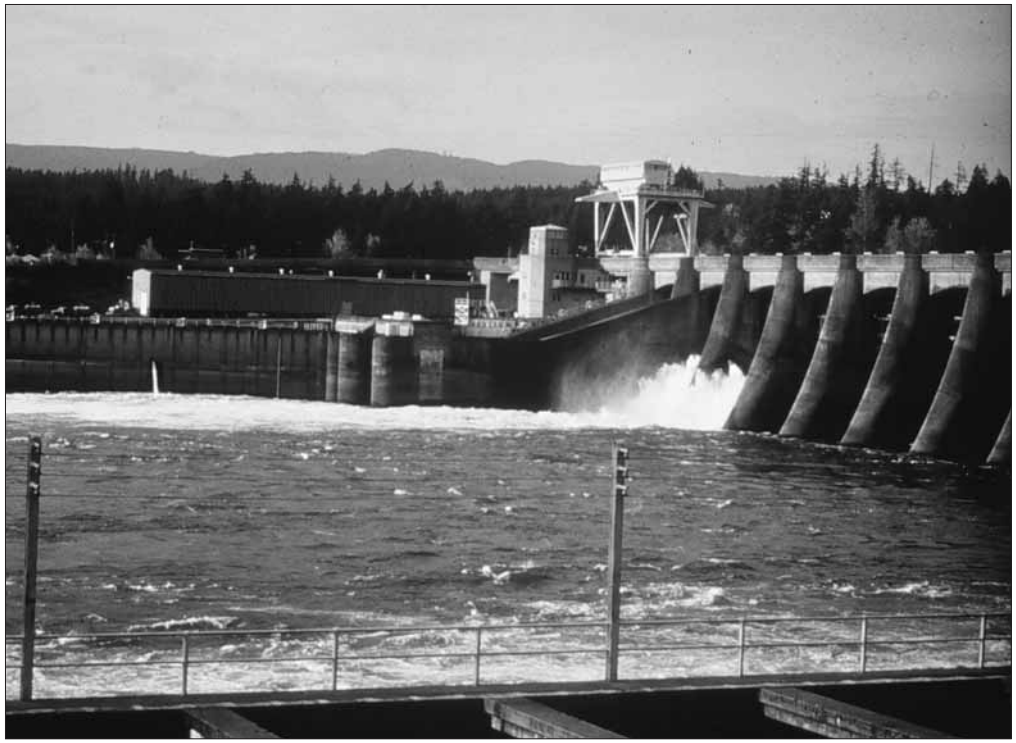
Dam Building and Poor Dam Operation



River Network Collection

Virtually every river in the lower 48 states is regulated by dams, locks or diversions. The U.S. has more than 75,000 dams over five feet in height, and new dam projects continue to be proposed in watersheds across the country. The U.S. Bureau of Reclamation has been studying a proposed $1.8 billion project in Washington's Yakima Basin that would rival the massive Grand Coulee Dam. In California, new or expanded water storage projects are planned to divert more water for an ever-increasing population.

The river below a dam is not the same as the river above it. Downstream, flows can vary wildly, depending on whether the dam is operated for electricity generation, navigation, recreation, flood prevention or water supply. Seasonal fluctuations can be altered by dams, and new flow patterns can cause significant changes in channel shape and habitat. The river downstream can suffer from an increase in algae and nutrients and a decrease in dissolved oxygen. Decreased sediment loads can allow more light to pass through the water, further altering the biotic system.

Upstream from dams, reservoirs flood riverine habitat and displace some species. Over time, reservoirs fill with sediment and may cause new flooding problems. Temperatures in reservoirs can rise to levels that violate water quality criteria intended to protect aquatic species.

As a result of all of these changes, native aquatic species can suffer and die.

FOR MORE INFO

Hydropower Reform Coalition (www.hydroreform.org)
American Rivers (www.americanrivers.org)
River Alliance of Wisconsin (www.wisconsinrivers.org)

Using the Clean Water Act

- **Section 404** — Section 404 requires permits for any discharges of dredged or fill material into "waters of the U.S." Building a dam requires a 404 permit. This permit requires public input on the questions of need, alternatives and cumulative impacts. All projects are required to avoid any impact if possible, minimize impacts that are unavoidable, and mitigate for any necessary impact. If the permit is issued, the type of mitigation required is also subject to public comment. (Chapter 5)
- **Section 401** — Section 401 requires state water quality certification for federally permitted and licensed activities that may result in a discharge to water. If water quality standards may be violated by building a dam or changing dam operations, raise those concerns during the public review of the state certification process. Make sure that the agency considers physical and biological criteria upstream and downstream of any dam. (Chapter 4)
- **Water quality standards** — Identify the existing and designated uses upstream and downstream of a proposed or existing dam. Which uses are most sensitive to conditions created by the dam (slow moving, warmer and deeper water, or unnaturally fluctuating flows)? To protect those uses, identify water quality criteria for temperature, dissolved gases, sediment (total suspended solids), pollutants related to upstream land uses, habitat, streamflow and biology. Evaluate whether the criteria are stringent enough to protect existing and designated uses. (Chapter 1)
- **303(d)** — Do the waters upstream or downstream from proposed or existing dam sites in your watershed support uses and meet water quality criteria? If not, or if they are threatened by dam building or operations, make sure they are on the 303(d) list for the appropriate pollutants, problems and threats. (Chapter 3)
- **TMDL** — Is there a TMDL scheduled or in progress in your watershed? Are adverse impacts of existing or proposed dams included as sources of the impairments? Have changes to the operation of dams or plans for new dams been included in the TMDL implementation plan? If not, encourage your agency to evaluate and include them. (Chapter 3)

Using other laws (Chapter 10)

- **Wild & Scenic Rivers Act** (p. 187) — Is any part of your watershed designated as a Wild and Scenic River? If so, new dams on designated segments are prohibited. If a proposed dam upstream or downstream of a designated segment would diminish the protected resource values, it may be viewed more critically in the permitting process.
- **FPA/ECPA** (p. 189) — The Federal Power Act allows individuals, public interest groups and other interested parties to comment at various stages of the process of relicensing privately-owned hydropower dams. Many private dams are, or soon will be, up for relicensing, and ECPA requires consideration of non-power values such as the environment, recreation, fish and wildlife. Is the dam in your watershed up for relicensing soon? You can file a motion to intervene. Intervenors become formal parties to the process, and their comments are given more consideration than the general public.
- **ESA** (p. 186) — Are there threatened or endangered species in your watershed? If so, you have another tool for protecting against poorly sited and poorly operated dams. The Endangered Species Act prohibits any activity that would result in harmful impacts to the species or its habitat.
- **SDWA** (p. 183) — Is the water upstream or downstream of a proposed or existing dam used or designated for drinking? Are there ground water drinking wells connected hydrologically to the waterway near the dam site? Will the quantity or quality of water coming from those wells be affected by the dam? Identify the potential contaminants in the river that could accumulate with sediments behind the dam and result in diminished drinking water quality. Identify risks to the drinking water uses and talk to the agency in charge of developing the Source Water Assessment for your watershed. Be sure that the risks to drinking water sources associated with dam construction and operation are included in the assessment and considered by your drinking water provider.