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The Era of River Anthropology
Social and eco-hydrological science connections and capacity for environmental flows

US case studies

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The Clean Water Act
1972
Clean Water Act

The primary rule for the Environmental Protection Agency that governs water quality in the United States

This presentation:
• Give a very brief overview of the CWA authority to address flow
• Provide a few examples, from both states and our tribes
  • How they are using these authorities to protect water for social and cultural values
• Economic importance that helps to provide incentives to make sure we protect these resources for cultural uses.
The Goals of the Clean Water Act

• To restore & maintain the chemical, physical, & biological integrity of the nation's waters

• This includes addressing pollution, defined as:

  “...the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.”
Water Quality Standards

- **Designated Uses** – Set the goals of the water body, such as fishing, swimming, recreation, aquatic life protection, etc.
- **Narrative and Numeric Criteria** – set the criteria necessary to protect those uses.
- **Antidegradation** – protects existing uses.
Water Quality Standards

• Backbone of implementing the CWA
  – States and Tribes set standards
  – For both use and the criteria for protecting uses

• Tremendous flexibility in identifying what those uses and criteria are
  – Must be defensible
Applying WQS to flow

**Designated Uses** – States and tribes can evaluate what flows are needed to meet their designated uses. For instance, if they have a DU of aquatic life, what flow regime is needed to support that.

- ‘Designated Uses’ = ‘Desired Uses’
- Different from ‘Existing Uses’

**Criteria** – States and tribes can set narrative or numeric criteria, e.g. “the flow needed to protect shellfish harvesting” or “the flow needed to protect restoration.” They can also use basic chemical criteria that is affected by flow – Dissolved oxygen, temperature or biological criteria and make sure the flow supports those criteria.

**Antidegradation** – They can ensure that existing uses of high quality waters are not removed, including the flow needed to meet those uses.
Some of the States and Tribes with Explicit Flow Criteria

- New Hampshire
- Rhode Island
- Vermont
- New York
- Virginia
- Kentucky
- Missouri
- Tennessee
- Seminole Tribe of Florida
- Mole Lake Band of the Lake Superior Tribe of Chippewa Indians
- Bad River Band of the Lake Superior Tribe of Chippewa Indians
Some of the States and Tribes with Explicit Flow Criteria

- Water rights are governed differently in the United States
- East – Riparianism or Riparian rights
  - English Rule
  - Exist In many jurisdictions with common law heritage
    - Canada, Australia
  - Limits use to those landowners with riparian land
  - What is or is not ‘reasonable’ may be defined by the state/tribe often through permitting
Some of the States and Tribes with Explicit Flow Criteria

- Water rights are governed differently in the United States
- West – Prior appropriation
  - American Rule
  - “first in time, first in right”
  - First user has the right to use the water
    - Excludes those who came later…or who may even own the adjacent land
  - Seniority rules in appropriating water from the river, not landownership
  - Tribes might be different because water rights are considered part of treaties
Seminole Tribe of Florida

Example of where Designated Use directly states that the goal of the Waterbody is to be protected for cultural and religious significance

All criteria would then be designed to directly protect that use.
Seminole Tribe of Florida

Class 2: Fish & Wildlife; Maintenance of a well-balanced population of fish & wildlife recreation in and on the water.

- 2A: Cultural & Religious Significance
- 2B: General Purpose Class 2
Tennessee

A state with wide use of rivers and streams for recreation

Specifically protect for flows for cultural/social uses
(3) Fish and Aquatic Life

(o) Flow – Stream or other waterbody flows shall support the fish and aquatic life criteria.

(4) Recreation

(m) Flow – Stream flows shall support recreational uses.
Tennessee

Narrative Criteria – How to interpret?

“Enough flow for two canoes…cuz who wants to canoe along”

-Paul Davis-
Why is it important to support these social issues like recreation?

Studies define economic impacts which are important to states.

- Healthy aquatic ecosystems support outdoor tourism and recreation
  - 6.1 million American jobs
  - $646 billion in outdoor recreation spending
  - $39.7 billion in state/local tax revenue
- Provide money to local economies in rural areas.
- Were noted to be stable even in economic downturns.
Bad River Band of the Lake Superior Tribe of Chippewa Indians

Example of setting criteria that specifically applies to the quantity of water that could affect culturally important uses of their water…
Bad River Band of the Lake Superior Tribe of Chippewa Indians

• “Water quantity and quality that may limit the growth and propagation of, or otherwise cause or contribute to an adverse effect to wild rice, wildlife, and other flora and fauna of cultural importance to the Tribe shall be prohibited.
Providing protections of flow, both for aquatic life as well as for social/cultural values, directly into a state/tribal water quality standards program is consistent with the Global Action Agenda from the BD.

Advocated for implementing and enforcing environmental flow standards.

EPA does not require states and tribes to do this – where they want to identify their socially/culturally important flow regimes, they can use the authority of the CWA to do so.