

Oyster work continues off San Rafael's shores

By Mark Prado , Marin Independent Journal

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Researchers make their way out to native Olympia oyster and eelgrass beds along the San Rafael shoreline in 2013. Millions of native Olympia oysters have settled on man-made reefs built in San Rafael Bay. Robert Tong — Marin Independent Journal

For the last three years in the shallows of San Rafael Bay, small oysters have grown by the millions as part of the state Coastal Conservancy's Living Shoreline Project.

On Thursday the conservancy board is expected to OK \$250,000 for continued monitoring of the submerged San Rafael plot, and a second site in Alameda County, to determine how and if the work is

benefitting the bay and how it might be repeated in other locales.

"We want to see how the oysters are doing, we are assessing," said Marilyn Latta, project manager, who is with the conservancy. "Overall we are thrilled with how it has gone. We would hope to replicate this in other parts of San Francisco Bay."

The summer of 2013 saw crews build and drop reefs — made of oyster shells from the now shuttered Drakes Bay Oyster Co. — about 600 feet offshore into San Rafael Bay near Starkweather Park. More than two years later, more than 3.5 million Olympia oysters, and other associated creatures, turned up.

That's good news. Restoring the native oysters is important, according to researchers.

The Olympia oyster, which measures no more than 1.5 inches in diameter when fully grown, once was plentiful in the bay, acting as a water purifier, as well as habitat and food for a variety of fish species.

Perfect spot

Overharvesting and pollution helped diminish their numbers in the 19th and 20th centuries, while sediment and development in the bay eliminated hard surfaces on which the oysters need to grow.

One of its key functions is its ability to act as a mini-filter. Although small, they can take in large quantities of sea water — as much as 20 to 30 quarts an hour — and extract pollutants and algae-causing plankton.

The reefs may also serve to protect shorelines from wave action and erosion; studies of the San Rafael site shows a 30 percent reduction in wave force.

As it turns out, the San Rafael shoreline is the perfect place to try to re-energize the species. The shallow water makes the locale ideal. Researchers can literally walk into the bay to the site to examine the reefs.

As the site has changed, researchers have noted a drop in the number of oysters to about 750,000 as some have grown larger while others have died off. But that number is still healthy especially in light of one estimate — albeit very preliminary — that put the entire San Francisco Bay population of the oysters at 600,000 in recent years.

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Other benefits

In addition to seeing oysters flourish, there have been ancillary benefits for other species. Crabs along with shrimp and other invertebrates have turned up on the reefs. The black oystercatcher, which breeds on the nearby Marin Islands, has been spotted along the shore where they had not been seen for some time.

The \$2 million effort will continue two more years if money comes through. Along with the Coastal Conservancy, the Environmental Protection Agency, San Francisco Estuary Partnership, Wildlife Conservation Board and NOAA Fisheries have assisted with the effort.

Meanwhile, efforts to grow eelgrass at the site have had mixed success. Eelgrass provides a nursery area for many fish and shellfish species and is a major food source, forming the base of food webs and hosting organisms that feed directly on its leaves. Eelgrass also supports tiny plants, animals and organisms that, in turn, are eaten by other invertebrates, larval and juvenile fish, and birds.

Eelgrass problem

Eelgrass beds also slow wave and current action, trap suspended particulates and reduce erosion by stabilizing sediment. The plant improves water clarity, cycles nutrients and generates oxygen during daylight hours.

But research at the site shows isopods and sea hares, which work to clean the grass of algae, have not turned up as expected. That may lead to problems and indicate those species need to be introduced when growing eelgrass.

“It has not been a good year for eelgrass,” said Kathy Boyer, lead eelgrass researcher with San Francisco State University’s Romberg Tiburon Center. “It seems to have eroded away within the oyster reefs. The warmer temperatures in the bay is probably a cause. But all this work does help us better understand the restoration of eelgrass.”

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