



# *How a Watershed Dam Works*

## **Flood Control and More**

The Watershed Program (Watershed Protection and Flood Prevention Act, Public Law 83-566) and Flood Control Act of 1944, Public Law 78-534) helps communities and rural areas reduce flooding and sedimentation, provides water supplies and recreational areas and creates thousands of acres of wildlife habitat. There are watershed projects in all 50 states and the Caribbean. Since 1948, 2,000 watershed projects, covering 160 million acres, have been organized by local project sponsors with assistance from the USDA Natural Resources Conservation Service.

Eleven thousand watershed dams have been built in 47 states. Watershed projects make up a \$15 billion national infrastructure that provides \$2 billion in annual benefits to over 47 million people.



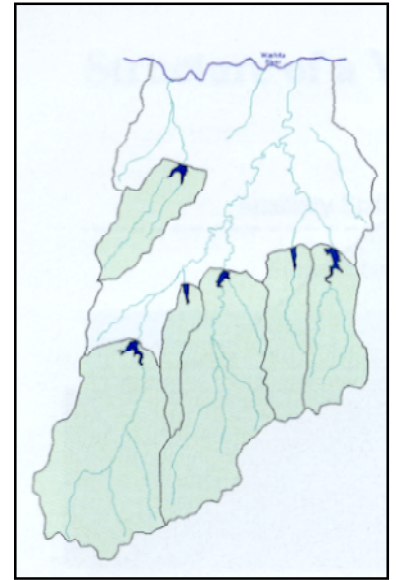
Watershed lakes average from about 5 to 25 acres in surface area. A few are larger, up to several hundred acres and some are designed as dry structures with no permanent water.

## **How Watershed Dams Reduce Flooding**

The concept of watershed projects is simple. A series of watershed dams are built across small tributaries to larger streams. The dams temporarily store flood water after rain storms and slowly release it over a period of several days through a pipe in the dam. This reduces the amount of water that reaches the main water course after a rain, reducing flooding.

Land treatment programs in the watershed help control erosion, which reduces the sediment that flows into the streams and lakes.

Watershed projects usually consist of earthen dams constructed on tributaries to a river. The number of dams in a watershed varies depending on the size of the watershed. Some projects do not have dams, but use other conservation methods to meet the needs in a watershed such as erosion control, animal waste management, and water quality practices.

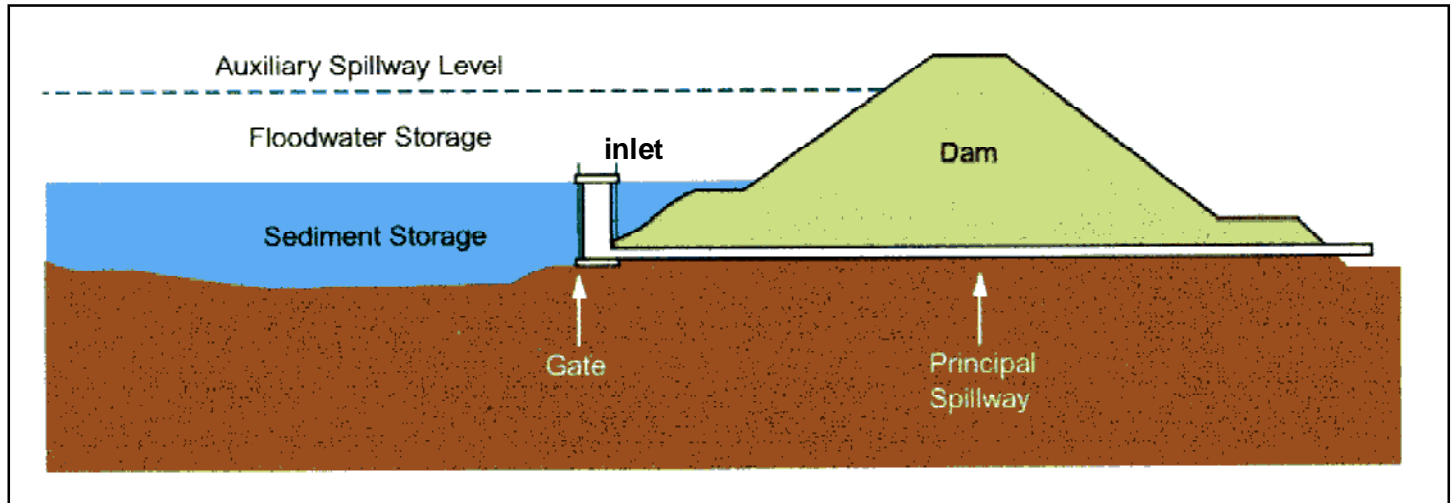


A concrete inlet tower (might be metal on older dams) connected to a pipe extending through the dam serves as a principal spillway for dams, controlling the water level. A slide gate at the bottom of the inlet can be opened to lower the water level for maintenance and repair.



Water is released through a pipe in the dam for several days after a heavy rainstorm.

# Cross Section of a Watershed Dam



This cross section of a dam shows the concrete inlet in front of the dam connected to the principal spillway pipe (extending through the dam). When water reaches the opening at the top of the inlet it spills over and goes through the pipe controlling the level of water in the lake. Some inlets also have openings in the side of the tower.

A slide gate, located at the bottom of the inlet tower, can be open to lower the water level for maintenance and repairs.

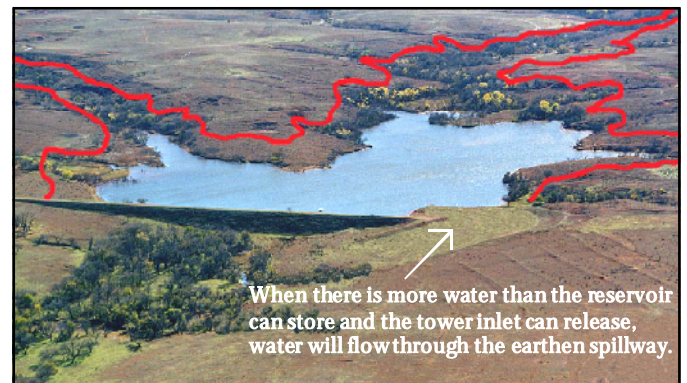
The diagram also shows the auxiliary spillway level. Water will flow through the earthen spillway at the end of the dam to safely convey large flows to avoid water going over the top of the dam, which could dam failure.

The sediment storage area on the cross section is what makes up the permanent pool of water. Over the life time of the dam this area will usually fill with sediment (usually 50 to 100 years).

## National Watershed Coalition

The National Watershed Coalition is a nonprofit organization composed of national, regional, state and local associations, organizations and individuals who advocate using watersheds as the planning and implementation unit when dealing with natural resource problems. Visit our website at: [www.watershedcoalition.org](http://www.watershedcoalition.org)

## Flood Storage



The red line on this photo indicates the extent that water can back up in the flood pool upstream before it starts flowing through the earthen spillway. This is where flood water is stored while it is slowly released through the principal spillway pipe.

It is important to keep the inlet tower clear of debris and to keep the earthen spillway clear of any structures such as fences and buildings. Disrupting the flow of the spillway could result in dam failure.