

# Update

Marine Protected Area Management Program e-news

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In the early hours of May 10, a remotely operated vehicle, or ROV, slipped beneath the choppy ocean surface and descended into the blue waters near Anacapa Island off Ventura County's coast. Aboard the Channel Islands National Marine Sanctuary Vessel *Shearwater* and on a three-day expedition at the island, the California Department of Fish and Wildlife's (CDFW) Marine Protected Area (MPA) and Invertebrate Project staff worked alongside partners from Marine Applied Research and Exploration to "fly" an ROV over the seafloor to look for warty sea cucumbers (*Parastichopus parvimensis*).



[Warty sea cucumbers](#), or "wartys", named for the black-tipped "warts" covering their tube-shaped bodies, can be found from Monterey, California to Baja California, Mexico and live in shallow waters to depths of about 150 feet. So why then was real-time video from the ROV revealing plenty of marine life in waters deeper than 115 feet, but no wartys? In fact, most of the wartys weren't observed until depths shallower than 65 feet.

It turns out, that each year this soft-bodied animal migrates from deeper waters to shallow areas in late spring for spawning. As broadcast spawners, meaning eggs and sperm mix outside the body in the surrounding water, individuals need to be close to one another to successfully reproduce. While several years of CDFW SCUBA data show the importance and use of shallow areas during spawning, it is not known how heavily wartys use waters deeper than 65 feet, or how much of the population moves to shallow areas during spawning.



Understanding the role deeper waters play in supporting warty populations is key to conservation efforts. "California has managed the artisanal commercial sea cucumber dive fishery since the 1980s, but a recent rise in foreign demand and local effort have driven populations down," says CDFW environmental scientist Carlos Mireles. "As diving technology improves, the ability for commercial divers to target greater depths improves. We need to know what that means for the fishery's sustainability."

To look at the importance of depth, ROV surveys occurred between 50 feet and 200 feet both on the north side of Anacapa Island in Anacapa Island State Marine Reserve (SMR), and on the south side of the island at a fished site. "MPAs, like Anacapa Island SMR, have provided the ability to monitor natural population trends," says Mireles. Mireles also points out, "wartys observed during SCUBA surveys are lower in fished sites when compared to MPA sites, and densities inside MPAs build to peak levels during maturation and spawning periods, which isn't seen at fished sites. Having an MPA as a control site is invaluable to the future management of this fishery."

Once the ROV video is processed for densities (number of individuals observed per area) and habitat associations, the data will be combined with ongoing CDFW SCUBA dive survey data to determine the role that deeper habitats play in supporting spawning activities of wartys. These results will be essential for planning future monitoring activities and management of the fishery.

This newsletter provides updates about the [MPA Management Program](#). California's MPA network is managed collaboratively through the MPA Management Program, which includes four focal areas: outreach and education, enforcement and compliance, research and monitoring, and policy and permitting.

## QUESTIONS?

Please send all inquiries to [ASKMPA@wildlife.ca.gov](mailto:ASKMPA@wildlife.ca.gov)



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