

Salmon Ranching in Chile

ICLARM's Role

COLIN NASH

Kramer, Chin & Mayo, Inc.
1917 First Avenue, Seattle
Washington 98101, U.S.A.

In 1976, ICLARM, in cooperation with the Oceanic Institute (Hawaii) and with financial support from the Rockefeller Foundation and the Tinker Foundation, developed a proposal based on a hypothesis by Dr. Timothy Joyner made in 1975 that salmon, properly introduced into the waters of the Southern Ocean, could provide a useful focus for a new approach to a rational, international system of fishery management. By such introduction, the southern waters of South America could be seeded with highly valued, easily harvested pelagic species capable of sustaining a major new fishery free of many of the entrenched interests and precedents that have inhibited rational management of fisheries in the northern hemisphere.

The land base most suitable for launching salmon into the Southern Ocean is the southernmost extremity of Chile. Projecting further south than any other continental land mass, except ice-covered Antarctica, it is a region of channels and fjords into which flows an abundance of clear, fresh water from the snow fields and glaciers of the Cordillera Darwin.

Appropriate stocks were to be seeded at a position below the divergence of the West Wind Drift. This westerly current strikes the coast of Chile continuously, but the divergence moves between latitudes of 35° to 45°S with seasons. Seaward migrating salmon, released south of latitude 46°S, would be carried into the cold, highly productive water around the Antarctic Convergence.

The transplantations carried out since 1972 by the JICA-Chilean government project were at 45°35'S (see p. 6). One reason given for the lack of returns to date is that the migrants were likely to be carried north by the Humboldt Current into warmer waters unsuitable for them. The JICA project has been releasing chum salmon, a far-ranging species not likely to

remain close to coastal areas but which move out into the ocean currents on its outward migrations.

In 1975 Dr. Tim Joyner and I made a preliminary evaluation for ICLARM of a number of regions in southern Chile around the Straits of Magallanes. This was followed in 1976 with investigations in salmon transplantation and propagation.

These activities were carried out in cooperation with the Chilean Division Proteccion Pesquera and with the assistance of the Chilean Navy and Airforce.

A number of sites for hatcheries were identified throughout the southern region of Chile. We estimated that the annual release of 10 million salmon smolts would produce sufficient returning fish to make the project self-supporting in eggs in about five years. Chum salmon was selected because of its far-ranging migratory behavior and its ability to return successfully in sufficient numbers to make annual propagation possible. A detailed project proposal, based on our findings was prepared in cooperation with the Chilean government.

The Chilean government indicated its interest in having ICLARM continue as the project's external, technical advisory agency, and several visits to Chile were made in 1977 and 1978 in support of the project proposal. However, funds could not be made available.

In spite of the fact that the project developed by ICLARM has not been funded, it remains one of the most exciting and potentially profitable fisheries projects that could be developed in the otherwise underutilized Southern Ocean. The large resources of krill present in the Southern Ocean could supply one of the most significant fisheries ever to be propagated and managed by man.

The ICLARM project produced three positive results: it brought Dr. Joyner's theory a step closer to a practical test; it awakened the interest of the private sector in salmon ranching, and revived international interest in the concept of sea ranching.

In fact, the private sector in Chile has been moving ahead successfully. Domsea Pesquera Ltda. set up a small pen-rearing and release project in central Chile. Two years after their first releases, the salmon began to return. Following this success (article p. 9), Domsea sought another location to the south in the Straits of Magellan on a river rated as suitable by the ICLARM site team. The first fish will probably be released from this site as this article is published. This second age of salmon transplants might finally achieve the seeding of the Southern Ocean. ○

Salto Grande in the Torres de Paine National Park, one of the promising salmon hatchery sites in southern Chile identified by the ICLARM project. Photo by Colin Nash.

