

## Chapter 1

### PISMO WIND STUDY (WORKING TITLE)

#### 1.1 Abstract

#### 1.2 Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

### 1.3 Materials and Methods

#### 1.3.1 Study Site

Pismo State Beach Monarch Butterfly Grove (hereafter "Pismo") is located in San Luis Obispo County, California (35.1285° N, 120.6305° W). The site encompasses approximately 4.05 hectares (10 acres) and is characterized by a mature grove of blue gum eucalyptus (*Eucalyptus globulus*). The grove is situated approximately 0.5 km from the Pacific Ocean, which lies directly to the west.

Pismo was selected as the primary study site for several key characteristics. The site consistently supports one of the largest aggregations of overwintering monarch butterflies (*Danaus plexippus*) in California, routinely ranking among the top ten overwintering sites by population size MonarchCount2023. Even during years of low monarch abundance, such as 2024, Pismo maintains a presence of butterflies while many other sites remain vacant.

The site's physical characteristics make it particularly suitable for wind analysis. The western exposure to the Pacific Ocean provides an unobstructed wind corridor, minimizing confounding topographical effects. The surrounding terrain is predominantly flat, and nearby anthropogenic structures do not exceed two stories in height, representing less than 20% of the canopy height of the grove's mature eucalyptus trees.

Additionally, Pismo's extensive history of monarch butterfly research and consistent population monitoring provides valuable historical context for this study. The site's well-documented population counts, conducted at regular intervals, offer opportunities for correlating wind patterns with butterfly abundance and distribution patterns.

## 1.4 Results

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

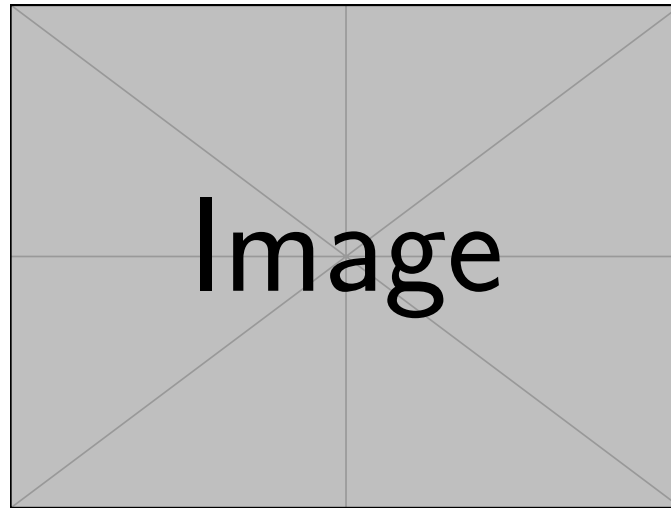


Figure 1.1. Clear, descriptive caption explaining what the figure shows and its significance.

## 1.5 Discussion

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvi-

nar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

## **1.6 References**