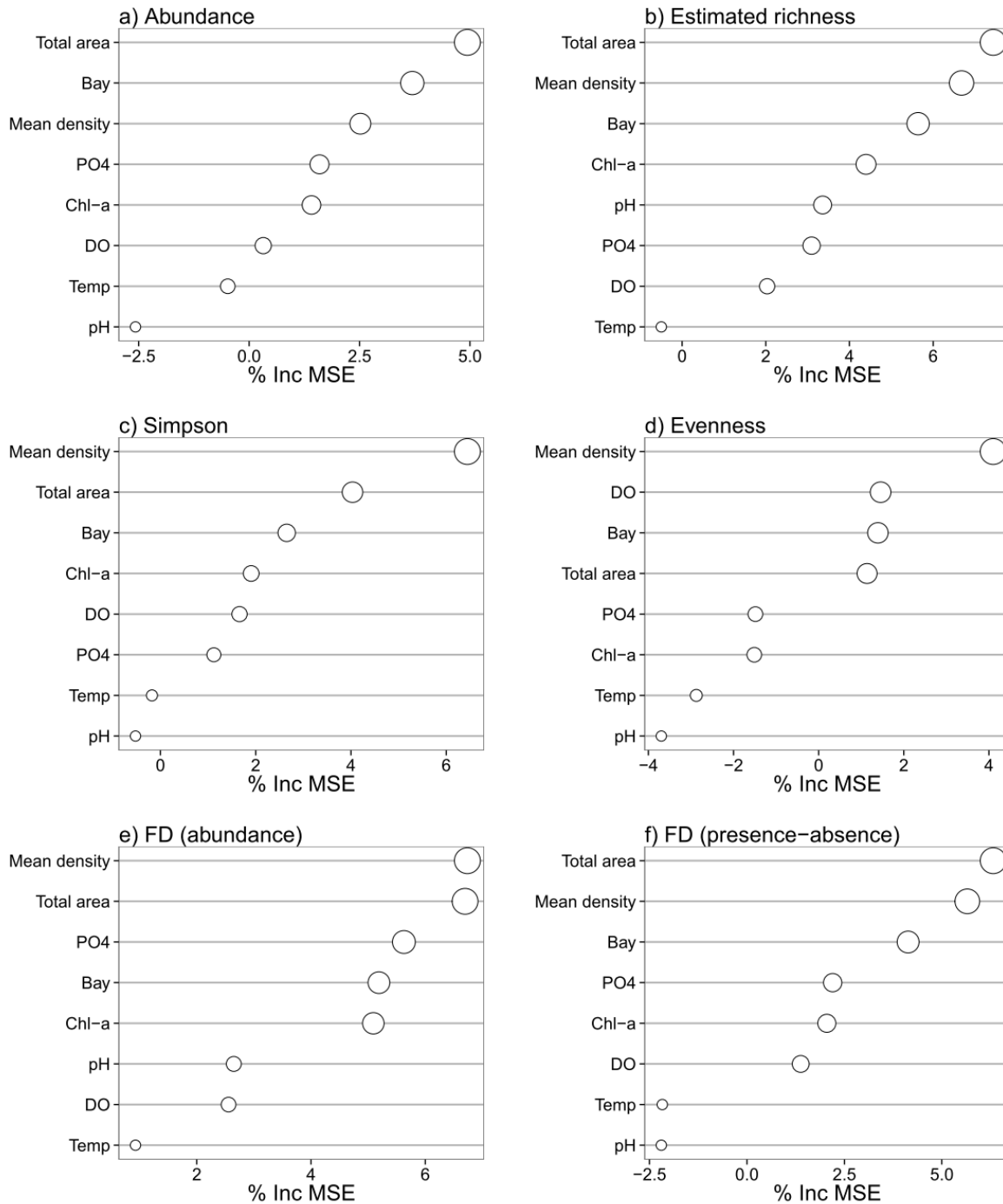


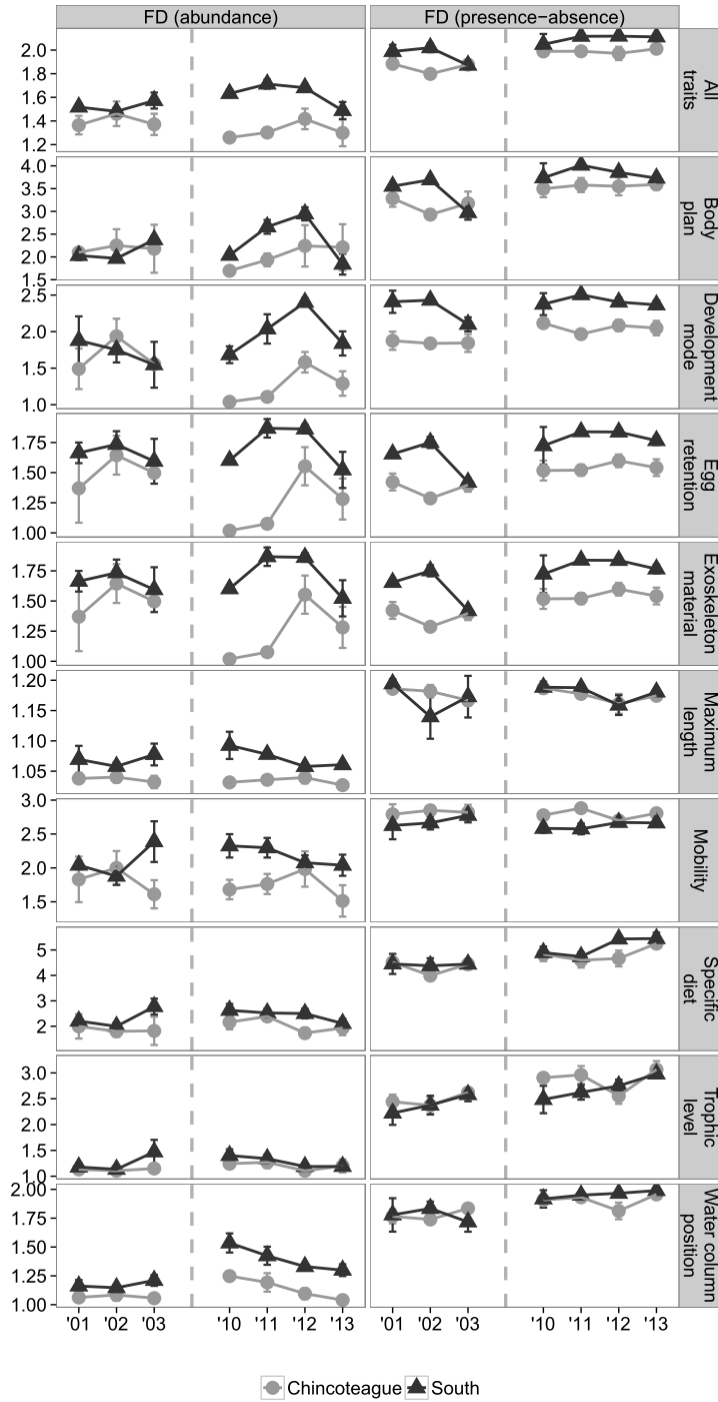
Table S1: Description of the nine functional traits used in the analysis, including their units and functional interpretation.

Trait	Description	Units	Functional Interpretation
Exoskeleton material	The primary material used in forming the exoskeleton	Calcium carbonate, chitin	Defense mode
Body plan	The general layout of the organism	Articulate (cylindrical, laterally-compressed, ventrally-compressed), bulloid, turbinate, turriiform	Habitat use and partitioning, defense mode
Trophic group	The primary trophic guild of the organism	Detritivore, filter feeder, grazer, omnivore, predator	Resource partitioning
Specific diet	The general group that forms the majority of the diet based on published analyses of diet preferences and/or gut contents	Benthic microalgae, bivalves, crustaceans, detritus, epibionts, epiphytic microalgae, hydroids, macroalgae, microalgae, polychaetes, sponges	Resource partitioning
Maximum length	The largest recorded size of the organism	Continuous, in mm	Habitat use and partitioning, resource partitioning
Water column position	Where the organisms spends the majority of its time	Benthos, epibenthos	Habitat use and partitioning
Mobility	The general state of activity of the organism	Crawling, free-swimming, tube-building	Habitat use and partitioning, colonization potential
Egg retention	Whether the organism retains its eggs or releases them into the water column	Brooding, external release	Colonization potential
Development mode	Whether the organism has a larval stage, and, if so, if that larvae disperse in the plankton	Direct, larval (non-planktonic), larval (planktonic)	Colonization potential



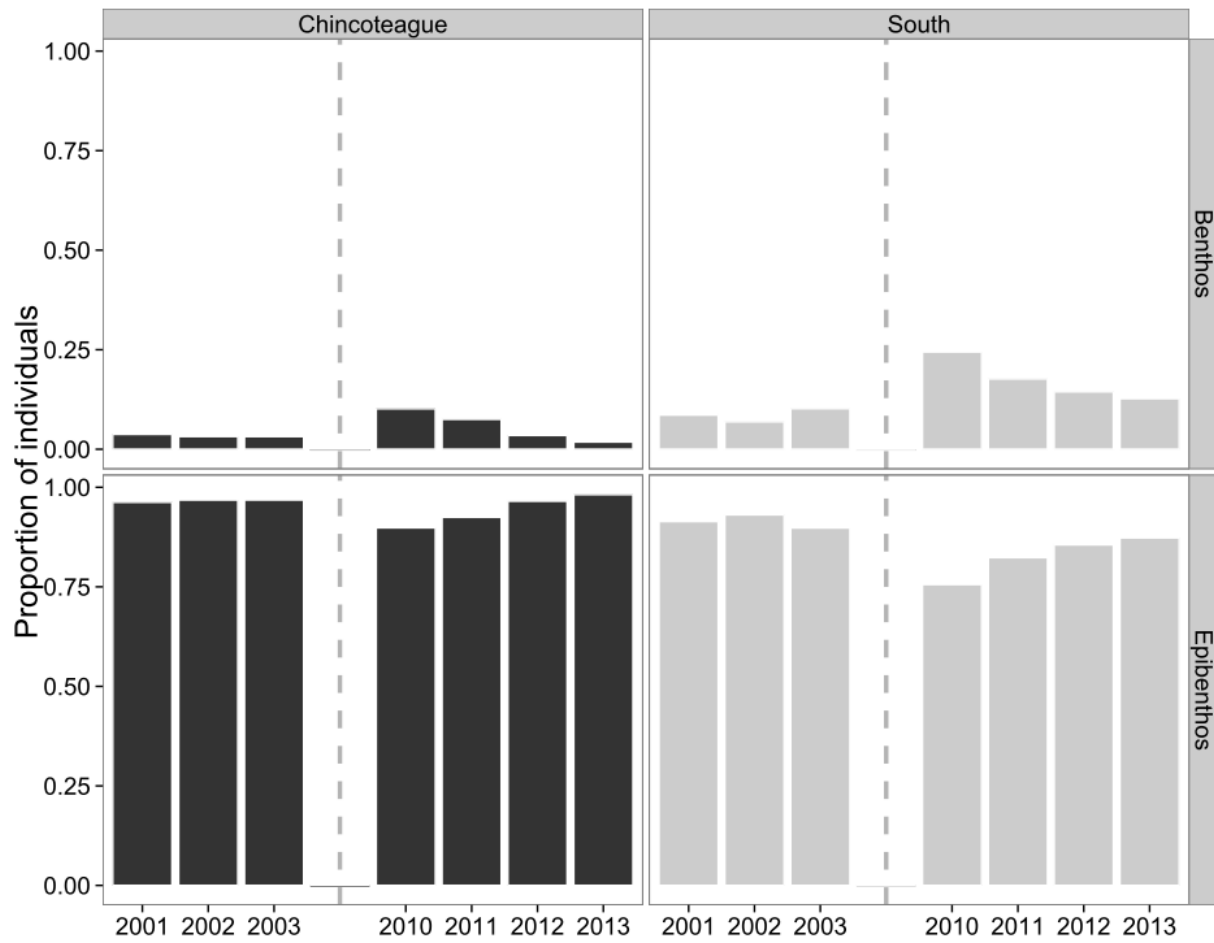
4

5 **Figure S1:** Importance plots derived from random forests for each community metric. The x-axis is
6 the percent increase in the mean-squared error (MSE) and represents how poorly the model does
7 at predicting the response when the variable on the y-axis is omitted. Points are scaled based on the
8 size of the increase in MSE.



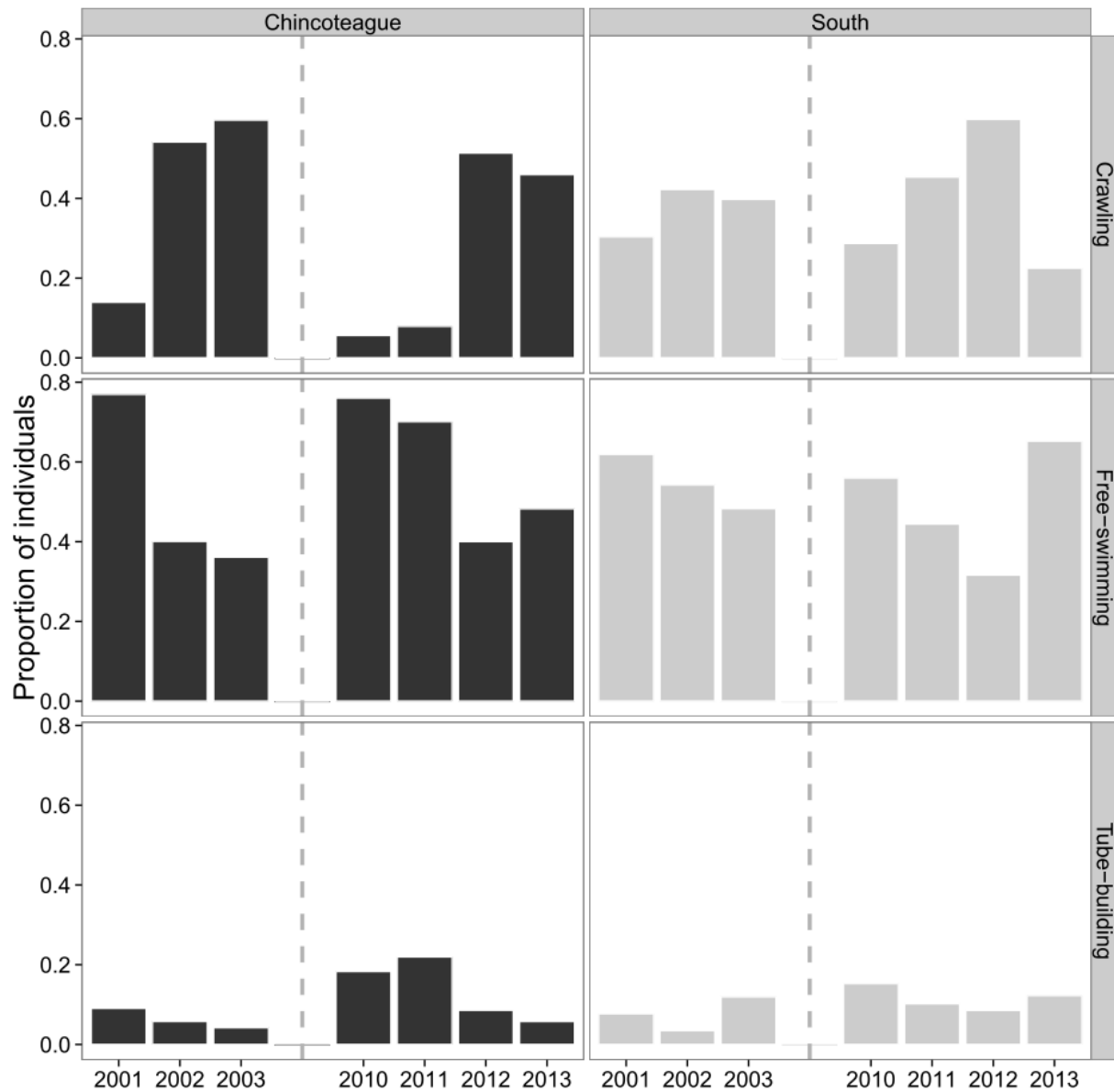
9

10 **Figure S2:** Functional diversity (FD) through time for all traits, and suites of traits relating to diet
 11 (trophic level and specific diet), habitat use (position in the water column and mobility), life history
 12 (brooding vs. non-brooding and larval dispersal mode), morphology (exoskeleton material and
 13 body plan), and body size.



14

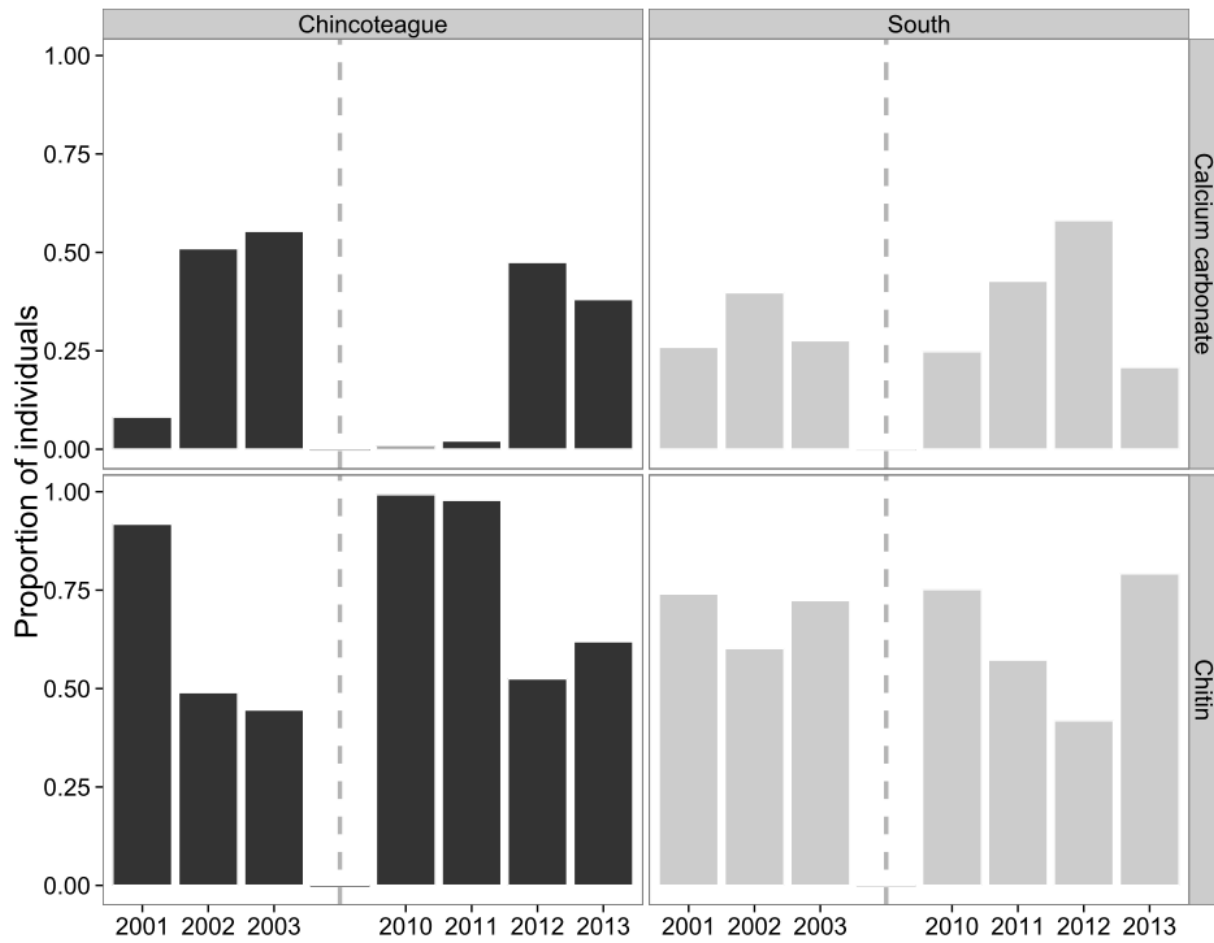
15 **Figure S3:** The proportion of individuals through time that possess traits relating to habitat use
 16 (benthos vs. epibenthos) for Chincoteague and South Bay.



17

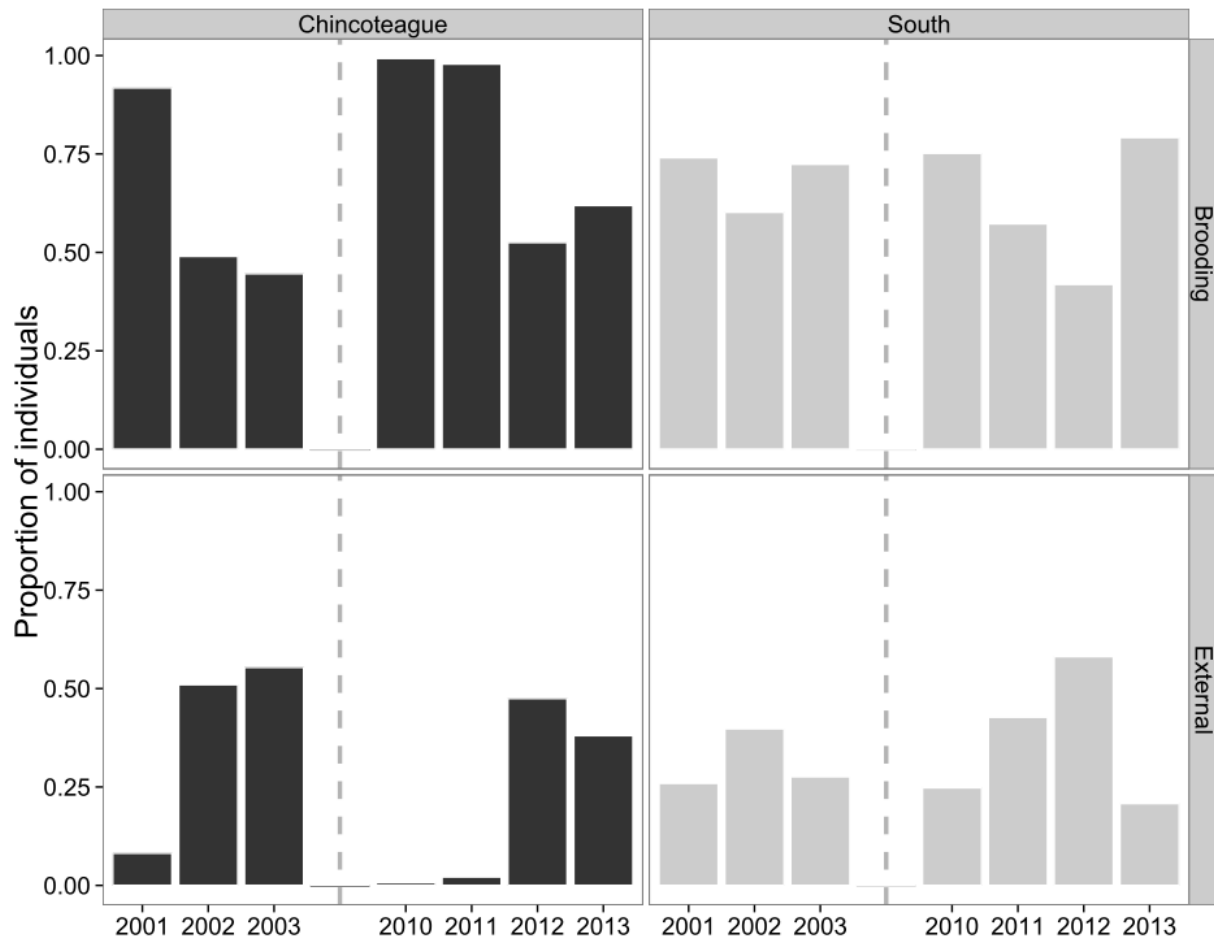
18 **Figure S4:** The proportion of individuals through time that possess traits relating to mobility

19 (crawling vs. free-swimming vs. tube-building) for Chincoteague and South Bay.



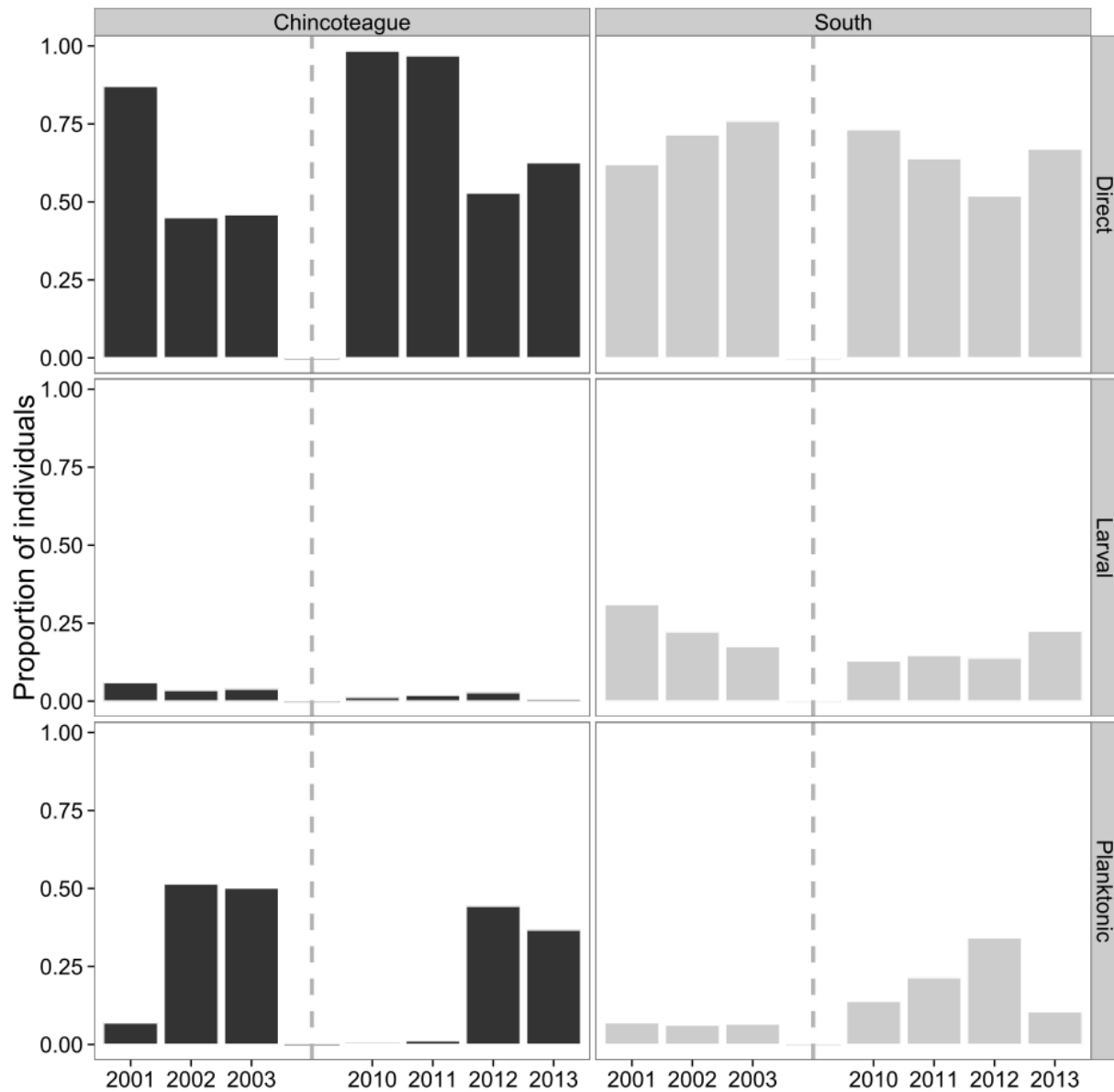
20

21 **Figure S5:** The proportion of individuals through time that possess traits relating to exoskeleton
 22 type (calcium carbonate vs. chitin) for Chincoteague and South Bay.



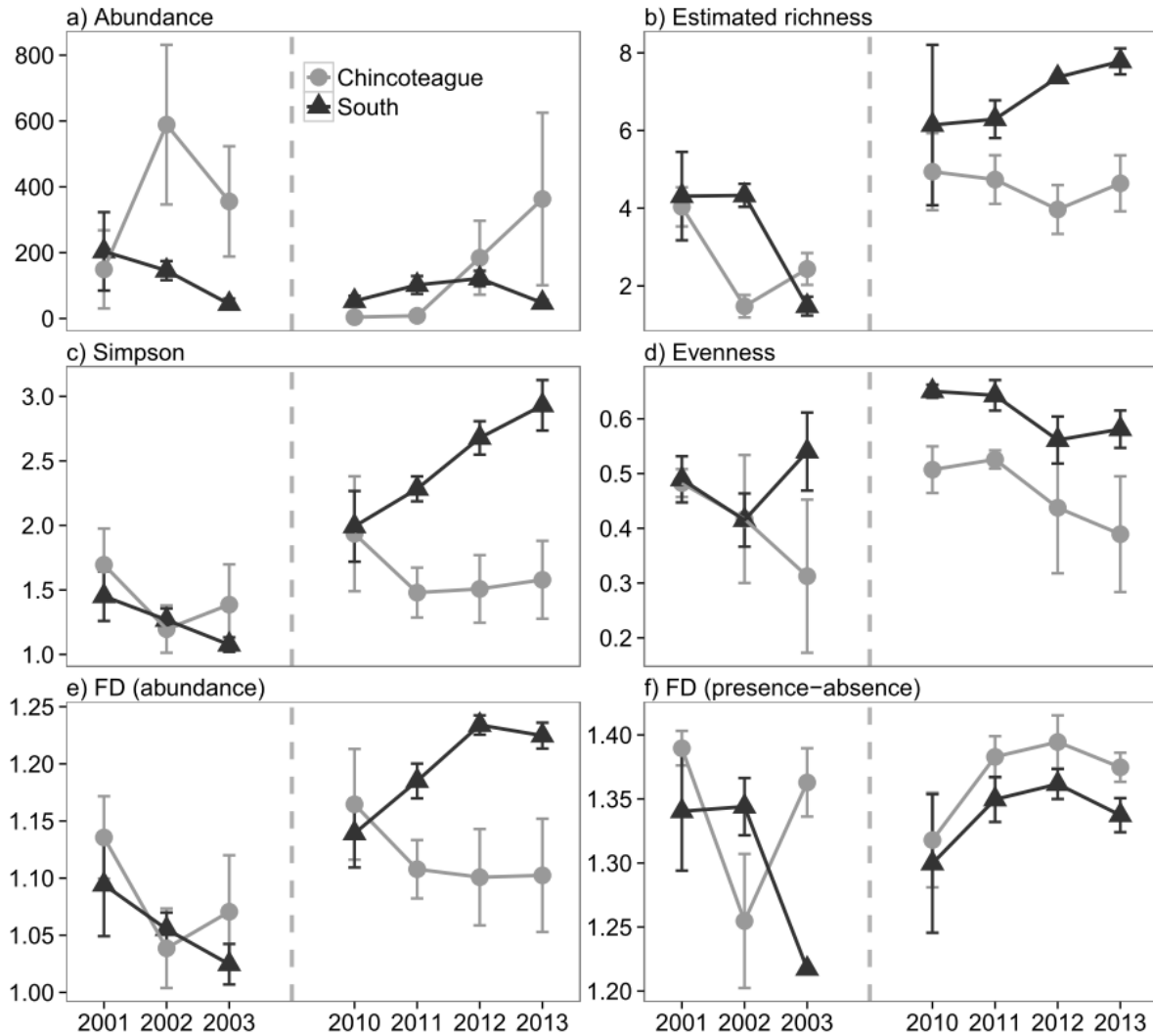
23

24 **Figure S6:** The proportion of individuals through time that possess traits relating to egg retention
 25 (brooding vs. external release) for Chincoteague and South Bay.



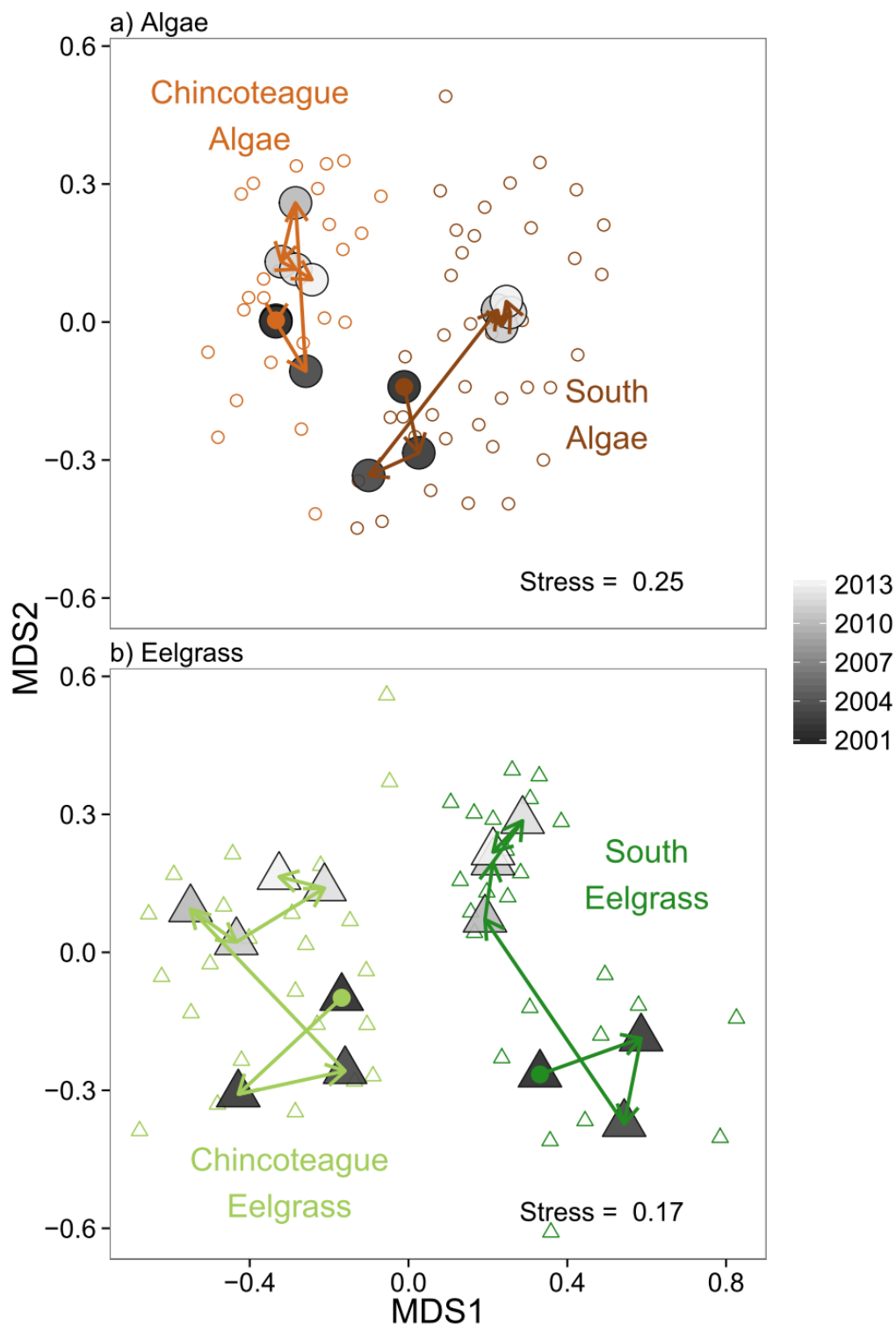
26

27 **Figure S7:** The proportion of individuals through time that possess traits relating to development
 28 mode (direct development vs. larval, non-planktonic vs. larval, planktonic) for Chincoteague and
 29 South Bay.



30

31 **Figure S8:** Times series plotting the annual mean ± 1 SE for various community properties
 32 representing only gastropods. Light grey circles represent the mature bed in Chincoteague Bay.
 33 Black triangles represent the restored bed in South Bay. FD = functional diversity, calculated as
 34 Rao's quadratic entropy from all nine functional traits.



35

36 **Figure S8:** Non-metric multidimensional scaling (NMDS) conducted on relative abundance data for
 37 **(a)** algal, and **(b)** eelgrass habitats over the course of the survey.

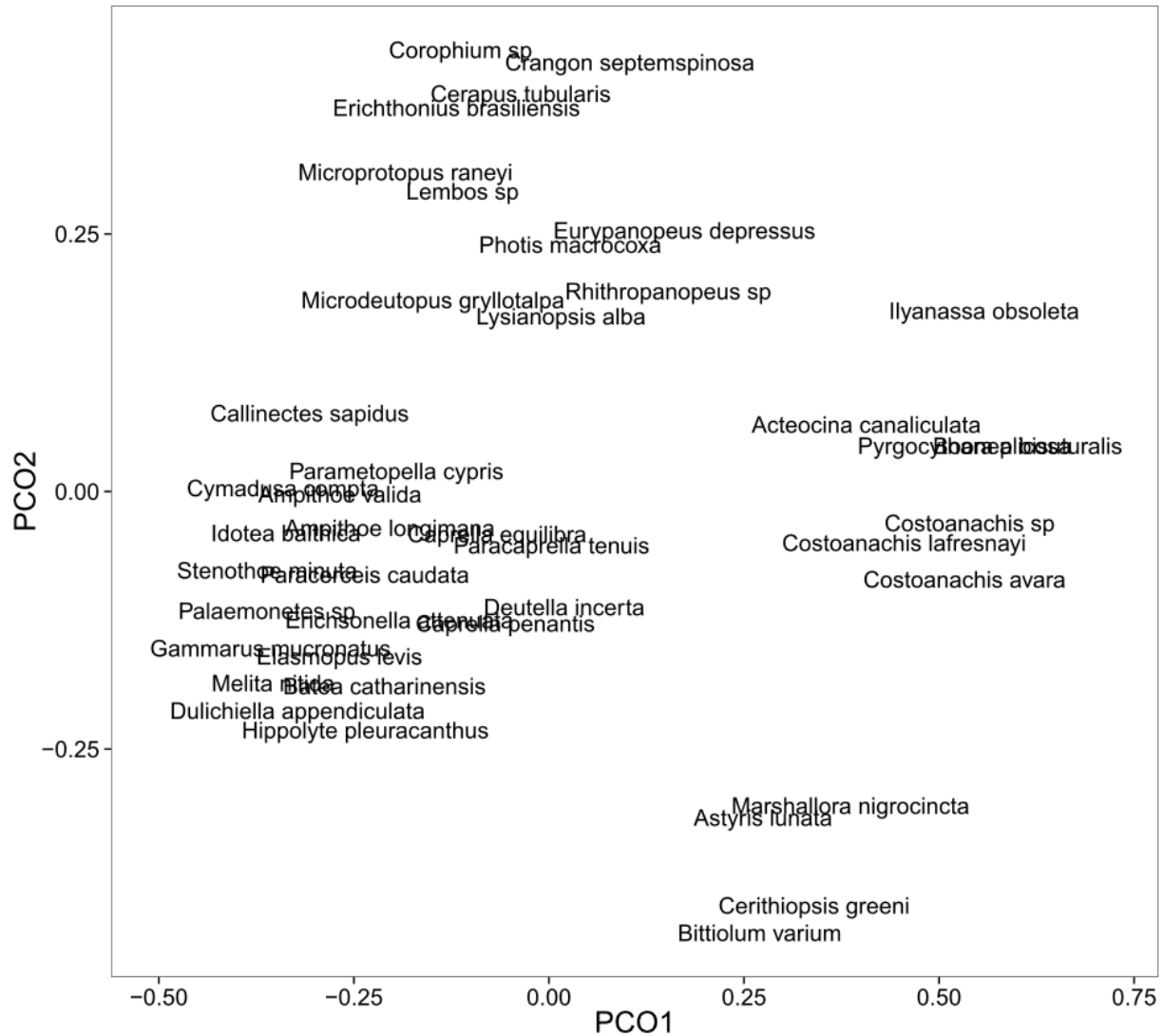
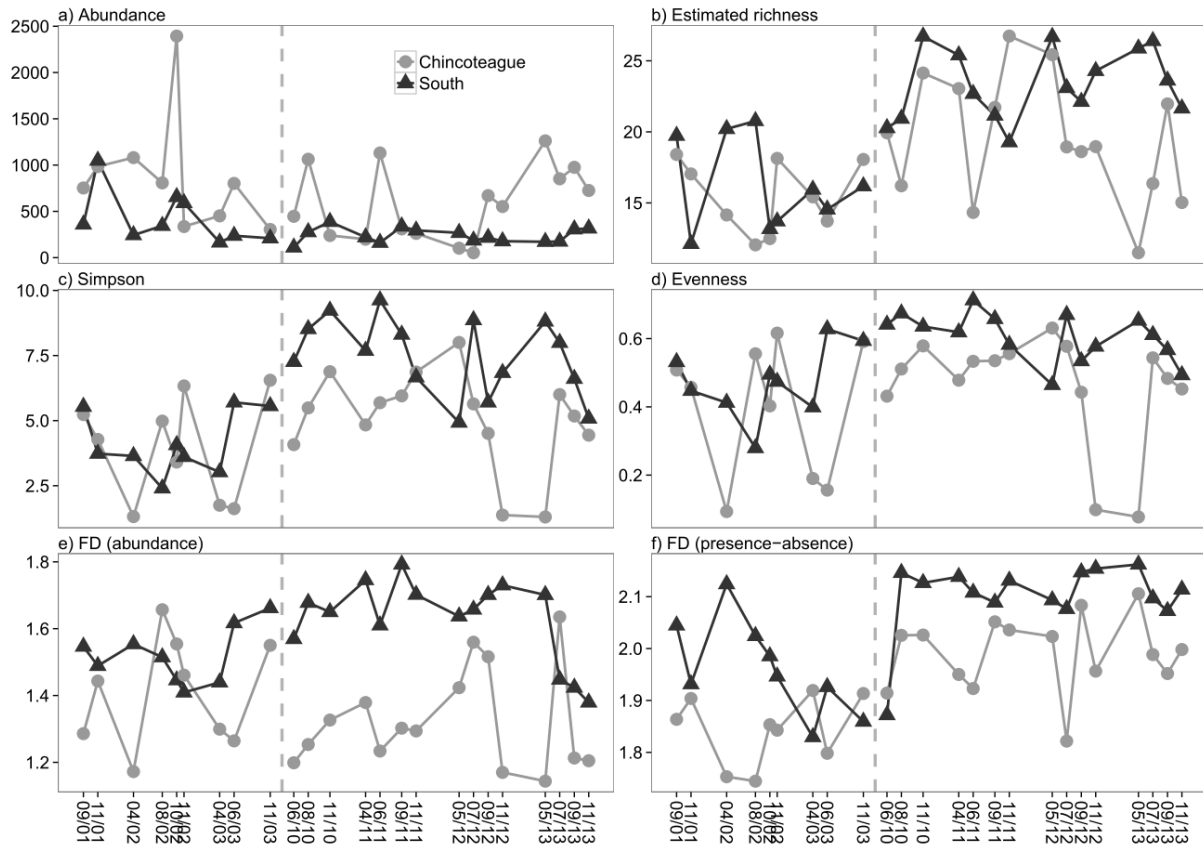


Figure S10: Relationships among species based on all nine functional traits generated using principal coordinates analysis. The two axes together explain 68% of the variance in functional traits.



42

43 **Figure S11:** Times series plotting the monthly mean \pm 1 SE for various community properties. Light
 44 grey circles represent the mature bed in Chincoteague Bay. Black triangles represent the restored
 45 bed in South Bay. FD = functional diversity, calculated as Rao's quadratic entropy from all nine
 46 functional traits.