

American shad Population Assessment in the Susquehanna River



SRAFRC annual meeting
10 December 2019

Susquehanna/Upper Bay Surveys

Sampling/Studies	Purpose
Seine Survey	Juvenile Abundance Index
Recreational Surveys	Recreational catch and effort
Hook and Line	Relative abundance, population characteristics, & adult population assessment

Hook & Line Survey

Average Year (1987-2019)

- Mid-April through end-May
- Average # of hours: 50
- Average # of fish: 488

2019

- April 15 – May 30
- Hours fished: 31.5
- Fish captured: 53

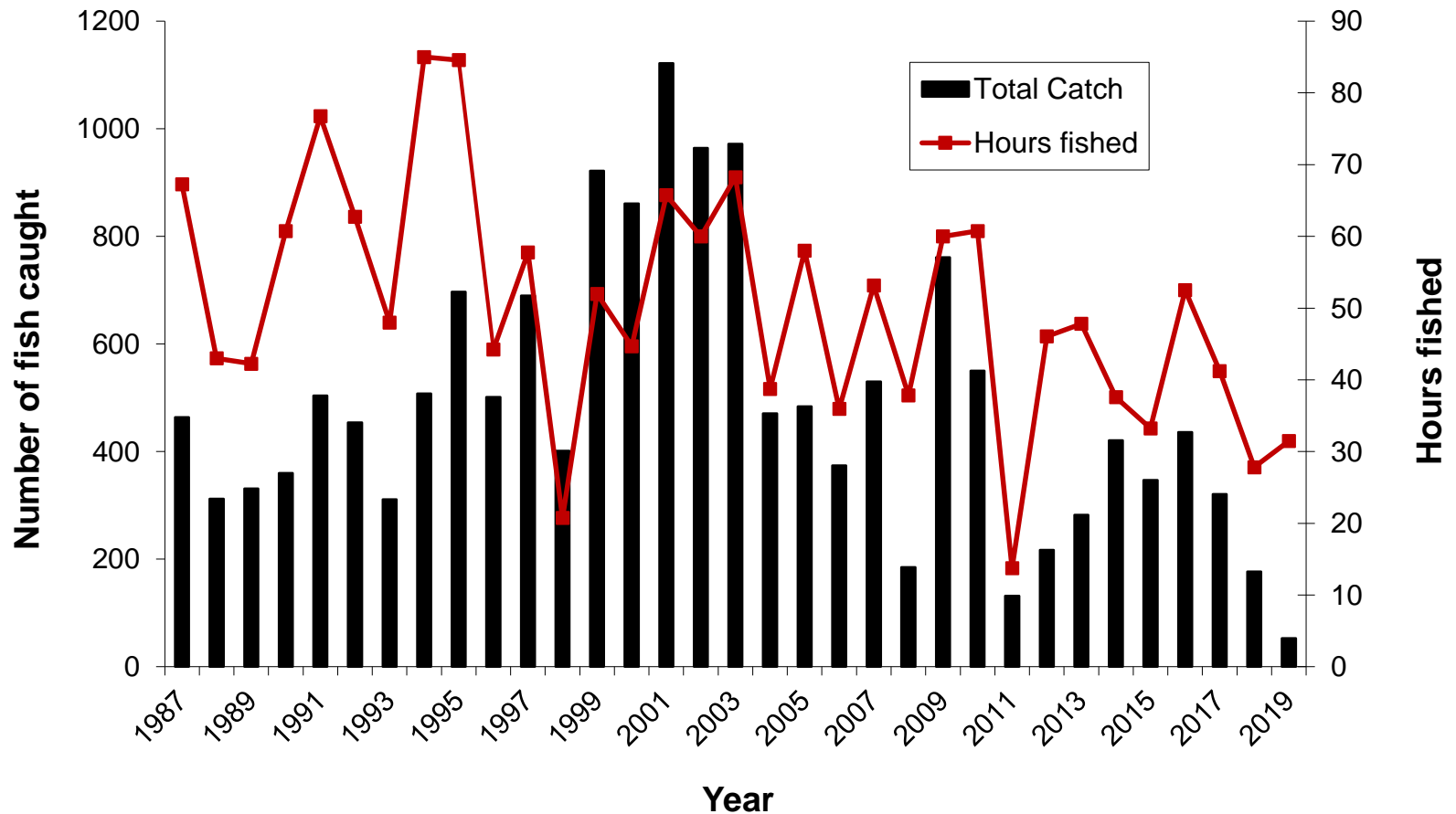


Tagged 43 Fish

M:F Ratio = 1 to 0.69

Hook & Line Survey

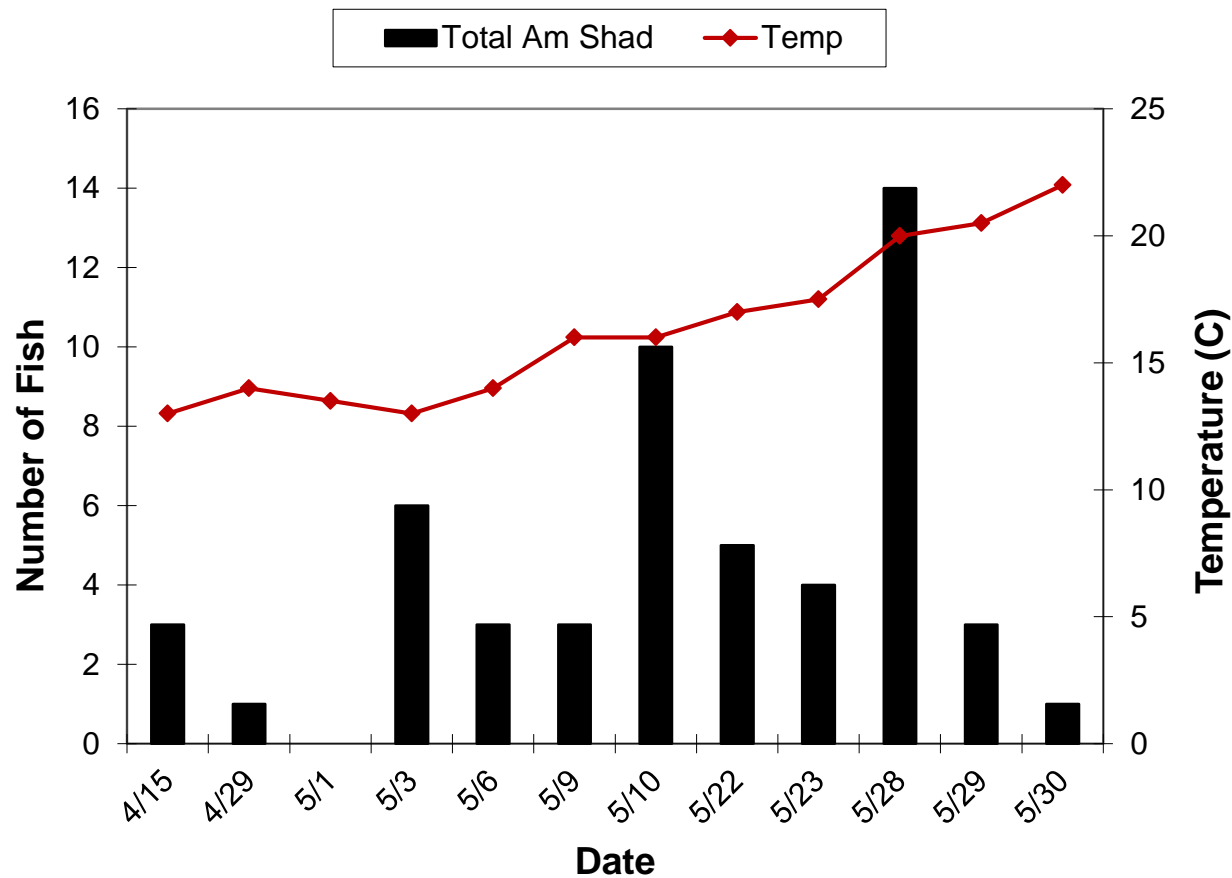
Catch and Effort



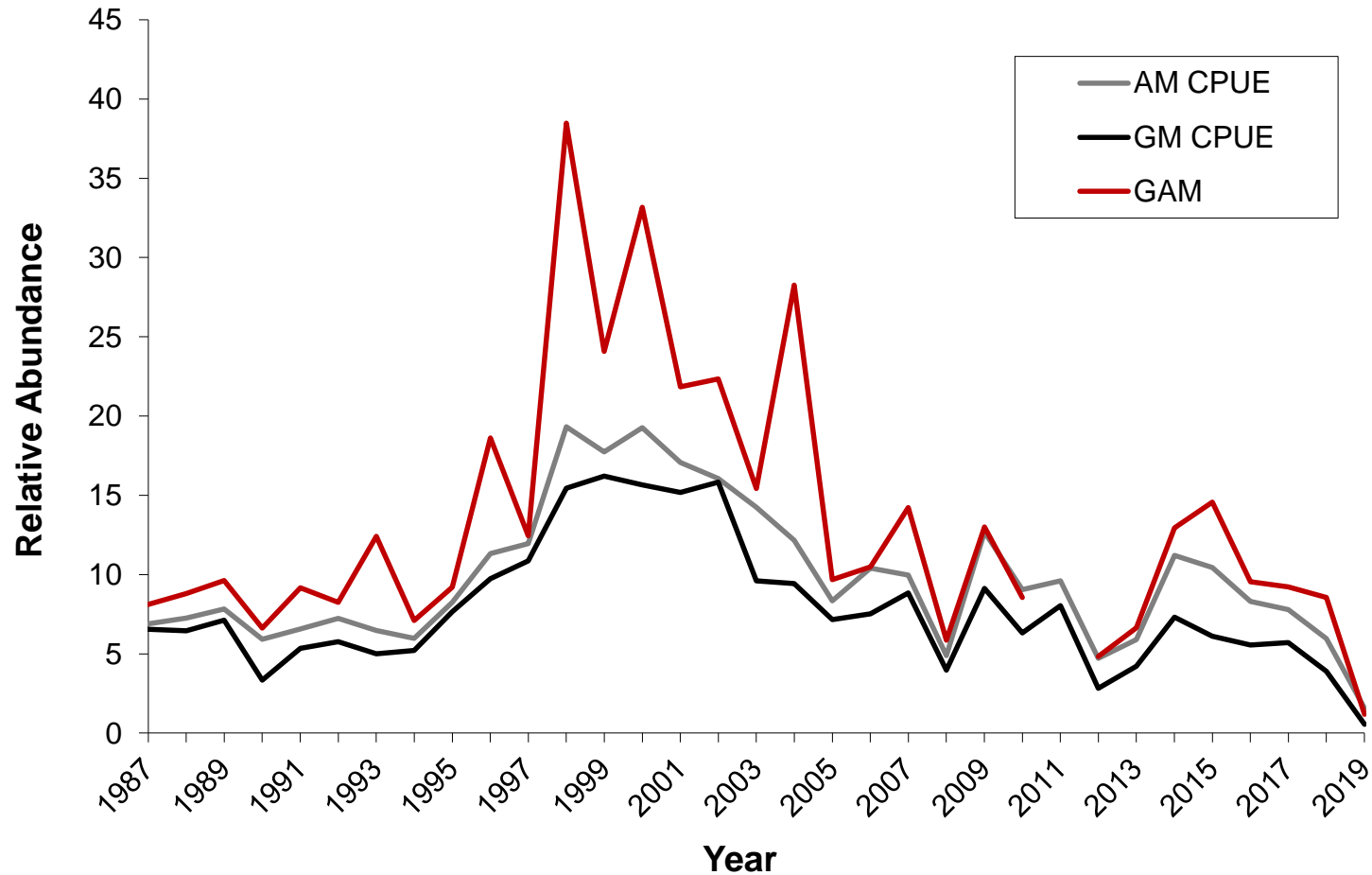
Hook & Line Survey

2019 Daily Counts

Peak catch was on May 28th; Temp was 20°C



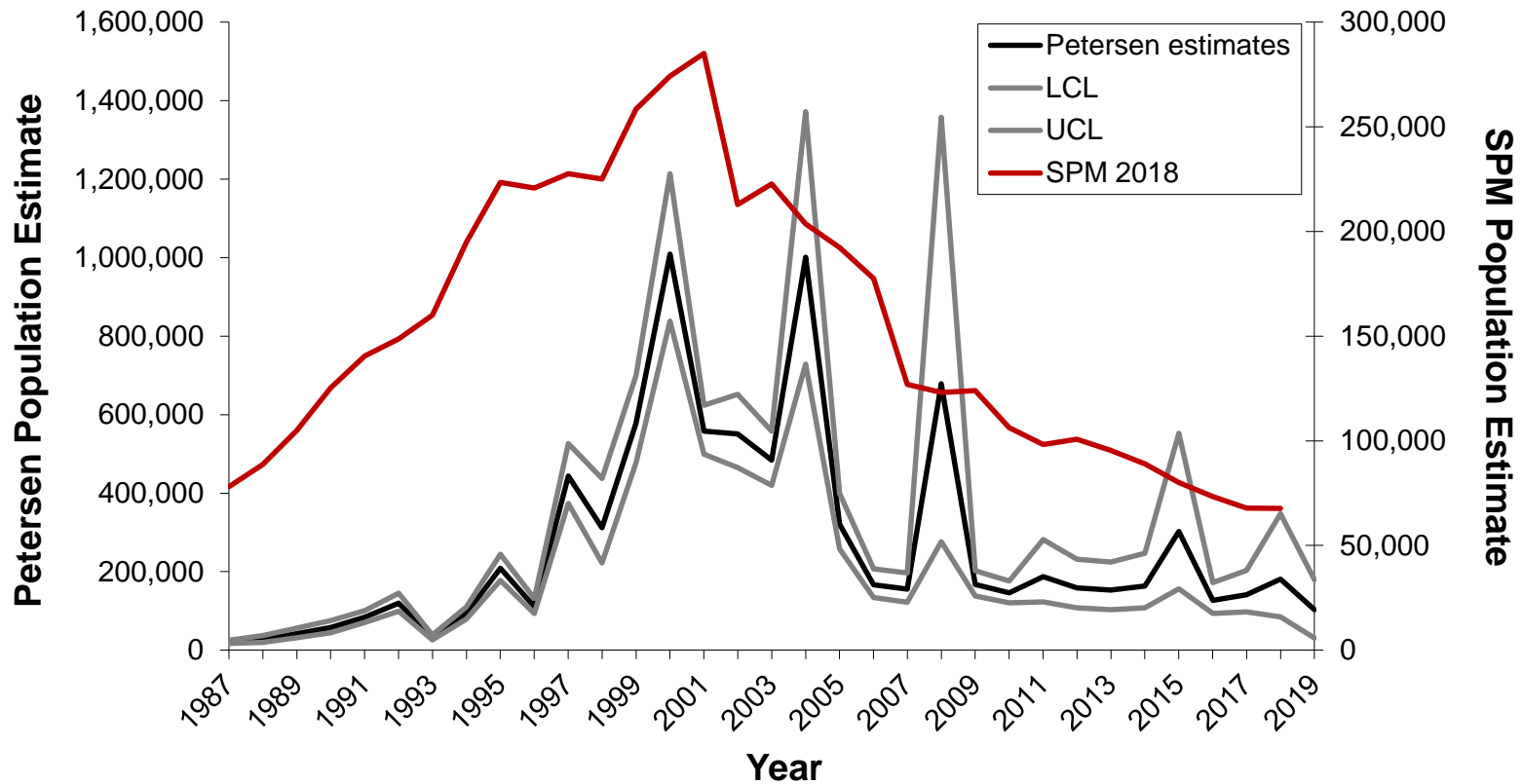
Hook & Line Survey



Best fit model (GAM)

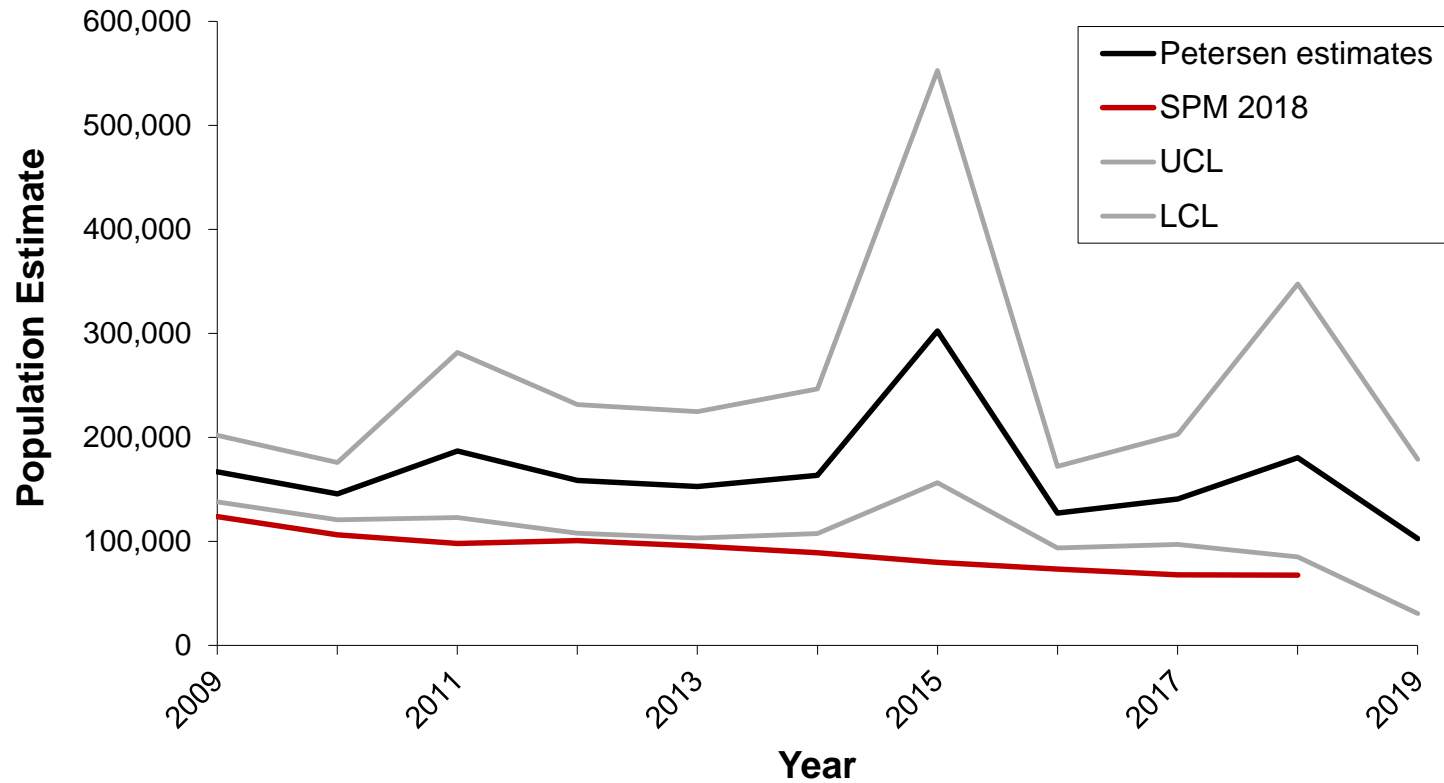
Catch ~ Year + Temp + Flow + Offset(LogEffort)

Population Estimates



- Petersen estimate: 102,813 fish
2004, 2008, 2014, 2015, 2017 – 2019 low recapture rates (<0.1)
- Surplus Production Model Estimate: **No estimate for 2019**
- Trends are more important than point estimates

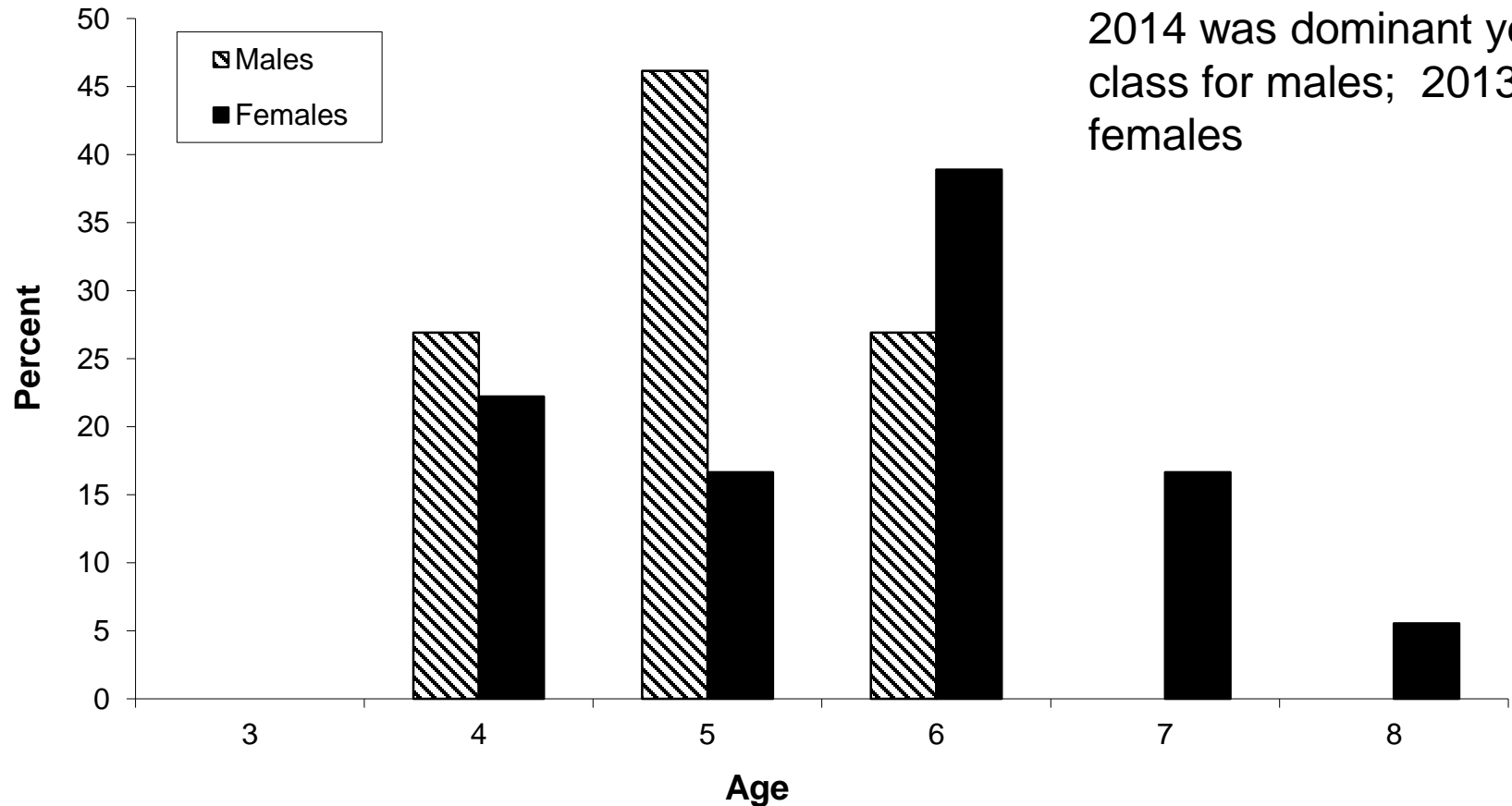
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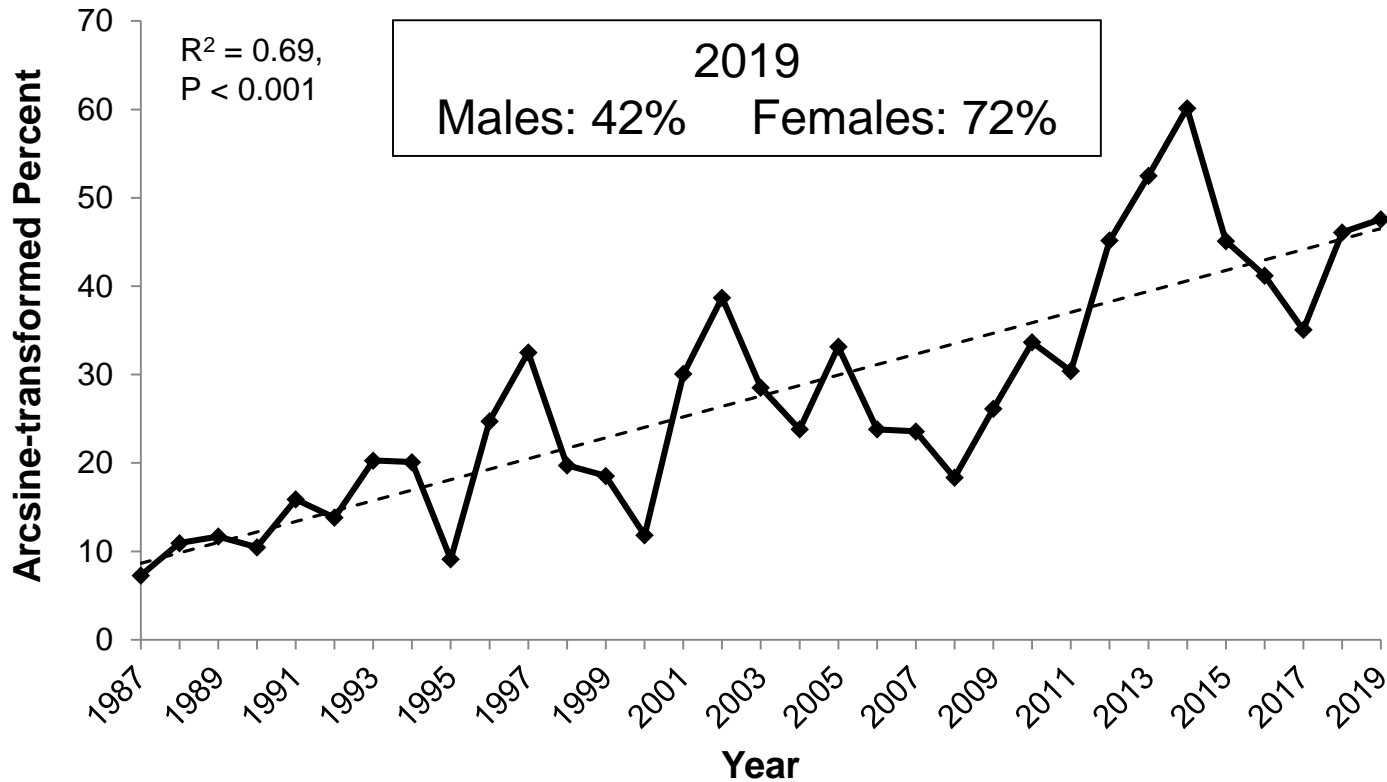
Hook & Line Survey

Age Structure



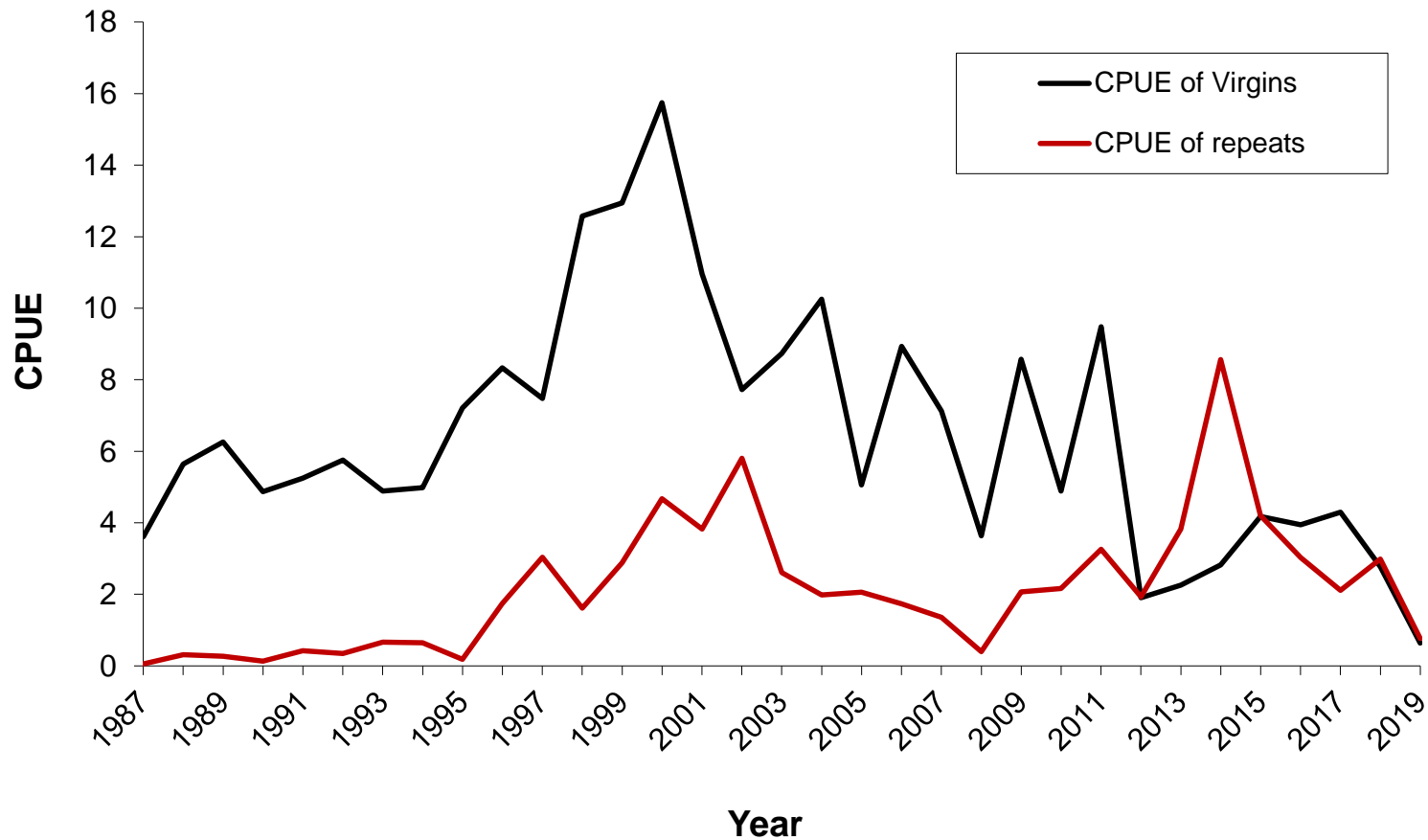
Hook & Line Survey

Repeat spawners in the tailrace

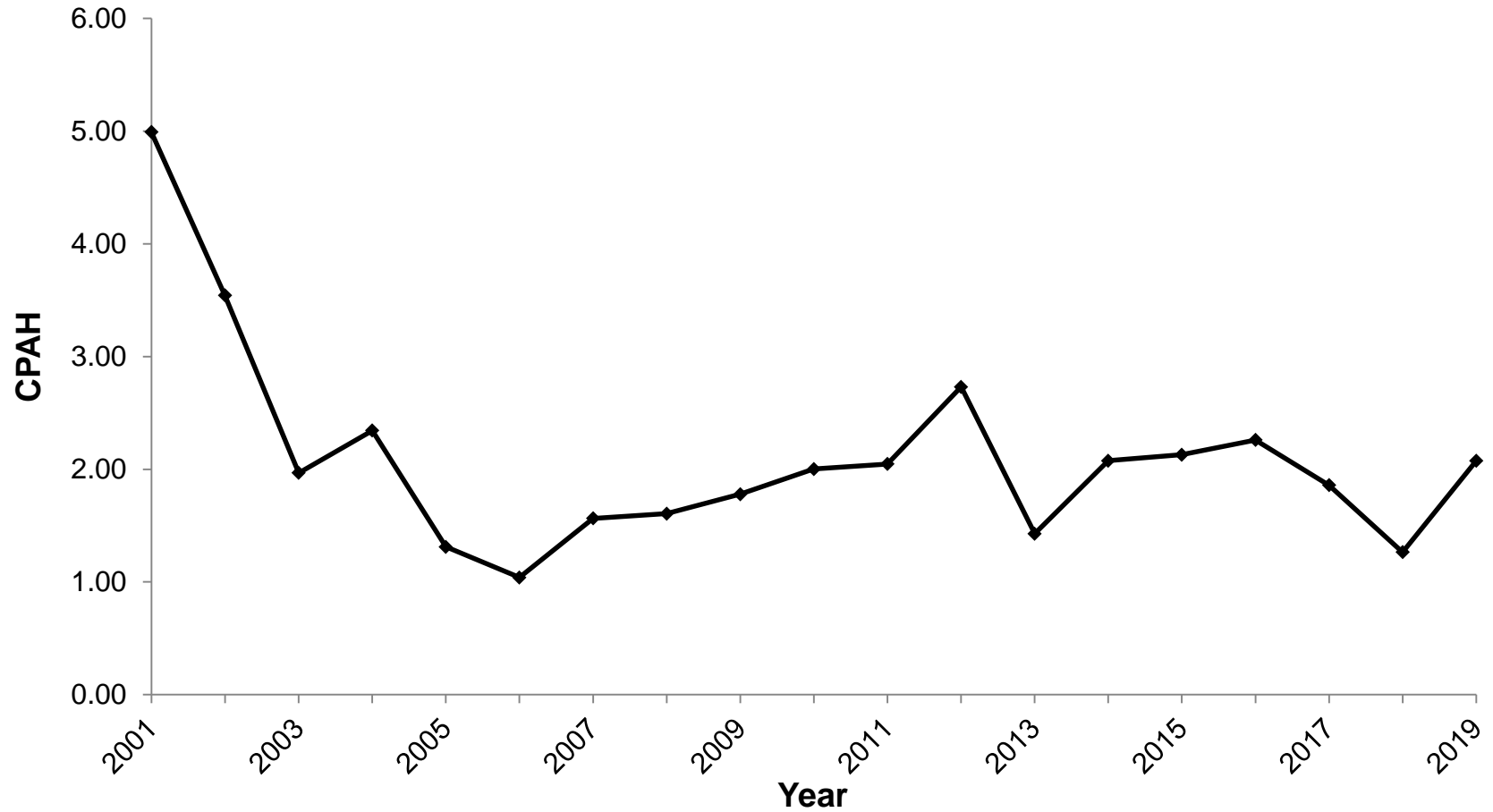


Hook & Line Survey

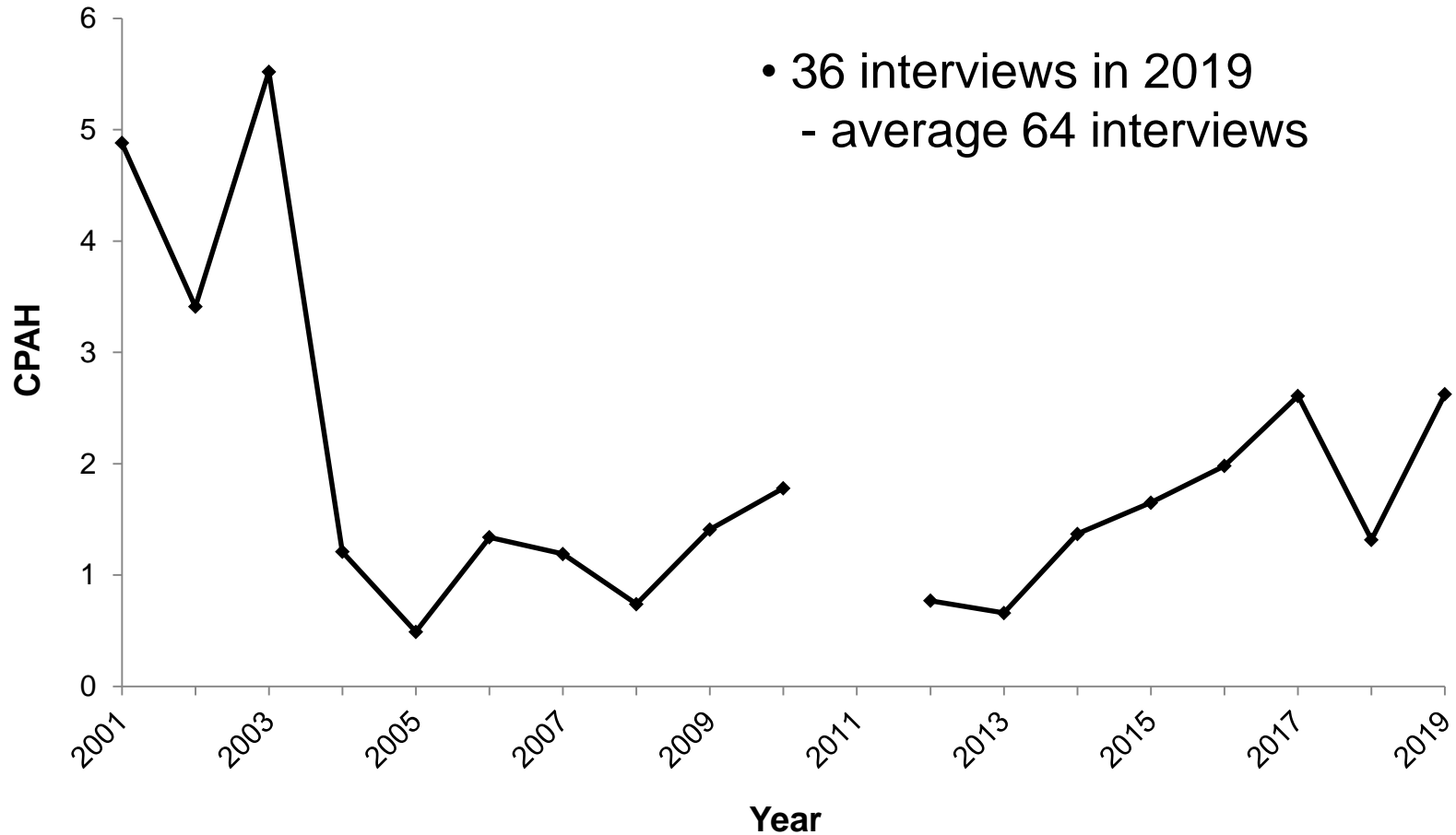
Virgin vs. Repeat Spawners



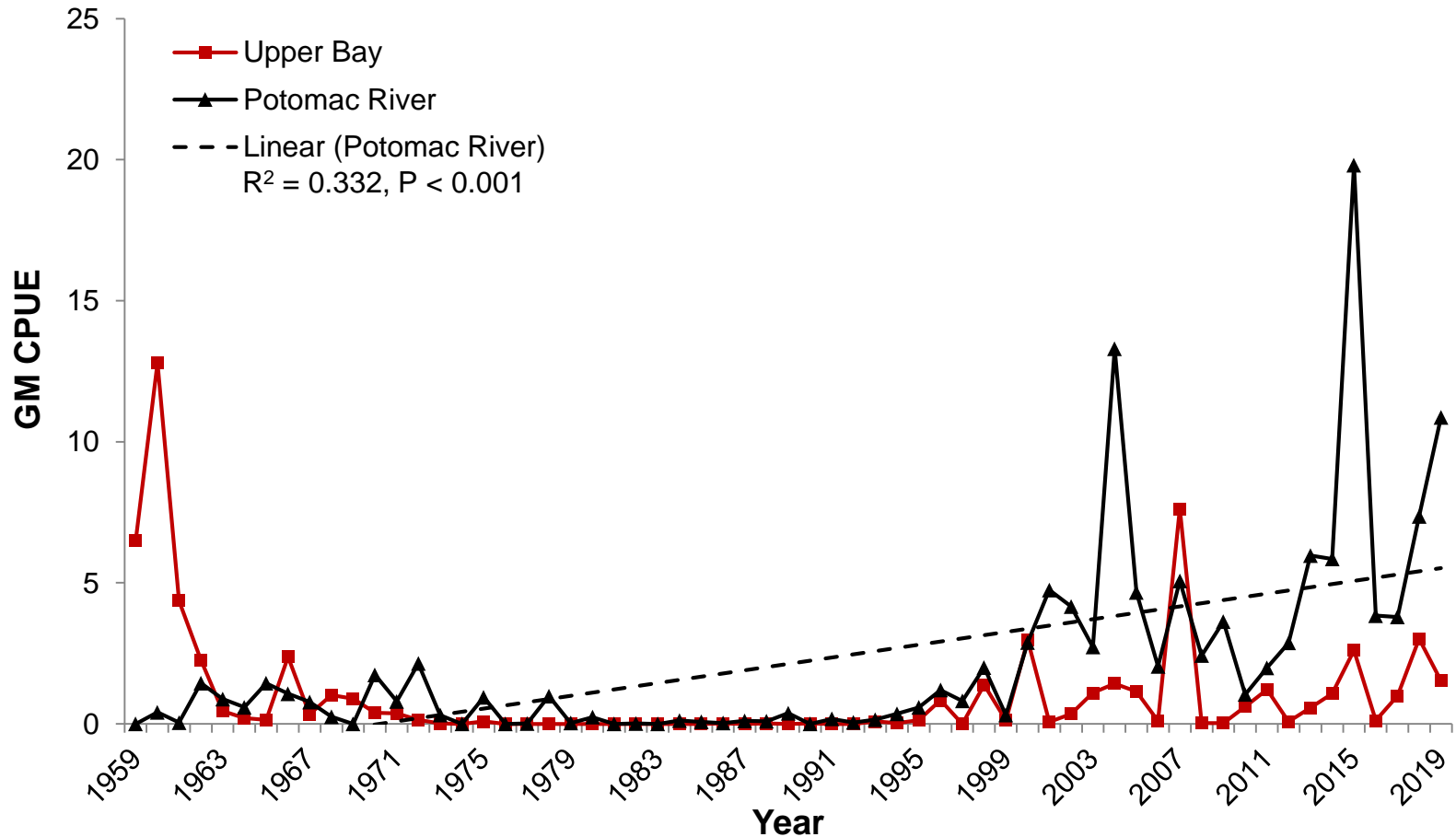
Logbook Survey



Creel Survey

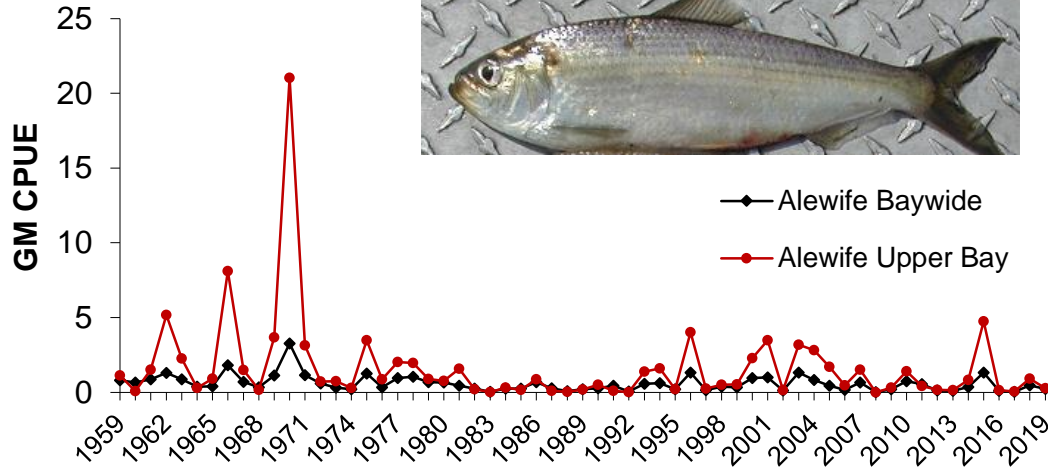


Juvenile American shad Index



River Herring Juvenile Indices

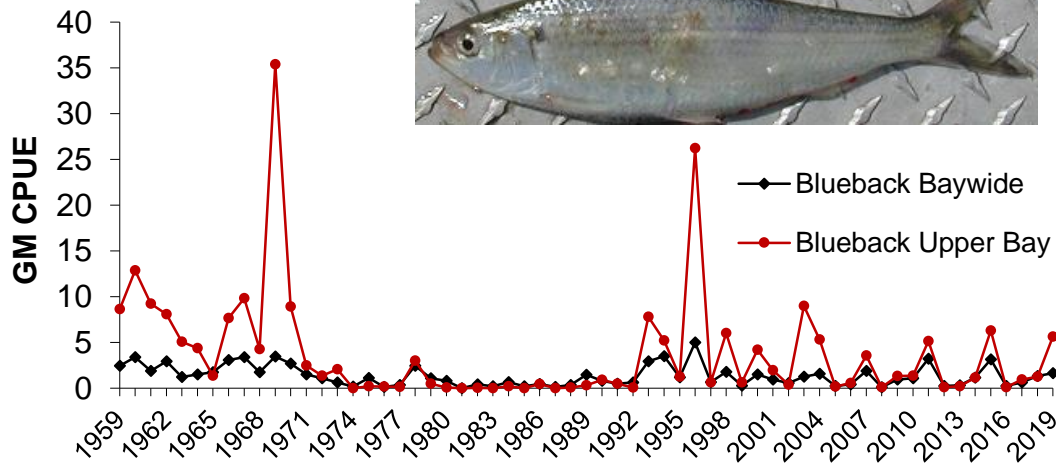
Alewife



Adults: (North East River)

- Alewife peak run on 4/4/19, water temp was 10.4°C
- Blueback peak run on 4/30/19, water temp was 16.7°C

Blueback



Questions?



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