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Canada's commercial fisheries

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SERIES No. 49

BFC-149-EN-85

Canada's commercial fisheries

... made, over the years, the...
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... development projects. This assistance has been obtained...
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... institutions). The Canadian International Development Agency (CIDA) and...
... ministerial Canadian assistance to developing countries and, in the case of...
... fisheries projects, if obtain technical support and advice from the Department...
... of Fisheries and Oceans.

Examples of Canadian fisheries support include:

Senegal, where Canadian experts have been visiting national fisheries...
... staff in the techniques of fisheries zone patrol and surveillance. Since 1971...
... CIDA has been helping Senegal's Centre for Assistance to Small Scale Fishing...
... in a project to improve the quality and distribution of fisheries projects.

Peru, where at the request of the Peruvian Ministry of Fisheries, CIDA...
... funded research by Canadian scientists on the anchovy, a valuable species...
... whose sharp decline threw the Peruvian industry into a crisis.

The Philippines, where CIDA has assisted St. Lucie in developing a long...
... term plan for fisheries development and has funded the construction of locks...
... and storage facilities, ice-making equipment and other facilities.

Southeast Asia, where CIDA has supported the work of the Association...
... of Southeast Asian Nations in reducing poaching and improving...
... control and inspection systems.

Zambia, where CIDA has been involved in...
... to important upgrading centres with...
... solely to get their fish to market. In...
... (CIFA), a Canadian non-governmental...
... economic development in Zambia and the...
... region.

Other areas, including Canada's fishing...
... Association Organization in...
... the Philippines and Thailand.

In 1985, according to reports, with several developing countries...

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the Right Honourable Joe Clark,
Secretary of State for External Affairs,
Government of Canada, 1985

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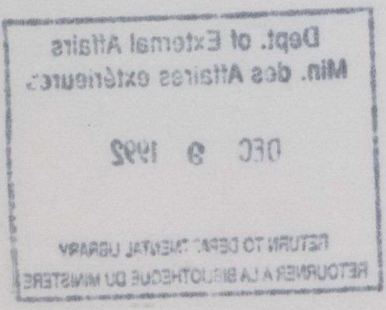
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Canada's commercial
fisheries

Revised 1985



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World fisheries development — the Canadian contribution

Drawing on its experience as a fishing nation, Canada, over the years, has assigned a substantial share of its assistance to developing nations on fisheries management and development projects. This assistance has been channelled both bilaterally (nation-to-nation) and multilaterally (through international institutions). The Canadian International Development Agency (CIDA) administers Canadian assistance to developing countries and, in the case of fisheries projects, it obtains technical support and advice from the Department of Fisheries and Oceans.

Examples of Canadian fisheries support include:

Senegal, where Canadian experts have been training national fisheries staff in the techniques of fisheries zone patrol and surveillance. Since 1971, CIDA has been helping Senegal's Centre for Assistance to Small Scale Fishing in a project to improve the quality and distribution of fisheries projects.

Peru, where at the request of the Peruvian Ministry of Fisheries, CIDA funded research by Canadian scientists on the anchovy, a valuable species whose abrupt decline threw the Peruvian industry into a crisis.

The Caribbean, where CIDA has assisted St. Lucia in developing a long-term plan for fisheries development and has funded the construction of docks, cold storage facilities, ice-making equipment and other facilities.

Southeast Asia, where CIDA has supported the work of the Association of Southeast Asian Nations in reducing post-harvest losses by improving quality control and inspection systems.

Zambia, where CIDA has been involved in a project to link lake fisheries to important purchasing centres with all-season feeder roads to allow small-scale fishermen to get their fish to market. The Co-operative Development Foundation (CDF), a Canadian non-governmental organization, has been active in fisheries development in Zambia and Botswana.

Multilaterally, Canada is funding projects managed by the Food and Agriculture Organization to develop small-scale fisheries in Indonesia, Malaysia, the Philippines and Thailand.

In 1985, responding to requests from several developing countries, Canada and the Food and Agriculture Organization of the United Nations co-sponsored a consultation of experts to begin development of a world-wide system for marking and identifying fishing vessels.

From Cabot to the 200-mile zone

Nearly 500 years ago, a tiny cockleshell of a ship, the *Matthew*, captained by one John Cabot, an Englishman born in Genoa, arrived off the coast of Newfoundland. Cabot's 18-man crew made a discovery that startled even these veterans of the ocean. A simple basket lowered into the water and hauled back in, came up full of fish.

The *Matthew* had found its way to one of the world's richest fishing grounds — the Grand Banks of Newfoundland. Later, other explorers sailed into other areas of fisheries bounty such as the Gulf of St. Lawrence, the Scotian Shelf, Georges Bank and the Flemish Cap.

Settlers followed the fishermen and, ever since, commercial fishing has been part of the history of the region now known as Canada. Today, the Canadian fishing industry is continental in scope, basing its operations not only on Cabot's discoveries but on stocks on the Pacific coast and in Canada's inland waters. In 1983, the industry landed 1.34 million tonnes of fish valued at \$874 million. (These are the latest figures available.)

Canada brings immense assets to world fisheries trade. One is abundance of raw material. Over 100 marketable stocks inhabit Canada's Atlantic and Pacific fishing zones, and its immense freshwater systems.

Another is experience and infrastructure. The Canadian fishing fleet comprises over 41 000 vessels, most of them owned by independent fishermen. The industry operates 900 processing plants across the country and employs some 70 000 fishermen and 30 000 plant workers.

A turning point in the history of the Canadian fisheries came in 1977. Modern, distant-water fishing fleets equipped with sophisticated detection and harvesting equipment had been overfishing the stocks off Atlantic Canada. Groundfish stocks such as cod and redfish which made up the Canadian industry's most important product lines were being fished to the point of diminishing returns. In 1977, Canada declared a 200-mile fishing limit and began a program of strict conservation and rebuilding. Today, in a remarkable success story of fisheries management, the groundfish stocks have recovered. Since 1977, landings of groundfish have increased by 56 per cent while cod landings have more than doubled.

Most of the total Canadian catch is landed fresh at Canadian ports. The exceptions include some halibut landed in United States ports and, on both coasts, sales by Canadian fishing vessels direct to foreign vessels. These "over-

the-side" sales are made in glut periods when processing plants have all the fish they can handle.

Processors sell the catch in a variety of forms: 62 per cent is frozen; the rest is sold fresh or chilled, cured, canned and dried; and a small percentage is sold live. About 7 per cent of the catch is processed as fish meal for poultry and farm animals.

Canada is now the world's leading exporter of fish and fishery products and, after grain, fish is the nation's largest food export. Canada's most important market continues to be the United States, which takes 62 per cent of exports. The European Economic Community is second at 16 per cent, followed by Japan with 12 per cent. In all, Canada exports to 50 nations. In volume, 1983 exports totalled nearly half a million tonnes valued at \$1.6 billion — about three-quarters of the total value of production.

The Atlantic industry rich in resources and experience

Canada's Atlantic fishing industry is based on several resource strengths. One is raw material. The amount of fish in coastal waters depends on the width of the continental shelf, which in these parts, is one of the widest in the world, reaching in places out beyond the 200-mile zone — and some of the world's richest fishing grounds are found above it.

Other Canadian fisheries assets include an unsurpassed pool of skills and experience and a highly diverse fishing fleet. The Atlantic fishing industry employs 52 300 full-time and part-time fishermen. The fleet comprises two main categories: some 29 000 vessels of under 19.8 metres (65 feet) making up the "inshore" fleet and about 30 000 vessels over that size — the "off-shore" fleet. The offshore category includes 240 large trawlers owned by a few companies which combine processing and fishing operations. These vessels can spend 10 to 12 days at sea, and can fish in all kinds of weather, year round, even in the wind-lashed, ice-infested waters north of Newfoundland and Labrador in winter.

Vast stocks of groundfish (so called because they live close to the ocean bed) are the backbone of the Atlantic fishery. They include cod, flounder, red-fish, haddock, poolock and turbot and are caught by both inshore and offshore fishermen, with about 45 per cent of the catch taken by the deepsea trawlers.

The groundfish catch is converted into many product forms. About 60 per cent is sold as frozen fillets and blocks, 25 per cent (almost all of it, cod) is salted. Less than 10 per cent is sold fresh.

It was danger to the groundfish stocks, posed by uncontrolled fishing, that led Canada to declare its 200-mile zone in 1977. Difficulties began in the 1950s when the fishing fleets of the world moved from salting to more modern methods of processing, including the freezing and processing of their catches at sea in large factory trawlers. Under the impact of virtually around-the-clock exploitation, the groundfish catch soared from 1.5 million tonnes in the 1950s to 2.8 million tonnes in 1965. Then, predictably, the returns diminished. Thereafter, although fishing efforts continued unabated, catches declined with the Canadian groundfish industry taking the brunt of the loss.

With the declaration of the 200-mile zone, Canadian fisheries authorities instituted a rigorous program of conservation including strict limits on catches. Since then, the groundfish stocks have made a remarkable comeback. Canadian catches, which had sunk to 418 000 tonnes in 1974 rose to 779 000 tonnes in 1981.

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Page 4, Paragraph 2, Lines 4 and 5, please read "38 000" for "29 000" and "3 000" for "30 000".

La pêche commerciale au Canada

DOCUMENTS
N° 49

Page 4, Paragraphe 2, Lignes 4 et 5, lire s'il vous plaît, "38 000" au lieu de "29 000" et "3 000" au lieu de "30 000".

In the early 1980s companies operating deepsea trawlers and processing plants experienced a slump in demand caused in part by the relative strength of the Canadian dollar against many other currencies. This left most of these companies heavily in debt and holding large inventories.

In responding to the situation, the federal government initiated a large-scale restructuring operation aimed at revitalizing the Atlantic fishing industry. Several large processing companies were regrouped into three restructured companies, supported by equity investments from the federal and provincial governments and private interests.

Despite its problems, the Atlantic industry has been able to maintain Canada's status as the Number One fish exporter in the world. Fisheries experts, looking at its resource assets and its pool of skills and experience, agree on its immense potential.

Canada's Atlantic coast catch

In Atlantic Canada in 1983, the total catch was 1.1 million tonnes of fish and the total value was \$621 million. In quantity and value the main products were:

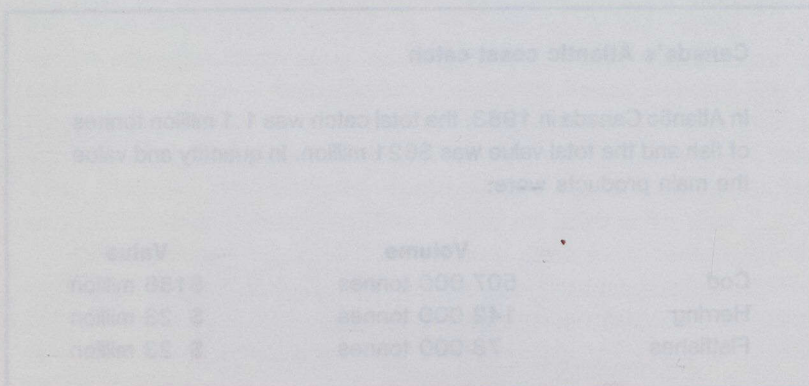
	Volume	Value
Cod	507 000 tonnes	\$186 million
Herring	142 000 tonnes	\$ 23 million
Flatfishes	78 000 tonnes	\$ 23 million

Cod is still king

The fish the men of the *Matthew* pulled up by the basket were probably cod. Since then the gear has become more varied — otter trawls, line trawls, handlines, jiggers, pair trawls, Danish seines, traps, gill nets. But cod continues to dominate the Atlantic fishing industry. So much so that in 1983, as in previous years, it was the biggest seller among all Canadian fish products with shipments of 145 000 tonnes valued at \$396 million.

The second most important Canadian fish product is herring (90 000 tonnes at \$192 million) followed by salmon (28 700 tonnes at \$213 million). Other valuable species include lobster and crab.

Today, almost half of Canada's fishery product exports are frozen, 14 per cent are fresh and the remainder are canned or treated products.



The west coast — land of the salmon people

For longer than history records, fish and fishing have been important in the lives of people residing on the northwest coast of North America. For the native peoples who lived in the region now called British Columbia, the salmon in particular was not only the most important single item of food but the centrepiece of a culture — so much so that they called themselves “the salmon people”.

Early in the nineteenth century, European settlement reached the Pacific coast of Canada and a commercial fishery began. The first fish exports from B.C. (salted salmon) were made in 1830 and the first salmon cannery began operations in 1870.

Comprising commercial, native and recreational fisheries, the Pacific fishery of Canada is as different from the Atlantic as its geographic base. The commercial fishery produces only about 10 per cent of the total volume of fish harvested in Canada, but it accounts for 30 per cent of the total value.

Today, as in the past, salmon is supreme. There are five Pacific species: chum, chinook, coho, pink and sockeye. Pacific salmon are the main source of animal protein for many native communities throughout the province. They are also the mainstay of the commercial fishery and the centrepiece of a rich recreational fishing industry. In 1983, landings of salmon were 71 000 tonnes valued at \$104 million. About 75 per cent of the total was exported.

The wild salmon stocks (i.e. those not raised in hatcheries) of B.C. begin and end their lives in thousands of streams and rivers, some reaching nearly 1 600 kilometres inland. In between, they spend much of their lives at sea. In this century they have come under pressure in both phases. Overfishing, on the high seas and also in Canadian and US waters, cut deeply into the stocks. Meanwhile, industrial development undercut salmon habitats in B.C., destroying many spawning beds and blocking many pathways to the sea.

At the United Nations Conference on the Law of the Sea, Canada responded to the problem of overfishing in the ocean by leading a drive for a special “salmon article” banning high-seas fishing of salmon, which was incorporated into the final convention. In 1985, after 15 years of negotiation, Canada and the United States signed the International Pacific Salmon Treaty which addresses the problem of salmon interceptions by both nations. Under its terms, Canada and the US agree to share the burden of rebuilding and conserving overfished stocks.

Rebuilding the salmon

Canada has been engaged, since 1977, in a \$150-million effort to rebuild salmon and steelhead trout stocks to the levels of the turn of the century. The Salmonid Enhancement Program, as it is called, includes the clearance of blocked streams, restoration of habitat and production of salmon in hatcheries. Planners of the program hope it will increase the total Canadian salmon catch from an annual average of 72 500 tonnes in 1980-83 to 100 000 tonnes in the early 1990s and even higher totals beyond that.

In recent years, following ominous declines in salmon stocks, the federal Department of Fisheries and Oceans introduced special measures, including catch limits, to conserve and rebuild the wild salmon stocks.

Herring

The story of B.C.'s herring industry is one of many and varied fortunes. From the late 1870s to the 1930s the British Columbia industry built a healthy herring export trade to the Orient. Then, world economic depression cut production by nearly two-thirds. The industry pulled itself out of the slump by building up a market for animal and poultry feed (fishmeal) made from herring. Catches climbed steadily to over one quarter of a million tonnes in the 1960s, before the stocks collapsed in 1965. In the early 1970s, with stocks recovering under careful management, the industry found yet another new herring product line and market — sales of herring roe (eggs) to Japan, whose own stocks of herring were in severe decline. Herring roe — a “high-ticket” item — has now become a major B.C. fishery product line responsible, in 1984, for \$40 million in landed value (i.e. fishermen's earnings) and a wholesale value of \$82 million. So intense and closely-managed is this fishery that annual fishing seasons have been opened and closed by gunshot signals 15 minutes apart.

Another important stock is halibut which, earlier in B.C.'s history, was second only to salmon in landings and value. Landings peaked in the 1920s. Then overfishing caused the collapse of the stocks. In 1923, Canada and the United States formed an international commission to manage the halibut stocks. Although halibut recovered until the early 1960s they are now again in a state of decline. Experts estimate that it will take a decade of strict conservation measures to rebuild the stocks.

With catches of some 62.7 thousand tonnes a year, the Pacific coast's groundfish industry is far smaller than its Atlantic counterpart but catches have tripled over the past 20 years. The main species in the catch are Pacific cod, ocean perch, hake and sablefish.

Smaller but highly promising Pacific coast fisheries have developed on shellfish and crustacean species, notably geoduck, oysters, crabs, clams, shrimp, prawns and abalone.

The fleet

The Pacific industry employs 17 300 fishermen and the 7 700-vessel fleet comprises mainly small, well-equipped ships, working in sheltered waters close to shore. The most common types are gillnetters and trollers, used to catch salmon. About 1 000 larger multi-purpose vessels use seine nets to catch salmon and roe herring. Another 1 200 small open motor boats use gillnets to catch roe herring. And 400 longliners concentrate on the halibut fishery.

The inland fishery

Canada's freshwater fisheries are based on lakes and rivers covering an area of 755 000 square kilometres (only slightly less than the total area of Australia).

These resources have become the base for a flourishing freshwater fishery sector that employs 8 000 fishermen. The inland fisheries harvest includes perch, pickerel, pike, smelt, tullibee and whitefish. In 1983, landings of the freshwater fisheries totalled 50 000 tonnes with a landed value of \$51 million.

The gear used in these fisheries varies from small open boats powered by outboard engines, to 300 vessels 12 to 25 metres in length which fish on the Great Lakes and other large freshwater bodies. These include Great Bear Lake which lies partly in the Northwest Territories, and Great Slave Lake in the Northwest Territories, one of the largest lakes in the western hemisphere, where the annual commercial fishing catch exceeds \$2 million.

By far the greatest share of the inland fisheries is based in Ontario, on the Canadian side of the Great Lakes.

Commercial fishing which started in Lake Ontario in the first half of the nineteenth century, has had to contend with many obstacles. The Great Lakes became the centre of industrial expansion in both Canada and the United States, causing habitat damage and water pollution. Another challenge was the introduction of the sea lamprey, an eel-like predator that decimated commercial stocks until joint action by the Canada-US Great Lakes Fishery Commission brought the problem under control.

Today, Ontario's commercial freshwater fishery is the largest in the world with 1983 landings of almost 27.5 thousand tonnes of fish with a landed value of about \$28 million. Nationwide, in 1983, Canada's freshwater landings were 48.8 thousand tonnes valued at \$49 million.

Fisheries and government in Canada

Canada's Constitution gives the federal government exclusive responsibility for the management of marine and inland fisheries. Over the years, some of these responsibilities have been delegated to provincial governments.

Today, the federal Department of Fisheries and Oceans (DFO) manages fisheries directly in the four east coast provinces, Nova Scotia, New Brunswick, Newfoundland and Prince Edward Island, as well as the Northwest Territories and the Yukon Territory.

In Ontario, Manitoba, Saskatchewan and Alberta, the federal government has delegated management of the fisheries to the provinces.

In Quebec, management of all freshwater and some marine fisheries has also been delegated to the provincial government.

In British Columbia, the federal government manages marine and anadromous species (i.e. fish such as salmon which inhabit sea and freshwater at different phases of their lives). The provincial government manages freshwater species.

Throughout Canada, DFO is responsible for the inspection of fishery products traded beyond provincial borders.

DFO's responsibilities cover:

Fisheries management — this activity includes surveillance and management of stocks within Canada's 200-mile zone on both the east and west coasts, and the associated research and stock assessments needed to make decisions about the sharing of access to the stocks among Canadian and foreign fishing fleets.

Fisheries research — DFO operates nine fisheries and aquatic research centres throughout Canada. Studies at these centres cover biology, ecology, population dynamics, distribution and migrations of fish, marine mammal and shellfish studies and the forecasting of fish stock abundance. DFO also operates several fisheries and oceanographic research vessels.

Economic marketing and development — DFO also conducts programs which support the fishing industry in marketing, promoting and realizing full economic benefit from fish products. This work includes serving as a national centre for the collection, analysis and distribution of data and information on fish catches, production and trade.

Small craft harbours — DFO also develops, maintains and administers harbours and marine facilities used by commercial and recreational fishermen at some 2 300 locations throughout Canada.

Fisheries research centres in Canada

Major fisheries research establishments operated by Canada's Department of Fisheries and Oceans are:

Pacific Biological Station, Nanaimo, British Columbia, specializing in Pacific salmon and other west coast species

Freshwater Institute, Winnipeg, Manitoba, specializing in freshwater species

Arctic Biological Station, Ste. Anne de Bellevue, Quebec, specializing in marine mammal studies

St. Andrews Biological Station St. Andrews, New Brunswick, specializing in studies of lobster, Atlantic salmon, and other east coast species

Northwest Atlantic Fisheries Centre, St. John's, Newfoundland, a fisheries research centre for Atlantic species

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