



Tule Perch of the California Delta



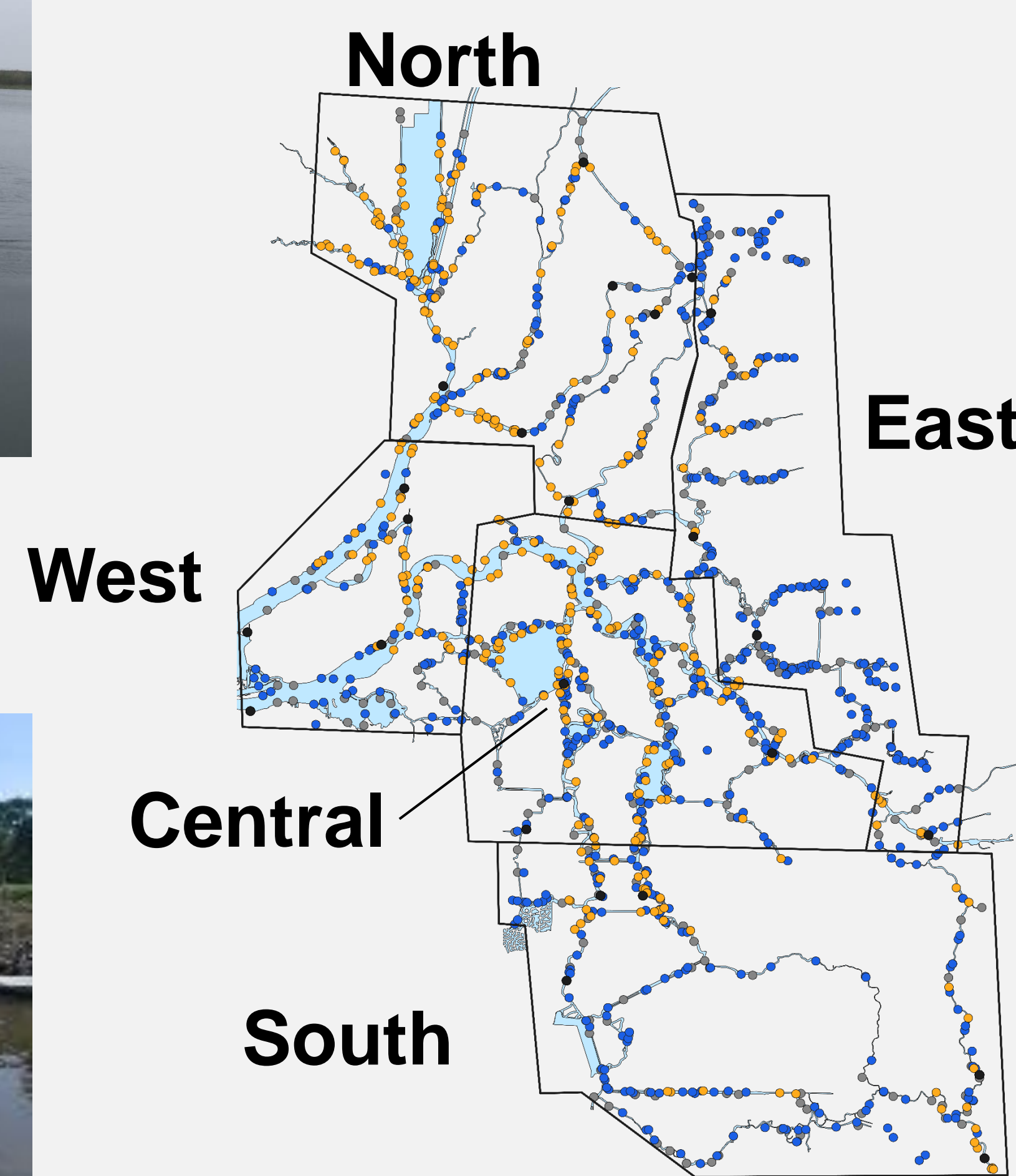
Erin Sharkey and Ryan McKenzie
U.S. Fish and Wildlife Service, Lodi Fish and Wildlife Office
Contact: erin_sharkey@fws.gov

Background

Tule Perch (*Hysterocarpus traskii*) are the only native viviparous freshwater fish in California and are year-round residents of the Sacramento-San Joaquin Delta (Delta).

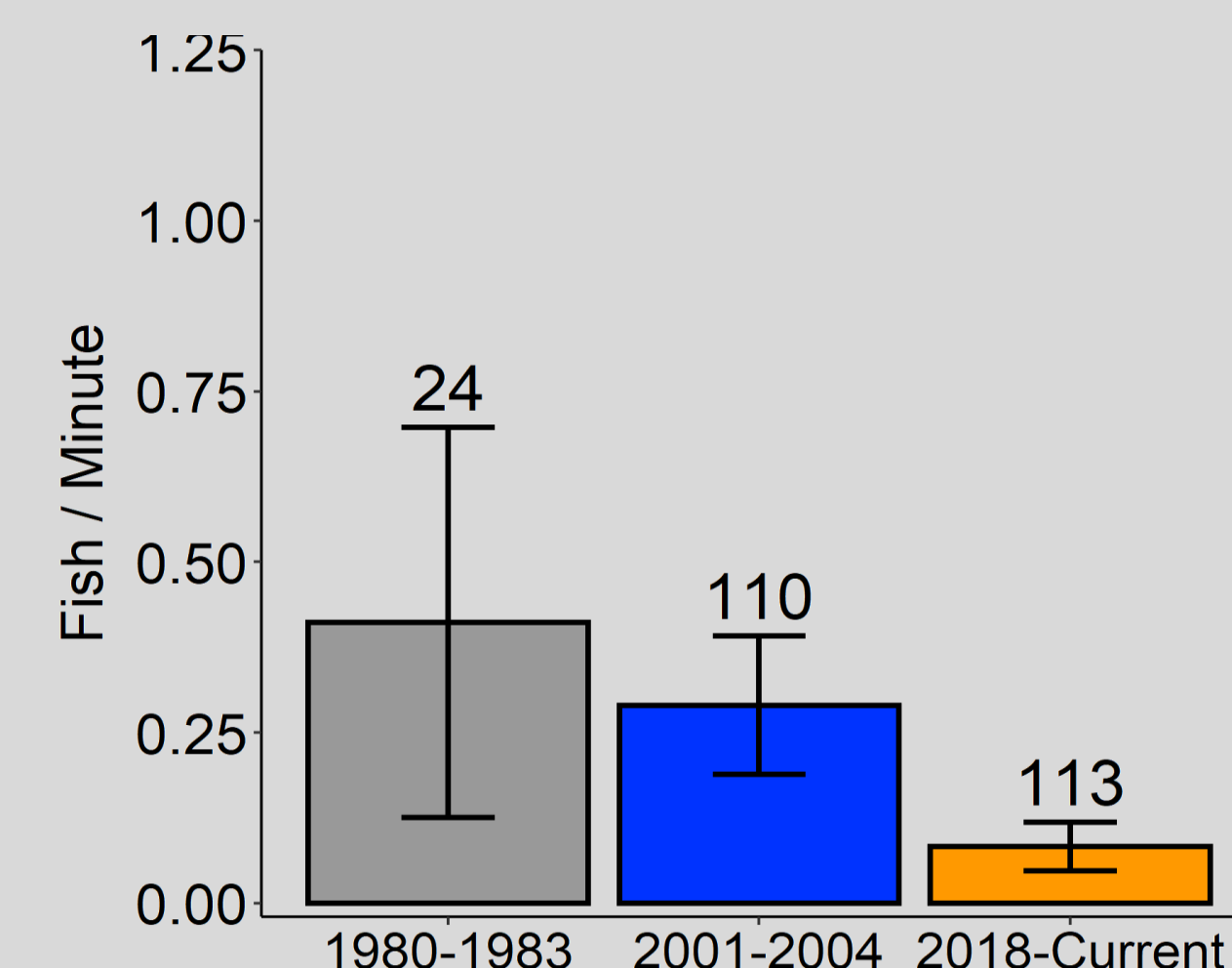
In this study, we assessed catch-per-unit effort (CPUE) trends in the Delta using data collected from the USFWS Beach Seine Survey (1980-2021), CDFW Boat Electrofishing Survey (1980-1984, 2001-2004) and the USFWS Boat Electrofishing Survey (2018-2021). CPUE was averaged across samples collected by time periods and regions. Habitat associations were assessed using the USFWS Boat Electrofishing dataset (2018-2021) by constructing a logistic regression model and performing AIC model selection to assess which environmental parameters (Dissolved Oxygen, Water Temperature, Specific Conductance, Dominant Substrate, Channel Type, Bank Type, Water Turbidity*, Emergent Vegetation*, Floating Vegetation*, Submerged Aquatic Vegetation (SAV)*) best predicted the presence of Tule Perch in sampling transects. *Parameters included in the final best fit model.

Overall, we found that CPUE was consistently higher in the North and West Delta Regions and that CPUE has generally declined over the three time periods. Increased water turbidity and decreased levels of floating vegetation were significant predictors of Tule Perch presence.

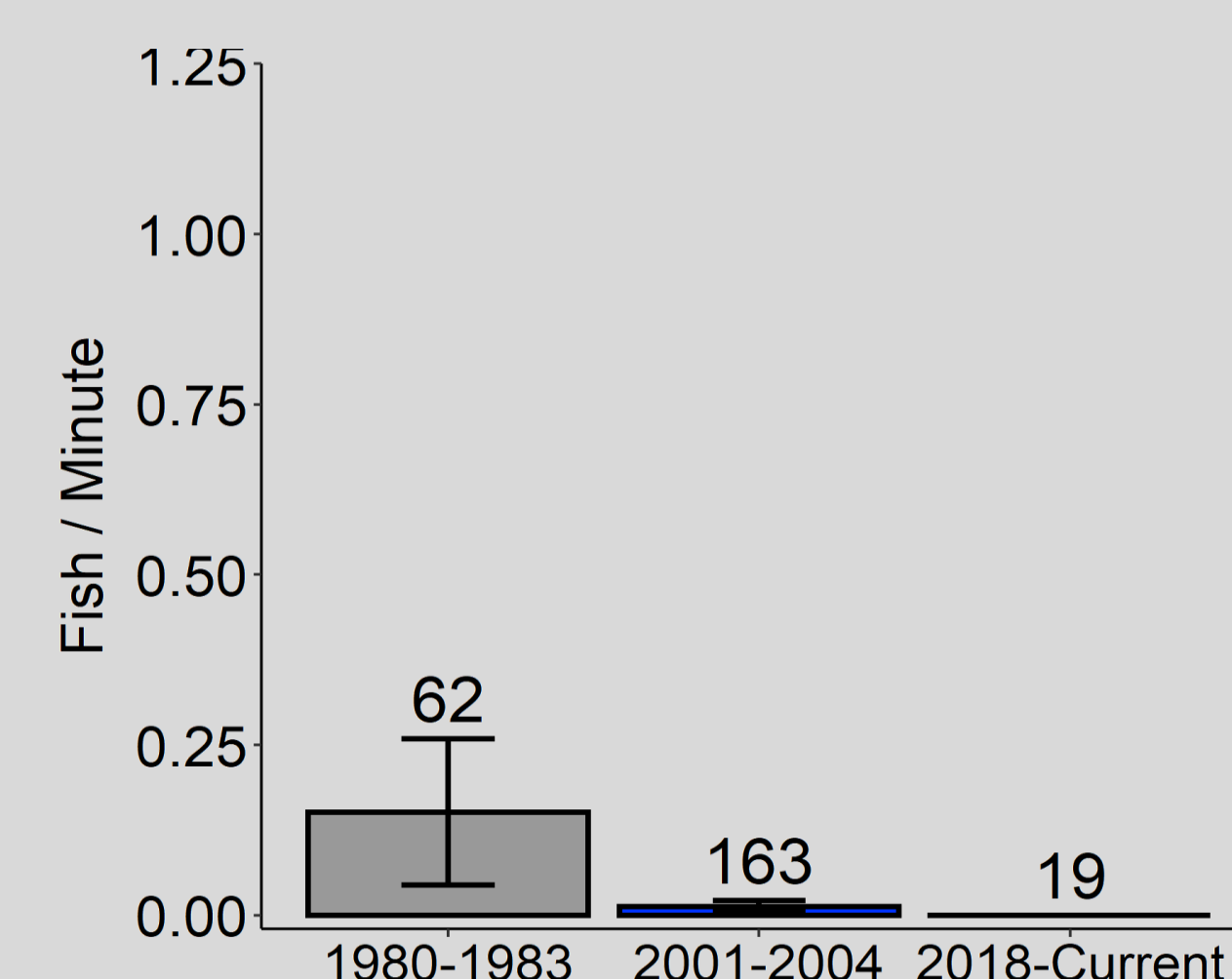


Spatial and Temporal Trends

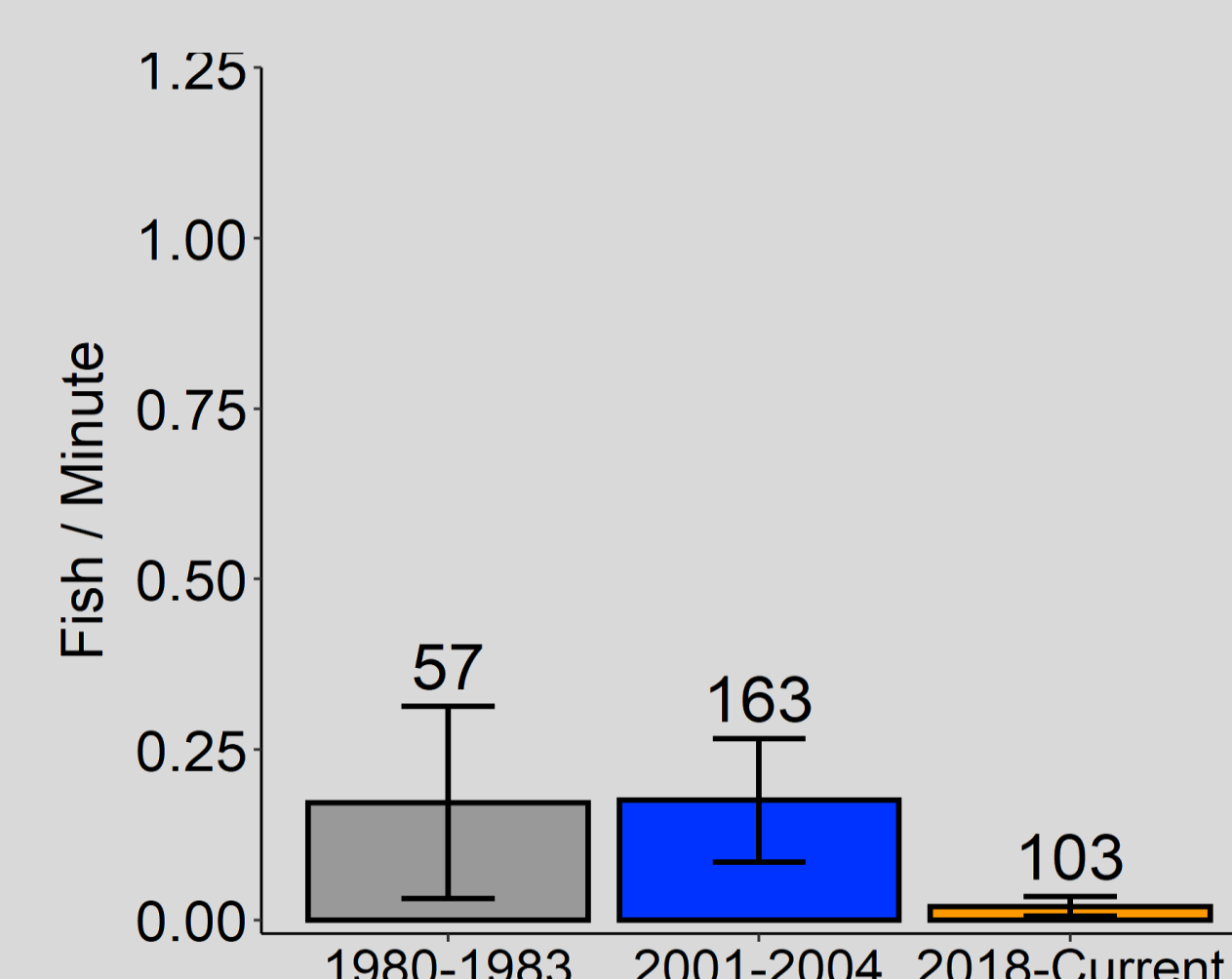
Electrofishing



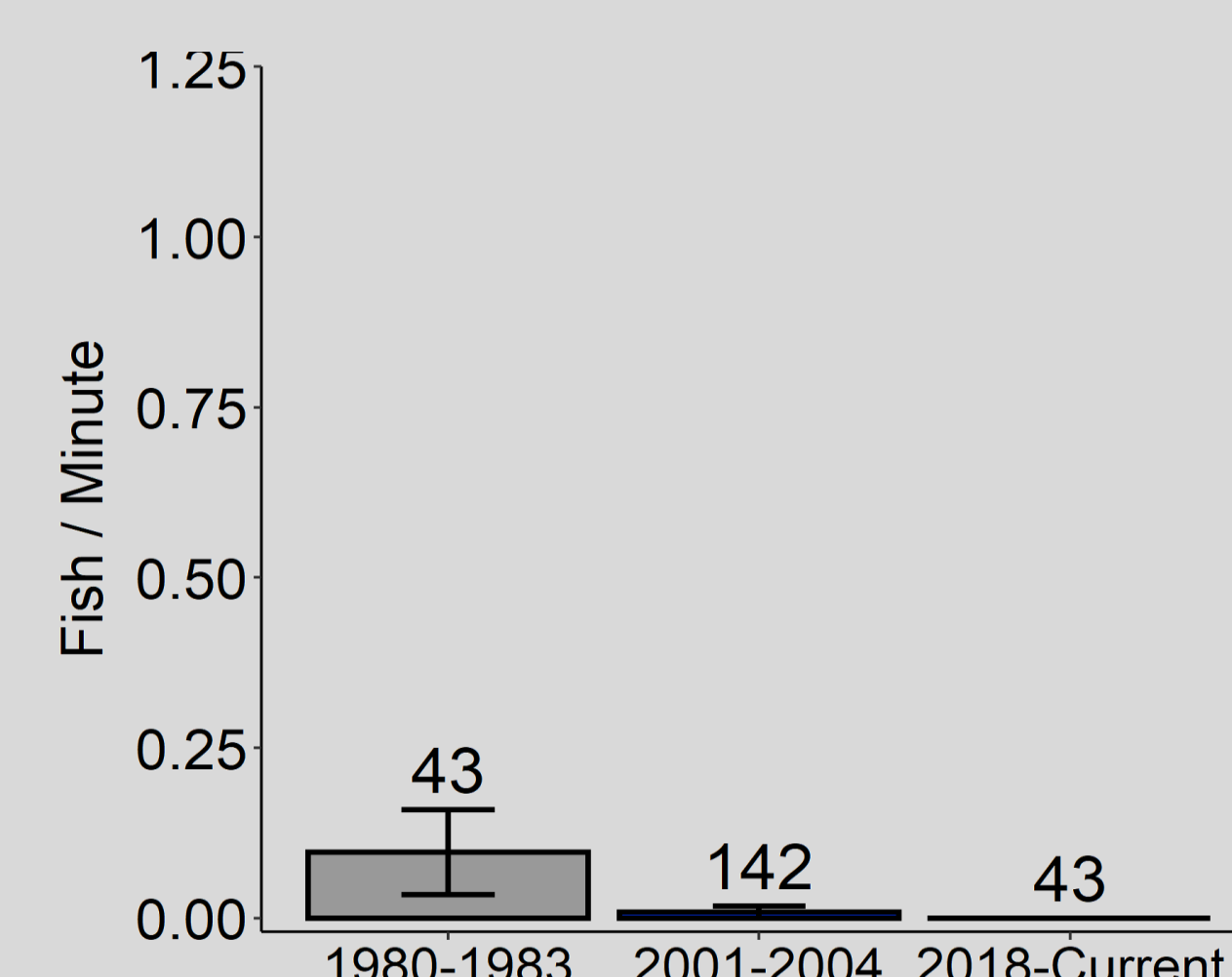
North



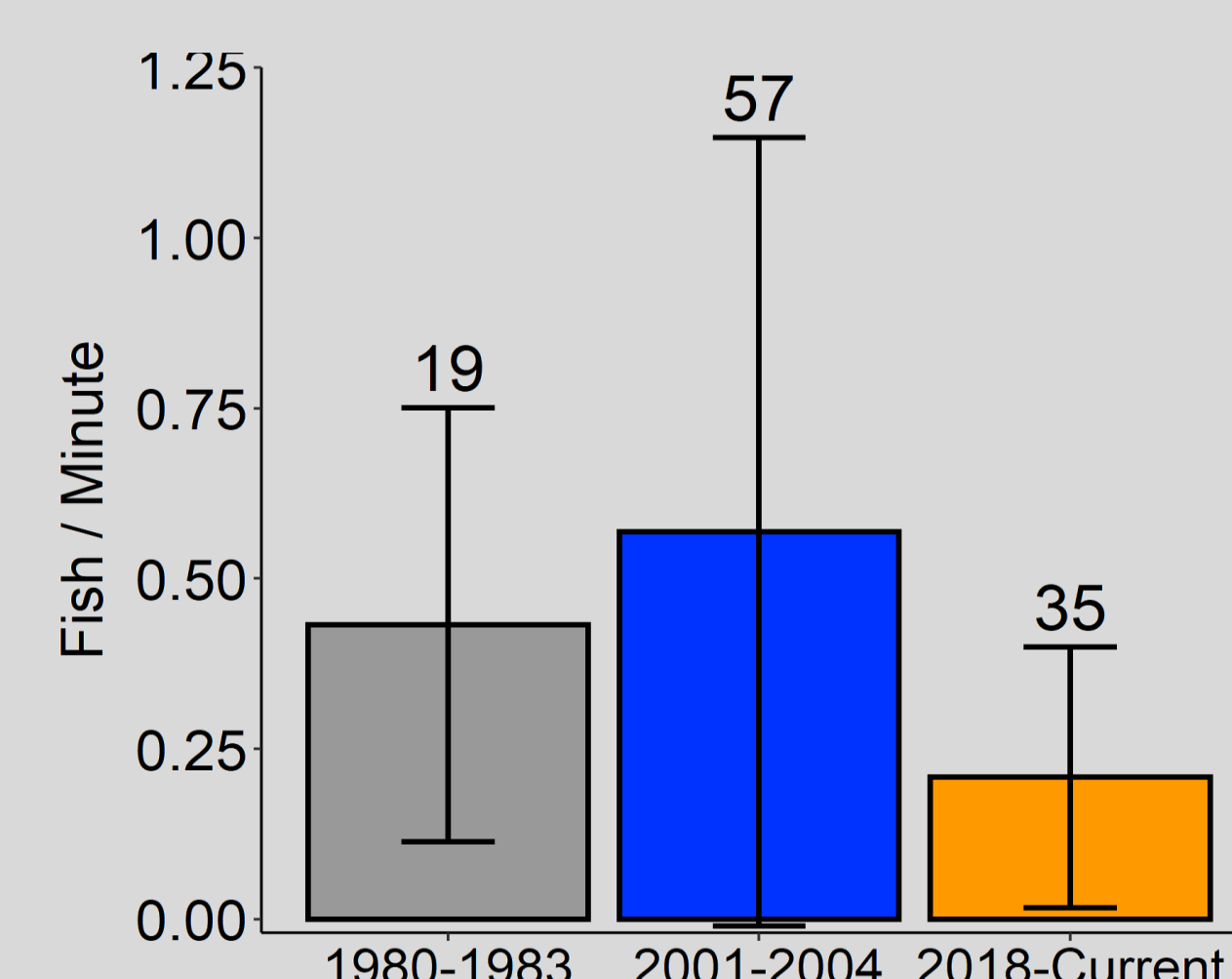
East



Central

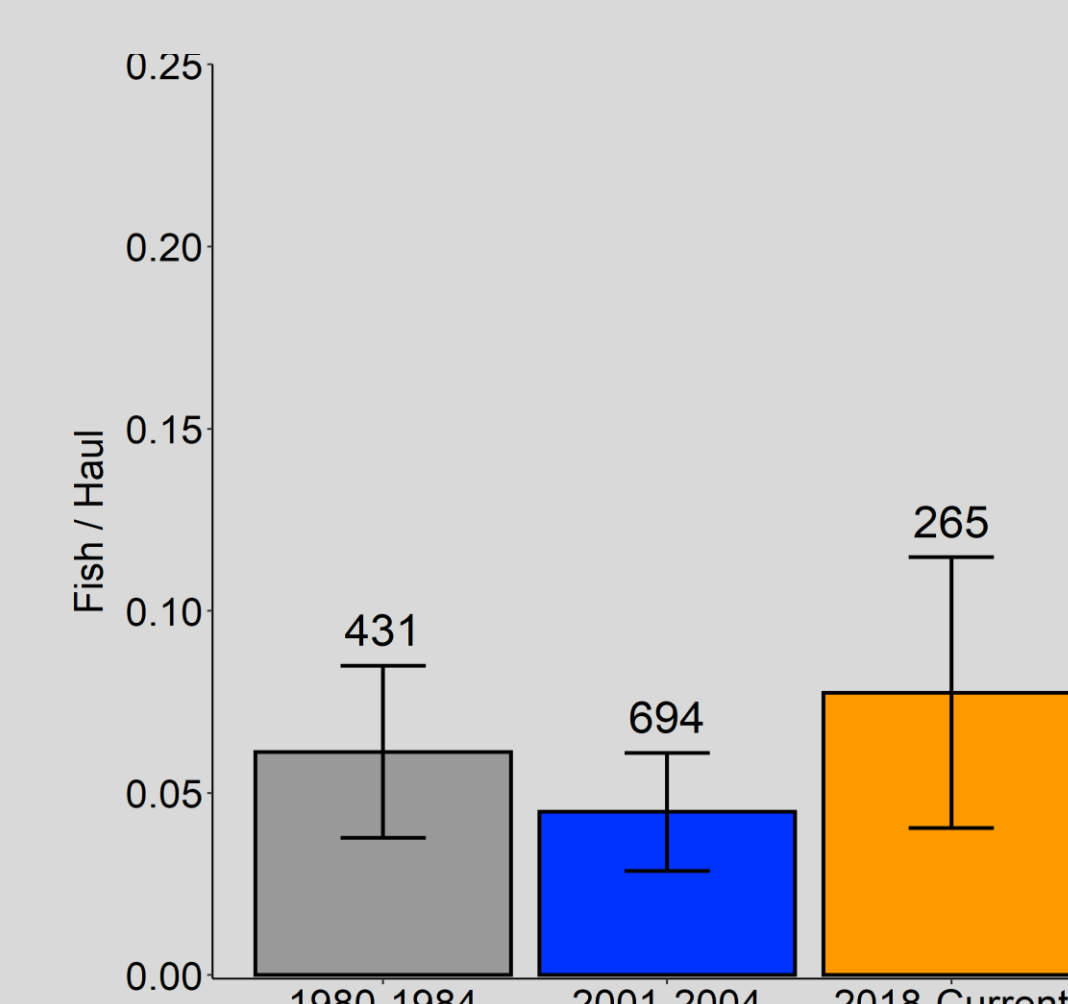
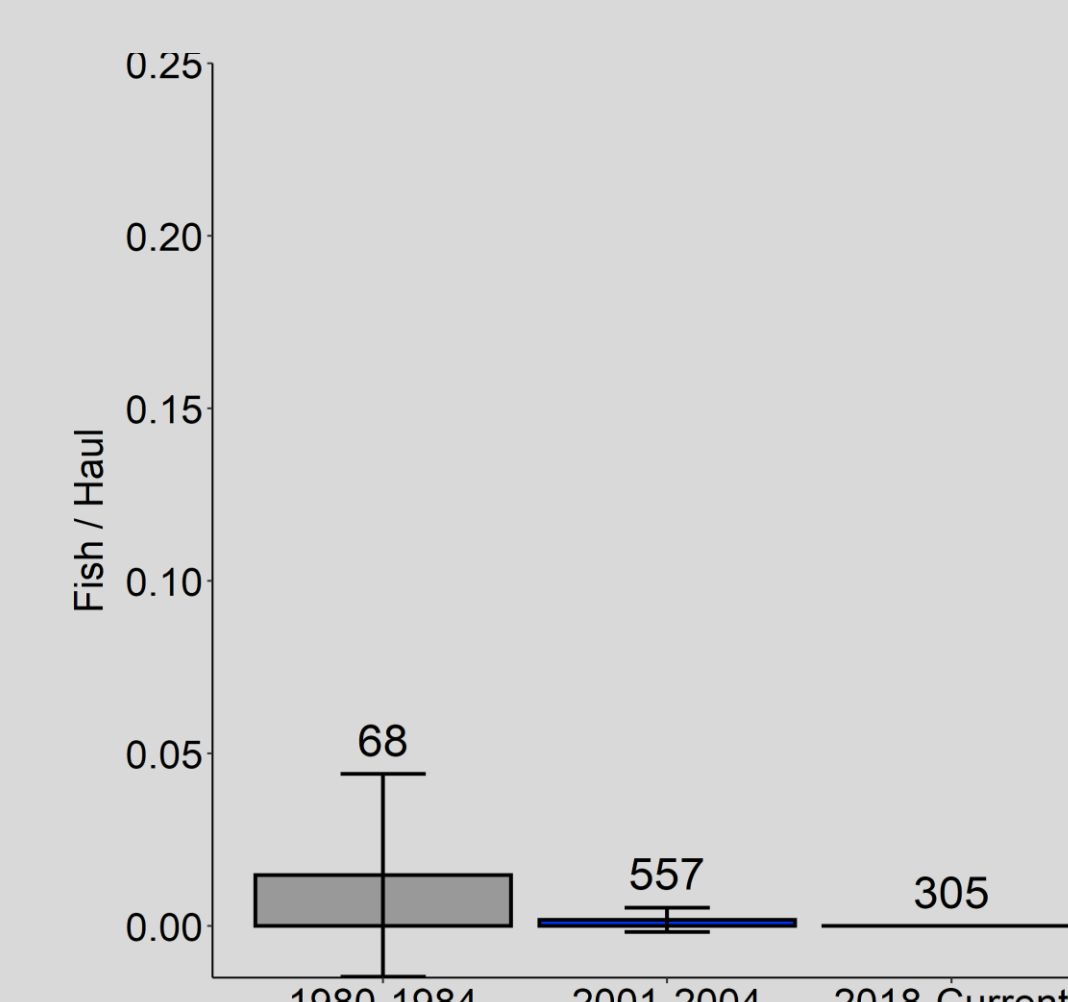
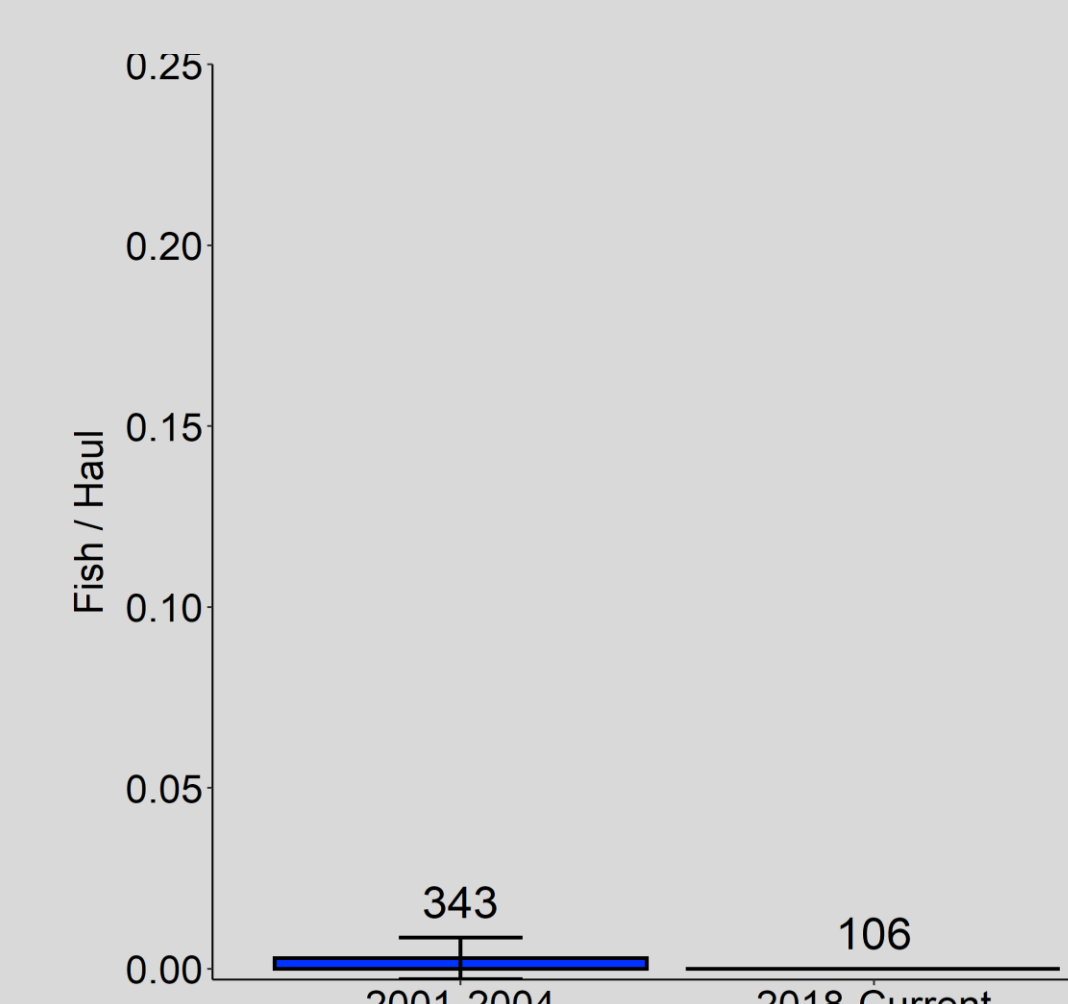
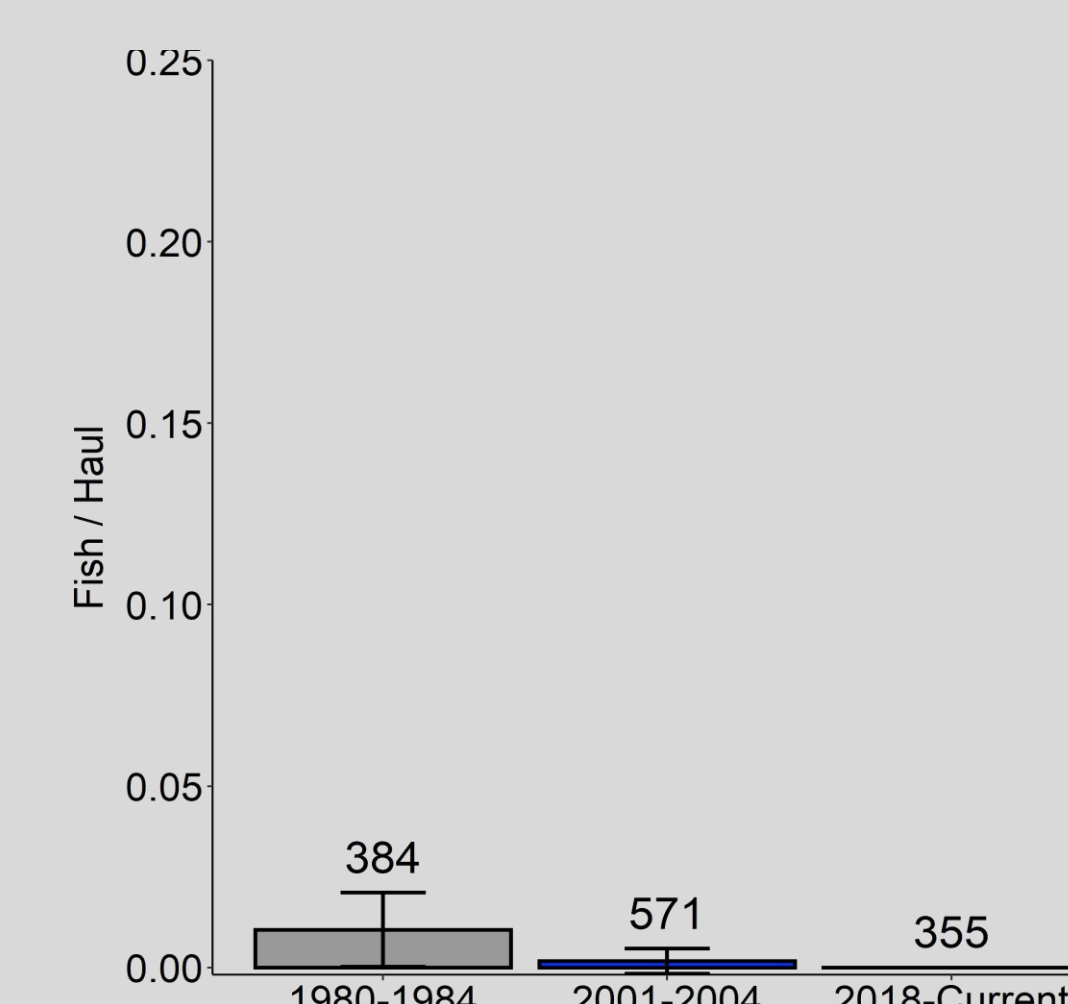
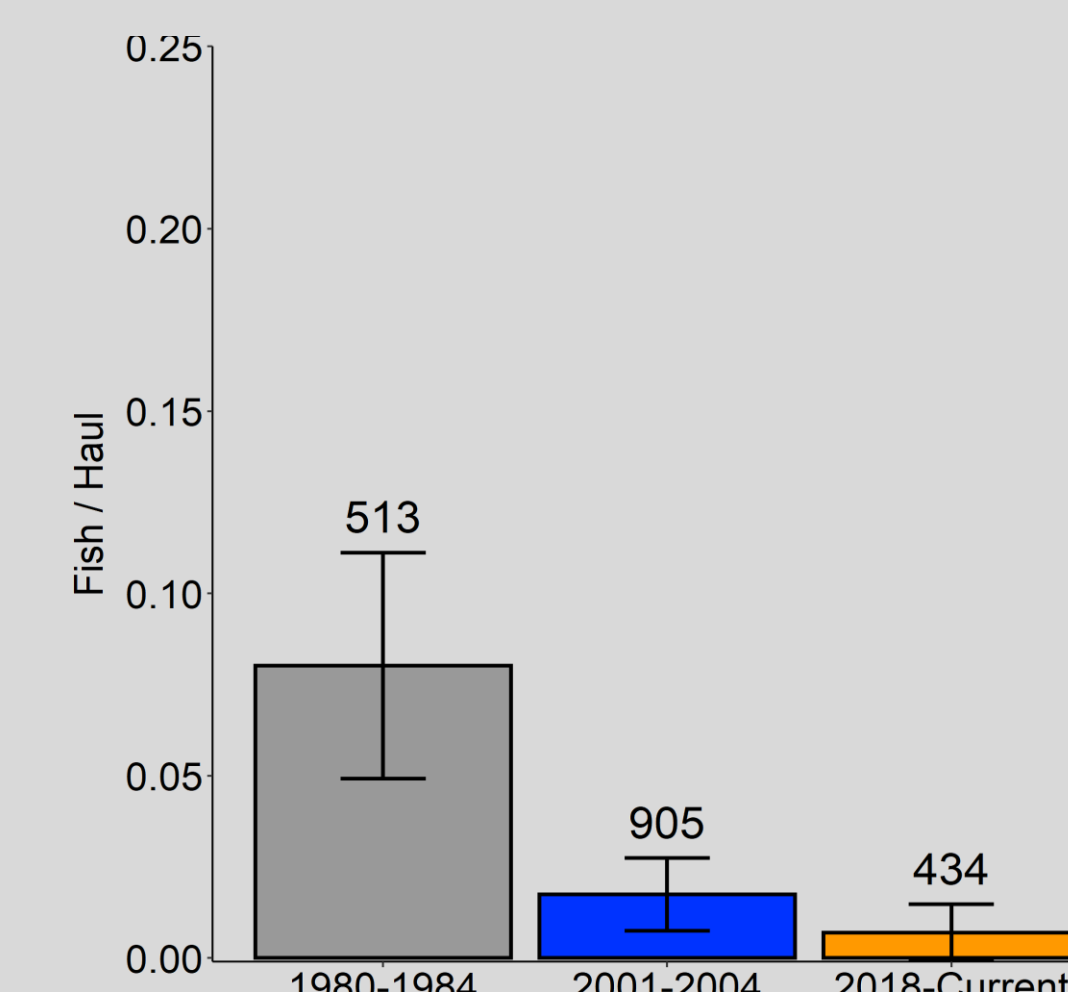


South



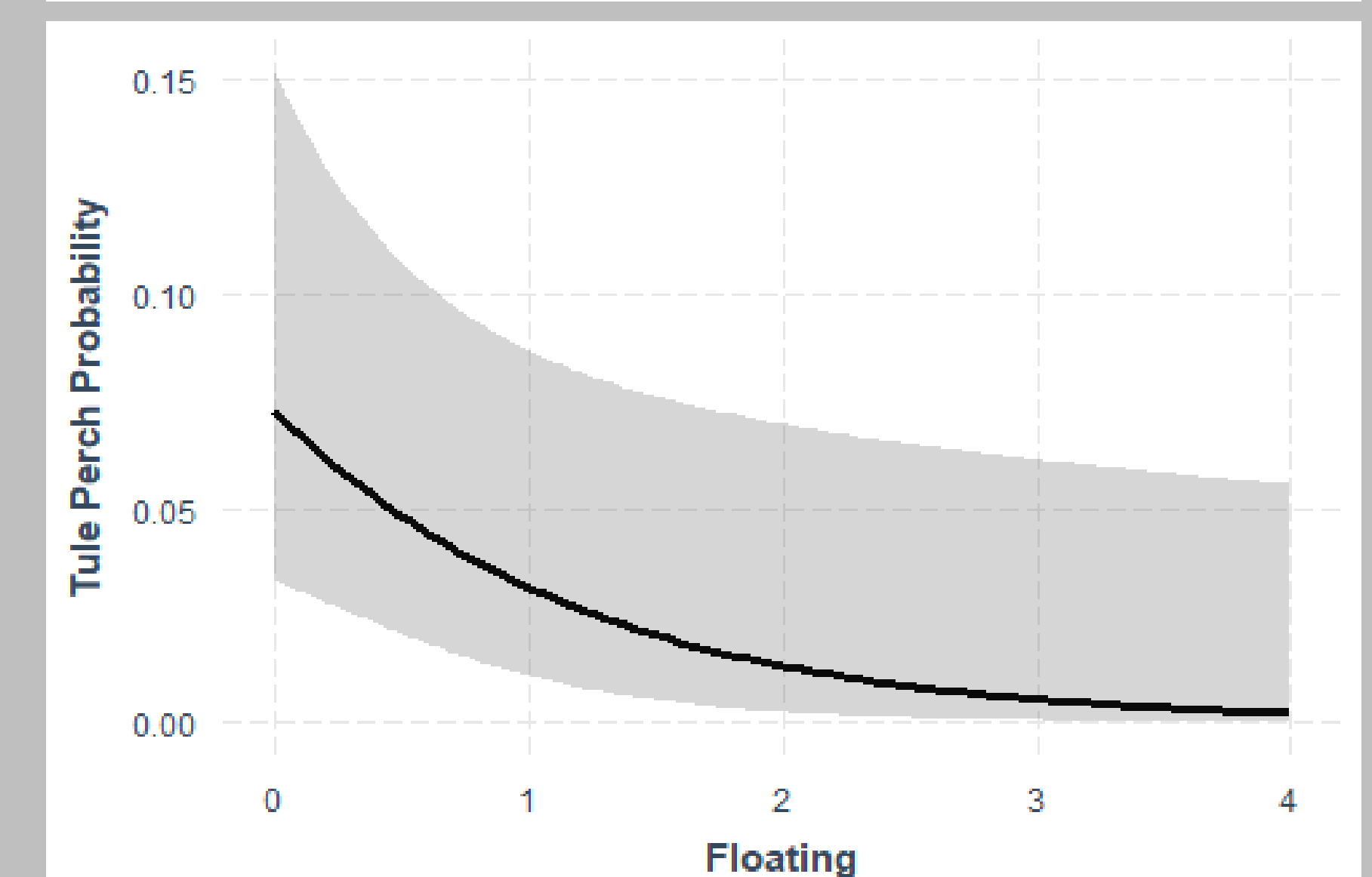
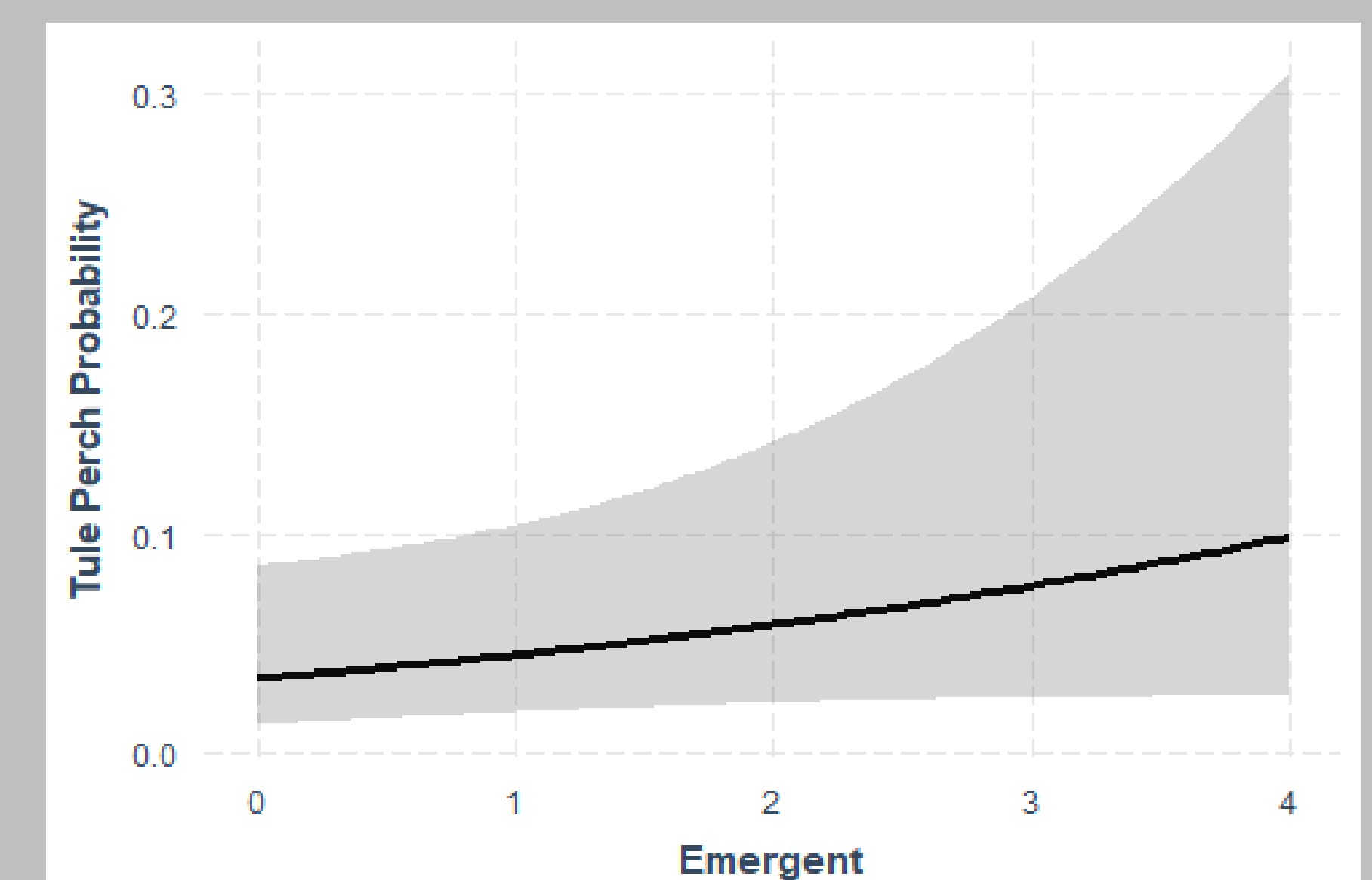
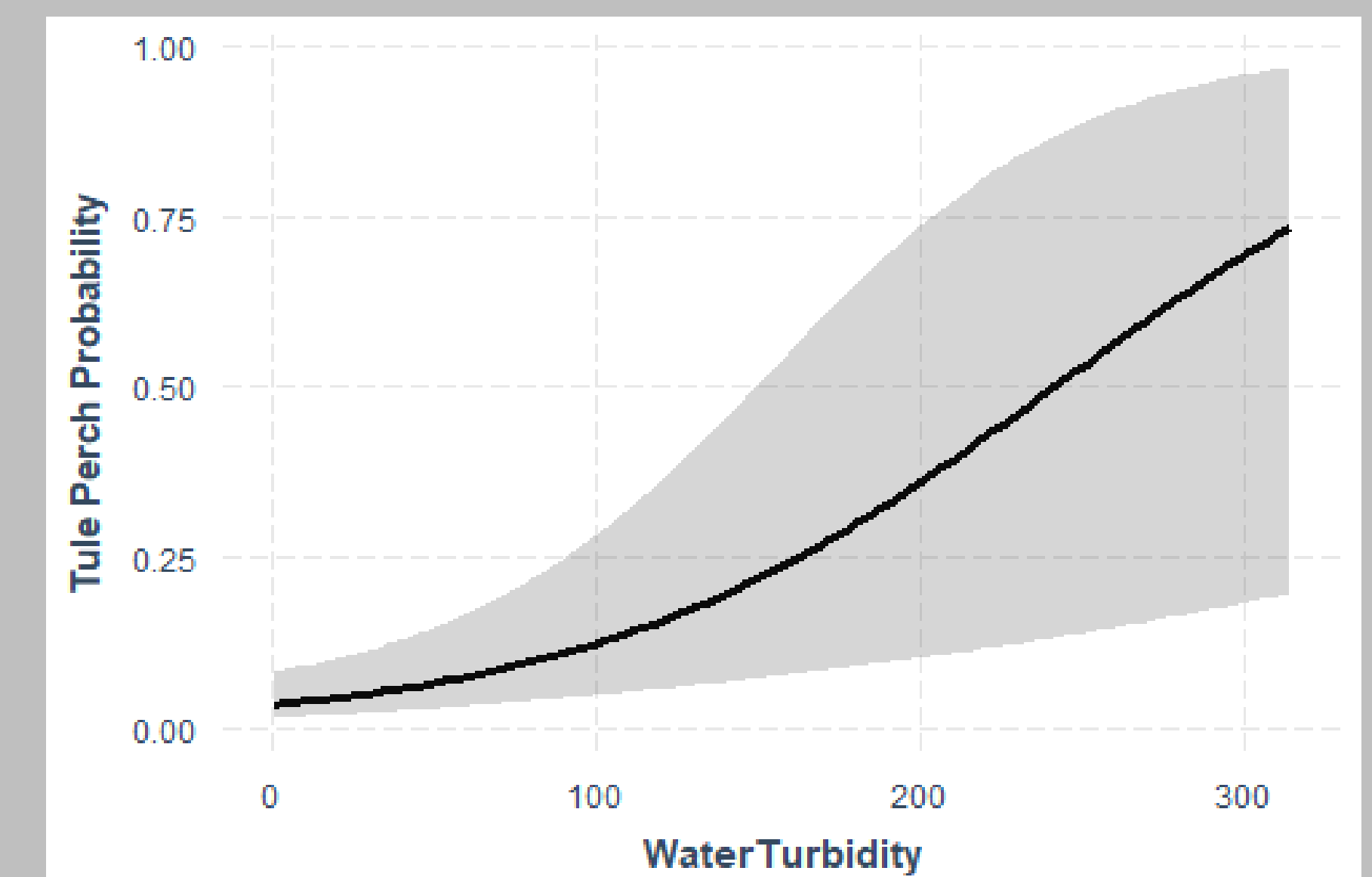
West

Beach Seines



Habitat Associations

	Estimate	Std. Error	Z- value	P-value
Turbidity	0.01393	0.00411	3.390	<0.001
Emergent	0.28047	0.18135	1.547	0.122
Floating	-0.88142	0.41254	-2.137	0.033
SAV-Yes	0.90035	0.47724	1.887	0.059



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Datasets: USFWS Beach Seine Survey:
<https://portal.edirepository.org/nis/mapbrowse?scope=edi&identifier=244&revision=8>
USFWS Boat Electrofishing Survey:
<https://portal.edirepository.org/nis/mapbrowse?scope=edi&identifier=692&revision=2>