

Saving West Coast Salmon

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by Robert T. Lackey

Wild salmon in California, Oregon, Washington, Idaho, and southern British Columbia are in serious trouble. South of the Canadian/United States border, most runs are less than 10 percent of their pre-1850 levels and over two dozen are listed as threatened or endangered under the U.S. Endangered Species Act. Similarly, several runs in British Columbia are listed under the Canadian Species at Risk Act. Worse, from California to British Columbia, many runs have disappeared, and more will follow unless there is a reversal of the long-term downward trajectory (Lackey 2003).

The decline in west coast wild salmon numbers started with the California gold rush in 1848; the causes include water pollution, habitat loss, over-fishing, dam construction, irrigation projects, predation, competition with hatchery-produced salmon and non-native fish species, and many others (Lackey 2004). In political terms, the aspiration to restore decimated wild salmon abundance enjoys broad support; yet wild salmon numbers continue to dwindle. The social dynamics surrounding salmon restoration create what political scientists explain as a wicked, messy policy problem. It is characterized by competing societal priorities, a large and expanding human population (and the resulting pressure on natural resources), the expectation that “experts” can solve the problem with technology, and confusion caused by the unwillingness of salmon scientists and other technical experts to remain neutral in policy debates (Lackey 2007).

Given the widespread support, is there a politically viable solution to reversing the decline of wild salmon in California, Oregon, Washington, Idaho, and southern British Columbia? The Salmon 2100 Project was launched around a restaurant table in downtown Seattle, Washington in 2002, where a group of veteran fisheries scientists mulled over the conference we had attended that day. We had been assembled to discuss policy and management options for restoring wild salmon along the west coast. The atmosphere at the conference was the usual mixture of policy complexity and scientific uncertainty, overlaid with a public veneer of

optimism. As always, the unspoken premise seemed to be: “if the experts could just solve the *scientific* challenges, or if we could just get sufficient *money* for fixing this or that obstacle to migrating salmon, runs could be brought back to sustainable levels.”

In contrast to the *public* conference, however, the tone around the table that evening was markedly gloomy. Everyone agreed that salmon recovery was technically complex and scientifically uncertain, but the challenges were not primarily scientific. Rather, dramatic and far-reaching public policy changes were needed to reverse the decline of wild salmon in the Pacific Northwest. Everyone sitting around the table was skeptical that such dramatic changes were likely to occur.

Many of the conference participants were the same people now sitting around the table, yet the tenor of the two discussions was as different as night and day. It was as if two parallel worlds existed: the public one, with a fairly optimistic perspective, and a private one, with a highly skeptical assessment of the recovery strategies under consideration.

Why the dichotomy? Are fisheries biologists and salmon advocates creating a “conspiracy of optimism”? If the technical experts are truly pessimistic, it is not being communicated to decision-makers responsible for developing and implementing salmon policy nor to the public. To confuse matters further, the fact that most salmon caught in the region are *hatchery* fish renders the status of *wild* salmon essentially invisible to the public. As if to erase any remaining public concern about the sorry state of *wild* salmon, *farm-raised* salmon are abundant in grocery stores, available year-round, and relatively inexpensive.

The Salmon 2100 Project

The goal of the Salmon 2100 Project was to develop a variety of policy options that could, if adopted, protect and restore wild salmon runs from southern British Columbia southward. My co-project leaders and I enlisted 33 salmon scientists,



salmon policy analysts, and salmon advocates; participants who often disagreed, to put it mildly, and several who only grudgingly conceded each others' right to an opinion. Nonetheless, all their views enrich the policy debate and all were invited to participate in the project.

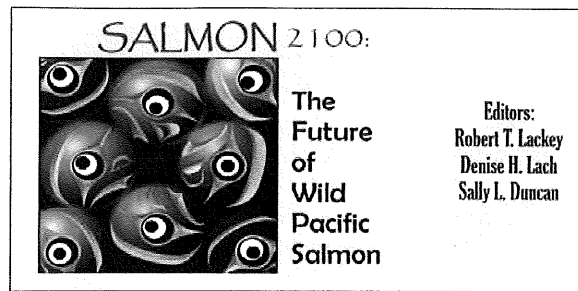
Each Salmon 2100 Project participant was asked the same question: *What specific policies must be implemented in order to have a high probability of sustaining significant runs of wild salmon through 2100 in California, Oregon, Washington, Idaho, and southern British Columbia?* Surprisingly, while nearly all participants concluded that current recovery efforts are largely ineffectual, none of them considered salmon recovery hopeless. Each author formulated at least one recovery strategy or policy prescription that could successfully restore wild salmon runs to significant levels.

What did they think would work? The policy prescriptions tended to fall into several broad approaches (Lackey and others 2006): 1) Employ Technological Intervention, 2) Apply Ecological Triage, 3) Change Bureaucracy, and 4) Domesticate the Policy Issue.

Employ Technological Intervention

Some authors openly accepted the reality that there would be a quadrupling of the human population along the west coast by 2100 and that most people will not drastically alter their life style to save wild salmon. Accepting such facts, prescriptions focused on technological intervention solutions such as habitat improvement, including creation of new "engineered" streams to replace lost salmon habitat. Society could also reverse some causes of habitat loss by removing dams, restoring vegetation, and reducing logging and road building.

Similarly, several argued that supplemental stocking from salmon hatcheries would be required to sustain salmon production at fishable levels. Some suggested that the controversy over *wild versus hatchery* salmon is misplaced, since the dispersal of hatchery fish to different streams over many decades has resulted in a massive mixing of the gene pool, making the goal of genetic purity impractical. Many authors felt that supplemental stocking could be a useful tool to assist in salmon recovery, and if society desires salmon in harvestable numbers, improvements in hatchery



practices will be critical.

Apply Ecological Triage

Six of the policy prescriptions called for focusing resources and recovery efforts on the most pristine and productive watersheds. The rationale is that, despite spending billions of dollars, it is nearly impossible to restore runs once they are threatened or endangered. Some authors shared a common philosophy that at least some streams should be managed as refugia where no salmon harvest or other detrimental practices are allowed. One proposed the creation of a Wild Salmon National Park in the region, observing that one of the most successful methods for protecting endangered species is to create national parks where citizens can experience the species in its habitat. Another proposal would create salmon sanctuaries in designated watersheds where salmon will be protected and restored.

With nearly all the triage strategies, there was reluctance to bluntly identify the downside: no one wanted to "write off" (from a wild salmon perspective) the watersheds that show little promise for maintaining wild salmon runs through the balance of the century.

Change Bureaucracy

Several authors assigned responsibility for the failure of wild salmon recovery to various government agencies or specific organizations. These authors feel that successful salmon recovery would require major changes in "the bureaucracy". They observed that bureaucratic institutions are often built on practices and policies that do more to support the continued existence of the institution than to solve a particular problem. Authors identified other examples of "institutional incompetence" in salmon recovery, such as applying inflexible rules, and allowing elected officials or citizens to make decisions not based on the best available science.



Policy prescriptions included moving toward a more decentralized recovery effort, with rural residents playing key roles, and the appointment of officials who will solve problems using the best available science rather than personal preferences.

Domesticate the Policy Issue

Some prescriptions fell into a category that political scientists call “policy domestication”, which is the political process of taking difficult, divisive issues off the table until a solution emerges, or the problem disappears on its own (e.g., the species is extirpated). The most common forms of domestication are funding more research, holding workshops and discussions, and tweaking current policies, to provide the illusion of action.

Clearly, offering policies that will domesticate the salmon decline issue is easier than developing policies to reverse the decline. Reversing the decline would require changing at least some of the following socio-economic realities: 1) most rules of commerce and economic growth are barriers to salmon recovery, 2) ecological options are limited by the increasing scarcity of key natural resources like water, 3) the current trajectory for the region’s human population precludes many recovery goals, and 4) life-style preferences speak louder than words when it comes to support for salmon recovery.

Instead of proposing ways to change these socio-economic realities, most authors suggested variations on existing policy options: revise the Endangered Species Act or the Species at Risk Act, protect more salmon habitat, create new hatchery practices, offer K-12 education programs, and change public attitudes. The proposed domesticating strategies tacitly assume that at some future time we will formulate and agree on a viable solution. In reality, the public may not even be sure what the problem is, much less know what possible solutions exist.

Our Choices

We are currently in a holding pattern since the salmon recovery problem has been largely domesticated politically. As a society, we appear to be waiting for something to change, something that will shake us into a place where the problem becomes so apparent that the way forward is both clear and acceptable.

Society may eventually decide that the best we can do is create large-scale salmon parks, as has been done for the buffalo in Yellowstone National Park, for the enjoyment of our great-grandchildren. Historians of 2100 may wonder why we spent billions of dollars on salmon recovery when we had so many other pressing needs: poverty, defense, health care, drug abuse, crime, and disaster relief. Conversely, society may opt for making the difficult decisions to actually restore significant, sustainable runs of wild salmon.

Ultimately, of course, it is the general public that must become knowledgably engaged in salmon policy debates if effective decisions are to be made. The book, *Salmon 2100: The Future of Wild Pacific Salmon*, discusses what would have to change if wild salmon recovery efforts in California, Oregon, Washington, Idaho, and British Columbia are to have a chance of success.

Additional Information

Additional information and references on the Salmon 2100 project can be obtained online at <http://oregonstate.edu/dept/fw/lackey/Salmon2100.htm>. *Salmon 2100: The Future of Wild Pacific Salmon* is published by the American Fisheries Society and can be purchased for \$55 online at <http://afsbooks.org/x55050xm.html>. The citation for the book is Lackey, R.T.; Lach, D.H.; Duncan, S.L. 2006. Editors. *Salmon 2100: The Future of Wild Pacific Salmon*. Bethesda, MD: American Fisheries Society. 629 p.

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