



# Cary Institute of Ecosystem Studies

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The Honorable Kathy Hochul  
Governor, New York State  
New York State Capitol Building  
Albany, NY 12224

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Governor Hochul:

I'm writing today to support the construction of effective barriers against invasive species in the Erie and Champlain Canals. Installing such barriers is a rare opportunity to slow the spread of invasive species and protect New York's natural resources for future generations. If thoughtfully designed, barriers can slow the spread of harmful invaders without interfering with canal operations.

I've conducted research on the ecology of the Hudson River since the 1980's, often working with NYSDEC's excellent Hudson River Estuary Program. My colleagues at the Cary Institute and I published more than 100 peer-reviewed papers about invasive species, food webs, water chemistry, and habitats in the Hudson, and I wrote a widely used book about the river's ecology.

During my time working on the river, I saw substantial progress by the state and federal governments and their partner NGOs in reducing water pollution, rehabilitating damaged habitats, protecting fisheries and endangered species, and improving public access to the river. In many ways, the Hudson is in better shape than when I took my first samples in 1985, and provides greater benefits to today's and tomorrow's New Yorkers.

But during that time I was also dismayed to see damaging new invaders appear and spread through the Hudson. Since the 1980s, a new non-native species has appeared nearly every year in the Hudson or its tributaries, and invasion rates are not slowing. Some of these invaders (for instance, the zebra mussel, the aquatic weed hydrilla, and the fish parasite *Glugea*) cause long-lasting or permanent ecological and economic damage. If uncontrolled, these invasions can undo the progress we've made in protecting the Hudson and other ecosystems.

Because we have made so little progress in preventing the arrival and spread of invasive species, we can expect invasive species to continue to cause large ecological and economic problems in the Hudson and across New York in coming decades. Some actions to prevent new invaders (e.g., better controls on the pet or horticulture trade, cleaner shipping practices) require national or international action, and are complicated and slow to implement. In contrast, setting up canal barriers is something that New York State can do right now to protect its natural resources from new invading species.

Biologists have known for decades that freshwater plants and animals use canals as short-cuts to travel quickly across the country. Here in New York, dozens of species have moved through the Erie and Champlain Canals, including troublesome species such as the zebra mussel, round goby, white perch, and water-chestnut. Movement has occurred in both directions along our canals, causing problems for Lakes Erie, Ontario, and Champlain and their tributary waters as well as the Hudson.

As long as canals remain freely open to invaders, they facilitate the movement of harmful invaders, including species that are already established near one end of the canal (e.g., round gobies, grass carp), species that probably will arrive soon near one end of the canal (e.g., bighead carp, silver carp, snakeheads), and species that will arrive in North America in the future (literally any species in world). We lose ground with each new invader that travels through our canals.

As new invaders accumulate, it will be increasingly difficult to protect New York's natural resources. For instance, the silver and bighead carps (abundant in the Illinois River and poised to spread through the Great Lakes) are voracious plankton-feeders. If they are allowed to reach the Hudson, it's hard to imagine how the Hudson's battered shad populations could ever recover to support valuable commercial and recreational fisheries again.

Instead, it makes most sense to prevent new invasions in the first place. As we work to reimagine the canals, we can install barriers along canals that allow essential canal operations to continue while reducing the movement of invaders through the canal. Several kinds of barriers are possible, but studies done to date suggest that hydrologic separation on the Champlain Canal and on the Erie Canal near Rome (and perhaps at other sites) best suit conditions on our canals, and provide the level of protection needed to stop invaders.

The discussion about of canal barriers is sometimes focused on the problem of keeping round gobies out of Lake Champlain. This is an important consideration at the moment, but canal barriers should be designed with the broader goal of preventing the movement of all harmful species from moving in either direction through both the Erie and the Champlain Canals. We are facing the round goby today, but will face many other species in the future.

As New York redesigns its canals for the future, we have a once-in-a lifetime opportunity to improve them by installing barriers against invasive species. Such barriers could protect Lakes Erie, Ontario, and Champlain, the Hudson River, and their tributary waters, and safeguard New York's natural resources for future generations. Let's not miss this chance.

Thank you for your attention.

A handwritten signature in black ink that reads "David Strayer". The signature is written in a cursive, flowing style with a long, sweeping underline that extends to the right.

David Strayer, Ph.D.  
Distinguished Senior Scientist Emeritus, Cary Institute of Ecosystem Studies