

2013 P.I.C.A Grant Summary  
*"Marine Mammal Center"*  
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The Marine Mammal Center began in 1975 when it acquired permits to use the location of the former Nike Missile site in the Marin Headlands. Seven marine mammals are admitted that year. In 1985, Humphrey, a humpback whale, swims 25 miles to Rio Vista in the Sacramento Delta. The center leads the successful response to return him to the ocean. In 1990, Humphrey visits again, getting stuck in mud at Candlestick Point. The center frees him at high tide. 1998 is a record year for the center. El Nino occurs and 1,129 animals are rescued. 2009 is another record year. The newly built center opens and the center responds to 1,704 marine mammals in distress – including Giovanni and Farley!

The Marine Mammal Center's missions are to Rescue, Rehabilitate, and Release as many marine mammals as they can. They also complete research projects on site as well as conduct education programs on site and at various schools and community areas.

Since 1975, the Marine Mammal Center has rescued more than 18,000 marine mammals along 600 miles of California coastline. Most calls are made to the 24 hour hotline on site and volunteers are sent out to assess the situation. The person who finds the animal has the chance to name it! On my first day at the center, I was one of only a few volunteers available to go out on a call. Unfortunately, this animal was already deceased but someone still needs to go collect the animal. The animal was a sub-adult Harbor Porpoise that was washed up on one of the popular beaches. I was able to attend the necropsy on the animal and it was discovered that the animal had trauma to most of its body. This was the fourth animal in two weeks that had washed up this way. The center speculates that the territories of the Bottlenose dolphins and Harbor Porpoises were overlapping possibly due to food source. When this happens, the more aggressive Bottlenose dolphins tend to beat up the porpoises, sometimes enough to kill them. The center is still not sure why this happens but every cetacean that they get is sent in to the lab for further study.

The center has a dedicated team of over 800 volunteers, most of which are on the rehabilitation side. They are responsible for feeding patients, restraining patients for medical procedures, cleaning pens and pools, administering medications, weighing and moving patients, tube feeding and teaching animals how to hunt for fish. Many of these volunteers have been there as long as the center has opened. While talking to them, it really seems that the volunteers are in it for the cause, not because they get something out of it. They are what every company wishes they had in volunteers.

The center most often rehabilitates elephant seals, harbor seals, and California sea lions. There are many reasons that the animals strand. Elephant seals are most likely to strand due to maternal separation, underweight, lungworm infections, or entanglement. During my time at the center, we had one malnourished pup and one that had congenital cataracts. We sadly had a third that passed away due to lungworms. Harbor seals have adapted to live with lungworms most of their lives but the elephant seals have not. Lately, young elephant seals and harbor seals have been overlapping territory and the elephant seals are getting lungworms from the harbor seals. It almost always means death for the elephant seals.

California sea lions strand due to malnutrition, pneumonia, entanglement, gunshot wounds, cancer, leptospirosis, or domoic acid toxicity. During my time at the center, we had a few entanglements, one shark wound, one cancer patient and many domoic acid toxicity patients. The shark wound patient ended up with an amputated flipper but was released with no further issues! The cancer patient sadly did not make it. Approximately 17% of California sea lions death are diagnosed with cancer which is a very high prevalence for a wild population. The cancer that they are seeing in these animals is similar to cancer that people get due to smoking. The center believes it is being caused by an environmental toxin, most likely human related.

The domoic acid patients are an extremely sad sight to see. This disease was first discovered in 1998. Humans can also become affected and it is called amnesiac shellfish poisoning. It is caused by a single-celled algae that has a biotoxin. Exposure to this biotoxin causes sea lions to be lethargic, disoriented, and to seize which can cause irreversible damage to the hippocampus which is in charge of navigation and memory. The reason that this has recently become a problem is due to an increase in fertilizer run-off in the past few decades which causes algae "blooms" during the warmer months. The sea lions are then affected in late summer. If the animal has an acute exposure, it is more likely to be able to be treated since it was a sudden exposure. Chronic exposure (long-term) patients often need to be euthanized due to severe brain damage that causes them to have multiple seizures per day. The animals are treated with a few days of phenobarbital, an anti-seizure medication. After the drug is discontinued, if the animal continues to have seizures, it is assumed to have chronic exposure and the animal is euthanized. Otherwise, if they pass a neuro-score, they are able to be released.

Amazingly, just over 50% of animals admitted are able to be released! I was fortunate to be able to attend two releases – one of which was our shark bite amputee! To be released, the animal must have a clean bill of health and be successfully foraging for fish. Animals receive a flipper tag so the center can recognize them in the ocean or if they re-strand. Occasionally, an animal survives that cannot be released. During my time at the center, they were housing

Ziggy Star, a Northern fur seal that had myelin degeneration and could not forage on her own. Otherwise healthy, she just seemed a little “slow” to those who were able to see her. She will be placed at the Mystic Aquarium in the next few weeks. I was also able to visit the San Francisco Zoo and MarineWorld where I was able to see three sea lions that were originally from the Marine Mammal Center. Two of the sea lions had previous gunshot wounds while the other was born with no eyes.

Finally, I was able to help out with numerous necropsies. The necropsies are extremely important because they show the researchers at the center just what is happening out in our oceans. The researchers at the Marine Mammal Center were the group who discovered the cancers that affect sea lions as well as domoic acid toxicity. They really are the world’s leader in marine mammal research.

Overall, I had an amazing time at the center and if anyone ever gets a chance to be in the San Francisco area, they should definitely check it out. It is free to the public and open all year. They are truly doing amazing work for our oceans and are worthy of any support they can get!