

Session 22

Course Title: Floodplain Management

Module Title: Policy History: Rivers as a Legal Battleground

Session 22: Federal Policies

Author: Elliott Mittler, PhD

Time: 75 minutes

Objectives:

- 22.1 Identify the major players in determining water policy.
- 22.2 Identify what constitutes “clean water.”
- 22.3 Identify what constitutes an “endangered species.”
- 22.4 Identify what determines flood risk and expected losses from floods.
- 22.5 Compare the management of navigable and non-navigable waterways.
- 22.6 Identify what constitutes water projects being considered “pork.”
- 22.7 Determine how the sum of federal laws is implemented in local jurisdictions.

(PP22.1)

Scope:

The purpose of this session is to understand the relationship between the federal government and floodplain management. In Session 21 students learned that since World War II, the federal government has usurped what were traditionally state and local responsibilities. During this session, the instructor will explain the direct and indirect effects of Congressional decisions that have given federal agencies policy control over many aspects of floodplain management. These decisions are made in situations where objectives are often mutually exclusive and equally compelling uses compete for scarce resources. Students should be reminded that laws, interpretations of laws, and implementation decisions are always in flux with many interests either supporting or seeking change in the status quo.

Readings:*Student Required Reading:*

Mittler, Elliott. 1997. *An Assessment of Floodplain Management in Georgia's Flint River Basin*. Institute of Behavior Science, University of Colorado. Chapter 2, pages 11-32.

Moore, Jamie W., and Dorothy P. Moore. 1989. *The Army Corps of Engineers and the Evolution of Federal Flood Plain Management Policy*. Institute of Behavioral Science, University of Colorado.

Reid, T. R. 1980. *Congressional Odyssey: The Saga of a Senate Bill*. W. H. Freeman and Company, San Francisco.

Student Recommended Reading:

Arnold, Joseph L. 1988. *The Evolution of the 1936 Flood Control Act*. Office of History, United States Army Corps of Engineers, Fort Belvoir, Virginia.

Ferejohn, John A. 1974. *Pork Barrel Politics: Rivers and Harbors Legislation, 1947-1968*. Stanford University Press, Stanford, California.

Reuss, Martin. Winter, 1992. "Coping with Uncertainty: Social Scientists, Engineers, and Federal Water Planning." *Natural Resources Journal*, Volume 32, Number 1, pages 101-135.

Instructor Reading:

United States Army Corps of Engineers. 1999. *Digest of Water Resources Policies and Authorities*, Washington, DC, (Publication EP 1165-2-1, available on the Internet at www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep1165-2-1/toc.htm)

General Requirements:

Prepare table 22.1 as a handout. The content should be presented by lecture with time allocated for discussion as necessary.

Objective 22.1. Identify the major players in determining water policy**Requirements:**

None.

Remarks:

Since the founding of the country, the Federal government has taken on a larger and larger role in the management of the floodplain until today where it is the most significant player in determining what is permitted and what is not permitted in the floodplain.

State and local government, still play important roles but, as time has gone on, their independent policy-making roles have been reduced and been replaced by mandates to implement federal laws and regulations. Understanding federal policies and how they are carried out can help us to understand contemporary floodplain management practices.

I. Federal Involvement in Floodplain Management (PP22.2 - 3)

- A. Federal involvement in floodplain management began with the regulation and control of navigable rivers.
 1. The justification was national security and to insure commerce between states.
 2. It was based on Article 1, Section 8, Clause 3 of the United States Constitution, which provides that “The Congress shall have power to regulate commerce with foreign nations, and among the several states, and with the Indian tribes.”
 3. In 1824, the **United States Army Corps of Engineers (USACE)** was given jurisdictional control over navigable rivers when Congress appropriated \$75,000 for improving navigation over sand bars in the Ohio River and removing snags in the Ohio and Mississippi Rivers.
- B. Powers of the federal government began to expand in the 20th century. As illustrated for the Flint River in Georgia (Mittler, Table 1 on pages 13 and 14), the following became federal concerns:
 - hydroelectric power,
 - agriculture,
 - flood control,
 - economic development, and
 - recreation.
 1. In most cases, when the federal government assumed new roles, the courts have had to decide whether federal controls and regulations were constitutional.
 2. A review of one of the last session readings (Mittler, chapter 3) provides a description of the growing federal role in the floodplain.

3. Since 1900, Congress began to believe it had a responsibility to protect citizens from floods.
- C. Before World War II, federal functions with respect to water resource management generally involved single-purpose projects by specific agencies with clear-cut divisions of responsibility.
- D. After World War II, Congressional acts have expanded the functions, authorities, jurisdictions, and interests of federal agencies in different phases of water resource management, often without concern if two or more interests were put in conflict.
1. One result is that there are frequent incompatibilities among various management aspects. Recent amendments to existing laws are often enacted to decide how to accommodate mutually exclusive practices fairly.
 2. Reid, in his classic case study of the trials and tribulations of an inland waterways bill moving through Congress, describes power struggles and the art of compromise needed to secure ultimate passage.
 - a. He traces the course of a bill that was introduced in February 1977 as Senate bill 790 (entitled the Inland Waterways Revenue Act) but was ultimately enacted in October 1978 as Public Law 95-502 within House bill 8533, a vehicle originally intended to amend the Internal Revenue Code.
- E. By the time President Carter was elected, there were numerous federal laws related to the management of the floodplain. Most had been amended several times.
1. In general, there were one or two lead agencies for each overall function, but specific tasks were often assigned to other agencies.
 2. As more agencies became involved in floodplain management, President Carter issued Executive Order 11988 on May 24, 1977 to establish general policies that all agencies must adhere.
 3. Section 1 of Executive Order 11988 states:

“Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands, and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs

affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.”

The full text of E.O. 11988 may be found at www.fema.gov/library/eo11988.shtm.

- F. Because there are so many laws that fully or partially affect what happens to the floodplain and so many agencies that have primary, secondary, or tertiary responsibility, it is not possible to list all the subjects that Congress has discussed, all the laws and amendments passed, or all the agency responsibilities.
1. The most significant subjects, laws, and primary agency responsibilities are shown in **(PP22.4 -6) (Table 22.1)** at the end of this session syllabus. Each law may be found in the United States Codes in print or on the Internet.

Objective 22.2 Identify what constitutes “clean water.”

Requirements:

None.

Remarks:

I. History of Federal Water Pollution and Quality Laws

- A. Federal concern over “clean water” originated in 1948 with the passage of the Water Pollution Control Act. **(PP22.4 – 6) (Table 22.1)**
1. The original 1948 statute (Ch. 758; P.L. 845) authorized the Surgeon General of the Public Health Service, in cooperation with other Federal, state and local entities, to prepare comprehensive programs for eliminating or reducing the pollution of interstate waters and tributaries and improving the sanitary condition of surface and underground waters.
 2. During the development of such plans, due regard was to be given to improvements necessary to conserve waters for
 - public water supplies,
 - propagation of fish and aquatic life,
 - recreational purposes, and
 - agricultural and industrial uses.

3. The original statute also authorized the Federal Works Administrator to assist states, municipalities, and interstate agencies in constructing treatment plants to prevent discharges of inadequately treated sewage and other wastes into interstate waters or tributaries.
- B. Since 1948, the original statute has been amended extensively either to authorize additional water quality programs, create or amend standards and procedures to govern allowable discharges, and provide funding for construction grants or general programs.
 1. Amendments in other years provided for continued authority to conduct program activities or make administrative changes to related activities.
 - C. One of the most significant amendments was the **Federal Water Pollution Control Act Amendments of 1972**, now commonly referred to as the “**Clean Water Act**.”
 1. The Clean Water Act stipulated broad national objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's waters
 - D. Since 1972, the law has been amended several more times. However, the basic focus, that the waters of the United States meet quality standards, remains.
 1. The Sierra Club estimates that about two-thirds of all lakes and streams are now safe for swimming, compared to 36% in 1970, thanks to the Clean Water Act.

II Clean Water

- A. Because of continuous research on water quality, standards used to define “clean water” change constantly.
 1. Therefore, there is no specific definition of “clean water” in federal statutes.
 2. What constitutes “clean water” is water that meets up-to-date chemical, physical, and biological standards. The Environmental Protection Agency (EPA) is the lead federal agency in conducting research and determining standards.

Objective 22.3 Identify what constitutes an “endangered species.”

Requirements:

None. See individual objectives.

Remarks:

I Federal Protection of Endangered Species

- A. Congress first established federal protection of endangered species when it enacted the **Endangered Species Preservation Act** in 1966. The act was amended in 1969.
1. However, what we consider **the true Endangered Species Act was enacted in 1973**. It repealed the 1969 law and implemented the Convention on International Trade in Endangered Species of Wild Fauna and Flora, signed by the United States on March 3, 1973, as well as the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, signed by the United States on October 12, 1940.

II The 1973 Endangered Species Act

- A. The 1973 Endangered Species Act provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Through Federal action and by encouraging the establishment of State programs, the Act:
- authorizes the determination and listing of species as endangered and threatened;
 - prohibits unauthorized taking, possession, sale, and transport of endangered species;
 - provides authority to acquire land for the conservation of listed species, using land and water conservation funds;
 - authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants;
 - authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and
 - authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued thereunder.
- B. Section 7 of the Endangered Species Act amended through January 24, 2002 requires Federal agencies to insure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

III Endangered and Threatened Species

- A. In Section 3 of the Endangered Species Act as amended through January 24, 2002, “the term ‘**endangered species**’ means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of Class Insecta determined by the Secretary to constitute a pest whose protection

under the provisions of this chapter would present an overwhelming and overriding threat to man.”

- B. Later in Section 3, “the term ‘**threatened species**’ means any species which is likely to become an endangered species within its foreseeable future throughout all or a significant portion of its range.”

Considering interactivity or short case study.

Objective 22.4 Identify what determines flood risk and expected losses from floods.

Requirements:

None.

Remarks:

I. Flood Risk.

- A. Throughout history, human settlements have been established on the banks of rivers and lakes.
 - 1. A consequence of siting homes, businesses, and other facilities near rivers is that periodic floods often damage or destroy structures as well as injure or kill inhabitants. In recent times in the United States, development along rivers has reached a point that many people and structures are at risk.
- B. What exactly is flood risk?
 - 1. Flooding is typically the result of either rising rivers (caused by rainfall or snowmelt upstream) or very heavy local rainfall.
 - 2. In severe floods, there may be a combination of the two causes or widespread rainfall that swells multiple upstream tributaries.
 - 3. Risk is determined by how high the waters rise in relation to the structures and how often certain heights of the structures are reached.
- C. The two agencies most concerned about flood risk are the USACE and FEMA, and their definitions of risk vary.
 - 1. With the goal of protecting communities, the USACE constructs its protective dams and levees at the then established “flood of record” defined as “the highest flood historically recorded in a given location.”
 - 2. FEMA, on the other hand, has established a flood insurance program to protect individual structures and to have communities plan to safeguard against future floods.

3. FEMA's flood insurance laws were developed around the 100-year flood or 1% flood concept. They specified houses that would be expected to be flooded statistically once every 100 years or had a 1% chance each year of being flooded would be required to have flood insurance when owners purchased and maintained a mortgage.

II. Expected Losses From Floods.

- A. Given the history of human settlement along rivers, there is an expectation that flooding will cause losses.
- B. Losses can be calculated by the use of damage functions for each structure that is inundated by water at different heights.
 1. By knowing the expected height of a flood, the number of structures located in and exposed to flooding, and the height of the flood above the first floor of each structure one can determine an estimated loss value in dollars.

III. Communities at Risk.

- A. After determining the expected losses for floods at different return levels, communities can be grouped according to risk.
- B. **Extreme risk communities** have expected high losses following floods every five years (very common occurrences).
- C. **Low risk communities** have low expected losses for all floods up to 100 years floods (uncommon occurrences).
 1. Most communities in the United States have some neighborhoods that are at high risk from floods that occur every 25 to 50 years.

IV. The National Flood Insurance Program.

- A. The private insurance industry has traditionally been unwilling to provide building owners with flood insurance.
 1. **Adverse selection** is the tendency for poorer-than-average risks to initially enroll in an insurance plan or to continue to renew insurance policies.
 2. The industry's expectation is that adverse selection risks will lead to heavy claims to the detriment of the plan.
- B. In the mid-1960's, the federal government decided to provide flood insurance. There were several reasons for the decision, including:
 - recognition that the private insurance industry would not provide flood insurance;

- floods were causing personal hardships and economic distress which required unforeseen federal disaster relief measures;
 - structural preventive works, including dams and levees, were not sufficient to adequately protect against a growing flood risk.
- C. Congress enacted the National Flood Insurance Program (NFIP) in 1968. It had two broad aims.
1. First, it provided homeowners with flood insurance.
 2. Second, before insurance could be offered in a community, the community had to join the program and agree to institute land use laws that, over time, would lessen potential losses in the flood plain.
 - a. If properly employed, communities would reduce human encroachment in the floodplain.
 - b. As of today, over 22,000 communities participate in the NFIP.

Objective 22.5 Compare the management of navigable and non-navigable waterways.

Requirements:

None.

Remarks:

I. Navigable Waterways.

- A. According to the USACE *Digest of Water Resources and Policies and Authorities*, “the definition of ‘navigable waters of the U.S.’ is derived from a history of judicial decisions and interpretations, along with administrative decisions of the Corps and legislative actions which may declare specific water to be non-navigable.”
1. The Corps defines navigable waters as “...those waters that subject to the ebb and flow of the tide and/or are presently used, or have been used in the past or may be susceptible for use to transport interstate or foreign commerce.”
- B. All economic activities on navigable rivers are subject to rules and regulations established by legislative action or administrative decisions of the Corps.
1. By law, every approved activity must be cost beneficial.
 2. Depending on the project, its construction, operation, and maintenance may be solely or jointly performed by the USACE, public entities, or private concerns.

- C. In addition to navigation (since the passage of water laws), management of navigable rivers must account for water quality, fish and wildlife, and other concerns.

II. Non-navigable waterways.

- A. By definition, non-navigable waterways are those that have not and will not be used for interstate or foreign commerce and those specific waterways declared by Congress to be non-navigable.
- B. If a waterway is non-navigable, it is not subject to as many federal rules and regulations for its use as are navigable rivers.

Objective 22.6 Identify what constitutes water projects being considered “pork.”

Requirements:

None.

Remarks:

I. The “pork barrel” and water projects.

- A. Pork barrel legislation refers to appropriations by congress that fund public works projects for political patronage, such as local improvements to please a legislator’s constituents.
- B. Traditionally, sources of “pork” have been the annual appropriations bills for the Bureau of Reclamation, various power administrations and river basin authorities, and the USACE civil construction program.
- C. It has been argued that pork barrel projects began after the Corps was appropriated funds to improve navigation on the Ohio and Mississippi Rivers in 1824.
 - 1. Since then, supporters of internal development along rivers have petitioned the Corps and other agencies to back their projects.
 - 2. During the settlement of the United States, projects approved by Congress often determined how the land got settled and whose local plans were adopted. Success was commonly associated with political power.
- D. As a result of a system of inland waterway developments largely formed through the political process, the floodplains of the United States were developed.
 - 1. Ferejohn presents a detailed study of pork barrel politics surrounding Rivers and Harbors legislation between 1947 and 1968. He shows how

legislators cooperated with the USACE to select, evaluate, and approve projects.

2. In his case study, Reid, in excruciating detail, demonstrates how one senator's meaningful legislation can be another's pork, and can lead to unusual coalitions that eventually gain passage of an inland waterways bill.

Objective 22.7 Determine how the sum of federal laws are implemented in local jurisdictions.

Requirements:

None. See individual objectives.

Special Considerations:

In Class Discussion and Homework.

(Will address homework assignments later so effort can be coordinated.)

Table 22.1 Federal Agency Responsibilities in Floodplain Management

Topic	Significant Federal Law(s)	Federal Agencies with Lead Responsibility
Navigation	Commerce Clause – Constitution	USACE
Flood Damage Reduction	1- Flood Control Act of 1917 2- Flood Control Act of 1936 3- Flood Control Act of 1960 4- E.O. 11988 Floodplain Management 5- Robert T. Stafford Disaster Relief and Emergency Assistance Act	USACE FEMA USBR
Flood Insurance	1- National Flood Insurance Act of 1968 2- Flood Disaster Protection Act of 1973	FEMA
Stream Bank Erosion Control	Flood Control Act of 1946	USACE
Hydroelectric Power	1- Federal Power Act of 1920 2- Electric Consumers Protection Act of 1986	FERC
Water Supply	Water Supply Act of 1958	USACE USBR
Water Pollution and Quality	1- Water Pollution Control Act of 1948 2- Federal Water Pollution Control Act Amendments of 1972 3- Safe Drinking Water Act of 1974 4- Clean Water Act of 1977 5- Water Quality Act of 1987	EPA
Fish and Wildlife	1- Fish and Wildlife Coordination Act of 1934 2- Fish and Wildlife Act of 1956 3- Endangered Species Act of 1973 4- Fish and Wildlife Conservation Act of 1980	FWS
Wetlands Conservation	1- Water Resources Development Act of 1976 Section 150 2- E.O. 11990 Protection of Wetlands 1977	USACE
Environmental Quality	1- National Environmental Policy Act of 1969 2- Comprehensive Environmental Response, Compensation Liability Act of 1980 (a.k.a. “Superfund”)	EPA
Watershed Protection	1- Conservation of Watersheds Act of 1911 2- Watershed Protection and Flood Prevention Act of 1954	SCS
Wild and Scenic Rivers	Wild and Scenic Rivers Act of 1968	Forest Service National Park Service
Community Development	Housing and Community Development Act of 1974	HUD
Reclamation	Reclamation Act of 1902	USBR
Dams	Dam Safety Act of 1972	USACE
Recreation	1- “The Fletcher Act” of 1932 2- Water Project Recreation Act of 1965	USACE USBR FWS

Abbreviations in Table 22.1: USACE (United States Army Corps of Engineers); FEMA (Federal Emergency Management Agency); USBR (United States Bureau of Reclamation); FERC (Federal Energy Regulatory Commission); EPA (Environmental Protection Agency); FWS (Fish and Wildlife Service); SCS (Soil Conservation Service).