Impacts of water control structures on the infauna of a tidally restricted wetland by Christine Mann

- Elkhorn Slough—many tidally restricted wetlands
- Water control structures: culverts, dikes, levees, tidal gates → poor WQ & restrict flow
North Azevedo Pond, Elkhorn Slough, CA-Tidally restricted system

### After Water Control Structures

<table>
<thead>
<tr>
<th></th>
<th>South</th>
<th>North</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ Inundation</td>
<td>↑ Inundation</td>
<td></td>
</tr>
<tr>
<td>↓ Tidal Range</td>
<td>↓ Tidal range</td>
<td></td>
</tr>
</tbody>
</table>
Benthic Sampling

- Before and After Infaunal Sampling
- North and South areas of North Azevedo Pond
North ≠ South
Before South ≠ After South

2D Stress: 0.15
Species Richness

Species density

Number of species per core

Location

South

North

Before South

After South

Before North

After North

$p=.0165^*$
Community drivers

**South**=Mollusks & Crustaceans

- Batillaria- invasive snail

**North**= Annelids

- More stress tolerant worm
- Less stress tolerant worm

Stress Sensitive  Stress Tolerant
North Azevedo Overall ≠ Other Tidal wetlands in Slough
Management implications

• Model of ponding restoration, other places might benefit
• High marsh-limitations
• Continue to monitor *Batillaria* populations to further explore what about the habitat makes it a unique refuge for it
Acknowledgements

John Oliver
Ivano Aiello
Kenneth Coale
Kamille Hammerstrom
Scott Hamilton
Peter Slatterly
Joshua Mackie

UROC Interns-
- Imani Thomas
- Enio Paiva Bandeira

Corey Hamza
Family support!

ESNERR & ESF
Charlie Endris
Kim Hayes
John Haskins
Kerstin Wasson

Dr. Earl H. Myers & Ethel M. Myers
Oceanographic & Marine Biology Trust

UROC
Undergraduate Research Opportunities Center
California State University, Monterey Bay

SJSU
SAN JOSÉ STATE UNIVERSITY