Review of Book: *Upstream: Salmon and Society in the Pacific Northwest*

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Citation: Lackey, Robert T. 1998. *Northwest Science*. 72(1): 68-69. [Review of: *Upstream: Salmon and Society in the Pacific Northwest*. Committee on Protection and Management of Pacific Northwest Anadromous Salmonids, National Academy Press, Washington, D.C., 1996].

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Upstream: Salmon and Society in the Pacific Northwest

Committee on Protection and Management of Pacific Northwest Anadromous Salmonids, 1996. National Academy Press ($44.95)

Is there really much more that could be written about the decline of salmon in the Pacific Northwest? After all, the scientific aspects of the salmon decline have been reasonably well known for many years. Sure, we learn a little more each year about the biology of salmon, but the salmon "problem" doesn't have a lot to do with fish or even science. It is about tradeoffs—difficult, unpopular, wrenching tradeoffs. If only it were otherwise. Concern over the decline of salmon is an example of a wickedly challenging ecological policy question for which there are no easy answers, nor solutions that only require spending more money.

How, then, is it that we need another scientific review of the decline of Pacific salmon? The Committee on Protection and Management of Pacific Northwest Anadromous Salmon was formed in 1992 by the National Research Council at the request of Congress. The committee's charge was to evaluate the options for long-term sustainability of salmon stocks and the economic and social consequences of such changes, ground that had been plowed by many others.

The technical facts of the case are well known. Pacific salmon (including steelhead and sea-run cutthroat trout) have disappeared from nearly half the area of the U.S. Pacific Northwest (Washington, Oregon, Idaho, and Northern California) where they occurred as recently as a century ago. Many of the remaining runs are severely depressed. Even most of the significant runs that still exist are composed predominantly of hatchery-bred fish. The causes, both oceanic and land-based, for the decline are reasonably well known although there continues to be vigorous scientific debate as to the relative ranking of the causes.

The specific directives issued to the committee were to (1) assess the state of salmon stocks in the Pacific Northwest, (2) analyze the causes of their decline, and (3) analyze the options for reversing the apparent downward trend. The committee was not asked to recommend what, if anything, society *should* do, but to inform the public and Congress of what the likely consequences would be for various options under consideration. Items 1 and 2 are the subject of other technically sound reviews. Item 3 could be interpreted as either part of a larger public policy question of which salmon are only one of many tradeoffs, or as a purely "salmon" issue with the societal decision options being unrealistically constrained.

The committee's directives essentially defined the salmon "problem" as it is typically treated—a "fish" problem rather than a public policy problem. The tacit dictum is "If we just had more scientific information, we could solve the problem, perhaps even not too painfully." What usually follows the results of one analysis of the salmon problem is a call for another study with better, more insightful scientists who will be able to solve the problem. To a large degree, the membership of the committee reflects this orientation. The members are all eminent professionals who represent some of the best in the fields of fisheries, limnology, aquatic biology, zoology, hydrology, genetics, molecular biology, biometrics, and conservation biology. To be sure, there are a few members with professional interests in natural resource economics, anthropology, and public policy, but the committee membership is pretty much a "biologist's committee."

But the salmon "problem" is not really about the decline or loss of salmon runs, the appropriate role of hatcheries, nor even whether certain salmon stocks should be listed as threatened or endangered. Rather it is a clash of an array of values and preferences, many of which are mutually exclusive. Society and individuals make choices within ethical, economic, and political contexts. Salmon are simply one of many competing values and preferences in the marketplace of democracy and public policy.

The book is organized into 15 chapters that collectively provide an admirable summary of what is known about Pacific salmon, especially life history, genetics, geography, ecology, role of human influences, and the status of the salmon stocks in different geographic areas of the Pacific Northwest. Other chapters deal with the influences of habitat alteration, dams, fishing, and hatcheries. This material is not new but is presented in a concise, readable way.

There are also chapters and sections that deal with public choice issues and how those choices affect salmon, but this material comprises a small portion of the book. The chapter on values and institutions is especially helpful, but does not go beyond a general discussion of the issues. From my perspective this is a weakness. The book in the aggregate reflects, perhaps appropriately, the committee's charge: to provide a fairly narrow definition of the salmon problem. However, the real societal tradeoffs are agriculture vs. salmon, energy vs. salmon, affordable housing vs. salmon, personal mobility vs. salmon, population growth vs. salmon, tax policy vs. salmon, individual rights vs. collective rights, and inter- vs intra-generational tradeoffs. There is, of course, no correct scientific or "right" decision to any of these tradeoffs, although scientists can provide an assessment of the consequences of the various alternative decisions. A little reality might help; if the Pacific Northwest continues to grow as it has for the past 50 years, the area will be inhabited by 65 million people.

In spite of its limitations, this is a very good book and worth the purchase price to anyone interested in salmon biology and policy. It is unfortunate, however, that such a highly visible effort did not concentrate on the heart of the salmon policy question, societal tradeoffs of which salmon is only one of many. Perhaps its time to look at alternatives to restoration of salmon, such as managing for fish species better adapted to the highly modified aquatic and terrestrial environments of the Pacific Northwest.

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