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# Too little, too late: Not enough food in Great Lakes to support Asian carp?

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<https://iiseagrant.org/too-little-too-late-not-enough-food-in-great-lakes-to-support-asian-carp/>

The threat of Asian carp invading the Great Lakes may not be as dire as some fear. According an Illinois-Indiana Sea Grant study, the lakes' open waters do not provide sufficient food for the fish to grow.

Asian carp species—for example, bighead and silver carp—are filter feeders. They eat microscopic plankton that provides the base of the food chain. Since these fish grow quite large, they potentially pose a threat to the Great Lakes ecosystem if they thrive in these waters.

With funding from [NOAA-National Sea Grant College Program](#), Sandra Cooke and Water Hill, [Illinois Natural History Survey](#) ecologists, sought to answer the question of whether Asian carp can survive and thrive in the nutrient-poor Great Lakes. They estimated the energy required for the carp to survive and grow, taking into account varying body sizes, swimming speeds and reproductive stages. These numbers were analyzed in light of available food sources in the Great Lakes.

According to their modeling results, there may be sufficient plankton in some harbors and other near shore areas, but not in open waters. “Flourishing populations of filter-feeding Asian carp are historically associated with conditions that feature abundant phytoplankton and zooplankton,” said Hill. “Most areas of the Great Lakes feature relatively low abundances of these plankton.”

Ironically, the carp may just be late to the Great Lakes plankton buffet because other invasive species have already depleted the supply. “Prior invasions of the Great Lakes by zebra and quagga mussels have reduced the potential for the carp to establish populations because these mussels have reduced plankton biomass,” said Hill. “They are filter feeders too.”

But don't write the carp off in the Great Lakes altogether. Cooke and Hill speculates that bighead and silver carp may still have significant impact on fish communities in areas where there is sufficient plankton—in harbors and nearshore areas, as well as other productive locations such as Green Bay and western Lake Erie. “Many nearshore habitats can serve as important nurseries for larval fish, including walleye and alewives,” said Cooke.

The situation is also subject to change. For example, climate change may lead to conditions in which plankton are more abundant. An increase in nutrient levels can have the same effect. As plankton numbers increase, so does the likelihood that the carp will grow and thrive.

Hill does not see these results as a reason to relent on efforts to keep Asian carp out of the Great Lakes. “Given the potential consequences to Great Lakes ecosystems if these filter feeders do prove capable of establishing reproducing populations, efforts to keep Asian carp out the Great Lakes must not be lessened,” he said. Rather, this work can provide insight for resource managers to direct their monitoring and prevention efforts to areas that are most at risk.

Results from this research are published in the October 2010 issue of *Freshwater Biology* (55).