

WATER RESOURCES

Natural Flood and Erosion Control

- Reduce flood velocities
- Reduce flood peaks
- Reduce wind and wave impacts
- Stabilize soils

Surface Water Quality Maintenance

- Reduce sediment loads
- Filter nutrients and pollutants
- Process organic and chemical wastes
- Moderate water temperature

Maintenance of Groundwater Supply and Quality

- Promote infiltration and aquifer recharge
- Increase base flows

LIVING RESOURCES

Support to flora

- Maintain high biological productivity of flood plain and wetland vegetation
- Maintain productivity of natural forests
- Maintain natural crops
- Maintain natural genetic diversity

Provision of Fish and Wildlife Habitat

- Maintain breeding and feeding grounds
- Create and enhance waterfowl habitat
- Protect habitat for rare and endangered species

CULTURAL RESOURCES

Harvest of Natural and Agricultural Products

- Create and enhance agricultural lands and pastures
- Provide areas for cultivation of fish and shellfish
- Create and enhance forest lands
- Provide harvest of furs

Recreation opportunities

- Areas for active and consumptive uses
- Areas for passive activities
- Open spaces
- Landscape values

Areas for Scientific Study and Outdoor Education

- Areas for ecological studies
- Historical and archaeological sites

Table 1. Natural and cultural resources and functions of flood plains. (After Thomas, 1995)

tem of the higher, surrounding land. As such it includes many interdependent natural phenomena that provide resources and functions important for human welfare (Frank H. Thomas, 1995).¹ Thomas divides these into functions related to water resources, living resources and cultural resources as shown in table 1.

The water resources functions are directly related to flood control. The spreading of a flood over the flood plain is an important part of natural flood attenuation and any attempt to prevent the inundation of a flood plain by canalizing the river using dykes or levees will result in increased velocities in the restricted channel and in higher flood levels reached more rapidly further downstream. The other functions are also of considerable importance to human society. Because the flood plain is frequently wet it provides a habitat for particular species of plants and wildlife, many of which are of economic value. For

1. Frank H. Thomas, (1995), Principles of flood plain management in J. Gardiner, O. Starosolszky and V. Yevjevich (eds.), *Defence from floods and flood plain management*, Kluwer Academic Publishers, Dordrecht.