Does eelgrass act as an ocean acidification refuge for shellfish in the Salish Sea?

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Does eelgrass act as an ocean acidification refuge for shellfish in the Salish Sea?

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WASHINGTON STATE DEPARTMENT OF Natural Resources
<table>
<thead>
<tr>
<th>Dark (pre-dawn)</th>
<th>Light (mid-morning)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare x 3</td>
<td>Grass x 3</td>
</tr>
<tr>
<td>Grass x 3</td>
<td>Bare x 3</td>
</tr>
<tr>
<td>Bare x 3</td>
<td>Grass x 3</td>
</tr>
</tbody>
</table>

Summer 2015
Proportion of Larvae at Surface

**Hypothesis**

- **Dark**
  - Bare
  - Grass

- **Light**
  - Bare
  - Grass

Central area: Grass

Minor area: Bare
Pacific oyster (Crassostrea gigas)

Mussels (Mytilus spp.)

Olympia oyster (Ostrea lurida)

Large clams >251 μm length

Small clams <250 μm length

D-shaped veliger (mixed species)
Species by Site

Number of Larvae per Sample

- Olympia
- Pacific
- Mussel
- Small Clam
- Large Clam
- D-hinge
- Unknown

Locations:
- Willapa Bay
- Fidalgo Bay
- Port Gamble
- Case Inlet

Graph shows the number of larvae per sample across different species and sites.
Proportion of Larvae at Surface

Total Bivalves

- Bare
- Grass

Dark | Light
--- | ---
0 | 0.5 | 1
Proportion of Larvae at Surface

Olympia oysters

Mussels

Large Clams

D-hinge
Proportion of Larvae at Surface

Olympia oysters

Mussels

Large Clams

D-hinge
Preliminary Conclusions

• Seagrass could be a refuge from low pH for bivalve larvae, but...
  – Likely will be species-specific and size-dependent behaviors
  – Other ecological drivers are also present
Thank You!

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Counting
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Time’s Up!

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