MORPHOMETRIC CHANGE WITH GROWTH IN THE SCALLOP *PLACOPECTEN MAGELLANICUS*

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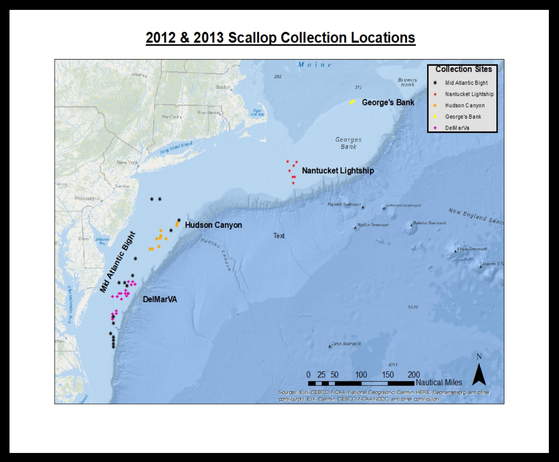
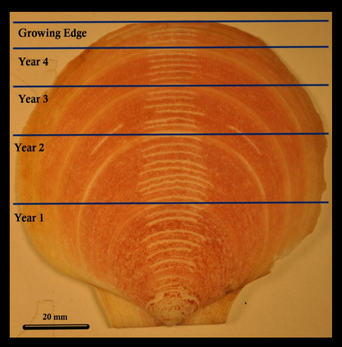
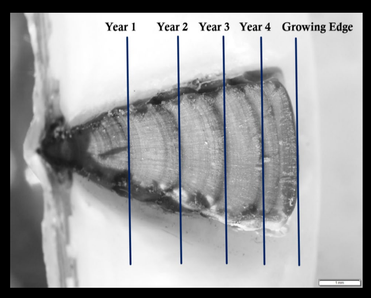
OBJECTIVE: To examine morphometry of *Placopecten magellanicus* with increasing size and age.



MATERIALS & METHODS:

683 scallops were collected between DelMarVA and Georges Bank (figure above) in 2012 and 2013 with a NMFS survey dredge: 8 feet in width, 2-inch rings, 4-inch diamond twine top and a 1.5 inch diamond mesh liner. All shells were measured, weighted and age estimated by two protocols: external shell signatures (figure below left) and internal hinge resilia (figure below right).





RESULTS:

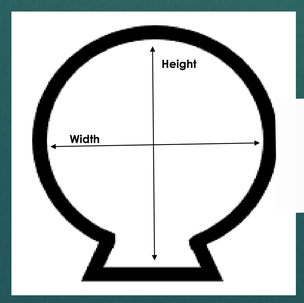
Morphometric analysis of scallop shells shows:

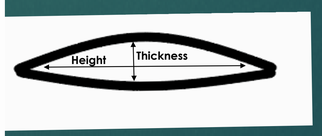
a) Height (mm) increases with age.
b) Age estimations by the two protocols are generally comparable: where discrepancies occur external signatures give higher values.
c) Width/height ratio increases as height increases.
d) Thickness increases proportionately with height.
e) Weight increases exponentially with height.
f) Descriptors for (c) through (e) are continuous without junctions.

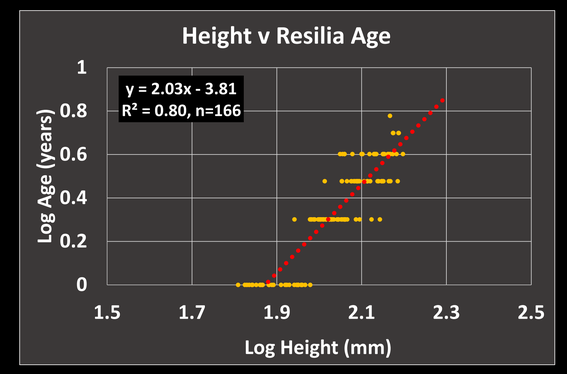
CONCLUSIONS:

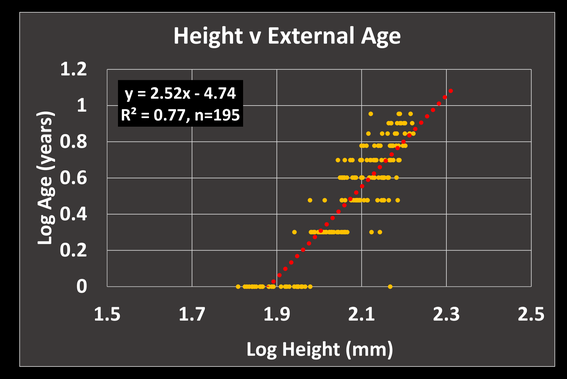
Age can be reliably estimated by two methods that show generally good agreement. The continuous descriptors noted in (b) though (f) indicate gradual change in morphometry with increasing age/size as niche changes from small, light scallops, and some times byssal attached, through swimming (midsize, growing scallops), to benthic sedentary (large, heavy scallops).

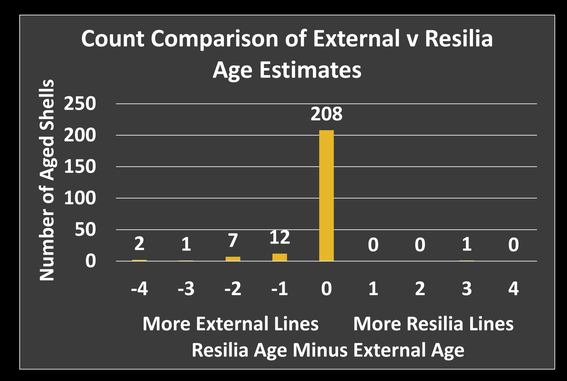
As *Placopecten magellanicus* grow larger and older, the shell becomes progressively wider with respect to height while shell weight increases exponentially. We view these changes as commensurate with gradual changes from juvenile (some times byssal attached), to swimming adult, to sedentary large adult phases of the life history.

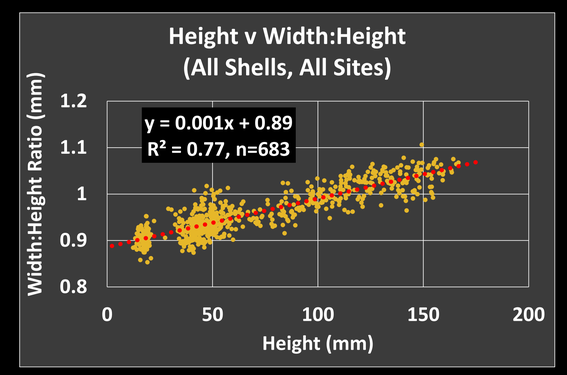


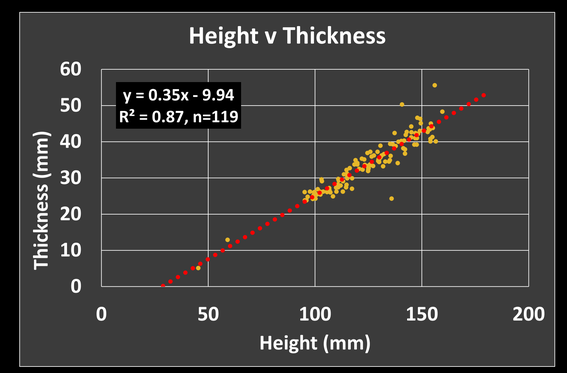


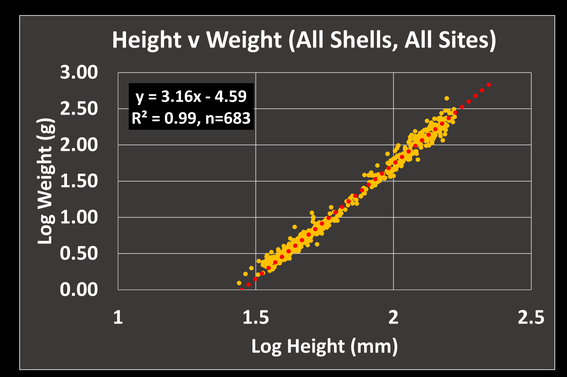












ACKNOWLEDGEMENTS:

- Virginia Institute of Marine Science - William and Mary
- Scallop Research Set Aside Funds (RSA) Award Number NA16NMF4540039

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