

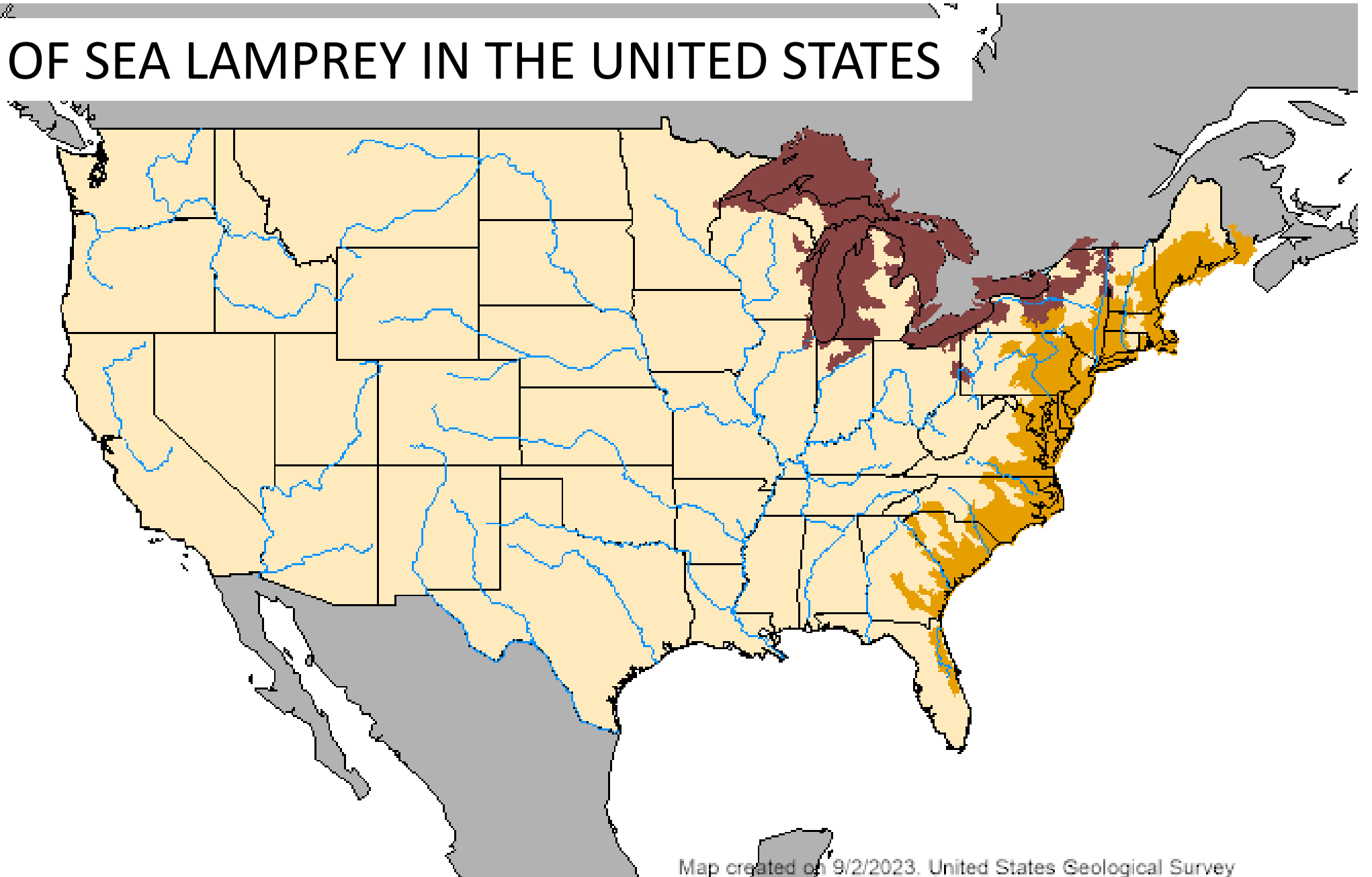
An underwater photograph of a sea lamprey swimming over a rocky riverbed. The lamprey is long and slender with a dark, mottled pattern on its side. The water is clear, and the rocks on the bottom are various sizes and colors, including yellow, grey, and brown. The background shows more of the riverbed and some green algae or plants.

UPDATE ON THE STATUS OF SEA
LAMPREY, *PETROMYZON MARINUS*, IN
THE UNITED STATES

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RETIRED

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RANGE OF SEA LAMPREY IN THE UNITED STATES



Map created on 9/2/2023. United States Geological Survey

HUMAN USE OF SEA LAMPREY IN THE U.S.

Pre-colonial times= Native Americans valued lamprey for their food value.

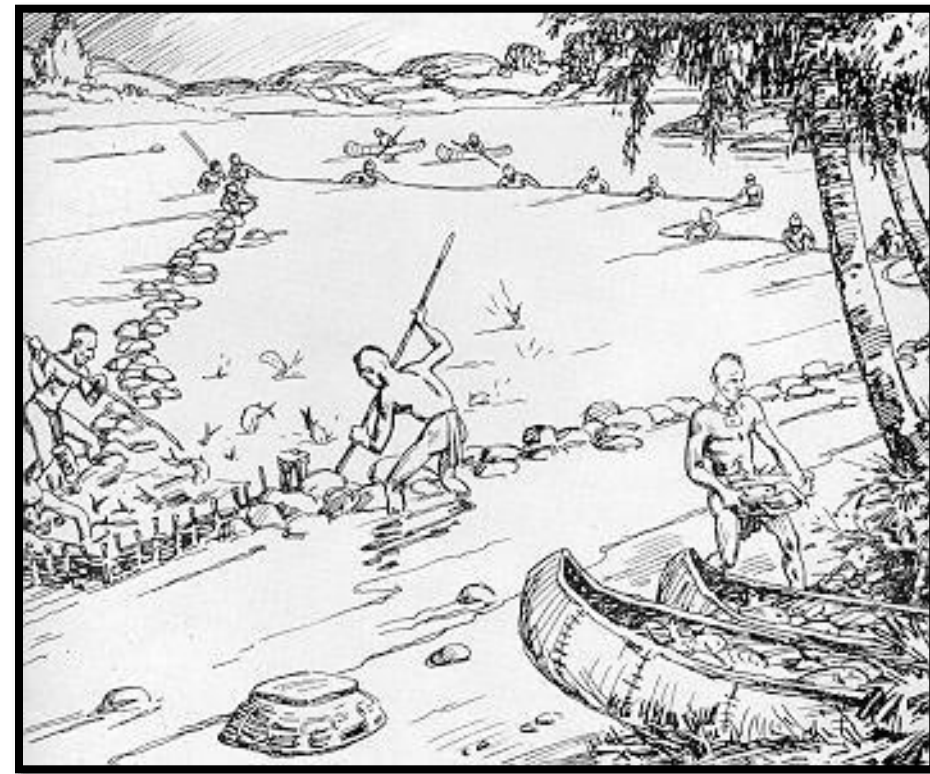
Colonial to early U.S. times= Not much reference to lamprey eating.

Late 1800s to mid-1900s= recent immigrants (mostly eastern Europeans) sought and ate Sea Lamprey. The last known fisher in the State of Connecticut stopped fishing in the 1970s.

Currently, no known use of Sea Lamprey as food in the US.

Some minor harvest of Sea Lamprey by biological supply companies for use in classrooms for dissection.

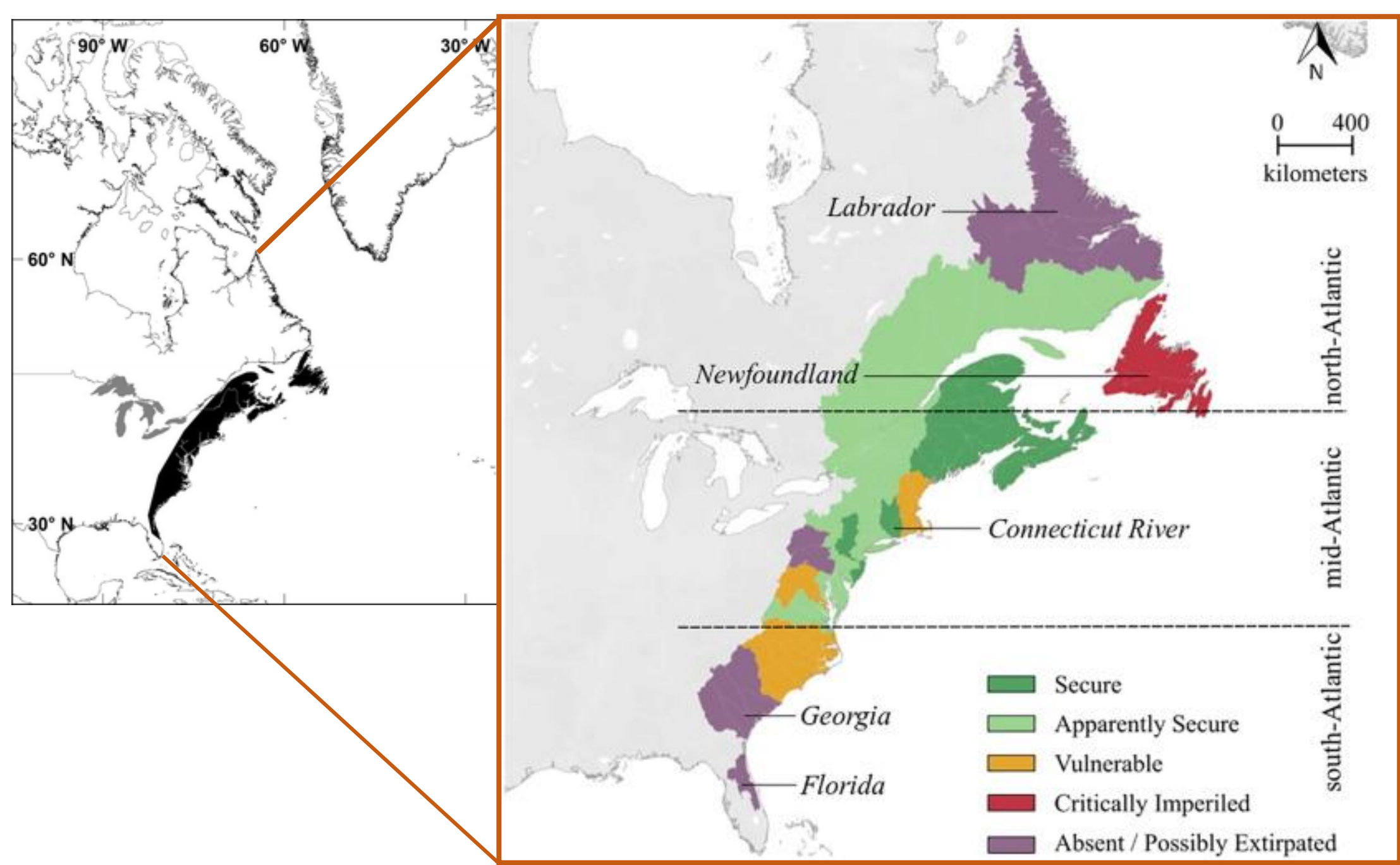
Most Americans know Sea Lamprey only from its invasion of the Great Lakes. If you Google Sea Lamprey, most of what you will find will refer to the Great Lakes. It is hard to find information on native anadromous Sea Lamprey in North America.



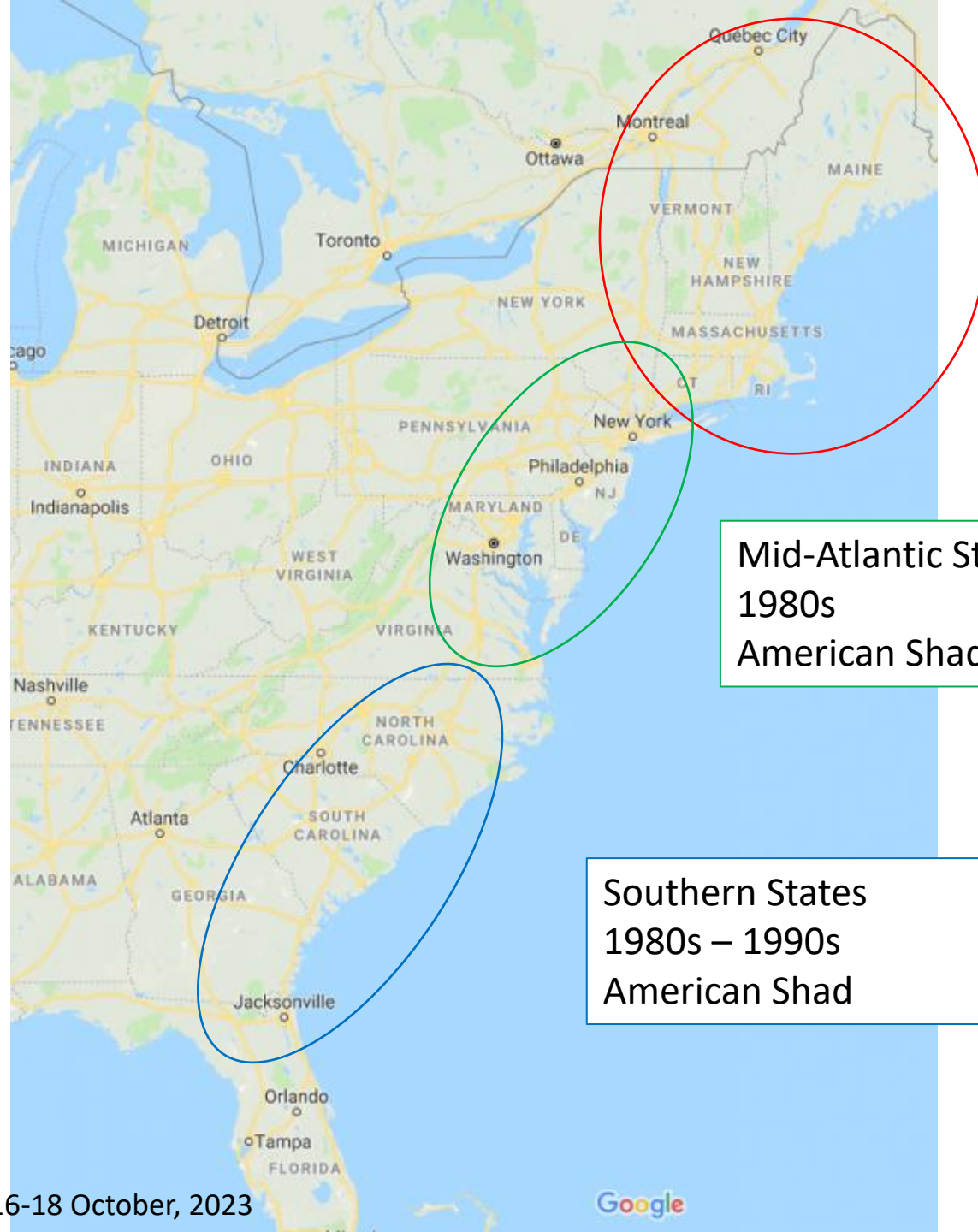
Reduction of size
of historic
lamprey runs

1700 – 1970.





MIGRATORY FISH RESTORATION PROGRAMS OF EASTERN U.S.



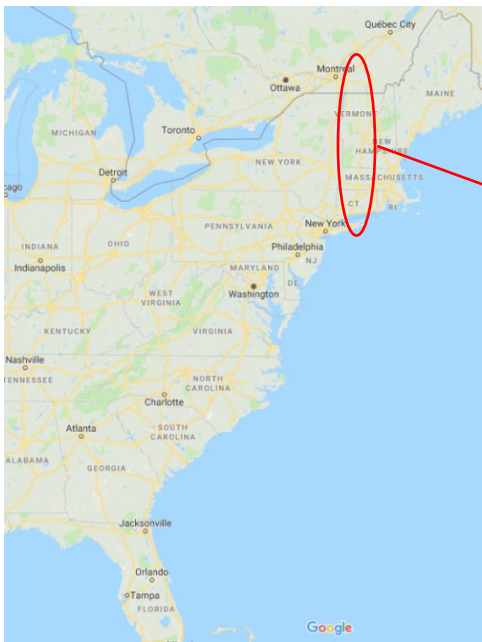
New England
1960s
Atlantic Salmon &
American Shad

Mid-Atlantic States
1980s
American Shad

Southern States
1980s – 1990s
American Shad

- Initially, restoration was driven by building fishways at barrier dams.
- Dam removal became more common starting in 2000.
- Sea Lamprey could use both and were initially just ignored. If they go upstream, OK
- In the State of Maine, lamprey were trapped and killed in some fishways built for salmon.





Connecticut River Watershed Selected Tributaries & Dams



State of Connecticut



SEA LAMPREY CONSERVATION TIME LINE

- **1970s-** Connecticut began passing Sea Lampreys upstream, implemented a no kill policy.
- **1980s-** Connecticut began conducting annual nest surveys on watersheds without fishway windows.
- **1990s-** The other Connecticut River states followed Connecticut's lead and changed the watershed plan from a salmon/shad program to a Diadromous Fish Restoration Program. Public education about Sea Lampreys began.
- **2000s-** Maine stopped killing Sea Lampreys and embraced the species as worthy of restoration.
- **2010s-** Connecticut began a more aggressive restoration approach by transplanting adults into vacant streams. (See paper later in Workshop) Research conducted at Universities and Research Labs (e.g. Conte Lab) on lamprey conservation and biology of EAST COAST lamprey instead of just studying ways to control Great Lakes lamprey.

Most of the East Coast States south of Connecticut remain at the stage where Connecticut was in 1970s. They pass them upstream without killing, some may collect count data, but lamprey restoration is not a stated objective and there is little to no public education about the species.



Sea Lamprey Nest Surveys



Rescue of stranded ammocoetes during de-watering events



First watershed management plan for Sea Lamprey (Connecticut River)



CONNECTICUT RIVER ANADROMOUS SEA LAMPREY MANAGEMENT PLAN

Connecticut River Atlantic Salmon Commission
103 East Plumtree Road
Sunderland, Massachusetts 01375
Approved June 29, 2018

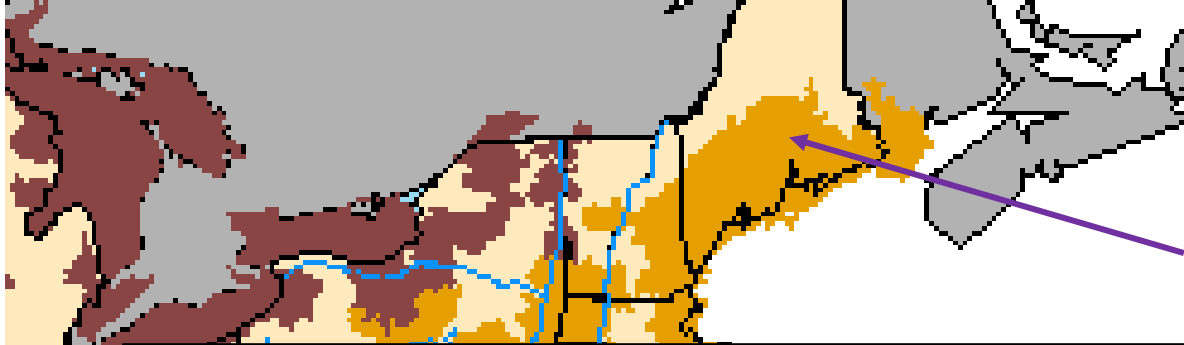
Systematic eDNA survey of the Connecticut River watershed to document covert existing populations of Sea Lamprey



Examination of Population Trends in the U.S.

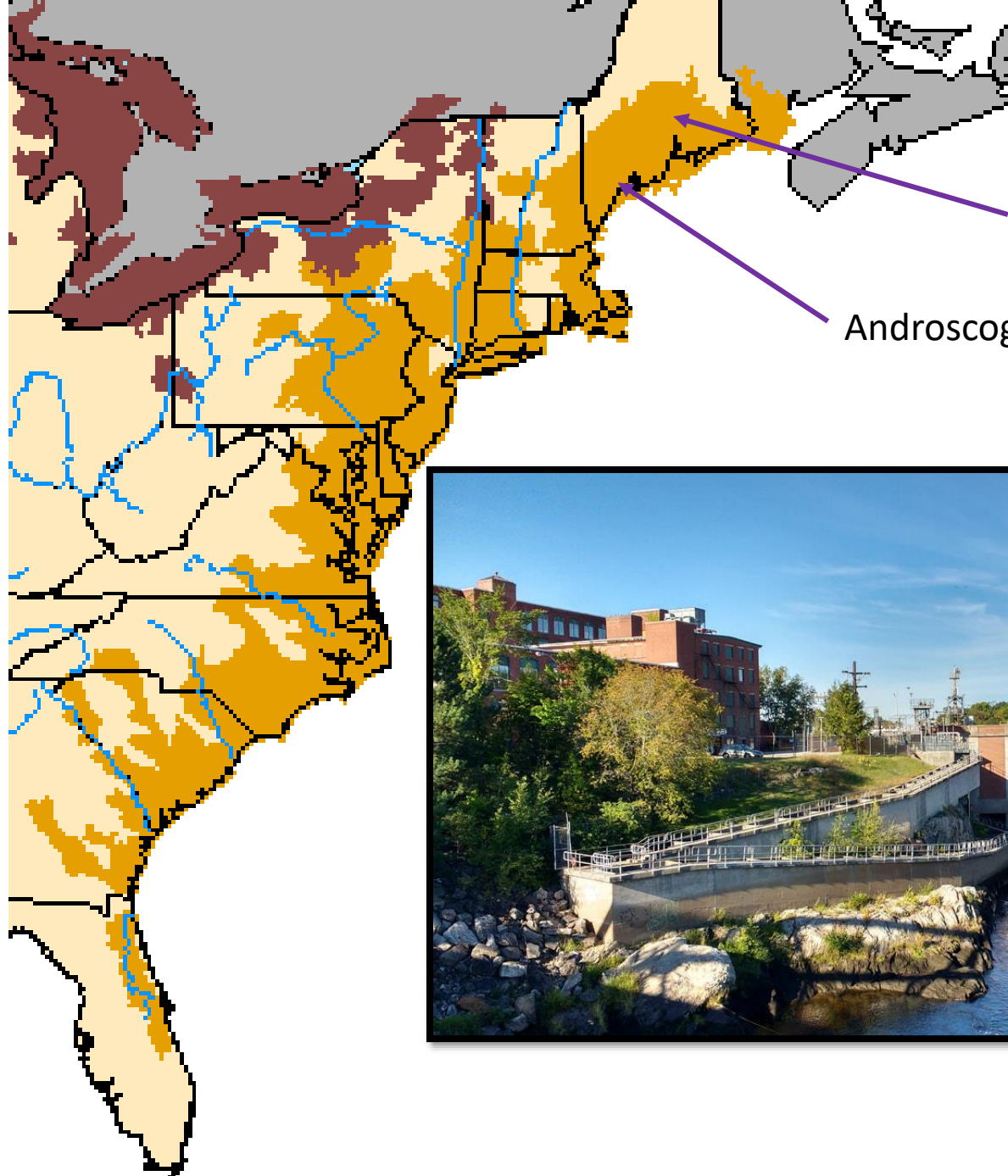
Not many locations where data are collected





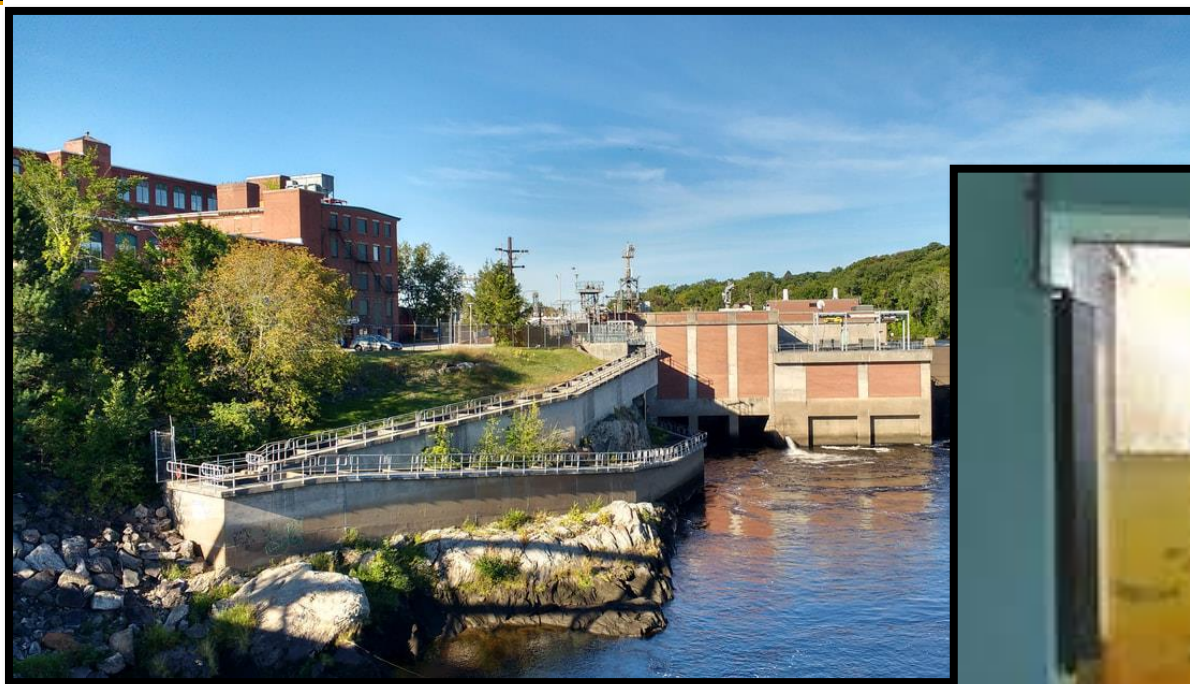
Penobscot River, Maine (Milford Dam Fishlift)

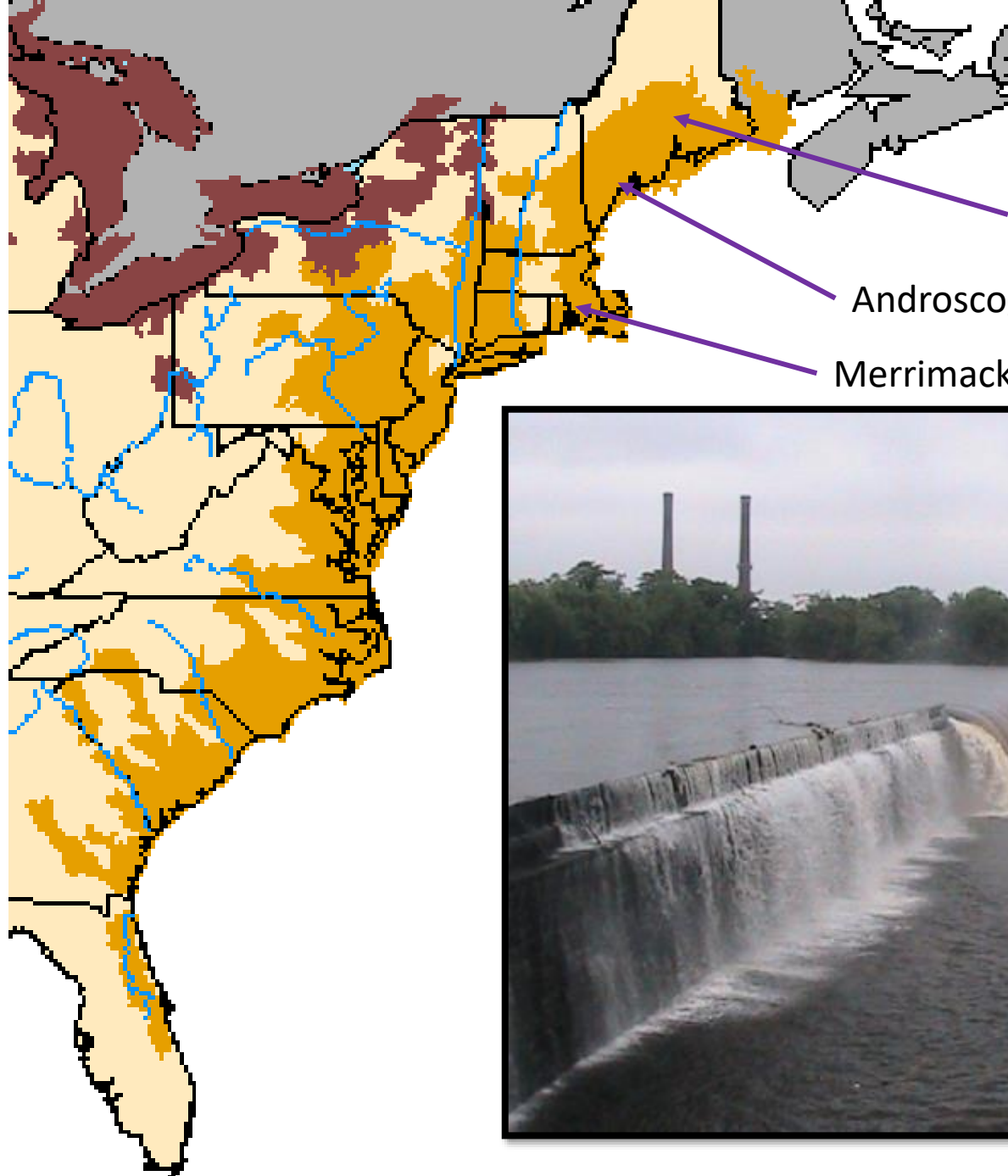




Penobscot River, Maine (Milford Dam Fishlift)

Androscoggin River, Maine (Brunswick Dam Fishway)



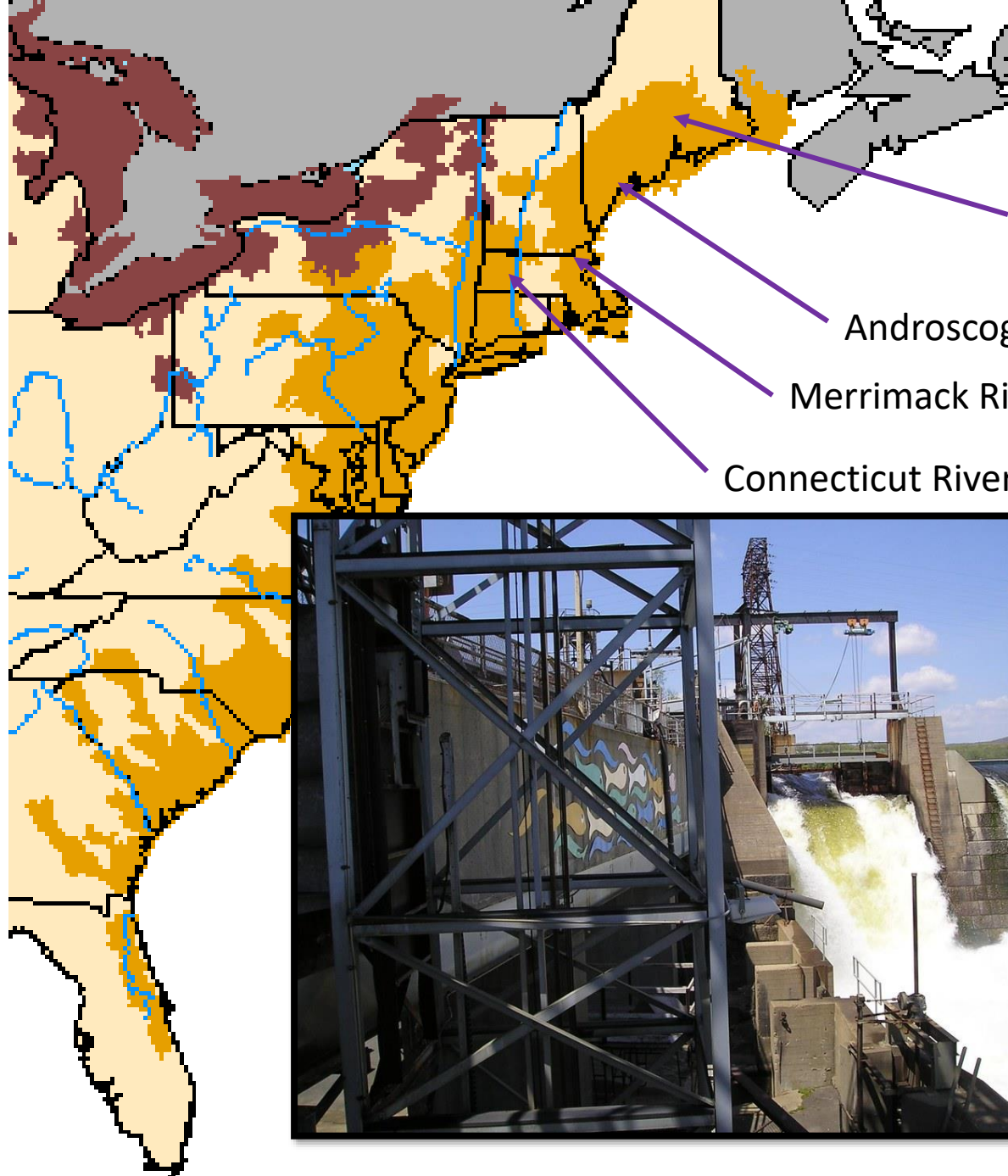


Penobscot River, Maine (Milford Dam Fishlift)

Androscoggin River, Maine (Brunswick Dam Fishway)

Merrimack River, Massachusetts (Essex Dam Fishlift)



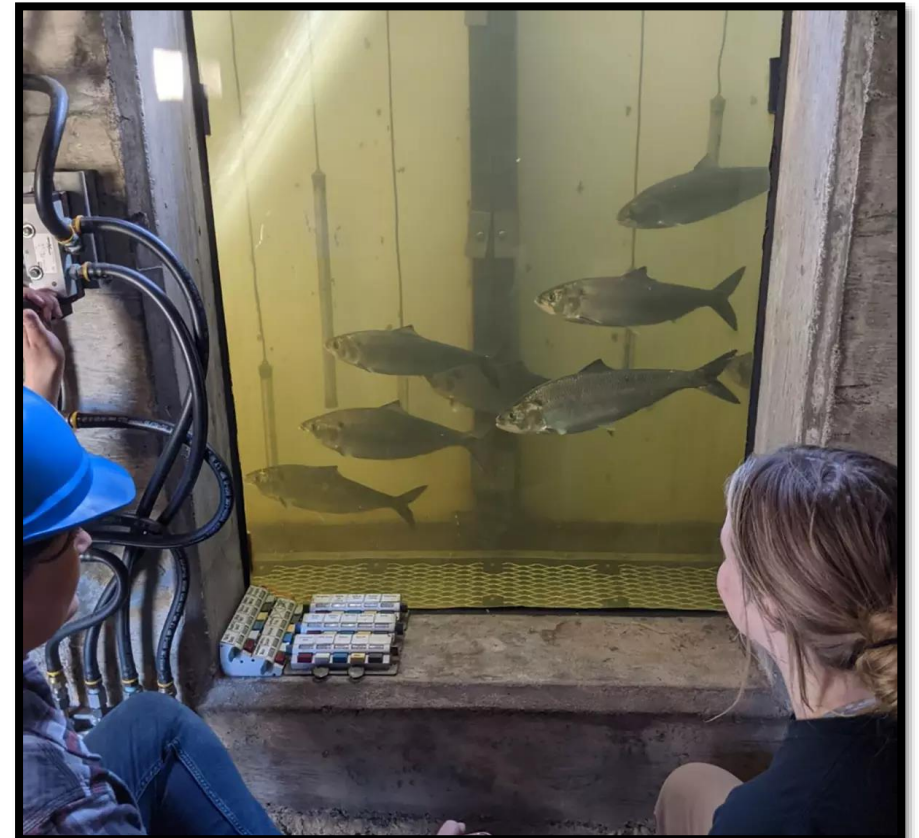


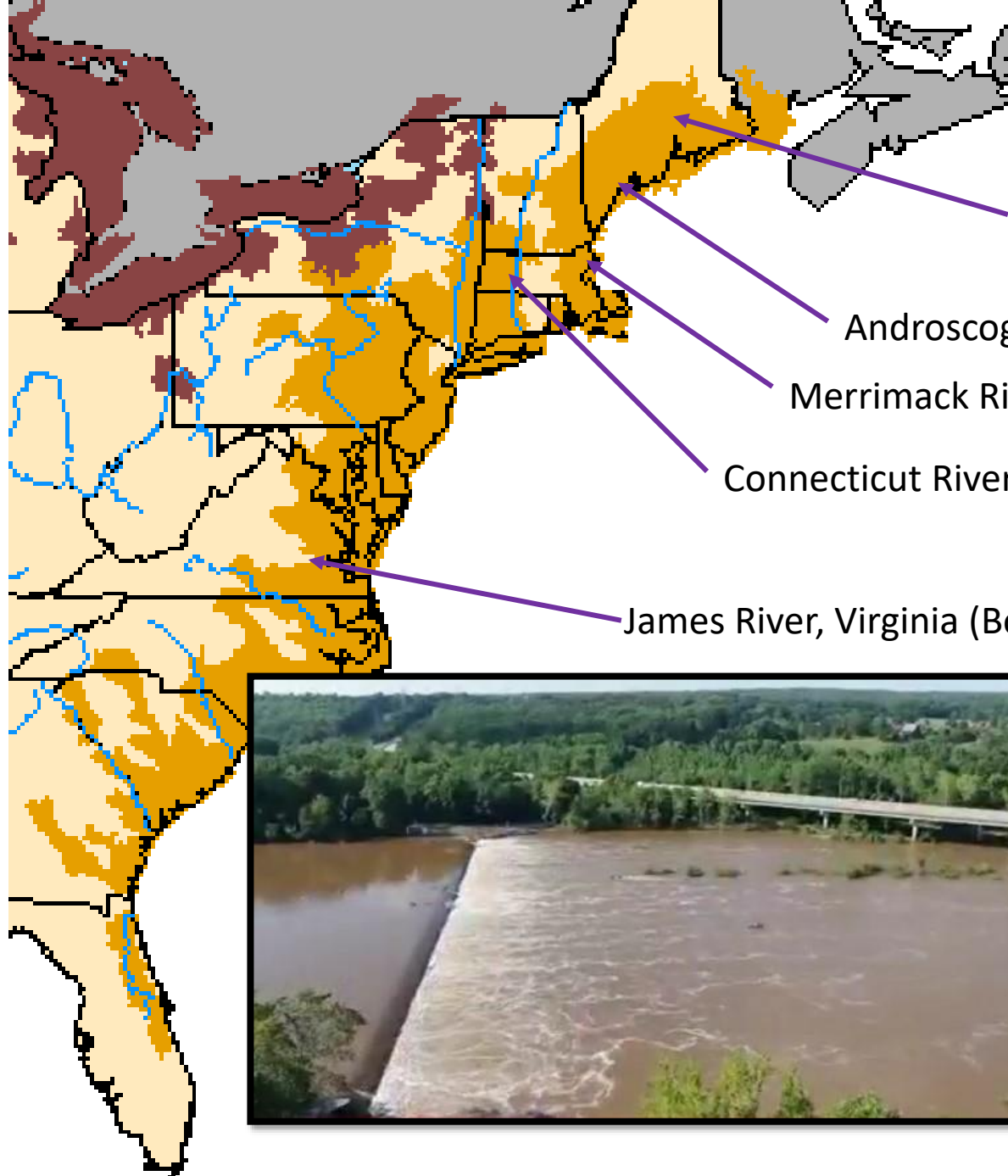
Penobscot River, Maine (Milford Dam Fishlift)

Androscoggin River, Maine (Brunswick Dam Fishway)

Merrimack River, Massachusetts (Essex Dam Fishlift)

Connecticut River, Massachusetts (Holyoke Dam Fishlift)





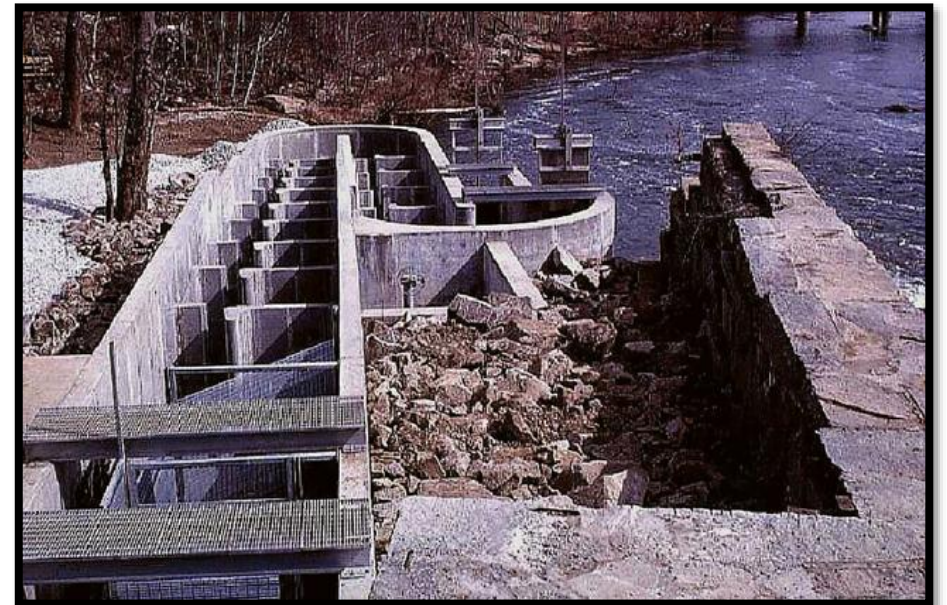
Penobscot River, Maine (Milford Dam Fishlift)

Androscoggin River, Maine (Brunswick Dam Fishway)

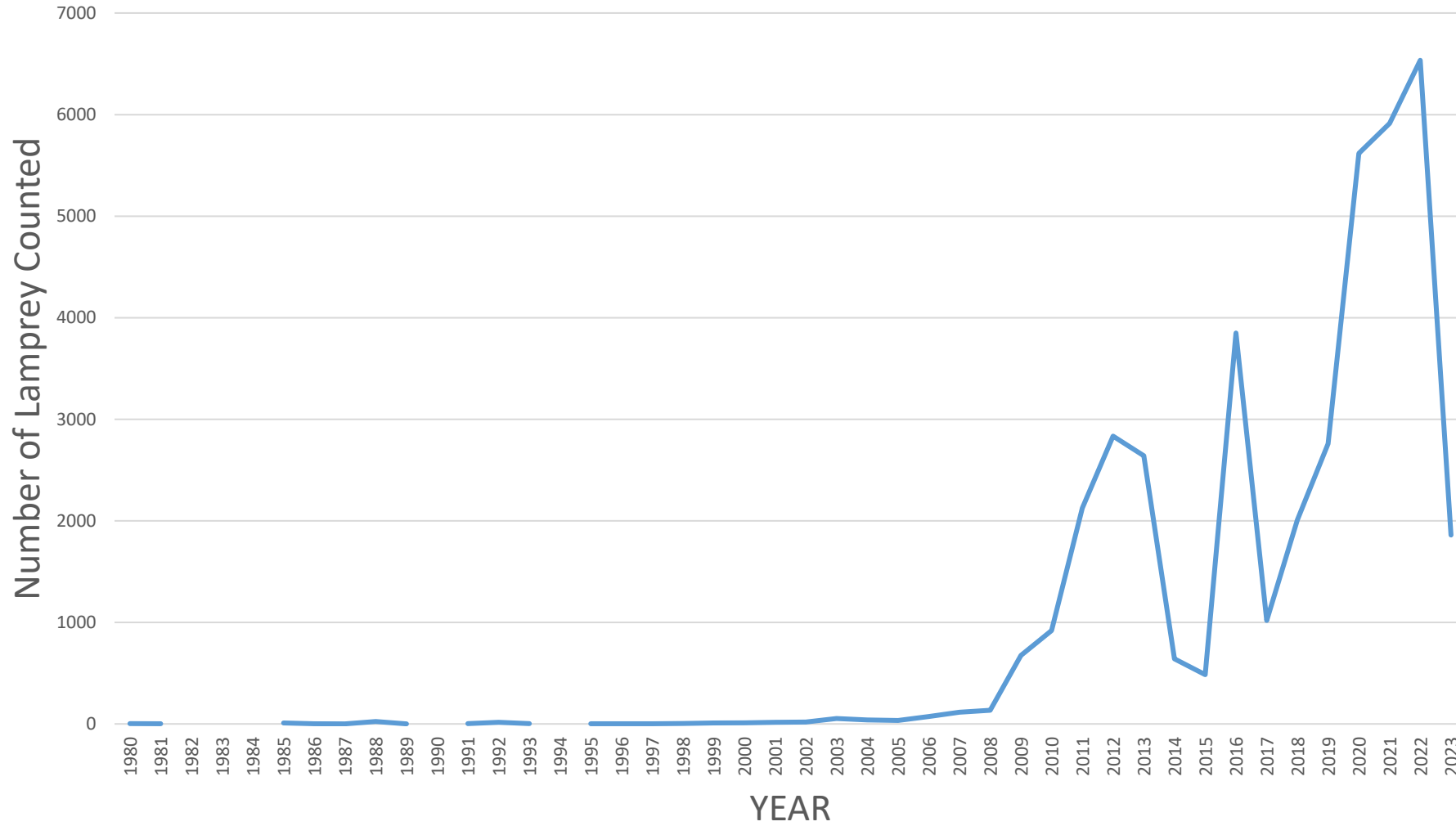
Merrimack River, Massachusetts (Essex Dam Fishlift)

Connecticut River, Massachusetts (Holyoke Dam Fishlift)

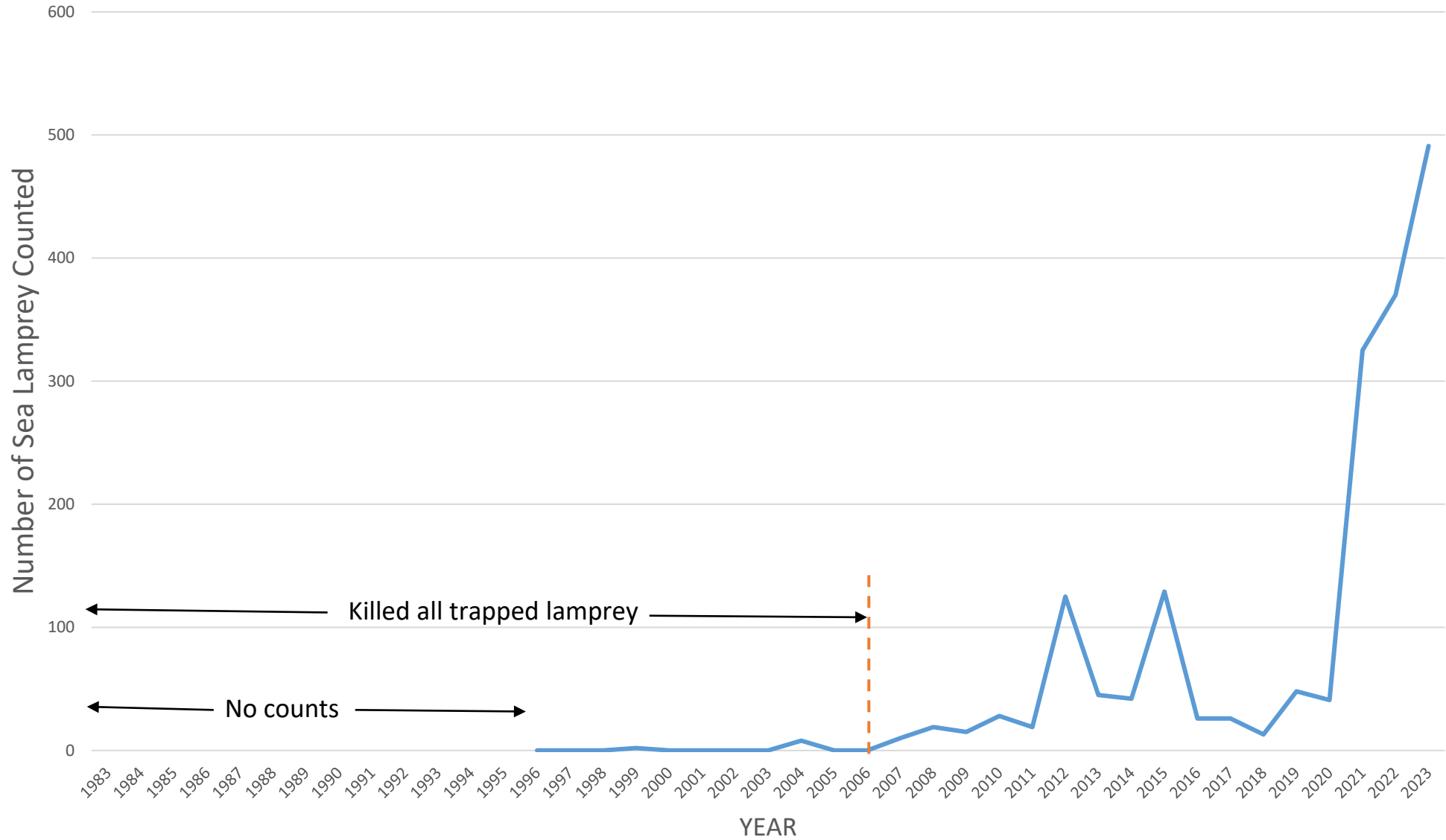
James River, Virginia (Boshers Dam Fishway)



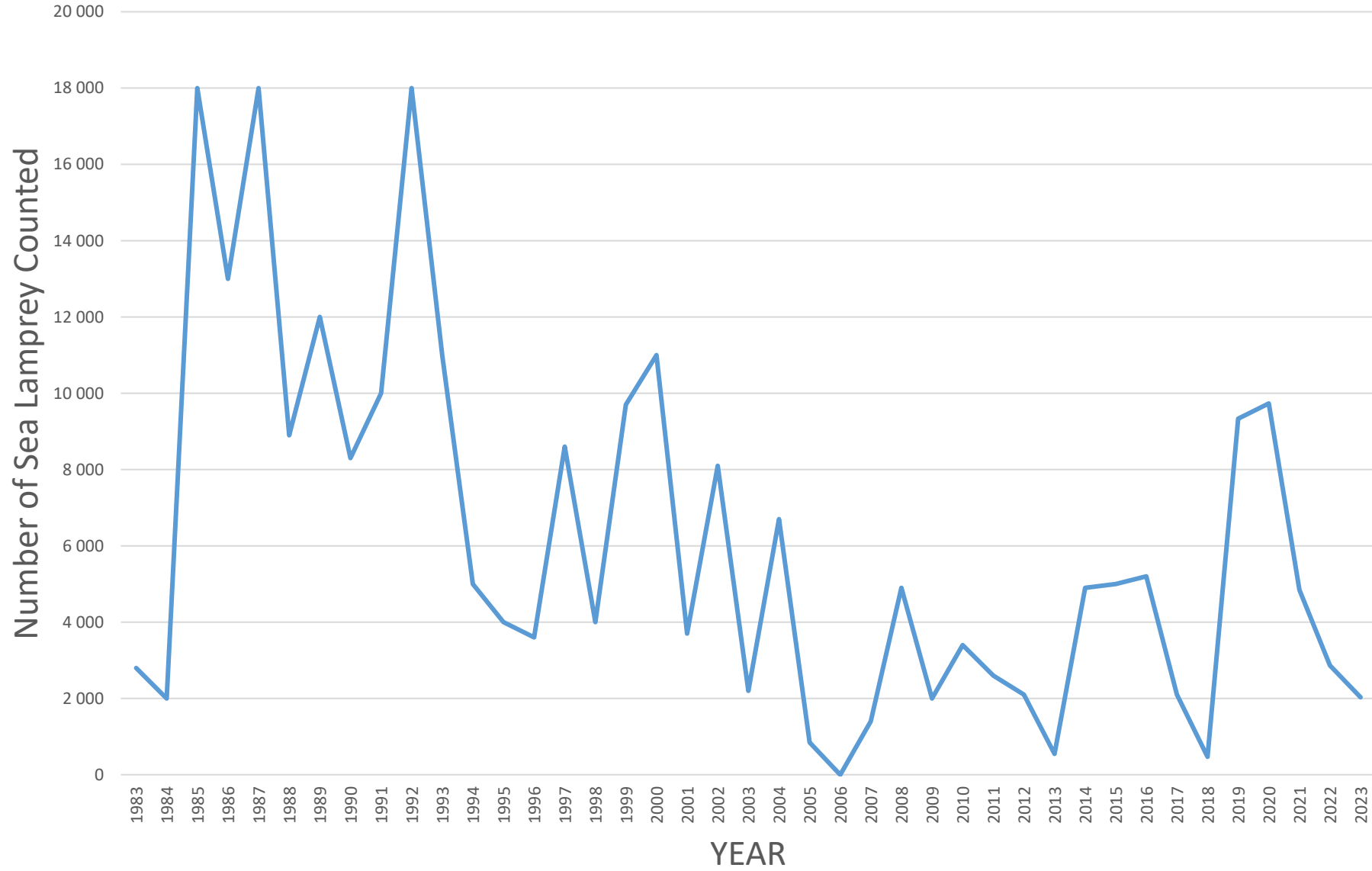
Sea Lamprey Passage- Penobscot River, Maine



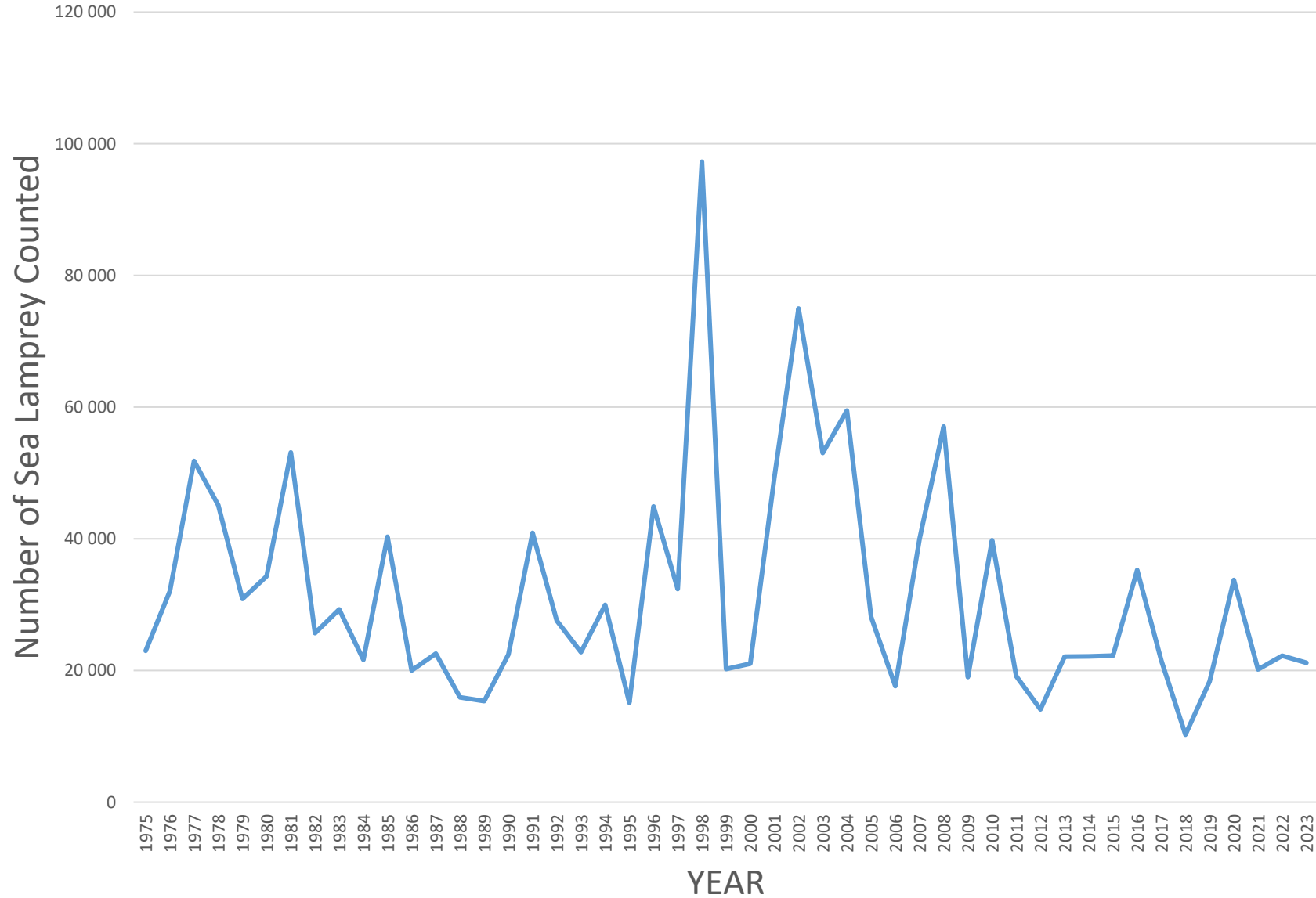
Sea Lamprey Passage- Androscoggin River, Maine



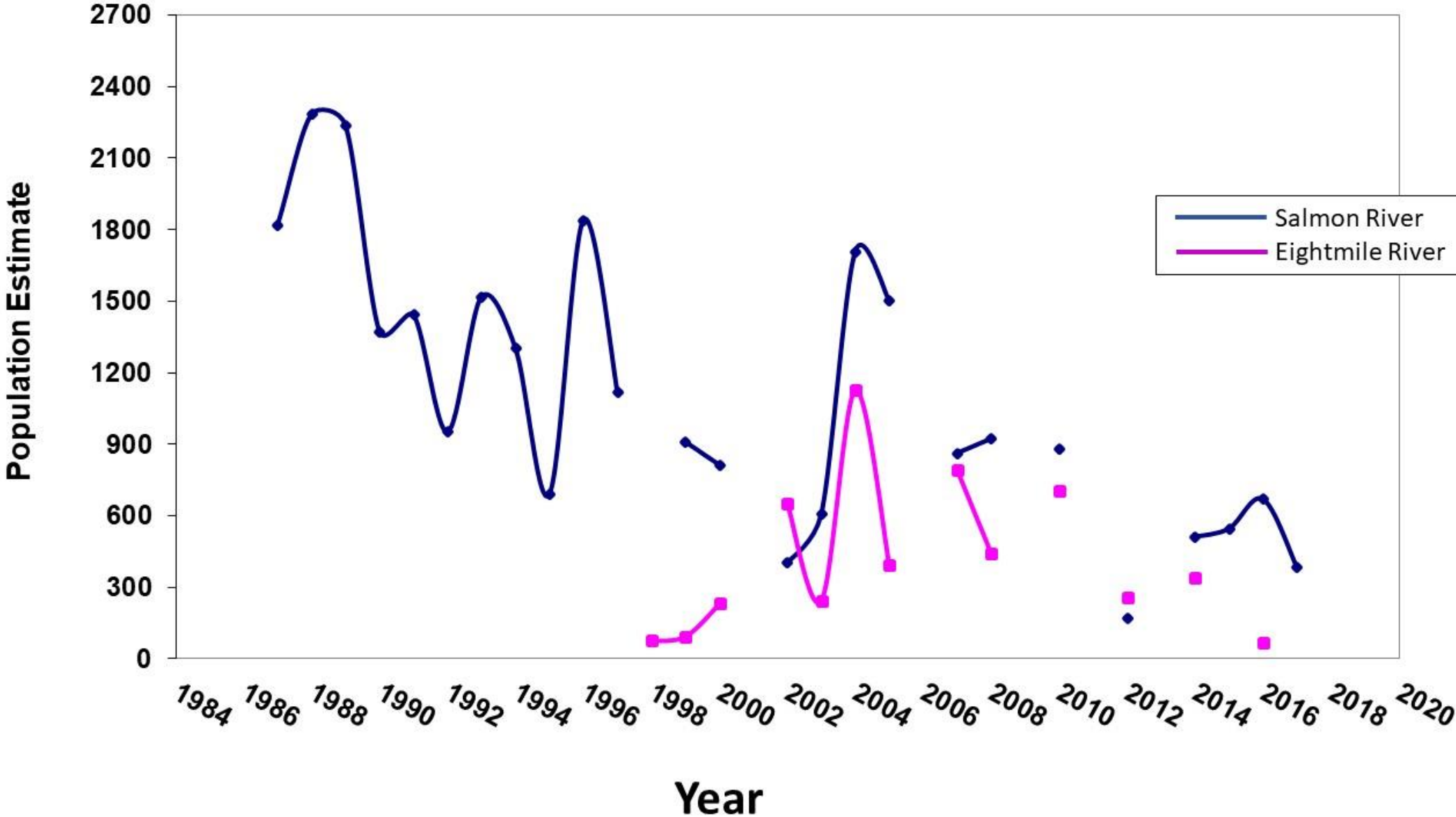
Sea Lamprey Passage- Merrimack River, Massachusetts



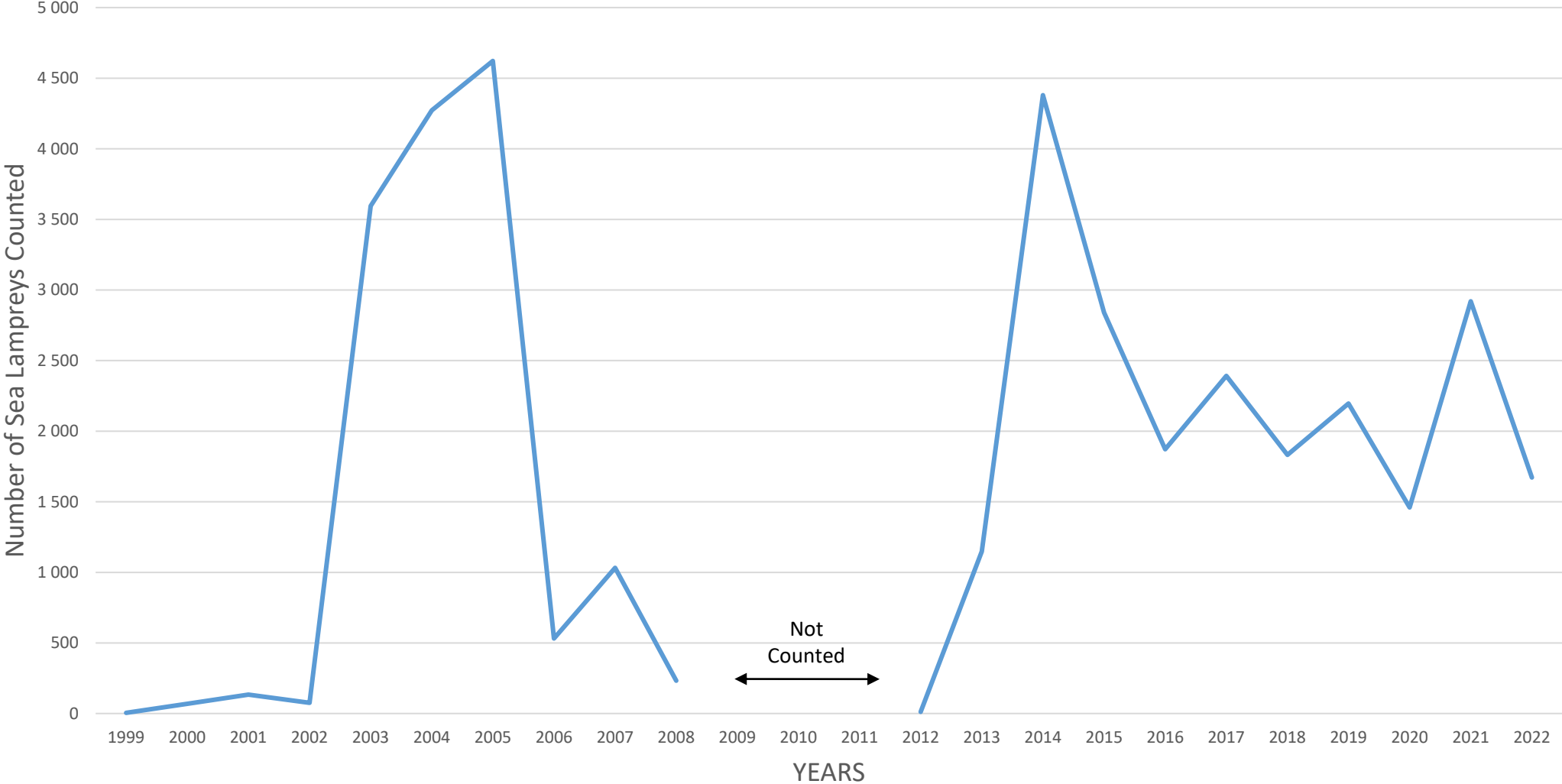
Sea Lamprey Passage- Connecticut River, Massachusetts



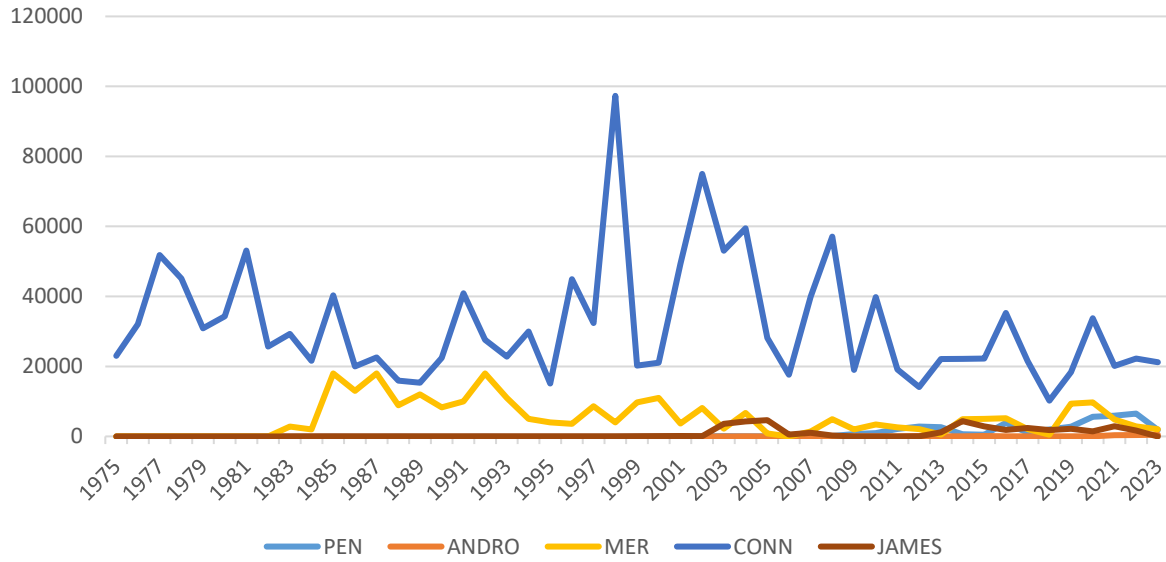
Nest Survey Data from Tributaries of the Connecticut River



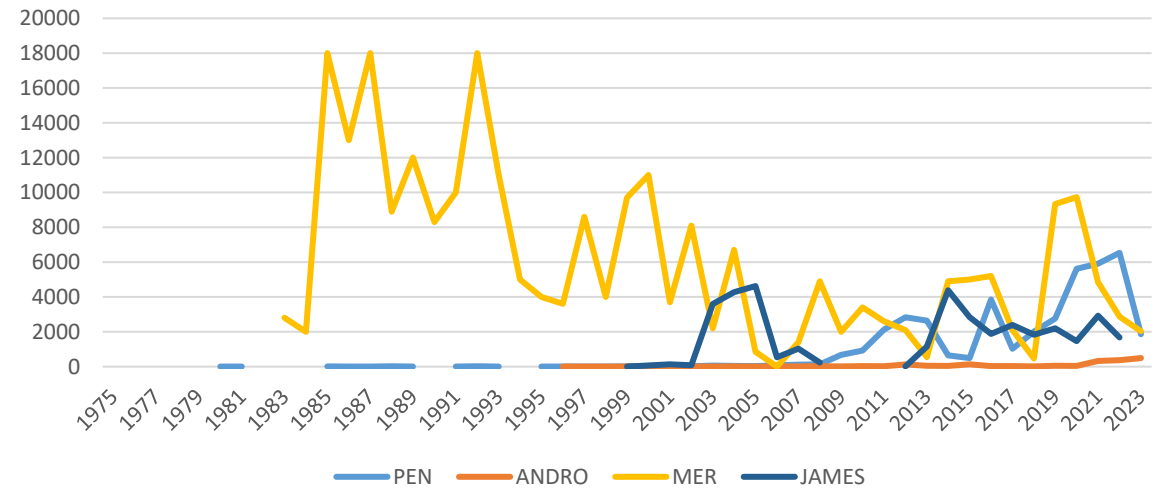
Sea Lamprey Passage, James River, Virginia



Sea Lamprey Runs in Selected US Rivers



Sea Lamprey Runs in Selected US Rivers w/o Connecticut River



SUMMARY:

Penobscot River	increasing
Androscoggin River	increasing
Merrimack River	decreasing
Connecticut River	stable
Connecticut River tributaries (CT)	decreasing
James River	stable

These are all large rivers and the only ones that have counting capabilities. Many large rivers are not represented. There are lamprey runs in many small rivers with some or none counting capabilities. Even if one added up all the available numbers in these small rivers, they would not likely approaching one of these large rivers in numbers.