

# **COMMUNITY STRUCTURE OF SEA URCHIN IN PRK. MURA-MURAHAN, MABINI, CUAMBOG DAVAO DE ORO**

## **CHAPTER 1 INTRODUCTION**

The phylum Echinodermata, which also includes sea stars, sand dollars, sea lilies, and sea cucumbers, is where sea urchins are classified. Sea urchins have a hard exterior body like their relatives, despite the fact that it is impossible to see through all of the spines. It consists of five rigid plates that join together to form a beak. Except for the flattened "irregular" urchins that bury themselves in the sand or mud, like sea biscuits and sand dollars, sea urchins have roughly spherical bodies with long spines (Ruppert et al., 2004). Shades of black, red, brown, green, yellow, and pink are frequently seen on different species of sea urchins.

There are approximately 950 species that may be found in the ocean, which is widely dispersed across all oceans (from the Mediterranean Sea to the Pacific Ocean), all climatic zones (from tropical to polar regions), and all marine benthic ecosystems (from stony coasts to hadopelagic zones). These echinoderms are crucial to maintaining the integrity of the marine ecosystem and are constantly exposed to pressure from the environment and people, such as predation, climate change, diseases, and pollutants (such as chemicals, nanomaterials, and plastics) (Smith et al., 2018). Sea urchins are part of the diverse web of life that populates the world's oceans. They come in various shapes, sizes, and colors, depending on the species and their habitat. This diversity is a reminder of the rich tapestry of life beneath the surface.

The specific species and their distribution can vary by region and ocean. There are about 1,000 different species of sea urchins worldwide (Edo, 2014). The population and density of sea urchins in a specific area can vary significantly depending on several factors. There are three factors, including shelter, food availability, and their habitat resistance, that affect the distribution and density of sea urchins in their habitats. A large number of sea urchins was discovered to be connected with habitat that offers refuge, which is typically highly complicated structurally and covered in coral (Dunn et al., 2017, Nelson et al., 2016).

## **Objectives**

The purpose of the study is to evaluate sea urchin populations in Prk. Mura-Murahan, Mabini, Cuambog Davao De Oro, it aims to:

1. Determine the species composition of sea urchin in the area
2. Determine the species diversity of sea urchins in Prk. Mura-Murahan, Mabini, Cuambog, Davao De Oro
3. Measure the physico-chemical parameters such as salinity, temperature, pH, and also the water depth.

<https://www.whoi.edu/science/B/people/kamaral/SeaUrchins.html>

<https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/sea-urchin>

<https://www.sciencedirect.com/science/article/abs/pii/S2352485523001081>

## **CHAPTER 2**

### **RELATED RESEARCH LITERATURE**

Sea urchins are spiny, global echinoderms in the class Echinoidea. The average size of a sea urchin is 3 to 10 cm (1 to 4 in), however the largest species can grow up to 36 cm (14 in). Sea urchins move slowly by crawling on their tube feet and by propulsion from their spines.

- Sea urchin abundance in the area
- Sea urchin abundance in the Philippines
  - general, Asia, 1 country/SE Asia
- Sec, threat
- Effect of sea urchin in the area
  - Loses species

[https://en.wikipedia.org/wiki/Sea\\_urchin](https://en.wikipedia.org/wiki/Sea_urchin)

## **CHAPTER 3**

### **MATERIALS AND METHOD**

- Study Area
- Sampling Method
- Determination of physio-chemical parameters
  - Salinity
  - pH
  - water depth
  - temperature