

Table S1 Mean total values for depth (Dep, m), sea surface temperature (SST, °C), sea surface salinity (SSS), sea surface chlorophyll a (SSChl, mg/m³) sampled from three cruises in Yangtze Estuary (±95% confidence interval)

Cruise timing	Depth	SST	SSS	SSChl
May 2019	5.14 ± 1.10	21.93 ± 0.22	7.47 ± 2.28	0.88 ± 0.14
May 2020	7.05 ± 1.11	22.35 ± 0.23	7.38 ± 1.91	1.16 ± 0.15
May 2021	10.25 ± 1.06	22.40 ± 0.28	4.32 ± 1.73	0.75 ± 0.06

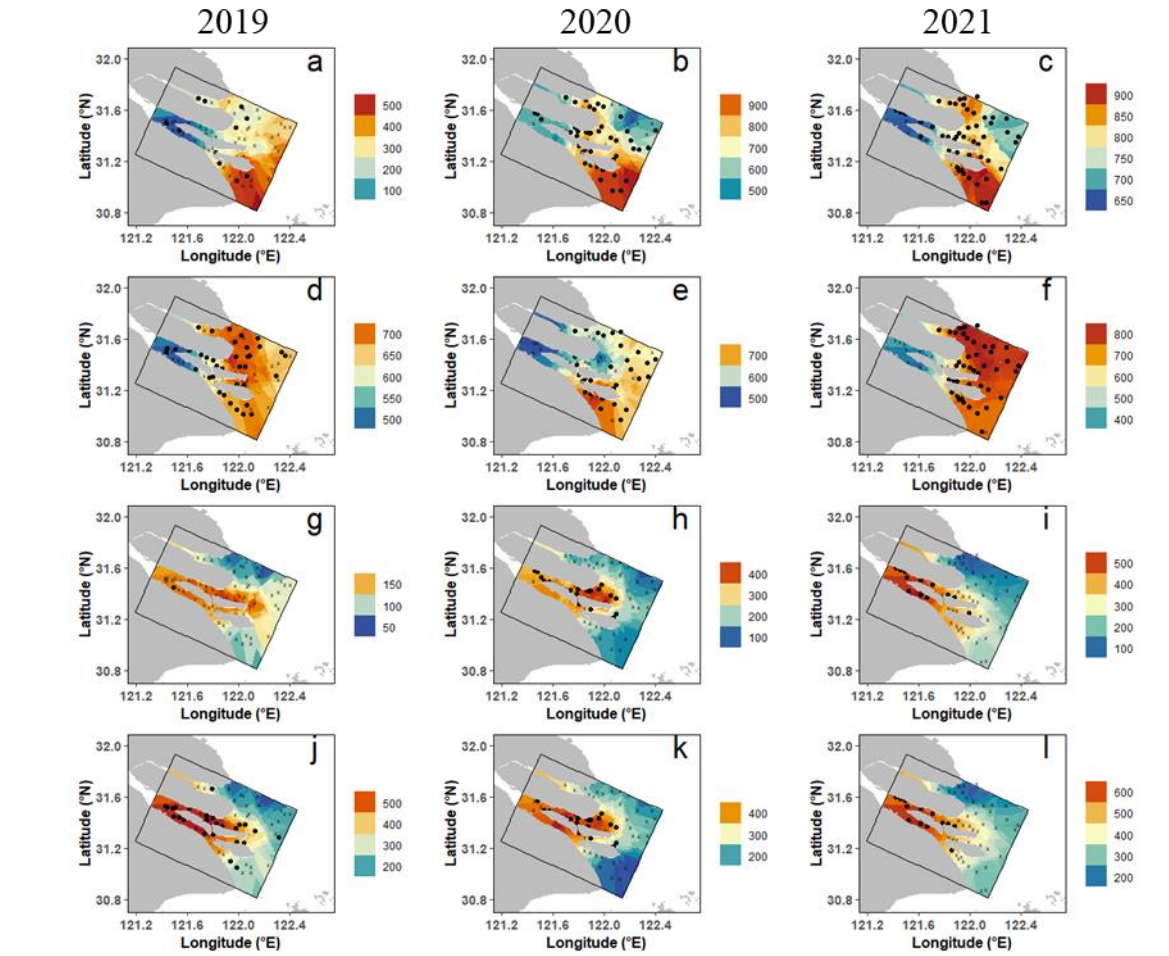


Figure S1 The distribution of modeled and observed for the four model species in all three cruises in the Yangtze Estuary. (a-c, *C. mystus*; d-f, *E. japonicas*; g-i, *P. sinensis*; j-l, *H. bleekeri*)

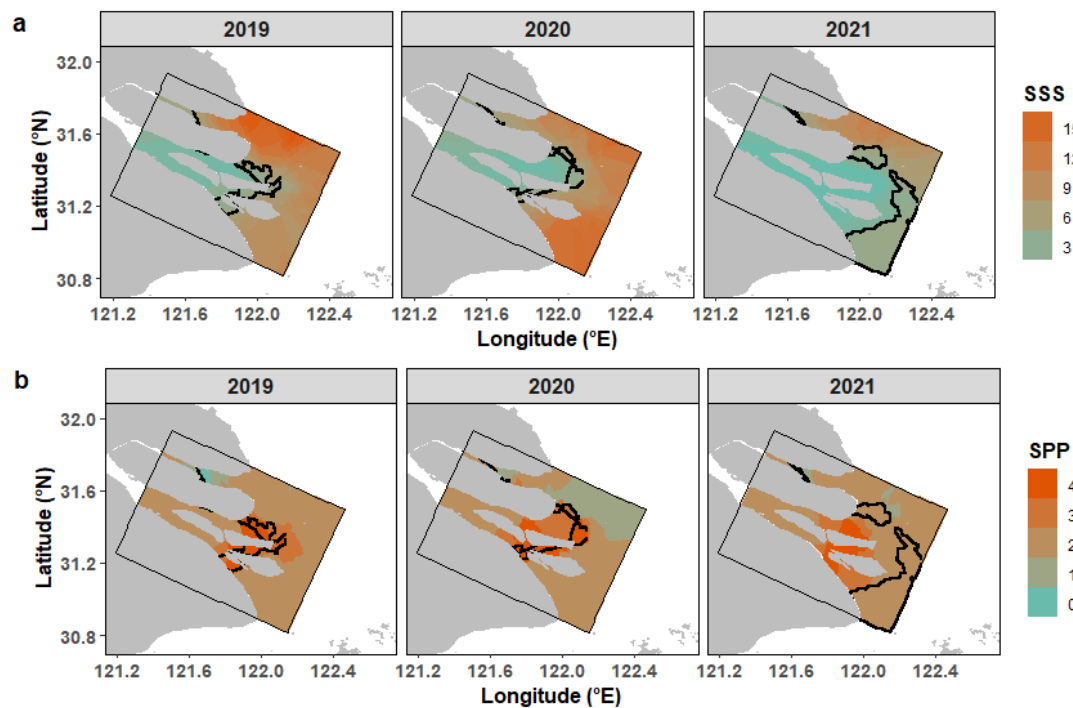


Figure S2 The spatial patterns of SSS (a) and the sum of predicted presences of the four species (b) considered in all three cruises in the Yangtze Estuary.