Sea Grant NewYork

*Academic, research and extension collaboration produces science-based public information materials to help Great Lakes interests manage AIS threat.*

# NYSG-Buffalo State College Collaboration Identifies Four High-Risk AIS Threats to Great Lakes

New York Sea Grant (NYSG) collaborations with academic partner Buffalo State College is helping identify aquatic invasive threats to the Great Lakes.

More than 180 aquatic invasive species (AIS) have been introduced into the Great Lakes, causing a variety of negative ecological and economic impacts. Ballast water discharge has been implicated as a major vector of these introductions, largely originating from the Ponto Caspian region of Eurasia. The species-rich area plus its large volume of ship traffic suggests that this region will continue to be a major source of AIS into the Great Lakes. Research and outreach programs for surveillance, prevention and control efforts are needed to prevent new introductions of AIS into the Great Lakes and to minimize the further spread of organisms to inland lakes, the Mississippi River watershed, and beyond.

Based on information on species' environmental requirements, distribution, and invasion history, scientists have previously identified 66 species that pose a potential Great Lakes invasion threat. Most recently, a Great Lakes Restoration Initiative research project coordinated by Buffalo State College researchers and NYSG's freshwater fisheries specialist led to the identification of nine high risk Ponto-Caspian fish species with the potential to survive and spread if successfully introduced in the Great Lakes. These AIS also have the potential to negatively impact the Great Lakes' food webs.

*The Caspian bighead goby, above, is one of four fishes identified as an aquatic invasive species threat for transport into North American waters. This fish will be profiled in a new NYSG-developed fact sheet in 2013. Photo: Brian Coad*

To develop detailed information used to predict the invasion potential into North America of the nine high risk species, Buffalo State researchers went to former Soviet bloc countries to translate previously unavailable literature on the fish species endemic to that area.

The researchers have predicted that only four species: kilka,Volga dwarf goby, Caspian bighead goby, and black-striped pipefish could survive ballast water transport to North America, suggesting that ballast water exchange, if carried out properly by ships, is an effective tool in reducing future introductions of the high-risk Ponto-Caspian fishes.

NYSG will now summarize the information on these four species into factsheets to help guide early warning monitoring programs for AIS.

**NYSG is developing fact sheets on four fish species at high risk for introduction into North American waters. Those fish are: kilka, Volga dwarf goby, Caspian bighead goby, and black-striped pipefish.**

*This project meets the performance goals of Sea Grant's Heathy New York Coastal Ecosystems Focus Area.*

New York Sea Grant is a joint program of Cornell University, the State University of New York, and NOAA.
New York Sea Grant Extension administration is located at 112 Rice Hall, Cornell University, Ithaca, NY 14853.
*This project summary was written by David MacNeill, Fisheries Specialist, 315-312-3042, dbm4@cornell.edu, www.nyseagrant.org*
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