

Salmon 2100 Project

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Book Specifics:

Editors:	Robert T. Lackey, Denise H. Lach, and Sally L. Duncan
Title:	<i>Salmon 2100: The Future of Wild Pacific Salmon</i>
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Year:	October, 2006
Length:	629 pp.
Cost:	US\$39.00

Questions Asked to Dr. Lackey:

Q: What is the current status of salmon runs in western North America?

A: *"For wild salmon, runs are generally less than 10% of the levels of pre-1850 in California, Oregon, Washington, and Idaho. Runs in southern British Columbia are also much reduced, but not as much as in the lower 48 states. A number of runs are listed as threatened or endangered under the Endangered Species Act (U.S.) or the Species at Risk Act (Canada). In the U.S., many runs are extinct. It is likely that many others will go extinct through this century unless there is a dramatic change in the long-term downward trajectory."*

Q: For the purposes of the Salmon 2100 Project, how is the Pacific Northwest Defined?

A: *“California, Oregon, Washington, Idaho, and southern British Columbia. The salmon runs in this region tend to track similar trends.”*

Q: What are the main policy drivers that will most likely determine the overall future of wild salmon in the Pacific Northwest?

A: *“There are four core drivers that most likely will constrain all salmon recovery strategies through this century. They are: (1) the economic rules of the game, especially the international and domestic drive for economic efficiency; (2) the increasing scarcity and competition for key natural resources, especially for high-quality water; (3) the rapidly increasing numbers of humans in the region and the requirement to meet their basic needs; and (4) individual and collective lifestyle choices and priorities. Any salmon recovery strategy must address these core policy drivers if that strategy has any chance of successfully restoring wild salmon runs.”*

Q: What is the general relationship between the human population level and the condition of wild salmon runs?

A: *“In the four places on the planet where salmon originally occurred, the same pattern followed: as the number of people increased, the number of wild salmon decreased. Starting with the discovery of gold in California in 1848, the same downward pattern for wild salmon has been shown in California, Oregon, Washington, Idaho, and southern British Columbia.”*

Q: How will the urban landscape in the Pacific Northwest be different in 2100?

A: *“The best current guess is that the corridor between Seattle and Vancouver, British Columbia will fill in to form the metropolis of “Seavan” with a population of 30 million. The Willamette Valley from Eugene to Portland will be largely covered with the metropolis of “Portgene” with a population of 6 million. These numbers are, of course, estimates based on the best available evidence. They could be higher or lower.”*

Q: Polling data shows strong public support for wild salmon recovery so given this apparent support from the public, why does the long-term forecast for wild salmon look so bleak?

A: *“No one is against saving wild salmon as the polling data show, but most people also have other priorities, many of which are the same as those of salmon. In short, salmon and humans compete for the same natural resources: streams, lakes, riparian corridors, estuaries, and so on.”*

Q: Can significant runs of wild salmon exist with large human populations?

A: *“It may be theoretically possible for large numbers of people to exist with large numbers of wild salmon, but it has never happened in the past. As the numbers of people in the Asian Far East increased, the number of salmon declined. As the numbers of people in Europe increased, the numbers of salmon declined. As the numbers of people in eastern North America increased, the number of salmon decreased. So far, the trend in western North America has followed a similar pattern.”*

Q: Why is it that salmon have such a difficult time surviving with large numbers of people when many other species seem to prosper?

A: *“Salmon have a life cycle that involves both a freshwater and a marine phase coupled with the requirement to migrate between the two. They also require high-quality fresh water in sufficient quantity and at specific times. Overall, they pretty much compete for the same natural resources that people need. Dams and other human developments hinder or even block access to spawning and rearing habitat. Farming and urbanization alters streams in ways not favorable to salmon. The reality is that nearly everything that people do is harmful to wild salmon at least at some level.”*

Q: How did the Salmon 2100 Project come to be?

A: *“Several years ago I was among a number of professional fisheries scientists who met informally after attending one of the hundreds of salmon recovery meetings that take place every year up and down the west coast of North America. That particular conference wasn’t unusual. Speaker after speaker addressed technical issue after technical issue. During the meeting there was an unstated but unmistakable aura of optimism about the future of wild salmon. No one lied to or intentionally misled the public, but I think most non-experts attending would have*

concluded that salmon recovery was certainly a challenge, but the prospects of successful recovery were looking pretty good overall. In the evening, after the conference, the tone of the conversation was decidedly different. None of the technical experts personally felt that wild salmon had much of a long-term future in California, Oregon, Washington, Idaho, or southern British Columbia unless changes in policy occur. That was not the message that anyone heard or understood during the day-long public meeting. The Salmon 2100 Project started as a response to the dichotomy between what the technical experts apparently believed and the message that was being heard by the general public. The purpose of the Salmon 2100 Project was from the beginning to provide a blunt assessment of the future of wild salmon in the region using the best available estimate of current trends and to identify those changes that would have to take place to ensure significant, sustainable runs of wild salmon through this century and beyond.”

Q: Who is leading the Salmon 2100 Project?

A: *“The project is a joint effort of Oregon State University and the EPA research laboratory in Corvallis, Oregon. There are 3 Project Leaders: Drs. Denise Lach and Sally Duncan are with Oregon State University and I am with the EPA lab in Corvallis, Oregon.”*

Q: Which recovery approach do you or the other Project Leaders support?

A: *“The Project does not endorse any approach to salmon recovery because it is up to the public to determine the relative importance of salmon recovery compared to the competing priorities. Our personal views didn’t enter into it and they shouldn’t. It is up to the public to decide on the tradeoffs that are necessary if wild salmon are to continue in significant numbers through this century.”*

Q: Isn’t it difficult to avoid taking a policy position when considering something so politically charged as salmon recovery?

A: *“We have made a very concerted effort to be honest brokers in running the project. We are well aware that people have many legitimate policy priorities of which salmon recovery is only one. We don’t take sides or let our personal policy preferences affect our efforts to present the best possible analysis of the suite of policy choices that the public has.”*

Q: What types of individuals were selected to be part of the Salmon 2100 Project?

A: *“The 33 participants in the Salmon 2100 Project were selected as nearly as possible to represent the full spectrum of policy perspectives relative to salmon recovery.”*

Q: How is the human population in the Pacific Northwest likely to change through this century?

A: *“The human population in the Pacific Northwest (Oregon, Washington, Idaho, and British Columbia) is currently 15 million. No one can predict with confidence exactly how much larger it will be by the end of this century, but it will be many times larger than it currently is. While the world-wide population is expected to stabilize by about 2080, the Northwest is what demographers call “fill-in” country, and will certainly continue to grow due to immigration. Our population in 2100 will most likely reach somewhere between 50 and 100 million. In our view, those involved in salmon recovery should use this estimate of the human population as the assumed level for developing credible recovery plans. California is a little different in that there are already 40 million people there. It is expected to continue to grow through this century, but at a slower rate than the Pacific Northwest.”*

Q: What were the general conclusions from the participants involved with the Salmon 2100 Project?

A: *“Nearly all the participants concluded that the current recovery efforts in California, Oregon, Idaho, Washington, and southern British Columbia will not sustain significant runs of wild salmon through 2100 and beyond.”*

Q: The results of the Salmon 2100 Project could be considered pretty negative, even doom-and-gloom. Is there any good news in the results?

A: *“Well, the results might be interpreted as doom-and-gloom by those who rank salmon recovery as a high priority. Others who view salmon recovery as just one of many competing priorities could also be fairly pessimistic because it appears that society will continue to spend considerable money and cause a lot of social dislocation in a futile attempt to reverse the decline. We are neither pessimistic nor optimistic. We describe the future the way we see it. We are not trying to make people feel good or bad about anything. Nearly all the participants in the Project concluded that current recovery efforts overall will not be successful, but it*

is important to remember that all of them also concluded that there are viable policy options available. These policy options might be radical and each would be difficult to implement, but the point is that there are policy options that have a good chance of restoring wild salmon runs to significant, sustainable levels through 2100 and beyond.”

Q: How will you measure the success of the Salmon 2100 Project?

A: “The goal of the Project is primarily educational. First, we want to provide the public and others with a no-nonsense forecast of the future of wild salmon given current trajectories. Second, we want to offer the public a selection of recovery strategies that would likely maintain significant, sustainable runs of wild salmon in California, Oregon, Washington, Idaho, and southern British Columbia. Whether the public adopts any of the proposed strategies is, of course, a choice that must be made by elected and appointed officials.”

Q: Why emphasize wild salmon? What's the difference between wild, hatchery, and farm raised salmon?

A: “Most of the policy and legal concerns over salmon have been about the status of wild salmon. The retail market is dominated by farmed-raised salmon that mostly come from Chile, Norway, Canada, and Scotland. Most of the salmon runs in California, Oregon, Washington, and Idaho are dominated by fish from hatchery breeding programs. Hatchery salmon are released at the same time that wild-spawned salmon would migrate to the ocean. They mix in the ocean and during their return to freshwater. Salmon spawned in the wild and those spawned in the hatchery look the same and appear the same except for some genetic differences. Past hatchery practices tended to create measurable differences between hatchery produced salmon and wild salmon in the same run. Through hatchery practices, these differences can be greatly minimized, but at least theoretically cannot be totally eliminated. One thorny challenge in salmon recovery programs is that hatchery produced salmon are often abundant and can support harvest, while the wild fish part of the run are usually much less abundant but are caught anyway. In the fisheries profession this is referred to as the “mixed stock” fishing problem.”

Q: If salmon are truly in jeopardy, why are they so inexpensive to purchase at the supermarket?

A: "Most salmon in the retail market are produced in "fish farms" located in Chile, Norway, Scotland, and Canada. The retail salmon sold as "wild" are most commonly from Alaska and northern British Columbia where they are abundant and at no risk of extinction."

Q: Were the authors paid by the Project sponsors to write policy prescriptions? Do their prescriptions represent their agencies or organizations?

A: "No one was paid by the Project sponsors to develop their policy prescriptions. All of them are representing their personal views which may not be those of their employers. Some participated in the project as part of their jobs. All chapters carry the disclaimer that the views and opinions expressed by the author do not necessarily represent those of any organization."

Q: Certainly some experts must believe that current recovery efforts will sustain wild salmon into the next century. Are there authors in the book whose chapters represent this view?

A: "Even the few authors who were slightly optimistic about the likely success of current recovery efforts are not all that positive in their conclusions. Generally their view was that because we cannot say for sure that the current recovery efforts will fail, we should be cautious about saying anything definitive one way or the other. It is not a vote of confidence for our current efforts."

Q: What is the most important single factor determining the future of wild salmon in the Pacific Northwest?

A: "The most important single driver determining the ecological future of the Pacific Northwest is the human population – its size and distribution, as well as the activities of individual people and their institutions."

Q: How common is it for government to allow for hunting and killing listed species?

A: "Threatened and endangered salmon are the only listed animals for which government routinely licenses large numbers of people to kill them."

Q: When will the science be sufficient to provide the answer?

A: *There is no scientifically correct approach to restoring runs of wild salmon, but rather a suite of alternatives with 'best' largely being a function of which vision of salmon restoration one accepts. The choice of the preferred policy option is a public choice in which the contribution of science is to evaluate the consequences of each policy option."*

Project Leader's Background:

Dr. Robert T. Lackey is senior fisheries biologist at the U.S. Environmental Protection Agency's research laboratory in Corvallis, Oregon. For over two decades, he has also been courtesy professor of fisheries science and adjunct professor of political science at Oregon State University. Since his first fisheries job 42 years ago mucking out raceways in a Sierra Nevada trout hatchery, he has dealt with a range of natural resource issues from positions in government and academia. His professional assignments have involved many aspects of natural resource management, but especially the interface between science and public policy. He has published over 100 scientific journal articles. His current professional focus continues to be providing policy-relevant science to help inform ongoing salmon policy discussions. Dr. Lackey also has long been active in natural resources education, having taught courses at six North American universities. He continues to regularly teach a graduate course in ecological policy at Oregon State University and was a 1999-2000 Fulbright Scholar at the University of Northern British Columbia. A Canadian by birth, Dr. Lackey holds a Doctor of Philosophy degree in Fisheries and Wildlife Science from Colorado State University, where he was selected as the 2001 Honored Alumnus from the College of Natural Resources. He is a Certified Fisheries Scientist and a Fellow in the American Institute of Fishery Research Biologists.
