

The attached peer reviewed paper published in the Alaska Fisheries Bulletin by the Alaska Department of Fish and Game details the position of the state of Alaska in opposition to the view that salmon belong to the area in which they spawn and that they should not be intercepted in other areas. That is, the position of Alaska is unequivocally that contributions of areas which contribute to the growth of salmon may outweigh the contributions of areas around the spawning grounds.

Complete paper at

<http://www.sf.adfg.state.ak.us/FedAidpdfs/AFRB.02.2.156-163.pdf>

CAMF submits this new information in support of the testimony of Pat Martin (RC011) which showed the size difference between smolt and adult sockeye salmon as an indication of the relative value of contributions to the market value of adult salmon.

Marine Factors in the Production of Salmon: Their Significance to the Pacific Salmon Treaty

Jev Shelton and Jeffery P. Koenings

A similar paper describing Canada's perspective has been solicited and is tentatively planned for the next issue (summer 1996) of the Bulletin.

INTRODUCTION

Pacific salmon migratory behavior in the ocean and the critical role of marine residence in salmon production relate to Article III of the Pacific Salmon Treaty (PST). One of the basic objectives of that article, the "equity" principle, provides that each party is "to receive benefits equivalent to the production of salmon originating in its waters." The following international, biological, and economic considerations (1) relate to the Canadian proposition that production of and proprietary rights to salmon are defined solely by spawning location, and (2) form the basis for including marine life stages in the conceptual framework of production employed in the PST. The view developed here is that, for purposes of evaluating fishery equity, salmon production encompasses all aspects of salmon life history.

Production of salmon involves processes that begin with deposition of eggs in freshwater spawning areas and continue throughout their life cycle. After hatching, salmon fry spend from several hours to 2 years (depending on the species) in fresh water and then migrate to marine waters, where they follow species-specific rearing patterns in near-coastal waters and the open ocean. Most salmon growth (generally 99%) occurs during these marine periods.

Salmon life cycles depend on successfully accessing a sequence of habitats, each of which contributes essential elements to survival and growth. Use of these habitats by growing salmon frequently involves sequential residence in Canadian and U.S. waters, and therefore, it is reasonable to propose that those salmon are jointly produced. Furthermore, real costs to both parties are associated with such shared production. Apportioning the economic benefits ultimately generated by these salmon should fairly reflect the relative

contributions to production made in each country's waters.

INTERNATIONAL AND LEGAL CONSIDERATIONS

One of the contentious debates during negotiation of the PST centered on salmon production. Canada argued for wording in Article III that would credit each nation for "production of salmon originating in its rivers." However, the accepted wording, "in its waters," reflected that salmon are the product of much more than freshwater birthplace. Taking into account marine elements of complex salmon life cycles seems intuitively essential in determining legitimate national claims to salmon that cross jurisdictions.

Canada has consistently asserted that a nation has the right to harvest salmon spawned in its rivers and other nations do not. In the Canadian view, equity status should be determined by the relative gross values of intercepted salmon, meaning salmon caught in one nation's fisheries that spawned in the other nation's waters. That is, the gross value of salmon intercepted by the nations' fisheries should be compared, equity being achieved only when the value of the respective interceptions is equal.

An alternative, and in our view, more defensible approach holds that *host nations* (i.e., countries that support the growth of salmon spawned in another country) are not simply interceptors of another nation's salmon. Rather, each country in whose waters salmon live and grow contributes essentially to the well-being of those stocks. As Yanagida (1987) observed, host country contributions may be greater than those of the nation with jurisdiction over the spawning grounds. The Canadian position disregards the role of U.S.

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