

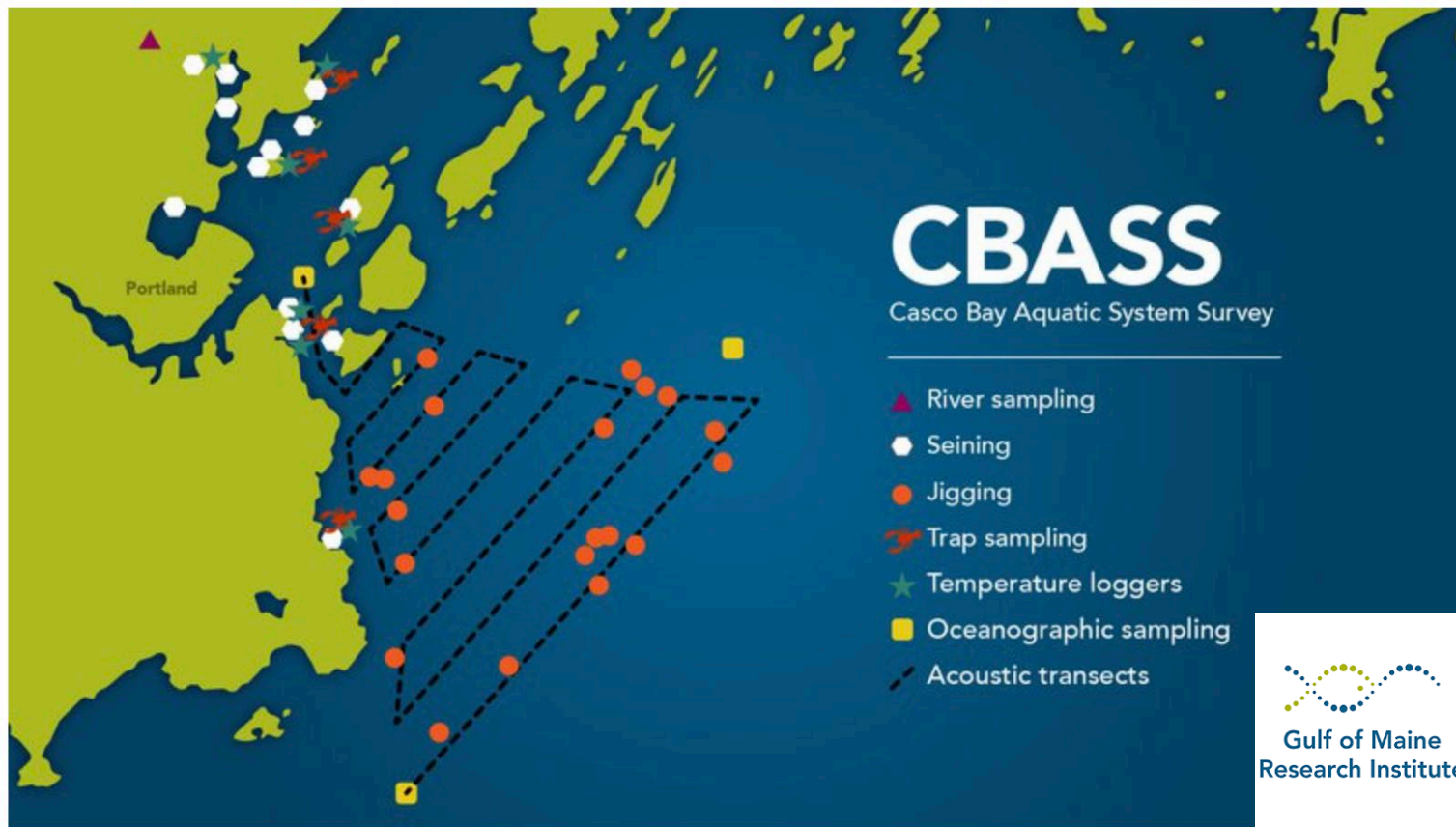
Spatial and Temporal Patterns in Fish and Zooplankton in Casco Bay

Rachel Lasley-Rasher

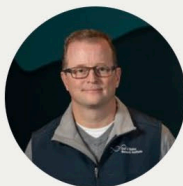
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University of Southern Maine





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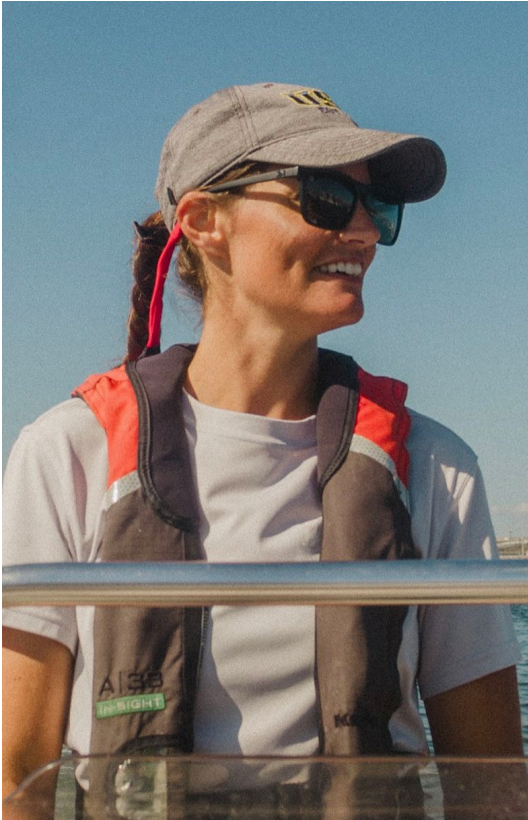
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Read the 10-Year
Monitoring Report!

<https://gmri.org/projects/casco-bay-aquatic-systems-survey-cbass/>

Student Researchers



Sam Bengs



Aaron Whitman

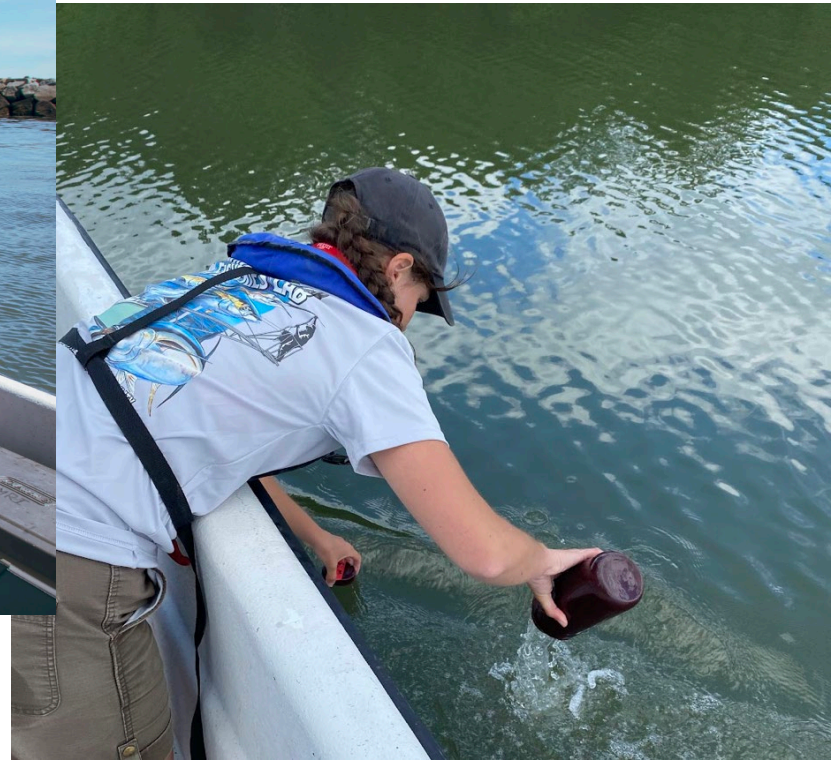


Brian Determan



Allison Fogg

Casco Bay Aquatic System Survey



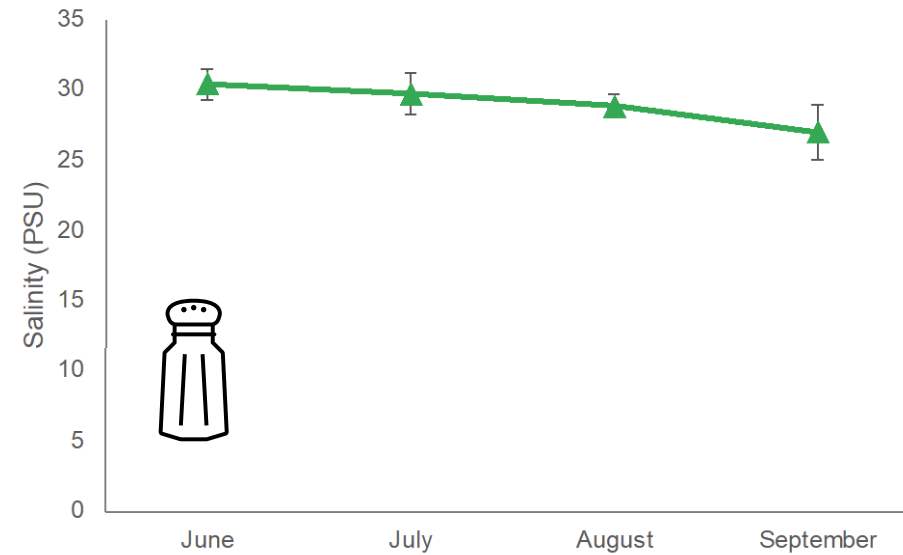
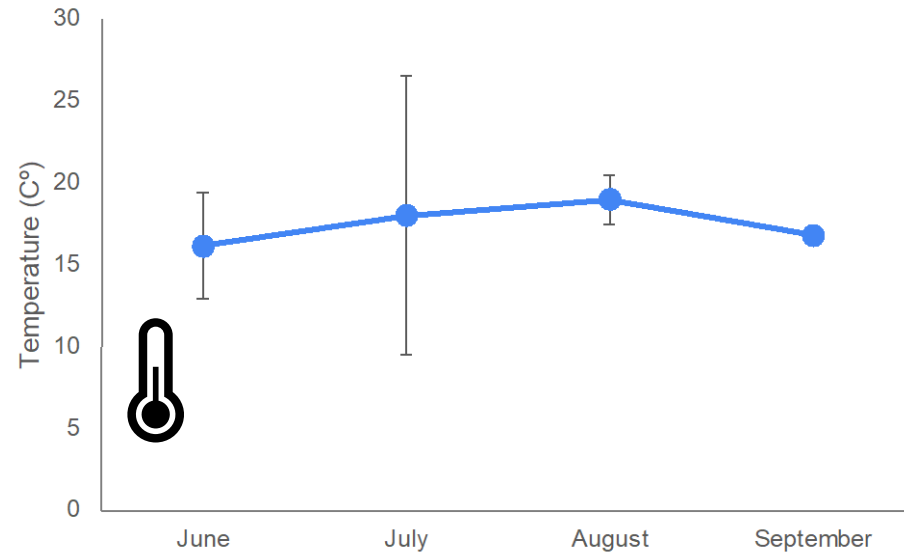
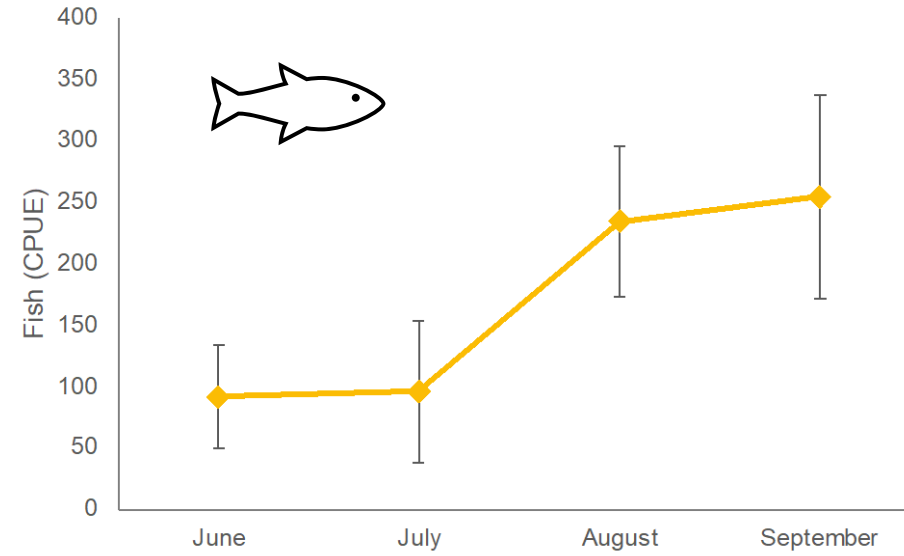
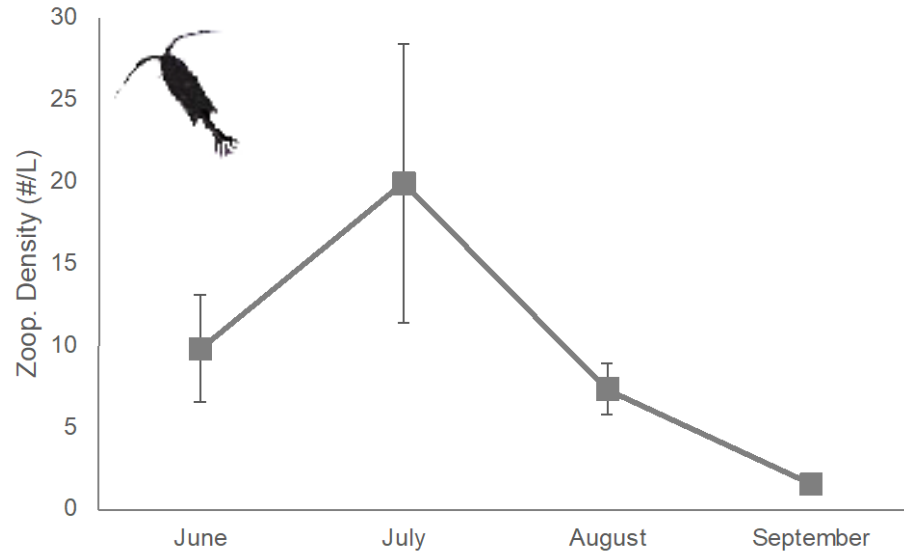
Field Site Cheat Sheet

Site Locations

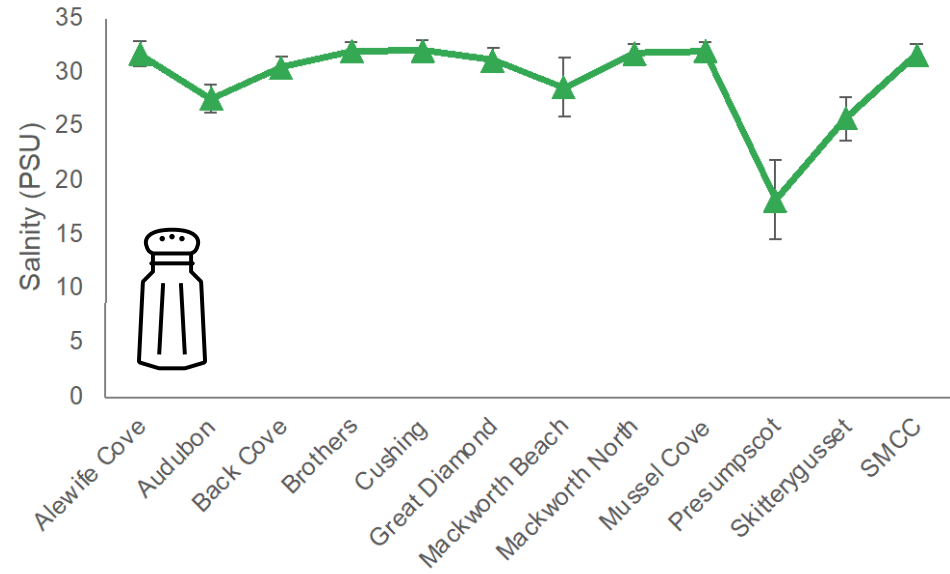
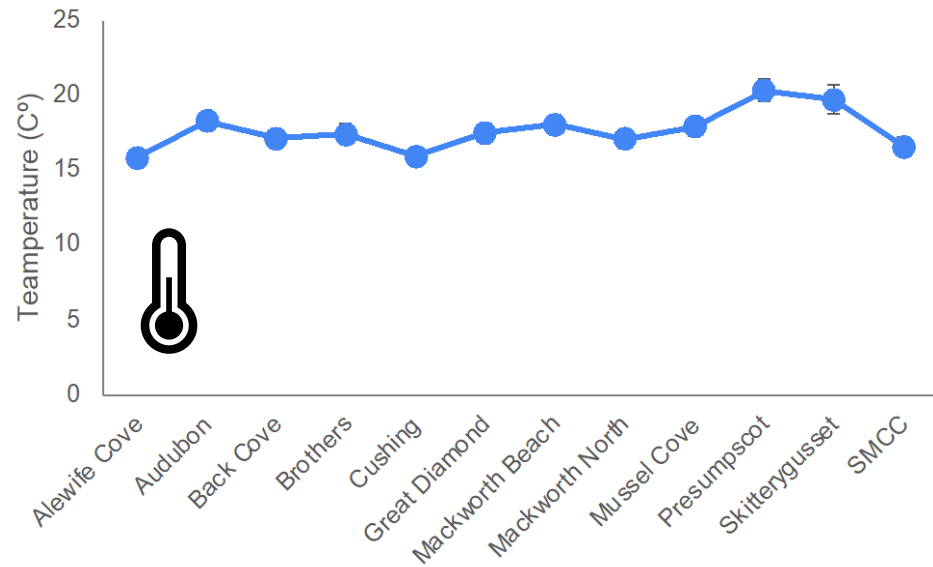
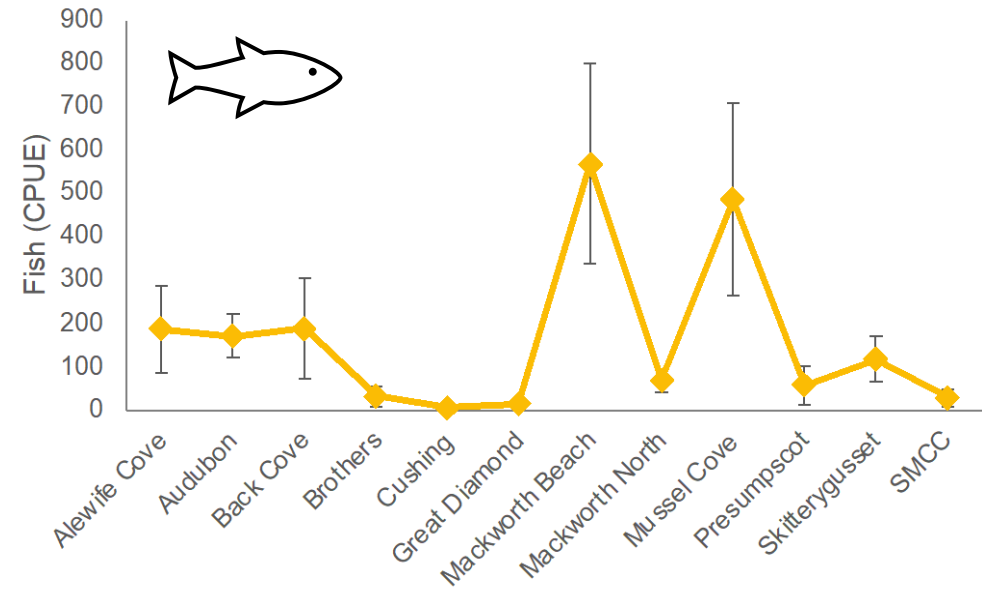
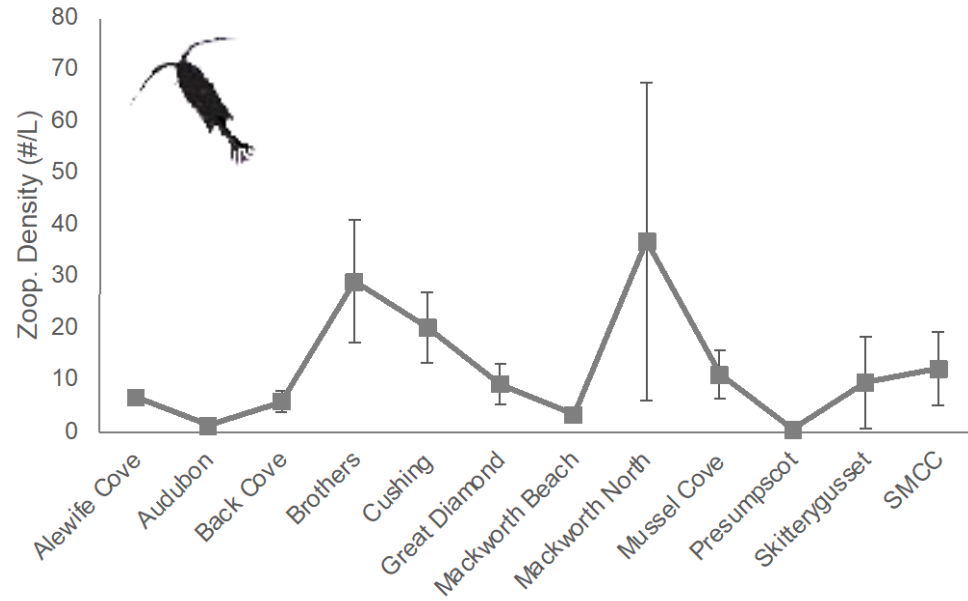
- 1 Mackworth Island - North
- 2 Mussel Cove
- 3 The Brothers - South
- 4 Great Diamond Island
- 5 Mackworth Island - Beach
- 6 Willard Beach
- 7 Alewife Cove
- 8 Cushing Island
- 9 Gilisland Farm
- 10 Scitterygusset
- 11 Presumpscot Moorings
- 12 Back Cove
- 13 SMCC
- 14 The Brothers - North



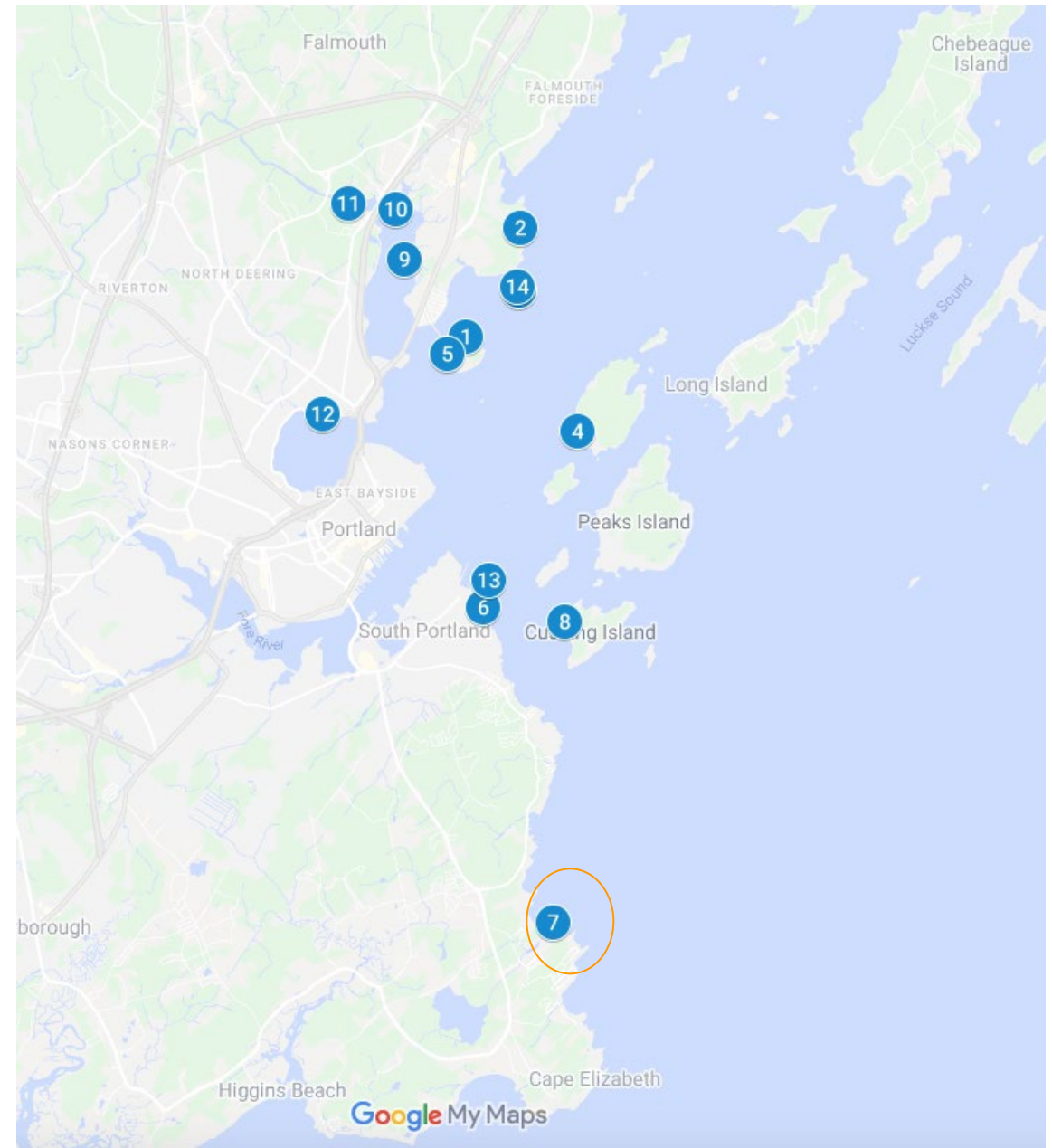
Seasonal patterns



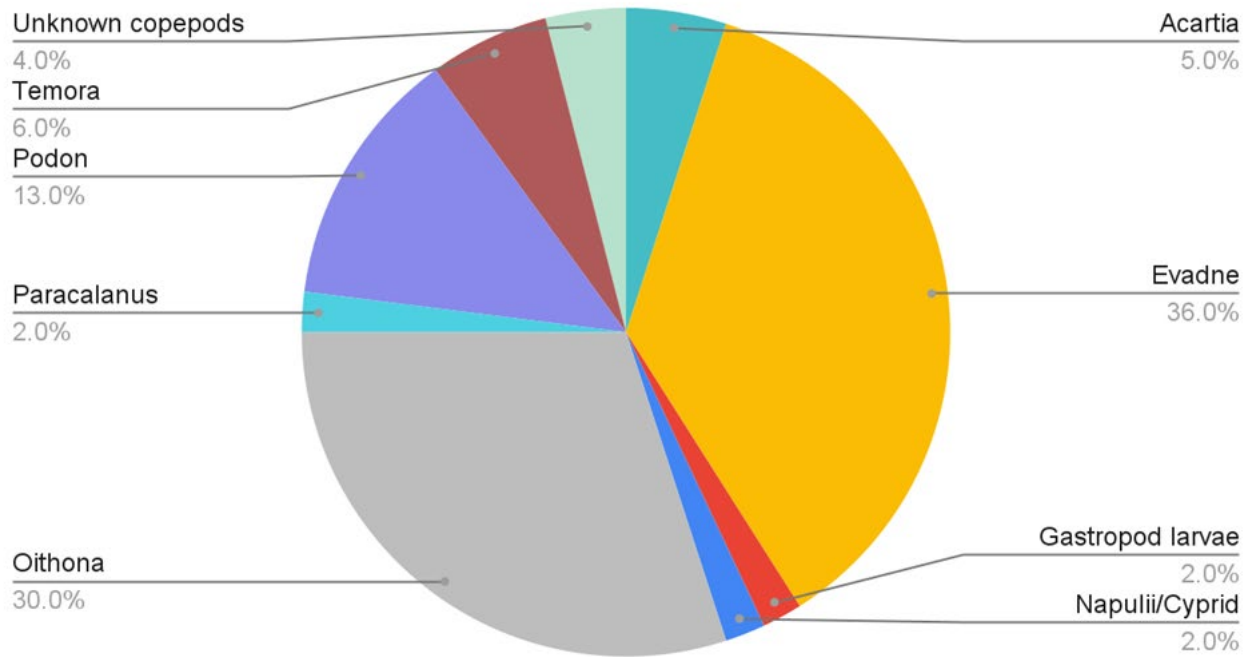
Spatial patterns



Alewwife Cove



Zooplankton Composition - Alewife Cove

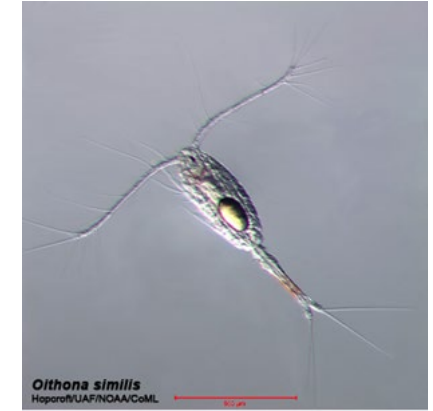


Evadne (36%)



- Cladoceran
- Slow swimmer
- Surface dwelling

Oithona (30%)



- Copepod
- Ambush predator
- Surface dwelling

Fish Composition - Alewife Cove

Atlantic Herring (37%) Sandlance (60%)

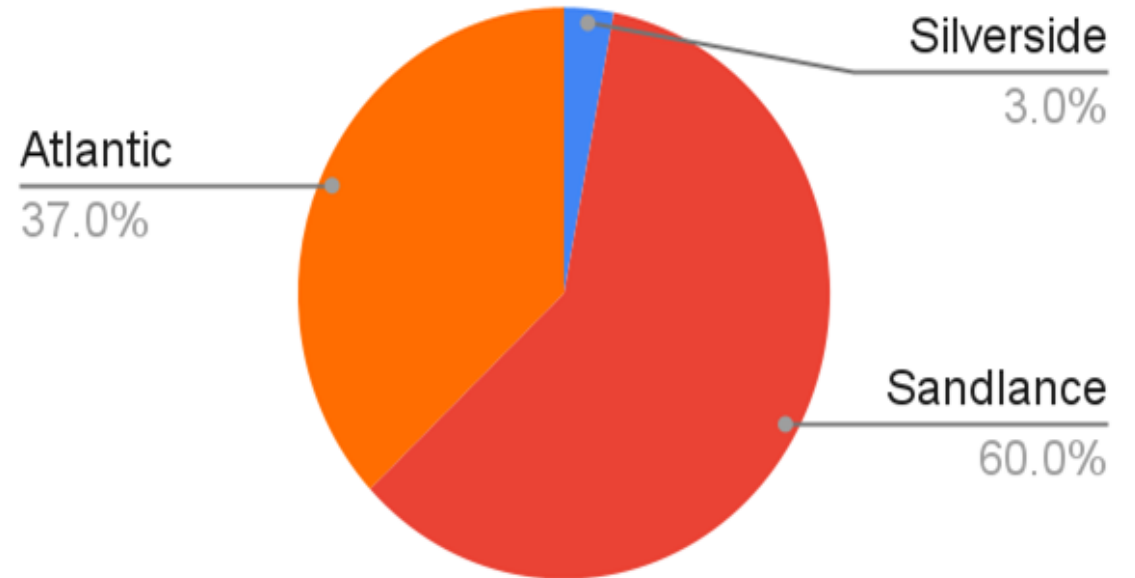


Image: WoRMS

- Bottom dwelling
- Present year round

Image: WoRMS

- Very commercially important
- Utilize Casco Bay as a nursery habitat
- Low numbers during warm years



Back Cove

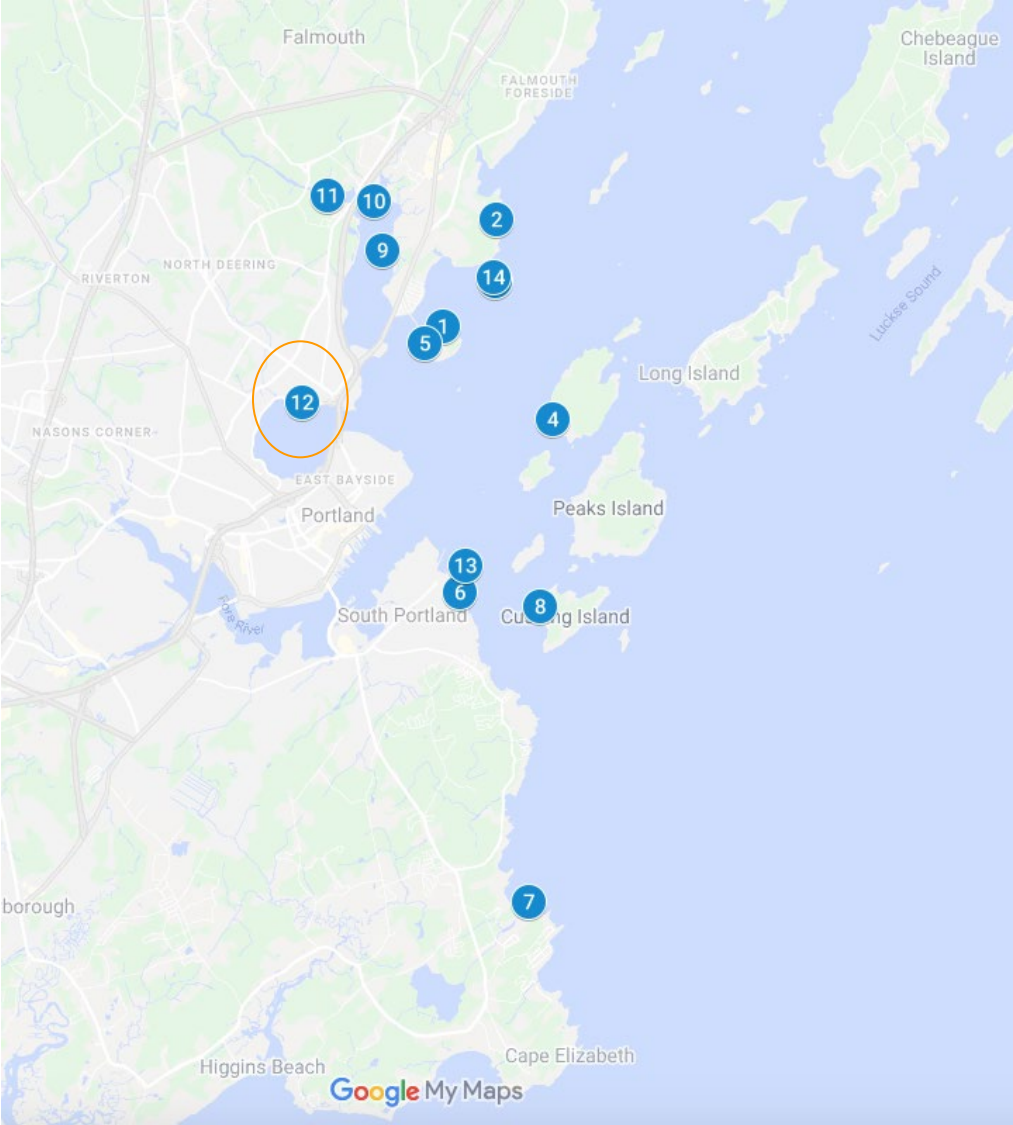
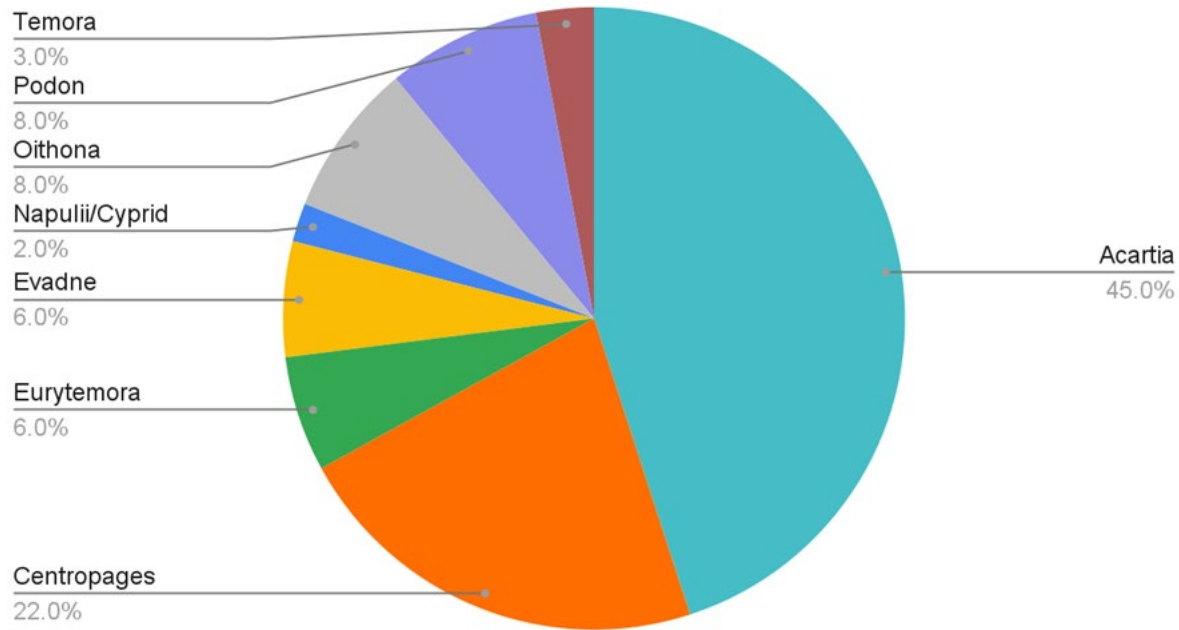
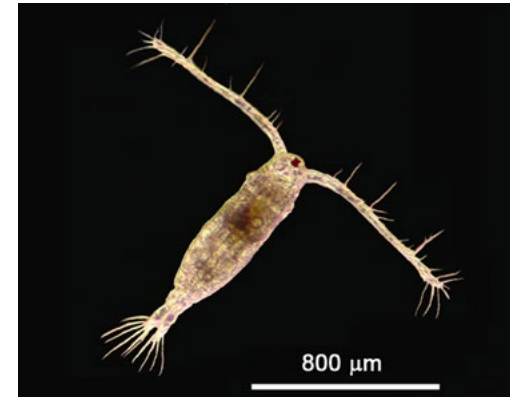


Image: Portland Trails

Zoop Composition - Back Cove

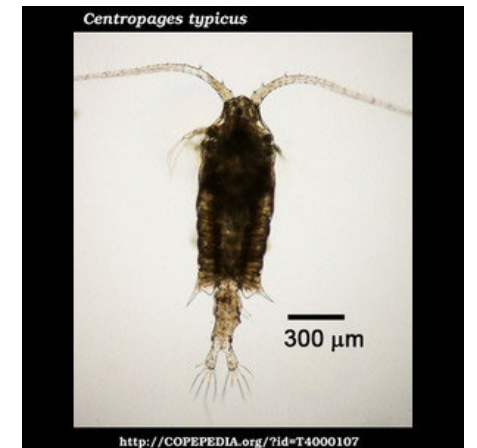


Acartia (45%)



- Estuarine
- Can reach very high densities
- Highly effective escape jumps

Centropages (22%)



- High abundance offshore
- Ambush or filter feeder

Fish Composition - Back Cove

Silverside (42%)

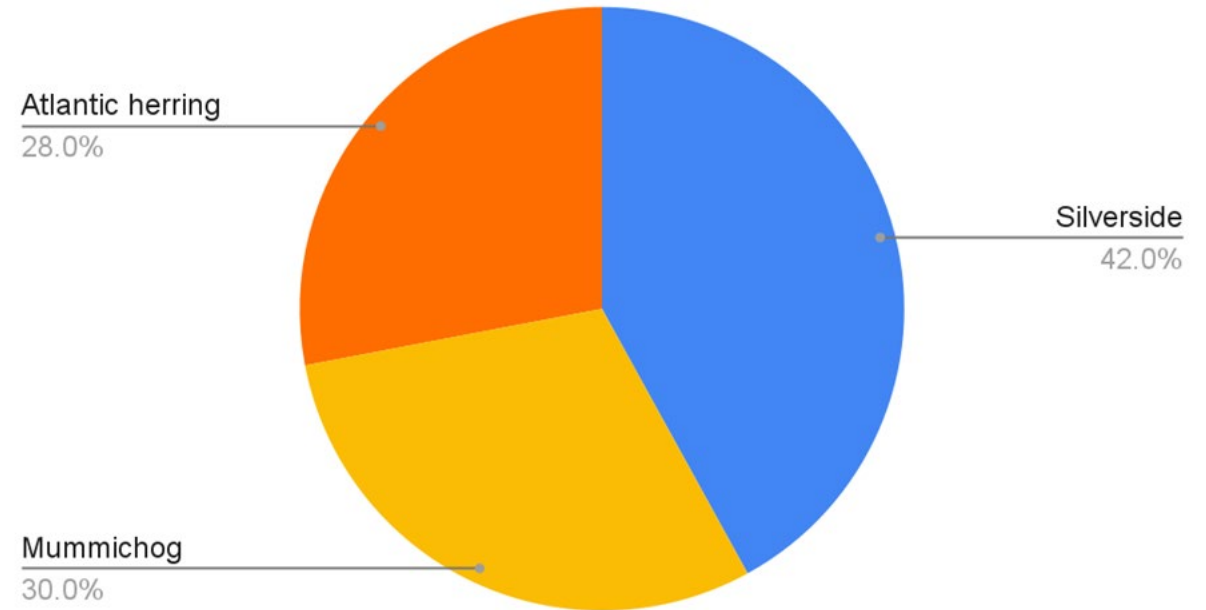


Mummichog (30%)



- Congregates near shoreline
- School in large numbers
- Present year round

- Can tolerate harsh conditions
- Prefers muddy marshes along sheltered shores
- Present year round





Thank you!



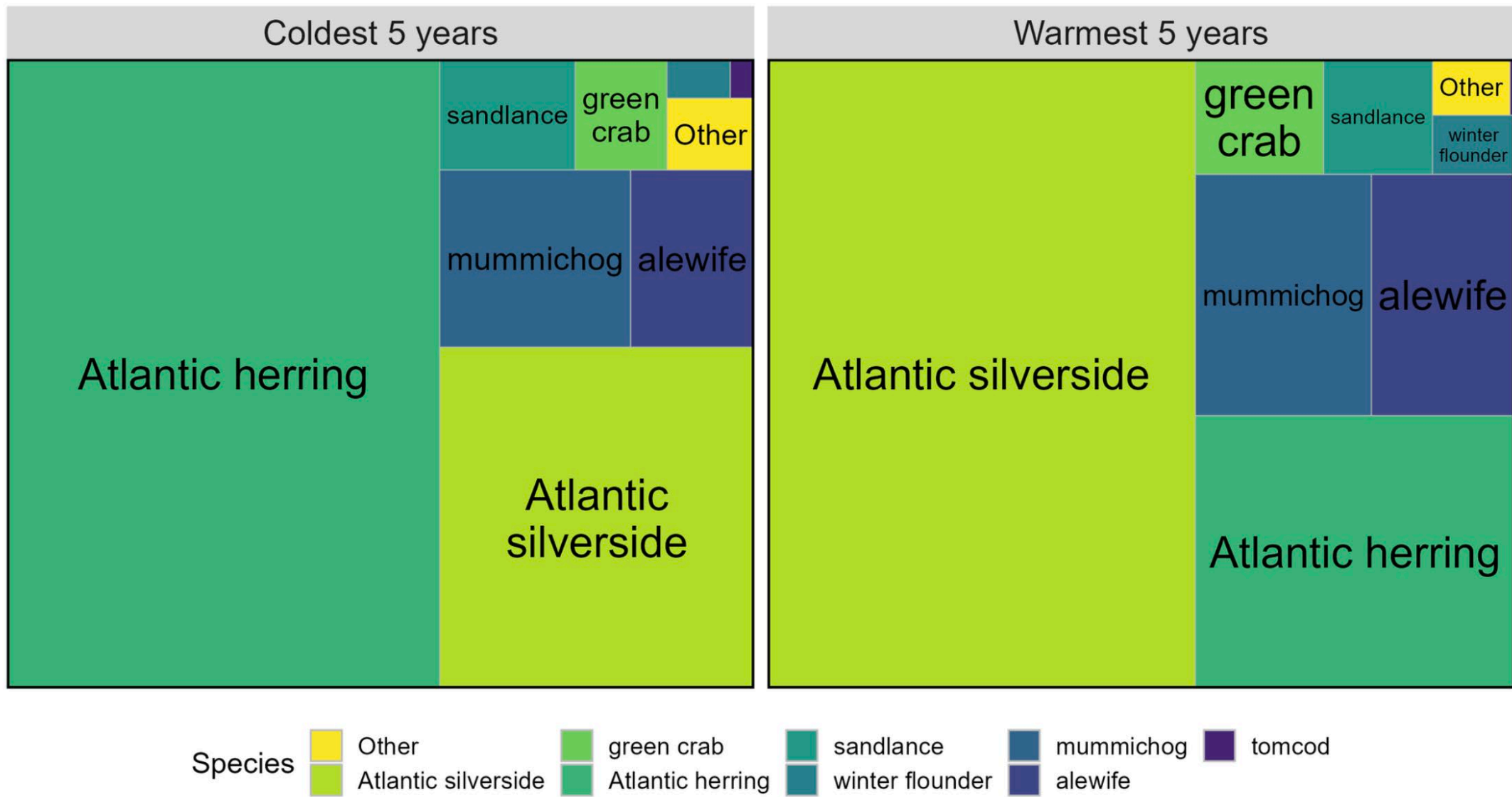
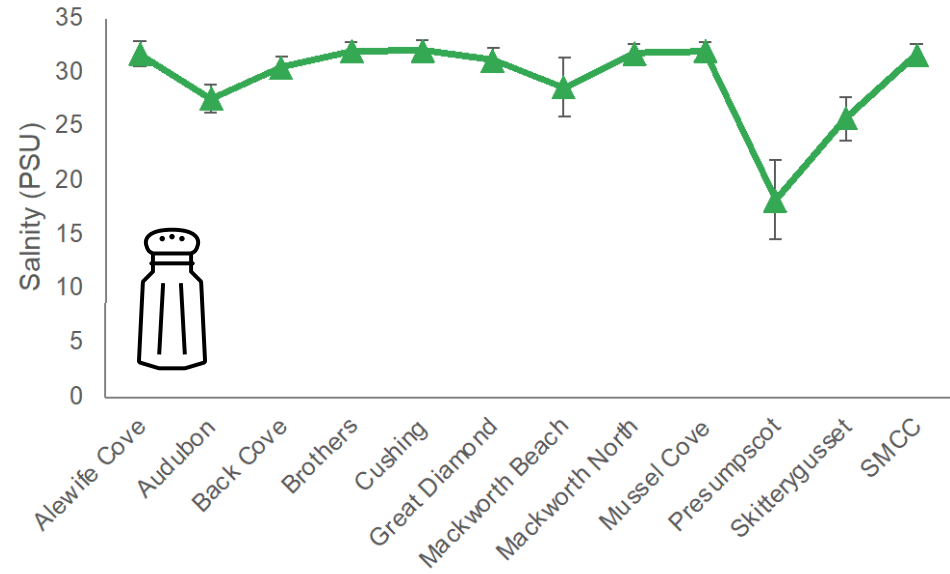
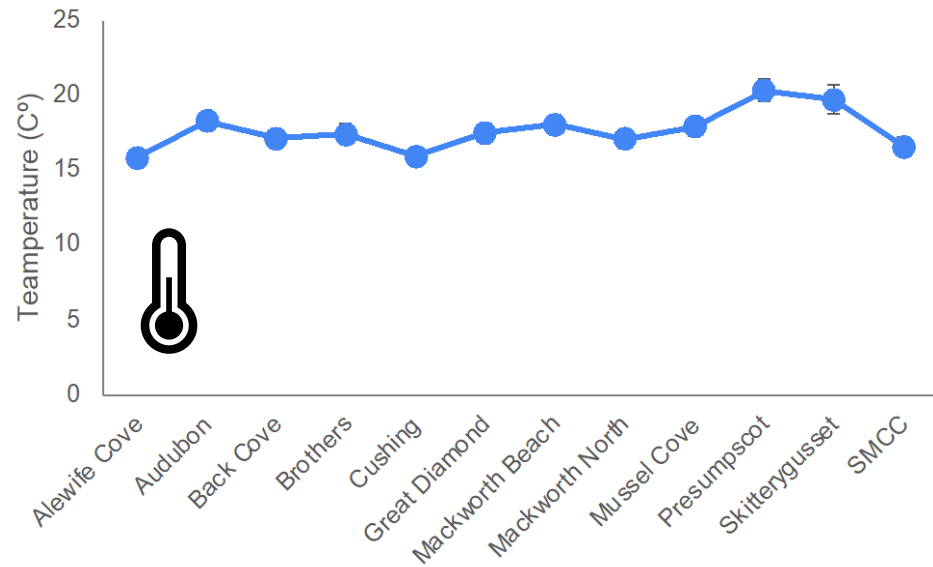
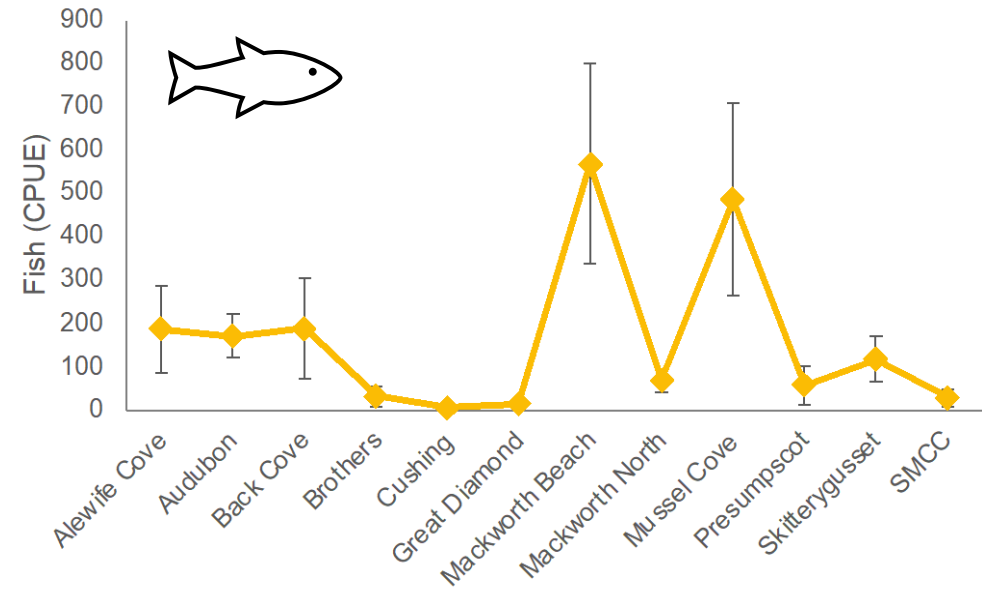
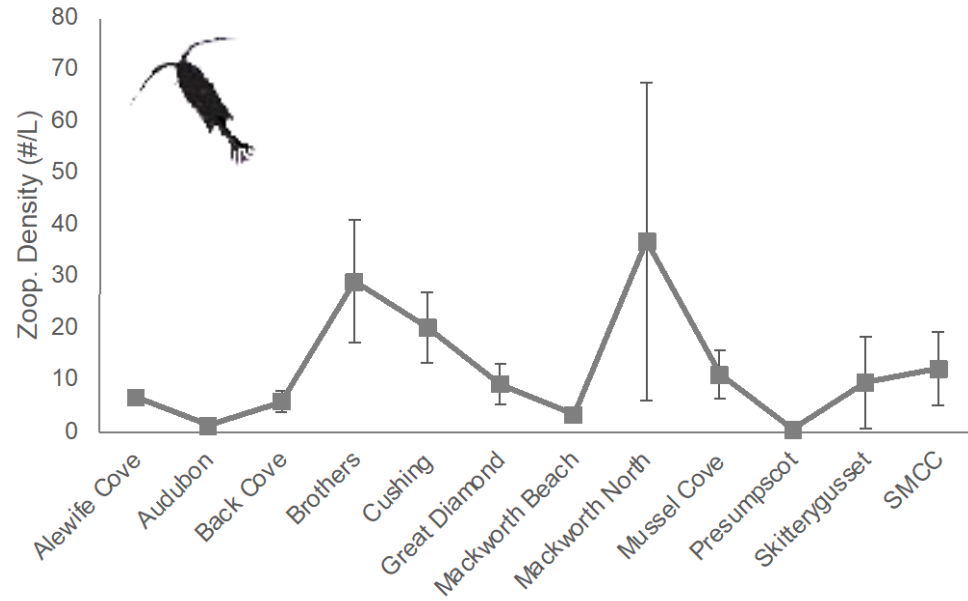
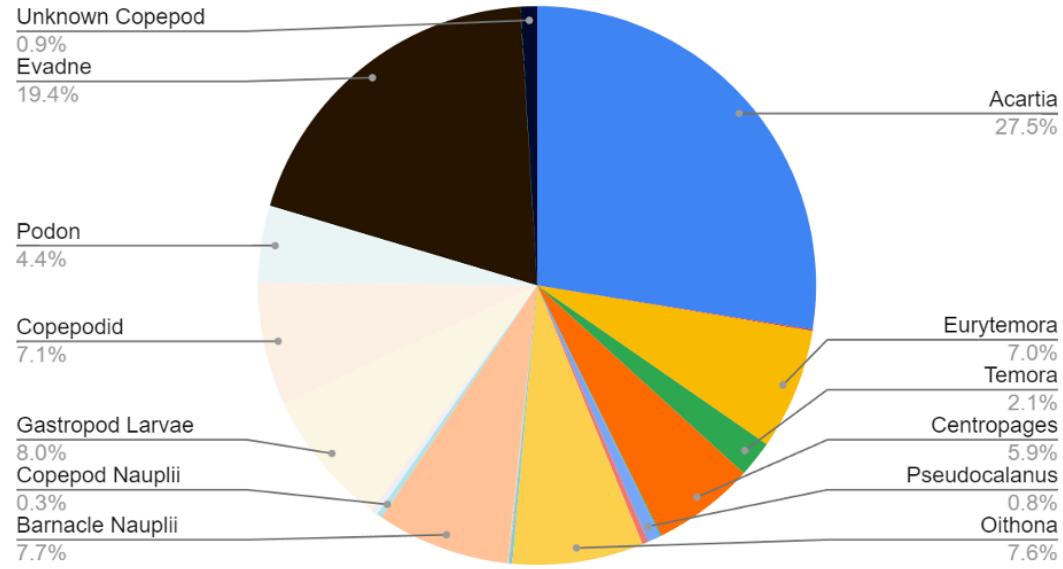


Figure 2. Nearshore Casco Bay ecosystem community structure in the five coldest (2014 – 2015, 2017 – 2019) and five warmest (2016, 2020 – 2023) years of CBASS seine survey data collection, as illustrated by scaled indices of relative abundance for the top eight most frequently caught fish and crustacean species.

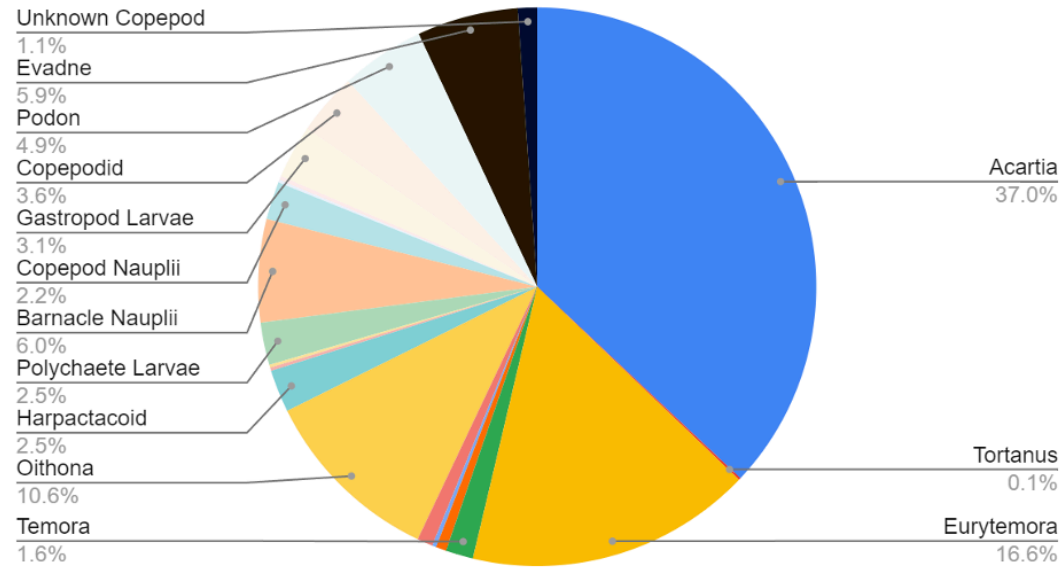
Spatial patterns

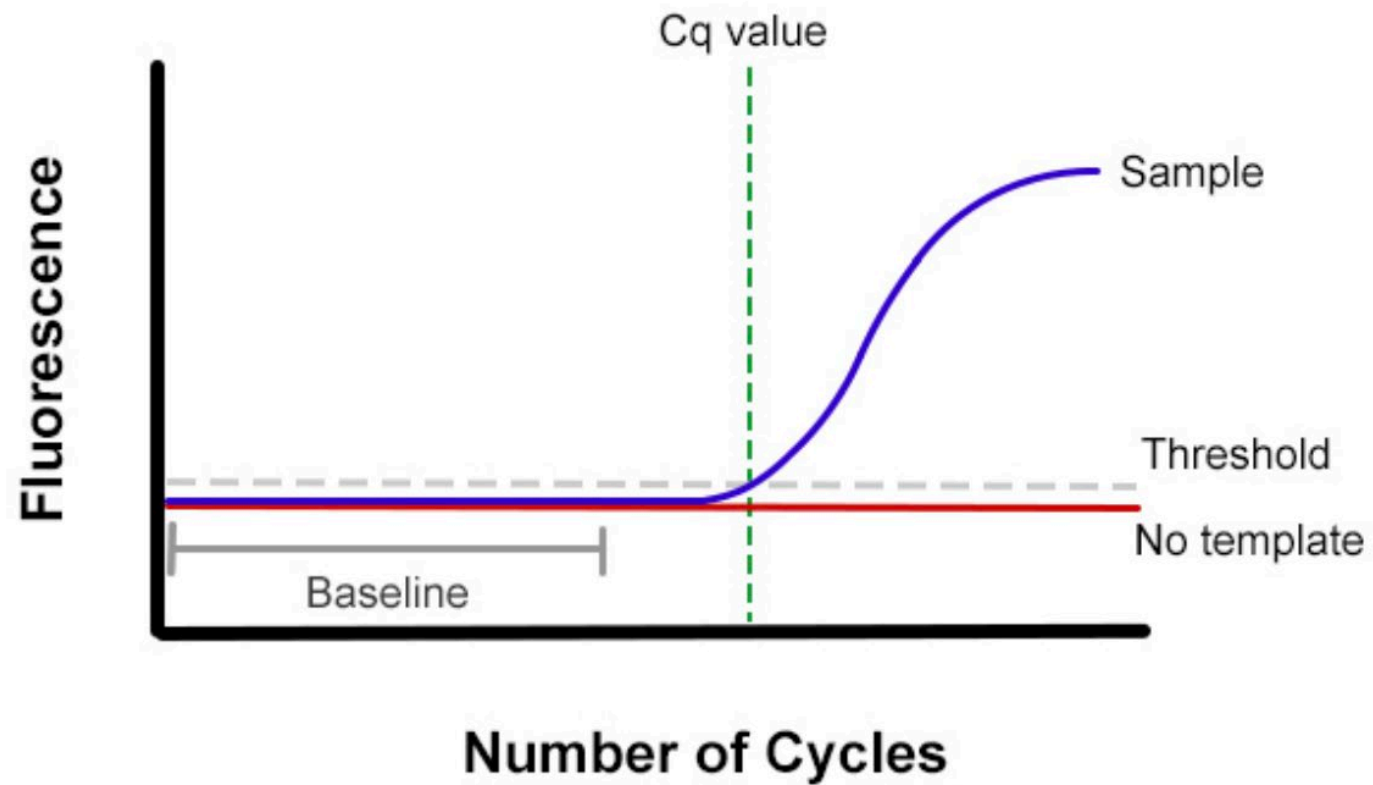


No Alewife



High Alewife





Casco Bay Aquatic System Survey

