

Pinto Abalone Rise in Northern California Against All Odds

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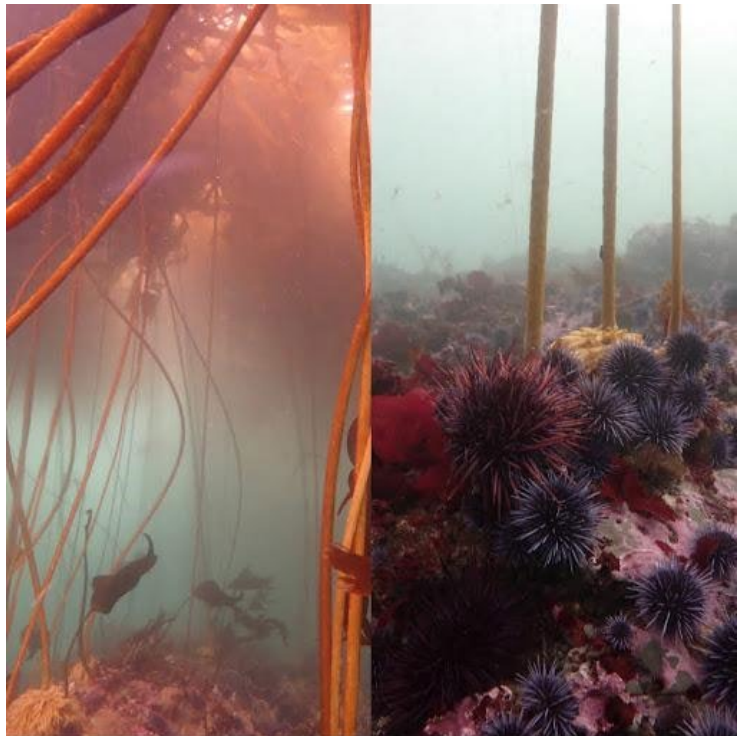
You might not know this, but the California coast is home to a few kinds of abalone and one of them, the pinto abalone, is beating the odds. Pinto abalone, also known as Northern abalone, are small in size, up to about 6 inches with bright yellow tentacles. While they are unique in appearance, they have a similar diet to other California abalones, feeding on kelp that breaks off and falls to the sea floor. In recent years, just like other northern California abalone species, pinto abalone have faced challenging ocean conditions followed by the collapse of the bull kelp forests which resulted in food shortages.

Photo credit Athena Maguire

Northern California's kelp forests collapsed in 2016 due to a combination of undesirable environmental factors. In 2013 sea stars began to die from a virus. Then in 2014, a marine heat wave began and was followed by an El Niño in 2015. Both of these events caused the coastal temperatures to increase, which paired with an increase in purple sea urchin populations, caused a large decrease in bull kelp forests.

Photo credits Cynthia Catton

Usually when a species' environment changes as much as the north coast environment has, the number of animals in the population decreases. This was true for red abalone as they experienced a decrease in populations of up to 82% by 2017 (Rogers-Bennett and Catton 2019).



Surprisingly, for the pinto abalone the trend was nearly the opposite. Their population size rose slightly from very low numbers to the highest it had been in the last 15 years in 2016 and stayed high all the way through 2018. Pinto abalone are located at the southernmost part of their range here in California. They typically thrive in Alaska and Canada, which have much cooler water temperatures. So why then would their populations increase here when our water temperatures were getting warmer and their food source was diminishing? One possible explanation is that the normally shy pinto abalone were out and about looking for food that was not as available as it had been, so they were easier for the divers to count on their surveys.



While, this could explain why more pinto were found on the dive surveys more juvenile abalone were also found in recent years. Abalone Recruitment modules are used to survey the baby abalone (less than 51mm in length) not the adults. Pinto abalone also saw an impressive spike in babies in 2016-2018, so surprisingly, pinto abalone were successfully reproducing in the warmer low food conditions.

Overall, pinto abalone are defying the odds that nature has set against them, and are doing better than ever here in northern California. It will be important to continue to track the health of the pinto abalone populations conducting Scuba surveys to make sure this rare species does not disappear from northern California's iconic kelp forests.