All data are publicly available through the Dauphin Island Sea Lab Data Management Center.

www.data.disl.edu

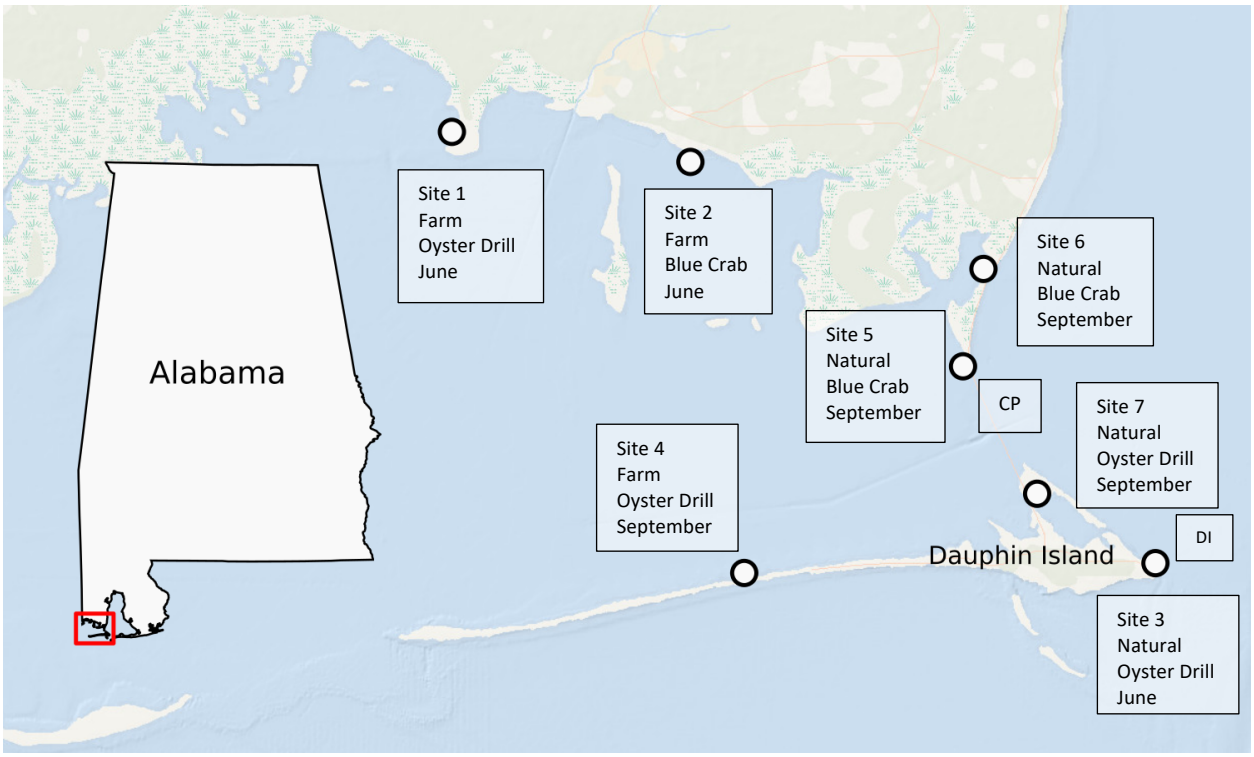

Figure S1. Map of study area. White circles indicate areas where experiments were performed. Text indicates whether sites were natural or oyster farms, which oyster predator was most often observed in the area, and when the oysters were deployed (June, September). Water temperature and salinity were recorded by the Alabama Real-time Coastal Observation System (ARCOS) during the experiment. CP indicates the Cedar Point ARCOS station, and DI indicates the Dauphin Island ARCOS. www.disl.edu/arcos/

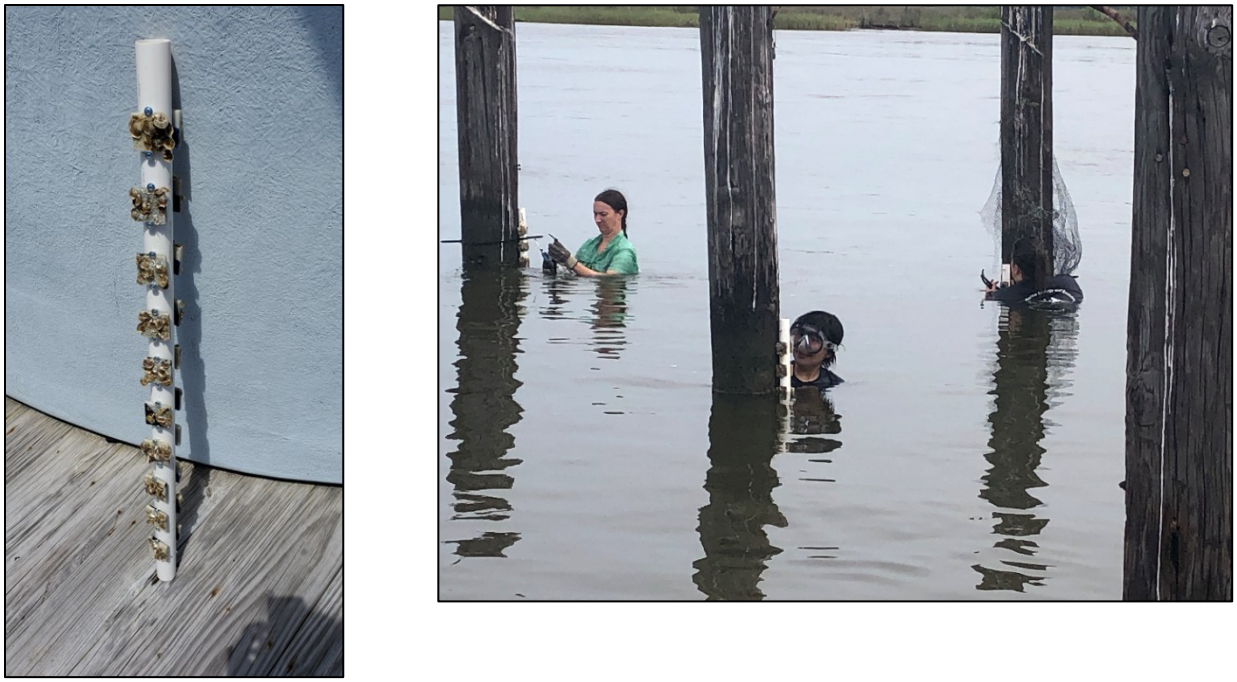

Figure S2. A) PVC pole with oyster tiles attached. The tiles span 102 cm, which covers the tidal range in the study area. B) Co-authors C. Russell (left) and Carter Lin (center) attaching PVC poles with oyster tiles to pilings. Also pictured is Armorel Eason, an REU intern. Photos by D.L. Smee.

Table S1: The proportion of time oysters were exposed to air at each site according to their tidal position. Positions spanned 102 cm height with 10.2 cm difference between center of adjacent positions and 8.9 cm between adjacent tile edges (A = highest position, J = lowest position).

Position	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7
A	0.00615	0.02783	0.46351	0.20945	0.36517	0.42401	0.30632
B	0.00295	0.01346	0.29446	0.11753	0.22628	0.26175	0.19080
C	0.00107	0.00575	0.15762	0.06242	0.11504	0.13604	0.09403
D	0.00008	0.00238	0.07620	0.03118	0.05090	0.06194	0.03986
E	0	0	0.02430	0.01302	0.01544	0.02585	0.00502
F	0	0	0	0.00418	0	0	0
G	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0
J	0	0	0	0	0	0	0

Table S2: Timeline for survivorship checks of June and September deployment sites. Weather and low initial mortality rate meant that September deployment sites were surveyed on a different schedule than June sites. We were unable to do a check at 7 months for the June deployment sites.

Deployment	Week 1	Week 2	Month 1	Month 2	Month 3	Month 7	Month 9
June	Jul 6-9	Jul 13-19	Jul 27-Aug 3	Aug 24-26	Sep 23-30	*	Mar 16-21
September	Sep 9	Sep 23	Nov 9	Dec 2	Mar 16	Apr 18	Jun 15

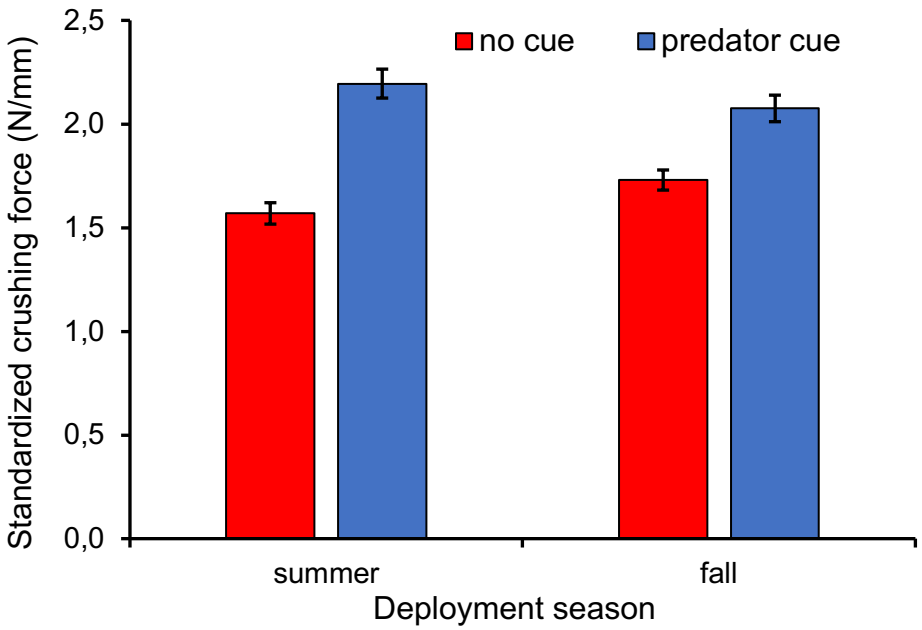

Figure S3. Mean ± SE shell hardness of oyster spat reared with blue crabs or in no predator controls. Oysters had significantly harder shells when reared with blue crab predators in both seasons. Season was not significant nor was the interaction between season and predator induction treatment.

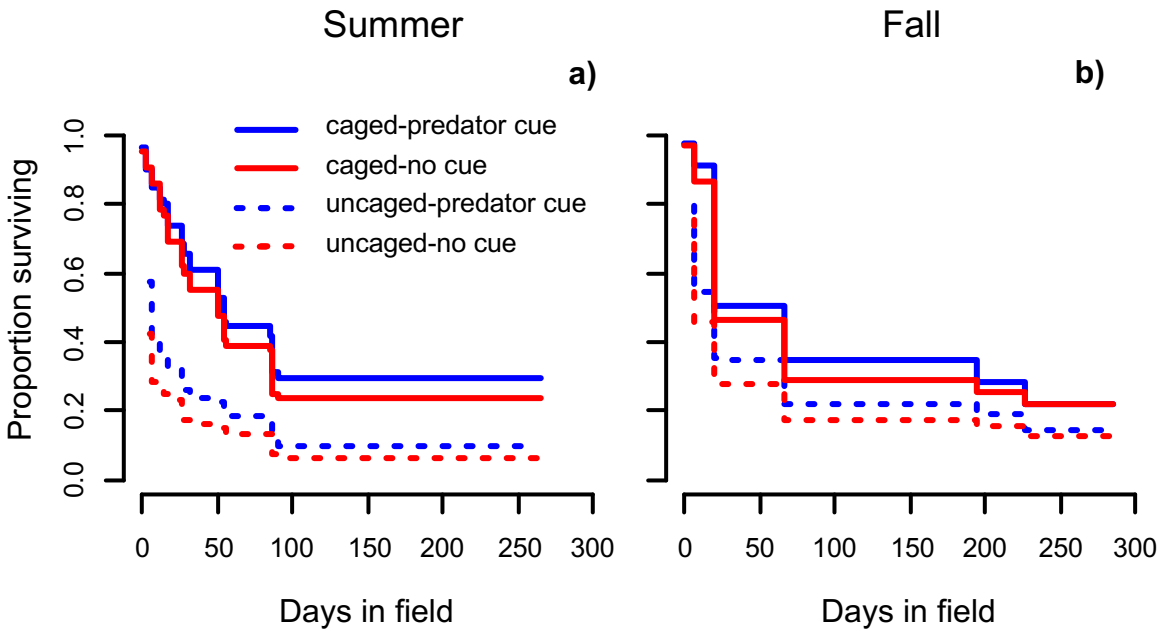

Figure S4. Cox proportional hazards model of oyster survival by cage and induction during **a)** summer and **b)** fall deployments. Blue lines indicate oysters reared with blue crabs and red lines indicate oysters reared in controls without predators. Solid lines are oysters in mesh cages to deter predators and dashed lines are oysters that are not protected by cages. Cages significantly increased oyster survival. Induced oysters survived significantly more than control oysters whether caged or not caged. The higher survival in cages indicates that much of the mortality observed was caused by predators. Cages were compromised within 6 weeks after placement in the field and became accessible to predators at that time.

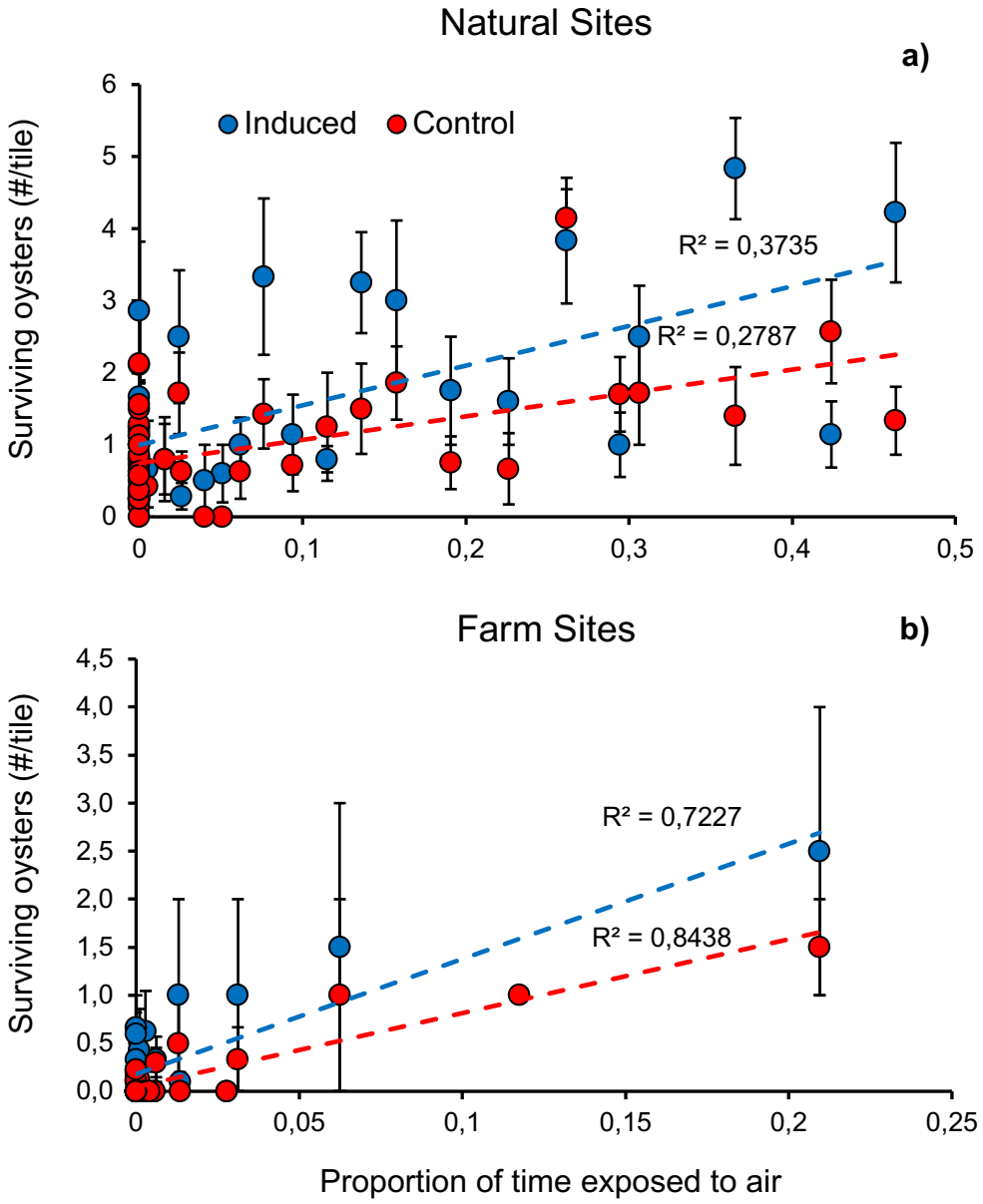

Figure S5. Mean ± SE oysters alive on each tile by exposure time between **a)** natural coastline sites (n = 5 – 10 tiles) and **b)** oyster farm sites (typically, n = 6 – 10 tiles, except at one farm where n = 2 – 5 tiles due to lost poles). Blue indicates induced oysters and red indicates those reared in controls without predators. The farm sites (bottom) had both fewer survivors per tile and less exposure time than the natural sites (top). However, exposure time and predator induction significantly increased oyster survival regardless of predation intensity.