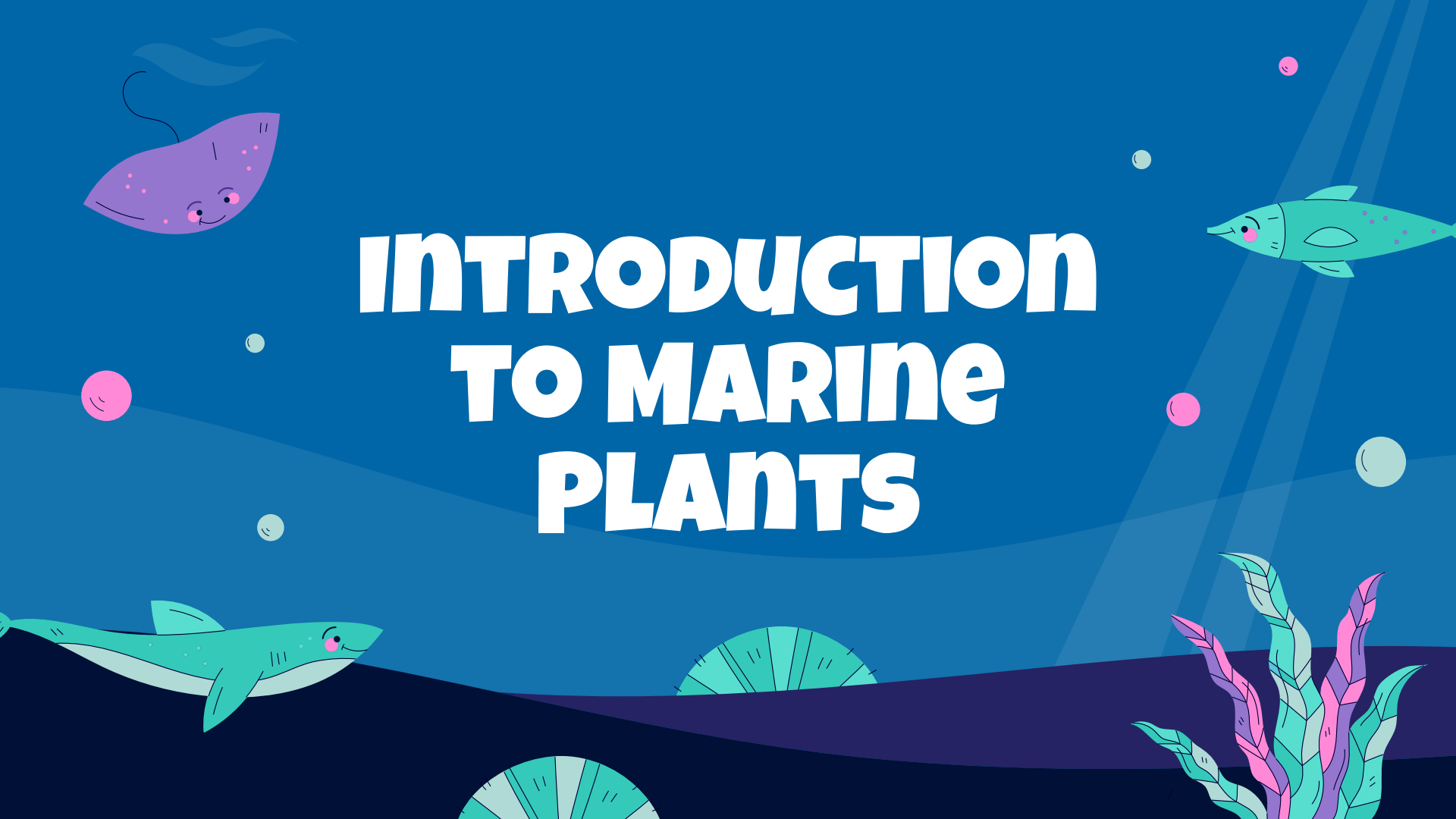




BIOLOGY - The Kingdom In The Deep Ocean

INTRODUCTION TO MARINE PLANTS



Giant Kelp (*Macrocystis pyrifera*)

Giant kelp is a brown algae that forms towering underwater forests along coastlines around the world. These kelp forests provide important habitat for a wide range of marine species, including fish, invertebrates and sea otters. In addition, giant kelp plays a vital role in nutrient cycling and carbon sequestration, contributing to the health of marine ecosystems.

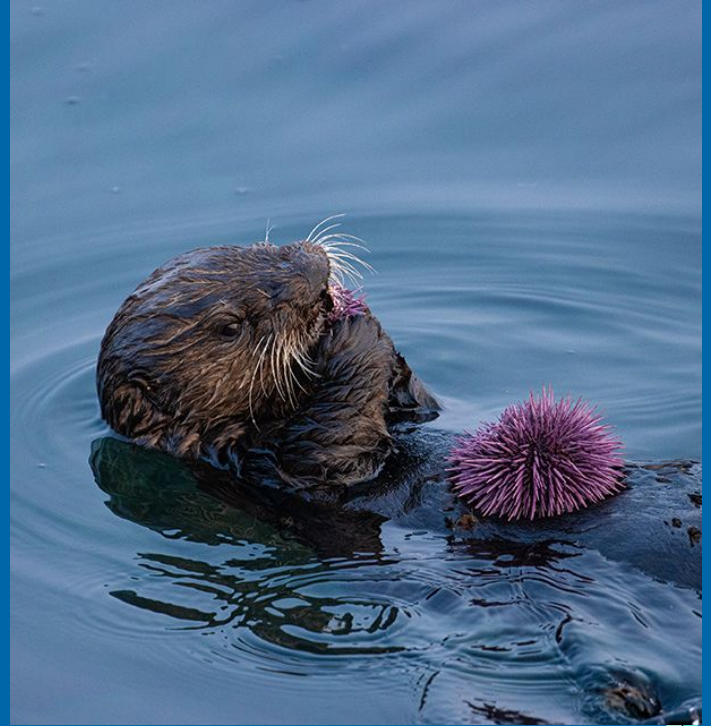




INTRODUCTION TO MARINE ANIMALS

Sea Otter (*Enhydra lutris*)

The sea otter is a charismatic marine mammal known for its playful behavior and thick fur. Sea otters are found along the North Pacific coast and play an important role in maintaining the health of kelp forests by controlling the population of sea urchins that feed on kelp. By controlling sea urchin populations, sea otters help maintain ecosystem balance and promote biodiversity.



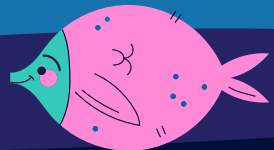
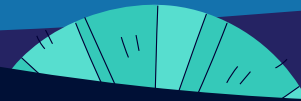
Blue Tang (*Paracanthurus hepatus*)

Blue tangs are colorful reef fish commonly found in tropical waters around the world. With their bright blue bodies and yellow tail fins, they are a favorite among divers and snorkelers. In addition to their beauty, blue tangs play a vital role in coral reef ecosystems by feeding on algae that compete with corals for space. By controlling algae levels, blue tangs help promote coral reef growth and health.

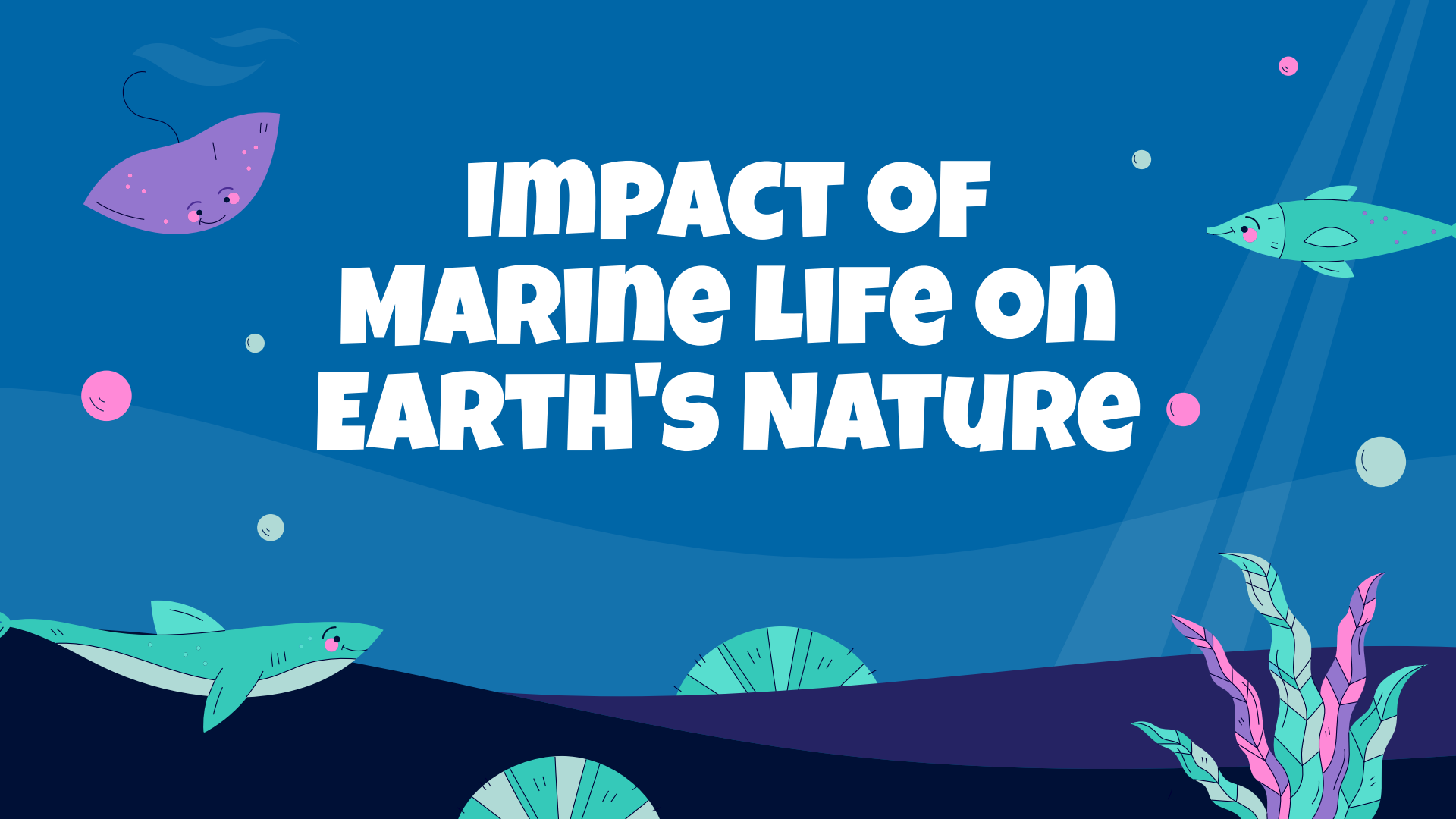


Seagrass (*Posidonia oceanica*)

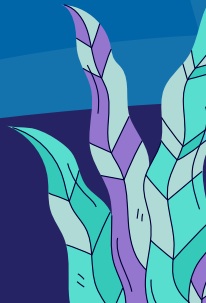
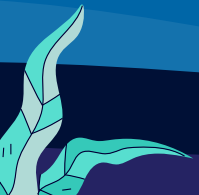
Seagrasses are flowering plants that are adapted to live in seawater. They stabilize sediments, improve water quality, and provide important nursery habitat for fish and invertebrates. Seagrass meadows are highly productive ecosystems that provide food for a wide range of marine organisms including juvenile fish, crustaceans and sea turtles. In addition, seagrasses are carbon sinks, absorbing carbon dioxide from the atmosphere and helping to mitigate climate change.



IMPACT OF MARINE LIFE ON EARTH'S NATURE

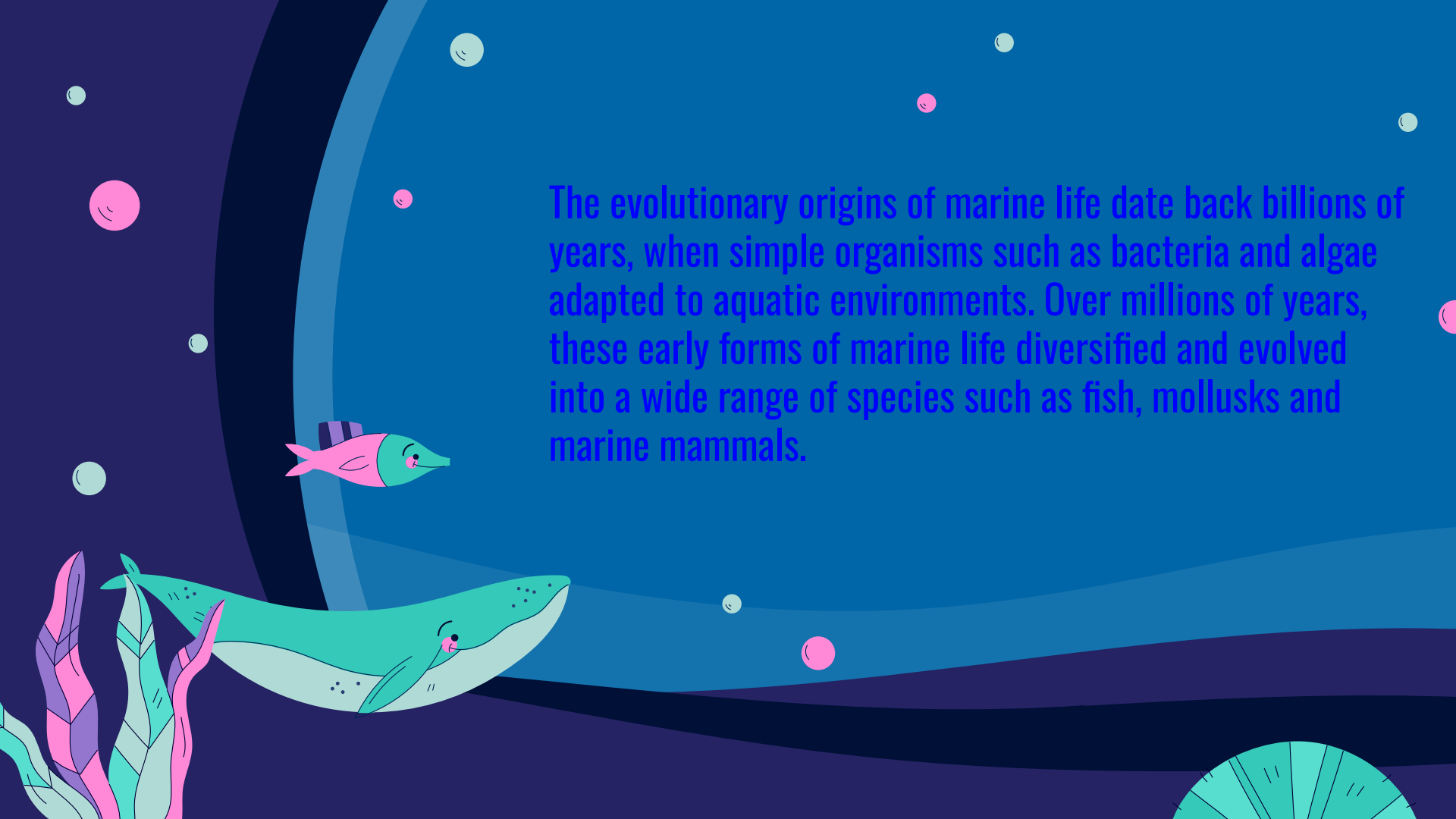


- **Oxygen production:** Marine plants, especially phytoplankton and seaweed, produce oxygen through photosynthesis and account for a significant portion of the Earth's oxygen supply.
- **Shoreline Protection:** Coral reefs, mangroves, and seagrass beds help stabilize shorelines, reduce erosion, and protect coastal communities from storm surges and waves.
- **Carbon sequestration:** Marine organisms, including plants and animals, play an important role in sequestering carbon dioxide in the atmosphere, helping to slow climate change by storing carbon in marine ecosystems.





EVOLUTIONARY ORIGINS OF MARINE ANIMALS



The evolutionary origins of marine life date back billions of years, when simple organisms such as bacteria and algae adapted to aquatic environments. Over millions of years, these early forms of marine life diversified and evolved into a wide range of species such as fish, mollusks and marine mammals.



How do sea otters contribute to the health of kelp forests?

ANSWER

Sea otters play a vital role in maintaining the balance of kelp forests by controlling the population of sea urchins.