

Epilogue: Reconstructing the Past and Rebuilding the Future of the Strait of Georgia

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Fisheries resources are rapidly being lost throughout the world, mainly as a result of excessive modification, by fishing, of the ecosystems in which these fisheries resources are embedded. (Pitcher 1999a, Pitcher and Pauly 1998, Pauly et al. 1998).

For British Columbia, this gradual process of grinding down one resource after the other was documented in Glavin (1996), based on data and concepts of up to the mid 1990s. Nothing has much has changed since, except that straightforward approaches for examining fisheries impacts in an ecosystem context of have become widely disseminated and accepted (NRC 1998). These new approaches, notably Ecopath, as presented in this report, and Ecosim (Walters et al. 1997), have helped quantify impacts previously thought to be inaccessible. Recent analyses based on these approaches show human impacts to be far more profound than previously anticipated (see e.g. Pauly and Christensen 1995, and Pauly et al. 1998).

In British Columbia, the strategy to deal with such problems has been to date to conduct an 'Enquiry' - the current one is the 'Peckford Enquiry' - then to issue a report calling for 'better management' of the resources. The resources don't notice much difference after the recommendations are implemented - increases in catching power usually more than offset the bandaids.

The problem is that the fish - particularly salmon - are no longer there that would meet the combined demand by the various fishery sectors, which leads to acrimonious debates about who should get what (Walters 1995).

Yet there was undoubtedly more fish in the Strait of Georgia in the past (Glavin 1996; and contributions in this volume). So why not aim at rebuilding the stocks? To a large extent, the

measures that should be taken to rebuild stocks are the same as those that will have to be taken to prevent species from being lost in the near future (e.g. coho salmon), and added to the many that have already gone locally extinct in the Strait of Georgia. These measure include: (1) a strong reduction of fishing effort, especially by unselective industrial gear (e.g. trawlers and purse seiners); (2) the establishment of substantial marine protected areas, as required esp. for sedentary organisms, such as abalone and other invertebrates, but also for many fish species, such as rockfishes and homing local herring stocks; and (3) small stream rehabilitation (for the large number of small salmon runs that jointly could restore a formerly massive abundance).

Public support can be expected for an explicit strategy of the Strait of Georgia ecosystem, as shown for example, by the strong positive response which followed the recent publication, in the *Georgia Straight*, of a thoughtful article on these and related issues (Baron 1998), and the similar series in the Vancouver Sun (see e.g. issue of Friday 5, June 1998).

The "Back to the Future" process includes the model reconstruction of past and present ecosystems, Ecosim and Ecospace exploration of the limits to fishing Walters et al. 1997, 1998, and the evaluation of economic and social benefits for each alternative ecosystem. The "Back to the Future" approach is structured such that it encourages discussion of what might be achieved from, and is open to contributions by, diverse elements interested in the fisheries resource, including fishers, scientists, First Nations, historians, conservationists and laypersons. All can contribute to the models representing past ecosystems. Once consensus on previous system configurations is achieved, the discussion can move on to desired ecosystem configurations, and thence on how to achieve those (Pitcher et al. 1999). The alternative to such an open process is the opaque allocation scheme we presently have, which satisfies no one, to which only a high priesthood can contribute, and which tends towards elimination of one resource species after the other.

This report represents only just over three months work by our graduate students team, the 2-day workshop, and some intensive weeks of effort on the part of the editors. As far as the Strait of Georgia is concerned, it is incomplete and far from definitive. We likely need ten times as much effort to reach the next stage of

understanding, before the modelling system could reliably be used to structure policy choices. Fortunately, there exists an immense archive of painstaking ecological research, historical documents and archaeological records concerning Strait of Georgia resources which can be tapped by such a project – all older research surveys, analyses and records have a value and can be used in the “Back to the Future” approach. In addition we have barely scratched the surface of the Traditional Ecological Knowledge that might be harnessed for the first time to real policy evaluations with the consent and support of the First Nations bordering the Strait of Georgia.

The next methodological work that needs to be done is to formalise ways of examining the ecosystem that maximises benefits to society; to design practical instruments to achieve this policy goal; to find ways of evaluating the costs of these management measures; and to devise adaptive ways to implement policy and monitor recovery and compliance. The benefits evaluated can include total catch, economic value, diversity of fishery products, employment, biodiversity and inter-sectoral conflict. Using Ecoval (Pitcher et al. 1999), the ecosystem and associated fisheries that maximize total benefit to society may be adopted as a policy goal, taking into account the costs of restoration, monitoring and enforcement when shifting from the present system. Pitcher (1999b) suggests that the “Back to the Future” process has a number of advantages in fostering public support for management goals, and public participation as sentinels of recovery process.

We hope that the momentum created by 'Back to the Future' will continue, that various interested groups will carry on, and help turn around what right now is a rather bleak situation in the Strait of Georgia.

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