

S7L4(b) Freshwater Ecosystems Supplemental Material

Chemical and physical weathering recycle materials found in the Earth's crust into rocks, sand and minerals. Chemical weathering breaks or weakens these materials through interactions between water and substances found within various types of rock. Friction created by wind physically accelerates the process. Over a long period of time, water percolating through mountains freed the rocks in this gravel bed from the surrounding earth and deposited at the bottom of this river.



The energy of flowing fresh water from rivers, creeks, brooks and streams naturally shape the Earth's surface. Moving water deposits sediment that creates floodplains and alluvial fans. Most sediments are deposited on river curves and in the deltas that form at the mouth of rivers, where they enter larger bodies of water.

The photo below shows the formation of an alluvial fan where a large river enters the sea.



Wetlands protect shorelines and river or stream banks from excessive erosion by slowing the movement of the current. They prevent erosion by binding or stabilizing the soil, and have been identified as important in maintaining the natural condition of the stream or river corridor. Wetland plants are important because they can absorb much of the energy of the surface waters and bind soil and deposited sediments in their dense root systems.

The floodplains of river systems also develop through the deposition of sediment on land outside the river's banks during floods. Wetlands form in these floodplains where regular flooding or a high water table can cause water to accumulate above ground. These *riparian* wetlands may undergo constant change as the energy of rivers and streams form new channels and when floods sweep the floodplain or deposit new material.



There are many types of waterlogged landscapes known as wetlands, including *swamps*, *bogs* and *marshes*. Some are even man-made, such as rice paddies and wetlands formed around reservoirs. A *marsh* is a type of wetland found around rivers, ponds and lakes. It usually contains plants that grow up and out of the water.



A swamp is a type of freshwater wetland that has a spongy, muddy surface and usually has more water than a marsh. Most swamps can support a variety of larger trees and shrubs, all of which capture soil through deposition.