The Marine Mammal Center.

The Marine Mammal Center advances global ocean conservation through marine mammal rescue and rehabilitation, scientific research, and education.

Patient Highlight: Happy Birthday Liana!

Liana is a yearling California sea lion rescued on May 22, 2020. Just about a year before that, Liana would have been born in Southern California, where most breeding for this species takes place.

After Liana was born, his mother would alternate between nursing and leaving him on land to go feed. Mothers do this for 9-10 months until their pup is weaned. Liana's father would migrate north and only return the next year to mate again.

As climate change causes sea level temperatures to increase, fish are moving into deeper waters and further offshore to find colder water. Mother California sea lions must dive deeper and further for food, leaving their pups for longer stretches of time. This can lead to the pups getting hungry while waiting for mom to return and venturing off to find their own food. However, they don't have the kind of stamina it takes to reach these food sources and can become malnourished. This is likely the case with Liana, who was rescued because of malnourishment and pneumonia.

The Marine Mammal Center treats patients like Liana by administering subcutaneous (below the skin) fluids and increasing their weight by feeding them fish or tube feeding weaker or younger ones that are unable to eat on their own. Rehabilitation ranges between 4-8 weeks, and the animals are released when they reach a suitable weight.

California sea lions are sentinels of the sea. By rescuing them, we not only save their lives, but identify changes in ocean health and therefore our own health because we rely on the ocean for many parts of our lives.

How to help patients like Liana

- ✓ Remember to #LeaveSealsBe and call The Marine Mammal Center's 24-hour Rescue Hotline 415-289-SEAL (7325) if you spot a marine mammal in distress.
- ✓ Reduce your carbon footprint through actions such as switching to renewable energy sources and reducing the amount of plastic you use.
    - ✓ Visit https://www.marinemammalcenter.org/science-conservation/conservation/climate-change for more information!

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Happy Birthday to ALL the California sea lions!

Are all California sea lions really born in June?

Mostly! Liana, and other California sea lions, are typically born in June, officially recognizing their birthday on June 15th for research purposes. Scientists call this "synchronized reproduction", which occurs when animals breed and birth while gathered on rookeries at specific times of year.

This cycle occurs because sea lions have a reproductive strategy called **delayed implantation.** Three to four weeks after giving birth, females can mate again to give birth the next year. After mating, the embryo does not immediately implant in the uterus. Instead, the embryo remains dormant, suspending pregnancy. Once the embryo does implant, gestation lasts until the following June.

California sea lion total range in light blue and breeding range in dark blue.

How?! And why?!

Delayed implantation allows for increased survival rates of young by ensuring they are born during an optimal time of year, such as when food and climatic conditions are favorable. For species like the California sea lion, this reproductive strategy allows for males and females to migrate to different ranges during the year and meet at the same time for birthing and mating. Delaying the pregnancy also allows females that just gave birth to have enough energy and strength to support a growing fetus.

How do we know?

Activity

Increased amounts of trash, particularly plastics and lost or discarded fishing gear, are finding their way into the ocean, creating a threat of entanglement or ingestion for countless marine animals.

Protection means actively eliminating or reducing risks, and we all have a part to play in shielding and safeguarding the ocean habitat.

In order to gain a better understanding about how observations can be used to study animal behavior, you can collect data for your own ethogram and create a hypothesis.

Materials:

- ✓ A notebook and pencil or ethogram template to take notes
- ✓ Optional: Laptop, tablet, or smartphone
- ✓ Stopwatch

Instructions

1. Choose your study species. You can either choose an animal you see in your own backyard, a pet, or use a live webcam of wildlife online (https://explore.org/livecams)
2. Every thirty seconds for five minutes, place a check mark in the column on the right of the ethogram each time you observe a behavior.

*For a challenge, make your own ethogram template or try longer observation periods.

3. Repeat Step 2 three times, using a new ethogram sheet each time.
4. Answer the following questions below.

Observing like a scientist

What animal did you choose?

_____

What behavior occurred the most?

_____

What behavior occurred the least?

_____

Generate one question based on the behaviors you observed.

Example: How does the change in prey location influence survivorship of California sea lion pups?

_____

Create a hypothesis with a possible explanation for your question.

- Use the following format: **If**... what the problem is, **then**… what you think will happen, **because**… why you think it will happen.
- Example: **If** ocean temperatures increase and drive prey fish into deeper water and further offshore, **then** California sea lion pups will have a low survivorship, **because** they will try to find their own food but will not have the stamina to reach the prey.

_____

_____

_____

Ethogram Template

Feeding: The animal is consuming food.
Vocalizing: The animal is vocalizing.
Locomotion: The animal is moving (walking, flying, hopping, swimming, etc.)
Resting: The animal is not moving.
Offspring present: Young present with the study species
Not Visible: You cannot see the animal you were observing.

Fill in the remaining columns with other behaviors you see other than the ones described above.

Time	Feeding	Vocalizing	Locomotion	Resting	Offspring present	Not Visible		
0:30								
1:00								
1:30								
2:00								
2:30								
3:00								
3:30								
4:00								
4:30								
5:00								
Total								