

Population Assessment of Alosine in the Upper Chesapeake Bay

Maryland DNR



2024 SRAFRC Annual Meeting
10 December 2024

Outline



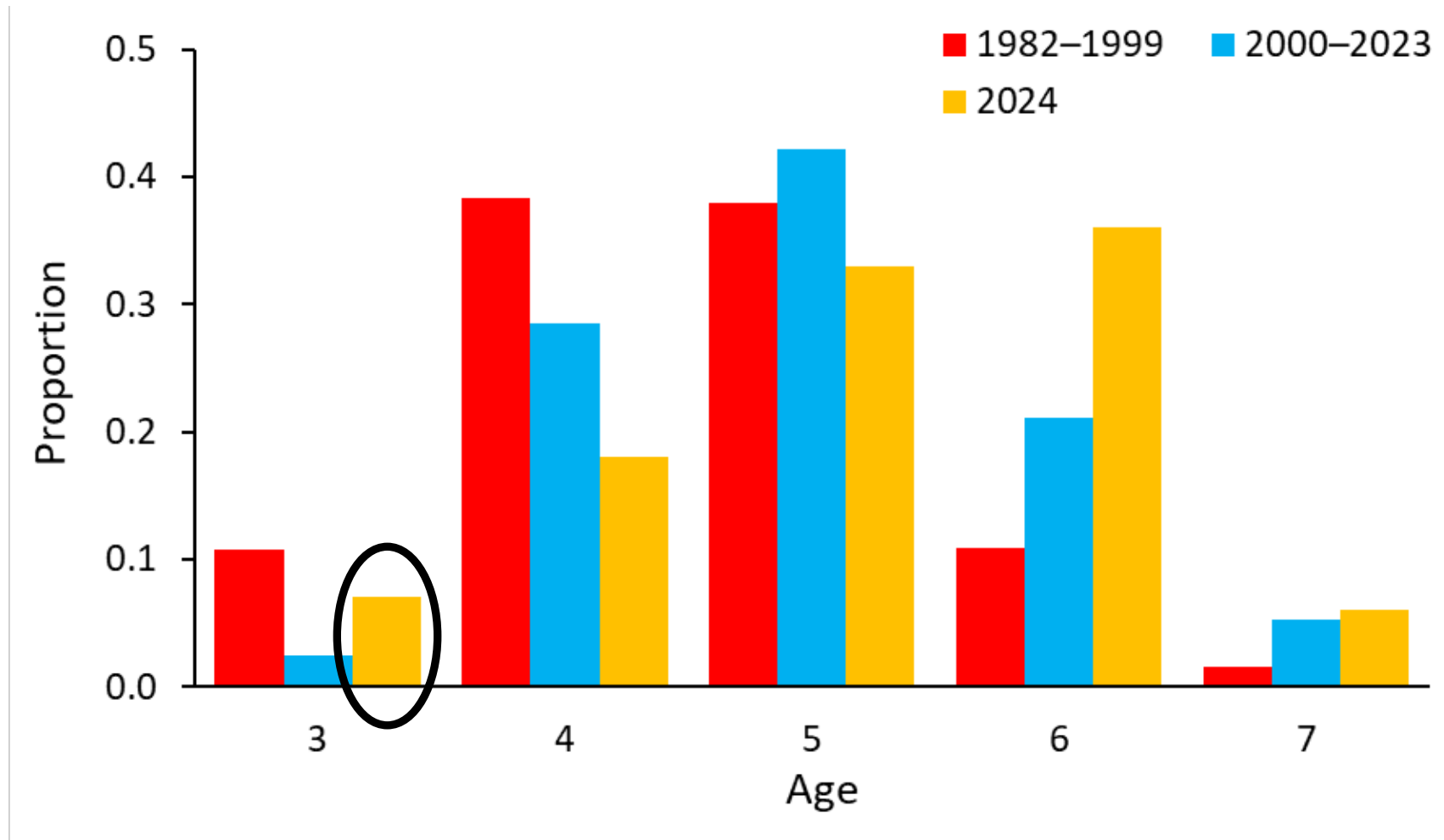
- Hook & Line Tagging Survey
 - Conowingo Tailrace
 - 1984 – 2024
 - Adult American shad
- Creel and Logbook Surveys
 - Fisherman’s Park / Susquehanna River
 - 2000 – 2024
 - Adult American & hickory shad
- Striped Bass Spawning Stock Survey (Gillnet)
 - Upper Chesapeake Bay
 - 1991 – 2024
 - Adult American, hickory, & gizzard shad
- Estuarine Juvenile Finfish Survey (Seine)
 - Upper Chesapeake Bay
 - 1959 – 2024
 - Juvenile American shad, river herring, & gizzard shad

Hook & Line

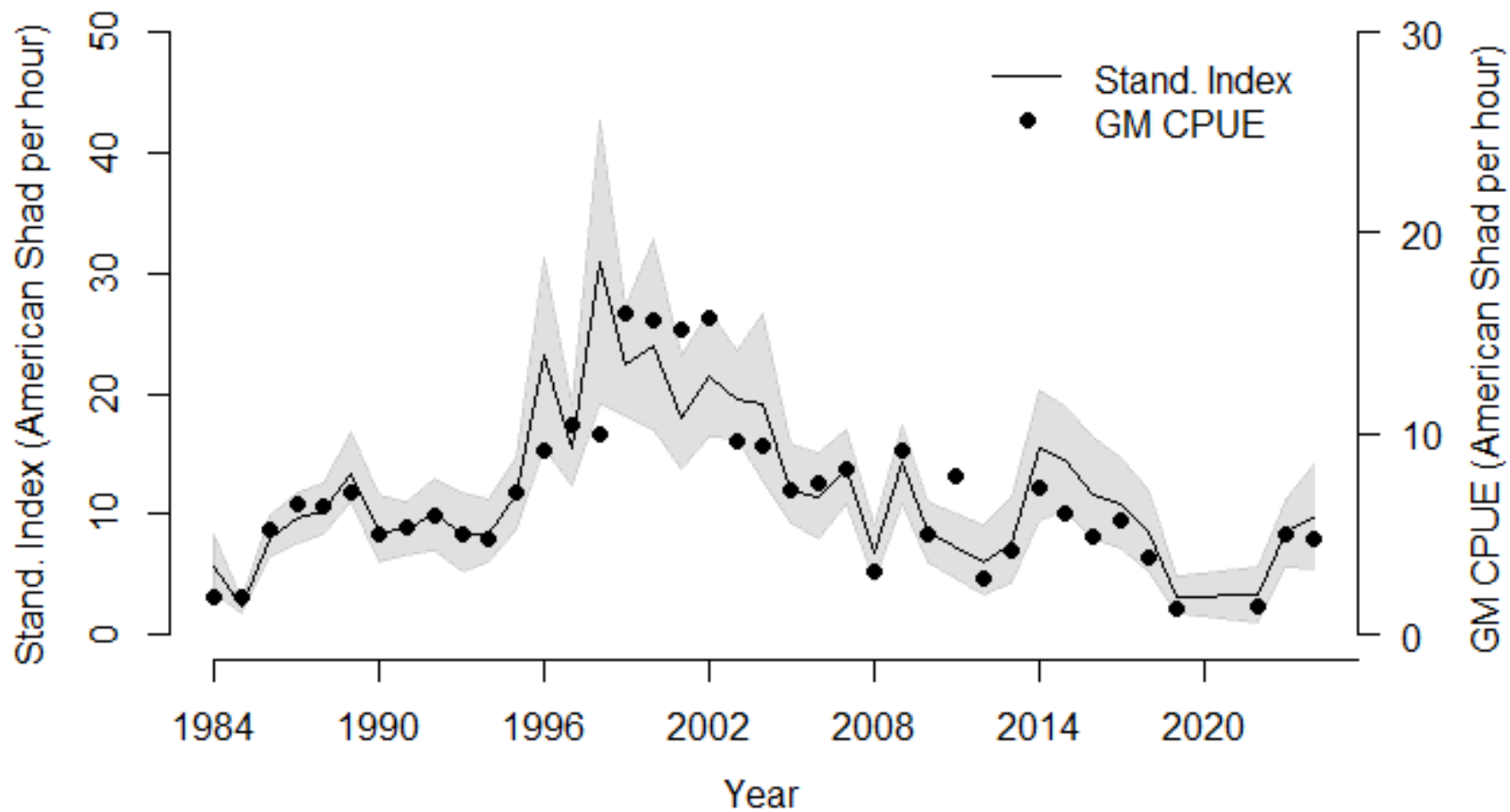
- 1984 – 2024
- Measure, sex, scale, and tag all healthy/non-spent American shad
- 2024
 - 266 caught
 - 211 successfully aged
 - 223 tagged
 - 5 recaptured in fish lifts, all from 2024



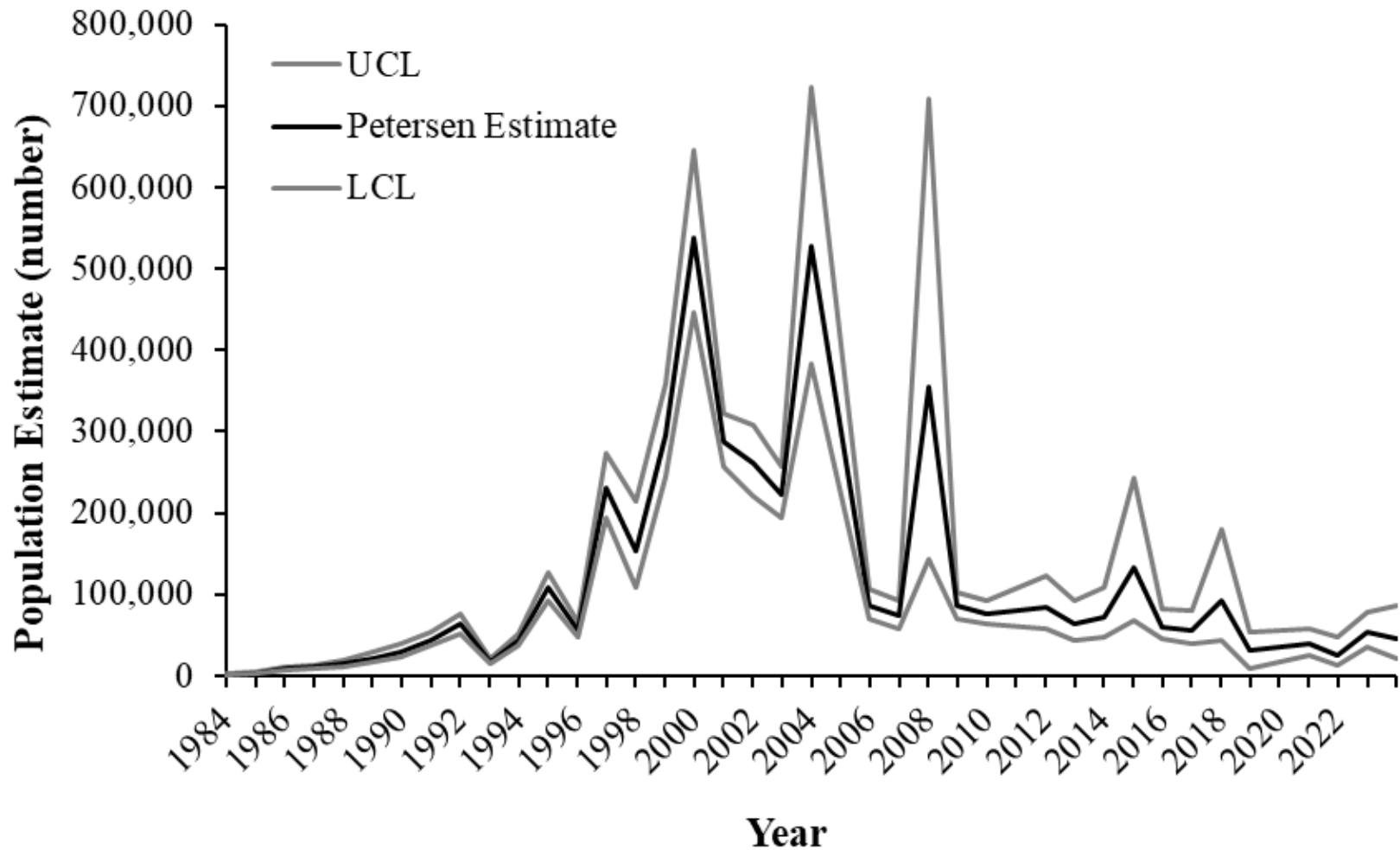
Age Distribution



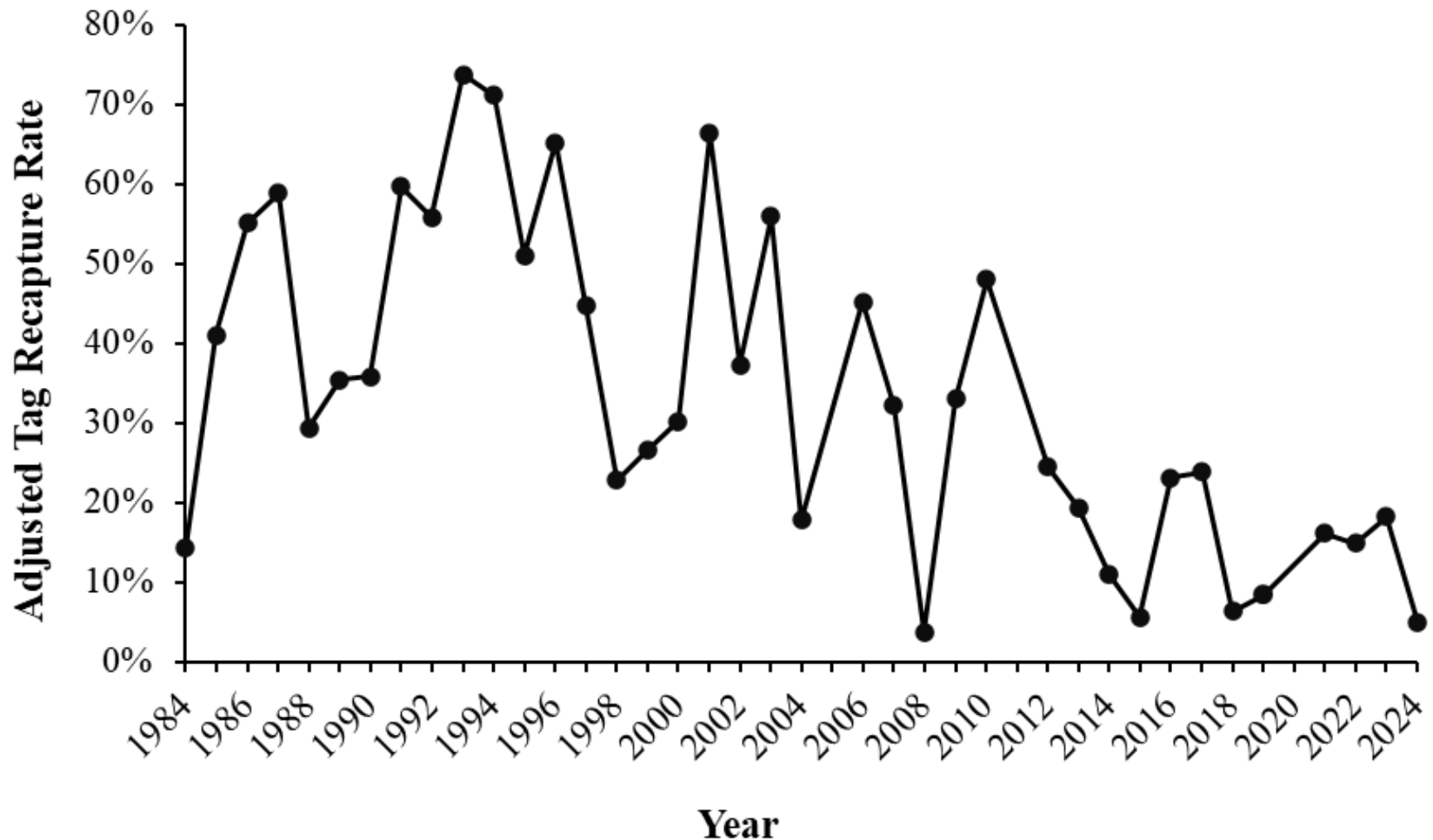
H&L Index



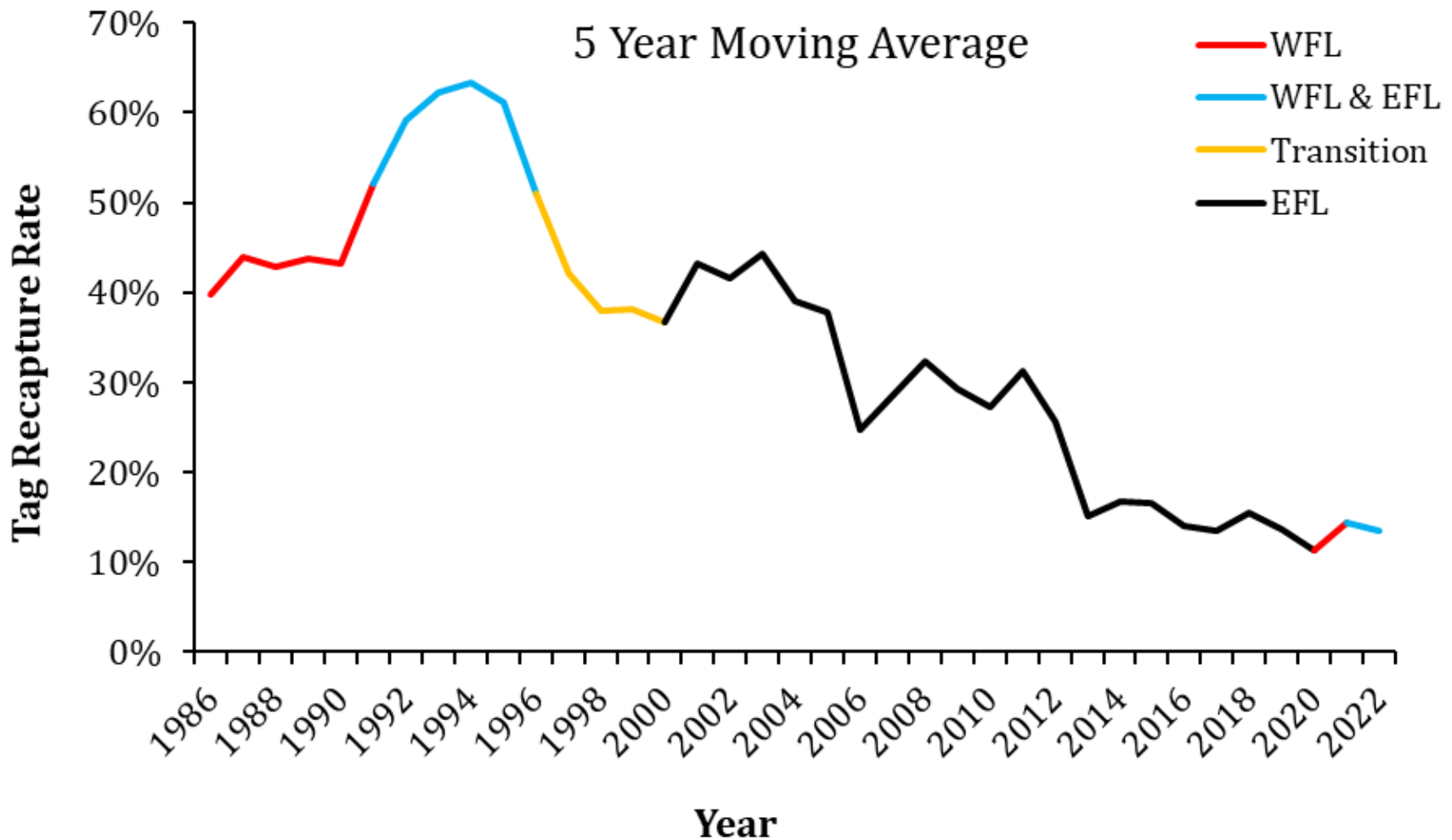
Population Size



Fish Lift Tag Recap Rate



Fish Lift Tag Recap Rate

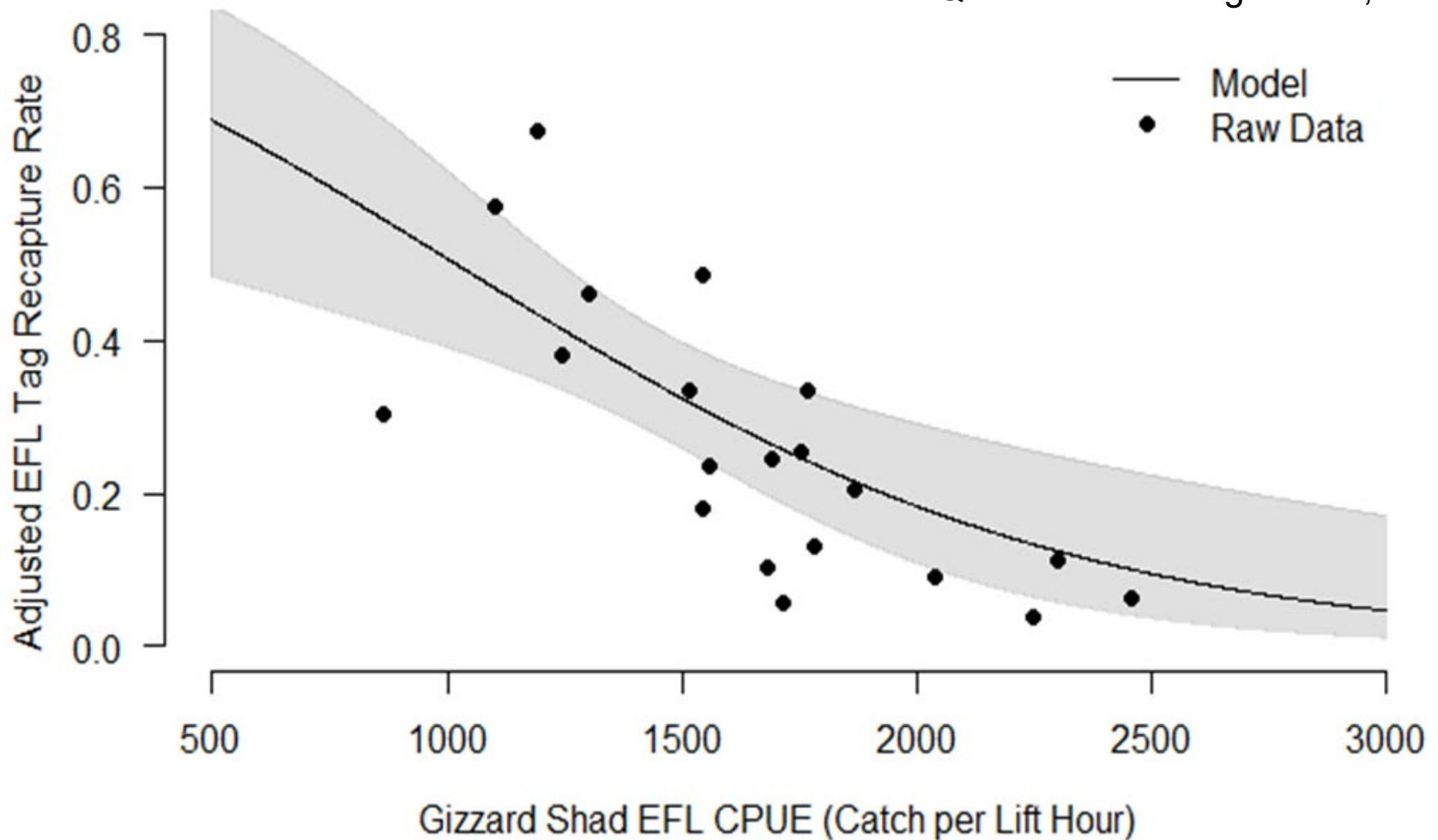


Tag Recaps Vs Gizzard Shad Abundance



2000–2024

Quasibinomial Regression; $R^2 = 0.43$



Impacts on American Shad Restoration



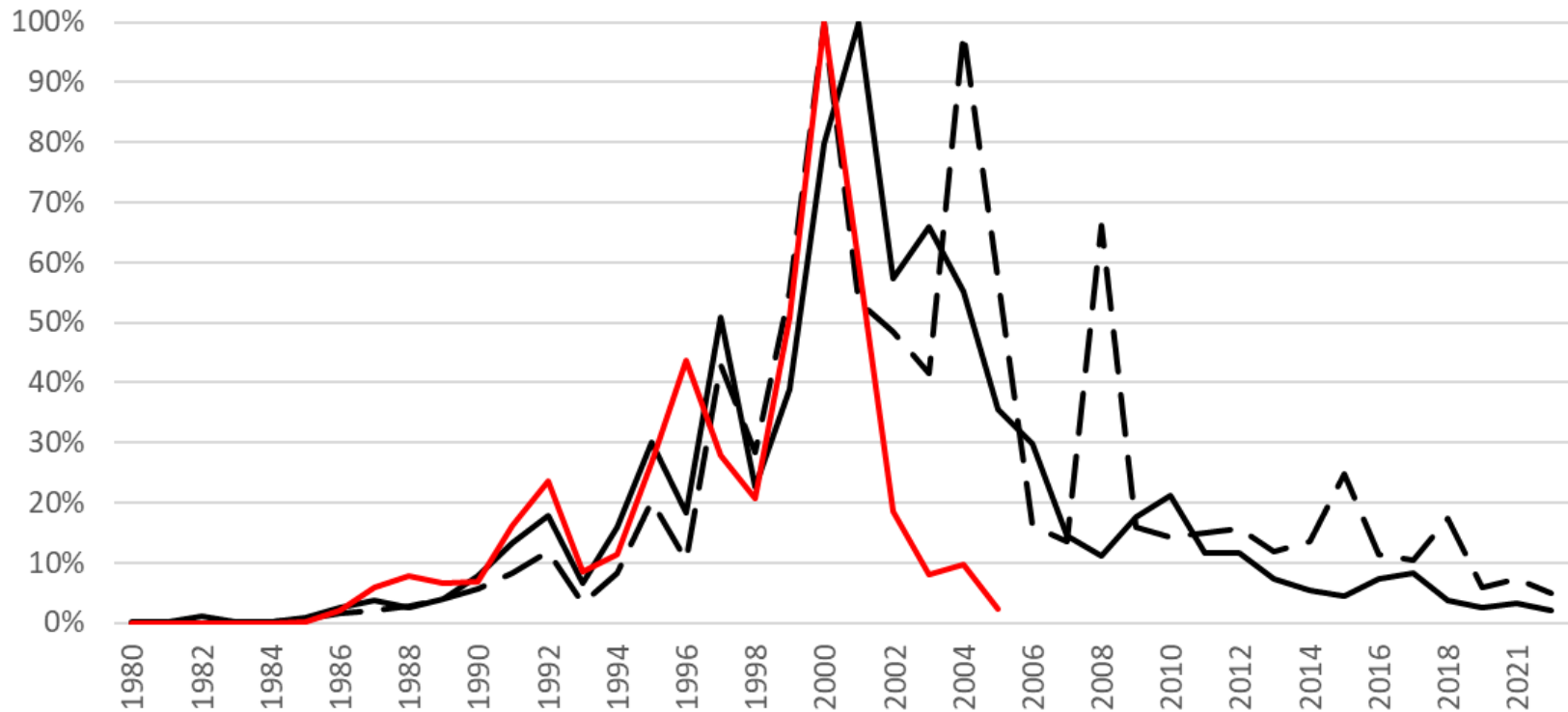
- Percentage of fish to make it past Safe Harbor or York Haven Dam
 - Trap and transport 1988–1996 (WFL & EFL)
 - York Haven: 49%
 - For every 1 fish transported, 8 returned five years later

Future Returns from Trap and Transport



1,926,570 (population) / 236,195 (transported) = 8.16 fish per transported adult

Scaled FP Metrics



— Total AS passed at Cono
81%

- - Tailrace Pop Est
88%

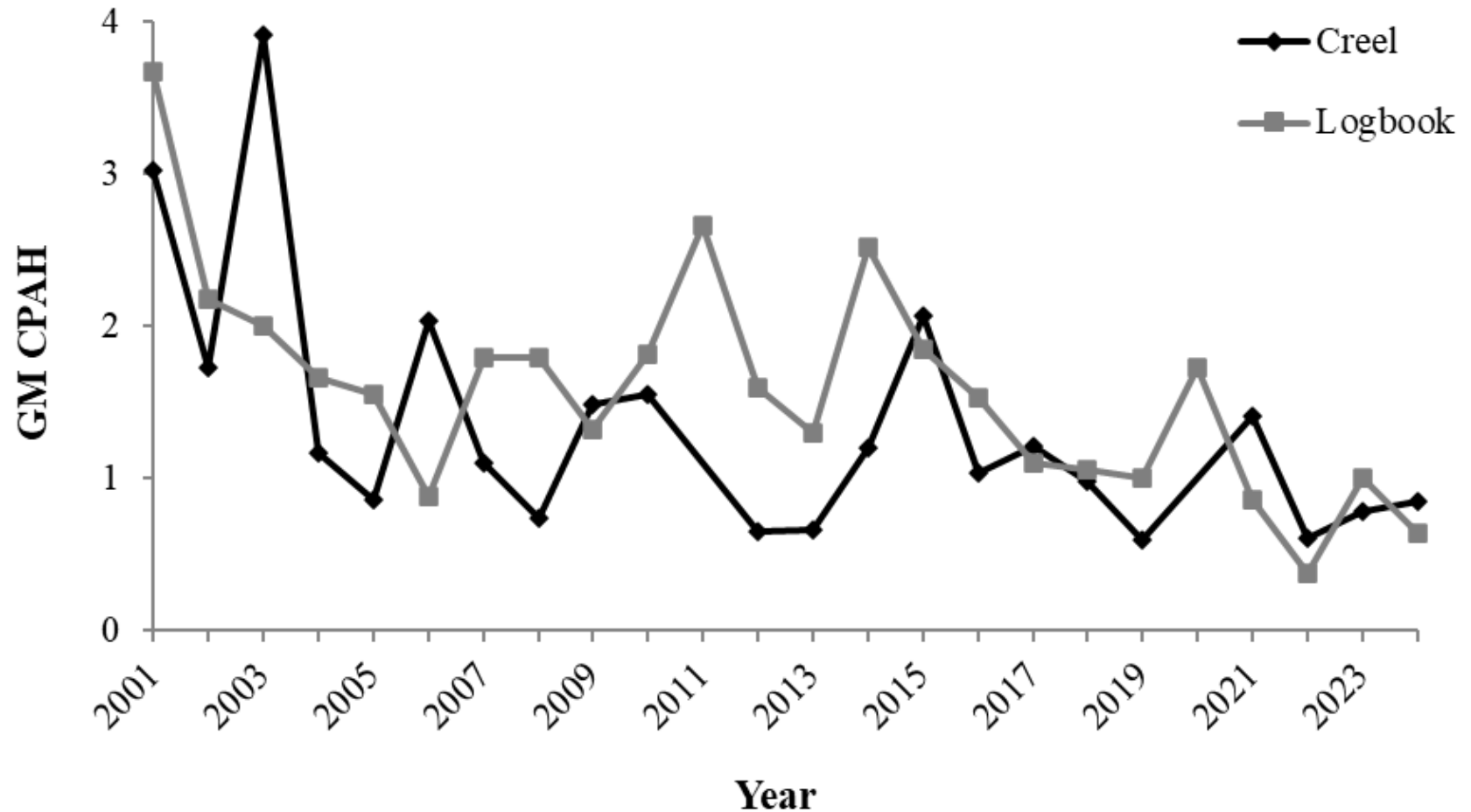
— Adults Moved w/ 5yr delay
= R^2 (1985–2001)

Impacts on American Shad Restoration

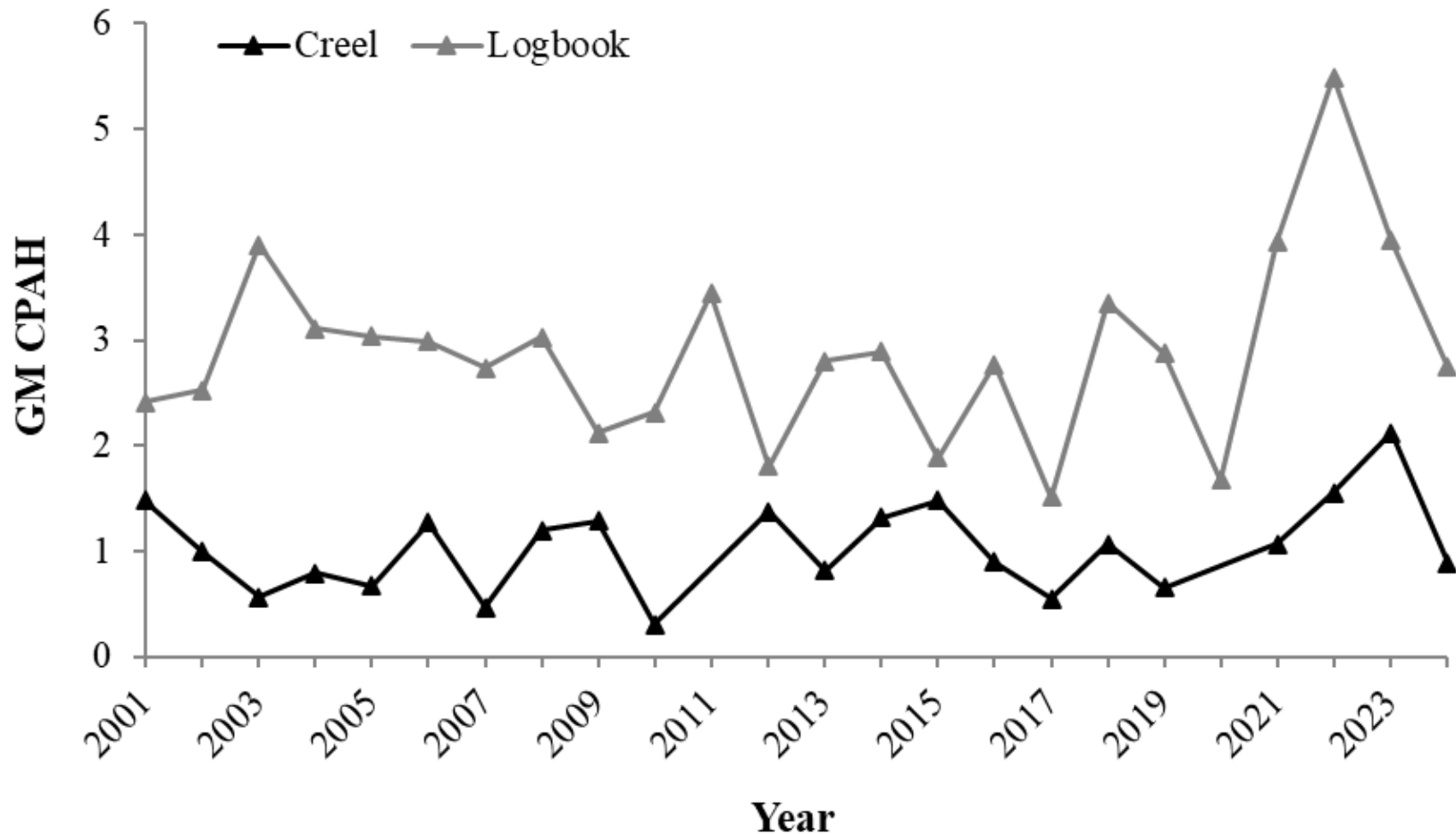


- Percentage of fish to make it past Safe Harbor or York Haven Dam
 - Trap and transport 1988–1996 (WFL & EFL)
 - York Haven: 49%
 - For every 1 fish transported, 8 returned five years later
 - >13% passage rate ($\sim 1/8$) for population growth
 - Volitional passage 2001–2017 (EFL)
 - Safe Harbor: 8%, York Haven: 1%
 - Trap and transport 2022–2024 (WFL & EFL)
 - Safe Harbor: 13%, York Haven: 11%
 - 2021 T&T turn 4 next year

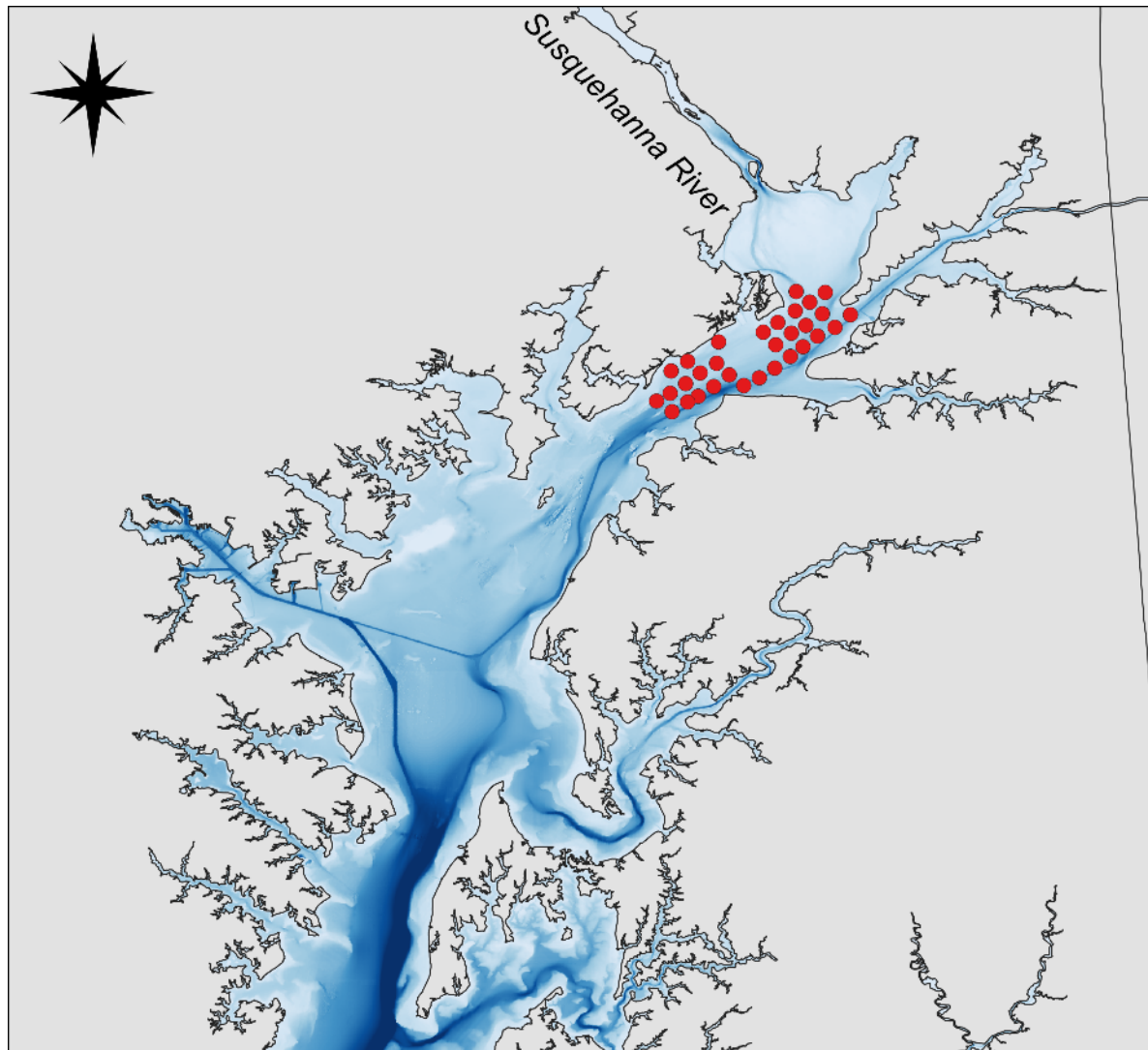
Creel and Logbook American Shad



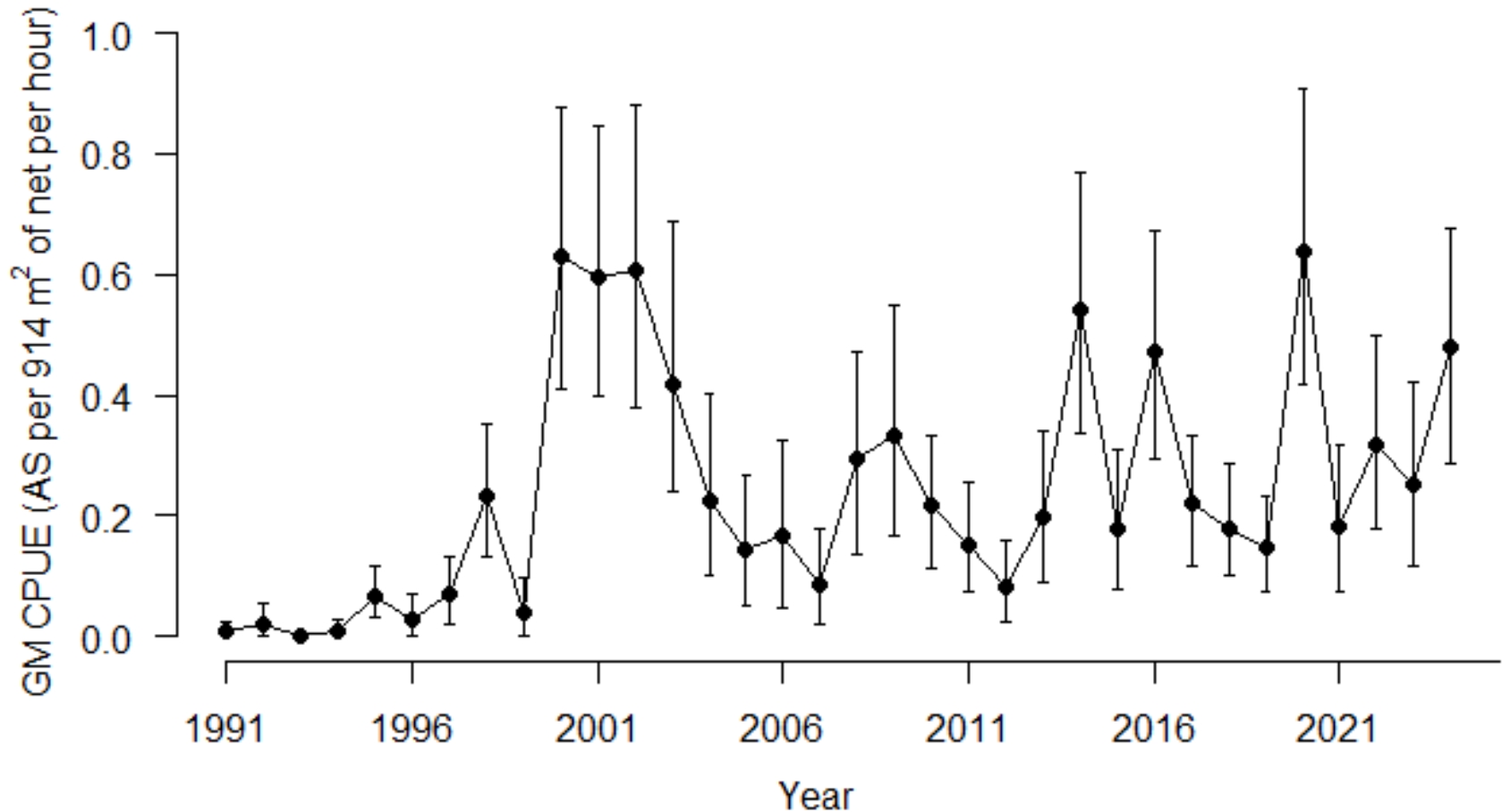
Creel and Logbook Hickory Shad



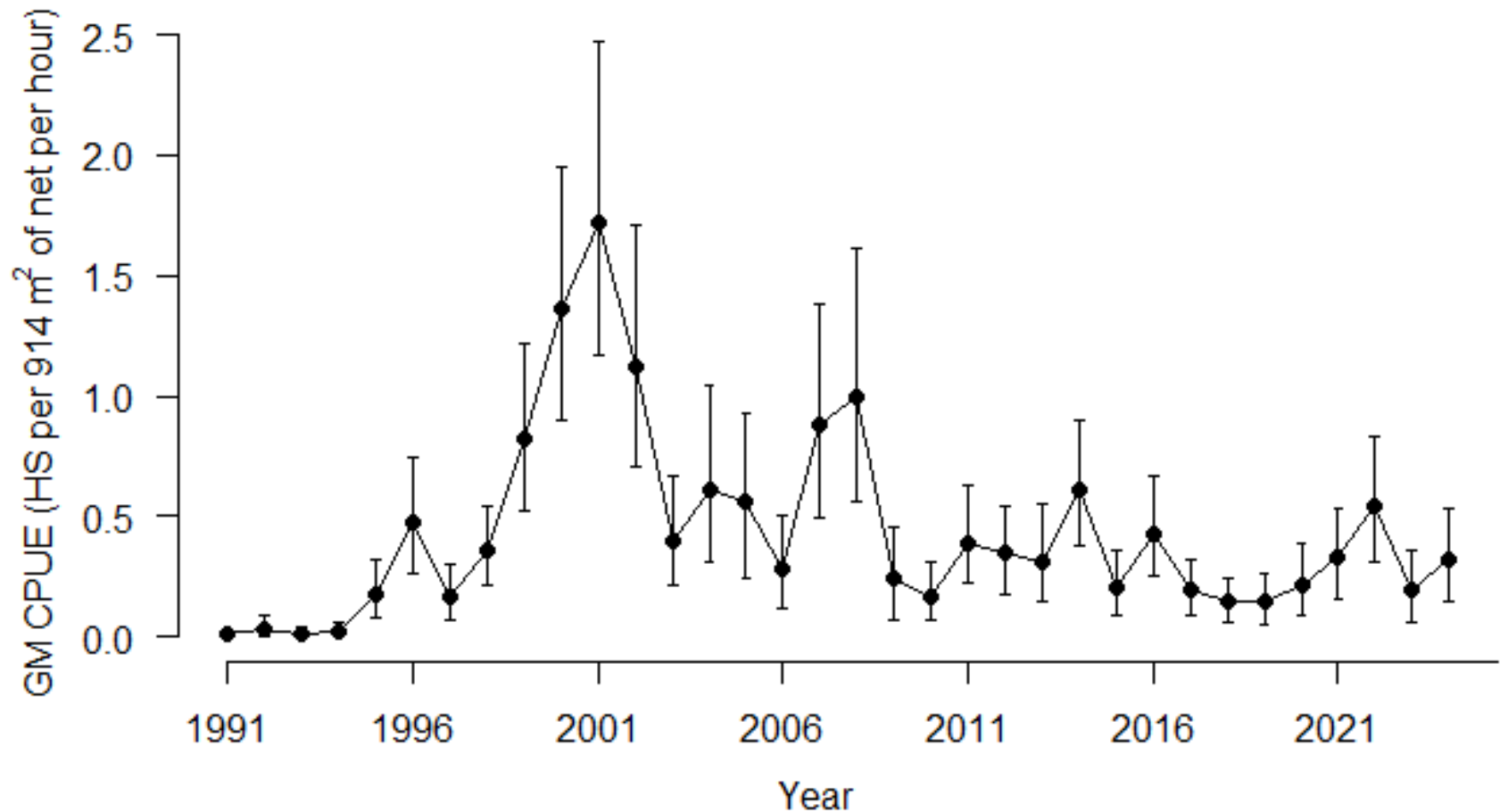
SBSSS (Upper Bay)



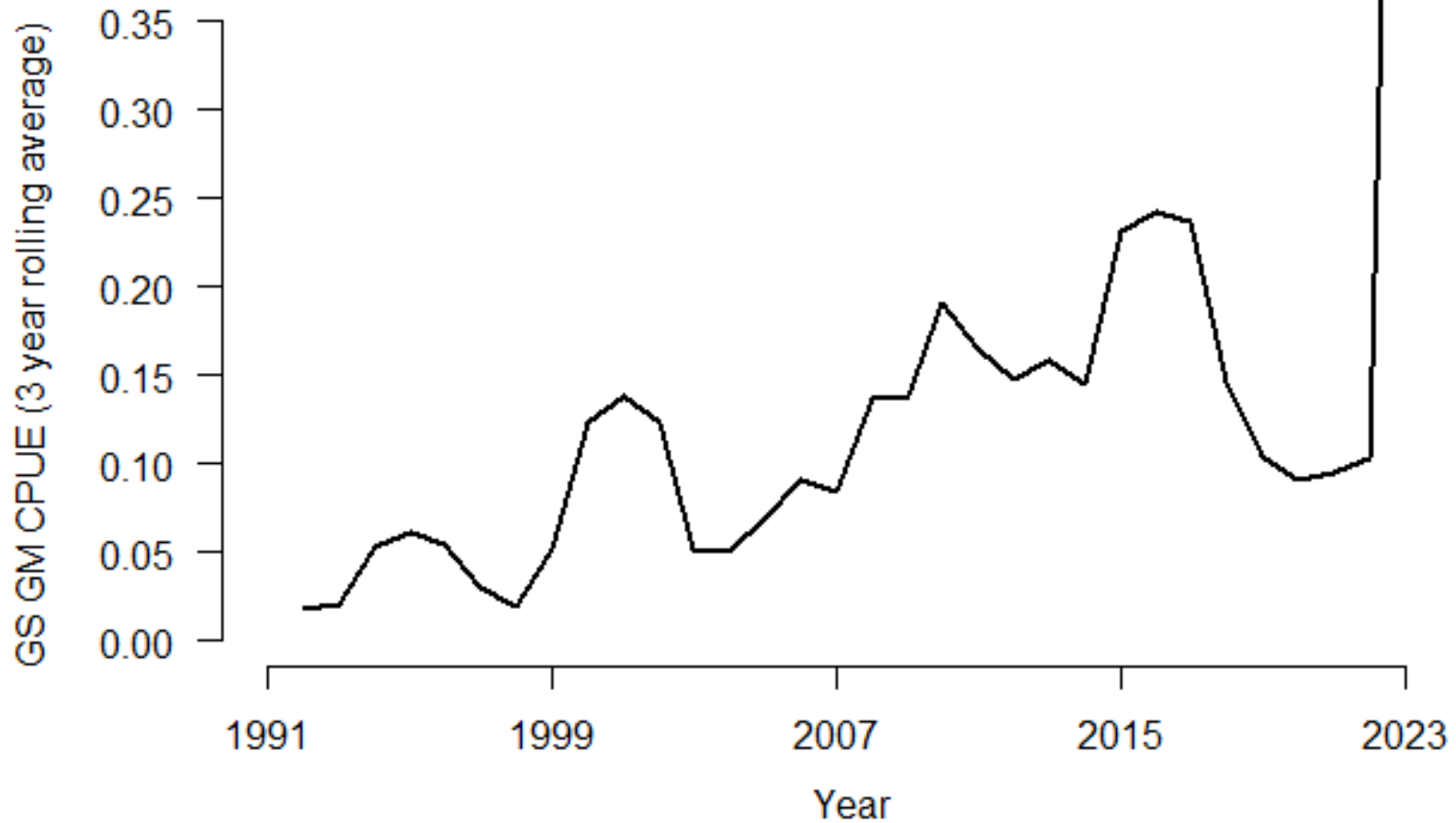
SBSSS (Upper Bay) American Shad



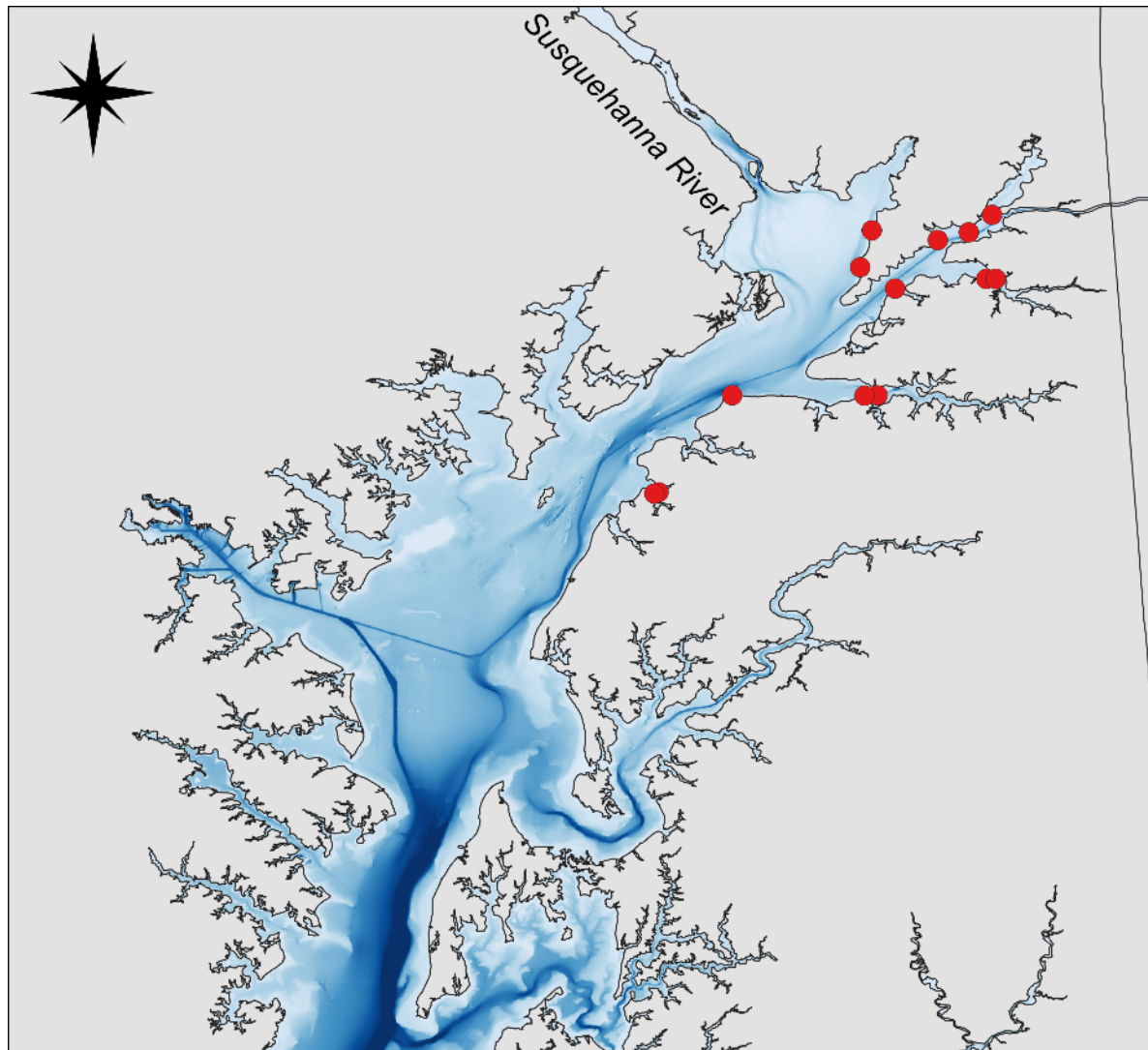
SBSSS (Upper Bay) Hickory Shad



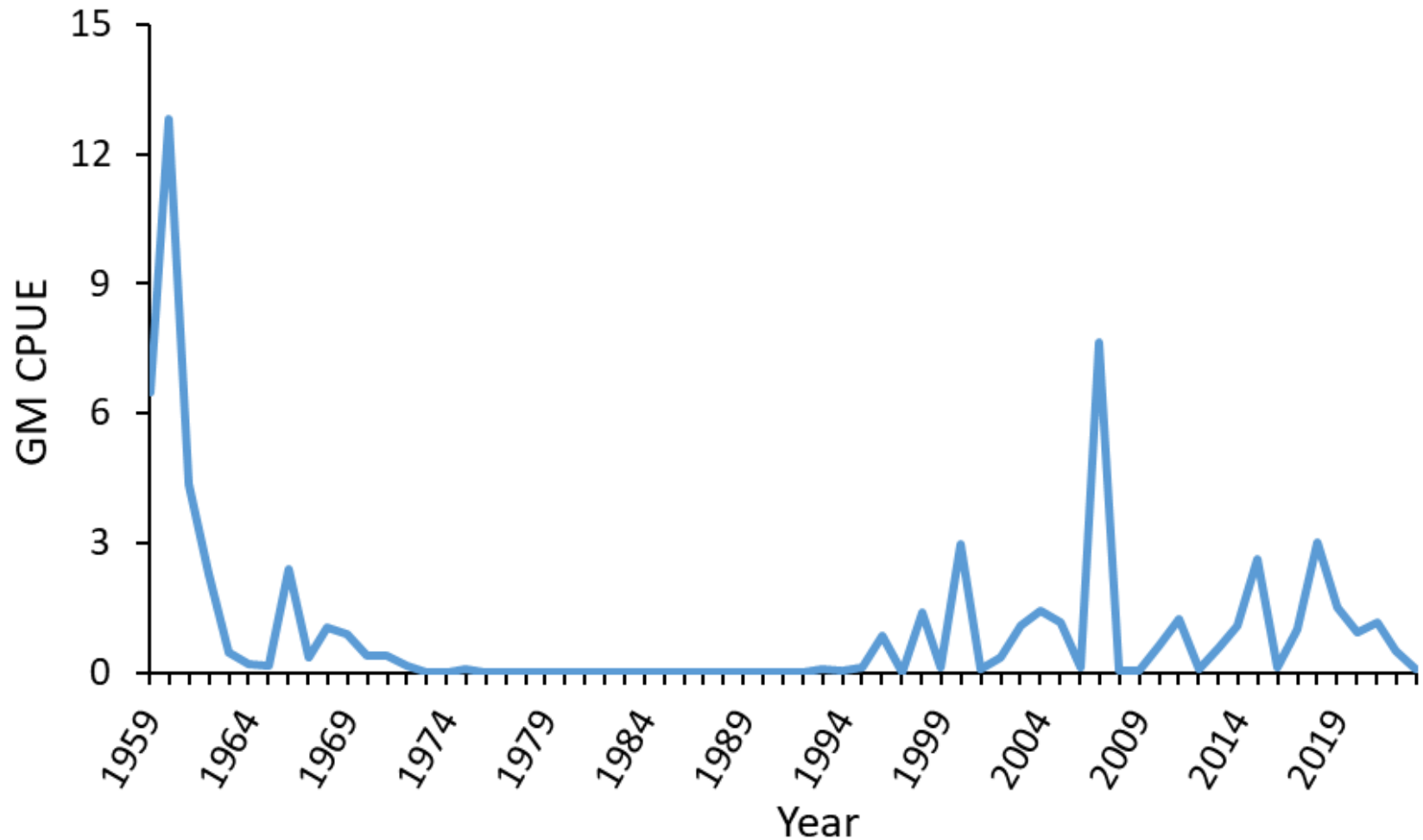
Adult GS Abundance



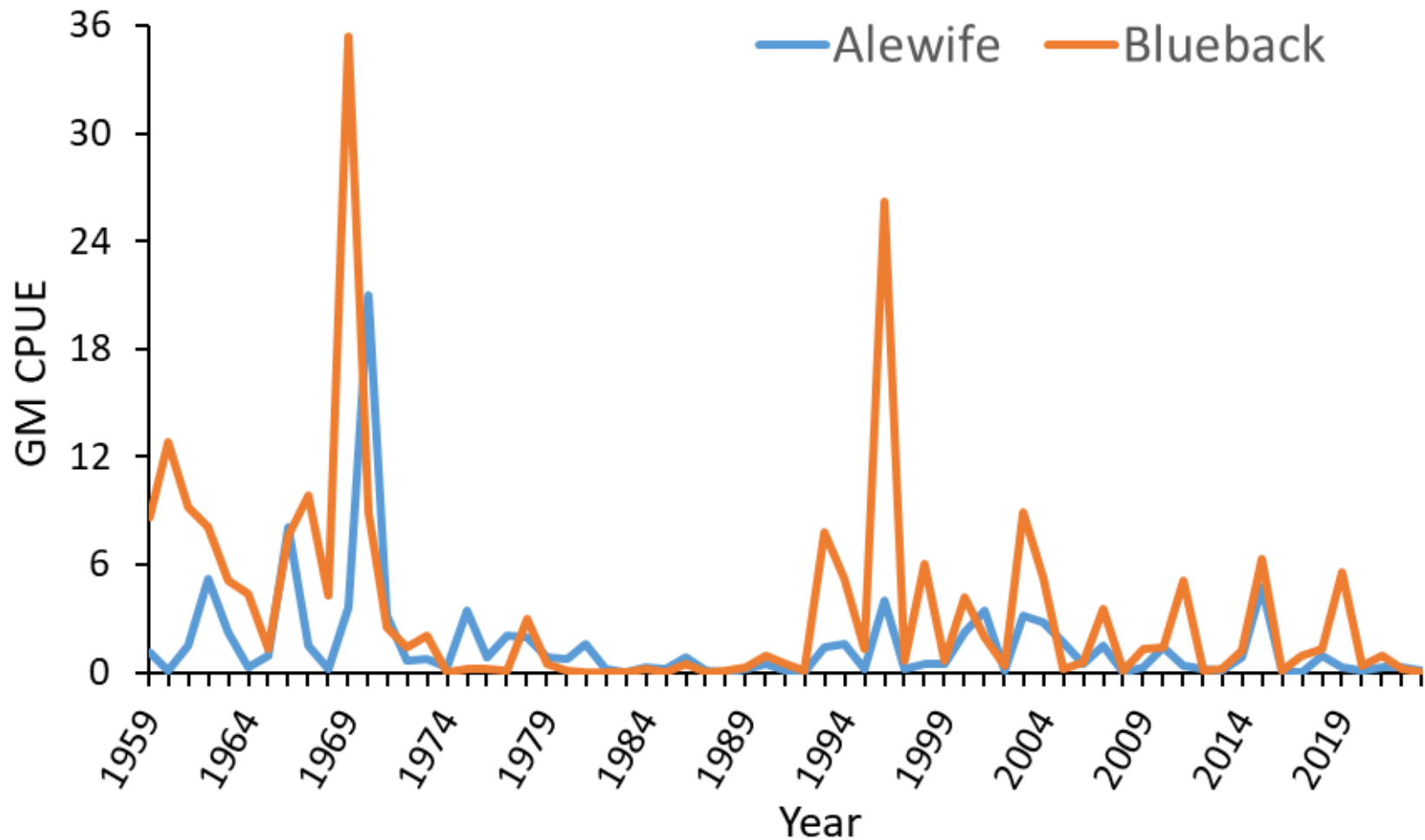
Juvenile Seine Survey



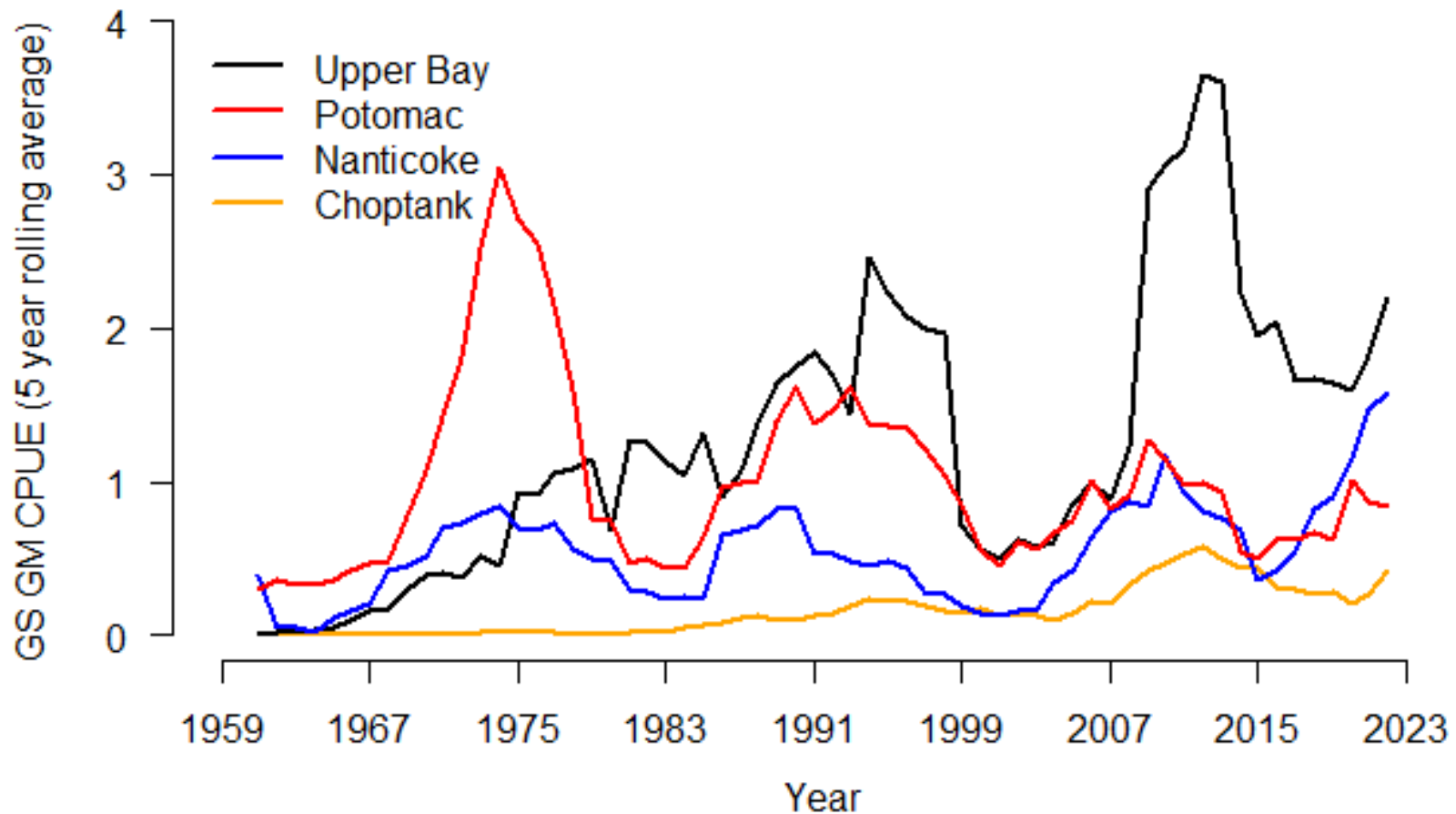
Juvenile American Shad



Juvenile River Herring



Juvenile GS Abundance



Questions?

Matthew Jargowsky
matthew.jargowsky@maryland.gov
410-643-6785 x2116

