



Life's a ball

Mucciarelli, exploring an Ogden Point reef ball draped in marine life, including a large sunflower sea star.

There's more going on at Victoria's Ogden Point breakwater than meets the eye

by Peigi McGillivray

For most Victoria residents, the city's iconic Ogden Point breakwater is a place to take a stroll, enjoy the spectacular scenery and perhaps see a seal or passing pod of killer whales.

But there's a lot more going on there, although most of us can't see it.

Below the waterline, the breakwater's enormous granite blocks are a beacon for a remarkable variety of sea life. That's why Ogden Point is such a popular destination for scuba divers. And that's why it's the site of a unique research project led by Valerie Mucciarelli, a University of Victoria graduate student in environmental studies.

Subtidal rocky reef habitats are a vital but disappearing component of healthy marine communities. To study how marine life develops on reefs in the Pacific Northwest, Mucciarelli arranged in 2009 for 92 dome-shaped "reef balls" to be deposited on the seafloor just east of the breakwater.

A reef ball is an artificial structure that acts as a reef by providing a hard surface for sea life to grow on. Each one-metre, 136-kg ball at Ogden

Point is designed with Swiss-cheese-like holes to entice marine plants and animals looking for a new home.

"Reef balls allow us to monitor the development of shallow-water ecosystems in a very strategic way," says Mucciarelli. "We can put them in the water at various depths and distances from each other, and watch different species discover and colonize them."

Prior to the project, Mucciarelli had never worked in the marine environment, had no experience with scuba diving, and little knowledge of marine life on the BC coast. That quickly changed.

"It's been tremendously exciting learning to dive, discovering the underwater world and watching a new habitat come alive," she says.

In fact, the speed of colonization was astonishing. Four days after the first reef balls were deployed, Mucciarelli dove down to check them out. "I was expecting to see bare concrete but to my surprise, marine life had already begun to cover them. We saw shrimp and snails galore."

After a week, green and brown algae had started to grow. In three weeks, fish and crabs had moved in. After four weeks, other critters

had arrived, including sea stars, sea cucumbers and nudibranchs (sea slugs).

But the big explosion of life happened in spring 2010 when bright red algae blanketed the reef balls and bull kelp took root. Since then, Mucciarelli has documented the development of a vibrant new marine ecosystem that includes snails, hermit and helmet crabs, lingcod and rockfish, sea slugs, sculpins and chitons.

"We even saw an octopus, and found evidence that it had used the reef balls to hide while it ate its catch."

Mucciarelli is especially interested in how factors such as current, light, depth, distance from the breakwater, and distance from other reefs can affect biodiversity in shallow coastal waters.

"Connecting the dots between what's happening in shallow waters and what's going on deep in the ocean is very important," says Mucciarelli. "It will help us protect the tremendous biodiversity that exists here in BC. Although my project will last only two years, the reef balls will remain in place, providing tremendous scope for continued research in the future."

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The Ogden Point reef balls were designed by the Reef Ball Foundation, which is a non-profit, environmental organization working to rehabilitate marine reefs around the world. To see images of the reef balls and sea life on and around them, visit <http://bit.ly/gqFUZv> or www.8arm.com.

The reef ball project was assisted by divers and dive shops throughout Greater Victoria. Donations from individuals and organizations help keep the project going. To donate or find out more, contact Mucciarelli at vmucciar@uvic.ca.

Did you know that the Ogden Point breakwater is made from over one million tonnes of rock and 10,000 granite blocks, each weighing more than 10 tonnes? Find out more in a new book by UVic environmental studies professor Val Schaefer and Anny schaefer. *Ogden Point Odyssey* explores the breakwater's biodiversity, history and sights. For more information visit Schaefer's website at www.urbanecology.ca.

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