



# **What is Marine Biology?**

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# Do now (3+3 min.)

- There are 2 hand outs:
  - New Report “Yes We Can”...
  - Scarcity of US Engineers...
- Read the one you got.
- When you’re done, find a partner that got the other one, get up and sit with them, and discuss 2 main ideas.

# Do now (3+3 min.)

- New Report "Yes We Can" ...
  - 47% nationwide graduation rates for African Americans.
  - 25% NYC graduating students with regents diploma.
- Scarcity of US Engineers...
  - US Universities are producing too few engineers.
  - 70% of US PhD students are foreign born.

# H.W.

- Professional e-mail due by Monday of next week.
- Materials are due by Monday of next week too.

# Objectives

- I can distinguish Marine Biology from the science of Biology.



**What do you see in this picture?**

What is Marine Biology?



# Biologists study the interactions of life

- Living things do not exist in isolation.
- Living things are all functioning parts in the delicate balance of nature.



# Biology

- **Biology** is the concepts, principles, and theories that allow people to understand the natural environment.
- **Biology** = the study of life.

## Bios + Logos

- **Bios** = "living" in the Greek language.
- **Logos** = "the study of" in the Greek language.



# Question

What is the origin of the term "biology"?  
(NY: St 1 KI 1.1b)

# Answer

"Biology" comes from two Greek words, "bios" meaning life, and "logos" meaning study. Biology is the study of life.



# Marine Biology

- **Marine Biology** is the concepts, principles, and theories that allow people to understand the natural AQUATIC environment .
- **Marine Biology**, the study of Aquatic life.
- **Limnology** concentrates on continental waters.
- **Oceanography** is a broader category that includes Marine Biology, Ocean Engineering, Marine Geology, and other Marine related sciences or technologies.

# Marine Biology





# The Science of Marine Biology

- Science is all about asking questions.
- In this class you'll ask **what**, **how** and **where** questions about life.
- Sometimes you may even ask **why** questions.
- The answers to such questions lead to the development of **projects** and general biological principles and rules.

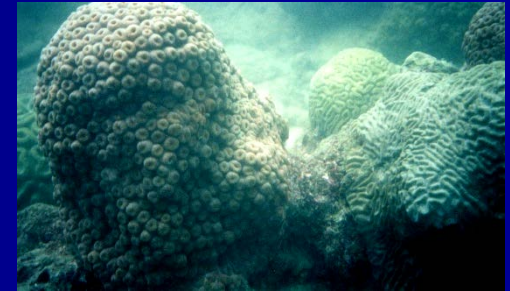
# Marine Biologists study the interactions of life

- Living things **interact** with their environment and depend upon other living and nonliving things to aid their survival.
- *What types of interactions do corals have?*



# Marine Biology - Systematics

- Kingdom **ANIMALIA**
- Sub-kingdom **METAZOA**
- Division **EUMETAZOA**
- Grade **RADIATA**
- Phylum **COELENTERATA**
- Class **HIDROZOA**
- Order **MILLEPORINA**
- Class **ANTHOZOA**
- Subclass **ZOANTHARIA** o **HEXACORALLIA**
- Order **SCLERACTINIA** o **MADREPORARIA**





# Marine Biologists study the Diversity of Life

- Through your study of MB, you will come to appreciate the great **diversity of life** on Earth and the way all living organisms fit into the dynamic pattern of life on our planet.



# METHODS

## ■ Preparation phase

- Digitizing maps and aerial photographs
- Identification of benthic components
- Delimitation and description of the domain of study
- Determining stations\*

## ■ Sampling and measuring phase

- Determining the cover of the principal benthic components\*

# Marine Biologists



What is Marine Biology?



# Marine Ecologist



What is Marine Biology?

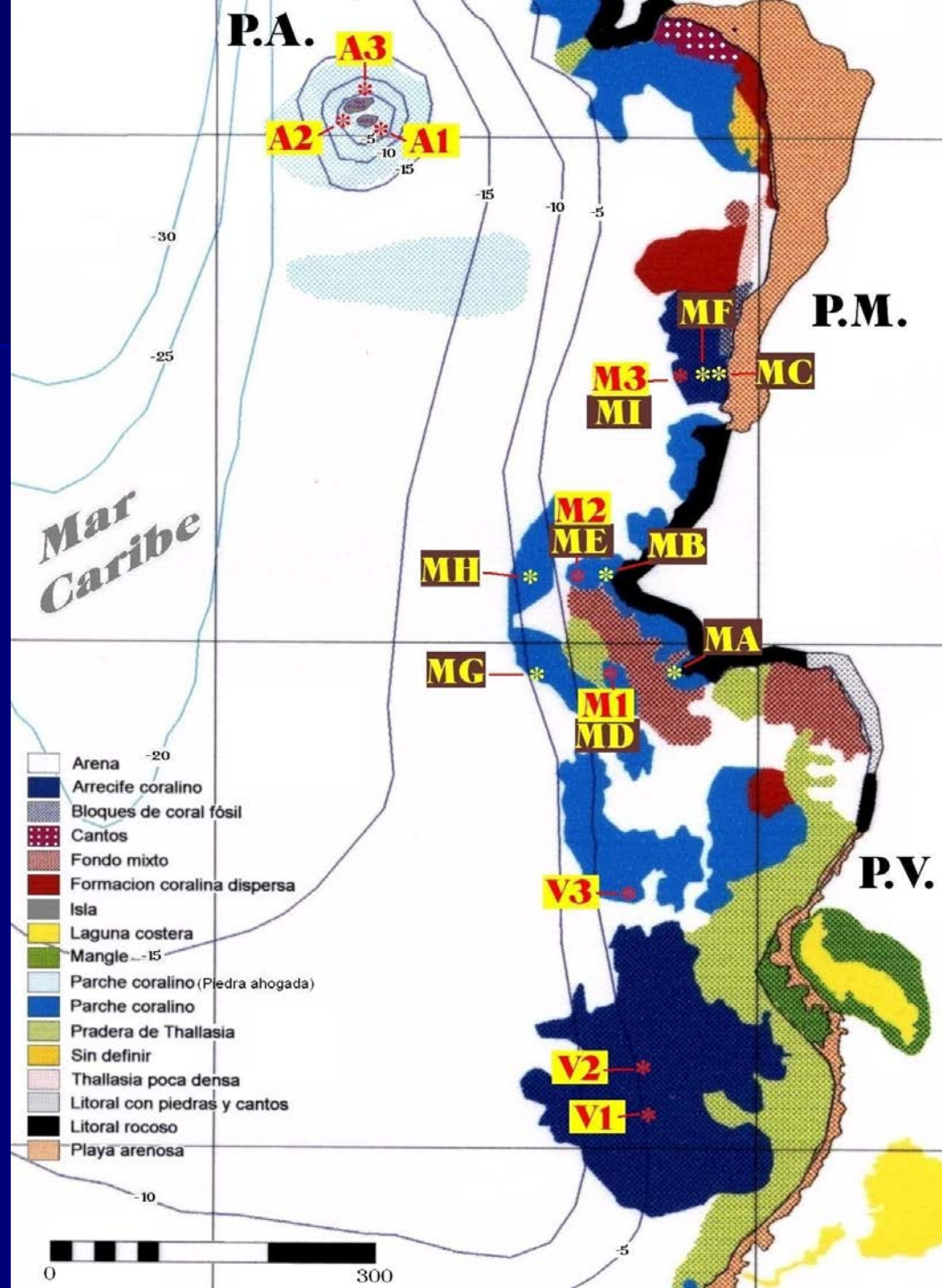
# Marine Biologists study problems and propose solutions

- The study of biology will teach you how humans function and how we fit in with the rest of the natural world.
- It will also equip you with the knowledge you need to help sustain this planet's web of life.

# Ecological Analysis Tools

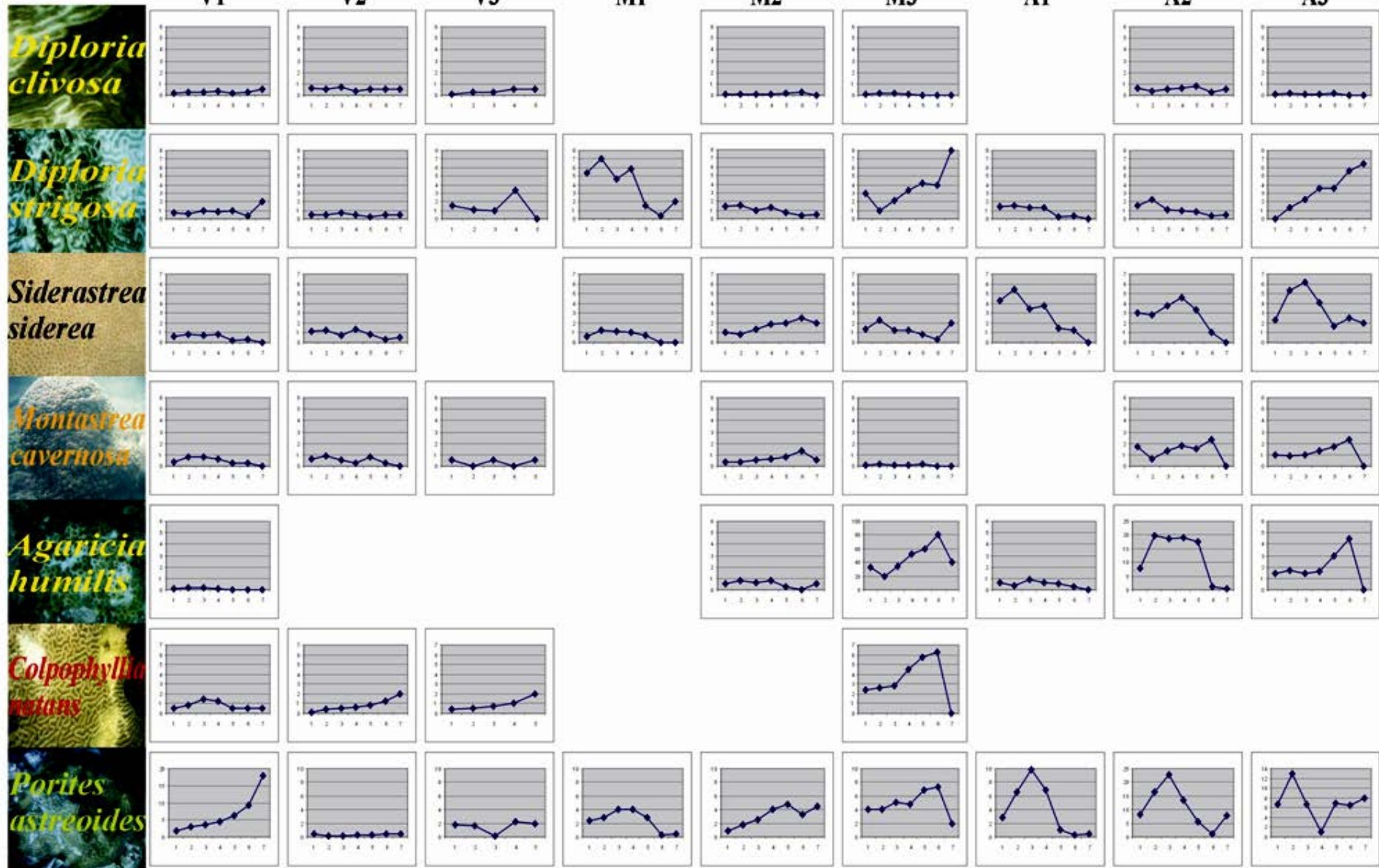
- What might be some important things that a Marine Biologist look for in nature?

# Stations



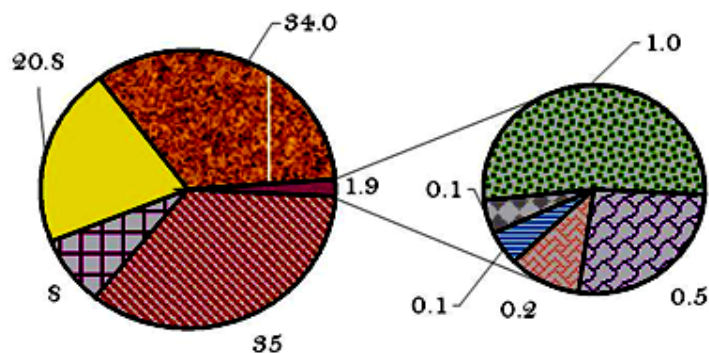


# DOV Species arrangements

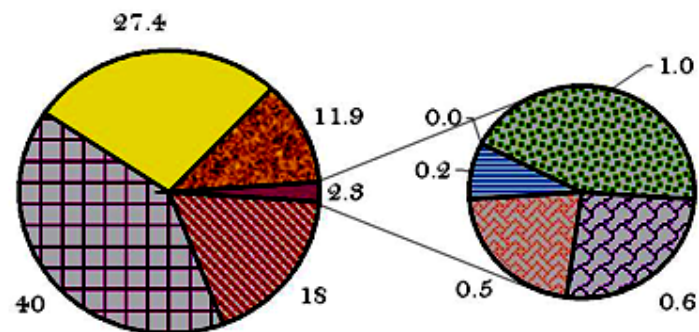


# % Coverage of benthic organisms.

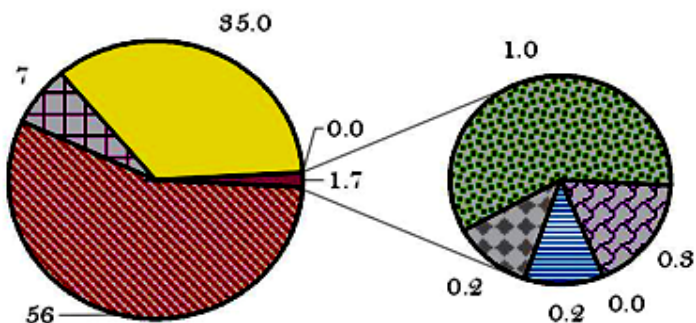
**Playa del muerto.**



**Playa viva.**



**Piedra ahogada.**



- |                   |              |
|-------------------|--------------|
| Coral erosionado. | Cascajo.     |
| Coral vivo.       | Arena.       |
| Esponjas erectas. | Anemonas.    |
| Palythoa.         | Gorgonaceos. |
| Coral muerto.     |              |

# Question

How does society benefit from the study of Marine Biology? (NY: St 1 KI 1.1b  
NY: St 4 KI 7.3a)

# Answer

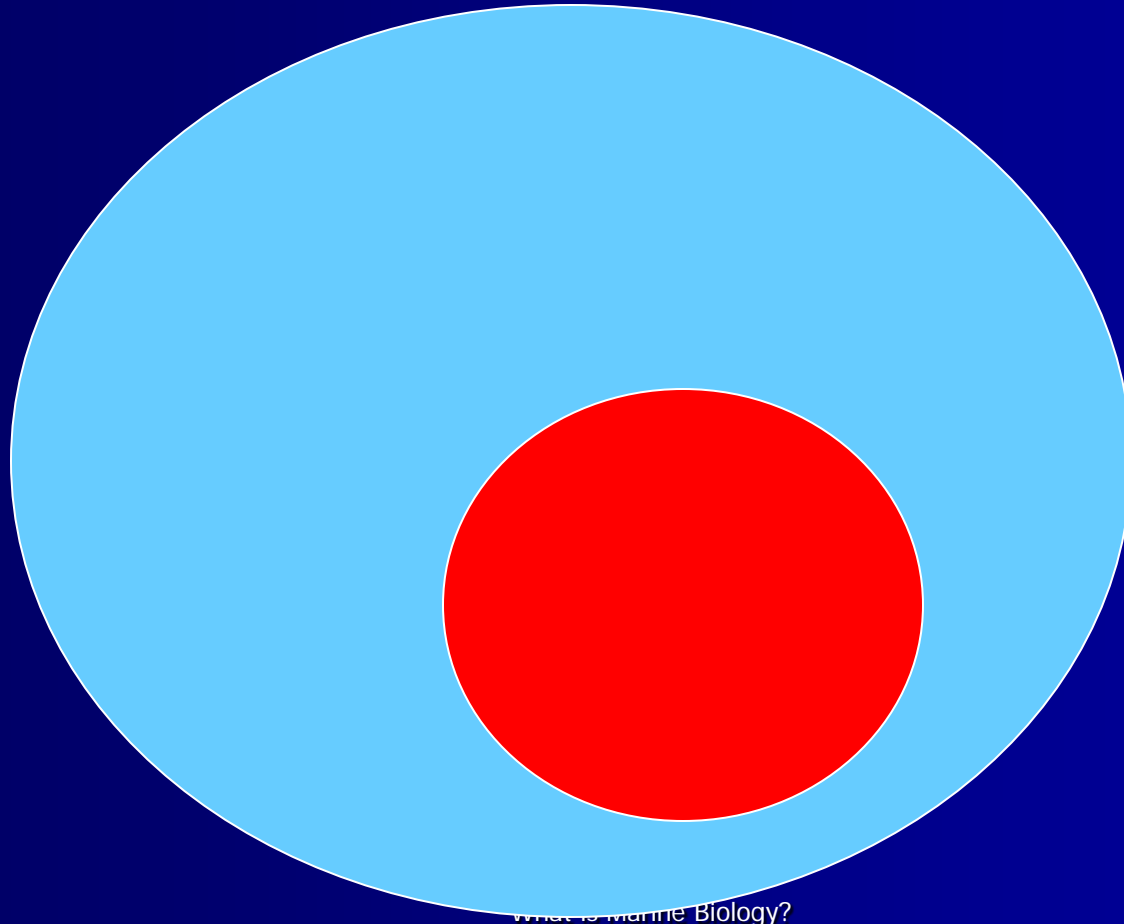
- The more we know about the organisms on Earth and how they interact, the better we'll be able to conserve and manage the marine resources.
- We depend on Marine Resources for food, clothing, medicine, energy, etc.
- Unfortunately, the world's oceans have also served as waste dumps.



# Journal Entry

- Create a Venn Diagram comparing and contrasting Biology and Marine Biology

# Biology vs. Marine Biology



What is Marine Biology?



**FIN**

