

Ecology, Delocalization, and Relocalization in a Canadian Maritime Community

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Introduction

Recent culture change in indigenous communities often has been driven by a process of *delocalization*, a term suggested to characterize the transition from local economic autonomy to economic interdependence with other regions of the greater society (Pelto et al. 1978). As the management of local production, distribution, and consumption becomes integrated with the larger society, a variety of other changes follow. These changes—social, cultural, and environmental—tend to be permanent. The anthropological literature is replete with accounts of traditional societies adversely affected, or obliterated, by industrialization and participation in cash economies dominated by distant centers of trade (e.g., Murphy and Steward 1956). In some areas, however, the process of delocalization appears to have run its course and there is a reversing trend to what might best be called “relocalization.”

In this paper, one such community is examined. Fieldwork was conducted in Bay St. Lawrence, a remote fishing village on the northern tip of Cape Breton Island, Canada, during a seven month period in 1981-1982. The village numbered 172 adults and several hundred children, many of whom were absent for varying periods for education beyond primary school or work outside of the area. A sheltered harbor provided moorage for 34 fishing vessels. Bay St. Lawrence has access to other villages by an often impassable road over a mountain range, with a ferry crossing and three hour drive to the nearest city.

Historical Background

The province of Nova Scotia, slightly smaller in land area than Scotland, the country after which it was named, is composed of a large mainland peninsula and the northern island of Cape Breton. The two regions are markedly different in topography, with the low-lying pastoral mainland contrasting with the less developed mountainous island. The deep and turbulent Strait of Canso separates the two land masses, and contributed to the isolation of Cape Breton Island from the mainland culture and economy until the construction of a causeway in 1956.

The modern history of the island began in 1497, when an expedition led by John Cabot arrived near Cape North at a location now called Cabot Landing. This occurrence marked the first documented European landfall on the North American continent. While the southern region of the island was populated with the Algonkin-speaking Micmac peoples, the northern region was uninhabited. The lack of native resistance combined with the extreme abundance of fish encouraged rapid settlement of the coastal area. The island probably was named after Cap Breton in the Bay of Biscay by the Basque fishermen who arrived in 1504. Initial settlement took place in the form of temporary fishing camps constructed by fleets from a number of European countries to provide a base for fishing

operations. Fish were split, salted, and sun-dried on shore, then shipped to the Caribbean to feed the growing number of African slaves brought as labor for the sugar-cane plantations. Canadian salt cod still is a favored food in Caribbean countries.

The first permanent settlement in Nova Scotia was a result of increasing European political and economic interest in the region and occurred in 1604 at Port Royal. Colonial control by a number of countries was gradually eliminated by French and then British domination of the North American eastern seaboard. In 1746, emigrants and exiles from the highland regions of Scotland began to settle in Cape Breton and rapidly became the major demographic influence. At present, 78% of the population is of British Isle descent, 10% of Acadian (French) descent, with the rest of Micmac, other European, or Asian extraction (Government of Nova Scotia, Statistical Services n.d.).

The history of Cape Breton describes a gradual progression from a founding colony of Canada, with cultural and economic independence based on a prosperous fishing industry, to one of the most economically depressed regions in the country, where unemployment and poverty are so endemic the national press long ago stopped taking notice. In the form of delocalization evident here, local production of a broad-ranging variety of goods was supplanted by the importation of manufactured goods, energy, and food supplies. The situation could also be described as a typical "metropolis-hinterland" relationship in which raw materials and single-product resources are exported from the hinterland in exchange for multiple finished products from the metropolis (Elias 1975). This type of exchange promotes economic integration of a country and increases wealth by allowing an economy of scale, such that inefficient small local manufacture of consumer goods or harnessing of energy resources is replaced by the importation of products and energy from large industry in the developed areas of the country. The flow of wealth, however, is one-way. Since the market value for both hinterland resources and imported products is set by the "metropolis," the hinterlands are often exploited to increase the wealth of the developed areas of the country.

Ecology of a Maritime Community

With no place in Cape Breton further than a thirty-minute drive from the coast, the economy and character of the island is tied to the sea. The warm gulf stream on the east meets the cold Labrador current from the north to create some of the most prolific—and perilous—fishing grounds in the world. A biotic inventory of Bay St. Lawrence contains species characteristic of both northern and temperate Atlantic ecotypes. These fish, marine mammals, and marine plants are listed in Table 1.

Not all of the fish, marine mammals and marine plants were harvested intentionally. Species such as sculpin, goosefish, sea raven, and lumpfish were regularly taken in nets or on lines along with commercially valuable species. Even the enormous, slow-moving sunfish had been mistaken for swordfish and harpooned. All were discarded, though they occasionally were used for bait. Of the finfish, cod was the most important economically and constituted a major source of income. Other, less common, roundfish were usually thrown in with the cod catch and therefore sold for the same price, a practice that was tolerated in moderate amounts by the fish purchasing agent. Eels were not harvested in 1981-82, though both the immature green eel and mature silver eel (locally regarded as separate species) were traditionally harvested and a viable market apparently existed. Recent attempts at an industrial eel fishery elsewhere on the eastern seacoast had met with variable success, due to excellent prices but an unstable market. Demand for eel is largely restricted to European and Japanese buyers who are reactive to changes in quality and rumors of contamination. Several years previous, PCB contamination of European eels set

Table 1: Marine Resources of Bay St. Lawrence

Species		Consumed	\$/lb.	Season
cod (Atlantic)	Gadus morhua	+	.26	-
tomcod	Microgadus tomcod	+	.26	-
mackerel	Scomber scombrusa	+	.08	summer
herring	Clupea harengus	+	.08	summer
haddock	Melanogrammus aeglefinus	+	.32	summer
blue shark	Prionace glauca	+	-	-
Atlantic wolffish	Anarrhicus lupus	+	.10	-
spotted wolffish	Anarrhicus minor	+	.10	-
spiny dogfish	Squalus acanthias	+	-	-
swordfish	Xiphia gladius	+	1.00	summer
sunfish	Mola mola	-	-	summer
pollack	Pollachius virens	+	.10	fall
goosefish	Lophias americanus	-	-	-
red hake	Urophycis chuss	+	.10	-
silver hake	Merluccius bilinearis	+	.10	-
ocean perch	Sebastes marinus	+	.10	-
bluefin tuna	Thunnus thynnus	+	1.25	summer
bigeye tuna	Thunnus obesus	+	1.25	summer
shorthorn sculpin	Myoxocephalus scorpius	-	-	-
sea raven	Hemirhamphus americanus	-	-	-
ling	Molva molva	+	-	-
capelin	Mallotus villosus	+	-	rare
lumpfish	Archosargus probatocephalus	-	-	-
plaice	Pleuronectes platessa	+	.16	sp,fall
American plaice	Hippoglossus platessoides	+	1.00	sp,fall
Atlantic halibut	Hippoglossus hippoglossus	+	.16	sp,fall
Greenland h. (turbot)	Reinhardtius hippoglossoides	+	.20	sp,fall
witch flounder	Glyptocephalus cynocephalus	+	.16	sp,fall
windowpane flounder	Scophthalmus aquosus	+	.16	sp,fall
yellowtail flounder	Limanda ferruginea	+	.16	sp,fall
winter flounder	Pseudopleuronectes americanus	+	.16	sp,fall
grey sole	Solea solea	+	.20	sp,fall
barndoor skate	Raja laevis	+	.10	sp,fall
winter skate	Raja ocellata	+	.10	sp,fall
Atlantic salmon	Salmo salar	+	2.00	15/7-15/8
gasperaux (alewife)	Pomolobus pseudoharengus	-	.04	spring
shad	Alosa sapidissima	+	.12	fall
American eel	Anguilla rostrata	-	-	-
shortfin squid	Illex illecebrosus	-	-	fall
lobster	Homarus americanus	+	variable	jl,aug
snow crab	Geryon quinqueidens	+	variable	fall
spiny crab	Cancer borealis	+	variable	fall
pilot whale	Globicephalus melaena	-	-	-
fin whale	Balaenoptera physalus	-	-	-
sei whale	Balaenoptera borealis	-	-	-
sperm whale	Physeter catodon	-	-	-
harbour seal	Phoca vitulina	-	25.00	-
dulse	Palmaria palmata	+	-	-
kelp	Pleurophyucus gardneri	-	-	-
wireweed	Furcellaria lumbricalis	-	-	-
rockweed	Ascophyllum nodosum	-	-	-
Irish moss	Chondrus crispus	-	-	-

off a scare throughout the EEC nations and caused the eel market—for uncontaminated North American as well as European eels—to collapse almost overnight, bankrupting a number of American producers (Rolleston 1981; Burnett 1981). Such unstable industry conditions have made fishermen wary of investing their limited funds in these ventures.

Marine mammals were not generally harvested in Bay St. Lawrence. However, some indirect income was derived from them. Harbor seals were shot for the bounty provided by the government to decrease damage done to nets and other fishing gear. Several fishermen from Newfoundland enjoyed the roasted flippers of this seal, and the pelt was fashioned into warm winter boots. Pilot whales were frequently seen in this area and provided a tourist attraction. Less often, a sperm, fin, sei, or minke whale was washed up along the coast. In the year prior to fieldwork, a mature sperm whale was beached, resulting in an enormous decomposing carcass that took months to reduce to a skeleton. This was dismembered and sold by villagers for vertebrae sculpture, rib ornaments, and the rest used to grace the homes and gardens of the community.

Marine plants traditionally were harvested for personal use. By 1981, this use had decreased in both quantity and variety. Only dulse was collected, by several families, and esculent seaweed was generally viewed with disinterest by older people and repugnance by their children. Commercial harvesting of marine plants, a growing industry elsewhere in the province, is not economical in Bay St. Lawrence because of the rough seafloor.

Edibility of species presented in Table 1 does not refer to the comestability of these resources. Indeed, nearly all fish and crustaceans, and all marine plants (which have been aptly referred to as "seavegetables" [Madlener 1977]) in this part of the world, are nutritious foodstuffs. Rather, the local view of the suitability of the resource for human consumption is considered here, and is indicated as "+". These tastes did not coincide with other Canadian or North American populations. For example, squid was considered suitable only for bait, or, as one informant explained, to be sold to mainlanders who don't know any better. Hake, a popular fish elsewhere, was similarly disliked.

The market value of each resource is given in 1982 Canadian dollars per pound of fish. The seasons of harvestability are also given. During the months from January to April, pack ice blocks the sea and the harbor is frozen, so none of the species is available. Those harvested throughout the ice-free season are indicated as "-".

Developmental Change and Delocalization

They studied the rock in Cape Breton—they know all about it—but they didn't know anything about what was going to happen to the people. [O'Neill n.d.:31]¹

The construction of the causeway linking Cape Breton to mainland Nova Scotia had a profound influence on the economic development of the region. The rapidly increased exchange of goods and services between the two regions favored the mainland, with the result that local industries succumbed to competition from the more highly capitalized industries of the mainland. These companies operated from a stronger base provided by economy of scale and more highly integrated business networks, and were easily able to extend their distribution onto the Island. The response of the government to this process has been to hasten it. Widespread unemployment resulting from the closure of local manufacturing industries in Cape Breton was met not with the restoration of these or other industries, but with inducements to build branch plants on the Island or to expand mining and forestry operations. In the short term, the developments caused rapid isolated employment booms with attendant environmental and social disruption. Years later, these plants would with equal rapidity and capriciousness cease operations, precipitating an economic

collapse of the region. The government would blithely attend to these events by extending unemployment benefits and offering even greater financial inducements to other companies, which were often multinational corporations with no other interest in the area beyond a high profit margin.

Industrial annexation of the Cape Breton Island economy extended to its lifeblood, the fishing industry. While the numerous small village operations have had a relatively insignificant effect on fish stocks, operations of increasingly larger ships in the course of the last century have greatly reduced the stocks and brought about the current need for fishing quotas. The loss of marine resources was largely due to two independent developments: the increase in size and efficiency of the fishing vessels, and the unrestricted presence of foreign fishing fleets which were relatively unconcerned with maintenance of maximal sustainable yield but, in an analogue of the "tragedy of the commons" (Hardin 1968), were concerned primarily with their share of a diminishing resource.

Unlike the whale stocks, for example, which were decimated well before the present century, fish were plentiful in the Cape Breton grounds until recent times. In 1963, the Rev. William Murray noted that, "The mackerel come in vast 'schules' several miles in breadth, sometimes so dense as to impede the progress of smaller vessels" (Government of Nova Scotia, Information Division n.d.). Since that time, fishing has expanded to an industry in Atlantic Canada that employs almost 70,000 workers and includes about 31,000 vessels (Department of Fisheries and Oceans 1981a). Canada currently is the world's largest exporter of fish, and Nova Scotia produces more than any other province. Early in this development, multinational corporations gained control of the market, and the fishing industry became an externally controlled resource extraction industry not unlike the industrial framework typical of third-world countries. Then as now, the primary producer derives a minimal share of the final market value, with distributors and other agents getting the most:

There was a big difference between the value of what the fishermen caught, and the value of what they got in return. They were rewarded with little more than the bare essentials for staying alive and raising more fishermen. The surplus value of the resource was concentrated into a few hands: those of the fish merchants, who grew affluent and powerful. Little or none of the wealth liberated from the resource was ploughed back into the community to grow new local industries, or improve local communities. [McCutcheon 1975:8]

In order to increase local control of both fishing operations and the value derived from them, Canada in 1977 declared a 200-mile limit adjacent to Canadian shores. The stated purpose at the time was to enable depleted stocks to recover by the implementation of stringent conservation measures and to rebuild Canada's sea fishery (Department of Fisheries and Oceans 1981b). Since the declaration, foreign fishing activity has decreased from about 66% to 31% of the total catch in Canadian waters (Department of Fisheries and Oceans 1981c), and fish stocks have improved to a higher sustainable yield.

The only significant industry in Bay St. Lawrence was the inshore finfish and crustacean fishery. While inshore fishing was technically distinguished from offshore fishing simply by the size of the boat employed, with fishing vessels of greater than 65 ft. overall length designated in the offshore fleet, the real distinctions between the two types of fishing were economic and cultural. Costs of purchase and operation of ships increases almost exponentially with size. While an outfitted inshore vessel typically was valued from \$20,000 to about \$150,000, offshore ships could cost several million dollars to construct and equip. The result was a major difference in the form of ownership. Virtually all inshore boats were privately owned or financed, occasionally in partnership or collectively by an extended family, whereas offshore vessels were seldom owned by an

individual and usually were leased or owned by large seafood companies. While inshore boats were operated by their owners, the captain and crew of offshore vessels were hired and had no adscitious responsibility to the company. Inshore fishing operations seldom extended beyond a day at sea, though the larger of these vessels were equipped for trips of up to a week in duration. The lifestyle of the crew was considerably different, therefore, from that of workers on the offshore fleet who were gone for a minimum of about four to ten days and often longer.

It is with some irony that the multiple, small inshore fleet historically had been the mainstay of the Canadian maritime economy, yet both provincial and federal governments seemed to favor by differential quotas and licensure heavy industry represented by the offshore fleet. Considerable bitterness existed among the population of coastal villages about these quotas, which restricted local fishing operations by limiting the size of the catch, the season, and curtailed the number of new licenses issued, while granting offshore fleets permission to harvest far greater amounts of fish by virtue of their "more efficient" operation.

In general ecosystems, independence, diversity, and small size increase flexibility and allow rapid adaptation to a changing environment. So it is with the fishing industry, where small boats can be refitted to a variety of fishing operations, and can be built or put out of service relatively quickly and inexpensively. Offshore fishing is a longer-term investment and far more specialized, with great financial vulnerability to changing fish stocks and markets. Despite the hazards of investment in the high-level industry of the offshore fishery, maritime governments have embarked on a plan to persuade small operators to change to the larger ships and have offered considerable financial inducements to bring about this development. The result is a loss of economic independence and an extensive social and cultural impact from the alternation of boom times and economic collapse with unemployment and forced relocation. A study of one village which has fully undergone this process concluded that the smaller operations provided greater stability and, in the long run, a more secure lifestyle, than the "development" encouraged by the government (McCay 1976).

In Bay St. Lawrence, fishing was carried out during the ice-free period of the year, from about mid-April to the end of December. In the remaining months, fishermen usually received government unemployment benefits. These benefits were based on income during the year, as determined by the value of fish sold. During this time, fishermen were occupied by mending nets and other gear, building lobster traps, and taking government-sponsored training courses to learn specialized net-mending, motor repair, navigation, etc., or to obtain certification in technical fishing operations.

The major environmental factor affecting the fishing industry is the condition of the sea. Inclement weather limits commercial fishing operations to a surprisingly large degree, such that fishing is an opportunistic industry in this region. Each morning, the fishermen arose at three or four A.M. to check the weather. A decision was made regarding the ocean conditions and the possibility of going out to sea. Since weather conditions often were marginally poor, there was some variation among the men as to whether a fishing attempt was worthwhile. In such conditions, several men may gear up for a day at sea only to find heavy seas several miles offshore and return to the harbor. On other occasions, the few men who venture out find unexpectedly calm conditions and bring in an excellent catch. While an overly cautious fisherman may not meet the economic requirements of income and boat payments, overconfidence in some fishermen has led to the loss of their boats and, in some cases, their lives. A variety of factors therefore determined success as a fisherman, ranging from motivation, experience, and ability to withstand hardship, to plain luck.

Codfish migrate and prefer cooler waters. Consequently, fishing is most productive during the colder time of the year. Catches improve, therefore, at the same time as the average weather conditions deteriorate. The greatest catches were brought in toward the end of the fall fishing season, almost immediately preventive of the pack ice, when much greater risk was present. The fishermen were well aware of the costs and benefits of fishing during marginal weather. Their behavior may be analyzed with the use of game theory, in which productivity is maximized by various fishing strategies (Davenport 1960; Gould 1969). In this case, a non-zero-sum game is evident with fishermen competing not with each other but with the environment. If the fishermen are jointly successful in "beating" the environment and bringing in a large catch, such further advantages as better fish-handling services due to increased volume and, eventually, improved wharfage facilities, can be gained which will increase their subsequent chances of success. To this extent, fishermen were cooperative. However, concern over decreasing quotas and increasing competitiveness from fishermen with more sophisticated boats and equipment also promoted a zero-sum game orientation. While families were openly sympathetic upon news of the loss of another's boat, many were privately pleased with the possible lessened competition. Most social problems appeared to be associated with conflicts about the exploitation of these resources.

Industrialization of the fishing industry and concomitant delocalization has had a marked effect on the local ecology and economy. Traditionally, the family unit comprised several generations which derived the major income from fishing and had a number of secondary forms of production, such as agriculture, weaving, knitting, fishing gear construction, and woodcutting. Delocalization involved a change from self-production of food, blankets and clothing, fishnets and traps, and firewood, to the purchase of these products. In order to finance these expenditures, fishing was intensified by the purchase of larger boats and automated equipment that increased catches by several orders of magnitude. These boats, and such sophisticated gear as radar, radio navigation aids, and fish-finding sonar equipment, often cost over \$100,000. Added costs of maintenance, depreciation schedules, and insurance involved extensive bookkeeping and legal procedures that made it necessary to incorporate the family business.

These changes had far-reaching sociocultural impacts on the community. Nag et al. (1978) have shown that children are a vital element of a family economy, and the typically large families of lesser developed countries are a result of the economic value of children. In Bay St. Lawrence, children traditionally were employed in gardening, animal husbandry, and household chores, while the adults were engaged in other productive activities. With full industrialization, these functions no longer were necessary and children became an economic liability rather than an asset. The result was a decreasing family size: from 9-16 children, typical of earlier families, to 1-5 children among couples beginning their families within the last decade.

Another result of delocalization and industrialization was a change from the bilateral kinship pattern characteristic of fishing communities to a patrilineal system. As recently as ten years previous to this study, research on maritime Canadian fishing communities revealed a strong bilateral kinship system (Breton 1973). Among other functions, kinship patterns tend to reflect the economic value of the cognates, such that the primary producers maintain title to the lineage. Bilateral systems implicitly recognize the value of both marital partners. Industrialization results in a devaluation of the female since her former productive role is replaced by purchases with income provided by the male. A change to a patrilineal system can be expected, though a number of other variables may intervene and the process may take several generations to complete. In Bay St. Lawrence, a clear patrilineal kinship type was evident. Women took on the surname of their husbands and were

considered part of their husbands' families: in response to a query about the lineage of a married woman, the answer might be, "Well, she's not really a MacIsaac, but she's a MacIsaac now."

Elements of Relocalization

At the time of fieldwork, the process of industrialization appeared to be complete. Yet, these recent changes promoted a number of events that promised to reverse this trend. While improved transportation and access to the mainland led to increased commercialization of the area, it also attracted a number of people who previously had limited access to these remote villages. The impact of these newcomers on the local communities has been understated in the literature, perhaps because they were not considered to be truly a part of the community. The immigrants, particularly those from urban areas, often generate an initial emotional reaction from the established families in the community, but appear to have a much more profound long-term impact. While the negative effects of industrialization have caught the native families off-guard, the immigrants are generally well aware of the detriments of industry and the cash economy—indeed, this is precisely what they have tried to escape in their move to the remote community. These people take pride in a lifestyle that is both economically independent *and* profitable. Their respect for self-sufficiency often is expressed in an intense interest in the traditional way of life. This knowledge may extend to an emulation of the preindustrial lifestyle of several decades ago, to the amusement and consternation of the established community.

At the time of fieldwork, 16 of the 172 adults had immigrated to the community from non-Maritime provinces of Canada or the U.S. They had lived in Bay St. Lawrence for a range of three to eleven years. These people were far from a homogeneous group and tended to be eclectic in their choice of appropriate technology, adopting local practices to various degrees. Their resultant lifestyle often reflected a mix of their initial and subsequent resources, acquired experience in the community, pre-envisioned lifestyle, and consequent successes or failures. For example, an attempt to establish an artistic pottery and jewelry industry to profit from the tourist trade was unsuccessful, while a number of innovations in fishing techniques appeared to work out quite well. The newcomers were much more likely to experiment with both new technology and archaic traditional technology, though it is debatable whether these innovations resulted from their inventiveness or from a perceived lack of security from a traditional livelihood. Innovations such as semi-submerged dwellings, partial sail power for heavily automated fishing vessels, and experimental windmills for electrical power would not have been likely to be attempted by the native community residents, but were eagerly discussed by the newcomers. The use of these would significantly reduce the need for purchased electrical power and fuel, and therefore reduce dependence on a cash income. While immigrant practices such as weaving cloth and travelling by skis instead of snowmobiles have had a limited diffusion in the community, the use of air-tight wood stoves introduced several years ago has been adopted by many native residents, and most others were planning a return to self-produced wood heat from the oil-burning furnaces currently in use. The result appeared to portend a gradual process of *relocalization*, in which the community residents are intrigued by and assume the innovations of the newcomers—which paradoxically often represent their own traditional culture.

The changes described by relocalization are most clearly evident in the three basic areas of the local ecology: the exploitation of marine resources, the provision of the household food supply, and the provision of non-food supplies and equipment. For the majority of the marine species currently used on the Island, value is derived either as monetary

value from sale or direct value by use in the household food supply. Each of these species is edible, and it is likely that all but the whales and a few bony fishes were consumed in earlier times, amounting to 43 of the 52 species used, or 83 percent. Conversely, very few species—primarily cod, herring, mackerel and salmon—were sold. With industrialization, consumption of these species decreased. Most households purchased canned or frozen fish for food while they increased the range of species harvested and sold. Refrigeration equipment, large-capacity boats, and powered seining equipment allowed a great expansion in quantity and diversity of the seafood industry. At the time of fieldwork, this trend again was reversing to some degree, with an increasing number of species consumed. Less welcome was the possible decrease in species sold, as a result of diminishing stocks and government restrictions on commercial harvesting of threatened species.

The remainder of the household food supply has undergone a corresponding shift from largely self-produced (the only traditional purchases were flour, molasses, sugar, salt, tea, and spices), to supplies entirely purchased by families who chose not to cultivate, gather, fish, or hunt for food, to a resurging interest in gardening and collecting wild foods.

Non-food household supplies provide the most illustrative process of delocalization and apparent relocalization. From a tradition of active craftsmanship where every man was a carpenter and every woman a weaver, households by the 1960s had become engrossed in the highest levels of consumerism. Indeed, a sizable proportion of new community dwellings were purchased mobile homes, and shopping expeditions became the favored recreation. Spurred by the newcomers, and welcomed with pride by the older residents, a recent preference for homemade clothing and traditional equipment, housing, and entertainment is becoming manifest.

Relocalization promises a return to the earlier economic autonomy by increasing local production of food and energy resources, and by reducing the need for a cash income to pay for these resources. This process is likely to continue, not by a reversion to the previous culture, but by means of a syncretism of the more traditional adaptation to the local ecology and the selective use of modern technology.

Note

¹ From an interview about the government decision to build the Canso causeway.

References Cited

Breton, Y.

1973 A Comparative Study of Work Groups in an Eastern Canadian Peasant Fishing Community: Bilateral Kinship and Adaptive Processes. *Ethnology* 12:393-418.

Burnett, W. E.

1981 N.C.'s Eel Fishermen Face Plunging Prices and a Glutted Market. *National Fisherman* 62(5):18.

Davenport, W.

1960 *Jamaican Fishing: A Game Theory Analysis*. Yale University Publications in Anthropology No. 59. New Haven: Yale University Press.

Department of Fisheries and Oceans

1981a *Policy for Canada's Atlantic Fisheries in the 1980's: A Discussion Paper*. Communications Branch, Department of Fisheries and Oceans, Canada. Ottawa: Minister of Supply and Services.

1981b *Resource Prospects for Canada's Atlantic Fisheries, 1981-1987*. Communications Branch, Department of Fisheries and Oceans, Canada. Ottawa: Minister of Supply and Services.

1981c *Annual Report, 1979-80*. Communications Branch, Dept. of Fisheries and Oceans, Canada. Ottawa: Minister of Supply and Services.

- Elias, P. D.
1975 *Metropolis and Hinterland in Northern Manitoba*. Winnipeg: Manitoba Museum of Man and Nature.
- Gould, P. R.
1969 *Man Against His Environment: A Game Theoretic Framework*. In *Environment and Cultural Behavior: Ecological Studies in Cultural Anthropology*. A. P. Vayda, ed. Pp. 213-249. Garden City, N.Y.: Natural History Press.
- Government of Nova Scotia, Information Division
n.d. *Nova Scotia Today*. Halifax: Nova Scotia Department of Government Services.
- Government of Nova Scotia, Statistical Services
n.d. *Victoria County Statistical Profile*. Halifax: Government of Nova Scotia, Statistical Services Branch.
- Hardin, G.
1968 *The Tragedy of the Commons*. *Science* 162:1243-1248.
- Madlener, J.C.
1977 *The Seavegetable Book: Foraging and Cooking Seaweed*. New York: Clarkson N. Potter.
- McCay, B. J.
1976 "Appropriate Technology" and Coastal Fishermen of Newfoundland. Unpublished Ph.D. Dissertation, Columbia University.
- McCutcheon, S.
1975 *Resources and Development in Newfoundland*. St. John's: Development Education Centre.
- Murphy, R. F., and Steward, J. H.
1956 *Tappers and Trappers: Parallel Process in Acculturation*. *Economic Development and Cultural Change* 4:335-355.
- Nag, M., N.F. White, and P. Creighton
1978 *An Anthropological Approach to the Study of the Economic Value of Children in Java and Nepal*. *Current Anthropology* 19:293-306.
- O'Neill, Leonard
n.d. *Cape Breton Magazine* 25:31.
- Pelto, P. J., H.R. Bernard, and L. Muller-Willie
1978 *Consequences of Economic Change in Circumpolar Regions*. Occasional Paper No. 14, Boreal Institute for Northern Studies. Edmonton: University of Alberta.
- Rolleston, M.
1981 *Burgeoning Eel Fishery Nipped in the Bud*. *National Fisherman* 62(5):16-17.