



States Action Plan to be submitted to the International Alliance to combat Ocean Acidification
June 2019

The State of Oregon

Ocean Acidification and Hypoxia

Action Plan



OAH Council Meeting

May 7th 2019

OAH Action Plan – Key Questions

➤ Audience:

- Governor signature (if we don't have her signature, it will not be our action plan).
- Then agencies (and legislators, since our agency budgets are finalized by legislators).
- Then collaborators, industry, NGOs, international community, etc.

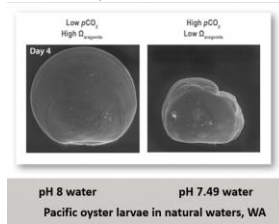
OAH Action Plan – Key Questions

- Length/tone/content of the introduction
- Quotes will be acquired from diversity of interview participants
- How to HOOK the reader on this Action Plan, urgency of action, getting worse.
 - OAH economic and ecosystem impacts NOW, and getting worse
 - CO2 is the problem
 - Oregon can make a difference locally, and globally
 - Oregon OAH Action Plan is Oregon's leadership and commitment to solutions.
 - “What's at stake” figures – 3 alternatives. Reactions/other ideas?

Figure 1:

Option 1

The extensive production failures of oyster larvae production in Netarts Hatchery 2007.



Pteropods shells deformation and disruptions in swimming behavior of in days to weeks. These are important prey species for salmon, herring, and many other fish.



Disruptions to basin neural functions and sensitive skeletal structures of rockfish, salmon, and other fish and shellfish. These functions and structures are needed for homing, prey finding, predator avoidance, finding suitable habitats.



Hypoxia has resulted pots full of dead Dungeness crabs and halibut absent from Washington population surveys in 2017 and Oregon surveys in 2018. Harmful Algal Blooms have resulted in long delays to the crabbing season, disrupting local economies.



Figure 1:

Option 2

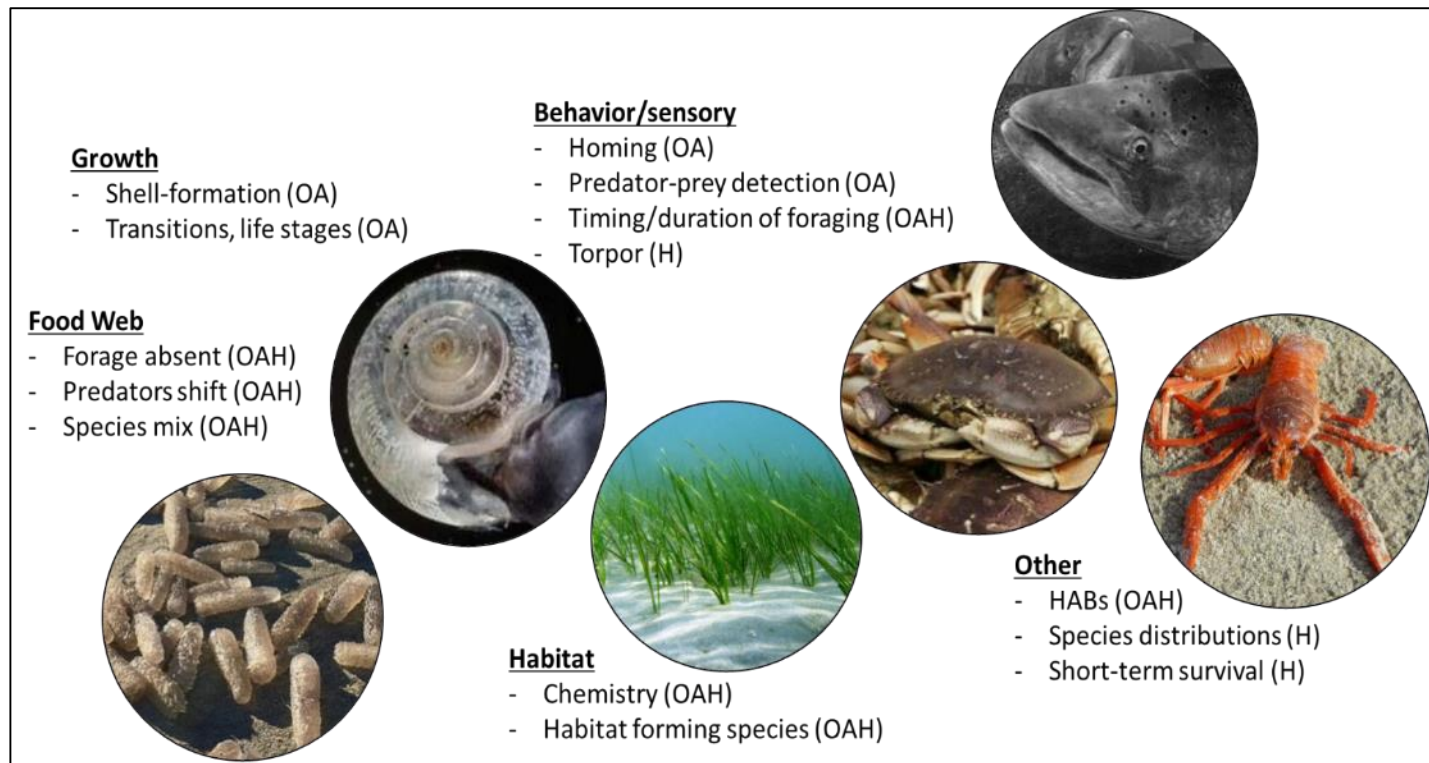
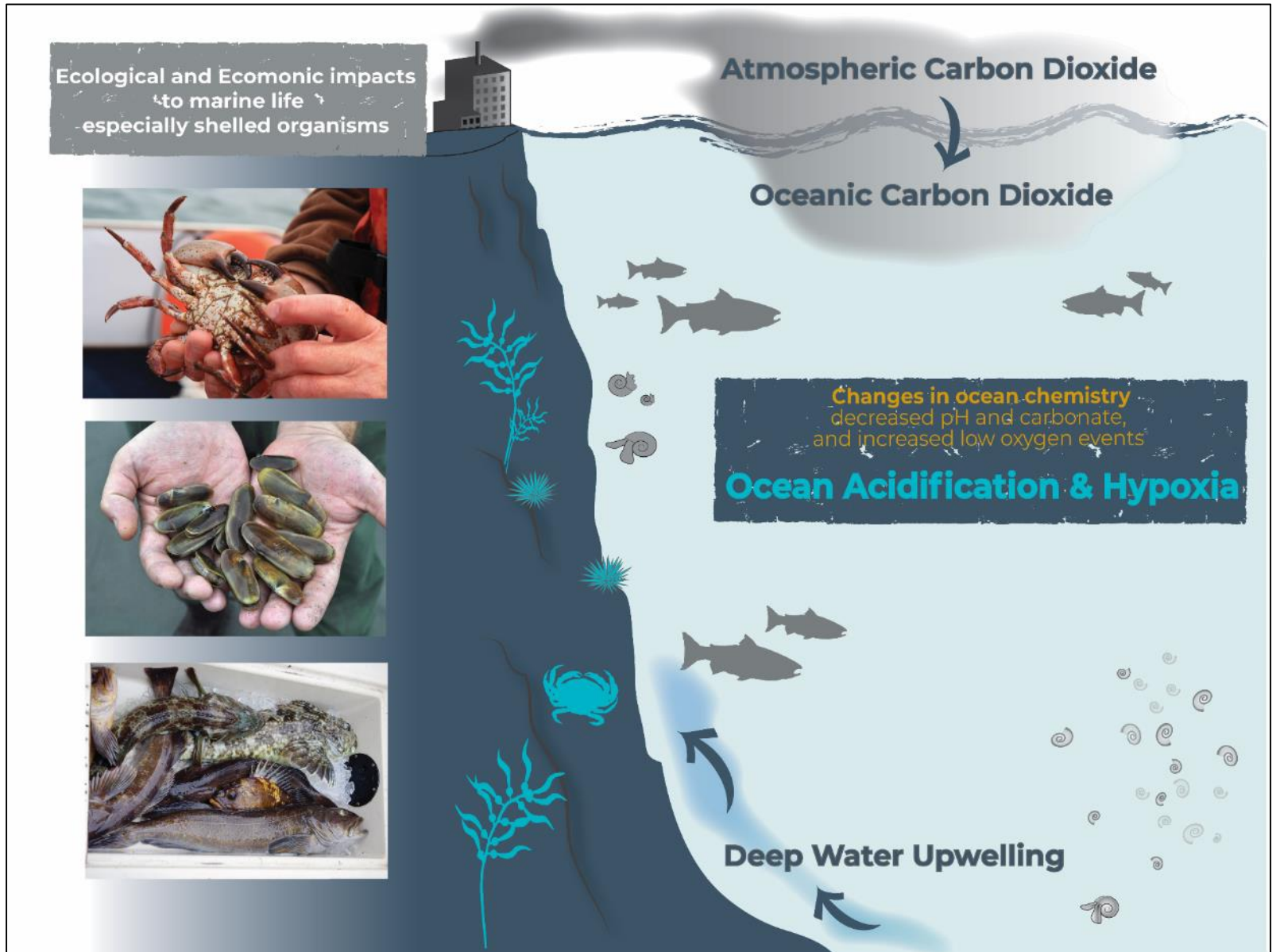


Figure 1:

Option 3



September 2018 OAH Report Priorities	December 2018 PACE Exercise	OAH Council Community survey	June 2019 OAH Action Plan
1.1.a 1.1.c	1.1.a 1.1.c 1.1.b	1.2.b 1.2.d	<u>1.1.a</u> <u>1.1.c</u> 1.2.b 1.2.c 1.3.b
2.1.b	2.1.a 2.1.b		2.1.a <u>2.1.b</u>
3.2.a 3.2.b	3.2.a		3.1.a <u>3.2.a</u> <u>3.2.b</u> 3.1.b
4.2.a	4.2.a	4.1.b 4.2.b	4.1.a 4.1.b 4.2.a <u>4.2.b</u>
5.1.a	5.2.a 5.2.b 5.2.c		<u>5.1.a</u> 5.1.b 5.2.a 5.2.b 5.2.c

*20 actions were identified
from 38 identified in the 2018 OAH Report*

Theme 5

Report Action(5.1.a): Develop and implement policy, directing agencies to address OAH priorities in agency planning.

Action Plan wording:

Implement policy to mobilize agencies to address OAH priorities

Step 1 Governor issues a 2019 policy directive (such as through an Executive Order), mobilizing relevant state agencies to document what they are doing and what needs to be done to address OAH priorities.

Step 2 Relevant state agencies implement measures described in agency OAH planning.

Step 3 Governor's Natural Resources Office expands policy expertise on ocean science and policy, and provides guidance and coordination on OAH action priorities for state agencies and entities.

Theme 2

Report Action (2.1.b): Strengthen communication and coordination on CO₂ and OAH management and mitigation among the OAH Council, State agencies, and other government entities (e.g., Oregon Global Warming Commission).

Action Plan wording:

Develop and integrate strategies to reduce causes of excess CO₂ and OAH

Step 1 GNRO, OAH Council and the OGWC establish regular communication and coordination pathways for state entities to address excess CO₂ and OAH.

Step 2 Support agency and/or academic researchers to provide science-based research and recommendations on effective and efficient ways to reduce causes of OAH.

Step 3 *Agencies implement measures to reduce OAH reduction measures, as identified by research outcomes (as described in Step 2 above).*

Theme 4

Report Action (4.2.a): Policy makers and legislative staff: Inform decision-makers on the science, impacts and solutions, to help them shape strategic policy decisions.

Action Plan wording:

Raise awareness of and communicate OAH science, impacts, and solutions to support decision-making

Step 1 The OAH Council leads on building a communications plan and outreach materials to communicate OAH science, impacts, and solutions.

Step 2 The OAH Council provides timely updates to Oregon Legislature, and other policy-makers in Oregon to inform decisions on how best to invest in OAH adaptation and mitigation measures.

Step 3 Empower communities by providing information on impacts and solutions so they act locally to adapt to and mitigate OAH

Theme 1

Report Action (1.1.a.): Maintain and support oceanographic and biological monitoring at significant research reference sites that provide high value to Oregon due either to prior State investments, the geographic location and/or historical data collection activities at that site.

Action Plan wording:

Invest in Oregon's long-term monitoring network to document oceanographic and biological trends and determine Oregon's socio-economic vulnerability to OAH impacts

Step 1 Strengthen Oregon's OAH oceanographic monitoring network by investing in research reference sites

- Burke-o-lator
- Instrument Yaquina Bay
- Instrument Marine Reserves

Step 2 Improve monitoring of Oregon's ocean life responses to OAH

- Newport Hydrographic Line augmentation
- Workshop to establish biological response metrics/plan.

Step 3 Conduct socio-economic vulnerability assessment, to describe Oregon's vulnerabilities to OA

Theme 3

Report Action (3.2.a/3.2.b.): Promote SAV conservation and restoration strategies and opportunities to achieve short term buffering, carbon sequestration and ecosystem services benefits. Promote native ecosystem resilience in management decisions.

Action Plan wording:

Support activities and initiatives that promote adaptation and resilience to OAH conditions, for Oregon's human communities and ecosystems

Step 1 Identify strategies to promote healthy wild and cultured shellfish stocks, and SAV's in Oregon's estuaries.

- Resilient shellfish aquaculture strains Molluscan Broodstock program
- ODFW shellfish and estuary assessment team, mapping

Step 2 Develop Best Management Practices (BMPs) for key activities in Oregon estuaries, including a) aquaculture, b) eelgrass restoration and protection, c) achieving high water quality.

- BMP development for shellfish aquaculture & estuary ecosystem health

Step 3 Fund modeling to maintain aquaculture activities in a range that promotes OAH resilient estuary function.

2018 Report Crosswalk to 2019 OAH Action Plan

	Theme 5 (5.1.a)	Theme 2 (2.1.b)	Theme 4 (4.2.b)	Theme 1 (1.1.a/1.1.)	Theme 3 (3.2.a/3.2.b)
<i>Step 1</i>	<i>3.1.a</i>	<i>2.1.a</i> <i>5.2.a</i>	<i>4.1.a</i> <i>4.1.b</i>		<i>Shellfish</i> <i>Taskforce 11</i> <i>1.2.c</i>
<i>Step 2</i>	<i>3.1.b</i>	<i>1.3.b</i> <i>5.2.b</i>	<i>4.2.a</i>	<i>1.2.a</i>	<i>Shellfish</i> <i>Taskforce 13</i>
<i>Step 3</i>	<i>5.1.b</i>			<i>1.2.b</i> <i>1.2.c</i>	<i>Shellfish</i> <i>Taskforce 8</i>

Oregon SB260: <https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/SB260>

Oregon Shellfish Taskforce Summary: <https://pcsga.org/wp-content/uploads/2013/04/Final-Shellfish-TF-Report-Sept20161.pdf>