Monterey Abalone Company

Most farmers work the land, but the "farmers" at Monterey Abalone Company (MAC) spend most of their time growing their crop in the water. Founded in 1992 and tucked under the Commercial Wharf in the Monterey Harbor, MAC is managed by co-owners Trevor Fay and Art Seavey.

The company's philosophy is to duplicate as closely as possible the abalone's natural environment, including a diet of fresh kelp. "We don't process the abalone in any way and we only sell them live in the shell," says Fay, who is also MAC's chairman of the board. "You can't beat the taste of fresh abalone."

MAC's customers include five-star restaurants and resorts, distributors, and private individuals. Their customers are exclusively domestic; in fact, most are located on the Monterey Peninsula.

Abalone Aquaculture in California

An "abalone rush" in the 1850s led to the overfishing of the species. In the 1930s, three to four million pounds of abalone were being harvested locally each year, and the state simultaneously experienced dramatic increases in population, pollution, and coastal development. By the end of the century, California's abalone population had been severely decimated.

The reduction of the abalone population resulted in fishing regulations, and in 1997, a complete ban on commercial and recreational abalone fishing south of San Francisco. These restrictions encouraged the development of abalone aquaculture. According to Fay, "The door was wide open to farm abalone in this area and to bring back a locally cherished delicacy."

How is Abalone Farmed?

Abalone can be farmed directly in the ocean, where the animals are grown in specially constructed habitats. They can also be cultured on land-based farms, where they grow in concrete tanks that are pumped with seawater. Unlike ocean-based farms, land-based farms can function as hatcheries, because they grow abalone in an enclosed, controlled environment—a necessity for containing the microscopic larvae.

MAC, an in-ocean farm, buys young abalone from land-based farms. About an inch in shell length, the abalone are placed in wire mesh cages lined with plastic panels—about three thousand to each cage. The abalone attach to the plastic substrate and, as they grow, compete for food and space. When this happens, MAC staff thins the population by dividing them and putting them in new cages. The process repeats itself as the abalone get bigger.

The cage habitats are suspended in the ocean on lines underneath the wharf. MAC built catwalks underneath the wharf, just above the high tide mark, for servicing the habitats. For example, when it's feeding time, a MAC employee raises the cages to the catwalk via winches and feeds kelp—freshly harvested from local kelp beds—to the abalone. MAC, which is licensed to harvest kelp by the California Department of Fish & Game, harvests by hand about five to six tons of kelp weekly.

According to Fay, the biggest challenge in abalone farming is surviving impacts such as El Niño. Because abalone are so sensitive to environmental changes such as water temperature, a warming phenomenon such as El Niño can stress the creatures. And unlike cooler water, warm water is essentially void of kelp-enriching nutrients. So periods of extended warm water result in thin kelp beds that are low in nutritional value. In addition, warm water creates more storms, which damage the kelp beds. "The mortality rate definitely goes up during El Niño," said Fay.

Working at Monterey Abalone Company

Including co-owners Fay and Seavey, MAC has three full-time and three part-time employees. Important tasks at the farm include harvesting kelp, managing population density, and harvesting the animals as customer orders come in. MAC employees have a variety of practical marine-related skills, but a strong interest in the marine environment is more important than a specific educational background.

For example, one MAC employee is an experienced diver with boat handling skills; another is a former teacher and pharmacist. Fay's own interest in the ocean goes back to his childhood—his father was a marine biologist—but he has also worked in warehouse and inventory management. Marine safety, boat handling, and swimming are all essential skills. Electronics is useful for maintenance of winches and other equipment and working on the boat. "You really have to be a jack-of-all-trades," says Fay.

Most of the company's employees like being a part of an organization that practices responsible and sustainable aquaculture. Experience with marine animals is helpful but not a requirement. "Abalones are so unique that abalone handling skills need to be learned through hands-on training here at the farm," Fay explains. "They're very delicate critters that are sensitive to handling. They have very specific needs for their water, their habitats, and their population density."

The company is in the process of hiring someone to manage population density, including thinning the crop. The new hire will help with kelp harvesting as well. According to Fay, some knowledge of marine animal growth rates is helpful but not required.

Working with the MATE Center

MATE Center interns and former interns who have been hired permanently are common at MAC. Current MATE student Rob Hewitt works part-time at MAC and attends Monterey Peninsula College; and former MATE intern Shinobu Okano is a part-time staff member. (*Read about Shinobu's most recent internship in the Summer/Fall 2004 issue.*) MAC allows MATE students to work flexible hours so that they can complete their coursework and simultaneously get work experience in the marine industry.

Fay himself is a former MATE student who interned at MAC in 2001. When one of the co-owners retired in 2002, Fay was given the opportunity to buy his share of the company. "I've got a favorite spot in my heart for MATE and MATE students," he admits.

So if you're a MATE student, are interested in sustainable aquaculture, have a broad set of skills that can be applied to the marine environment, and are willing to learn—then someday you might find yourself piloting a skiff or feeding abalone at the Monterey Abalone Company!

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realized that everything we needed to develop the curriculum was right there," she says. "The only thing we needed to do was have our advisory board review it and adapt it to our specific regional and local needs."

Anderson is pleased with the continued growth of the entire Marine Science Technology department, which is currently seeking a full-time faculty member. Curriculum in all areas is being updated and Anderson expects that the MATE Center will assist in curriculum development again. "We've already added a class called Subsea Technology—ROVs," she explains. "And we're working with other program areas to tie in a GIS course and an electronics course for the marine science technician program."

As Saddleback College continues to expand its Marine Science Technology department, many more opportunities for collaborating with the MATE Center will be available. From aquaculture to ROVs to GIS, the partnership between the two will only become stronger!