



# California Wildlife Center

## Patient of the Week

### September 2, 2022



Photo by Jenn Guess

## Domoic Acid Toxicity Poisoning

Marine mammal rescue centers along the Santa Barbara, Ventura, and Los Angeles coastlines are receiving an increased number of calls about California Sea Lions in need of help, and these animals are presenting with signs of suspected domoic acid toxicity poisoning. Domoic acid is a naturally occurring neurotoxin that is produced by certain types of algae in the genus *Pseudo-nitzschia*. When this type of algae “blooms” the toxin is then consumed by crustaceans, fish, and shellfish, who are able to accumulate elevated levels of domoic acid in their bodies without any ill effects on the animals. The neurotoxin then works its way up the food chain and eventually causes harm to marine mammals and seabirds. Domoic acid blooms are also known as “Red tide.”



Photo by Jenn Guess

*Pseudo-nitzschia* are able to survive in a diverse temperature range, and the algae can be found in open ocean and near coast lines around the world. There is no consensus on what exactly causes the blooms but increased nutrients, long hours of sunlight, and warm water temperatures tend to correlate to an elevation in domoic acid concentrations.

Adult California Sea Lions consume between 15-35 pounds of fish each day. When their natural food source harbors domoic acid, the neurotoxin can quickly accumulate in their bodies. This toxin causes brain damage to the animals' hippocampus (the part of the brain that is involved in memory) and attacks the heart potentially causing heart failure. A sea lion suffering from domoic acid poisoning often goes through periods of seizures, uncoordinated movement, and potentially aggressive behavior.

If a sea lion has an acute poisoning (single or short-term exposure) the negative effects of the neurotoxin can usually be reversed with fluid therapy and an ample supply of clean food free from the toxin. The body is then able to work the domoic acid out of the system and the sea lion will be able to once again survive on their own in the wild. Unfortunately, if the sea lion has a chronic poisoning (frequent repeated exposures) the damage to the brain is too severe to be reversed. Animals in this state will no longer be able to find appropriate food since they cannot remember what their food sources are and will eat inappropriate things like plastic bags and trash. They also will not be able to remember what their natural habitat is and will sometimes be found far out at sea or inland, away from the coast.



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Here at CWC we have been responding to many calls from concerned members of the public about sick sea lions in need of rescue. This was the case for a recent call we received about a large adult female sea lion on Broad Beach in Malibu. The animal was hauled up on the sand on a very crowded beach, apparently unaware of her surroundings. She was going through periods of seizures and was struggling along the shore. Luckily, a member of our Marine Mammal team was nearby, and headed straight to the beach in order to keep the public away from the animal and provide education. Sea lions suffering from domoic acid poisoning can go through periods of unpredictable aggression, and so for their safety and to minimize additional stress to the animal, it is important that people and pets stay far away from these animals.

Our Marine Program Manager, Heather Henderson, accompanied by two experienced team members showed up shortly afterwards. At this time the sea lion was experiencing a period of impaired consciousness and our team was able to easily capture the animal in a net. The patient was then loaded up into the one of our rescue vehicles and transported back to CWC for care.

Once at CWC the sea lion was administered anti-seizure medications and provided fluid therapy. After stabilization, the patient was transferred to the Marine Mammal Care Center Los Angeles for continued care. The prognosis for this patient is still uncertain since it may take days to weeks for the negative effects of domoic acid toxicity to work its way out of her body. With the help of concerned members of the public, our Marine Mammal team, and the Marine Mammal Care Center, this California Sea Lion has the best chance possible of once again returning to the wild.

It is often difficult for a member of the public to tell if a sea lion is in need of help. They frequently lounge on the coastline and can often appear lethargic even when they are perfectly healthy. It is best to keep 50+ feet away and contact your local marine mammal rescue center to report any sea lion that is showing signs of lethargy, aggression, uncoordinated movements, or any other unusual behavior. Experts in the field will then be able to assess if an animal is in need of human intervention.