

Policy Conundrum: Restoring Wild Salmon to the Pacific Northwest

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Abstract. Restoring wild salmon runs to the Pacific Northwest is technically challenging, politically nasty, and socially divisive. Past restoration efforts have been largely unsuccessful. Society's failure to reverse the continuing decline of wild salmon has the characteristics of a policy conundrum: nearly everyone supports, abstractly at least, restoring salmon runs; considerable public and private resources have been devoted to their restoration; but society collectively remains evidently unwilling to make the painful decisions clearly necessary to arrest their decline. The salmon policy conundrum is characterized by competing societal priorities being adjudicated in a political environment where few are willing to acknowledge publicly the future consequences of prior *de facto* policy choices. Decisions already made have greatly circumscribed the status of wild salmon in the Pacific Northwest through *at least* the next several decades. Barring a near wholesale reversal of many of society's previous decisions (and apparent priorities), and allowing for considerable year-to-year and decade-to-decade variation in run size due in part to oscillations in climate and oceanic conditions, I conclude that through the twenty-first century, many, perhaps most, stocks of wild salmon in the Pacific Northwest likely will remain at their current low levels or continue to decline in spite of current protection and restoration efforts.

Keywords: Salmon, Fisheries, Endangered Species, Extinction, Pacific Northwest

1. INTRODUCTION

In the Pacific Northwest region of North America, the most vocal public concern over salmon policy is driven by the documented decline of *wild* salmon (Lichatowich, 1999; Lackey, 2000). The extent of the decline is not accurately known, nor will it ever be known with certainty, but the decline and public concern are real (Lackey, 1999a). Public concern is not limited to loss of a food or recreational resource because farm-raised and imported wild salmon (mainly from Alaska) are readily available for retail sale, and supplemental stocking could maintain at least some runs in perpetuity, albeit at high economic and ecological cost.

Many people view salmon as a cultural symbol and deem further reduction of remnant wild runs as an indicator of a grave decline in the quality of life in the Pacific Northwest. Such passion for wild salmon does not necessarily mean that advocates are unwilling to trade salmon for competing priorities, but it does mean that maintenance of salmon is a pivotal policy for them; in fact, for some individuals,

restoring wild salmon runs is *the* foremost public policy objective.

Developing a widely supported policy on reversing the salmon decline is an apparent conundrum (Lackey, 2000). Maintaining wild salmon runs commands widespread public support, but there are important competing societal priorities, many of which are in partial or total conflict with maintaining salmon runs. Further, the burgeoning number of people in the region creates increasing pressures on all natural resources (including salmon), while political stances in the salmon debate are entrenched.

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. The human population of the Pacific Northwest is growing rapidly — at a rate comparable to those of some Third World countries. From the post Ice Age waves of aboriginal immigrants from the North, to the influx of North Americans (and Europeans) from the East during the

past two centuries, to the deluge from California and southward after the Second World War, the Pacific Northwest has been transformed in a few thousand years from a relatively uninhabited corner of the planet to one of the most urbanized regions of the United States with nearly three-quarters of the population residing in urban communities (1990 US Census). The human population surely will continue to grow in the Pacific Northwest.

2. POLICY OPTIONS

It is debatable whether viable public policy options exist in the overlap between what is ecologically possible for restoring wild salmon and what is desired (apparently) by society (Lackey, 2000). For most people, the choices are difficult, unpleasant, and preferably avoided if possible. For example, choices in the salmon policy debate include:

How expensive will energy be?

Where will people be able to live?

How will use of private and public property be prescribed?

Which individuals and groups will be granted the right to fish?

Will human food and energy continue to be subsidized?

Will society be able to provide high paying jobs the next generation?

What personal freedoms, if any, will be sacrificed to restore wild salmon?

What, if anything, will society do to control the increase the human population in the Pacific Northwest?

It is the answers to these and other questions that fundamentally determine the future of wild salmon stocks. Science can help evaluate the consequences of different policy options, but the salmon "problem" is an issue of *societal* choice (Lackey, 1999b).

Lest we assume that the decline of wild salmon is exclusive to the Pacific Northwest, it is not: the demise of most salmon stocks in Europe, the Asian Far East, and the Northeastern United States are strikingly parallel to what is now happening in the Pacific Northwest. Most of the wild salmon stocks in these other areas have vanished, yet, even in those locations, no *species* of salmon currently faces extinction.

Is society chasing an illusion in attempting to restore wild salmon, considering growing human population in the Pacific Northwest? The habitat of the Pacific Northwest is dramatically different than it was even a few hundred years ago. The Columbia Basin, for example, is now dominated by a series of mainstem and tributary lakes formed behind dams created for electricity generation, flood control, river transport, and irrigation. Land use (*e.g.*, agriculture, urbanization, hydrological modification, roads, forest management) in much of the watershed has changed the aquatic environment in ways that no longer favor salmon. As dramatic as these changes are, some fishes, especially exotics, are thriving: walleye, American shad, smallmouth bass, and brook trout, to name a few. These exotic species are well adapted to the new environment. From an ecological perspective, skeptics of restoration argue, we are surely past the stage where we can re-create past salmon habitats, and a simple, cheap option would be to manage for those fishes best suited to current habitat.

There have been serious efforts to systematically prioritize salmon stocks to help allocate society's efforts to protect and restore runs. A similar option is to preserve stocks in those locations, such as some "coastal" rivers, where some reasonably healthy wild stocks still exist and the chances of restoration are greater (Michael 1999). Or, perhaps society should stop focusing on stocks, accept some loss of genetic diversity in salmon, and countenance that no *species* of salmon is in danger of extinction and quit worrying about extinctions below the species level? Still others counter by denouncing such acceptance of "reality" as merely admitting defeat in the face of difficult, expensive, and divisive policy choices.

3. ECOLOGICAL REALITIES

The people of the United States and Canada now allocate considerable resources toward an earnest, perhaps futile, attempt to restore wild salmon stocks. Unfortunately, many existing aquatic environments are much altered and not now well suited to supporting wild salmon. In numerous places, for example, wild stocks of Pacific salmon have been supplanted by fish species better adapted to the current aquatic environment, and it may not be possible, realistically, to maintain, much less restore, wild salmon runs. Will society conclude that the *economic* costs of maintaining wild salmon in ecologically suboptimal environments is too high? Will society be willing to bear the great *social* dislocations required to maintain wild salmon runs?

Michael (1999) concluded that

“ . . . society has already decided that anadromous salmonids in the Pacific Northwest will exist in low numbers and less diversity than historically.”

Although far from indisputable, I conclude that over a multiple decadal time scale and allowing for considerable year-to-year and decade-to-decade variation, there is little doubt that many, perhaps most, stocks of wild salmon in the Pacific Northwest will remain at their current low levels or continue to decline in spite of current costly protection and restoration efforts. Based on historic patterns, another cyclic climatic and oceanic change likely will occur early in the 21st century, last several decades, and stimulate modest increases in the size of wild salmon runs generally, but the long-term trend is likely to remain downward.

It may appear that political institutions are unable to act, but, in fact, they are making decisions on the relative importance of maintaining or restoring *wild* salmon compared to competing societal priorities — though few people appear to be happy with the present situation, and everyone publicly professes support for maintaining salmon. Thus, it is likely that society will continue to chase the fantasy that *wild* salmon runs will be restored without massive changes in the number and lifestyle of the human occupants of the region.

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