



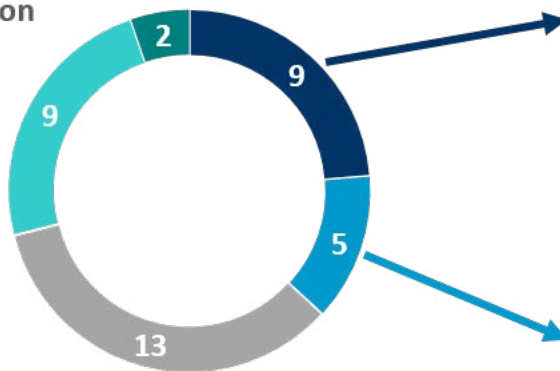
## BARRIERS AND NEEDS FOR SUSTAINABLE MARINE AQUACULTURE DEVELOPMENT IN OREGON

From May to June 2021, Oregon Sea Grant distributed an online survey via email to individuals working in and around the aquaculture industry to help determine barriers to expansion and current needs

### WHO COMPLETED THE SURVEY?

A total of 38 respondents filled out the survey, which is representative of a small marine aquaculture industry in Oregon.

- Aquaculture Operation Owner/Grower
- Prospective Grower
- Agency Personnel
- Researcher
- Other



Responses came from current and prospective aquaculture operation owners, agencies, researchers and other stakeholders. Other stakeholders included people involved in aquaculture outreach and coastal businesses.

Current growers produce oysters, seaweed and shrimp and prospective growers showed interest in several species, including some that are not currently grown in Oregon.

#### Current Grower Species

Pacific oysters	58%
Kumamoto oysters	17%
Olympia oysters	8%
Shrimp	8%
Dulse seaweed	8%

#### Prospective Grower Species of Interest

Pacific oysters	30%
Kelp	30%
Dulse seaweed	20%
Mussels	10%
Sea urchins	10%

## AQUACULTURE EXPANSION



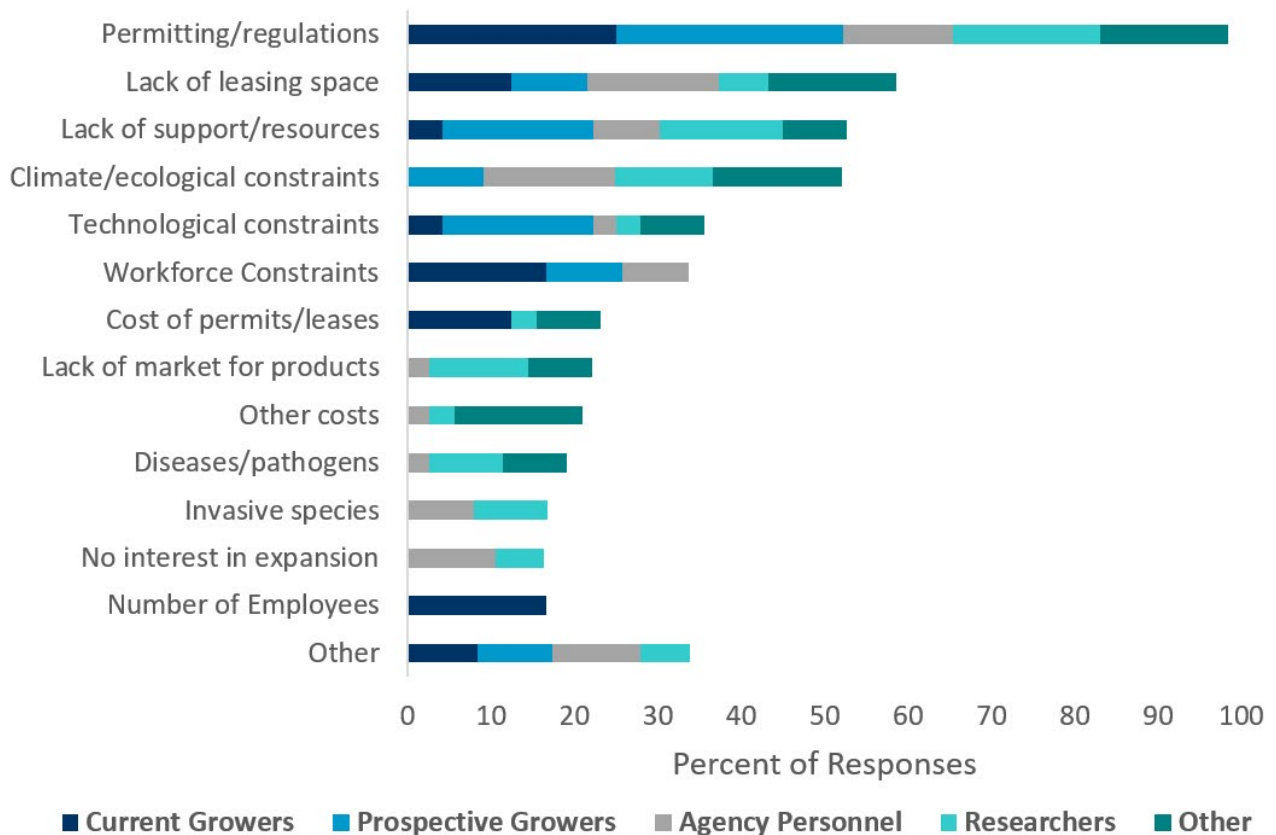
### Interest in Expansion

89% of current growers were definitely (78%) or probably (11%) interested in expanding their business by producing more of the same products.

67% wanted to incorporate new technologies.

55% were interested in producing new products, such as oysters, seaweed, clams, abalone, mussels, prawns, and sea urchins.

### PERCEIVED BARRIERS TO EXPANSION AMONG EACH SECTOR



#### Other specified barriers:

**Current growers:** dairy pollution, plat specific regulations about growing/harvesting/planting

**Prospective growers:** hatchery training, seaweed seed production

**Agency Personnel:** available land and water, coastal public perception, ocean acidification

**Researchers:** time-consuming process for permits/leases, lack of partnerships between researchers and producers of emerging products



## PERMITTING AND REGULATIONS: EXPERIENCES AND RECOMMENDATIONS

The top barrier selected by respondents from all sectors (except agencies, where it was the third most commonly selected barrier) was permitting and regulations.

While 57% of current growers and 60% of prospective growers said the permitting process was somewhat or extremely difficult, one agency respondent noted that

*"... the permitting process [in Oregon] is substantially less complex than the neighboring states of WA and CA."*

The process may be less complex in Oregon, but survey responses suggest that all groups experience challenges with the permitting and leasing process.

Current growers expressed that there is a need to expand leasing opportunities for shellfish.

**"Conditions on plats change** in many ways frequently...I think each plat should be able to **edit the regulations with each generation grown.**"

"Oregon needs an **advocate for shellfish farming**, we need someone who can work to **open new leasing areas...** This is an **untapped resource.**"

Prospective growers shared that the permitting process lacked documentation, leadership/coordination, and responsiveness.

"...I have felt like **information and next steps have come after each step**, rather than having visibility upfront into the process and timeline."

"I feel like **the lack of centralized permitting is a huge barrier**. Attempting to search around through all the different state agencies and organizations is daunting."

"Currently **there does not seem to be anyone in charge of this kind of permitting** and all potential agencies are just throwing all their paperwork at it."

"[This permitting process] is not difficult, but it is **taking a long time with no updates.**"

"...some folks in the permitting process have been **consistently unresponsive**, thus **creating an environment of uncertainty of next steps and outcomes.**"

"There is an opportunity here to **have [permitting] information defined upfront in detail, along with timelines...**If this upfront documentation was available, one could plan accordingly..."

Agency regulators noted challenges with expectations to advise on aquaculture facilities with limited resources.

"Though we have few administrative rules, **we are relied upon to provide habitat and ecological data** and analysis on proposed facilities."

"A **barrier for me is a lack of knowledge about the existing process**, such as: Who covers what? How are permits acquired and managed? Does monitoring occur to ensure the permitted activities aren't causing unanticipated impacts?..."

"There is a significant **difference between aquaculture operations that are on land versus in natural bodies of water...**"

We asked agency staff which agency they thought should take a lead role in permitting for three types of aquaculture: offshore, nearshore, and inland, and they responded as follows.



**NOTE:** These responses do not reflect the current regulatory structure for aquaculture permitting in Oregon. Oregon Department of Agriculture takes a lead role in permitting nearshore estuarine oyster aquaculture. For other nearshore shellfish and inland operations, several agencies are involved, but Oregon Department of Fish and Wildlife provides the major permits and Department of State Lands or local municipalities manage leases. Oregon lacks a structured permitting process for offshore operations.

## RESEARCH NEEDS

Aquaculture research in Oregon encompasses a wide range of topics, but only a few researchers focus on each one. The top reported research needs by researchers are shown in the figure below.

*“There is a need for enhanced support and resources to encourage and promote partnerships between researchers and producers. There is an opportunity to encourage restorative mariculture of seaweeds and shellfish. This approach will require new approaches to permitting and redirection of resources. There is an opportunity to “rebrand” aquaculture, particularly ocean aquaculture, aka mariculture.”*

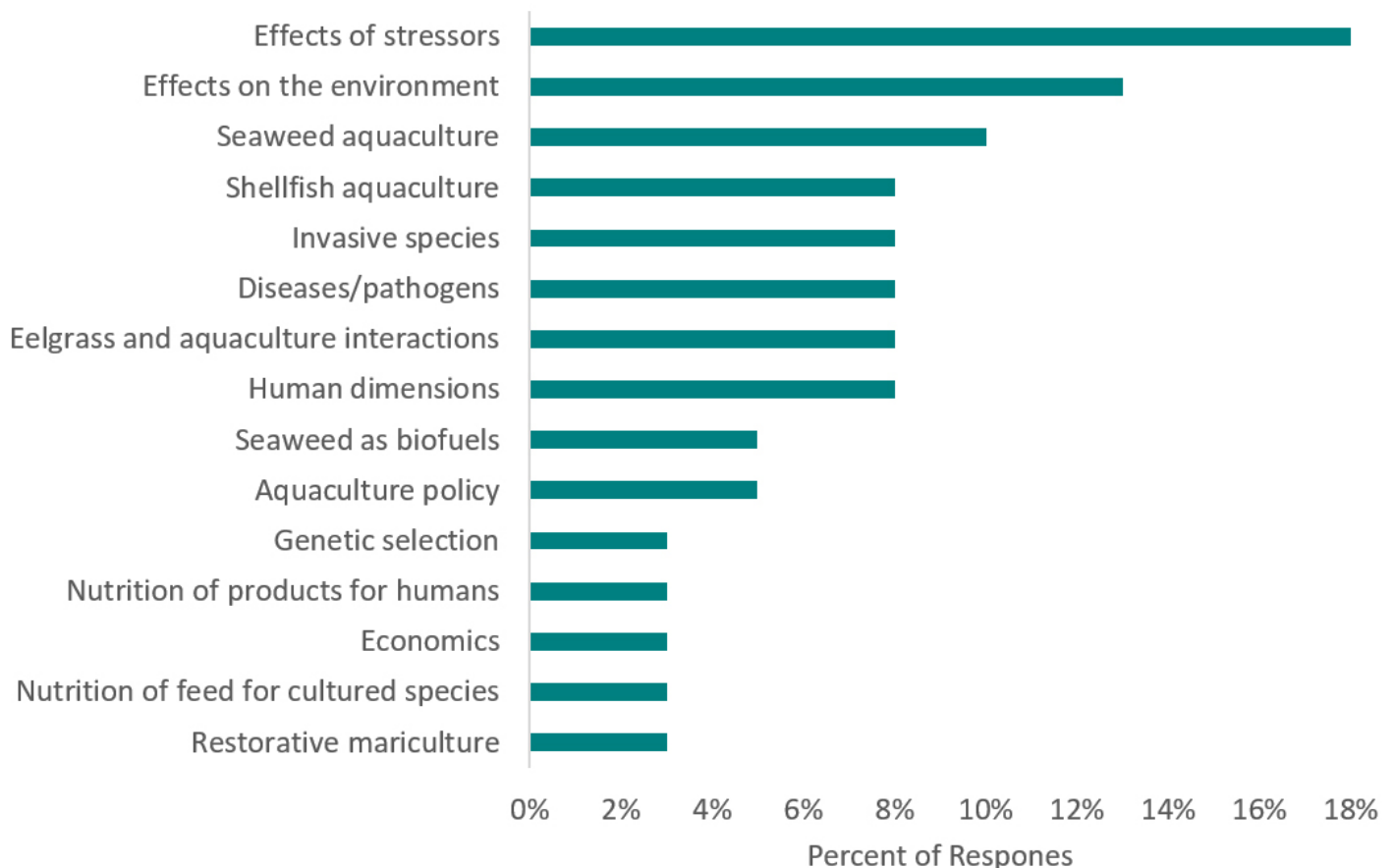
- Researcher

A barrier to aquaculture in Oregon is *“community perception of aquaculture and negative stance of the fishing industry towards aquaculture, especially fish aquaculture. The fishing industry has a loud voice and strong political influence.”*

- Researcher



## AQUACULTURE RESEARCH NEEDS IN OREGON



## RESOURCES AND OUTREACH

Oregon Sea Grant is working on providing outreach on topics identified by the industry. Here are the top three preferences for outreach topics identified by current and prospective growers, and other stakeholders.

Other resources that were requested from prospective growers were internship placements, seaweed hatchery training, a seaweed farm coordinator, and use of title companies to record lease information.

CURRENT GROWERS	PROSPECTIVE GROWERS	OTHER
Potential technologies (22%)	Permitting/regulations & Potential products (24%)	Potential technologies (20%)
Permitting/regulations (19%)	Potential technologies & product development (18%)	Permitting/regulations (20%)
Potential products, product development & marketing (15%)	Marketing (12%)	Potential products (20%)



*“The oyster industry is more struggling with the pathway to permits and leases. Also, changes in laws have forced many growers to use additional gear adding plastics to the issues they are dealing with. Products that allow growers to more substantially grow products are needed. They know about existing resources. What’s new?”*

- Other stakeholder

### NEXT STEPS

Oregon Sea Grant is beginning to address these issues by researching regulatory recommendations that could be applied in Oregon, planning several aquaculture investment events, and creating outreach materials to increase awareness of aquaculture in Oregon and spur further interest and development.

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