

Natural & Beneficial Functions of Floodplain

Importance of Floodplains

Flood plains are areas adjacent to rivers, ponds, lakes, and oceans that are periodically flooded at different points in time. Floodplains are hydrologically important, environmentally sensitive, and ecologically productive areas that perform many natural functions. They contain both cultural and natural resources that are of great value to society. Flooding occurs naturally along every river and coastal areas. Flood waters can carry nutrient-rich sediments which contribute to a fertile environment for vegetation. Floodplains are beneficial for wildlife by creating a variety of habitats for fish and other animals. In addition, floodplains are important because of storage and conveyance, protection of water quality, and recharge of groundwater.

Riverine Floodplains

Riverine systems such vary in steepness, width, flow, sediment deposition, and erosion. Riverine floodplains typically flood during the spring, but are subject to periodic flooding due to excessive rainfall. The flooding brings erosion and deposition of soils and can determine considerably the shape of the floodplain, the depth and composition of soils, the type and density of vegetation, the presence and extent of wetlands, richness and diversity of wildlife, and the depth of groundwater. The major flood component of a riverine system is the flood way. Flood ways are defined as that area of the watercourse that is necessary to carry the base flood without increasing the water surface elevation more than one foot. Development is heavily regulated in flood way areas. Riverine systems are important habitats for a variety of fish, reptiles, vegetation, and furbearing wildlife. These systems provide feeding and breeding grounds for these species.

Coastal Floodplains

Marshes, near-shore ocean bottoms, beaches, bays, coastal dune lakes, tidal flats, and estuaries are all components that make up the coastal floodplain. Coastal beaches, dunes, banks, and tidal flats all play roles in protecting the land from destructive coastal storms, such as hurricanes. In coastal systems, aside from major storm events where waves may overrun large areas, inundation follows a largely predictable tidal cycle. Coastal floodplains are recognized for their importance to estuarine and marine fisheries. Estuarine wetlands are important for breeding, nursery, and feeding grounds for marine fisheries and coastal floodplains are important to waterfowl and other wildlife. Shallow coastal areas such as estuaries, tidal flats and rivers, and beaches are significant for shellfish, reptiles, and other fin-fish. The water quality in these areas is affected by changes in sediments, salinity, nutrients, oxygen, temperature, and the addition of various pollutants. Rivers, creeks, and lakes that have an unimpeded connection to the sea provide breeding and feeding grounds for a variety of coastal marine life.

Benefits to Humans

Floodplains provide cultural, educational, recreational, and scenic values to humans. The earliest Native Americans settled in and around floodplains, as they provided a wealth of food and provided the easiest means of travel. Consequently floodplains include many archaeological and historical sites. Floodplains also serve as a nature study center for scientific research. Due to the scenic value that they provide, floodplains are ideal locations for parks and campgrounds. Water-oriented sports and recreational activities such as boating, swimming, hiking, and camping are all dependent on floodplain areas. Wildlife resources in floodplains can be managed for observation, and recreational hunting and fishing. Natural floodplains are valuable in providing the “wilderness experience” that is an important part of American culture.

Summary

The importance of maintaining natural floodplains is not a difficult idea to understand. However, humans have always been attracted to floodplains because of their many sustaining attributes. Human development and industrialization take a toll on the natural functions of the floodplains. Development in the floodplains causes decreases in water quality, loss of wildlife habitats, and an increase in severity and frequency of flood losses. Understanding the importance of maintaining the natural functions of floodplains can lead to better floodplain management approaches that will better protect the natural and beneficial functions of floodplains.