

Overview of the American Eel Assessment Framework for Maritimes Region

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Stock assessments: to support fisheries and habitat management objectives

Quantify to the extent possible:

- losses arising from human activities:
 - Large eel and elver fisheries, hydroelectric developments
 - Relative to Limit and Upper Stock Reference Points
- Prevalence of *Anguillicoloides crassus*

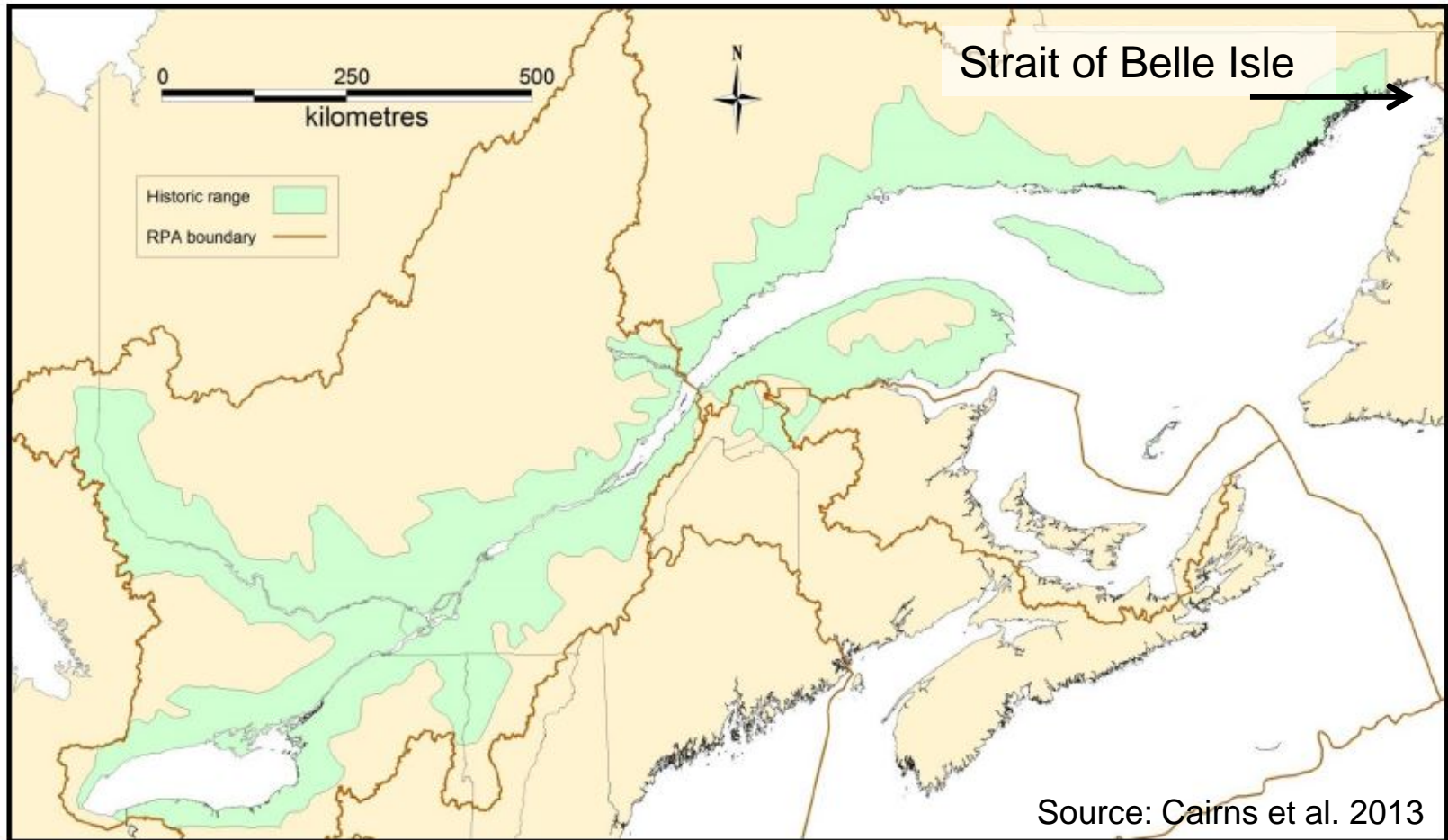
Advise on impact of losses to silver eel escapement:

- Regional level (contribution to panmixia)
- Watershed level (biodiversity, ecosystem integrity, important cultural fisheries)

Advise on current status relative to status in past years

Data Sources:

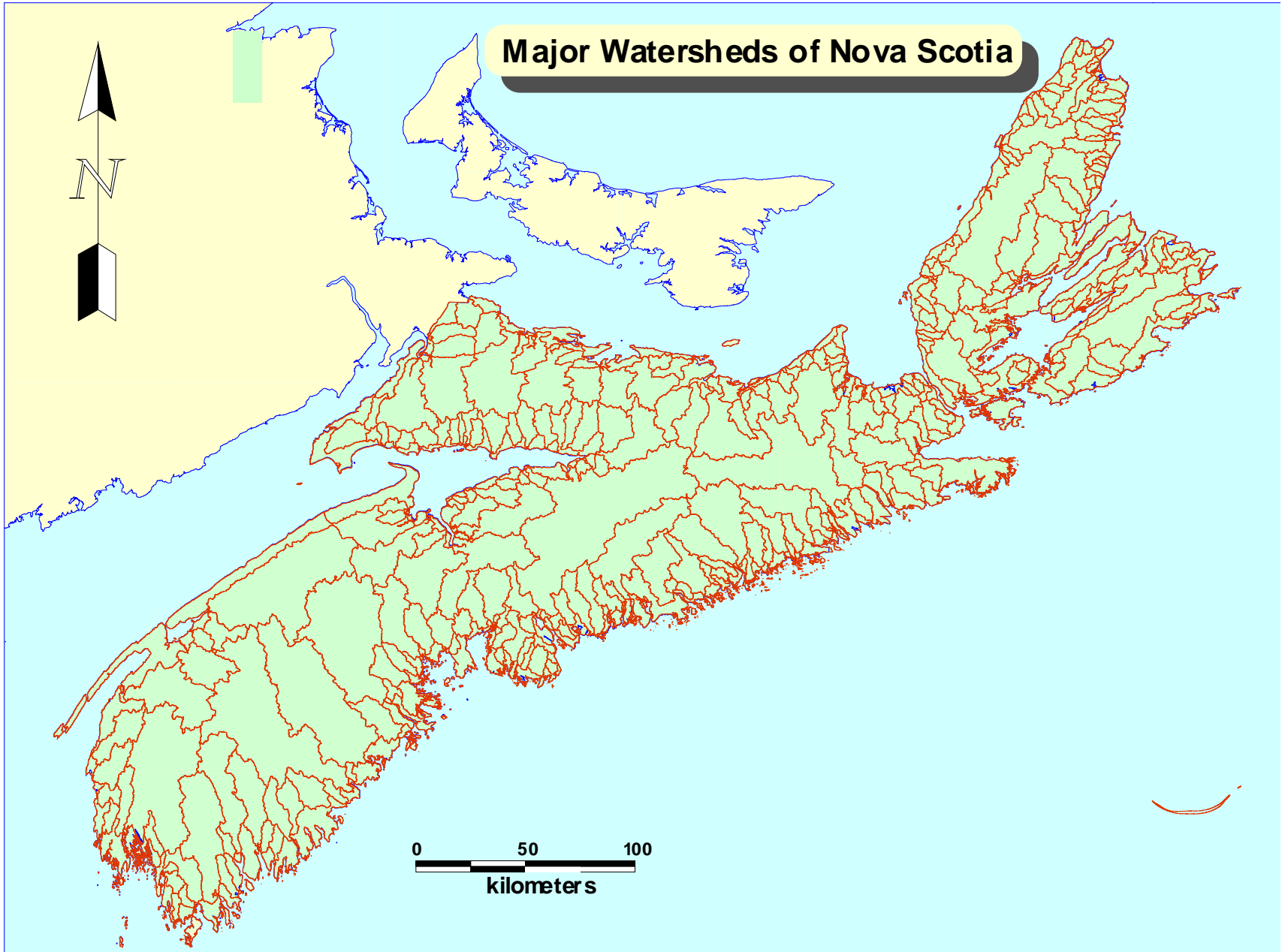
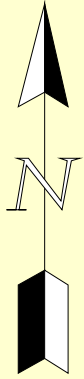
- Area of extent of potential impact
- Fishery dependent: commercial eel and elver fisheries
- Fishery independent: elver index, electrofishing data



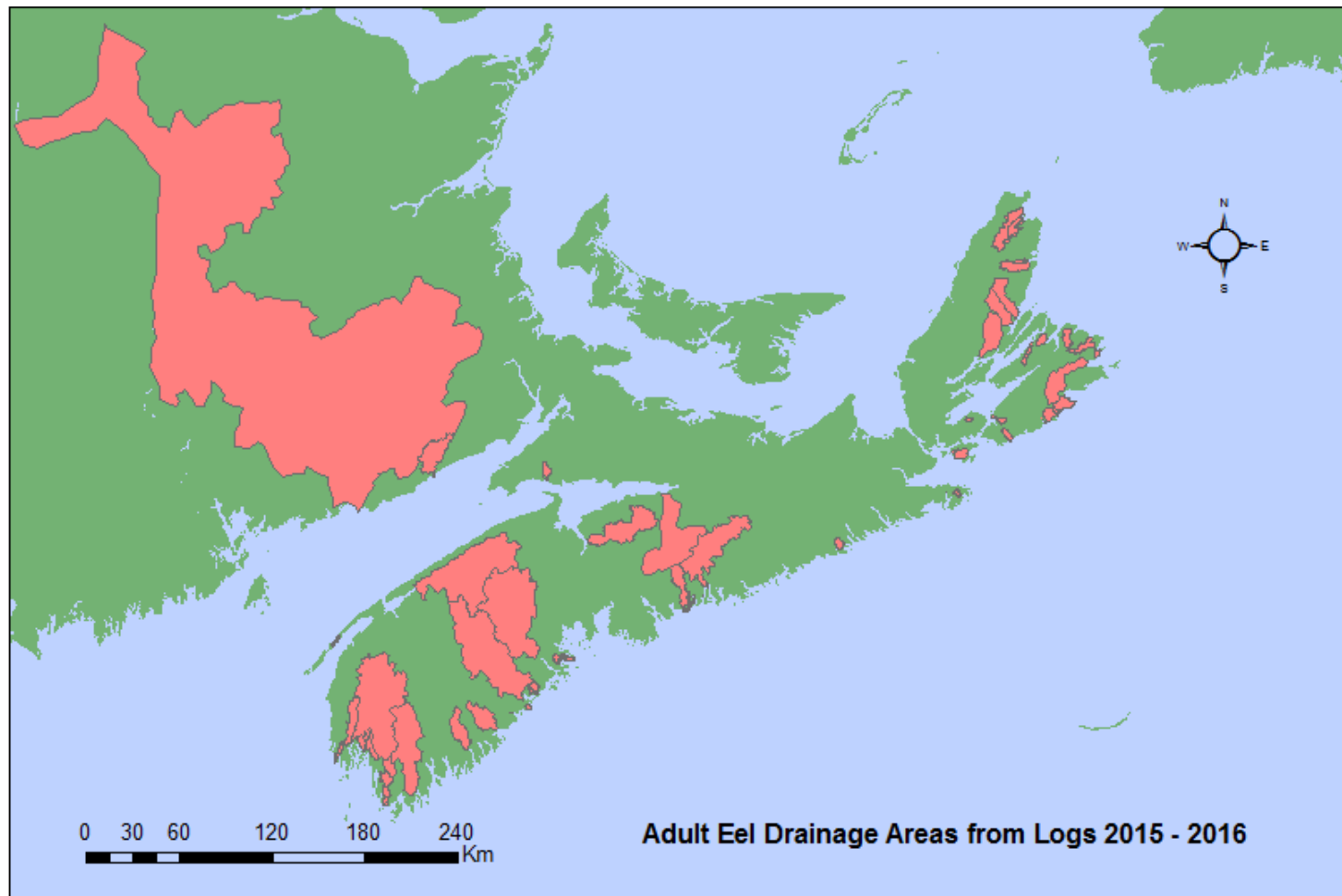
Catchment Area exiting via Maritimes Region = 118,846 km²

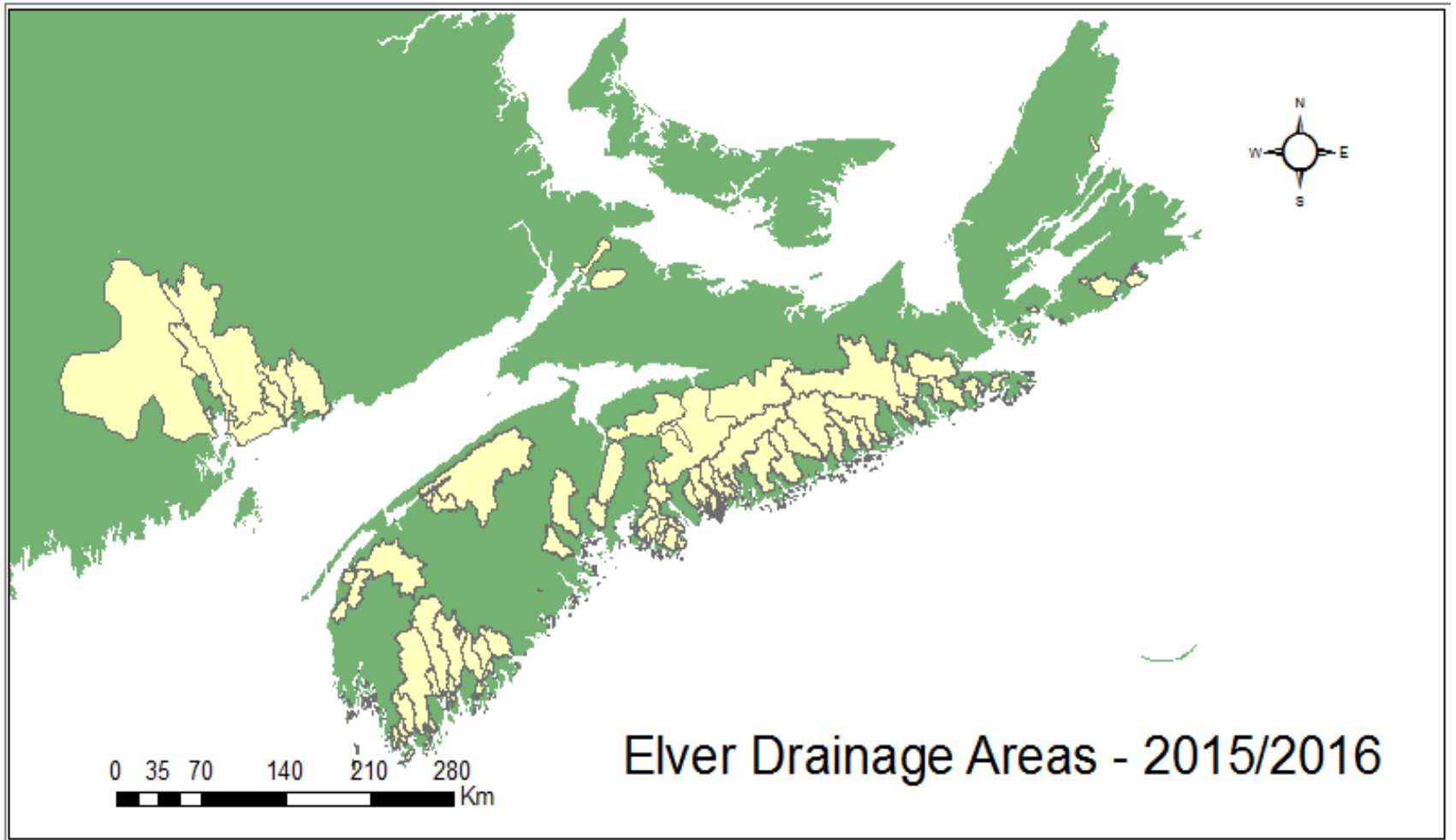
- % Eastern Continental NA below SBI = 6.27
- % Eastern Continental Canada below SBI = 10.65

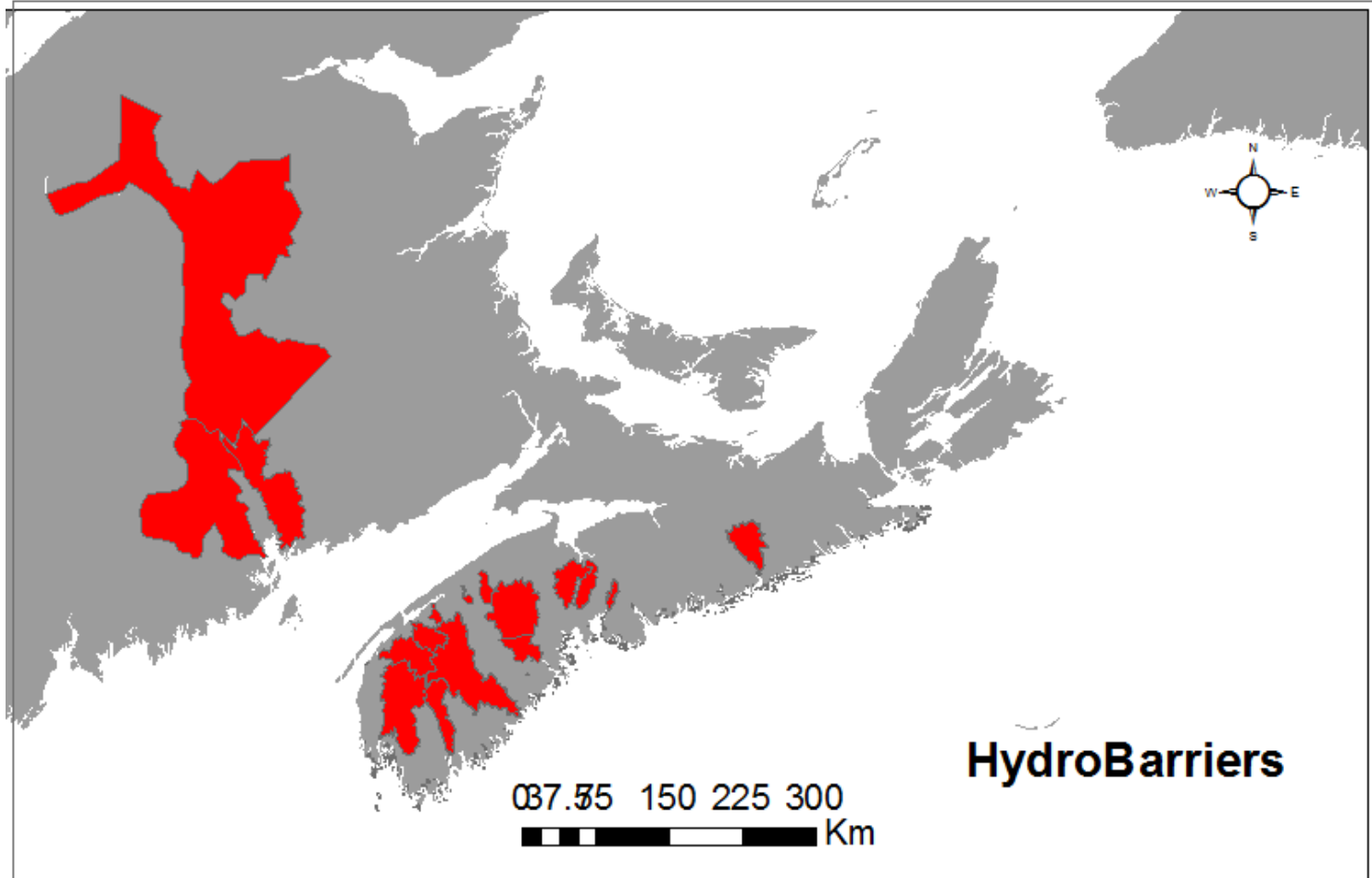
Major Watersheds of Nova Scotia

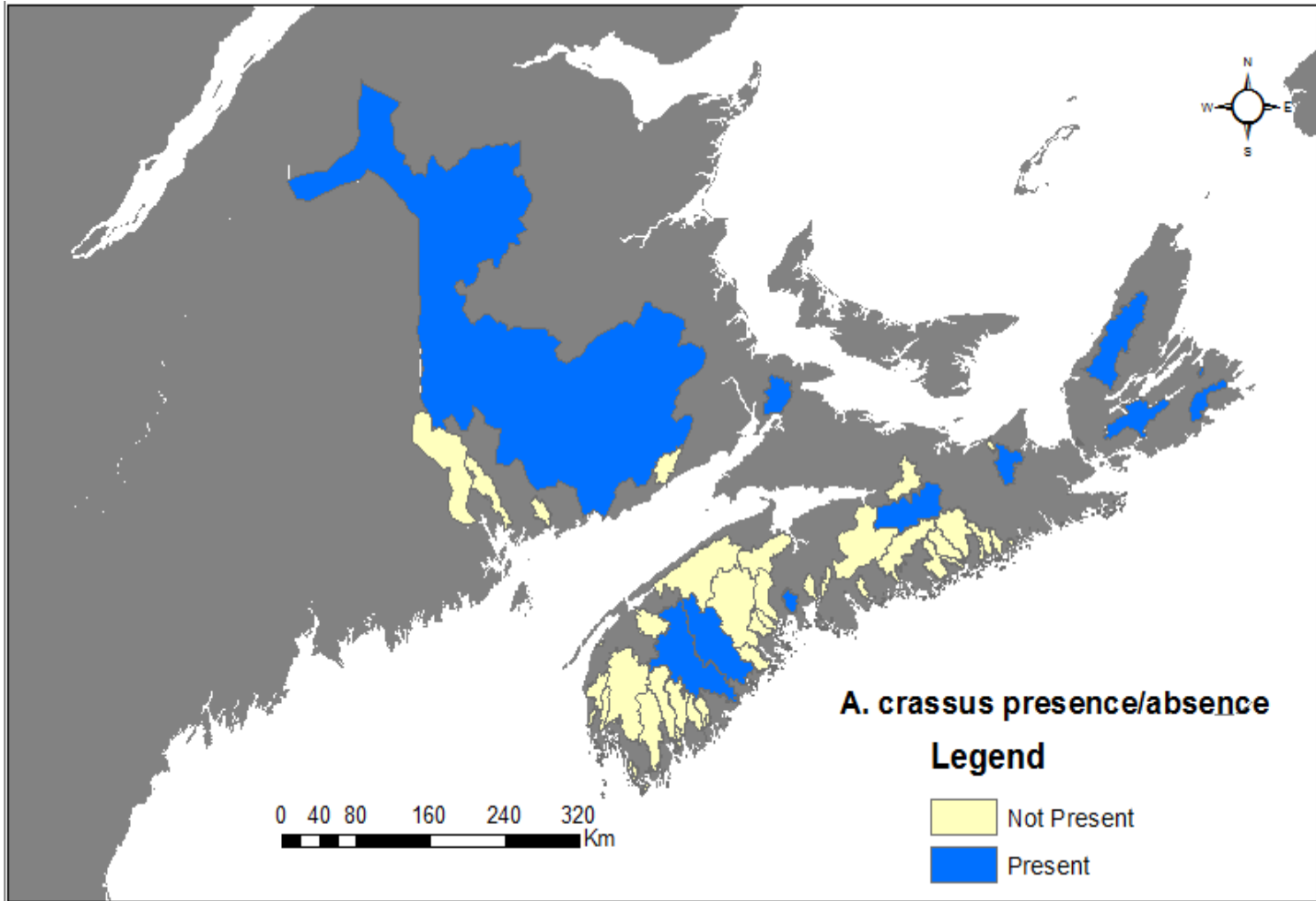


0 50 100
kilometers





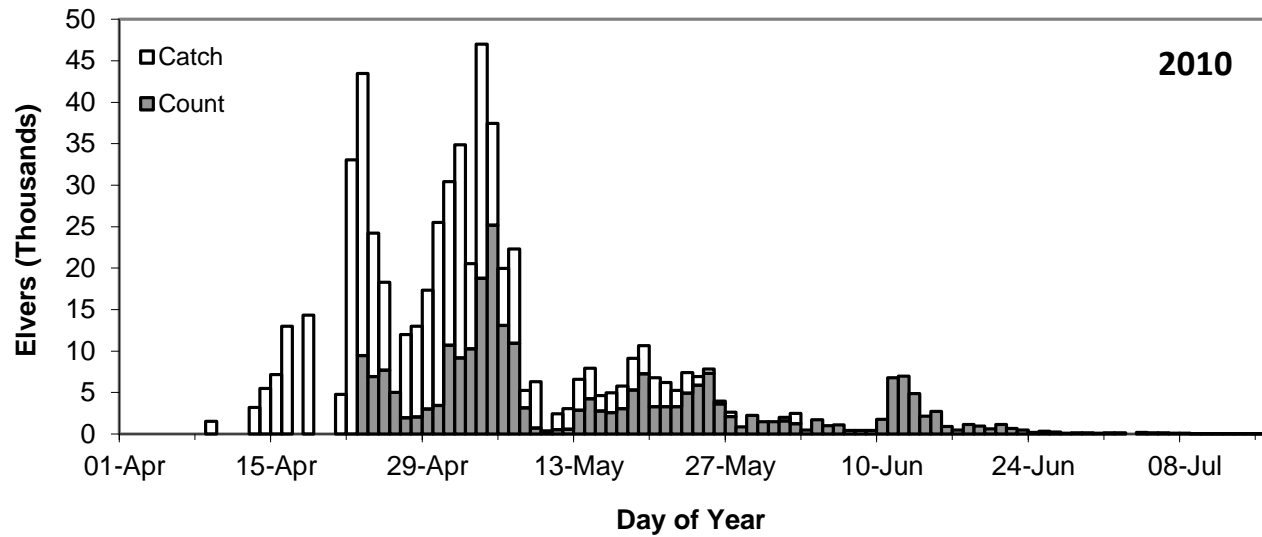
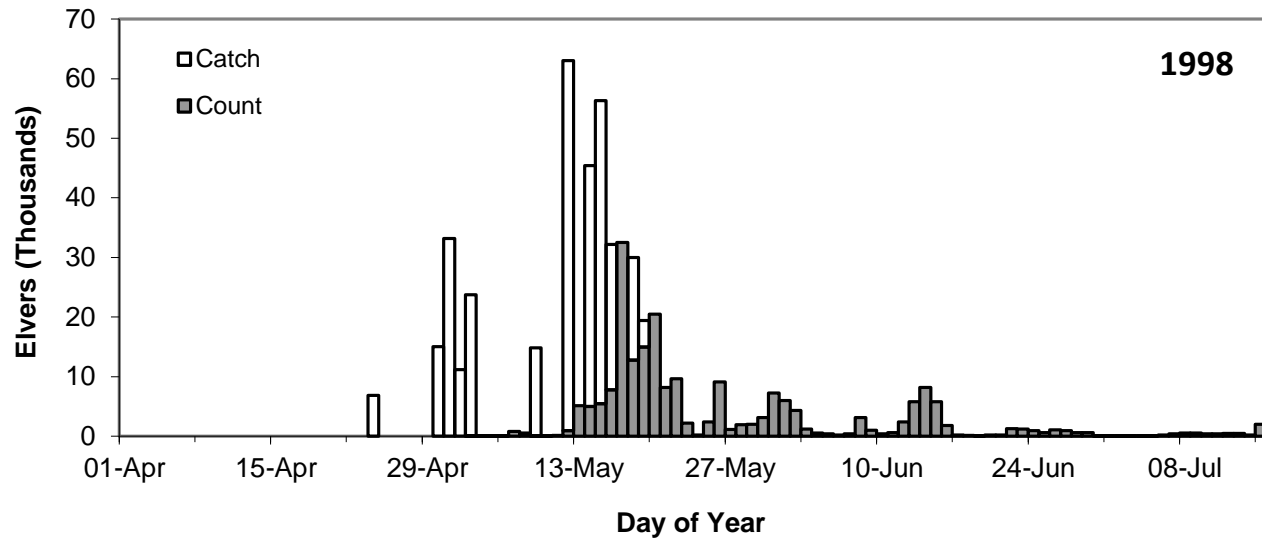








Elver Runs to East River-Chester, Nova Scotia



East River-Chester

Area = 134 km²

Annual Run-Size

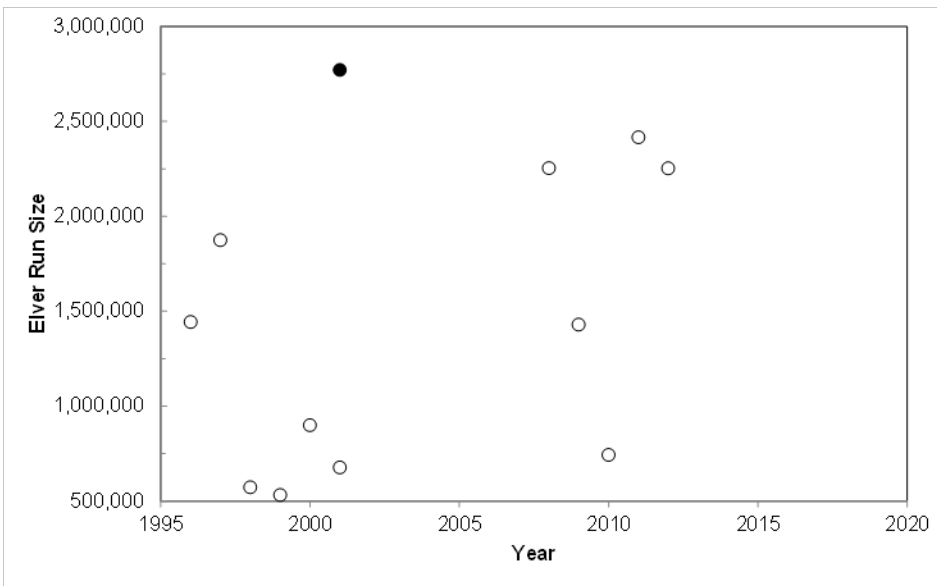
n = 16 Years

Low ~0.5 million

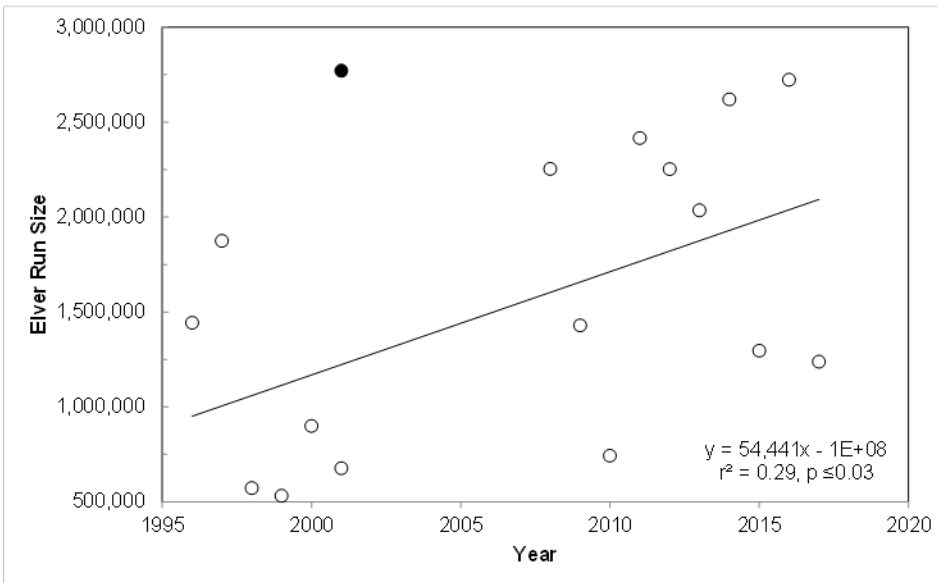
High ~2.5 million

Average Increase per Year

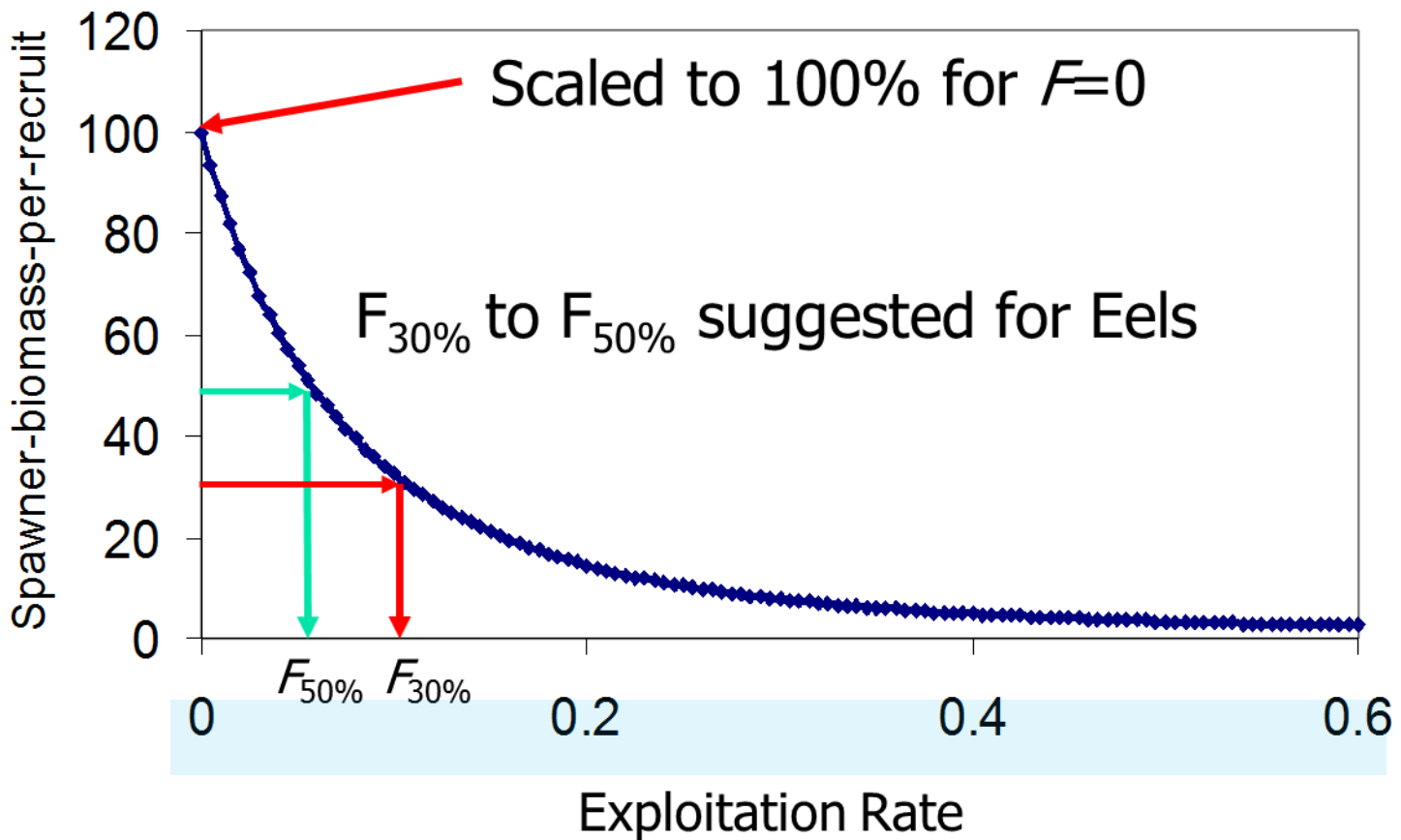
~55,000 elvers

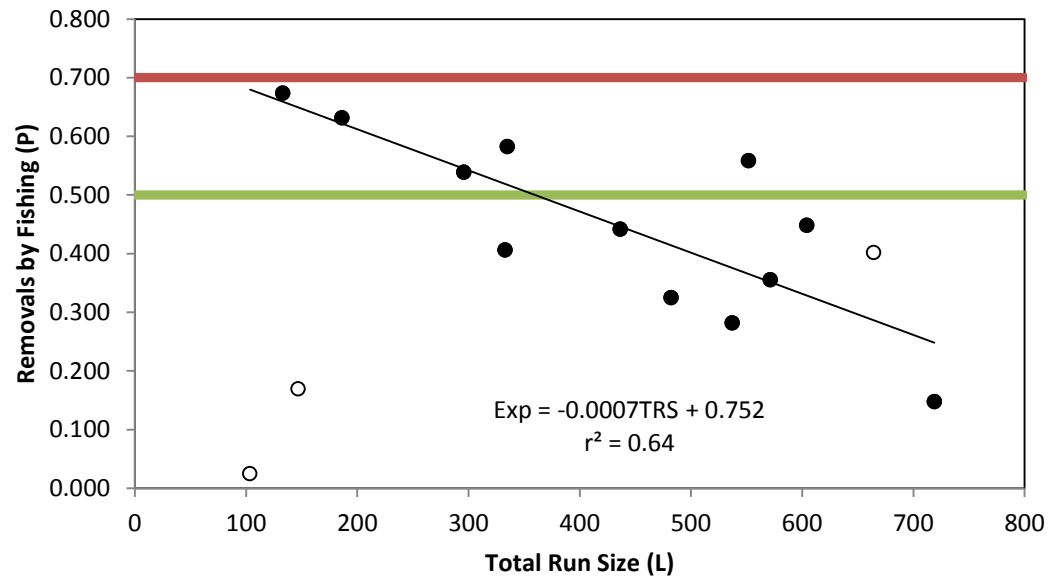
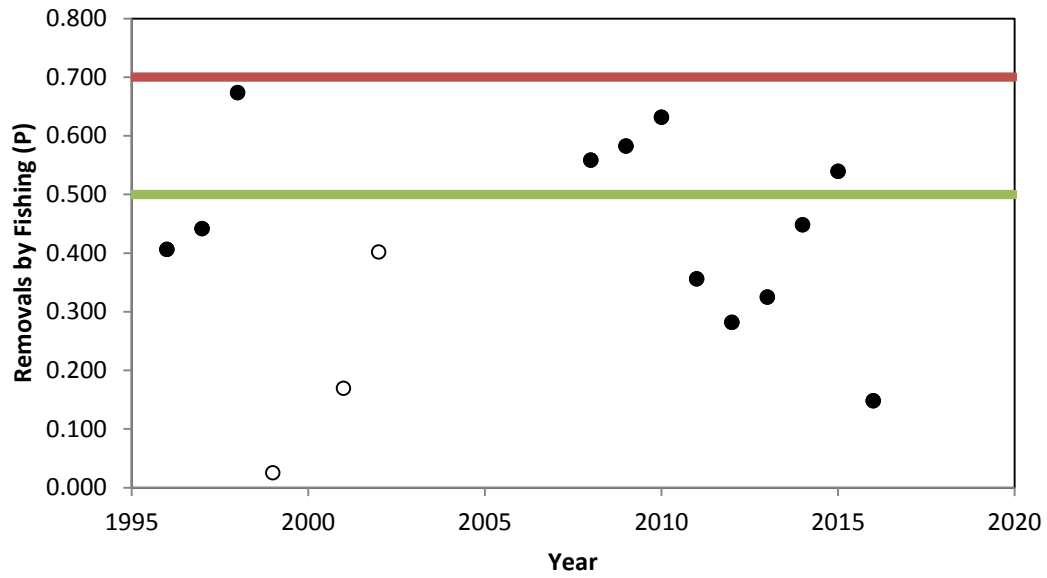


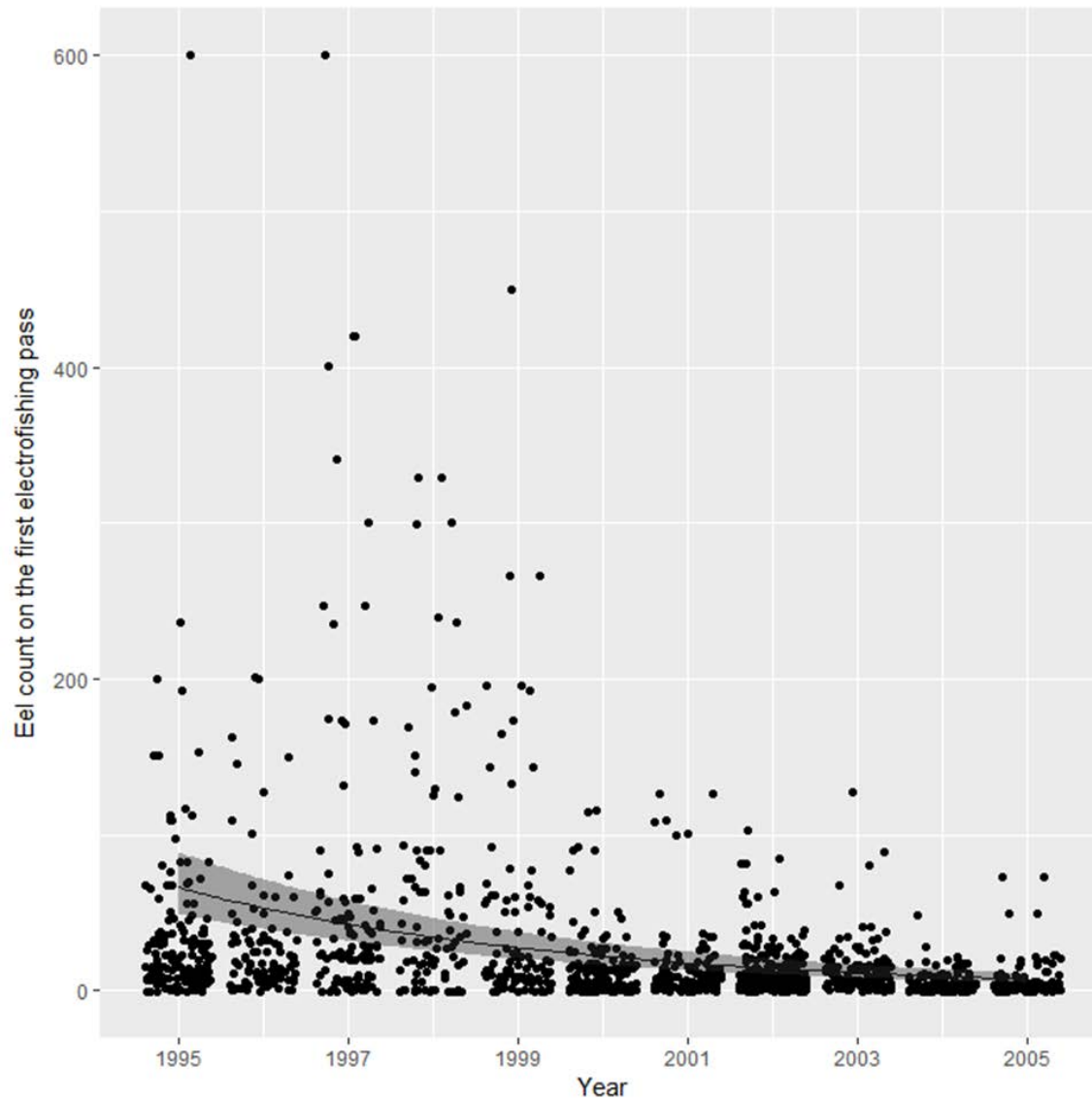
Upper Panel: Annual elver run size to East River-Chester for the years 1996-2001, 2008-2012. The 2002 estimate is considered inaccurate and is excluded. No significant trend with time is evident.



Lower Panel: Annual elver run size to East River-Chester for the years 1996-2001, 2008-2017. The 2002 estimate is considered inaccurate and is excluded. A statistically significant increase in annual elver run size with time is evident.







Predicted fit and 95% CI for the decline in first-pass counts of American eel during 1995 to 2005 from the chosen zero-truncated negative binomial GLMM. Individual points are spread out slightly along the x-axis to be visible. Data combined for 29 NS rivers.