Restoration of Missouri River (USA)

Missouri River, a largest and the longest river in North America, has been widely modified over these 150 years. However, as the American people grew aware of the environmental ethics, they came to focus on the deterioration of the major rivers in the country, and to reexamine the river management priority. As a result, some national laws and state laws were established, and many measures to support restoring a number of major rivers in America were provided. For Missouri River, based on the Missouri River Mitigation Act (an act of compensation for environmental destruction), a project was implemented, which restored the wetland and the riverside forests, changed the banks and weirs, and reunited the "chutes" (water channels for high water) with the mainstream.

◆ Key to Restoration

- The Missouri River Mitigation Act
- Wetland restoration project
- Restoration of habitats

◆ Overview of the River

Missouri River originates at the confluence of Madison River, Jefferson River, and Garritan River. Its total length is 3720 km2; the longest in America, and its total basin dimension is 137 million ha, which is a quarter of the whole North America. The river originally was the route of American Indian and explorers, and from the mid 1800s to the late 1800s until the start of the transcontinental railway, it played the role of marine transportation. Starting with the River and Harbor Act in 1848, various laws regarding river development were established by the mid 1970s. As a result, Missouri River drastically changed: from a gently winding stream to a water channel network with shallow water channels that are 200 to 300 meters wide, with bars and wetland, and with cutoff lakes. It transported massive silt, often causing floods in the floodplains.

As the ecology movement grew in America in 1960s and 1970s, a wetland protection program and the Missouri River Mitigation Act were established, followed by an emergency wetland protection program and the water resource development act. These efforts accelerated the movement to restore the deteriorated riverside system, focusing mainly on large rivers.

◆ Project Efforts for Restoration

【The Missouri River Mitigation Act】

The Missouri River Mitigation Act, established in 1986, authorized acquiring the land of 675 km2 in the states of Nebraska, Kansas, Iowa, and Missouri, over 1183 km of length and developing the habitats for fish and wildlife.

【Wetland restoration project】

There was a long history of farming along the downstream of Missouri River by the wetland irrigation. A wetland restoration project was started in early 1990s in the Eagle Bluffs Conservation Area (1750 ha) in Columbia State, aiming at restoring the 750-ha area to its original state of wetland. The bank was broken in the summer of 1993 and it caused a flood, but after two years, the restored wetland in the Eagle Bluffs raised the water storage ability and the downstream water level was lowered dramatically.

【Restoration of habitats】

Lowering flood control banks in some zones will restore the habitats in land and wetland, as it causes floods mostly in spring and autumn when the water level rises. Also, the natural reproduction of the species composing riverside forests and the planting of selected riverside vegetation (beech, chestnut, oak, and sawtooth oak) will restore the constituents of lowland forests in the river system. They will provide wildlife habitats, nutritious water resources, bank protection, and public recreation places.

Source: Case examples in the international symposium "River Restoration." Published by Foundation for Riverfront Improvement and Restoration. 2003.9.