

### Supplementary Table

Settings for simulation of abundance estimates with the vector autoregressive spatiotemporal (VAST) model in the R package VAST (Thorson, 2019). The simulation analysis was used to assess the effect of variability in sampling density on estimates of the biomass of species targeted in a bottom-trawl survey conducted in the Gulf of Alaska.

Setting	Function	Value
purpose	make settings	index
region	make settings	GOA survey grid (< 1,000 m, excl. untrawlable cells)
Observation model	make settings	delta-gamma
knot count	make settings	500
knot method	fit model	mesh
field configuration	make settings	$\varepsilon_1 = 0$ ; $\varepsilon_2 = \text{IID}$ ; $\beta_1 = \text{IID}$ ; $\beta_2 = \text{IID}$ ; $\omega_1 = \text{IID}$ ; $\omega_2 = \text{IID}$
rho configuration	make settings	$\beta_1 = 0$ ; $\beta_2 = 0$ ; $\omega_1 = 0$ ; $\omega_2 = 0$
anisotropy	make settings	ON
Bias correction	make settings	ON
vessel effects, catchability, covariates	fit model	none

#### Reference

Thorson, J. T. 2019. Guidance for decisions using the Vector Autoregressive Spatio-Temporal (VAST) package in stock, ecosystem, habitat and climate assessments. *Fish Res.* 210:143–161. [Crossref](#)