

# INVENTORY OF STATE LAWS AFFECTING COMMERCIAL SEAWEED AQUACULTURE



AMANDA NICHOLS  
OCEAN AND COASTAL LAW FELLOW

MARCH 2019

NSGLC-19-06-01



*The Agricultural & Food Law Consortium, led by the National Agricultural Law Center, is a national, multi-institutional collaboration designed to enhance and expand the development and delivery of authoritative, timely, and objective agricultural and food law research and information.*



*This material is based upon work supported by the National Agricultural Library, Agricultural Research Service, U.S. Department of Agriculture.*

## TABLE OF CONTENTS

I. Introduction .....	1
II. Alaska .....	2
III. California .....	4
IV. Connecticut.....	6
V. Maine .....	7
VI. Massachusetts .....	9
VII. New Hampshire .....	10
VIII. New Jersey .....	11
IX. New York .....	12
X. Oregon .....	13
XI. Rhode Island .....	14
XII. Washington .....	15

## Introduction

In recent years, the United States has begun to foster growth of a domestic seaweed aquaculture industry, with hopes that resulting food products may compete with those imported from larger Asian and European markets. However, the industry faces several layers of federal and state regulatory uncertainty, primarily stemming from the U.S. Food and Drug Administration's (FDA) lack of guidance regarding the marketing of seaweed products in their whole form when meant for human consumption. While the FDA's current regulations can help aquaculturists who wish to sell products for use as food additives, they limit the types of species farmers can market and do not encompass the sale of full-sized products. As a result, states are left to determine how to regulate the sale of whole-form seaweed through their own statutes and administrative regulations, which vary widely in scope, content, and applicability. Consequently, it is necessary to understand the differing elements of these states' rules, as they can greatly impact the potential success of a commercial seaweed aquaculture operation. In response to this need, the National Sea Grant Law Center (NSGLC) conducted an inventory of applicable statutes and regulations in states that either currently permit commercial seaweed aquaculture or have taken steps to facilitate such in the future. This research and resulting report are meant to help provide interested parties with baseline legal information concerning state regulation of the commercial seaweed aquaculture industry as it currently stands in the United States.

In creating this report, the National Sea Grant Law Center identified eleven states with potentially applicable statutes and regulations—Alaska, California, Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Oregon, Rhode Island, and Washington. NSGLC then compiled a list of rules that either relate to seaweed aquaculture explicitly, or are applicable due to a state's inclusion of marine plants within its definition of aquaculture. This report does not list every potentially applicable rule, but instead includes those most relevant due to their scope, content, and/or applicability. Generally, the rules listed in this document relate to state licensing, permitting, and leasing structures governing commercial seaweed aquaculture along with any applicable enforcement provisions. Additionally, related definitions and outlying rules were included. Citations to listed statutes and regulations are included throughout the report.

# Alaska

## Background Information

Although the people of Alaska have been harvesting and using seaweed as a food staple for centuries, appreciable interest in the commercial aquaculture industry has only recently begun to grow. The industry is currently developing in the state, with a variety of seaweed species having been approved for cultivation on aquatic farms, including sugar kelp, giant kelp, bull kelp, ribbon kelp, red ribbon seaweed, three ribbed kelp, nori, and sea lettuce.<sup>1</sup> In 2017, a half-million-dollar federal grant was awarded to the University of Alaska Fairbanks to help improve methods of growing, harvesting, and transporting farmed sugar kelp.<sup>2</sup>

In 2017, fourteen Alaskan aquatic farms were permitted to grow kelp, though only three were actively culturing plants.<sup>3</sup> All three operational farms marketed their yield to Blue Evolution, a California-based company that produces pasta products.<sup>4</sup> In the future, the state anticipates targeting additional North American markets, rather than competing with low-cost Asian or European producers.<sup>5</sup>

Despite this recent progress, many of Alaska's rules and regulations related to seaweed still only concern wild harvest. However, the Alaska Department of Fish and Game has implemented a number of rules and regulations that affect the commercial aquaculture industry.

## Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

### Definitions

- “Fish or fisheries products” (ALASKA STAT. § 03.05.100)
- “Aquatic farm,” “aquatic farm product,” “aquatic plants,” and “stock” (ALASKA STAT. § 16.40.199)
- “Aquatic farm,” “aquatic farm product,” “culture,” and “stock” (ALASKA ADMIN. CODE tit. 5, § 41.400)
- “Aquatic farm” and “aquatic farmsite lease” (ALASKA ADMIN. CODE tit. 11, § 63.900)
- “Seafood” (ALASKA ADMIN. CODE tit. 18, § 31.990)

### Permits

- Aquatic farm and hatchery permits (ALASKA STAT. § 16.40.100)
- Criteria for issuance of permits (ALASKA STAT. § 16.40.105)
- Permit application, renewal, and transfer (ALASKA STAT. § 16.40.110)
- Aquatic stock acquisition permits (ALASKA STAT. § 16.40.120)
- Permits (ALASKA ADMIN. CODE tit. 5, § 37.100)

---

<sup>1</sup> McDOWELL GROUP, ALASKA MARICULTURE INITIATIVE ECONOMIC ANALYSIS TO INFORM A COMPREHENSIVE PLAN 34 (2017).

<sup>2</sup> Paula Dobbyn, *Federal grant aims to stimulate Alaska seaweed farming*, Alaska Sea Grant (Sept. 26, 2017), <https://alaskaseagrant.org/2017/09/26/federal-grant-aims-to-stimulate-alaska-seaweed-farming/>.

<sup>4</sup> McDOWELL GROUP, *supra* note 1.

<sup>5</sup> *Id.* at 37.

<sup>6</sup> *Id.* at 38.

- Aquatic farm and hatchery permit applications (ALASKA ADMIN. CODE tit. 5, § 41.220)
- Review and determination (ALASKA ADMIN. CODE tit. 5, § 41.240)
- Permit conditions (ALASKA ADMIN. CODE tit. 5, § 41.250)
- Permit renewal or transfer (ALASKA ADMIN. CODE tit. 5, § 41.280)
- Stock transport permits (ALASKA ADMIN. CODE tit. 5, § 41.295)
- Permit classifications (ALASKA ADMIN. CODE tit. 5, § 41.610)
- Application review; best interest finding (ALASKA ADMIN. CODE tit. 11, § 63.050)

#### Leases

- Aquatic farming and hatchery site leases (ALASKA STAT. § 38.05.083)
- Aquatic farmsite lease applications (ALASKA ADMIN. CODE tit. 11, § 63.030)
- Issuance of aquatic farmsite lease (ALASKA ADMIN. CODE tit. 11, § 63.100)
- General lease provisions (ALASKA ADMIN. CODE tit. 11, § 63.110)

#### Restrictions

- Prohibited conduct generally (ALASKA STAT. § 16.05.920)
- Restrictions (ALASKA ADMIN. CODE tit. 5, § 37.900)

#### Import, Transport, and Sale

- Importation of aquatic plants or shellfish for stock (ALASKA STAT. § 16.40.130)
- Limitation on sale, transfer of stock, and products (ALASKA STAT. § 16.40.140)
- Retail seafood products (ALASKA ADMIN. CODE tit. 18, § 31.810)

#### Penalties (ALASKA STAT. § 16.40.170)

Associated facilities; upland owner preference right; upland owner access right (ALASKA ADMIN. CODE tit. 11, § 63.040)

## California

### Background Information

The California seaweed aquaculture industry is growing, with its first open-water seaweed farm having opened in early 2018.<sup>6</sup> However, the state's existing leasing and permitting process for seaweed culture is convoluted—having originally been designed for commercial shellfish operations rather than small-scale seaweed farms.<sup>7</sup> The current pathway for the establishment and operation of new seaweed farms in California is a multi-phased, time consuming, and expensive process involving several state and federal agencies.<sup>8</sup> Applicants must first gain underwater lease approval from the California Fish and Game Commission, which then triggers an environmental review process.<sup>9</sup> Once a lease is granted, the multi-agency permit application process then begins, hopefully culminating in state approval to begin farming seaweed in the ocean.<sup>10</sup>

Within this complicated leasing and permitting structure are numerous rules and regulations that can directly affect commercial seaweed aquaculture operations in the state.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

Aquaculture registration (CAL. CODE REGS. tit. 14, § 235)

Commercial aquaculture operation environmental impact reports (CAL. FISH & GAME CODE § 15008)

#### Leases

- Leasing state water bottoms or water column (CAL. FISH & GAME CODE § 15400)
- Lease application (CAL. FISH & GAME CODE § 15403)
- Lease term (CAL. FISH & GAME CODE § 15405)
- Lease renewal (CAL. FISH & GAME CODE § 15406)
- Termination of lease (CAL. FISH & GAME CODE § 15409)
- Leasing of state water bottoms for aquaculture (CAL. CODE REGS. tit. 14, § 237)

#### Stocking

- Placement of plants or animals in designated waters (CAL. FISH & GAME CODE § 15202)
- Stocking of aquaculture products (CAL. CODE REGS. tit. 14, § 238.5)
- Take of aquatic plants for aquaculture stocking (CAL. CODE REGS. tit. 14, § 243)

---

<sup>6</sup> Alexander Sammon, *Meet the Women Behind California's First Open-Water Seaweed Farm*, SIERRA CLUB (Feb. 14, 2018), <https://www.sierraclub.org/sierra/meet-women-behind-california-s-first-open-water-seaweed-farm>.

<sup>7</sup> *Guide to Navigating Lease & Permit Approvals for Ocean Farming in California*, GREENWAVE, <https://static1.squarespace.com/static/58d2a2d36b8f5bdf9d98ba51/t/5b7ac0c040ec9a9bc8996ddd/1534771392649/GreenWave+Guide+to+Lease+%26+Permit+Approvals+for+Ocean+Farming+in+California+8.19.2018.docx.pdf>.

<sup>8</sup> *Id.*

<sup>9</sup> *Id.* at 2.

<sup>10</sup> *Id.*

### Import, Transport, and Sale

- Importation of plants or animals from diseased areas (CAL. FISH & GAME CODE § 2270.5)
- Sale or collection of aquatic plants and animals (CAL. FISH & GAME CODE § 15301)
- Importation by registered aquaculturist (CAL. FISH & GAME CODE § 15600)
- Importation application (CAL. FISH & GAME CODE § 15601)
- Importation of live aquatic plants and animals (CAL. CODE REGS. tit. 14, § 236)
- Sale and transportation of aquatic plants and animals (CAL. CODE REGS. tit. 14, § 238)

## Connecticut

### Background Information

Connecticut is currently in the process of growing its seaweed aquaculture sector, having received national attention from environmentalists after permitting one of the world’s first “vertical ocean farms,” where cultured animals are raised along with seaweed in order to increase resilience, sustainability, and productivity.<sup>11</sup> The state’s industry is one of the most robust in the nation, with two species of seaweeds having been approved for cultivation and commercial sale—sugar kelp and a variety of red algae named *Gracilaria tikvahiae*.<sup>12</sup> To date, eight commercial operations have permits to cultivate seaweed in Long Island Sound, and many more are navigating the permitting process.<sup>13</sup> The state is currently working to identify available markets for edible seaweed as well as develop guidelines governing the production and processing of seaweed as food.<sup>14</sup>

As Connecticut’s interest and market grow, the Department of Agriculture has several rules and regulations in place that can directly impact the commercial seaweed aquaculture industry.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

Definition of “aquaculture” (CONN. GEN. STAT. § 22-11c)

#### Licenses

- Licensing of aquaculture operations (CONN. GEN. STAT. § 22-11f)
- Seaweed planting and cultivation license (CONN. GEN. STAT. § 22-11j)

#### Permits

- Permits for aquaculture operations (CONN. GEN. STAT. § 22-11h)
- Permit application final determinations (CONN. GEN. STAT. § 22-11k)

Releases from aquaculture systems (CONN. GEN. STAT. § 22-11g)

---

<sup>11</sup> Gregory B. Hladky, *Connecticut’s ‘Vertical Ocean Farmer’ Wants To Change World’s Food Supply System*, HARTFORD COURANT (Mar. 28, 2016), <https://www.courant.com/news/connecticut/hc-vertical-ocean-farming-20160328-story.html>.

<sup>12</sup> *Seaweed Cultivation*, CONNECTICUT SEA GRANT, <https://seagrant.uconn.edu/focus-areas/seaweed-cultivation/>.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* See also CATHERINE JANASIE & AMANDA NICHOLS, NATIONAL SEA GRANT LAW CENTER, REGULATION OF SEAWEED AS A FOOD SOURCE (2019), available at <http://nsglc.olemiss.edu/Advisory/pdfs/seaweedregulation.pdf>.



## Maine

### Background Information

Compared to other states, Maine has a robust seaweed aquaculture industry, with the first commercial sugar kelp crop being successfully cultivated in 2010.<sup>15</sup> Maine farms have also successfully harvested winged kelp and are currently developing the capacity to grow at least four new species.<sup>16</sup> Furthermore, Maine is the only state that certifies farmed seaweed and kelp products as organic.<sup>17</sup> As seaweed farming represents an opportunity for diversification for traditional fishermen and aquaculturists in the state, interest is steadily growing. The combined landings from the wild harvest and aquaculture sectors totaled almost 20 million pounds and \$771,963 in 2017.<sup>18</sup>

Maine's Department of Marine Resources regulates the seaweed fishery, and has numerous rules and regulations in place that affect aquaculturists' ability to commercially farm seaweed in state waters.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

#### Definitions

- "Aquaculture" and "seaweed" (ME. REV. STAT. tit. 12, § 6001)
- "Aquaculture" and "culture or husbandry (13-188-2 ME. CODE R. § 2.05)

#### Leases

- Research and aquaculture leases (ME. REV. STAT. tit. 12, § 6072)
- Lease option (ME. REV. STAT. tit. 12, § 6083)
- Nonpayment of aquaculture lease fees (ME. REV. STAT. tit. 12, § 6084)

#### Licenses

- Limited-purpose aquaculture license (ME. REV. STAT. tit. 12, § 6072-C)
- Harvester license exemption; aquaculture (ME. REV. STAT. tit. 12, § 6073-B)
- Special license (ME. REV. STAT. tit. 12, § 6074)
- Seaweed buyer's license (ME. REV. STAT. tit. 12, § 6803-A)
- Aquaculture license (ME. REV. STAT. tit. 12, § 6810-B)
- Limited-purpose aquaculture (LPA) license (13-188-2 ME. CODE R. § 2.90)

---

<sup>15</sup> *Seaweed Aquaculture Industry Overview*, MAINE SEA GRANT, <https://www.seagrant.umaine.edu/aquaculture/resources-for-seaweed-growers/industry-overview>.

<sup>16</sup> *Emerging Species for Seaweed Aquaculture*, MAINE SEA GRANT, <https://www.seagrant.umaine.edu/aquaculture/resources-for-seaweed-growers/species/emerging>.

<sup>17</sup> *See Guidelines for Organic Sea Vegetables*, MAINE ORGANIC FARMERS AND GARDENERS ASSOCIATION, [https://www.mofgacertification.org/wp-content/uploads/1\\_SeaVegetableGuidanceDocument.pdf](https://www.mofgacertification.org/wp-content/uploads/1_SeaVegetableGuidanceDocument.pdf).

<sup>18</sup> Caroline Losneck, *Maine seaweed landings, value grow as southern kelp forests decline*, NATIONAL FISHERMAN (Jan. 15, 2019), <https://www.nationalfisherman.com/northeast/maine-seaweed-landings-value-grow-as-southern-kelp-forests-decline/>.

Permits

- Seaweed permit (ME. REV. STAT. tit. 12, § 6803)
- Primary buyers' permit (13-188-8 ME. CODE R. § 8.05)

Primary buyer permit reporting (13-188-8 ME. CODE R. § 8.10)

## Massachusetts

### Background Information

Since 2012, Massachusetts has been experimenting with seaweed farming, and has now claimed a small stake in the nascent industry.<sup>19</sup> Massachusetts' farms primarily exist around Cape Cod and Martha's Vineyard, where a handful of farmers are pioneering commercial kelp production.<sup>20</sup> For example, some shellfish aquaculturists are currently participating in pilot programs that seek to determine the benefits and feasibility of commercially growing sugar kelp in the winter off-season.<sup>21</sup> However, the state's focus isn't purely on the food sector, with interested aquaculturists citing the agricultural, industrial, and cosmetic markets as potential buyers.<sup>22</sup>

Although Massachusetts' commercial seaweed aquaculture industry is in its fledgling stages, the state Division of Marine Fisheries has several rules and regulations in place that could guide the industry in the future.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

Definitions of "aquaculture" and "commercial aquaculture" (322 MASS. CODE REGS. 15.02)

Marine plants; regulation of taking (MASS. GEN. LAWS ch. 130, § 102)

Authorization (322 MASS. CODE REGS. 15.03)

Permits

- Permits (322 MASS. CODE REGS. 15.03)
- Application (322 MASS. CODE REGS. 15.05)
- Site review (322 MASS. CODE REGS. 15.06)

Biological controls (322 MASS. CODE REGS. 15.07)

Operation (322 MASS. CODE REGS. 15.08)

Monitoring (322 MASS. CODE REGS. 15.09)

---

<sup>19</sup> Erich Luenig, *Massachusetts Wants Slice of Seaweed Market*, AQUACULTURE NORTH AMERICA, [http://magazine.aquaculturenorthamerica.com/publication/?i=469975&article\\_id=2990628&view=articleBrowser&ver=html5#%22issue\\_id%22:469975,%22view%22:%22articleBrowser%22,%22article\\_id%22:%222990628%22](http://magazine.aquaculturenorthamerica.com/publication/?i=469975&article_id=2990628&view=articleBrowser&ver=html5#%22issue_id%22:469975,%22view%22:%22articleBrowser%22,%22article_id%22:%222990628%22).

<sup>20</sup> *Greens from the Ocean*, WOODS HOLE SEA GRANT, <https://seagrant.whoi.edu/kelp-sidebar/>.

<sup>21</sup> Sarah Mizes-Tan, *Kelp Farming Sees a Rise In Interest on the Cape*, WCAI (May 10, 2018), <https://www.capeandislands.org/post/kelp-farming-sees-rise-interest-cape#stream/0>.

<sup>22</sup> *Id.*

## New Hampshire

### Background Information

New Hampshire is currently in the process of growing its seaweed aquaculture sector, having received a \$1.4 million National Oceanic and Atmospheric Administration (NOAA) grant in 2015 to increase aquaculture production along with the state of Maine.<sup>23</sup> New Hampshire's efforts include increasing awareness of sustainable seaweed and integrated multi-trophic aquaculture (IMTA) technologies.<sup>24</sup>

Although New Hampshire's commercial seaweed aquaculture industry is in its fledgling stages, the New Hampshire Fish and Game Department has several rules and regulations in place that could guide the industry in the future. While the state has enacted other rules directed at seaweed, they were created with wild harvest, not commercial aquaculture, in mind.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

#### Definitions

- “Marine species” (N.H. REV. STAT. ANN. § 207:1)
- “Aquatic species” and “aquaculture” (N.H. REV. STAT. ANN. § 211:62-e)
- “Seaweeds” (N.H. CODE ADMIN. R. ANN. FIS. 611.01)

#### Commercial salt water and wholesaler licenses

- Nonresident and resident commercial salt water licenses (N.H. REV. STAT. ANN. §§ 211:49-a and b)
- Nonresident and resident wholesaler licenses (N.H. REV. STAT. ANN. §§ 211:49-aa and c)
- Penalties (N.H. REV. STAT. ANN. § 211:58)

Out-of-state seaweed sales (N.H. REV. STAT. ANN. § 207:51)

Enforcement (N.H. REV. STAT. ANN. § 207:54)

Inland and marine aquaculture licensing (N.H. CODE ADMIN. R. ANN. FIS. 807.01 – 15)

---

<sup>23</sup> For more information, see Christopher Katalinas, *Sea Grant Sets the Stage for Aquaculture Growth in New England*, NOAA SEA GRANT (Sept. 22, 2017), <https://seagrants.noaa.gov/News/Article/ArtMID/1660/ArticleID/1654/Sea-Grant-Sets-the-Stage-for-Aquaculture-Growth-in-New-England>.

<sup>24</sup> IMTA calls for several different species (typically finfish, shellfish, and seaweed) to be cultured simultaneously at one site in order to increase sustainability and productivity.

## New Jersey

### Background Information

Currently, there are no commercial aquaculture farms cultivating seaweed in New Jersey state waters. However, the state's Department of Agriculture has implemented several rules that could help guide the industry in the future.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

Definitions of “aquaculture,” “aquatic organism,” and “aquatic species” (N.J. ADMIN. CODE § 2:89-1.2)

#### Licenses

- Aquatic Farmer License Requirements (N.J. ADMIN. CODE § 2:89-2.1)
- Aquaculture Application (N.J. ADMIN. CODE § 2:89-2.4)

#### Identification of Aquacultured Stock

- Sale or distribution (N.J. ADMIN. CODE § 2:89-4.1)
- Label requirements (N.J. ADMIN. CODE § 2:89-4.2)
- Food license (N.J. ADMIN. CODE § 2:89-4.4)

Compliance (N.J. ADMIN. CODE § 2:89-7.1)

Violations and enforcement (N.J. ADMIN. CODE § 2:89-8.1)

## New York

### Background Information

New York is currently in the process of growing its seaweed aquaculture sector, with Cornell University having recently received authorization to work along with the University of Connecticut on a pilot project in Gardiner’s and Peconic Bays in Suffolk County. The project has two main goals: 1) to determine the local viability of commercial seaweed farming; and 2) to analyze the interest and demand for kelp products in local markets.<sup>25</sup>

New York’s Department of Environmental Conservation has several rules and regulations in place that affect aquaculturists’ ability to commercially farm seaweed in state waters.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

#### Definitions

- “Aquaculture” and “aquatic products,” (N.Y.UNCONSOL. LAW § 6266-y (McKinney))
- “Culture or cultivation” and “marine plant and animal life” (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.1)
- “Aquaculture” (N.Y. COMP. CODES R. & REGS. tit. 6, § 661.4)

Pilot program (N.Y. ENVTL. CONSERV. LAW § 13-0302 (McKinney))

#### Permitting

- Authority to issue permits (N.Y. ENVTL. CONSERV. LAW § 13-0316 (McKinney))
- On-bottom and off-bottom culture permits (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.3)

#### Marketing and sale

- Marketing of agricultural products (N.Y.UNCONSOL. LAW § 6266-y (McKinney))
- Sale of cultivation products (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.4)
- Marketing and identification of cultivation products (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.5)

General prohibitions (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.2))

Records (N.Y. COMP. CODES R. & REGS. tit. 6, § 48.6)

---

<sup>25</sup> *Kelp Aquaculture Feasibility Study*, <http://ccesuffolk.org/marine/habitat/kelp-aquaculture-feasibility-study>.

# Oregon

## Background Information

While Oregon has not yet established an appreciable commercial seaweed aquaculture industry, the state has taken several newsworthy steps over the past few years to do so. Perhaps most notably, Oregon State University's (OSU) Hatfield Marine Science Center developed and patented a strain of dulse (a nutrient-dense red algae) that could be more easily marketed for human consumption due to its bacon-like flavor when fried as well as its high protein, vitamin, and mineral content.<sup>26</sup> Scientists at OSU have recently expressed their interest in scaling up the production of red seaweeds after being awarded federal funding to explore new farming techniques.<sup>27</sup>

Though the state's industry is still in its fledgling stages, the Oregon Department of Agriculture has several rules and regulations in place that can help guide commercial seaweed aquaculture into the future.

## Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

### Definitions

- "Aquaculture" (OR. ADMIN. R. 141-082-0255)
- "Biomass," "lease," "license," "special use, and "submerged land" (OR. ADMIN. R. 141-125-0120)

Sale or lease of submerged lands (OR. REV. STAT. § 274.040)

### Special use leases and licenses for aquaculture on state lands

- Purpose and applicability (OR. ADMIN. R. 141-125-0100)
- Policies (OR. ADMIN. R. 141-125-0110)
- Application requirements (OR. ADMIN. R. 141-125-0130)
- Application review and approval (OR. ADMIN. R. 141-125-0140)
- General terms and conditions (OR. ADMIN. R. 141-125-0170)
- Insurance and bond (OR. ADMIN. R. 141-125-0180)
- Termination (OR. ADMIN. R. 141-125-0190)

### Enforcement

- Criminal penalties (OR. REV. STAT. § 274.990)
- Civil penalties (OR. REV. STAT. § 274.992)
- Enforcement actions; civil penalties and other remedies (OR. ADMIN. R. 141-125-0210)

---

<sup>26</sup> *Aquaculture*, OREGON STATE UNIVERSITY COLLEGE OF AGRICULTURAL SCIENCES, <https://marineresearch.oregonstate.edu/comes/research/aquaculture>.

<sup>27</sup> Tiffany Woods, *OSU researchers aim to scale up production of nutritious red seaweeds*, OREGON SEA GRANT (Oct. 17, 2018), <https://seagrant.oregonstate.edu/feature/osu-researchers-aim-scale-production-nutritious-red-seaweeds>.

## Rhode Island

### Background Information

When compared to other states, Rhode Island has a fairly robust seaweed aquaculture industry, with its Coastal Resources Management Council (CRMC) having permitted the first exclusive kelp farm in the state in 2016.<sup>28</sup> Since then, the state has taken additional steps to promote the industry, such as embarking on a project that hopes to help inform site selection of kelp-shellfish integrated systems in local waters.<sup>29</sup> Additionally, the University of Rhode Island is currently conducting research to understand the potential markets for farmed kelp in the larger New England region.<sup>30</sup> Generally, commercial seaweed aquaculturists in the state sell their yield at local farmers markets.

The CRMC has put into place a number of rules and regulations to govern the industry as the market for cultured seaweed grows in Rhode Island.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

#### Definitions

- “Farm products” (R.I. GEN. LAWS § 6A-9-102)
- “Aquaculture” (R.I. GEN. LAWS § 20-10-2)
- “Aquaculture,” “aquaculture lease,” and “cultured crops” (250-40 R.I. CODE R. § 00-1.7)

#### Permits and licenses

- Application for a permit to conduct aquaculture (R.I. GEN. LAWS § 20-10-4)
- Procedures for approval (R.I. GEN. LAWS § 20-10-5)
- Permits and licenses for the taking, possession, sale, importation, and transportation of species used in aquaculture (R.I. GEN. LAWS § 20-10-12)
- License or permit suspension or revocation (R.I. GEN. LAWS § 20-10-16.1)
- Permitting and licensing requirements (250-40 R.I. CODE R. § 00-1.8)

#### Leases (R.I. GEN. LAWS § 20-10-6)

#### Enforcement

- Penalties (R.I. GEN. LAWS § 20-10-16)
- Arrest, seizure, and prosecution of violators (R.I. GEN. LAWS § 20-10-2)
- Enforcement (250-40 R.I. CODE R. § 00-1.13)

---

<sup>28</sup> CRMC permits first exclusive kelp farm in RI, COASTAL RESOURCES MANAGEMENT COUNCIL (June 6, 2016), [http://www.crmc.ri.gov/news/2016\\_0606\\_kelpfarm.html](http://www.crmc.ri.gov/news/2016_0606_kelpfarm.html).

<sup>29</sup> *Integrated Kelp Aquaculture*, HUMPHRIES LAB, <http://ahumphrieslab.com/integrated-kelp-aquaculture#integrated-kelp-aquaculture-1>.

<sup>30</sup> *Understanding Potential Markets for Farmed Kelp in New England*, The University of Rhode Island Coastal Resources Center, [https://www.crc.uri.edu/projects\\_page/understanding-the-potential-to-farm-kelp-as-an-aquaculture-crop-in-new-england/](https://www.crc.uri.edu/projects_page/understanding-the-potential-to-farm-kelp-as-an-aquaculture-crop-in-new-england/).



## Washington

### Background Information

In Washington State, interest in kelp aquaculture initially grew due to research concerning how the practice could potentially mitigate ocean acidification in Puget Sound.<sup>31</sup> Currently, the state is supporting efforts to develop a market for locally grown native kelp by piloting ways to prepare and preserve fresh harvest, helping ensure that products meet food safety standards, and connecting growers and local culinary individuals.<sup>32</sup> The traditional aquaculture industry has shown growing interest as well, citing integrated multi-trophic systems<sup>33</sup> as possible tools to naturally aid in production and increase total product value.<sup>34</sup>

Though most regulatory emphasis in the state remains centered on wild harvest, the Department of Fish and Wildlife has a number of rules and regulations in place that affect the commercial seaweed aquaculture industry.

### Statutes and Regulations Relevant to Commercial Seaweed Aquaculture

#### Definitions

- “Aquaculture,” “aquatic farmer,” and “private sector cultured aquatic products” (WASH. REV. CODE § 15.85.020)
- “Seaweed” (WASH. REV. CODE § 77.08.010)
- “Marine aquatic plants” (WASH. REV. CODE § 79.135.400)
- “Aquatic farm” (WASH. ADMIN. CODE § 220-370-040)
- “Marine plant” and “kelp” (WASH. ADMIN. CODE § 220-370-050)

Shoreline uses (WASH. ADMIN. CODE § 173-26-241)

Duties of aquatic farmers (WASH. ADMIN. CODE § 220-370-160)

#### Registration

- Aquatic farm registration (WASH. ADMIN. CODE § 220-370-060)
- Aquatic farm registration required information (WASH. ADMIN. CODE § 220-370-070)

Description of aquatic farm production report (WASH. ADMIN. CODE § 220-370-170)

---

<sup>31</sup> *Kelp Aquaculture*, WASHINGTON SEA GRANT, <https://wsg.washington.edu/community-outreach/kelp-aquaculture/>.

<sup>32</sup> *Id.*

<sup>33</sup> In integrated multi-trophic aquaculture, or ITMA, multiple aquatic species from different trophic levels (such as shellfish and kelp) are farmed together to improve efficiency, reduce waste, and provide ecosystem services.

<sup>34</sup> *The new wave of shellfish farming and how seaweed may be the answer*, THE UNIVERSITY OF WASHINGTON SCHOOL OF AQUATIC AND FISHERY SCIENCES (Mar. 19, 2018), <https://sites.uw.edu/bevanseries/2018/03/19/the-new-wave-of-shellfish-farming-and-how-seaweed-may-be-the-answer/>.

#### Leases

- Leasing beds of tidal waters (WASH. REV. CODE § 79.135.110)
- Renewal of leases (WASH. REV. CODE § 79.135.150)

#### Import, harvest, and sale

- Sale of aquaculture products by leaseholder (WASH. REV. CODE § 79.135.040)
- Commercial harvest and import restrictions (WASH. REV. CODE § 79.135.410)
- Kelp importation (WASH. ADMIN. CODE § 220-370-230)

#### Marine plant aquaculture disease control (WASH. ADMIN. CODE § 220-370-220)

#### Violations and enforcement

- Infractions (WASH. REV. CODE § 77.15.160)
- Seaweed harvest and possession violations (WASH. REV. CODE § 79.135.420)
- Seaweed enforcement (WASH. REV. CODE § 79.135.430)
- Facility inspection authority (WASH. ADMIN. CODE § 220-370-080)