

# Importance of Coastal Dunes Various Protecting Ways and its Biological Threats

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# DESCRIPTION

Coastal dunes are a unique and fascinating feature of many coastal regions around the world. These natural landforms are formed by the wind, waves, and tides that shape the coast, and they play a vital role in protecting coastal ecosystems, supporting human communities, and providing important recreational opportunities.

#### **Coastal dunes**

Coastal dunes are hills or ridges of sand that form along the coast, usually between the beach and the hinterland. They can vary in size and shape, from small mounds of sand to large, complex systems of dunes that stretch for miles along the coast.

The formation of coastal dunes is a complex process that involves the interaction of several natural forces. Wind, waves, and tides all play a role in shaping the sand and creating the distinctive features of coastal dunes.

#### Importance of coastal dunes

Coastal dunes are important for several reasons. They provide vital habitat for a wide range of plant and animal species, including many that are rare or endangered. Coastal dunes are also important for protecting inland areas from storm surges and coastal erosion, which can cause significant damage to human communities and infrastructure.

In addition, coastal dunes are a popular destination for tourists and locals alike. Many people enjoy hiking, bird-watching, and other recreational activities in and around coastal dunes. The beauty and diversity of these natural landscapes make them an important part of many coastal communities.

Sand, groundwater, salt spray, live and dead organic material, and air and precipitation are the other two materials that are exchanged along the dune/beach interface. Almost all coastal dunes acquire sand from beaches or provide it to them. Through confined or unconfined aquifers, groundwater flows into the ocean from the land. This groundwater may be released in huge quantities in some areas and frequently has extremely high nutrient levels, which considerably increases the nutrient pool of the beach and surf zone.

The vegetation of coastal dunes is significantly influenced by salt spray that is blown inland, which coupled with sand movement is a key component in shaping plant groups and landward gradients. The dune/beach interface can interchange different kinds of organic elements, including: insects are frequently carried by the wind from land to the sea; carrion and wrack washed up on the shore may provide as a source of food for dune animals that descend to the beach to graze; Larger dunes creatures, such birds, may rely on intertidal organisms for food, and dunes' waste may be blown into the beach system.

### Threats to coastal dunes

Despite their importance, coastal dunes are facing a range of threats. One of the most significant threats is human activity. Development, pollution, and other forms of human disturbance can all have negative impacts on coastal dunes and the ecosystems they support.

Climate change is also a major threat to coastal dunes. Rising sea levels, more frequent and intense storms, and other climaterelated changes can all have significant impacts on coastal dunes and the communities that depend on them.

#### Protecting coastal dunes

Protecting coastal dunes is an important task that requires the cooperation of many different groups, including governments, conservation organizations, and local communities. Some of the key strategies for protecting coastal dunes include:

**Conservation:** Protecting coastal dunes through conservation measures such as zoning, land acquisition, and restoration efforts.

**Education:** Educating the public about the importance of coastal dunes and the threats they face can help to build support for conservation efforts and encourage people to take action to protect these vital ecosystems.

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**Management:** Effective management of coastal dunes is essential for protecting their natural resources and ensuring their long-term health and sustainability.

## CONCLUSION

Coastal dunes are a unique and important feature of many coastal regions around the world. These natural landforms play

a vital role in supporting diverse ecosystems, protecting human communities, and providing important recreational opportunities. Protecting coastal dunes requires the cooperation of many different groups, and it is essential that we take action now to ensure that these vital ecosystems are protected for future generations.