

Alewives in Maine: Identifying Population Structure across Multiple Scales

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P. Stetson

The Alewife Harvesters of Maine



'Conserving to Preserve Maine's future'



UNIVERSITY OF
SOUTHERN MAINE



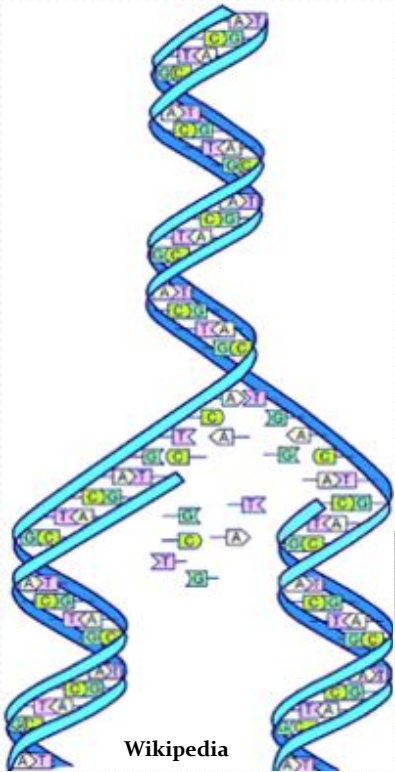
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Northeast Fisheries Science Center
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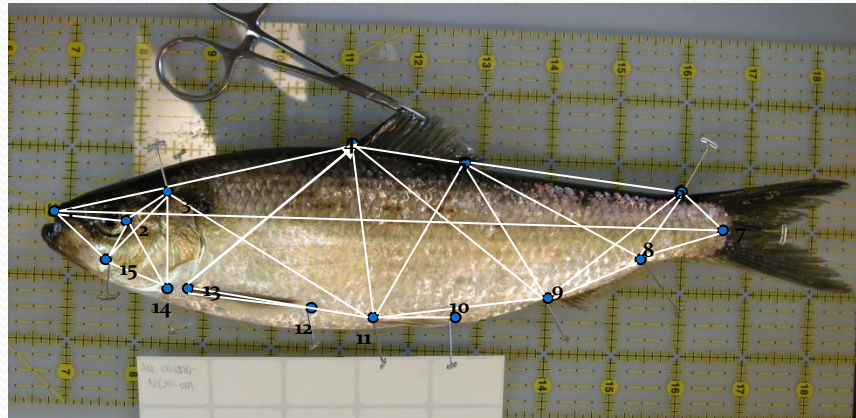
Alewife Stock Structure in Maine

Multidisciplinary approach to stock identification

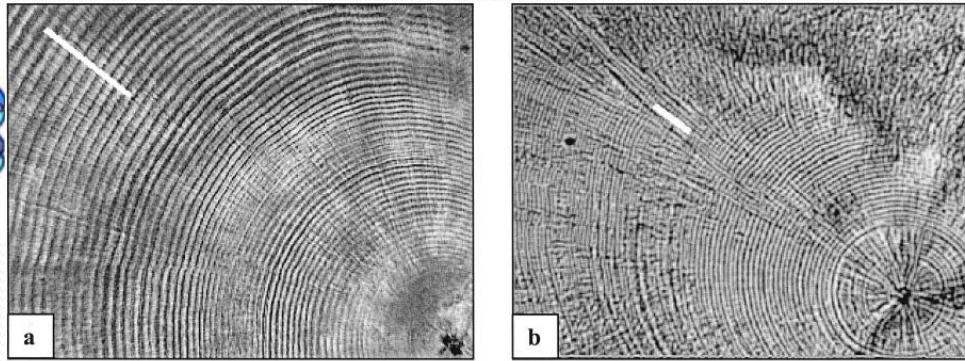
Microsatellite genetics



Morphometrics



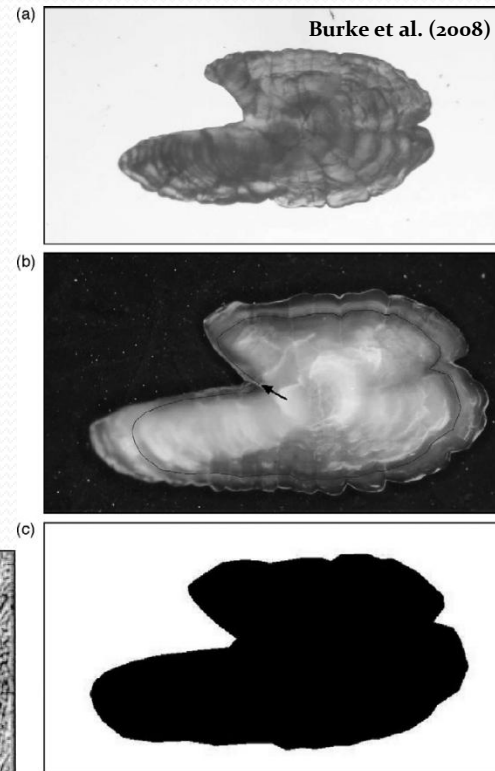
Otolith microstructure



20 μ

Brophy and Danilowicz (2002)

Otolith shape analysis



Alewife Stock Structure in Maine

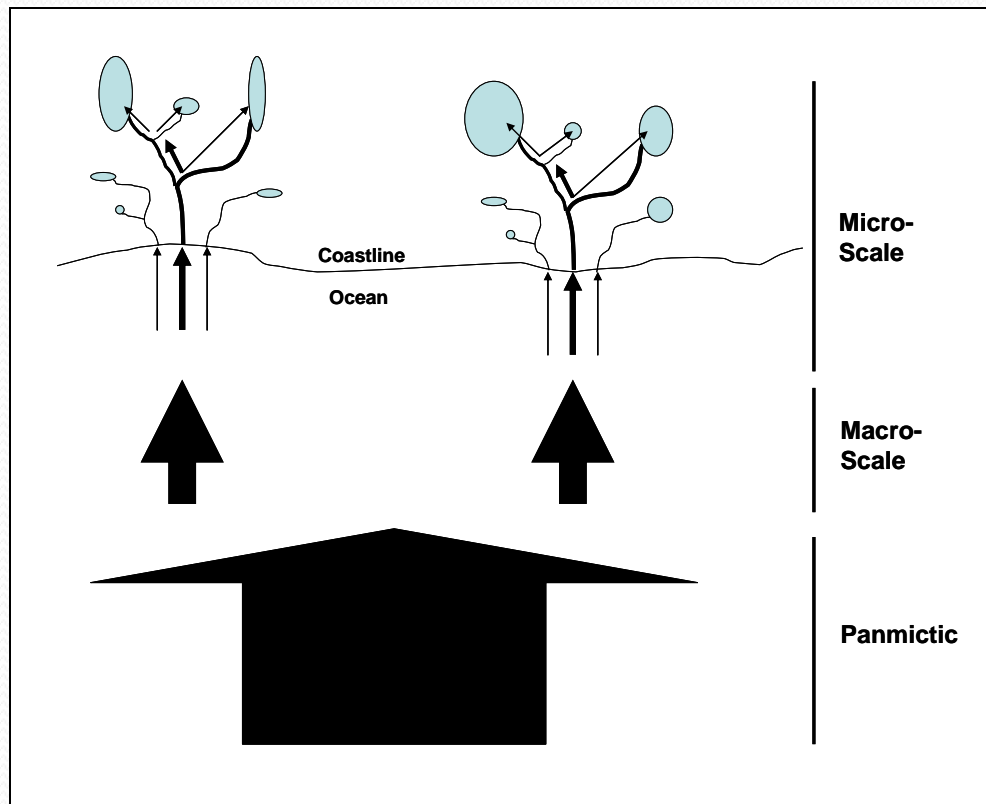
Quantify and define anadromous alewife stock structure across coastal Maine systems

- 1. Test for and inventory stock structure across river systems (“macro-scale”) and across spawning lakes within subset river systems (“micro-scale”)**
- 2. Develop classification models to assign alewife of unknown origin to their natal river system or lake**
- 3. Preliminary assessment of distribution of Maine alewife stocks in Gulf of Maine by applying the classification models to marine samples**
- 4. Recommendations for implementing stock composition analysis as a part of monitoring and assessment processes**

The fundamental population unit is the river system or the lakes within the river system

Hypotheses

Alewife populations maintain a metapopulation structure at the scale of large river systems (“macro-scale”)



Study Sites (20 River Systems Sampled)

