* are detected below the first electrical barrier, a chemical piscicide (e.g., rotenone) could be applied between the 2 barriers. The effectiveness of these methods on *N. melanostomus* however, needs to be examined." Unfortunately, the round goby had moved downstream from the barrier en route to the Mississippi drain basin before the first barrier was energized, April 2002 (Corkum *et al.* 2004).

Belanger and Corkum (2003) state that, "Predation risk to a small *N. melanostomus* is high in sandy habitats without shelters."

In an attempt to quantify *N. melanostomus* impact on smallmouth bass, Steinhart *et al.* (2004) state that, "If the number of surviving smallmouth bass embryos drives adult population size, managers should consider angling regulations that reduce interference with nesting males, thus limiting the deleterious effects of *N. melanostomus*."

A study conducted into tagging of round gobies found that the optimal tag in terms of ease of use, high visibility, retention, and low mortality or damage to fish was injected latex paint, while the best technique for individually marking fish was use of the Floy anchor tag (Wolfe and Marsden, 1998).