Historical Impacts: The Politics and Economics of Watershed Management

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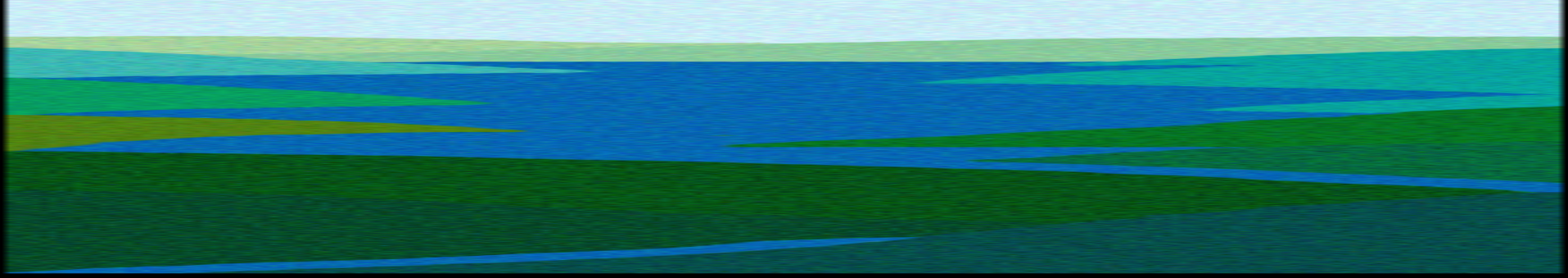
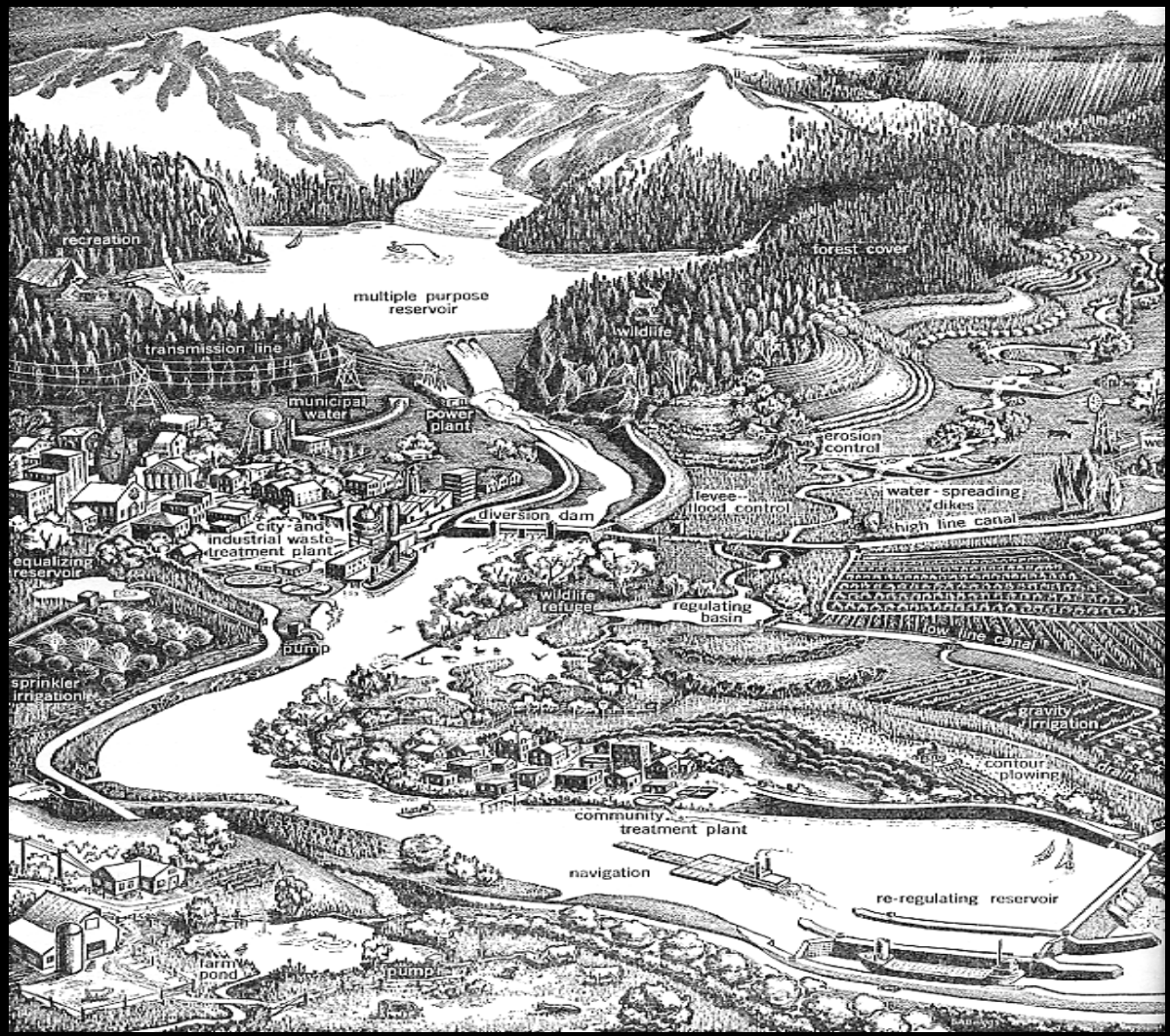


"While conceptually sound, most of these attempts at water management have been failures. The reason is that society is not organized around hydrological boundaries…In considering the best spatial arrangements for water policy, we should remind ourselves of the fact that regions do not have 'truth'—they only have utility…If so, there is an urgent need to define water regions as something other than river basins. Problem-sheds are what we have in mind." (Foster and Rogers 1988)

Watersheds as socially-defined systems



Does a watershed represent an ecosystem?

Is a watershed a useful metaphor for an ecosystem?

Source: USACE 1950

Social values concerning natural resource use are superimposed on watersheds

VALUES:

- underlie the exploration, settlement, development and protection of a watershed
- as society changes so does the purpose and content of watershed management

Source: JW Powell Memorial Museum

Source: USDA 2002

U.S. watershed planning history in a nutshell…

- 1920-1970 federal water projects
  - Comprehensive river basin planning
  - Activity peaked in 1965
  - Almost all federal water policy and planning revolved around federal water projects

Source: USACE 1950

U.S. watershed planning history in a nutshell…

- Late 1960s to early 1970s federally funded water quality planning
  - Federal subsidies for wastewater treatment plants
  - Subsidies declined by mid-1970s

Source: Cornell University 2002

- 1980s demise of the Water Resources Council

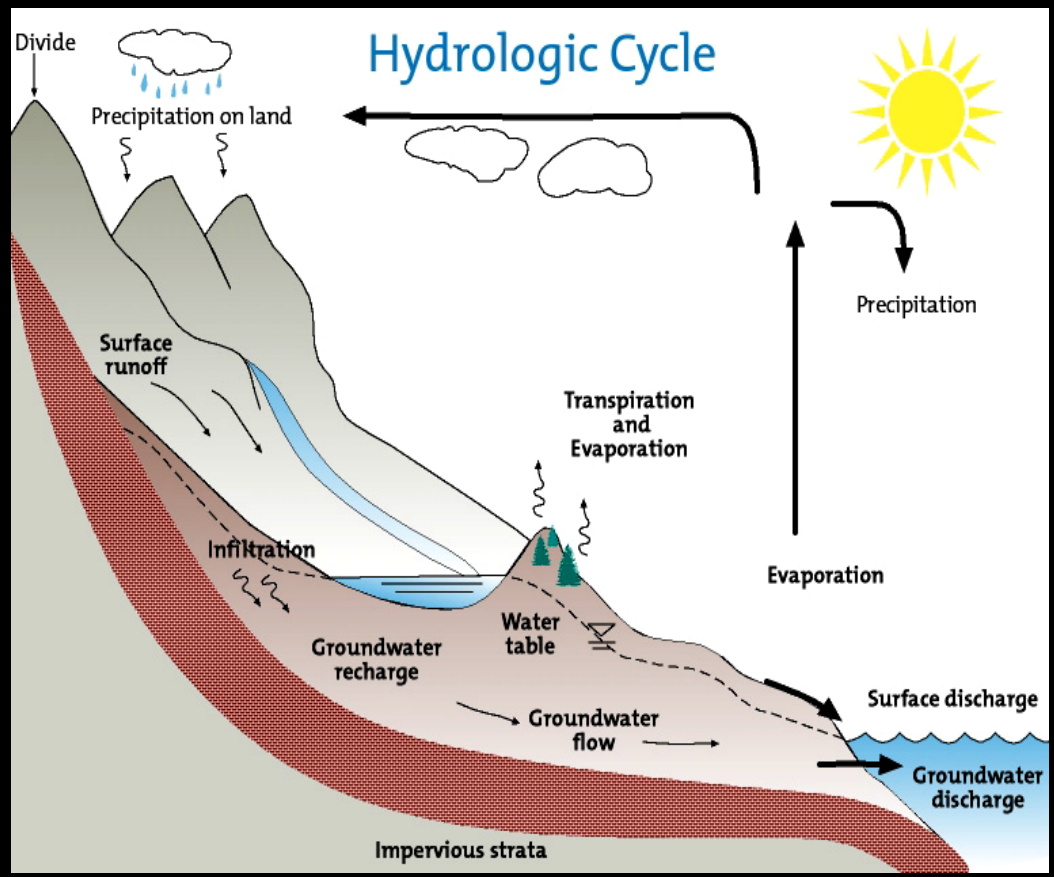
U.S. watershed planning history in a nutshell…

- Resurgence of watershed planning and management in the 1990s
- Water Quality 2000
- Clinton Administration support
- EPA advocacy
- Support of environmental experts and advocates

Source: EPA 2002

Established planning and management principles (Moreau 1994)

- Water resources should be planned and managed in a manner that respects the interrelatedness of hydrologic systems.
- Water resources and facilities to manage them should be planned comprehensively for multiple purposes.



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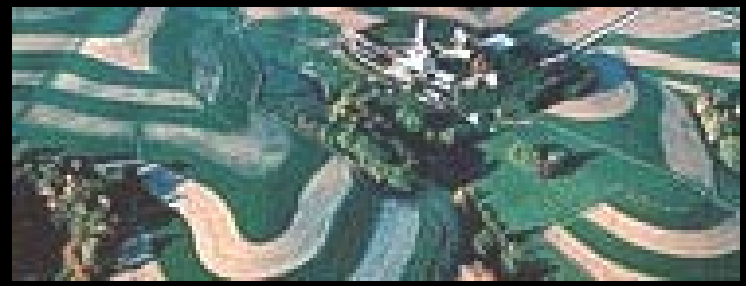
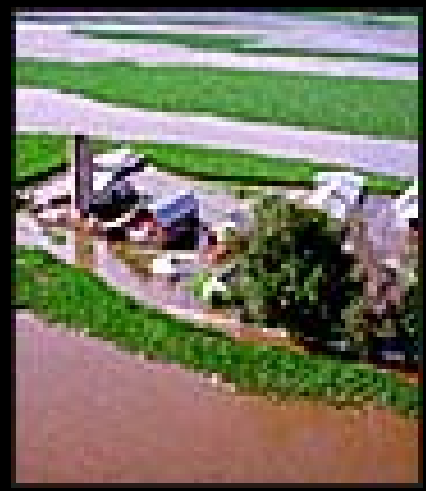




Source: USDA 2002

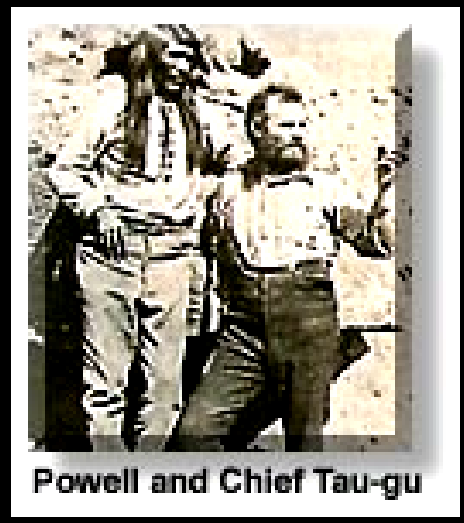
Long-standing focus on river basin planning

- Planning on the Mississippi River during the mid-19th century

Source: Ramsey County Historical Society 2002

Long-standing focus on river basin planning

- Conservation movement at the turn of the century
  - Legacy of Major John Wesley Powell (USGS)


Powell and Chief Tau-gu

Source: JW Powell Museum

–Advocacy of basin-wide planning and multiple use

–Influences on Roosevelt Administration

–Reclamation Act of 1902

–Hydro-electric dam development at Muscles Shoals, Alabama

Source: New Deal Network

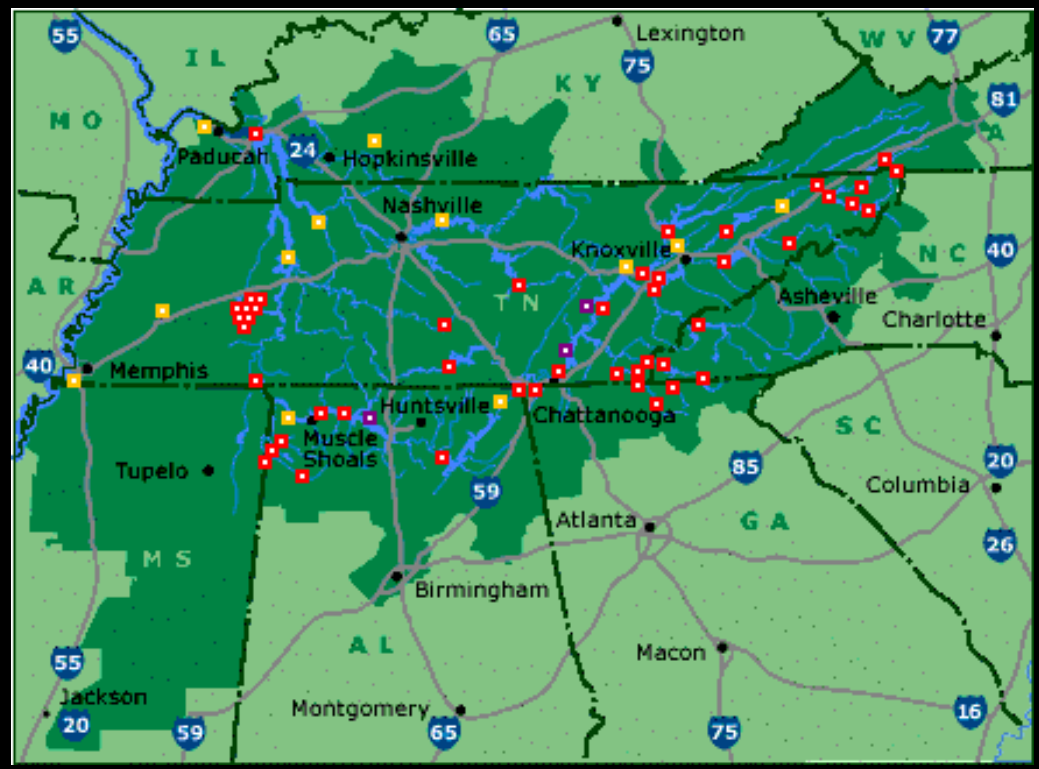
Long-standing focus on river basin planning

- Federal Power Act of 1920
  - USACE's emphasis on unity of the river basin as the basic planning unit for planning
  - multiple purpose planning

Source: USACE 1950

Long-standing focus on river basin planning

- Tennessee Valley Authority 1933
  - Regional experiment in comprehensive watershed planning and economic development



Source: Tennessee Valley Authority

Shift of focus to water quality protection

- Water Pollution Control Act 1948
  - –Comprehensive pollution control plans for interstate waters; predecessor of CWA
- President's Water Resources Policy Commission 1950s
  - –Established an interagency river basin commission with federal and state representation for each major river basin in the nation
- Water Resources Council
- State level river basin planning initiatives

Source: eserver.org/govt

Source: USACE

Shift of focus to water quality protection

- CWA 1972
  - State implementation of EPA-approved plans for each river basin to include:
    - Delineate basin boundaries
    - Classify stream segments
    - Designate each stream segment in compliance with relevant standards
    - Estimate total maximum daily loads (TMDLs)
    - Identify point sources
    - Prioritize pollution abatement needs

Source: EPA 2002

New values: localism and habitat protection

- Demise of President's Water Resource Council early 1980s (ended systematic push for comprehensive multi-purpose planning)
  - Increasing fiscal conservatism
  - Cost-benefit analyses under the Procedures and Guidelines for water planning issued by the Water Resource Council
  - Carter's reluctance to fund water projects
  - Reagan and the conservative political agenda

•Columbia River Basin management in the 1980s

–Revised emphasis on creating parity for fish and wildlife in watershed management

Source: USACE 1950

State primacy and planning

Growth of state level planning in the 1990s

- –State primacy
- –Increased emphasis on water quality control, especially in states east of the Mississippi
- –Key elements of state-level water quality control:
  - •Waste water discharge permit program
  - •Monitoring and assessment of water quality
  - •Management of nonpoint sources
  - •Groundwater management
  - •Establishment of total maximum daily loads and waste load allocation

Watershed planning

–The Watershed Protection Approach of the 1990s

- •Promoted by USEPA, the Clinton Administration, and advocacy groups
- •1994 CWA re-authorization title covering "Watershed Planning and Nonpoint Pollution Control"

Source: Seattle Municipal Archives 2002

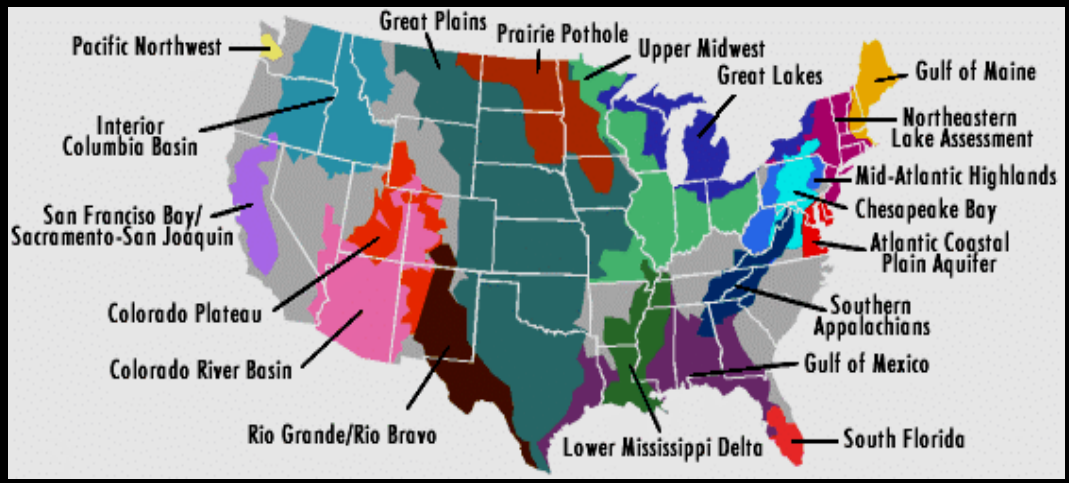
Goals of the USEPA Watershed Protection Approach

- To encourage state and local governments to target watersheds based on overall human health and ecological risk
- To encourage development of site-specific protection methods based on holistic, integrated approaches to a variety of pollutant sources

- To establish a cooperative multilevel decision-making process
- To establish effective programs to measure success and continuous improvements
- Small watersheds planning by USDA-NRCS
- Local (voluntary) watershed initiatives

Assessment of 1990s watershed planning

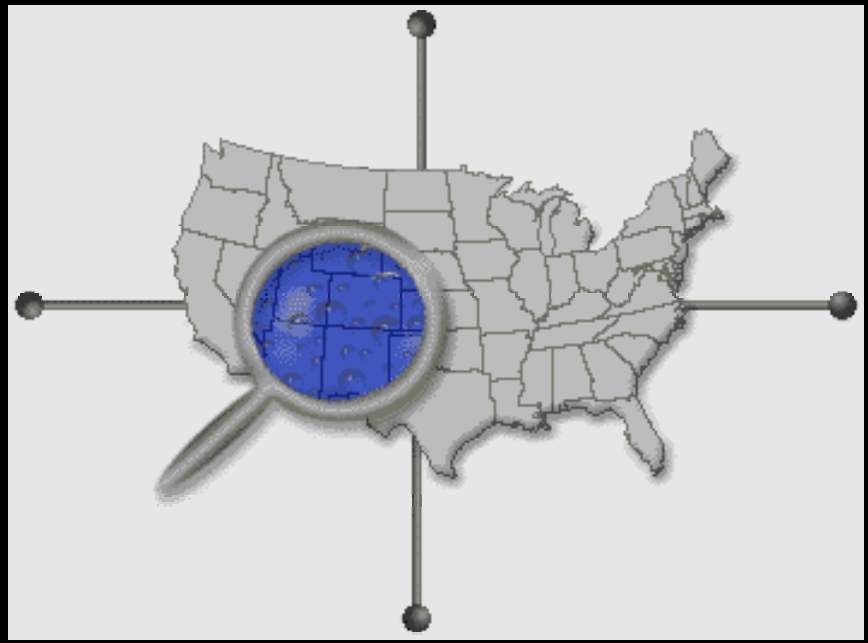
- Watershed planning is not necessarily being carried out in area defined by hydrological boundaries
- Some watershed planning activities tend to be single purpose in character, especially focusing on water quality
- Elevated role given to relationships between land use, water resources, and ecological systems
- Lack of prioritization of problems on a watershed basis



Source: EPA 2002

Unresolved problems in contemporary watershed planning

- Scale
- Boundaries
- Control of planning and management
- Mission
- Consistency



Source: EPA 2002

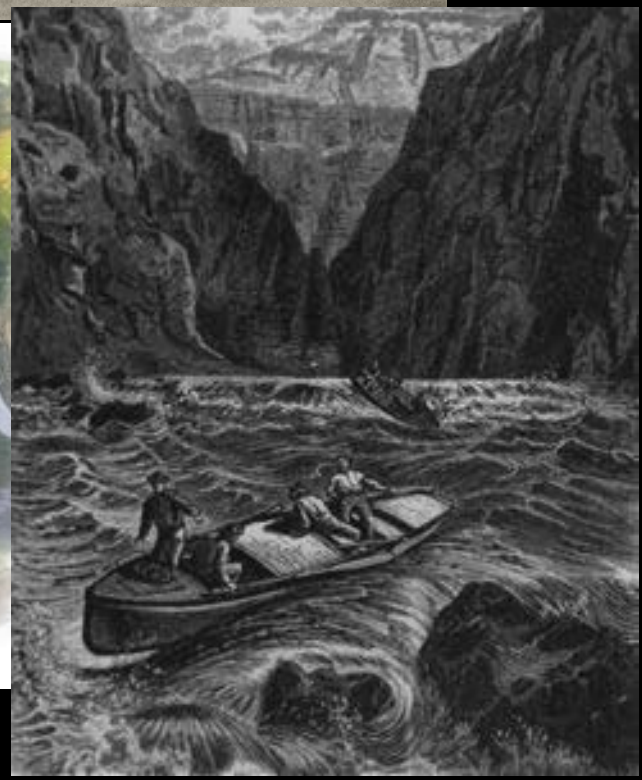
Additional problems raised by the NRCs Committee on Watershed Management

- Involvement of relevant stakeholders
- Identification of tradeoffs among alternative plans
- Identification of shared values to guide selection of alternatives
- Actions to balance among tradeoffs

Source: USDA 2002

Basic questions emerging from the renewed interest in watershed management

- What is new about these activities?
- Which well-established principles of watershed management have they incorporated?
- Have the meaning and objectives of watershed management changed?
  - If so, what should we understand contemporary watershed management to be?

Established planning and management principles (Moreau 1994)

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