The Need for Balance in Canada's Fisheries Policy

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by Parzival Copes

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THE THREE PILLARS OF FISHERIES POLICY

Making optimal use of fishery resources for the people of Canada requires appropriate government action in three important policy areas. They are concerned with:

- Biological sustainability
- Economic efficiency
- Social equity

Depending on circumstances, it may be necessary for the government, at any one time, to focus particularly on needed action in one of the three areas. Thus, it is understandable that when British Columbia’s valuable coho stocks are collapsing, emergency measures must be taken to protect and restore these stocks (Copes 1998b). The benefits of strengthening endangered coho populations are obvious, but this should not blind us to the need to balance these benefits against the high cost of coho conservation.

Strong measures paid for by the government to rebuild coho stocks will have large direct costs in terms of public expenditures born by Canadian taxpayers. However, the greater share of the costs will likely be in the nature of indirect losses suffered by the harvesting and processing sectors of the salmon industry in British Columbia. These losses are related particularly to the severe restrictions placed on fishing healthy stocks, in an effort to reduce mortality of weak coho stocks mixed in with these healthy stocks. They affect commercial fisheries, as well as recreational and Aboriginal fisheries, and may be measured in terms of losses in profits, income and quality of life. Further indirect losses will be suffered by suppliers of the fisheries sectors and by fishery-dependent communities generally, which may find their economic base severely weakened.

Canadian government policy has set a goal of zero fishing mortality for endangered coho stocks. This has emotional appeal to many, but achieving true zero fishing mortality for these stocks is practically impossible. Despite strong efforts and enormous costs we have not come close to it this past year. At some point on the way to an attempted zero mortality we need to ask how much is saving one more coho worth in terms of its additional cost to fish harvesters, fishing communities and our society overall: $100? ... $5,000? ... $10,000,000? With greatly diminishing returns to the most extreme efforts to approach zero mortality, there comes a point at which the cost of additional attempts at coho protection greatly exceeds its value to society.
POLICY INTERDEPENDENCE AND FEEDBACK LOOPS

The single-minded 'unidimensional' pursuit of a particular fisheries objective in one policy area can become insupportably costly, because of interdependence with other policy areas that may be seriously impacted. Moreover, that pursuit may be counterproductive because of feedback loops within the policy area itself. If coho protection measures close down other salmon fisheries there can be serious negative consequences for salmon conservation. Strong stocks that are then not fished down adequately will crowd spawning grounds, causing disturbance of egg deposits that may lead to excessive mortality in the next brood. Crowding on the spawning grounds may also lead to disease outbreaks that spread among salmon populations. Both of these contingencies have been observed in BC salmon stocks.

UNIDIMENSIONAL POLICY DISASTERS

Canada has an enviable reputation for outstanding work and indeed world leadership in fishery science, fisheries economics and social analysis of the fishery sector. Canadian governments have taken the advice of the country's experts in these areas seriously and have attempted to apply it earnestly, if often not successfully. A real problem has been that the advice has usually come from experts in separate specialized areas, pushing conclusions based on their discipline's narrow view of the world, be it a biological view, an economic one, or a social one. Rather few experts are able and inclined to offer a well-balanced cross-disciplinary and multidimensional perspective, and of them fewer still have caught the ear of government. Thus, following the narrow advice from different single-discipline experts, the focus of Canadian fisheries policy has often jumped around from one set of issues to another, concentrating in turn on social affairs, economic profitability and conservation, without adequate attention to the cross-over effects among policy areas. The results of such 'unidimensional' policy applications, concentrating entirely or primarily on a single policy area, may turn out to be disastrous.

A UNIDIMENSIONAL SOCIAL FISHERIES POLICY

Consider some important examples. Newfoundland joined Canada in 1949, with an economy in which the fishing industry was by far the largest sector, in terms of employment. Fishing incomes were extraordinarily low, while unemployment levels were exceedingly high (Copes1972). Premier Smallwood was exceptionally skilled in drawing financial assistance from the federal government, which acknowledged the need to address the socially adverse conditions in the fishing industry. This lead to a fisheries policy with a dominant social focus throughout the 1950s and 1960s. It attempted both to increase employment and to raise incomes. Large subsidies and cheap government loans were used to outfit more fishermen with boats, gear and supplies and set up more processing plants. Incomes were raised by very generous and heavily subsidized seasonal unemployment benefits. The Maritime provinces with similar fisheries problems, that were only moderately less severe, were also covered by the federal policy. Chronically high unemployment in the Atlantic provinces ensured that the fishery retained its role as employer of last resort (Copes 1983, 1990).
The unidimensional socially-oriented policy that was in place until the 1970s had seriously adverse economic and conservation impacts. Fishing subsidies, widespread defaults on government-backed fisheries loans, and repeated bail-outs of financially failing processing plants, all added to budget deficits and debts at the federal and provincial levels. This, incidentally, contributed to the stressful financial conditions of recent years in which governments in Canada were so preoccupied with necessary debt reduction that they felt compelled to slash critically important expenditures on health care, education and culture, social welfare, economic development, and fisheries management and enforcement.

Meanwhile, the social policy of maximizing employment in the fishery inevitably resulted in overfishing, which reduced catches and depressed incomes per fisherman, while depleting stocks. When biologists recommended lower harvest levels to protect or restore declining stocks, they were at times overruled by politicians anxious to support fishermen-constituents facing declining catches and incomes. This further added to stock decline.

A UNIDIMENSIONAL ECONOMIC FISHERIES POLICY

Some economic concerns regarding the fishery began to draw attention in the 1960s. In the face of increasing evidence of the economic non-viability of the Atlantic fishery, the federal government increasingly turned to economists in search of a new approach in fisheries policy. A policy transformation towards an economic focus started in the 1970s and became dominant in the early 1980s. The government accepted a new theoretical approach to fisheries management recommended by economists who promoted quota-based fisheries especially those in the form of individual transferable quotas (ITQs). This marked a shift towards a unidimensional economic policy, in which social concern was replaced by the rectitude of market-based economics. Fisheries access increasingly was confined to those with the substantial financial resources needed to buy up quotas (or stackable licences in the case of the salmon fishery) (Copes 1994, 1997b).

As might be anticipated, an economic policy focussed exclusively on market solutions, resulted in substantial costs from damage to the conservation and social dimensions of Canadian fisheries. Consider the results in the Atlantic fisheries. While many enthusiasts have hailed quota systems in general, and ITQs in particular, as a panacea for fisheries management problems, the predictable realities of quotas have been sobering (Copes 1986). ITQs generally do offer the advantage of helping to rationalize fishing capacity (Moloney and Pearse 1979). However, they are distinctly vulnerable to a host of problems by giving incentives to quota owners to engage in collectively harmful actions. These include high-grading and other forms of discarding of marketable fish, the black-marketing of catches in excess of often difficult to enforce quotas (quota busting), false reporting of catches and discards (data fouling) that hide transgressions and invalidate stock estimates on which management depends, the misjudgement in advance-estimation of allowable quotas, and several others (Copes 1986, 1994, 1995,1996).

Individual quota systems were introduced in Canada's Atlantic fisheries in 1976 and were rapidly expanded after 1982, soon extending to the larger part of the catch. There has been a great deal of
persuasive anecdotal information regarding large unreported losses of fish through quota busting, high-grading, bycatch waste and data fouling in quota fisheries. These losses came on top of the already weakened condition of Atlantic groundfish stocks resulting from excessive fishing pressure in preceding years, as recounted above. Thus, in 1992, after a decade of extensive use of individual quotas, Canada's Atlantic Coast for the first time ever experienced a massive and multiple collapse of groundfish stocks, from which the fisheries have yet to recover. Successive unidimensional policies focussing first on social concerns and then on economic concerns, combined to produce a massive fishery conservation disaster. In addition they demonstrated the perverse effect of also failing the original policy concerns. In the end they helped produce a socially and economically disastrous loss of 40,000 jobs in the groundfish industry, as well as the closure, removal and/or failure of large numbers of fishing and fish processing enterprises.

A UNIDIMENSIONAL CONSERVATION FISHERIES POLICY

To complete a review of different unidimensional policy approaches it is useful to consider an example of an exclusive conservation policy focus in BC. In 1998 federal fisheries minister David Anderson announced a salmon fisheries policy for which he stated that his three priorities were "conservation, conservation and conservation." It had the beneficial effect of demonstrating the government's determination to deal forcefully with the restoration of BC's endangered coho stocks. But it disregarded the dangers of an unbalanced policy, which when pushed to its logical extreme was bound to result in excessive economic and social losses, as well as collateral damage to salmon conservation itself.

A very large part of the BC salmon fishery was closed in 1998, in support of a fishery policy to achieve 'zero mortality of endangered coho'. The aim was to secure maximum spawning escapement for weak coho stocks mixed in with other migrating salmon. These weak coho stocks in fact made up a very small part of total salmon stocks in BC. But the extensive closures had devastating consequences for the commercial salmon fishery, causing a disastrous drop in catches, resulting in heavy financial losses for operators, many of whom were forced out of the industry. There were also serious negative impacts on recreational and Aboriginal fisheries. Neglect of the economic and social consequences left fisheries policy without a human face and greatly exacerbated hostility of fishermen towards those in authority.

With some foresight, a more inventive fishing plan could have been developed, that was sensitive to the needs in all three policy areas. By applying more well-tuned time and area openings, fuller utilization of surplus stocks could have been achieved, while still affording substantial protection to endangered coho. This could have produced substantially larger catches from surplus stocks and a significant reduction in idle vessel time. In the more collaborative atmosphere that this approach would engender, the entire fleet could have been involved in real-time monitoring and reporting of coho encounters, producing better intelligence on coho migration. A smaller number of more target-effective closures to save endangered coho might well have been the result.

Ironically, some of the limited concessions made in support of continuing opportunities for recreational fishing were so damaging to endangered coho as to make a mockery of the objective of
zero mortality for these fish. Thus a large area at the northern end of the Queen Charlotte Islands (Haida Gwaii), known as a prime fishing area for coho including those from endangered stocks, was opened to recreational fishing on condition that all coho caught would be released. Considering the large number of coho caught in this fishery, this was bound to result in the loss of a large number of endangered coho, given the known high mortality of coho released after being played to exhaustion in a sport fishery.

The unidimensional conservation policy resulted in seriously adverse social and economic effects felt throughout fishery-dependent communities. There were also negative impacts on overall salmon conservation. The 1998 salmon season was marked by serious disease outbreaks on spawning grounds overcrowded by large salmon runs that had not been adequately culled by fishing. One may also anticipate damage to next-cycle broods from over-escapements onto spawning grounds. No analysis seems to have been undertaken to give an assessment of the costs and benefits of the 1998 salmon policy. Given the enormous damage wreaked upon the BC salmon fishery, it is difficult to accept that a more purposeful balance among conservation, economic and social objectives could not have been found to yield a superior outcome for society.

THE NEED FOR A BALANCED FISHERIES POLICY

A unidimensional fisheries policy considers objectives only or primarily in a single area. If the focus of that policy is on conservation, it likely means a single-minded effort to restore the size and variety of fish stocks, regardless of the public expense and regardless of economic and social devastation in the fishing industry and fishery-dependent communities resulting from closures of viable fisheries, quite possibly leading to collateral conservation damage from over-escapements. If economics is the sole focus, it may mean creating a system designed to produce maximum present value of profits (rents) for the owners of accumulated fishery access rights (quotas and licences), regardless of long-term depletion or destruction of stocks and regardless of the fate of otherwise viable small-scale fisheries and fishing communities. Allowing fishing corporations and entrepreneurs with high profit expectations to pursue their maximum economic efficiency in some fisheries would induce them to fish the stock quickly and very profitably to collapse or extinction, then move their assets to another fishery where they might do the same, or to another industry with high profit expectations (Clark 1976). A unidimensional fishery policy focussed on social concerns, might be one designed to accommodate excessive numbers of workers in the fishery at public expense regardless of the government debt incurred and regardless of the dangers of overfishing and stock depletion. All of these cases illustrate how a fishery policy based solely or primarily on considerations in a single policy area, ignores the often heavy collateral costs that it causes in other areas.

When a crisis develops in an important conservation, economic or social area of a fishery, strong emergency action is warranted in the area concerned. But this is not a good reason to adopt a unidimensional fisheries policy and ignore the impacts of contemplated emergency action in the other important policy areas. Appropriate fisheries policy clearly rests on three pillars of support—biological conservation, economic efficiency and social equity. Ignore any one of these and the policy is bound to fail our essential societal requirements. It is necessary for all the costs and benefits in all policy
areas to be taken into account and appropriately balanced. A unidimensional policy prescription provides an essentially invalid response to society's needs and interests.

A balanced fisheries policy is what we need!

**FISHING COMMUNITY PRIORITY ACCESS RIGHTS**

Among important social equity issues in fisheries matters are those concerned with rights of access to fishery resources, both in respect of individuals and of communities collectively. In small-boat fisheries, where the owner-operator mode of fishing tends to be highly appropriate both from a social and an economic perspective, the question of individual access rights is particularly significant (Copes 1994, 1995, 1997a, 1997b, 1998a, 1999). Given the subject matter of this paper, however, the focus here will be particularly on the matter of community access rights (Copes 1995, 1997a, 1997b, 1997d, 1998a, 1998b, 1998c).

There are two well-recognized principles to help structure collective allocation priorities in the fishery, at a group, community, regional or national level (Copes 1997d, 1998b). These are the abstention and adjacency principles. The abstention principle holds that where a fish stock is fully utilized, generally, no additional groups should claim admission to the fishery. In essence, the principle recognizes the historical rights of first-comers. At the international level this principle has been used, for instance, to pressure Japan and other Asian countries to abstain or withdraw from high-seas fisheries on U.S. and Canadian salmon stocks. The principle may be used to support historical group rights to a fishery. In the Canadian context it may be seen as a justification for the Supreme Court mandated protection of priority allocations to Aboriginal groups, which have utilized specific salmon stocks intensively since days long before the arrival of Europeans (Copes 1999b).

The adjacency principle recognizes priority rights for population groups to exploit nearby fishery resources. At the international level this is reflected in the Law of the Sea determination of jurisdictional boundaries for fishery and other purposes, which is based primarily on adjacency, as implemented by 200-mile limits and equidistance lines to separate neighbouring jurisdictions. Because resident populations are most often the first to make substantial use of local fish stocks, the adjacency principle may often combine with the abstention principle to establish a strong claim by coastal or river communities for continuing priority access rights to local stocks. Such claims are now a notable occurrence in developing countries, where local artisanal fishing groups are resisting the encroachment on their traditional fishing grounds by intruding industrial fishing companies (1997d).

It may be observed that the notion of common property access rights operates at different scale levels. In Canada the federal government represents the public ownership of tidewater fish resources, in which all citizens of the country may thus claim an interest. Appropriately, it is at this national level that the federal government recognizes universal citizen access to recreational fish resources. However, a more intensive claim for priority rights to local fishery resources may be made by established fishing communities on the basis of their historical usage of and dependence on adjacent resources.
The salmon fisheries of B.C. present another aspect of historical rights. The highly migratory nature of salmon stocks means that they will be fished along an extended migration path and that fleets exploiting these stocks will often be quite mobile and will be targeting on them at various points along the route. A claim for preservation of access rights on the basis of historical usage by identifiable fleets would seem in order. Evidently, for some fisheries-dependent coastal communities 'adjacency' needs to be interpreted flexibly, as pertaining to the customary range over which migrating stocks are exploited from the coastal community base. As cases in point, Steveston and Prince Rupert may be considered to be particularly important coastal fishing communities, in large part because they are home to many vessels exploiting migrating stocks at some distance from port.

It may be noted that in international conventions and agreements there is distinct recognition of the need to protect the common property resource base of (smaller) coastal fishing communities, lest it be alienated by the encroachment of interest groups with the financial power to buy up local access rights or persuade governments to give them privileged entry to local fisheries. Thus Article 61 of the United Nations Law of the Sea Convention urges coastal states to enact conservation and management measures that, inter alia, take into account 'the economic needs of coastal fishing communities'. More specifically, The Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization of the United Nations (FAO 1995) contains the following section:

6.18 Recognizing the important contributions of artisanal and small-scale fisheries to employment, income and food security, States should appropriately protect the rights of fishers and fishworkers, particularly those engaged in subsistence, small-scale and artisanal fisheries, to a secure and just livelihood, as well as preferential access, where appropriate, to traditional fishing grounds and resources in the waters under their national jurisdiction.

While some of the language in this section evidently refers to situations in developing countries, the recognition of small-scale fisheries contributions to employment and income is very much a matter also for developed countries, as is the Code of Conduct document as a whole. Canada has been a major contributor to the U.N. and F.A.O. deliberations resulting in the foregoing rules and standards, and apparently has formally supported them. It appears in order for Canadian coastal communities to press the federal government to add substance to its implicit recognition of coastal community access rights.

CUSTOMARY LOCAL ACCESS RIGHTS

In fishing communities around the world there is a pervasive 'squatters= rights' notion that local fish resources are the common property of the local community. Often ownership rights are claimed by custom and enforced by extra-legal action (e.g., Acheson 1975): outside fishing vessels encroach on local grounds at their peril (a hole in their hull ... or worse! In many traditional societies such local fishing rights structures known in the literature as 'territorial use rights in fisheries' (TURFs) are more explicitly recognized and well enforced. In essence, local common property fishing rights may be seen as the economic equivalent of settlers= rights to distributed farm lands, as exemplified by the
homesteading process on the Canadian prairies. Fortunately for farmers, land tenure allows for easy registration of individual ownership rights.

The nature of the common property marine resource precludes individualized assignments of full property rights to particular fish in the wild. There is a challenge now to find a legally recognizable and socially and politically acceptable form of local access rights in the marine fisheries and to determine when and where access rights may or should be vested in communities, to be made available to individuals in those communities. This is an important question with many ramifications, that requires careful consideration and will not readily be fully resolved. In the salmon fishery, with its highly migratory stocks, one needs to consider the geographical range or radius of protection given to community fisheries, as well as quantities of fish allocated (Copes 1997b, 1998b). Provision will also be required for individualized rights of fishermen residing in areas different than those in which they fish.

It is necessary to reflect for a moment on the purposes for applying historical and adjacency principles in respect of community access to common property fish resources. Because of the fugitive nature of fish, it is usually impossible to carve up common property fish resources into self-contained units that can be assigned as private property to individual fishermen. It is somewhat easier to recognize the extent of fish stocks utilized by a community, and it certainly is possible for a national government to make some general harvest allocations on the basis of historical usage at the community or regional level. There are also both good economic and social equity reasons for doing so. As a matter of equity, it is a way of recognizing de facto property rights, earned by long term usage and dependence, which may be achieved at the group level, when it is impossible to implement them at the individual level.

There is also economic utility in recognizing fishing property rights at the community level, because it is only at such a collective level that the common interest in conservation and sustainable use can be effectively exercised. With the heightened awareness of the importance of habitat maintenance and restoration to maintain the health of local salmon stocks, there is room for a very useful community involvement in stewardship of local resources. On the other hand, if a community loses interest in the local fishery through neglect of the resource or a superior interest in more profitable alternative undertakings, there is no good reason to reserve common property fishing rights to the community: the rule might be 'use it or lose it'.

The purpose of fishery allocations at the community level should not be to perpetuate local access rights that are no longer wanted. Rather it should be to safeguard against loss of those rights as a by-product of changes in the management system. The 1998 stacking provisions are a case in point (Copes 1997b). Fishery-dependent communities that lose fishery allocation shares as a result of biases in rationalization devices should be given opportunities to retain their historical share by recruiting local fishermen ready to become vessel operators. One way of making this work would be to allow communities to purchase and hold spare licences (with government assistance where necessary and appropriate), representing the shortfall in a community’s historical share of the catch, in a licence bank. The licences could then be leased, on affordable terms, to local aspiring vessel operators.
In B.C., loss of harvest access if not reversed could threaten the viability of some communities, leading to their gradual abandonment, with attendant losses in private property values and public infrastructure utilization. This should be a matter of direct concern to the provincial and federal governments. To ensure the continuing economic viability of fishery-dependent coastal communities on the basis of recognized community user rights, they need to have guaranteed access to adjacent and adjacently transient fishery resources.

CO-MANAGEMENT AND LOCAL STEWARDSHIP

In recent years the need for 'co-management' in fisheries administration has been more widely recognized, particularly in some of the industrially more advanced countries. Acknowledgement of the desirability for fisheries stakeholder groups to take part in the management process has been evident also in Canada. However, the current situation in much of the country's fishing industry, at least at the harvesters' level, suggests that only slow and spotty progress has been made in establishing effective consultation leading to meaningful co-management. It is in the interest of the resource and of all parties, that they engage in a strong effort to develop co-management protocols that will give local stakeholders and their communities a genuine sense of proprietary interest and participation in setting management objectives, fishing plans and regulatory procedures. The proactive energies of these communities could be turned to good use. It would make sense to assign to them stewardship responsibilities for adjacent fishery resources, including the salmon stocks of local streams, while giving them, in return, priority access to these resources through a form of community allocation. It may be noted that coho, much more than other species, favour the utilization of the numerous smaller streams dispersed along the coast. Effective stewardship efforts by smaller coastal communities in respect of these streams could have a considerable impact on the so essential restoration of endangered coho populations.

In several of B.C.'s fisheries-dependent communities there is an evidently high level of concern that their interests have been severely harmed by recent rationalization measures to 'privatize' fisheries access. This has tended to favour urban-based interests with more ready access to financial resources to buy up access rights. Through the Coastal Communities Network, coastal communities are now banding together, in alliance with adjacent First Nations, and are pressing for restoration of access to a larger share of the fish harvest. This echoes the situation on Canada's Atlantic Coast, where some communities, in response to their agitation, have been allowed to pool their rights in the form of community harvest allocations. A most hopeful sign now is the recent establishment of the Nuu-chah-nulth/West Vancouver Island Aquatic Management Board in collaboration with the federal and B.C. governments. It appears that progress is being made with elaboration of an area-based salmon allocation framework for the West Coast of Vancouver Island, involving all interested parties in the area. If successful, the system could well be extended to other coastal areas in B.C.

PROSPECTS FOR LEGAL RECOGNITION

The Supreme Court of Canada in a 1990 landmark decision (R. v. Sparrow) ruled that the constitutionally protected rights of Aboriginal people in Canada required the federal government to
allow them improved access to fishery resources. The Court based its judgement in large part on historical usage of, and dependence upon, such resources by Aboriginal communities (Copes 1998b). Does the Supreme Court decision have wider implications for recognition of community-based resource access rights? Can a legal case can be made to protect also non-Aboriginal fishing communities against alienation of their historical resource base? Such alienation is now in progress, driven by market-generated reallocations of fisheries access rights linked to transferable licences and ITQs.

Interestingly, this question appears to have occurred to the Chief Justice of Canada's Supreme Court. In another case of the Court bearing on Aboriginal fishing rights (*R. v. Gladstone*), Chief Justice Lamer mused on possible extension of the principles supporting Aboriginal fishing rights, referring to concomitant objectives "... such as economic and regional fairness, and the recognition of the historical reliance upon, and participation in, the fishery by non-aboriginal groups ...." This suggests there may be a legal opening for coastal communities to contest fisheries allocations and reallocations that alienate their resource base.

CONCLUSION

This paper has explored two areas of intense interest to fishery-dependent coastal communities in B.C. One concerns the content and conduct of fisheries management policy in Canada, the other concerns recognition of community based access rights and stewardship interests in respect of adjacent fishery resources.

While recognizing Canada's deserved reputation for willingness to adopt innovative changes in fisheries policy, the paper has been critical of the frequent lack of balance among the major components of fisheries policy and the serious damage resulting from this. The content of fisheries policy in Canada implicitly recognizes biological conservation, economic efficiency and social concern as three fundamental policy areas. However, there appears to be an unfortunate tendency to focus on one major problem at a time and thereby to be preoccupied with the policy area pertinent to that problem. The most recent focus is on conservation, correctly identifying needed action to restore endangered coho stocks, involving selective fishing practices and habitat restoration. However, the new policy developments have neglected to take account of disastrous impacts of the chosen conservation measures on economic and social conditions in the fishery, as well as some indirect collateral damage to conservation itself. In other words, the new measures have no human face and have largely ignored critical interactions among the three essential policy areas.

This paper has also drawn attention to the continuing effects of a previous fisheries policy imbalance, where an exclusive focus on narrow considerations of economic efficiency led to the installation of fishery access rights based on such devices as ITQs and stacked licences. The former often have adverse conservation impacts. Both devices have adverse social impacts. They lead to relatively high-level capitalization of fishing enterprises, tending to concentrate fishery access rights and rent capture opportunities disproportionately in the hands of well-heeled individuals and enterprises. This has a concomitant effect of tending to concentrate an increasing share of fishing power in a smaller number of larger centres, which threatens the viability of smaller coastal communities.
One favourable development now is the apparent interest the federal government is showing for the development of a Nuu-chah-nulth/West Vancouver Island Aquatic Management Board, which could lead to a comprehensive coastal-community-based co-management regime, with favourable effects for the retention of local access rights and installation of local stewardship. One may hope that this signifies an interest in restoring a human face to Canadian fisheries policy, in conjunction with the long-overdue recognition of the interdependence of the three essential areas of that policy—biological conservation, economic efficiency and social equity.

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**NOTES**

1. In opposition, some observers have argued that 'there can be no over-escapement' onto the spawning grounds, as more spawned-out carcasses are needed to refertilize spawning rivers. Taken to its logical extreme, this argument would hold that there should be no catch of salmon at all, as nature requires all for fertilization. This notion is contradicted by the very successful use of artificial fertilizers to restore and improve nutrient-poor salmon-bearing lakes and rivers.

2. It should be acknowledged that some reduction in the number of vessels in the salmon fishery was called for because of existing overcapacity in the fleet.

3. The following three sections draw on material in Copes 1998b.

4. In fisheries circles there is a diversity of opinion regarding the meaning of the term "artisanal." In some English speaking circles, particularly so in North America, the term is meant to signify simple subsistence fishing, particularly as practiced in developing countries. In some other circles, however, it is used in a sense much closer to the original meaning of the word, denoting a highly skilled and independent craftsman. In France, for instance, it is used to refer to independent owner-operator sectors of the fishing fleet, which include some fairly large and technically sophisticated vessels operating offshore on extended trips.

5. This section draws on material in Copes 1999a.
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