

# Owl Limpet Lab Report

## Introduction

### Background information

Owl Limpets are also known as *Lolitta Gigantea* from the kingdom Animalia. It is a snail attached to a white, black, and solid muscular foot attached to a rock. The name owl was given due to its shiny silver-blue on its interior, marking the look of an owl. (Pace, 2017). This species range is 40-44. owl limpets are found in Washington to Baja, California, Mexico. (Turner & Turner, 2013). Threats to owl limpets include illegal takes, among the biggest threats to owl limpets. In addition, threats like visits to internal sites appear to be a threat. (Lolita gigantic MARINe, 2021). Throughout the investigation and research of owl limpets, the data was collected at Cabrillos National Park Tide Pools using a 3.4 circular plot, with two students collecting the data. (Engle & Davis, n.d.)

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Commented [3]: Great job with your citations

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## Objective

### Purpose of the experiment, hypothesis

The purpose of this study is to understand better owl limpets, their environment, and their role in the ocean. This purpose is prominent since they maintain the biodiversity of their ecosystem. Based on the size of 2020 owl limpet data, I think the size of the owl limpets I measured in 2022 will be bigger.

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## Procedure

### Description of the lab and how it was performed including all materials and equipment.

1. The first step of our procedure was to be assigned a certain spot where a circular plot was already placed.
2. Two students measured all the owl limpets using a circular plot and measured the limpet from the top of the shell using a caliper.
3. After measuring the owl limpets, we needed to convert the measurements from cm to mm.
4. The measurement was passed to the data collector.
5. Once all the data was collected, the data collector created a graph with the information received.

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### Materials

- Caliper
- Circular plot
- Datasheet
- Pencil to write our data

## Data and Results

### All observations and measurements

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The average size of owl limpets that I measured was 40-44 mm. They were measured at the Cabrillo National Park Tide Pools, where my team and I were in charge of collecting data from a specific place at the tide pool that was on a circular plot. We measured all owl limpets in the circle plot using a caliper. We first got our measurements in cm and then converted them to mm. From our data chart, our smallest owl limpet had a size of 20 mm, and the largest one had a measurement of 62 mm. So most of the owl limpets were found at 40 mm. The data results maintain constant through 20-24, 25-29, 45-49, and 60-64.

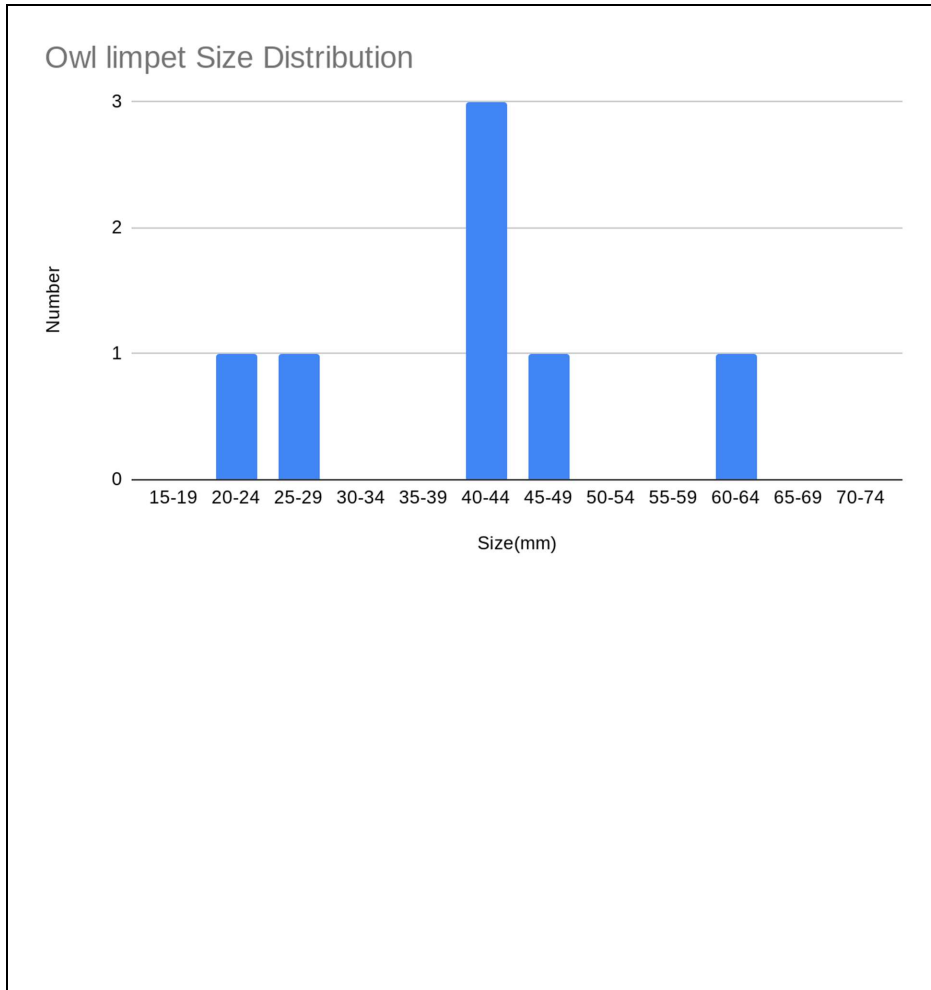
**Commented [9]:** This is good information, but it belongs in the procedure or the Introduction

**Commented [10]:** good job putting your data into words

Owl Limpet Sizes

| Size(mm) | Number |
|----------|--------|
| 15-19    | 0      |
| 20-24    | 1      |
| 25-29    | 1      |
| 30-34    | 0      |
| 35-39    | 0      |
| 40-44    | 3      |
| 45-49    | 1      |
| 50-54    | 0      |
| 55-59    | 0      |
| 60-64    | 1      |
| 65-69    | 0      |
| 70-74    | 0      |

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### Discussion

*Discuss how the results apply to the purpose of the lab*

In 2020 the average range was 15-66 and it was the same in 2022. The mode for 2022 was 40, and in 2020, the mode was 60. Overall the owl limpets in 2020 had a decrease in the end in zone three, and in 2022 they had a slight increase. The owl limpets may have had a reduction in 2020 due to the rise of the ocean's acidic levels, making it harder for owl limpets to get their shells, which may be the same reason in 2022. In 2022 the owl limpest didn't increase for much, there wasn't a drastic change, and I believe that was because of the ocean's acidic levels that make it harder for owl limpets to create their shell. During the lab,

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mistakes were being made in collecting data of the owl limpets. In the lab at the beginning, we weren't converting our measurements to mm, affecting our results. It wasn't later that we noticed that mistake and were able to see our accurate data. Something that also affected our results was that in the beginning, I was measuring the limpets from their side when we needed it to measure it from the top of the shell. As a result, we got smaller measurements since I measured the limpet from the side. After fixing our data, we noticed that most of our data were maintained constant. There was mainly one limpet in most sizes, and only one measurement had three limpets between their range. Next time I would change the way we approached the experiment. Instead of doing the lab without being entirely sure of what we have to do, I would ask someone to re-explain the instructions to have a more effective data collecting process. If we changed this mistake, we wouldn't have to change our data constantly, and we would be more confident that our data was correct.

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### Conclusion

*What conclusions can you make about the lab based on your hypothesis, results and discussion*

In conclusion, my results were unsupported by my hypothesis. I hypothesized that the owl limpets I measured would be bigger in 2022. But seeing my data charts, the owl limpets became slightly bigger, it didn't grow significantly but it didn't decrease or stayed the same proving that my hypothesis was right. What I took from this lab was the opportunity of getting to know the importance of owl limpets. Before this lab, I didn't know what owl limpets were. I may have seen them before but didn't see them as anything significant. In addition, I learned skills like measuring owl limpets with a caliper and using a quadrat graph.

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### Bibliography

- "Species Spotlight: Owl Limpet (*Lottia Gigantea*) - Cabrillo National Monument (U.S. National Park Service)." *NPS.Gov Homepage (U.S. National Park Service)*, <https://www.nps.gov/cabr/blogs/species-spotlight-owl-limpet-lottia-gigantea.htm>. Accessed 6 Mar. 2022.
- Engle and Davis, John and Gary. *Rocky Intertidal Resources Monitoring Handbook, Cabrillo National Monument Point Loma, San Diego, California*. <https://pubs.usgs.gov/of/2000/0202/report.pdf>. Accessed 6 Mar. 2022.
- "Lottia Gigantea | MARiNe." *Multi-Agency Rocky Intertidal Network*, <https://marine.ucsc.edu/target/target-species-lottia.html#:~:text=Illegal%20take%20is%20among%20the,2006>. Accessed 6 Mar. 2022.
- Turner, Olivia and Sarah. "ADW: *Lottia Gigantea*: INFORMATION." *Animal Diversity Web*, [https://animaldiversity.org/accounts/Lottia\\_gigantea/](https://animaldiversity.org/accounts/Lottia_gigantea/). Accessed 6 Mar. 2022.

| Rubric Score   |   |
|----------------|---|
| Introduction   | 4 |
| Objective      | 4 |
| Procedure      | 4 |
| Data           | 4 |
| Discussion     | 4 |
| Conclusion     | 4 |
| Overall Score: | 4 |