

## Nature's Flood Control System

Every year, damage from storms--hurricanes, intense rainstorms, Nor'easters--makes the news as flood waters wash away structures, roads, and topsoil. Floods are natural events but their impacts are often unnecessarily magnified when a lack of understanding of the functions of wetlands results in their filling, draining, and development.

Wetlands desynchronize (collect, store, and slowly release) runoff. They serve as natural sponges. Water is held back in wetlands so it reaches streams and rivers more slowly than when it runs rapidly over pavement and structures. Runoff needs to be delayed by soaking into the ground or traveling over and through rough, heavily vegetated areas. When water is not delayed, large volumes reach rivers at the same time and cause serious flooding and erosion.

Not all wetlands help to limit storm damage. Some of the factors which influence a wetland's damage control function include:

- the size of the wetland in relation to its watershed (the area which drains into a stream or river),
- where the wetland is located within the watershed (how far upstream),
- the types of soils in the wetland (this affects the water-holding capacity),
- the manmade and natural resources located downstream of the wetland,
- the presence of streams within the wetland,
- the density of the vegetation, and
- whether the outlet from the wetland is narrow or wide.

One large non-structural project which reflects knowledge of the value of wetlands for storm damage control is the Charles River Natural Valley Storage Area in eastern Massachusetts. In 1974, as an alternative to structural flood-control means such as dams, the Corps of Engineers recommended and was authorized by Congress to acquire wetlands in the middle and upper reaches of the Charles River watershed to protect downstream properties. This project now encompasses about 8,100 acres of wetlands and other floodplain sites. Not only does the project provide flood control, but it offers numerous opportunities for recreation and fish and wildlife management.

As hard as wetlands work to prevent it, some flooding can still occur. Remember that flooding is a natural occurrence which deposits vital nutrients in the floodplain. Not all floodplains are wetlands so it is also important to recognize the function of the floodplain itself as the broad overflow basin where floodwaters can spread out and slow down. Construction in floodplains can reduce this overflow or storage capacity and create constrictions that increase upstream flooding.

The role of wetlands in storm damage protection is recognized in federal, state, and local laws. Learn more about wetlands and floodplains by contacting Westford's conservation commission at 692-5524. Work with and support the conservation commissioners in their efforts to protect the natural resources of Westford. These gifts from nature provide many benefits that may not always be obvious but which are often very valuable, including during flood emergencies.