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## Political Economy of Pacific Northwest Salmon

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Edible, storable, tradable, and mystical, salmon defined the economies and cultures of Northwest tribes for millennia before the arrival of Europeans. Salmon also drew European settlers. Twenty-five years after the journey of Lewis and Clark, packed and salted salmon found its way to U.S. and world markets. The first salmon cannery was built on the Columbia in 1866. While commercial harvest of all salmonid species peaked at 47 million pounds in 1911, harvest of the more valuable chinook had already peaked 25 years earlier. There are many lessons in the rise and demise of the Northwest commercial salmon harvest -- failure to understand salmon biology, and a tragic application of the "tragedy of the commons" with everyone rushing to exploit a resource that appeared to be free for the taking.

In the 1860s, Mormon farmers began diverting tributary streams high in the Snake River country of southeast Idaho to grow irrigated crops. From this tentative start, irrigated agriculture grew to 7 million irrigated acres and became a cornerstone of the Pacific Northwest Economy. Irrigated crops use large amounts of water on which salmon once relied for spawning, rearing, and for their passage to the ocean and back. Irrigation diversion and storage changed the timing of river flows away from patterns salmon had evolved to require. The economics lesson here is one of alternative resource uses. Salmon and irrigation both need water — particular attributes of water — quantity, velocity, timing and quality. It was inevitable that growth of irrigated agriculture into one of the mega-industries of the Pacific Northwest should involve tradeoffs. Irrigation became one of the menu of reasons for the demise of salmon.

There were other tradeoffs. It is no coincidence that the real decline of salmon harvest dates from the late 1920s, the start of the great era of dam building on the Columbia and its tributaries. Rivers were to be "working rivers." Cheap electricity would stimulate agriculture and industry, promoting regional growth. Mainstem dams would accommodate barge navigation, and link even Lewiston, Idaho, to Pacific Rim markets. By the 1970s, dams blocked fish access to half their former spawning habitat. Idaho salmon had to pass eight dams,

downstream as juveniles, and upstream as adults.

Fish were too important to be ignored; instead they were dealt with in a climate of technological optimism. For every problem caused by technology or development, there must be a technological solution -- and the fish, fishermen and alternative uses will all survive and prosper. This optimism was misplaced, and salmon numbers continued to plummet, especially in the Snake River basin, and especially since the completion of the four lower Snake dams.

Present debate centers on two tracks the region might follow to promote salmon recovery. The transportation track's goal is to trap smolts at the dams, and transport them by barge or tank-truck to below Bonneville Dam. The in-river track's goal is to improve the river environment for migrating fish, using flow augmentation, spill, improved fish bypass structures at dams, and possibly reservoir drawdown, maybe even to natural river levels. So far there is no consensus (biological, economic, or political) on which of these alternatives is preferable.

What role can economics play in these decisions? The Northwest Power Council's Independent Economic Analysis Board was created to advise the Council on that question. Some argue that economics should have little say in decisions that affect life and death of species. Others feel that economics should have some role in decisions about endangered species. Economics can at least provide information to help society make political decisions about species extinction or recovery. Decisions about cost effectiveness are hard to clarify and harder yet to answer. Which salmon: wild or hatchery? Whose costs: electricity users, irrigators, navigation? Whose benefits should take precedence? Do the benefits justify the costs? In spite of these difficulties, the benefit/cost framework remains an appealing paradigm.

The U. S. Army Corps of Engineers Environmental Impact Statement is only one more step in the ongoing political process of fitting salmon into the balance between economy and environment in the Northwest. No matter what the Corps concludes, any action would require congressional authorization and appropriation. What will happen to the fish? Can we figure out, before they go extinct, what actions are needed to help the endangered stocks recover? How much do we value salmon? Do we have the resources, the knowledge, or the will to make the decisions that may be required to achieve salmon recovery? For me, that remains an open question.

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