Saltmarsh

DEFINITION

Ecosystems of brackish, shallow water with salt-tolerant plants such as herbs, grasses or shrubs. They are usually found in the intertidal zones of sheltered marine and estuarine coastlines, in temperate and high latitudes.

DESCRIPTION

Saltmarshes, also called saltwater marshlands or saline marshes, are ecosystems located in the intertidal zone of sheltered marine and estuarine coastlines. The intertidal zone is the seashore area which is covered by water at high tide but exposed to the air at low tide. Saltmarshes are dominated by salt tolerant grasses, herbs and low shrubs.

GEOGRAPHIC DISTRIBUTION

Saltmarshes tend to grow in areas exposed to relatively low energy waves, such as estuaries and tidal inlets. Saltmarshes develop where fine sediment has accumulated to an appropriate elevation and salt tolerant plants have colonised the surface. The roots of these colonisers help to stabilise the sediments and slow water flow, encouraging further deposition of sediment and stabilising the marsh surface [1]. Saltmarshes are distributed on coastlines around the world, particularly in temperate and arctic regions. In tropical areas, saltmarshes tend to be replaced by mangroves, which grow in a similar zone of the seashore. The most extensive saltmarshes occur where there are large tidal ranges [2].

ECOLOGY

Saltmarshes are of ecological importance as they underpin the estuarine food web. Saltmarshes serve as nesting, nursery and feeding grounds for numerous species of birds, fish, molluscs and crustaceans, including commercially important fish species such as herring (*Clupea harengus*) [3, 4]. The shallow water and vegetation provides hiding places and abundant food for juvenile fish and various invertebrate species. Larger predators cannot enter these areas, making them a temporary safe haven while the fish have a chance to grow [5].

Saltmarshes are also home to a number of Endangered and Critically Endangered species. An example of the unique and rare species found in this habitat includes the endangered saltmarsh harvest mouse (*Reithrodontomys raviventris*) [6], one of the few terrestrial mammals in the world able to drink seawater if fresh is not available [7]. Saltmarshes are a particularly important breeding, foraging, overwintering and migration stop off points for many waterfowl species [2].

ECONOMIC & SOCIETAL VALUE

Saltmarshes are also significant for human well-being and economies as they provide a range of ecosystem services, such as coastal defence, nutrient cycling, water filtration, immobilisation of pollutants and carbon sequestration [8]. Saltmarshes are one of three key coastal 'blue carbon' habitats, recognised for their ability to store carbon within above- and below-ground biomass and sediments [9]. With an average annual carbon sequestration rate of 6 to 8 tonnes of carbon dioxide equivalent per hectare [10], saltmarshes sequester carbon at a rate two to four times greater than that recorded for mature tropical forests [11].

THREATS

Saltmarsh habitats are threatened by climate change-induced sea level rise as their capacity to migrate landward is often restricted by infrastructure, embankments or topography, resulting in loss due to "coastal squeeze" [4]. Habitat loss is also driven by local-scale anthropogenic activities, such as drainage for agriculture and mosquito control, development of coastal infrastructure and ports, coastal ecosystem eutrophication, conversion to salt ponds, and infill for coastal development [8, 12].

INTERNATIONAL THREAT STATUS

Despite providing essential ecosystem services, saltmarshes have not traditionally been a habitat of high priority for conservation and have lost between 25% and 50% of their global historical coverage [13, 14]. The rate of loss is currently around 1-2% per year [15].

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Saltmarshes in the Bon Secour National wildlife refuge, Alabama, USA. Danny E. Hooks/Shutterstock.com

Category:

Marine biodiversity features

Tools

Ocean Data Viewer A tool for easy access to a range of datasets that are important for the conservation of marine and coastal biodiversity. The data can be downloaded or viewed online.

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