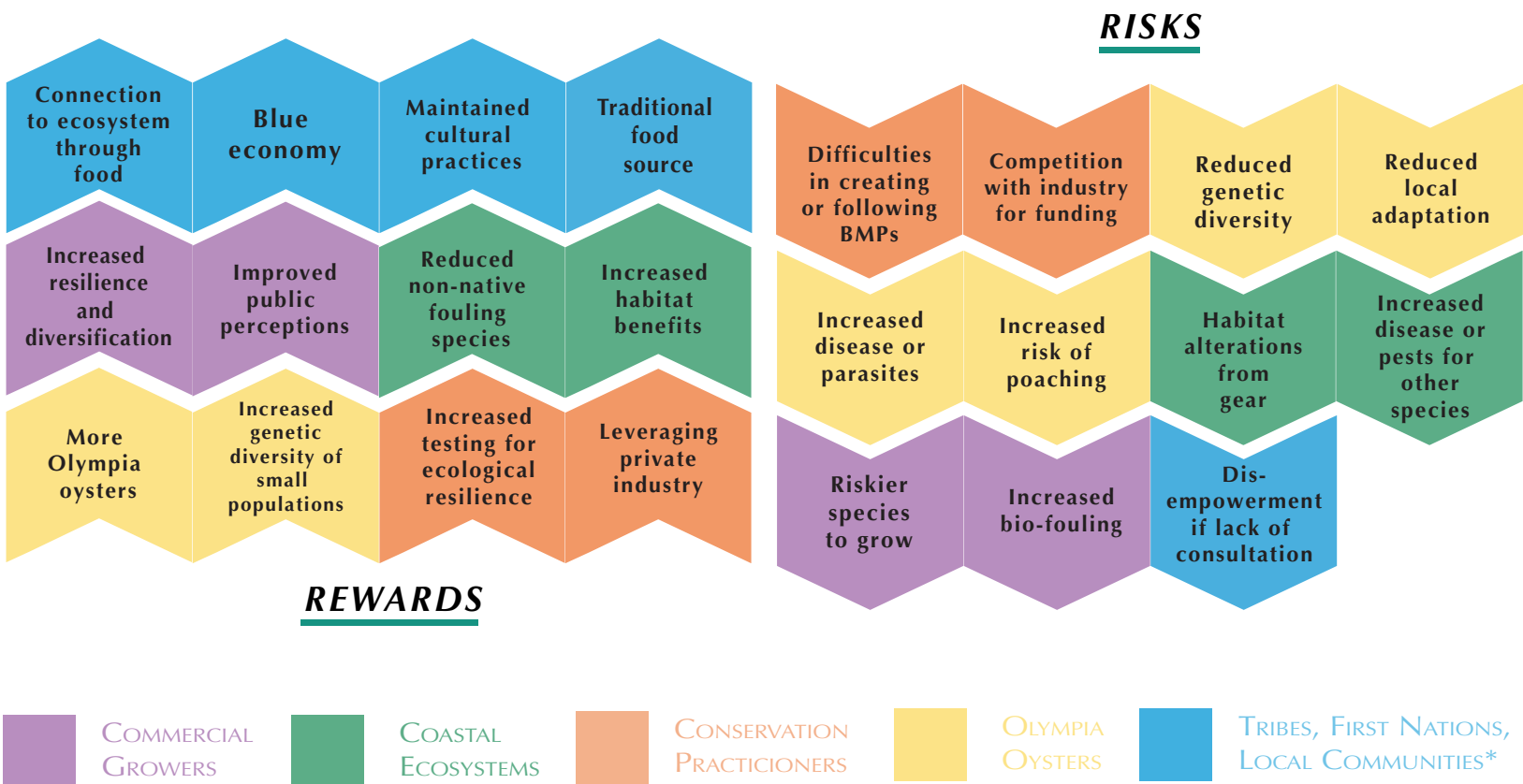


Conservation Aquaculture as a Tool to Support Olympia Oysters, a Marine Foundation Species

A diverse team of stakeholders has identified risks and rewards of using aquaculture as a tool to support restoration of Olympia oysters. Ten priority locations along the west coast are confidently recommended for increased investment in conservation aquaculture.

While significant efforts exist to restore aquatic species, aquaculture is an underutilized tool that can help rebuild these species, and also provide economic and social benefits to coastal communities. Conservation aquaculture – aquaculture that directly increases or sustains the abundance of wild populations - was analyzed for how, where, and with whom it should be used to benefit both people and nature.

Stakeholders including scientists, shellfish growers, managers, and Tribal representatives co-created a synthesis of the rewards and risks of Olympia oyster conservation aquaculture. They developed a clear framework for decision making that considered conservation goals and human needs together. The project includes recommendations to strategically use conservation aquaculture where the rewards outweigh the risks.



* Tribes / First Nations are Governments and early collaboration and discussion with them should occur consistently through any local estuary prioritization process for conservation aquaculture.

For conservation aquaculture of Olympia oysters, the rewards most clearly outweigh the risks in estuaries with low recruitment, very low adult populations, and in areas that are relatively isolated.

PRIORITIZING AQUACULTURE FOR RESTORATION

The team developed an index to identify priority areas for conservation aquaculture along 3000 km of coastline. This tool can also serve as a model for decision support in other systems.

The index rates recruitment limitation most highly among ecological criteria, since oyster populations where estuary-wide recruitment failure is common stand to benefit the most from enhancement of reproduction through aquaculture. Risk of local extinction due to small or declining population size, and high isolation resulting in lack of larval transport from other populations were also critical determinants of ecological priority.

Beyond ecological prioritization, the index also revealed which estuaries are well suited to use aquaculture for community-based restoration and harvest, and which might support commercial aquaculture with this species. This type of collaborative stakeholder-driven assessment is needed for other foundation species. The tools the stakeholder group created, and the process used to develop them, serve as a model for the assessment of the use of conservation aquaculture for other foundation species, which can be used on both regional and species-wide scales.



Ecological Priority Estuaries for Conservation Aquaculture

These ten estuaries that emerged as ecological priorities represent locations where our stakeholder team can confidently recommend increased investment in aquaculture as a tool to support native oyster conservation.

- Northern Puget Sound, WA
- Whidbey Basin, WA
- Netarts Bay, OR
- Humboldt Bay, CA
- Tomales Bay, CA
- Richardson Bay (excluding Sausalito), CA
- Elkorn Slough, CA
- Morro Bay, CA
- Carpinteria Marsh, CA
- Mugu Lagoon, CA