

# Coastal Ecosystem: Characteristics, Components, Types and Benefits

Coastal ecosystems are one of the ecosystems on Earth. As we all know that the Earth has 2 types of ecosystem, namely a land ecosystem and also a water ecosystem. This beach ecosystem is a type of land ecosystem. Although it is adjacent to the marine ecosystem, the coastal ecosystem is a land ecosystem. Coastal ecosystem is defined as an ecosystem which is a unit of both biotic and abiotic components that are around the coast, interact with each other, and influence yet form an energy flow. In addition to forming energy, the interaction between these components also forms a biotic structure and the material cycle.

From the description above, we can say that the coastal ecosystem is biotic (living) component and an abiotic (nonliving) component in the coastal region. In this coastal ecosystem, we can find a variety of distinctive characteristics of the coast.

## Characteristics of Coastal Ecosystems

The beach is a very beautiful a fun place to visit. Beach is a top tourist destination. However, the beach with all its beauty slowly begins to disappear if it is not properly maintained. Over time, lots of irresponsible people litter the beach. More and more, this will cause a damage to the coast. As a result, we often see many dirty beaches.

The coastal ecosystem itself can generally be said to be a harmonious ecosystem. Good and healthy coastal ecosystems have the following characteristics:

1. It is well maintained and has a permanent coastline. The coastline in question is the area or boundary between land and sea. A good coastal ecosystem is a beach that has a well-preserved and permanent shoreline feature.
2. There is a [mangrove](#) ecosystem around the coast. A good coastal ecosystem is one that has a mangrove forest ecosystem in the coastal area. This mangrove ecosystem is at least 30% of the total coastal area. This percentage is the ideal number. The mangrove forest

ecosystem that is located in this coastal area has a function as a barrier to sea waves that can erode the coast.

3. There is a pattern of brackish water cultivation business. One of the characteristics of a good and healthy coastal ecosystem is that there is a business pattern of brackish water cultivation which is carried out by adhering to a good insight into the environment. Why should it be environmentally sound? This is because the utilization of the beach environment should not be arbitrary for it relates to a variety of living things around the coast.
4. Beach pollution can be controlled. Coastal ecosystems are indeed difficult to escape from pollution. However, pollution in a good and healthy coastal ecosystem can be easily overcome or control, both scientifically and by human intervention.
5. Acting as a home for various types of living things and can be a source of life for humans who live around the coast. Healthy coastal ecosystems are coastal ecosystems that have various functions or benefits of the coast.

Those are some of the characteristics possessed by a good and healthy coastal ecosystem. Polluted coastal ecosystems will not have such characteristics.

## **Components of Coastal Ecosystems**

We all know that on this Earth, there are various types of ecosystems. Each of these ecosystems has a biotic component and also an abiotic component. This is because the ecosystem is indeed the interaction of living things with their environment. And this environment is composed of biotic and abiotic components. Therefore, the biotic and abiotic components are constituents of an ecosystem.

Along with other ecosystems, this coastal ecosystem also has various biotic components and also abiotic components. Various kinds of biotic components and abiotic components owned by the coastal ecosystem include:

- a. **Biotic Components.** The biotic component is a component in the form of living creatures, where these living things are in the coastal environment of both animals and plants. Some biotic

components located in coastal environments include algae, mangroves, marine anemones, shrimp, crabs, fish, and other plants and animals that live in coastal areas.

- b. Abiotic component. An abiotic component is a component that exists in an ecosystem in the form of an inanimate object. Even though it is an inanimate object, the existence of these components can affect the survival of living things around the coastal ecosystem. Therefore, some of the abiotic components possessed by the coastal ecosystem include sand, land, temperature, air, humidity, rocks, and also sunlight. These abiotic components are in the majority of the world's coastal ecosystems. That is because we can find objects that are components easily in the area around the coast.

That is the biotic and abiotic component in the coastal ecosystem. They are always present in every ecosystem on Earth.

## **Units in Coastal Ecosystems**

Coastal ecosystem is one ecosystem that are unique. The reason behind its uniqueness because it includes three elements. The elements included in this ecosystem are land, water in the sea, and also the air. The coastal area is a meeting area between land ecosystems and also [aquatic ecosystems](#). This coastal ecosystem is also an ecosystem that has a variety of units. These units are only owned by coastal ecosystems and not the other ecosystems. Some of the units owned by this coastal ecosystem are as follows:

1. Coral reef ecosystem or Coral Reef.
2. Mangrove ecosystem or mangrove forest.
3. Sea grass or sea grass ecosystems.
4. [Sandy beach](#) ecosystem or sandy beach.
5. Rocky beach ecosystem or rocky beach.
6. River or estuary ecosystem.

Those are the units owned by the coastal ecosystem. Among the six units, there are three units which are included as the most important ecosystems in the coastal ecosystem. The main ecosystems in coastal ecosystems are coral reef ecosystems, mangrove ecosystems, and also sea grass ecosystems.

## **Nature of Coastal Ecosystems**

This coastal ecosystem is the most unique ecosystem because it is a meeting area between land and also the ocean. Therefore, this coastal ecosystem has several special properties that are not shared by other ecosystems. This coastal ecosystem has several special properties, namely:

### ***A. This Ecosystem is Affected by Tides***

This coastal ecosystem is an ecosystem that is strongly influenced by tides. These tides are the daily cycle of sea water. Thus, the flora and fauna that can survive in the coastal region are the flora and fauna that adapt by attaching to the hard substrate so as not to be blown away by the waves.

### ***B. The Uppermost Region of This Ecosystem is the Area Least Affected by Water***

This coastal ecosystem has the least water part which is the top part. The uppermost part of this ecosystem will only be exposed to water when the sea water is in the tide. Therefore, this region is very rarely affected by water. The uppermost coastal area is inhabited by fauna and flora, including the types of mollusks, algae, shellfish, and also some types of shorebirds.

### ***C. Has a Midpoint That is Submerged by Water When High and High Tides are Low***

Coastal ecosystems have a middle nature that is submerged in water during high tides and low tides. This central place is inhabited by several organisms. Organisms that live in this area are sea anemones, mussels, snails, algae, Porifera, and so on.

### ***D. The Deepest Area is Inhabited by Several Types of Living Things***

Some living things that live in this area include invertebrate animals, fish, and various kinds of seaweed.

Those are some of the properties possessed by this coastal ecosystem. These properties are a characteristic possessed by this coastal ecosystem. As for all the coastal ecosystems that exist on Earth, they must have the properties mentioned above.

## Types of Coastal Ecosystems

Do you know about the information of coastal ecosystem? It turns out that the coastal ecosystem is not an ecosystem that only consists of one kind in the whole world. When viewed from the beach, at least we will find out two types of coastal ecosystems. They are:

### 1. Stone Beach Ecosystem

The first type of coastal ecosystem based on the type of beach is a coastal rock ecosystem. This rock beach ecosystem is a coastal ecosystem that is formed due to the presence of chunks of granite. These chunks of granite are large chunks of rock called padas. Padas rocks that form this ecosystem if formed by conglomeration or the process of gathering and fixing small stones (gravel) with clay or limestone soil. In this coastal rock ecosystem, we will usually find vegetation from Sargassum or Eucheuma plants. This rock beach ecosystem is easy to recognize because it has several features. The characteristics possessed by the coastal stone ecosystem include:

Sandy land. As a result of the coastal ecosystem, these rocks have sandy soil so that the soil has minimal nutrient content (because the ground has large pores) and have very good soil permeability.

Shallow groundwater. This rock beach ecosystem has shallow groundwater compared to other coastal ecosystems.

Has moist air and high salt levels. Stone beach ecosystems have a type of humid air and high salt content because they are located next to the sea ecosystem.

Low rainfall. Coastal ecosystems have lower rainfall than other ecosystems.

It is inhabited by 170 types of flora which are divided into 42 regional and also in 61 families.

This ecosystem can be found in hilly coastal areas that have stone walls.

### 2. Mud Coast Ecosystem

The next type of coastal ecosystem is the coastal mud ecosystem. This type of ecosystem is formed by a meeting of [mud](#) – mud river deposits.

Some interesting information about this ecosystem includes:

This ecosystem forms a habitat with recemia, keratin, and also seaweed (enhalus acoroides) plants.

It is inhabited by various types of animals that have high eco-economic values when sold.

Has an estuary. The estuary in the coastal ecosystem of this mud is in the estuary, commonly called the monsoon estuary.

Inhabited by various biotas, such as Periophthalmus.

There are beaches that have large islands. This is because a large island also has a large river, hence the creation of this mud beach ecosystem.

That is the type of coastal ecosystem when viewed from the type of beach. There are indeed very many striking differences when we compare the two ecosystems.

## **Benefits of Coastal Ecosystems**

Just like other ecosystems, this coastal ecosystem also has benefits or functions. Some of the benefits or functions possessed by this ecosystem include:

1. As the Area of Salt Ponds

As we all know, salt is a daily needs. Indonesia's long coast, has abundant raw materials for making salt. When it's expanded, Indonesia can become a massive salt producer. This, of course, can help communities around the coast to get livelihoods.

2. Coconut and Banana Plantation Area

Coconut and banana are two plants that are very suitable to plant in the coastal areas. It is very useful for creating two plantations around the coast.

3. Tidal Farming Area

Coastal tidal areas can also be used as agricultural fields. These agricultural products are used as a source of livelihood by the surrounding community.

4. Tourist Attraction

The beach is also very useful when used as a tourist attraction considering the beautiful and soothing scenery. Lately, there are many beaches that have been developed as tourist attractions.

5. Development of Typical Beach Crafts

The results obtained from the beach can also be used to make various kinds of crafts because it has a high selling value and it can add to the income of local people.

Those are some benefits that will be obtained from the existence of a coastal ecosystem. Apart from those mentioned above, there are still many other benefits that we can find in this coastal ecosystem.

Source: [Coastal Ecosystem: Characteristics, Components, Types and Benefits - \(deepoceanfacts.com\)](https://deepoceanfacts.com)