



Like *Trees* in the *Sea*

Jaclyn Robidoux: Why seaweed is good for the planet, coastal economies, and you

BY LYNN FANTOM

On any given day, Jaclyn Robidoux might be hauling lines in a boat on Casco Bay, counseling seventh graders, collaborating with a documentary filmmaker, or poring over a scientific journal. The single thread linking these diverse days is both intriguing and still somewhat obscure: seaweed.

It's no surprise that "Jax" or "Jack," as she's known to her friends, dubs herself a "Jack of all trades." She needs to be. As a member of Maine Sea Grant's marine extension team, the 26-year-old has a big mandate. Her job is to connect various communities around seaweed, the common name for marine algae. She joins a flotilla of Maine women who have been pioneering this sustainable crop—one that is good for personal health, the economy of coastal communities, and the environment.

Jaclyn's supervisor, Beth Bisson, sees ways that Maine can meet a growing need: "Seaweed is a huge industry elsewhere in the world. In the U.S., we consume a lot of it in nori rolls and all kinds of other products, but we don't produce as much as we could. And, so, it's an opportunity for the country, but also really for Maine." Beth Bisson is associate director of the University of Maine's Sea Grant program, which she calls the "wet and salty counterpart" of the USDA-funded agricultural extension network.

Succeeding in any extension role takes versatility, initiative, hard work, and expert knowledge of the subject matter—in this case, seaweed. The goal is to build two-way communication between researchers and growers, as well as loop in other groups, including related nonprofits.

TOP: Carrageen, an edible shoreline seaweed. *Photo by Jonas Drotner Mouritsen.*

LEFT: Kelp is the variety of seaweed most commonly farmed in Maine. *Photo by Joey Conroy.*





Jaclyn Robidoux of Maine Sea Grant. Photo by Joey Conroy.

Jaclyn can boast such solid science creds (though she never would). “Science was always one of those subjects that just clicked for me,” she says. She is now wrapping up her master’s degree in marine biology at the University of New Hampshire with a capstone project to develop a nursery and cultivation system for Maine-native nori. Her aspiration is to help diversify seaweed farming in Maine, which has largely been concentrated on kelp.

Known to occasionally reference “the scientist in me,” the Massachusetts native seems as comfortable discussing her research on a TED Talk-like stage as she is weed whacking an electric fence line on Metinic Island to keep wild sheep out of a tern colony, both activities she has readily done. She approaches all such challenges with energy, enthusiasm, and an organized manner.

And initiative? Well, that started early. When Jaclyn camped with her family on Hermit Island every summer, she and her brothers would drag their parents out of bed at five o’clock to scout for moon snails and sea stars at low tide. This little girl loved Maine. She soon started picking up brochures of “Maine Homes for Sale” and laying them out strategically for her parents to see. Although they never acted on those hints, Jaclyn says she always knew she would live in Maine.

Today, she does—with a roommate and two cats on Portland’s East End, an up-and-coming neighborhood that the *Boston Globe* has called “one of Portland’s coolest spots.” Included among the area’s bakeries, bookstores, and restaurants are, says the *Globe*, “quirky delights, such as Heritage Seaweed, a fascinating shop with ocean-based specialty goods.”

This spring, Jaclyn partnered with its proprietor to support Seaweed Week, a state-wide food festival to celebrate Maine’s kelp harvest. But, in the shadow of COVID-19, she shifted gears and devised a marketing program—replete with kelp prep instructions, hand-stamped eco-friendly delivery bags, and an online platform—to help seaweed farmers with direct-to-consumer sales. Among the buyers was another woman who believes kelp farming is good for Maine: Governor Janet Mills.

“Jaclyn has done a wonderful job, in particular working with the culinary industry and all of her partners during Seaweed Week,” says Beth Bisson.

“The reality is that people are unfamiliar with seaweeds,” Jaclyn adds. “So, you can tell them all day, ‘Oh, this is great for the environment. This is great for you. But they need to know what to do with it.’”

She herself eats a little seaweed every day. “Marine algae are a much better source of iron than foods such as spinach and egg yolks,” says Ole G. Mouritsen, author of *Seaweeds: Edible, Available, and Sustainable*. Rich in both minerals and vitamins, the macroalgae are high in fiber and low in calories.

When fresh seaweed is in season in the spring, Jaclyn substitutes it for spinach or kale—in stir fries, soups, scrambled eggs, baked dishes like lasagna, even cocktails! “Kelp adds a subtle savory flavor in dishes and, eaten raw, has a crisp ocean taste,” she says.

Because of its seasonality, products have been developed to preserve it, by pickling, freezing, or drying it into sheets or sprinkles. “My favorite is sprinkled on avocado toast,” Jaclyn says.

Crispbread with a mixture of seaweeds. Photo by Jonas Drotner Mouritsen.



Saco-based Atlantic Sea Farms has developed delicious, award-winning products with seaweed, like a mild kimchi, sea-beet kraut, and kelp smoothie cubes, that “normalize kelp.” This year the women-led company also did a deal with farm-to-counter salad specialist Sweetgreen. With a network of 24 seaweed farmers from Portland to Eastport, Atlantic Sea Farms was able to meet the volume requirements of a large chain.

The company’s chief executive Briana Warner, whose background is in economic development, says her overriding mission is to help diversify Maine’s coastal economy in the face of climate change. Since most of the network’s farmers come from traditional fisheries, her guarantee to buy every blade they produce gives them an additional income stream. That alternative will be welcome if warming waters in the Gulf of Maine drive lobsters and sea scallops farther offshore or north, as scientists predict.

Like Jaclyn, Litchfield-native Sarah Redmond also worked for Maine Sea Grant, then founded her own company, Springtide Seaweed, a certified-organic farm that grows four varieties of edible seaweed. A leader in seaweed aquaculture since 2010, her initiatives—developing nursery systems and setting crop standards—have also included educating the general public about the environmental benefits of seaweed.

These benefits are considerable. As seaweed grows, it vacuums up harmful nitrogen and phosphorus discharged by farms and factories. More importantly, it consumes carbon dioxide. That’s key because the ocean absorbs about 30 percent of the carbon dioxide released into the atmosphere. “Think trees in the sea,” Jaclyn says.



Briana Warner with Atlantic Sea Farms’ kimchi. *Photo courtesy of Daily Harvest.*

More recently, researchers have discovered another environmental benefit: seaweed in agricultural feed reduces bovine burping. The Environmental Protection Agency estimates that animals like cows and sheep produce about one-third of agricultural methane emissions. And that’s important because methane warms the Earth even faster than carbon dioxide.



Sarah Redmond farms Frenchman Bay. *Photo courtesy of Springtide Seaweed.*

A love of the outdoors, engendered by those early camping trips in Maine, propelled all three of the Robidoux children into careers in marine or environmental fields, Jaclyn says.

Sitting today in her knotty-pine-paneled living room, her long, blonde hair escaping from an unsuccessful clip, she turns her attention to the special role women are playing in the marine sector of seaweed. “Because it’s relatively new for the U.S., some of those old barriers that may have existed in other marine industries are not there yet. Not to say that it’s easy. But since it’s new and a little different, a woman can go and independently start her own oyster or kelp farm. There’s a lot of room for growth.”

That momentum has already been building. According to the Maine Department of Marine Resources, last year’s harvest of farm-raised marine algae in Maine was almost 20 times the volume five years ago.

The future is promising for this new industry, thanks to these many enterprising women. Their dedication to seaweed is not new, however. During the first half of the 20th century, a female scientist Kathleen Drew-Baker made discoveries about the lifecycle of edible seaweed that led to a breakthrough in commercial cultivation. So important was her research to nori production that the Japanese celebrate her as the “Mother of the Sea.”