Predicting blue crab (*Callinectes sapidus*) fisheries independent survey abundances and commercial landings in Charleston Harbor, South Carolina

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Abstract

Marked high fluctuations in blue crab (*Callinectes sapidus*) seasonal and annual abundance, and commercial landings are typical, but data from both fisheries independent and dependent surveys have shown declines in populations in recent years in South Carolina. Despite several long-term fisheries independent surveys encountering blue crab, predictive models have not recently been developed in South Carolina to quantify variation in abundance and commercial landings.

Table 1: SCDNR fisheries independent survey methodology.

	Sampling				Data		
Survey	Gear	Sample Area	Sample Interval	Sample Method	N(events)	Biotic	Standardization
CRMS							
Creek Trawl	6m Trawl, 2.54cm stretch mesh	Ashley River, Wando River	Monthly, May-Sep	Fixed Stations	1827	Abundance, Size, Sexual Maturity	Time
Harbor Trawl	4.6m Trawl, 0.6cm D mesh	Ashley River, Charleston Harbor	Monthly	Fixed Stations	2956	Abundance, Size, Sexual Maturity	Time, Gear
Ashley Fall Potting	0.6 x 0.6 x 0.46m Pot, 3.8 cm mesh	Ashley River	Monthly, Oct-Nov	Randomized Block w/in a Fixed Station	128	Abundance, Size	Time
ERS							
SCECAP Tidal Creeks	5m trawl, 1.9cm bar mesh	Charleston Harbor Systemwide	Jun - Aug	Random Stratified	62	Abundance, Size	Volumetric
SCECAP Open Water	5m trawl, 1.9cm bar mesh	Charleston Harbor Systemwide	Jun - Aug	Random Stratified	92	Abundance, Size	Volumetric
IFRS							
Trammel Net	183 x 2.1m trammel net	Charleston Harbor Systemwide	Monthly	Random Stratified	4736	Abundance	None (Total)