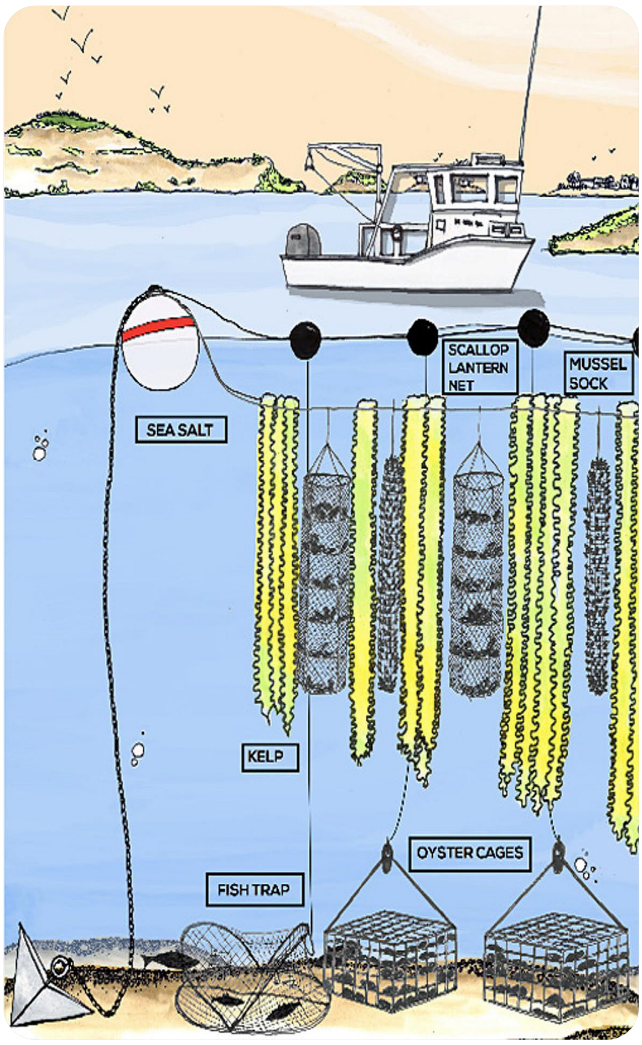
Sea farming in the future

Bren Smith is a former fisherman turned sustainable shellfish and seaweed farmer and entrepreneur. His company, Thimble Island Oyster Co., operates one of the first sustainable 3D ocean farms in the country. Nestled in the Thimble Islands of Long Island Sound, their 40-acre farm uses the entire water column to grow a variety of species – ranging from sugar kelp and oysters to mussels and scallops – and has emerged as a national model for hyper-local sustainable food production, ocean restoration, and economic development.

1 Read the interview and match the questions given below to the answers.

a. What kinds of things can you do with kelp?
b. How are you rethinking aquaculture?
c. How did you go from a fisherman to an ocean innovator?
d. What is a 3D ocean farm?

1. ☐ My story is one of ecological redemption. At age 14, I dropped out of high school and headed out to sea. My first job on the boats was to stand on deck with a shotgun and shoot as many birds as possible before they stole the bait. I worked 30-hour shifts on factory trawlers scraping the seafloor, ripping up entire ecosystems; fished illegally at night in protected waters; and have personally thrown thousands of pounds of dead by-catch back into the sea. As a young fisherman with salt in the veins, the destruction was too much to bear, so I headed off to try my hand at aquaculture, and got a job working on a large salmon farm in Canada. Aquaculture was to be the answer to overfishing, but it was more of the same destruction, achieved in new ways. Disillusioned with the fishing industry, I kept hunting for a sustainable way to work the seas, own my own boat, live a self-directed life, and leave my ocean in a better place. My journey took me to Long Island Sound where there was a program to lease shellfishing grounds to young commercial fishermen under 40. I leased 20 acres, started harvesting oysters and then slowly, with many experiments and failures, transitioned the farm into one of the first 3D ocean farms in the country.



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2. ☐ A 3D ocean farm is designed to restore rather than deplete our oceans. We use our new farming methods to meet the growing need for sustainable seafood, while restoring ecosystems, mitigating climate change and building a new blue-green economy. We grow and produce mussels, oysters, kelp, scallops, and even sea salt – all with a small underwater footprint. The environmental effects are stunning. Our kelp – known as the "rainforest of the sea" – absorbs five times more carbon than land-based plants. So, I'm not just a fisherman; I'm a climate farmer. Our farm gear also functions as a storm surge protector, reducing the impact of storms on shoreline communities. Kelp and oysters need nitrogen to grow, so our farm – soaking up to 164 kg of nitrogen per year – is vital for restoring water quality. We also turn our kelp into liquid fertilizer for the Yale Sustainable Food Project in order reduce nitrogen run-off from land-based farming. Finally, our farm system doubles as an artificial reef, attracting 150 species that come to hide, eat, and thrive. After a decade of farming, what was once a barren patch of ocean is now a robust ecosystem.

3. ☐ My team prepares kelp linguini, kelp ice cream, even kelp cocktails. So, it's fun, but also healthy. Fish don't make omega-3's; they consume them. So, by eating like fish, consumers get the same benefits, while reducing pressure on dwindling fish stocks. I've created a blue-green jobs program to hire inner-city kids to process seaweeds and other farm product. I've developed multiple sustainable commercial uses for kelp, including organic liquid fertilizer and biofuel; and developed solar refrigeration systems for transport and storage. The possibilities appear endless. We've just begun a project to revive the Scottish tradition of using kelp feed as a core food source for sheep and cattle as a way to reduce methane output, as well as develop new artisanal kelp-fed lamb for high-end markets.

4. ☐ Fundamentally, my model is about two things: 1) growing environmentally restorative species that mitigate climate change, restore ocean ecosystems and reduce pressure on dwindling fish stocks; and 2) re-imagining the role of the fisherman from hunter-gatherer to ocean entrepreneur growing food, fuel, and fertilizer for local communities. We have started GreenWave, an organization that works to replicate our model throughout the US and globe, both by creating new 3D farms but also by pushing the edge of what's possible on the sea, such as embedding 3D farms in offshore wind farms. Our goal is to train thousands of new ocean farmers. We want fishermen of the future to be at the front edge of jump-starting a new ocean economy that meets the growing need for sustainable seafood, habitat restoration, and resilient communities in the era of climate change. We believe this sort of re-imagining of the ocean economy and role of the fishermen is our only hope for saving our seas – and ourselves – in the era of climate change.

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2 Read the interview again and find the words corresponding to the following definitions.

1. Denoting the most expensive of a range of products: .....
2. Able to withstand or recover quickly from difficult conditions: .....
3. Extremely impressive or attractive: .....
4. A ridge of jagged rock, coral, or sand just above or below the surface of the sea: .....
5. The line along which a large body of water meets the land: .....
6. Gradually diminishing in size, amount, or strength: .....
7. Absorbing a liquid: .....
8. Integrating in something: .....
9. Fishing boat with net: .....
10. Abandon a course of study: .....
11. Tear something violently into small pieces so as to destroy it: .....
12. Bivalve mollusc with rough irregular shells: .....
13. The action of saving or being saved from sin, error, or evil: .....
14. Leave and start a journey: .....
15. Too much commercial fishing: .....

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3 **Read the text and decide if the statements are true or false. Then identify the most logical words in the text which may support your decision, writing them in the box. The first one is an example.**

1. Bren finished college then he started working as a fisherman.

F	I dropped out of high school and headed out to sea.

2. He used to work on fishing boats without caring about the ecosystem.

3. Later he was satisfied to work in a salmon farm.

4. 3D ocean farms are environmentally-friendly.

5. Growing kelp may have a negative impact on environment.

6. Kelp might also be used as livestock feed.

7. 3D ocean farms are a risk for the sea wildlife.

8. Bren believes it is possible to integrate 3D farms in wind farms.

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