PACIFIC OCEAN 21: FOUR PROBLEMS IN SEARCH OF A SOLUTION

A Public Forum Sponsored by The Maritime Awards Society of Canada

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The Maritime Awards
Society of Canada

C O N T E N T S

FOREWORD

It was my great pleasure to attend the initial Maritime Awards Society of Canada Forum on Maritime Affairs. I was impressed by the topics chosen for discussion, the quality of the presentation, the perceptive questions and the thoroughness of the responses. I hope the Record will bring some of the flavour of the day's proceedings to readers who could not attend and will introduce a larger constituency to the Society and to its long-term fund-raising aims

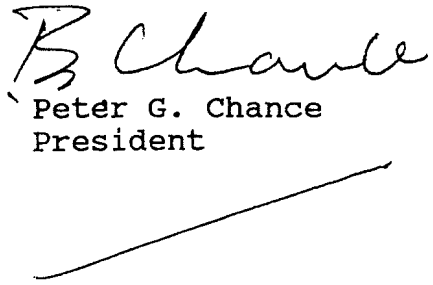
Honourable Robert G. Rogers
OC, OBC, KStJ, LLD, DScM, CD
Patron

INTRODUCTION

As President of the Maritime Awards Society of Canada (MASC), it was a pleasure to have the honour of welcoming a distinguished audience to our first Forum on Maritime Affairs. The aim of our Society is, through education, to foster a national awareness of the vital importance that oceans play in the life of our nation. Towards this aim we have embarked on the establishment of scholarship programmes at Canadian universities. At present, scholarships have been established at the University of Victoria and at the Memorial University of Newfoundland. As the Society grows, it is intended to offer scholarships at all Canadian universities with relevant programmes.

In addition to helping finance young Canadians with their advanced studies, the Society hopes this initiative will contribute to the development of a nation-wide network or coalition of affiliated associations sharing our interest in marine and coastal policy issues of the day. Canadians have a proud heritage, and we believe we must build on our past to strengthen our nation's role in ocean affairs in the future.

I would like to acknowledge the generous support received from the University of Victoria and four local corporations, the British Columbia Ferry Corporation, MIL Systems Engineering Inc. (Pacific), Seaspar International, and Vancouver Shipyards Ltd. Their support was essential to making this Forum a reality. Finally, last but by no means least, a very special thank you is extended to Professor Douglas Johnston whose vision and outstanding ability resulted in a particularly timely and pertinent programme of urgent issues and, through his contacts and reputation, bringing nationally accredited panelists to the Forum.



Peter G. Chance
President

WELCOMING REMARKS

Mr. Jack Frazer, M.P.

Canada, facing on three oceans, has the world's longest coastline. With the extension of national jurisdiction to 200 miles, and in the East beyond, the onus is on us as a nation to provide responsible stewardship of this gigantic area.

Not the least on the West Coast, between Dixon Entrance in the North and the Strait of Juan de Fuca in the South, our waters pose enormous challenges to those who would protect our priceless environment. Not only must we assure the sustainability of our vital salmon fisheries, we must also manage our coastal waters judiciously, assigning the responsibility to the level of government best able to achieve the desired results. This has not always been the case. In the 1990's we must find a way to ensure efforts are harmonized and avoid governments squabbling over turf.

As the increasingly interdependent global economy develops, Canada must become even more competitive as a trading nation. We must focus much more critically on the problems confronting our shipping industry and its ancillary shipbuilding and ship repair services.

The time has arrived also to move towards the 21st century with a clear vision of the roles of our Coast Guard and Armed Forces will have to play in monitoring, enforcement and other aspects of coastal management. We are already seeing the need for such intervention off the East Coast, as foreign vessels intrude and violate agreed quotas for rapidly depleting fish stocks.

You will find these issues front and center at today's Forum, ladies and gentlemen, and the organizers tell me that they depend on your lively and penetrating questions and comments to keep our distinguished panelists on their toes. This is your opportunity to "meet the experts" and they are an extremely well qualified group. I am sure that you will want to take full advantage of this, the first meeting of its kind in the Greater Victoria area to cover such a wide variety of ocean policy topics. With our federal government in the process of re-assessing its priorities in ocean policy and management, an enlightened public opinion is needed to provide guidance in these complex matters.

I congratulate the Maritime Awards Society of Canada for taking this initiative and for its work across Canada in raising funds to provide tomorrow's experts in all sectors of ocean-related studies. I wish you well in today's endeavours!

- PANEL 1 -

THE FUTURE OF THE BRITISH COLUMBIA SHIPBUILDING AND SHIP REPAIR INDUSTRIES

Panel Chair: Graham Kedgley

Panel Introduction

It is my privilege to chair the opening session of the programme and to introduce three of the wisest and most knowledgeable members of the West Coast's shipping community. Mr. McLaren will speak on the history of the ship repair and refit industry in British Columbia. Admiral Martin will review the range of shipping activities that our government gets involved in by reason of such things as having a Navy, a Coast Guard, a Fisheries fleet, and so on. Finally, Mr. Ward will provide us with some thoughts on new ship construction work: domestic, export, deep sea and ferries.

It will be interesting to hear whether the panelists share my doubts whether, in this day and age, the Canadian shipbuilding industry can, should, or will, be allowed to rely on government bail-outs. In England recent success has come with privatization. Our own industry has a glorious past here in Victoria with a dry dock in place for over 100 years, starting with the Navy dock. The current Public Works Canada Esquimalt dry dock was built in 1926, and the industry has been involved in some pretty prestigious ships, including the *RMS Queen Elizabeth* which was docked here early in World War 11.

Some of us would like to think that the British Columbia shipbuilding and ship repair industry has an exciting future, even in the absence of direct government support.

The History of the Ship Repair Industry in British Columbia

T. Arthur McLaren

Let me start by defining shipbuilding and ship repairing. A shipbuilder has the capacity to build a ship, launch, refit, and repair her. A ship repairer has the facilities for docking the ship clear of the water to undertake repairs and refits. Repairs and renovations afloat can be undertaken by a shipbuilder, ship repairer, or by owners employing labour directly. For the purpose of this presentation, I shall deal only with ship repairers with dry docking facilities.

Ship repairing has been an active industry in British Columbia for over 100 years. Ship repair facilities might be classified according to three categories of vessels:

mainly ocean-going ships in excess of 4,000 tons light displacement, including large coastal passenger ferries, which require the facilities of a graving dock or floating dry dock to execute repairs;

smaller ferries and ships, and barges, etc. up to 3,000 tons light displacement, which require the services of a large marine railway, synchro-lift dock or floating dry dock to undertake underwater repairs; and

under 300 tons docking displacement, which are serviced by small marine railways, travel hoists, or other novel devices for docking.

The earliest graving dock in B.C. was built at the Royal Naval Dockyard in Esquimalt in the 1880's. This facility was built to service the Royal Navy's Pacific Squadron, but the dock was made available for commercial work and leased on occasion to private industry. This graving dock is still in service and the equipment kept up to date.

When the Grand Trunk Pacific Railway was built to terminate at Prince Rupert, the railway company, eager to create a new port at that northern location, had by 1914 installed a floating dry dock of some 15,000 tons capacity. Unfortunately, this dry dock attracted very limited business and was sold and relocated to Seattle after World War II.

At the conclusion of World War I, Admiral Jellicoe headed a survey of dockyard facilities available to the Royal Navy and recommended the construction of graving docks on a worldwide basis to accommodate the Royal Navy's largest capital ships. As a result, graving docks exceeding 1,100 feet in length were built at several locations, including Esquimalt, Saint John (New Brunswick), Lauzon (Quebec), Singapore, and Simonstown (South Africa).

The Esquimalt Graving Dock was built by the Department of Public Works and continues to be operated by Public Works on a charge-for-services basis. At the time the Esquimalt Graving Dock was under construction, political pressure from the Vancouver Harbour Commission and other port interests resulted in a federal subsidy to the Wallace Shipbuilding Company to build, maintain and operate a 12,000 ton floating dock in the Port of Vancouver. This dry dock, with wooden pontoons and steel wing walls, was scrapped after a life of 50 years.

A second floating dry dock of approximately 10,000 tons lifting capacity with wooden pontoon construction was built during World War II by North Vancouver Ship Repairs Ltd. and installed at their wartime shipyard on the site of what is now Lonsdale Quay. North Vancouver Ship Repairs, renamed Pacific Dry dock, was bought out by Burrard Dry Dock in the early 1950's and this dry dock relocated on the premises of Burrard Dry Dock Ltd. The dock was dismantled in the early 1980's.

The latest floating dry dock located in Vancouver Harbour, was built in Japan in the early 1980's to Panamax dimensions: that is, its dimensions equal those of the Panama Canal lock system. This dock, of 35,000 tons lifting capacity, is now operated by Vancouver Dry dock Company Ltd.

During the 1890's and the first decade of this century, marine railways with capacities of 1,500 tons to 3,500

tons were built at both Victoria and Vancouver:

a. B.C. Marine Railway (Yarrows) in Esquimalt;

b. Victoria Machinery Depot in Victoria's Inner Harbour;

c. Wallace Shipbuilding Co. Ltd. (Burrard Dry Dock) in North Vancouver;

d. B.C.Marine Engineers; and

e. Burrard Shipyard & Engineering Works Ltd.

All the foregoing marine railways are now demolished. The present facilities available for docking coastwise vessels and barges include a 1,200-ton synchro-lift docking system and a floating dry dock of 4,000 tons at Vancouver Shipyards in North Vancouver, floating dry docks of 2,000 tons, 600 tons, and 250 tons lifting capacity at Allied Shipbuilders Ltd. in Vancouver, and two 800 ton barge-ways at McKenzie Barge & Marine Ways Ltd. Small marine railways are operated at Point Hope Shipyard in Victoria and Nanaimo Shipyard and others at many locations along the coast, including the Fraser River, service vessels of under 30 metres in length.

The main work available to ship repairers is docking vessels for annual, bi-annual and quadrennial surveys. Docking for annual surveys includes cleaning and painting the underwater hull and a examination of shafting, propellors and rudders. Bi-annual surveys usually require the attendance of classification society surveyors and Coast Guard inspectors and involve drawing the propellors to measure the wear-down on the stern bearings, inspection of rudder bearing and pintle wear-down, and an overview of the condition of sea valves, bow thrusters and other underwater equipment. A quadrennial survey involves dropping the rudders, opening up the rudder carrier bearing, removal of the propellers, and withdrawing the tail-shafts from the stern tubes for inspection. If required, this docking includes the drawing, repairing or renewing of stern bearings, hydrostatically testing double bottom and other tanks, and checking plating thickness by electronic instruments or by test drilling.

Docking invariably involves painting the underwater hull. Annual surveys may only require spot painting. Bi-annual and quadrennial surveys usually involve cleaning to remove deteriorated paint coatings and repair bare spots. Modern practice is to use high pressure water blast to clean the structure. Subsequent to survey, steelwork repairs may be

found necessary either as a result of damage or due to excessive corrosion. On wooden vessels, there is often a need to re-caulk seams.

Apart from scheduled dry docking, there are occasions where underwater damage dictates dry docking for repairs. In the normal course of events, the ship is docked on a row of keel blocks extending down the centreline of the dry dock and on these blocks the weight of the ship is carried, augmented on either side by bilge blocks which carry any off-centre loading. When a ship is docked with heavy bottom damage, additional blocking is required in way of the damage.

Periodic docking on coastal and small craft provides a steady turnover of minor work to some ship repairers. This work is fairly steady and can be scheduled by ship owners to avoid heavy workloads involving the added expense of overtime work by the ship repairer.

Where there is damage to repair, the insurance underwriter's surveyor is brought into the equation. This surveyor will control the extent and cost of repairs and may, once the ship is docked and the extent of repairs determined, call for firm price offers from other ship repairers to repair the damage.

Repair facilities on the British Columbia coast have developed and expanded to match the tonnage and variety of vessels trading in this area. The earliest deep-sea ships trading into British Columbia were sailing vessels. Ships and barques of 1,500 to 3,000 gross tons capacity took on cargoes of sawn timber. Sailing ships of this order were the bulk carriers of the era and were most suitable for long voyages, not requiring replenishment of bunkers. Since these ships predated the advent of the Panama Canal, voyages to Europe and the Eastern Seaboard were of some 15,000 miles. Ships are prone to the build-up of seaweed, barnacles and other marine growth on the bottom. Without dry docks, these ships were careened or set on a grid to enable bottom growth to be scraped.

Regular trade between British Columbia, the Orient and Australia, involving high-class steamers dates from 1891 with the advent of the CPR ***Empresses.*** The Canadian Australian Line served the Antipodes and the Blue Funnel Line from the United Kingdom via the Orient served B.C. ports. These early steamship lines had their ships docked in Hong Kong, Sydney, Australia, or in United Kingdom ports. In the event of a local stranding or other damage requiring docking, the nearest facilities were in Seattle. Early coastwise vessels were brought in from California or

the North Western United States and, again, went to Seattle for docking, but dry docking was later available at the Esquimalt Dockyard and later at the Marine Railways at Victoria and Esquimalt.

The primary export from B.C. remained timber, although cargoes of canned salmon to the United Kingdom and cargoes of coal for San Fransisco were loaded. Deep sea shipments from B.C. ports greatly increased with the opening of the Panama Canal in 1914, but it was not until after World War I that grain elevators were built and the great exports of grain to the United Kingdom and other European ports developed. The timber trade was now entirely handled by steamers. With the increase of steamship traffic, coal bunkering from Vancouver Island loading wharfs augmented exports.

Apart from the passenger liner companies, like the CPR, the bulk of shipping trading into and out of B.C. ports were vessels of 7,000 to 9,000 dead weight tons dwt. Hence when graving and floating docks were built in the 1920's and 1940's, this was the size of ship that had to be handled.

Between the wars, Esquimalt Public Works Dock handled the Canadian Pacific coastal fleet, the Prince Rupert Dry dock looked after the Canadian National coastal steamers, and marine railways at Burrard Dry Dock and B.C. Marine docked vessels of the Union Steamship Co. Ltd. After World War II, the principal vessels trading to and from B.C. ports grew in size from 10,000 tons dwt to 15,000 tons to 30,000 tons and by the 1960's, the floating dry dock at Burrard Dry Dock was incapable of handling this size of deep sea ships. The earlier dry docks were scrapped and replaced with a Panamax Dock with the capacity to handle all shipping trading into this area.

Since World War II, there have been changes in the coasting trade. Self-propelled cargo coasters have been replaced by tug and barge fleets and the wooden-hulled tugs were replaced with steel-hulled vessels during the 1960's. There are literally hundreds of chip, gravel, oil and chemical barges. These large barges provide business for the Esquimalt and Vancouver dry docks. Smaller barges are handled by the synchro-lift dock and the marine railways at McKenzie Barge & Marine Ways.

British Columbia is a high-wage region, and ship owners nowadays seek out lower-cost Third World countries to undertake routine dockings. However, cost is not the only factor in placing ship repair contracts. Availability and speed in completing repairs are attractions to the owner.

Time and scheduling are paramount in undertaking repairs and maintenance on cruise ships.

The future of ship repairing in British Columbia is largely under the control of those in the industry. It is obvious that we cannot beat Third World countries on the basis of price alone. We must give the ship-owner service, schedule work with no delays, use the latest safety equipment and training to avoid fires (one of the greatest hazards in ship repairing), and we must co-operate with labour to increase productivity and avoid double-time rates for overtime and week-end work.

The future may be challenging, but really what is being demanded is hard work and good planning.

Government Support for Canadian Shipyards

Michael A. Martin

My participation in this Forum is in the capacity of a client, who has had some experience with shipyards and shipbuilding and who has been on the receiving end of the products of both East and West Coast shipyards. I would like to review the likelihood of governmental support for the Canadian shipyards in the future.

Over the years I have commissioned ships that have been built in both East and West Coast ports, and have taken quite a number of ships to refit in a number of shipyards. My strongest impression of West Coast yards has always been of their meticulous approach to quality in the final product delivered to the customer. West Coast-built vessels reflect a pride and attention to detail that are not always evident in other yards in Canada. For example, ***HMCS Skeena*** was of the highest possible standard, the equal of any in the world. Over time this has changed somewhat, but in my view the products from West Coast yards have always been the best in Canada.

Let me make a quick summary of the history of contract allocation as it related to the Royal Canadian Navy (RCN)

during and after World War II. Obviously, during the war there was massive expansion in the industry on both coasts, and every conceivable yard worked flat-out to meet the demands of the country. A thriving industry was generated on the West Coast with an extremely skilled labour force. During the 1950's and 1960's, there was a very careful distribution of naval shipbuilding work throughout the country. Approximately two-thirds of the vessels were built in the East, and one-third in the West. Of the twenty destroyers of the St. Laurent-class and follow-on classes of destroyers, seven of them were West
Coast vessels. Of our ten post-war minesweepers, four were built on the West Coast, as were two of the five gate vessels.

There was a *conscious policy* emanating from Naval Defence Headquarters (NDHQ) that it was important to maintain a broadly-based, technically modern, warship-building capability that was able to expand rapidly with appropriate skills in time of emergency. In fact, in the late 1950's, there was an extremely close rapport between the Chief of Naval Staff and the managers or presidents of the shipbuilding yards. There were regular meetings and considerable personal contact (particularly on the golf course).

This strategic Department of National Defence (DND) policy was supported politically, as it was the government's belief that the benefits of shipbuilding should be shared country-wide. This policy was followed despite the fact that it increased the cost of programmes. I believe it cost approximately 10% more to construct vessels on the West Coast. There was no doubt, however, that the quality was much higher. This policy of sharing contracts, which maintained a vital, modern industry on both coasts, went out the window in the 1970's and was replaced by the policy of awarding contracts to the lowest bidders. Certainly politics also played a role. For example, all of the three replenishment ships were built on the East Coast, all four Tribal-class destroyers were built on the East Coast, and all twelve new patrol frigates went to East Coast yards. The significant program of conversion and mid-life improvement for the Tribal-class was completed in the East, and all twelve of the coastal patrol vessels presently under construction were assigned to East Coast yards.

The conclusions are obvious. There is little strategic advantage, either industrial or military, in maintaining a broad-based shipbuilding capability. It is apparent that the West Coast yards can no longer depend *on* a "share the

wealth" policy. If there are contracts, there will be no sharing; the lower costs in the East will win out.

The approach to *maintaining* a viable naval fleet, and other government fleets, has been very Canadian. Over the last few decades there have been many examples of procrastination, delayed programmes, and changes in approach. It's strange too, that the last few programmes, which have made such a massive change to the Canadian Navy, occurred just before the recent world-wide reduction in cold-war tensions. The result is that Admiral Bruce *Johnston,* currently commanding the West Coast fleet, has one of the most modern stables of warships in our history. In fact, everything under his command is either new or modernized. He is receiving new vessels every few months, while his support capability and personnel are being slashed.

Indeed, there is a surfeit of modern vessels, and unless there is an unpredictable national defence emergency (and we are invariably very slow to recognize this when it comes), there will be no naval programmes for a very long time. If there is a submarine replacement programme, it will go ahead only if the vessels can be purchased cheaply off-shore. There will be no modernizations and no life extensions. In other words, there will be very little support for shipyards to undertake new building or major conversions.

Undoubtedly some refits will continue to be completed by civilian shipyards, but it is important to recognize that the government has spent tens of millions of dollars in revitalizing Ship Repair Units in the dockyards on both coasts. Both are manned by highly skilled, dedicated warship overhaul and refit personnel. The facilities are extremely modern and are capable, in fact, of completing the modernization of vessels, should it be required. It is important to note that modern warships are considerably more complex than twenty-five or thirty years ago, when naval ships were last built in the West. The technical skills needed to refit a warship, such as the new patrol frigates, have almost disappeared in civilian yards and the capability resides almost solely in the naval dockyards.

What is the future for these Ship Repair Units? As I said, they have been completely modernized with massive capital injection. The Esquimalt Ship Repair Unit is the most modern shipyard on the West Coast with its own purpose-built, dedicated dry dock, and access to the Public Works Canada Esquimalt Graving Dock. There is speculation that the ship repair units will be privatized

in terms of operating leases to outside interests. In fact, today there is a rumour that a well-known West Coast yard has this week put in a bid to take over the operation and management of the ship repair unit in Esquimalt. If this should happen, it would be seen as a reduction in civil service employees. It should also be noted that there is a massive reduction in uniformed personnel in the management of the ship repair facilities to meet the Navy personnel cuts which have been ordered.

Another factor is that the Navy has recently expended funds to modernize and move ashore its previously sea-based fleet maintenance group. This facility provides quick-response teams and dedicated uniformed specialists, particularly in the weapons and sensors field, to augment ships' crew in the event that repairs are required quickly or at some remote site.

With privatization of the ship repair unit, the Navy would lose the expertise and training of engineers in the management of complex industrial yards. There would also be reduction in the "comfort level": in the knowledge that, "come hell or high water", the naval dockyards will always be there to meet naval needs. Frankly, I am ambivalent about the privatization of the ship repair unit, but I have a gut feeling that it would be a retrograde step.

As to other government support for shipbuilding, it is hard to forecast what will happen with the Coast Guard. There has been a steady reduction in funding for this organization, and, of course, they have now amalgamated with Fisheries and Oceans (DFO). There is little doubt that quite a number of their vessels are deteriorating through age and hard work, although some new vessels were completed in the last few years. It is important to note, however, that neither DFO nor DND has had a strong record over the last decade in achieving significant and continuous building programmes. The support of the capability inherent in the Coast Guard and in Fisheries and Oceans, like DND, comes from discretionary funding and, therefore, is vulnerable when the country faces debt and deficit problems. In summary, it seems to me that in the present financial debt crisis there will be very little built for civilian government marine fleets.

Finally, provincial programs. The B.C. Department of Highways might find the need to replace some vessels for their inland waterways responsibilities over the years, but these would not be large programmes, and it is unlikely that new routes will be created. B.C. Ferries, on the other hand, is one of the growth industries in British

Columbia. The Corporation has just put into place a ten-year capital programme, which projects hundreds of millions of dollars of shipbuilding over the next ten years. Ship refits will also continue for an expanded fleet. In fact, from a shipbuilding point of view, this situation is quite positive.

My conclusion is that, despite the fact that the West Coast yards can demonstrate the highest quality of shipbuilding in Canada, there will be no new federal shipbuilding contracts for the next decade. I think the privatization of the ship repair unit is highly possible, and that there will be, therefore, strong competition for refit contracts throughout British Columbia with an advantage residing in the Ship Repair Unit. There will certainly be large B.C. Ferry contracts, but this is probably the only source of significant government support that one can see. All in all, this is not a rosy picture from the shipbuilder's point of view. Government contracts will not help, and I suggest a new entrepreneurial approach will be necessary to maintain the vitality of the industry.

B.C. Ferry Corporation's Role in the Future of the British Columbia Shipbuilding and Ship Repair Industry

Thomas C. Ward

The second half of the last decade of this Century will be a busy and exciting period for the British Columbia Ferry Corporation, as it positions itself to better serve the needs of the travelling public of British Columbia.

Last year our ferry system carried over 21 million passengers and 8.3 million automobiles with a total revenue of $240 million. On some of the lower mainland to Vancouver Island routes, traffic has been growing at a rate approaching 4% annually for the past few years. Traffic to the Sunshine Coast is also up considerably. Last year, there were as many passengers traveling between Horseshoe Bay and Bowen Island as were carried

between Tsawwassen and Swartz Bay during the initial year of the Ferry Authority's operation.

The ferry system has remained essential unchanged in character since its inception, when 17 vessels were constructed for the service. Since its beginning the ferry system has proven to be a catalyst in the development of British Columbia's coastal community. Almost continuous growth in demand over the past 30 years has necessitated frequent major expansions of the system.

As it considers its strategic options for the coming decade, the Corporation must face significant challenges. Historic demand has led to a doubling of traffic on roughly a 20-year cycle. Continuation of this trend appears to be confirmed in traffic growth of over 4% in each of the past six years.

This growth will require additional fleet capacity in the not-too-distant future. The average age of the existing vessels in the fleet is 24 years with some of the major vessels being well over 30 years old. If one vessel is replaced in each of the next ten years, the average of the fleet will remain at 24 years.

The vehicle/driver tariff on the main routes, if expressed in constant dollars, remained virtually unchanged for the past 15 years, while the Corporation's annual operating subsidy has declined to one-third of the 1977 level. While continued growth in the utilization of individual vessels has narrowed the gap between operating revenues and operating costs, the probability of further reductions of the operating subsidy must be contemplated. Two major routes between Tsawwassen and Swartz Bay and Horseshoe Bay and Departure Bay (Nanaimo) generated an operating surplus of some $22 million last year. All other routes ran at a deficit. Cost recovery on the Sunshine Coast routes was $18 less than the operating cost. The Southern Gulf Island routes had a shortfall of $23 million; the Northern Gulf Island routes $18 million; and the North Coast routes nearly $14 million.

Over the past years the Corporation has been engaged in two major activities: the development of a Corporate Strategic Plan and the development of a long-range Capital Plan. In this presentation I will address the Capital Plan of the Corporation, although many of the goals of the Strategic Plan will probably have a profound impact on how the ferry system continues to develop its business plans and delivers its service.

Central to the Capital Plan was the need to develop a Mid-Island Transportation Strategy. This was done in cooperation with the Crown Corporation Secretariat and the Ministry of Transportation and Highways. The Mid-Island Transportation Strategy recognized that both the Horseshoe Bay and Departure Bay Terminals already suffer from severe congestion, which will become more acute as traffic grows. The Horseshoe Bay Terminal is sandwiched against a large cliff on one side and a large commercial marina on the other. The Terminal services three routes, all of which are growing. Earlier studies had indicated that a double-decking of the terminal would be necessary to handle the forecast growth at a cost in the order 'of $40 million.

At Departure Bay the highway infrastructure approaching or departing from the terminal as been known to be overloaded for several years now. The Ministry of Transportation and Highways has long contended that continued use of Departure Bay as the terminus for cars and heavy truck traffic from both Horseshoe Bay and Tsawwassen will necessitate the building of a major highway connector along the Brechin Hill-Northfield corridor to the new Nanaimo Bypass at a cost of something in the order of $70 million.

Traffic studies indicate that 55% of all Mid-Island ferry traffic is traveling to or from points north of Nanaimo. An extensive public consultation process was held, including Open Houses in Nanaimo, Parksville, Campbell River and Chemainus. As a result of these studies and consultations, a consensus was developed which indicated the need to: relieve the congestion at Horseshoe Bay; remove heavy truck traffic from Departure Bay; develop a new terminal at Duke Point just south of Nanaimo to handle the heavy duty commercial vehicles; and smooth out the traffic on the access highways to both terminals by breaking automobile traffic into smaller loads and spreading the traffic over more sailings through the introduction of a reservation system or similar demand management strategy.

Our ten-year Capital Plan includes a number of distinct elements. On the terminal side, to support the Mid-Island Transportation Strategy, there will be a new commercial vehicle and automobile terminal constructed at Duke Point, some 12 km. south of Nanaimo. The terminal will be at the outboard end of Duke Point Industrial Park. This terminal will have two major berths situated parallel to the shore-line and access will be by a new limited-access highway, which will connect the terminal to the Island Highway. The new terminal is expected to be a major economic stimulus to the development of the Duke Point Industrial Park, and

consultations are currently taking place with all the stakeholders, including the Nanaimo City Council, the Nanaimo Indian Band, the residents of the community of Cedar, and the existing industries on or in the vicinity of Duke Point. Duke Point Terminal is expected to open in mid-1997.

The second phase of the ongoing development of Tsawwessen Terminal will see: the upgrading of the original berth, which was put in place when the system was inaugurated in the early 1960's; the building of an all-weather berth capable of taking the Spirit-Class vessels during adverse winter weather conditions; and the improvement of foot passenger facilities to reduce the distance foot passengers have to walk to board their ferries.

At Horseshoe Bay the toll booth will be moved further up the approach road to allow for more efficient segregation of traffic bound for the three destinations accessed through this terminal (Nanaimo, Langdale, and Bowen Island). Foot passenger and pay parking facilities will also be improved.

At Departure Bay foot passengers amenities will be improved.

On the ship side, four basic programmes have been identified in the Plan:

a. The first involves the building of a more cost-efficient vessel to provide summer service between Prince Rupert and Skidigate on the Queen Charlotte Islands. This ship will also provide the winter schedule service between Prince Rupert and Port Hardy on the northern end of Vancouver Island.

b. The second programme is directed at the conversion of the service between Horseshoe Bay and Departure Bay (Nanaimo) to a fast ferry service by building three high-speed passenger and automobile ferries.

c. The third programme involves the building of a more cost-effective ferry to service the Powell River to Comox route across the middle of the Strait of Georgia. Further significant economies can be gained if this new vessel can be utilized on a tri-angular route so as to provide vehicle service between Powell River and Texada Island. There is strong resistance to this proposed tri-angular service by the residents of Texada

Island, and considerably more consultation will be required before this portion of the Capital Plan is implemented. However, the significant shortfall between operating costs and the revenue stream on both of these mid-coast routes is a matter of considerable concern and, therefore, an equitable solution, satisfying both the Ferry Corporation's and its customers' needs, must be found. It may well be that a combination of some automobile-capable voyages and some passenger-only service will prove to be a viable option.

d. The fourth phase of the ship construction program will be developed from a comprehensive review of the deployment of the existing fleet. From this review will be developed a plan to phase out of service vessels which by virtue of their age or design are no longer able to be cost-effective or suitable for today's traffic demand, or will not be able to meet the demand projected through the five- to ten-year periods of growth. Some vessels, such as the C-class presently on the Horseshoe Bay - Nanaimo run, will be deployed to advantage elsewhere in the system, replacing older or less-efficient vessels. Some vessels will be identified as suitable for life-extension through re-engining and equipment and passenger facilities or refurbishing. Some vessels will be identified as having reached the end of their economic life and will be sold off or scrapped.

The Ferry Corporation operations management has already identified the need for a number of fairly spartan, cost-efficient ferries having a carrying capability in the order of 100 cars, and the construction of at least two of these vessels has now been brought forward in the Capital Plan schedule. The design is being prepared by McLaren and Sons, Naval Architects, assisted by Polar Design Associates Ltd. and Nautican Research Ltd. Tenders for construction of the first of these vessels will be called in the early summer.

In addition to the Capital Plan, we have a number of engineering projects which will be, of interest to the marine engineering community of this Province:

a. The first of these is the introduction of a computer-assisted Asset Maintenance Management System. An initial study of the options available has been completed and this project is now proceeding to the implementation stage.

b. The second is the development of an exhaust emission reduction program. Some data-gathering has already begun and a number of unsolicited proposals have been received. This promises to be a very interesting and challenging program.

c. The third programme is designed to review further the feasibility and economics of using either compressed or liquid natural gas as an

alternative to marine diesel oil will be initiated. A comprehensive study was done by the Ferry Corporation in the late 1970's and this work will be revisited as well as a new study to determine if any of the new vessels in the Capital Plan could benefit from this alternative fuel. This programme will be conducted in cooperation with B.C. Gas.

d. The fourth project will examine ways and means of reducing fuel consumption. A pilot programme on the ferry ***Queen of Albernie*** shows every indication of being able to provide annual savings in the order of $150,000.

With the 10-year Capital Plan, an ongoing programme of engineering projects, and, of course, the continuous programme of maintenance dry dockings and refits, the British Columbia Ferry Corporation looks forward to a continuing close relationship with the Province's shipbuilding, ship repair, and marine engineering community, as we all steer our course towards the 21st century.

Panel 1: General Discussion

Panel Chairman:

At least four important points, in my view, have been made about the future of the industry in British Columbia:

a. We can compete: in quality, by being on time, and in productivity. Both Arthur McLaren and Michael Martin made the point about cheap labour (which we do not have) not being of consequence in the absence of these advantages.

b. Privatization, perhaps of the kind that has come to the Clyde, may come here too. This prospect was addressed by Michael Martin and Tom Ward.

c. All sectors of the industry must be ready and willing to change: the B.C. Ferry Corporation, the unions in jurisdiction and type of work, and others. This was implicit, I thought, in Tom Wards remarks.

d. New career paths within the industry must be opened up for our youth.

Audience:

The panel is lacking in perspective and vision. Canada has the longest coastline in the world, and yet we have only three million tonnes of shipping registered in this country, the 46th position in world ratings. Our neighbour to the south is in sixth place with nearly 40 million registered tonnes. Why do we not have a merchant marine? Lots of other countries with high labour costs are building ships, e.g., Norway, Denmark, Scotland, and others. What is wrong with us? Our industry seems to have lost its edge, perhaps because it is guaranteed work from Navy and B.C. Ferry contracts.

Thomas Ward:

Although this may have been true, the position is changing, as the new ferry contracts will put the industry back into the international market place.

Audience:

The threat of world war may have disappeared, but serious conflict can erupt again very quickly and we must be ready. What has happened to the promise of icebreakers and possible nuclear submarines?

Arthur McLaren:

I question the need for icebreakers. Why not sail under the ice or fly over it?

Tom Ward:

The real purpose of icebreakers is to facilitate the oil industry's access to and through the Arctic. As long as oil prices remain at their current low level, interest in Arctic oil and Arctic access will remain minimal. If prices rise, the need for icebreakers will return.

Audience:

The St. Laurent-class vessels were built with superior quality. Their length of service shows how good they were, and that they were worth the money they cost. Canada did not really get in on the surge of merchant ship building after World War 11. These ships are now ageing, but it looks as if Canada will once again miss out as the new wave of shipbuilding arrives.

Audience:

For those of us serving in the Navy, the writing is on the wall. The taxpayers of the country have invested over half a million dollars in training me for naval duty. I am married with a family, but I will not go on unemployment insurance. There are opportunities in the Far East, China, and the Philippines, where I can get a job. I do not want to leave Canada, but I will if I must. I will desert, not out of desire but need. There are seven of us here today. Hire us!

Audience:

I agree with previous remarks. Surely someone must have done a study of the replacement ship requirements that are coming up.

- PANEL 2 -

THE INTEGRATION OF COASTAL MANAGEMENT IN BRITISH COLUMBIA

Panel Chair: Rod Dobell

Panel Introduction

This panel will address questions, which range over much of British Columbia's geography and many disciplines. Speakers will offer sketches of a few key points which begin with work of the scientific community in monitoring the state of the marine environment and tracing some of the consequences of the stresses imposed on that environment as a result of human activity; move on to institutional structures created by governments in attempts to moderate impacts on coastal resources, and to control the harvesting of those resources; and finish with reflections on the way in which concerns for the health of the ecosystem, the health of the society and the health of the individual must be brought together in a comprehensive concern for sustainability and the monitoring of our progress toward achievement of sustainability goals.

Of course, coastal resources and the coastal zone represent only one part of much larger ecosystems and attempts to manage human activities having significant impacts on the coastal zone must be seen within a larger institutional context as well. In particular, we see a division of responsibilities, jurisdictions, and authorities, as well as the involvement of many different actors, with many forms of evolving linkages.

Many initiatives are now in train, ranging from local land use planning processes to efforts to mobilize non-

government organizations through umbrella structures like the Earth Council (chaired by Canadian Maurice Strong) designed to "amplify" the voices of local groups in new institutions such as the United Nation's Commission on Sustainable Development, which might be expected to develop internationally accepted standards for regulating the impact of human activities and human settlements on coastal ecosystems. All four of today's panel themes are inter-linked, reflecting aspects of coastal management in this comprehensive sense.

In this panel we can only touch the highlights of a few selected elements of this challenging topic. But we do have some fascinating highlights to touch.

The first speaker, Andrea Copping, a biologist and oceanographer, will discuss the work of the Marine Sciences Panel of the new structure called the British Columbia/State of Washington Environmental Cooperation Council. This panel of scientists has considered and reported on the quality of the marine environment in the semi-enclosed international sea we call the Georgia Basin.

The second speaker, Joe Truscott, a provincial official with long experience and expertise in coastal resource management, will lift the veil a little on some of the things governments are doing to try to control impacts on the coastal environment and assure the health of fisheries resources.

And the third speaker, Tony Hodge, with extensive experience in non-governmental organizations and consultative processes, will broaden the discussion to review some of the many factors affecting growth management in this region which, of course, is one of the fastest growing in North America.

The British Columbia/Washington Marine Science Panel

Andrea E. Copping

On behalf of the six-member British Columbia/Washington Marine Science Panel, I would like to briefly describe the findings of our panel.

We were appointed by the Province of British Columbia and the State of Washington to report on the environmental quality of the shared marine waters of British Columbia and Washington. For our report, we built on the work of hundreds of our colleagues. First, at a two-day symposium held in Vancouver during January, 1994, we heard thirteen papers co-authored by US and Canadian scientists on aspects of the ecosystem ranging from waste-loading and physical oceanography to the status of fish, shell fish, bird and marine mammal populations. Following the symposium, we received oral and written briefs from scientists, managers, non-government organizations (NGO's) and others. We consulted extensively with colleagues and went to the scientific literature for further information.

Some of the specific issues that the state and province asked us to address include:

a. The mechanisms by which organisms and contaminants cross the international boundary;

b. The present and projected status of trends in marine plant and animal populations in the region;

c. The evidence of harm to marine organisms from human activities;

d. Projections of the condition of marine resources in twenty years, if we continue with our current land use, waste disposal and environmental practices;

e. Priorities among marine environmental issues; and

f. Recommendations for improvement in the management of Georgia Basin.

In order to organize the vast amounts of information available to us, the panel adopted a risk-based approach, so that those ecosystem components that are most at risk would receive the greatest attention. There were several criteria associated with this risk-based approach. We felt that the most important was the concept of recovery time. We defined recovery time as the time for an ecosystem to recover after an environmental assault is removed or stopped. For example, the water column may clean itself very rapidly after sewage discharge is terminated and thus a short recovery time. The removal of near-shore habitat through dredging, filling and paving is permanent and has an irreversible recovery time.

The shared marine waters of British Columbia and Washington are a large estuarine system with sea water moving landward at depth and fresh water moving seaward at the surface. The shared waters and surrounding watersheds are home to fish, shell fish, bird and marine mammal populations and parts have been severely affected by human activities. Habitat loss of the near-shore region has been extensive, especially on the Washington side of the border, although British Columbia is learning to be equally destructive!

Impacts on fish in the shared marine waters serve as examples of the living resources that have been affected by human activities. Many salmon stocks in Puget Sound are either depleted or threatened, and this has lead to massive closures of the fisheries in 1994. British Columbia salmon stocks are more robust, but losses are also being observed (like the missing Fraser River sockeye). Marine fish populations have also declined, particularly in Puget Sound. For example, hake (also known as Pacific whiting) populations crashed in Puget
Sound and, despite a complete fishing closure, these populations have not rebounded. Hake catches in British Columbia continue to be good (see Figure 1 on Page 23). In contrast, ling cod have declined sharply in both British Columbia and Washington, which has prompted a closure of the recreational fishery in both areas. Again these populations do not seem to be responding to the decreased fishing pressure (see Figure 2 on Page 24).

In order to determine the state of the shared waters and its resources, the marine science panel looked at three major areas of the ecosystem: habitat; living populations; and threats to human health. We examined these areas at three points in time: the present condition of the ecosystem; where we believe the ecosystem will be in twenty years time, if we continue with our present land use, waste disposal and environmental management programs (our "business as usual" scenario); and where we believe the ecosystem could be in twenty years time, if we make strong and committed efforts starting immediately (our "optimum future scenario").

The overall picture of the present condition of our habitats and resources is not particularly good. In general, habitats in Washington have been more degraded than in British Columbia, largely due to the much greater shoreline length in British Columbia and the larger human population in Washington. Habitats that are in close proximity to land have been the most strongly affected, while sub-tidal habitats are generally in good shape.

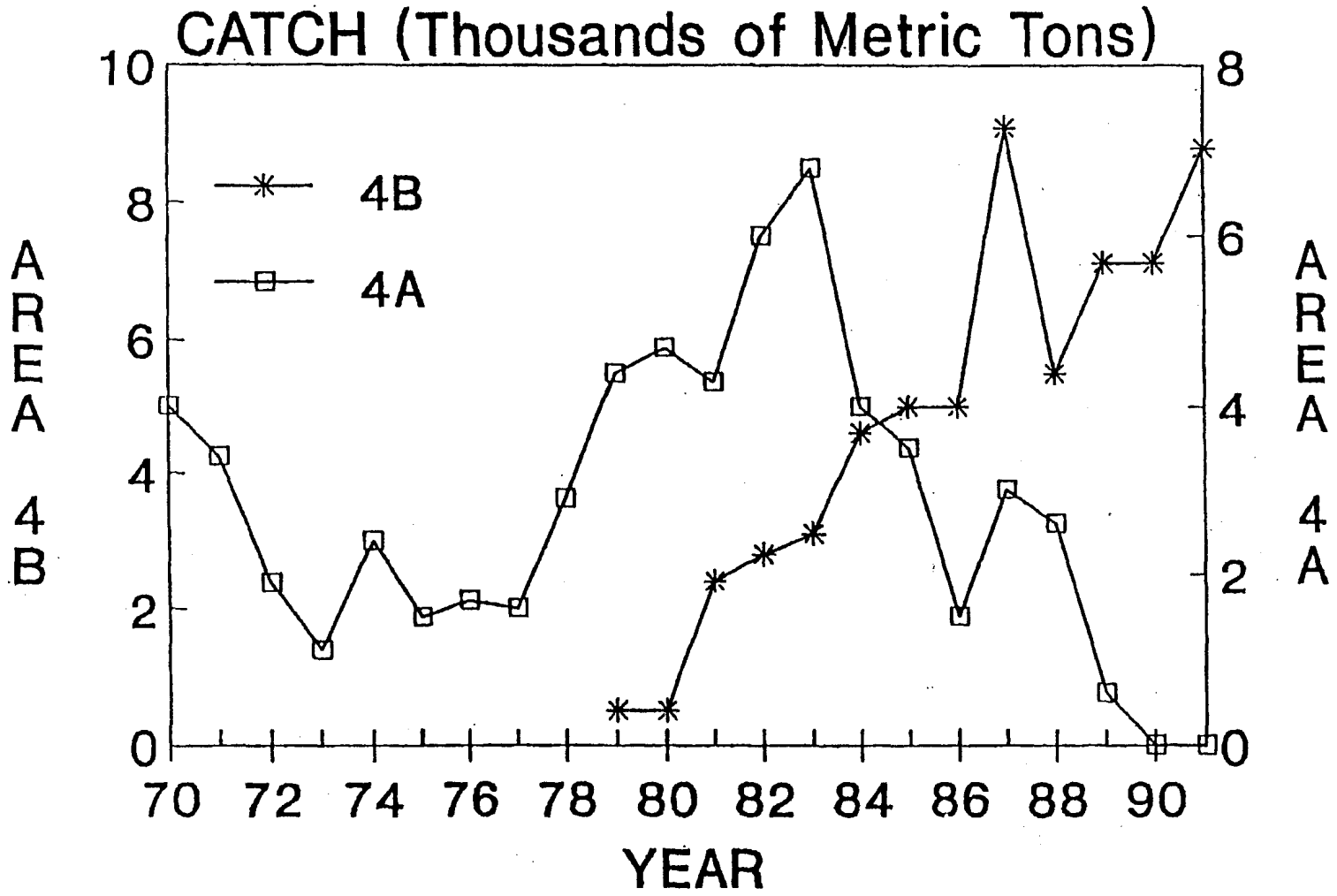


Figure 1: Catches of Hake in Areas 4A and 4B

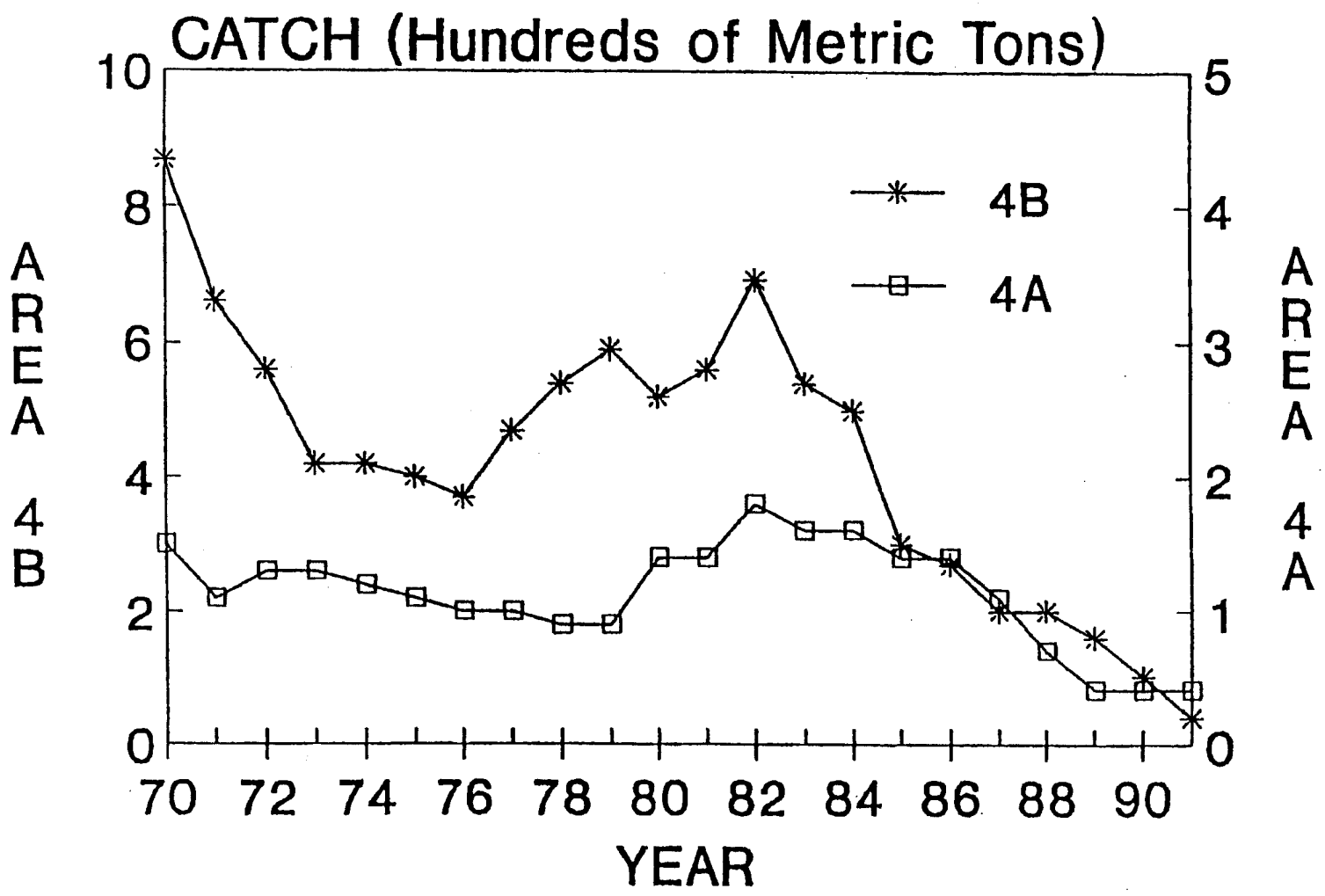


Figure 2: Catches of Ling Cod in Areas 4A and 4B

Habitats upriver are threatened, while sediments in urban bays are contaminated with chemicals. Fish resources are in worse shape in Washington, although some species in British Columbia are also threatened. The size and health of populations of invertebrates, birds and marine mammals show mixed results. Generally, there are limited threats to human health from the marine environment; our present public health programs and practices are fairly protective.

The future (twenty years hence) of our shared waters is not rosy. Under our "business as usual" scenario, we can expect continued and increasing degradation of habitats, losses of living resources and some increases in threats to human health. Under our "optimum future scenario", we can, at best, hope to hold the line on habitat losses, to make some fair improvements to our living resource populations incrementally, and to lessen threats to human health.

As we were asked by the State and the Province, we set priorities for management action among different parts of the ecosystem and among competing environmental problems. Based on our estimate of harm done to the environment, the time for each ecosystem component to recover, the cost of correction or mitigation, and the ease with which harm can be prevented, we ranked the related issues (see Table 1 on Page 26).

Losses of habitats, particularly those in the near-shore estuaries and uplands, constitute the highest priority, largely due to the irreversible nature of the loss. Impacts on native fish and shell fish populations are severe, difficult to reverse and very costly to the region. These threats ranked as our second priority.

The unexpected issue here may be the third priority: invasions by exotic or non-indigenous species. We already have several exotic species well established in the shared waters (like the smooth cord grass Spartina spp.) with many others poised to invade. Experiences from other areas tell us that exotics benefit from having few natural predators or competitors and may overrun native habitats and populations in very short order. These changes can be devastating to the ecosystem and we have little means of controlling exotics once, they are established.

Diversions of fresh water (like dams and re-routing of rivers) can have major impacts, not only on the watersheds but also on the estuarine habitats, populations

Table 1: Ecosystem Issues and Recovery Times

ISSUE	RECOVERY TIME	OVERALL PRIORITY
- Habitat Loss	Irreversible	Very High
- Fish & Shellfish Populations	Medium	High
- Exotic Species	Long/Irreversible	High
- Freshwater Diversions	Long/Irreversible	High
- Toxics in Living Resources	Short/Medium	Medium
- Toxics in Sediments	Medium	Medium
- Oil Spills	Medium (long for some populations	Medium
- Toxic Algae	Irreversible (short for single episode)	Medium
- Fecal Contamination	Short	Medium
- Water Column Contamination	Short	Low

and even the physical flushing mechanisms of the estuaries. Washington has dammed many of its major rivers; British Columbia has not yet achieved this. Abundance of salmon in Washington is depressed over historic levels; British Columbia salmon have generally fared better. There may be a connection.

Toxic chemicals in sediments and living resources continue to be a problem in the developed and industrialized areas of the shared waters. Although we have controlled many of the major point source of toxics, many non-point sources of chemicals like PAHs (polyaromatic hydrocarbons) from petroleum products, are still on the increase. Although per capita toxic releases are and have been declining in the shared waters, the projected increases in human population in the basin will reverse any improvements in sediments and biota during the next twenty years.

Oil spills, despite the amount of publicity and public outcry associated with them, are not a major ecosystem threat to the shared waters, although they may have devastating local effects on resource populations and shorelines. Most oil spill effects will disappear from the ecosystem within a few years.

Increases in toxic algae blooms is the single environmental issue in the shared waters that does not seem to be linked to human activity. There is a world-wide increase in these events; our ability to predict blooms in the shared waters is very low and there is little that can be done about their occurrence. Concerns about toxic algae are largely public health concerns; in the overall ecosystem, they have fairly limited impacts.

Through very aggressive wastewater treatment programs, we have reduced the threat of fecal coliform bacteria and other contaminants in the water column considerably to where they do not constitute a major threat. Exceptions may be human health concerns from failing septic systems and untreated sewage.

Finally, from this list of priorities, we developed twelve recommendations, divided into seven specific actions, and five actions to improve the environmental management of the shared waters (see the Table 2 following on Page 28).

The first recommendation calls for minimizing estuarine habitat losses. The panel felt that people of British Columbia and Washington must make some fundamental choices about whether they want to continue to develop near-shore areas or maintain healthy salmon populations; allow residential sprawl or have clean shell fish. Until the people can make educated choices of this sort, the panel recommends that remaining estuarine habitats be afforded the highest level of protection possible.

In the interests of protecting and enhancing fish and wildlife populations, the panel recommends that marine protected areas (also known as marine parks or sanctuaries) be set aside in the trans-boundary area as well as throughout the shared waters (Recommendation No. 2). Marine protected areas have proved to be very successful in New Zealand, Australia, and on the East Coast in allowing fish opportunities to mate and rear their young without interference. Proximity to a marine park has been shown to enhance fish populations in the surrounding waters. The third recommendation also addresses the protection of marine plant and animal species through encouraging better management of commercial and recreational populations and better enforcement of harvest regulations.

The panel recommends that large diversions of fresh water not be carried out until or unless the full impact of the diversion on the estuary, the watershed and the associated populations is known (Recommendation No. 4). With this information in hand, the public can weigh the value of

Priority	Actions
Highest	Minimize Estuarine Wetland Habitat Losses
	Establish Marine Protected Areas
Medium	Protect Marine Animals and Plants
	Minimize Introduction of of Exotic Species
	Control Toxic Wastes
Lowest	Prevent Large Oil Spills

Priority	Effective Environmental Management
Highest	Strategic Planning
	Comprehensive Programme Review
Medium	Monitoring/Research/ Management Framework
	Increased Public and Scientific Communication
	Freedom of Scientific Discussion
Lowest	

Table 2: Recommendations for Actions and Effective Management to Protect the Shared Waters

inexpensive hydro-electric power and industrial growth against impacts on anadromous fish, wildlife and estuarine health.

The potential devastating impacts of exotic species in the shared waters prompted the panel to recommend that all steps be taken to minimize their introduction, as well as to understand the extent and impacts of exotics which are already established and those yet to come (Recommendation No. 5). By enlisting the public's help, managers can help minimize introductions, as well as plan for the management of resources in the presence of invading species.

The panel recommends stronger controls on toxic waste discharges, particularly storm water and non-point sources. We also endorse the work of the States/British Columbia Task Force on Oil Spills and recommend early implementation of the Task Force recommendations that are cost-effective and aimed at spill prevention (Recommendation No. 7).

Through the panel's work, we came to understand the importance of viewing the shared waters as a single ecosystem. With that in mind, the panel recommends several actions which would move towards an integrated system of environmental management for the shared waters. The panel recommends that a process of joint strategic planning be initiated for the ecosystem (Recommendation No. 8) and that environmental monitoring, research and management programmes be carried out collaboratively (Recommendation No. 10).

The panel recognized that many of the environmental management programmes aimed at protecting the resources and marine environment in British Columbia and Washington have not worked well and have not been very cost-effective. Nowhere is this more apparent than the management of Pacific salmon; millions of dollars have been poured into salmon hatchery and management programs, yet many runs of salmon are in decline. The panel recommends that environmental management programs of all sorts be evaluated in order to learn what works and what does not (Recommendation No. 9). This environmental audit should lead to more cost-effective and appropriate environmental management.

Scientists, natural resource managers and the public do not communicate well with one another. The panel recommends that steps be taken to improve communications among these groups on each side of the border as well as across the border (Recommendation No. 11). Similarly, in order to use the information being gathered in research and monitoring programmes for optimal

environmental management, -scientists must be free to discuss their results without political hindrance or barriers (Recommendation No. 12).

The final message that the panel would like to convey is that we have a great deal to protect in the shared marine waters of British Columbia and Washington, but many of our resources and habitats are threatened. We all have to play a part in seeing that we have good information about the state of the marine environment and in making good choices for the future.

The Resurgence of Coastal and Marine Area Management Policy in Pacific Canada: On The Threshold of Commitment?

Joseph Truscott

Previous efforts initiated by government staff to develop a province-wide Coastal Zone Management Program in British Columbia have failed. However, British Columbia has recently been experiencing a resurgence of interest in the development of strategic policy for coastal and marine areas. This includes consideration of both environmental and socio-economic needs in the context of overall sustainability. The need is great to galvanize provincial political commitment to coastal resource management in order to sustain both coastal environment and development into the future.

Historically, the initiative to develop policy has come primarily from government. This has included an intergovernmental estuary working group in 1970, a Federal-Provincial Coastal Zone Resource Sub-Committee in 1978, and in 1978 a Shore Management Symposium sponsored by the Canadian Council of Resource and Environment Ministers. These exercises were consistent in their recommendations for management of coastal resources. The approaches were valuable in identifying highly complex coastal problems and issues that are still topical today.

A series of initiatives with public consultation components also took place. These included the West Coast Oil Ports Inquiry in 1978, the Pearse Commission on Pacific Fisheries Policy in 1982, the 1983 West Coast Offshore Exploration Environmental Assessment, and the 1986 Gillespie Inquiry into Finfish Aquaculture in British Columbia. These reviews helped to create a shift in political awareness regarding the importance of public consultation and emphasized certain components of coast-wide resource management strategy. However, they reflected an emphasis on resource sectors rather than on integrated management, and failed to gain political commitment.

More recently, several initiatives involving both government and non-government organizations have more clearly identified the need for an overarching coastal resource management strategy. These included the 1988 Ombudsman's Review of Aquaculture and the Administration of Coastal Resources in British Colombia, the 1992 British Columbia Science Council-funded SPARK Oceans Study of West Coast Opportunities, and the 1993 Provincial Coastal Resources Strategy Study.

The creation of the Commission on Resources and Environment in 1991 by Cabinet set the stage for the development of a Provincial Land Use Strategy (PLUS) and the development of regional and more detailed land use plans. Since then a few provincial agencies at the staff level have been emphasizing inclusion of the coastal/marine area in these exercises, particularly in the development of a PLUS. However, despite a significant mandate in the coastal/marine area, there has been no political commitment to develop strategic provincial coastal policy, because the provincial Cabinet agenda is so heavily loaded with upland-related problems.

Recently, the Federal Department of Fisheries and Oceans (DFO) has launched its Oceans Initiative, which involves a pending Oceans Act, development of a coastal resources management strategy and increased federal leadership in oceans management. Within the next six months, DFO will approach coastal provinces to develop partnerships in coastal resource management. It is essential that British Columbia seize this opportunity for joint stewardship of the Pacific Coast. For successful coastal management, all agents must apply an integrated coastal resource management framework to common problems, rather than continuing with the old ineffective sectoral resource management techniques.

Building a Respect for People and the Ecosystem Together

R. Anthony Hodge

The topic of this panel is of great significance. The coastal zone is the meeting place of land, air, and ocean. More than ever before it is a focus of human activity, whether that activity be transportation, commerce and industry, living, or playing. It is our gateway to foreign countries.

It is essential that young people, now considering opportunities for the future, be encouraged to focus their interest on our coastal zones and related marine affairs. My adopted grandfather was one of Canada's first hydrographers, having initially come on loan from the Royal Navy. Here today amongst so many Navy people, I am reminded of the pride with which he held his naval career. It is a pride that needs to be re-kindled in young people. However, when I consider how we have treated much of our coastal zone over the past fifty years I understand why young people are not flocking to the traditional coastal zone industries in pursuit of career opportunities. To be blunt, we have often treated our coastal zone as a toilet, a recipient for our waste products with little regard for the richness of life that is there. Today's young are more sensitive than ever before to such folly. They have taken up the flag of concern for the environment and it is to that concern the appeal must be made, if there is to be a rekindling of interest in Canada's maritime heritage.

Neglect of the coastal zone is not unique to the West Coast. In the Great Lakes, it stretches back to the beginning of European settlement in the 18th century. At the turn of this century the abuse had led to cholera and typhoid epidemics; in the 1950's the Great Lakes fishery collapsed; in the 1960's Lake Erie was pronounced dead; in the 1980's poor coastal zone management led to massive property damage with the coincidence of high water levels and nasty storms; in this decade there is a growing concern for the implications of persistent toxic substances. Estimates for repairing the damage reach the tens of billions of dollars, a hidden environmental deficit that has been an unrecorded cost of doing business.

There are two critical lessons arising from the Great Lakes story that we must learn from here on the West Coast. First, we must stop using the coastal zone as a toilet. Now, and completely. Second, we cannot solve in-water problems by only looking to water and in-water activities. The source of most coastal management problems that must be faced lies in on-land activities, activities that are connected to the ocean by drainage and, most important, by air.

One critical missing element is an entrenched, systemic, and apolitical mechanism for monitoring, assessing, and reporting on change and progress. We seem to build no memory, inevitably repeating the same mistakes. In taking up this challenge, it is essential that the elders of our communities participate, for it is they who can help extend our horizon back to a point where rich comparisons can be made. It is not lofty dreaming, but hard analysis that is required.

Over the past decade the idea of sustainability has emerged to provide a kind of bridging mechanism, not only between often-isolated components of knowledge and technique, but also between disparate groups in society. Sustainability is not a complex idea. It has to do with maintaining in our society and the enveloping world certain characteristics that are necessary and desirable. These characteristics are important, if the generations coming after us are to have the same richness of life and breadth of choice that we enjoy now.

Sustainability is a concept deeply rooted in a parallel care and respect for the ecosystem and people within, not one or the other, not one more than the other, but both together. This is not a competition. It is not jobs versus the environment. Rather, it is jobs and the environment, or the jobs don't exist. Nowhere is this point more poignantly illustrated than in our coastal zone.

Sustainability is a concept that doesn't fit party lines. But it can provide the needed basis for addressing the complexity of the institutional and ecological maze governing our coastal zones. It can guide creation of the mechanism needed to record societal memory. Most important, it is a concept which, if used, will provide the basis for regenerating the pride in young people that is needed, if they are to turn their efforts to maritime affairs.

Panel 2: General Discussion

Panel Chair, Rod Dobell:

Before moving to the floor for questions, I would like to invite further comment from the Panel in response to any of these stimulating presentations.

Joe Truscott:

In the past, the general approach to coastal management, like land use management, has been on a response-byresponse basis. In my view, it is important now that we take a broader view of things, adopting the holistic perspective inherent in "integrated coastal management", as recommended by the Brundtland Commission and spelled out in the action plan (Agenda 21) endorsed in 1992 by the United Nations.

Tony Hodge:

It is interesting to observe how slow the mainstream political parties have been in adopting the cause of sustainability. The B.C. Government has spoken of its commitment to this concept, and the Canadian Government often pays lip service to the goal of sustainable development. Yet one could say that the idea of sustainability **is** most closely aligned with goals of the Conservative Party; after all, "conserve" and "sustain" have a similar ring. On the other hand, sustainability directly affects the health and well-being of individuals, which are among the social welfare goals identified closely with the NDP. Again, it has been chiefly policies of the Liberal Party, which has governed Canada at the federal level for the most part of 50 years, that have moved the country in the direction of sustainability to the extent we have. And through its interest in efficiency and the reduction of government waste, the Reform Party projects a commitment consistent with the goal of sustainability. The truth is that these ideas cut across all political party lines and cannot be pigeon-holed by standard ideology, rhetoric, or political jockeying.

Audience:

After several large oil spills a few years ago, it was asserted that one preventive measure that should be

adopted was the construction of double-hulled tankers that would withstand the effects of running aground or hitting an iceberg. What happened to that proposal?

Andrea Copping:

Several years ago, the recommendation that double-hulled tankers should be mandatory was favoured by a panel set up under the B.C./Washington Environmental Cooperation Council. Both the Canadian and U.S. governments have committed themselves to double hulls in the construction of new tankers, but the phase-out period for existing non-complying ships may be ten years or more.

Audience:

Both governments have also said that all existing tankers can continue in use until decommissioned. But I would like to make another point, that double hulls on tankers will not prevent oil spills: most tanker and other shipping accidents are the result of human error which cannot be legislated away. The training of those responsible for piloting ships in dangerous waters is a primary concern of the Nautical Institute.

Audience:

I would like to ask panel members what value, if any, they attach to international environmental conferences, such as the recent Earth Summit in Rio de Janiero, and the international agreements on the environment.

Tony Hodge:

Admittedly there has not yet been a significant amount of action as a direct result of the 1992 Rio Summit (the U.N. Conference on Environment) and even some back-tracking, as we saw recently when many governments, including the Canadian, announced they would not meet their Rio commitments for the reduction of the greenhouse gas emissions, as negotiated under the U.N. Framework Convention on Climate Change. However, there is a great deal of value in meetings such as the Rio Summit, in bringing together a large number of people from different regions and cultures to discuss issues, share ideas, and raise awareness generally within the political systems represented.

Rod Dobell:

Also coming up soon in Copenhagen is the U.N. World Summit for Social Development, which will remind us that the

concern for poverty must go hand-in-hand with concern for the environment. Perhaps more important than the conferences themselves are the preparatory inter-governmental negotiations, which result in whatever instruments are subsequently signed or otherwise adopted at the summit.

Andrea Copping:

Also these meetings attract a great deal of media coverage, which conveys the general message to a large part of the world's population. Exposure to the mass media audience may be one of the chief benefits of high-profile conferences such as these.

Audience:

Perhaps the greatest value is the increased pressure on governments to develop policies in line with the goals agreed on and made known to electorates around the world. But it is not enough to go to the Earth Summit and sign instruments like the Framework Convention on Climate Change, when there is no provincial commitment to implement their provisions. Moreover, universal commitment to environmental management is not enough. Many problems have to be dealt with at local, regional, and national levels, and universal prescriptions may have to be adapted to the variable conditions in these areas. Sometimes it is more important to have awareness and commitment at the local level. It may be only through pressure generated by local governments that environmental reform will become possible.

- PANEL 3 -

THE SALMON FISHERIES

Panel Chair: Michael P. Shepard

Historical Background

Fish roam the oceans and man goes forth to sea to fish them. Despite the development of astounding modern technology, the basics of fishing have really changed little. Fishermen compete with one another in a free-for-all on the oceans, much the same as the buffalo hunters operated on the prairies a century ago.

Since time immemorial, competition for the common property resource has continuously sparked conflict. In modern times it is true that awareness of the need to conserve fish stocks has resulted in governments taking action to control the activities of its citizens. One might think that this would minimize conflict, but, as is evident from the frequency with which fisheries articles appear in our daily papers, competition and conflict still characterize the industry.

Whereas a government can control the actions of its own citizens, the fact that fish do not respect man-made international boundaries adds an international dimension. This is particularly true for salmon, both Atlantic and Pacific, which conduct broad trans-oceanic migrations, attracting the interest of fishermen of many countries.

Beginning in the 1930's, the threat of uncontrolled international harvesting of North American salmon by non-North Americans galvanized Canada and the United States in an international crusade to reserve harvests of salmon to the states that produced them. The crusade gained impetus

after World War II, when, flowing from the peace treaty that ended the Pacific war with Japan, the United States and Canada concluded the North Pacific Fisheries Treaty with Japan that effectively limited the Japanese fishery for salmon to the western North Pacific, where few North American salmon could be intercepted.

The arm-in-arm approach of our two countries continued with initiatives on the Atlantic to halt fishing in waters off Greenland for North American salmon by the Europeans, initiatives within the North Pacific Fisheries Commission to further limit Japanese fisheries for North American salmon, efforts to control high seas gillnetting ("walls of death") in recent years, and most important, initiatives within the United Nations Conference of the Law of the Sea aimed at achieving international acceptance of the special interest of each coastal state in salmon originating in its waters.

For the most part, these cooperative efforts were successful, resulting in minimization of harvests of North American salmon by third parties.

Whereas the two countries cooperated in protecting North American salmon from intrusions by others, they developed very different approaches in dealing with interceptions of each other's fish. The problems stem from the migratory behaviour of the salmon. Along the coast of the Gulf of Alaska, after leaving their rivers of origin, young salmon migrate northwestward to their offshore feeding grounds. When they return to spawn, they carry out a reverse migration from the northwest to the southeast. Many make their "landfall" far north of their rivers of origin, where they become vulnerable to harvest by fishermen of both countries fishing in near-shore waters. Thus, Alaskan fishermen have substantial opportunities to intercept salmon bound for British Columbia and Washington State; British Columbia fishermen have opportunities to intercept Washington fish; and, because the abundant runs bound for Canada's Fraser River migrate along the shores of Washington State in the Strait of Juan de Fuca, Washington fishermen have a major opportunity to catch Canadian salmon.

The problems began when fishermen of the two countries started competing for salmon bound for the Fraser River. The commercial fishery for Fraser salmon began in the late 1820's, when the Hudson Bay Company first salted salmon for export to Hawaii. Until the last decade of the century, the Canadian fishery concentrated in the estuary of the Fraser River took most of the harvest. However, completion of rail links between Seattle and the eastern

United States created new market opportunities for the United States industry, and by the turn of the century United States fishermen were taking more Fraser-bound salmon than were the Canadians. This situation was a source of irritation between the two countries for the next fifteen years, with Canadians continuously calling for the United States to reduce its fishery and Washington State interests vigorously resisting any cutbacks.

The situation became acute in 1913, when a landslide in Hell's Gate Canyon devastated most of the runs destined for the upper reaches of the Fraser. Canadian engineers took action to remove the slide, so that the salmon could again proceed, but before this was accomplished two years' migrating runs were virtually annihilated. With the destruction of the runs, it was apparent to both sides that the Fraser salmon resource was being threatened with extinction and that, if the resource was to survive, measures would have to be taken to cut back on fishing to allow more salmon to escape to the spawning grounds to perpetuate the runs.

What happened was a disgrace. It was not until 1937 that the countries entered into a treaty to control fisheries for Fraser salmon, and then the terms of the treaty delayed the ability of the international commission to actually limit the fisheries of the parties until 1945, a shocking 32 years following the occurrence of the disaster. During that three-decade interval, the stock plunged to perhaps 10% of its historic levels, and the fisheries of both countries languished.

The Fraser Sockeye Salmon Treaty, signed in 1937, provided for the building of fishways to improve upstream migration of the salmon and led eventually to the two countries taking bilateral measures to restrict their fisheries to permit rebuilding of the stocks. Since then the stocks have largely recovered. .

By the 1950's, however, interceptions were creating other problems. Alaskan fisheries off the southwest tip of Southeast Alaska were clearly targeting on salmon bound for northern British Columbia rivers. On the other hand, expanding Canadian hook and line fisheries off the west coast of Vancouver Island were clearly targeting on chinook and coho salmon bound for rivers in Washington and Oregon.

In 1970 the two countries initiated negotiations aimed at developing comprehensive arrangements to deal with the deteriorating interception problems. The negotiations took place at the same time that both countries were extending their fisheries jurisdiction to 200 miles and excluding each other's fishermen from waters that formerly had been high seas.

It took fifteen years to conclude the treaty which was signed in 1985. The two countries had very different views on how interception problems should be handled. Following up on the "ownership" principles both countries espoused during the Law of the Sea Conference, Canada believed that, to the extent practicable, each country should harvest its own resources. In this light, interceptions on both sides should have been minimized. This, of course, was not an altruistic position in that Canada believed that United States fishermen were taking far more Canadian salmon than vice versa. Consistent with the "ownership" position, Canada pressed for Canada to take over management of the Fraser fisheries from the international commission that had been established by the 1937 treaty. On the other hand, the United States pressed for continuation of shared management and for continuation, under agreed limits, of long-standing intercepting fisheries.

The 1985 Pacific Salmon Treaty represented a compromise. It established a Commission to provide an arena for negotiation and data collection regarding intercepting fisheries on both sides. The two sides were to conduct their fisheries in order to conserve the stocks (the "conservation" principle) and to provide each country with benefits equivalent to the production of salmon in its own waters (the so-called "equity" principle).

The treaty worked well for the first four years and, with some exceptions, arrangements for the second four (1990-1993) were concluded successfully, although by mutual agreement fisheries adjustments did not take the "equity" principle into account.

Recently, however, the Commission has run into heavy seas. In 1994, the Commission was unable to come up with agreed arrangements for intercepting fisheries and a "mini fish war" was conducted on the approaches to the Fraser, wherein, within conservation limitations, both sides attempted to maximize their share of the harvest. The crux of the present problem is that, when the treaty was signed, the interceptable stocks of both countries were in relatively healthy shape with prospects, under the treaty, that the stocks would increase. If this scenario had come to pass, the interception limitations would have permitted both sides to benefit from increases in their own stocks.

Regrettably this has not been the case. Canadian stocks, particularly those of the Fraser, have burgeoned, whereas the principal United States stocks subject to Canadian interceptions (chinook and coho in Washington) are spiralling downward. This leaves the United States with a doubly disappointing situation. On the one hand, conservation requires that United States fishermen reduce their fisheries on the decreasing local stocks. At the same time, because of the treaty limitations, United States fishermen are prohibited from participating in increased harvests of the healthy Canadian stocks, fisheries they would have been able to conduct under pre-treaty circumstances.

These circumstances are creating great strain on the Salmon Treaty. It has so far proved impossible to negotiate annual fishing regimes satisfactory to both parties. Implementation of the "equity" principle has proved especially difficult and no resolution to the problem is in sight. Intensive bilateral discussions are underway now in attempts to get the treaty process back on track.

The other two speakers will provide you with the perspectives of the two countries on the present dispute and hopefully indicate where there may be avenues for solutions.

Canada/U.S. Pacific Salmon Treaty: The Canadian Government Perspective

Bud Graham

I welcome the opportunity to offer the Canadian federal government's perspective on the implementation of the Pacific Salmon Treaty and the problems facing Canada and the United States in these negotiations.

The Treaty came into being because the United States intercepts substantial numbers of Canadian salmon in both Alaska and in Washington State, and Canada intercepts substantial numbers of salmon bound for the rivers of Washington and Oregon.

The existence of these intercepting fisheries meant that neither country could conserve its stocks on its own nor profit from enhancement projects, when the benefits would not return to the country of origin. There had to be mechanisms for cooperative international management.

When the Treaty was signed in 1985, both countries were optimistic that after twenty years of negotiation the two countries would finally embark on cooperative management programs that were designed to:

a. Prevent overfishing and provide for optimum production; and

b. Provide for each Party to receive benefits equivalent to the production of salmon originating in its waters.

These principles, which are often referred to as the "conservation" and "equity" principles of the Treaty are to guide the Commission in the development of both countries' fishing regimes. Negotiated fishing regimes are the essential implementation mechanisms for the Treaty.

In general, the implementation of the Pacific Salmon Treaty has resulted in some very positive results.

a. The chinook rebuilding program has been successful at stopping the decline in chinook salmon stocks although there are a number of indicator stocks, which will likely not rebuild by the 1998 target completion date.

b. The coordinated management of the Fraser River sockeye and pink stocks has allowed both Parties to benefit from the increased production, while improving the overall spawning escapement to the system.

c. On the Trans-boundary Rivers, which flow through the southeast Alaska Panhandle, the parties have developed an effective cooperative management and enhancement program for the salmon stocks in the area.

d. The parties have developed a coordinated chum management regime for southern British Columbia and northern Washington State stocks, which has provided stability to chum fisheries in both countries.

However, in other areas, significant problems have arisen that have resulted in conflicts between the parties and may threaten the future of the Treaty. Essentially, there are three operational aspects to implementation of the Treaty.

a. The first was essentially to cap interceptions (in terms of numbers of salmon) at pre-Treaty levels.

b. The second was to provide mechanisms for annual consultations to modify fishing plans to improve conservation, while at the same time limiting interceptions.

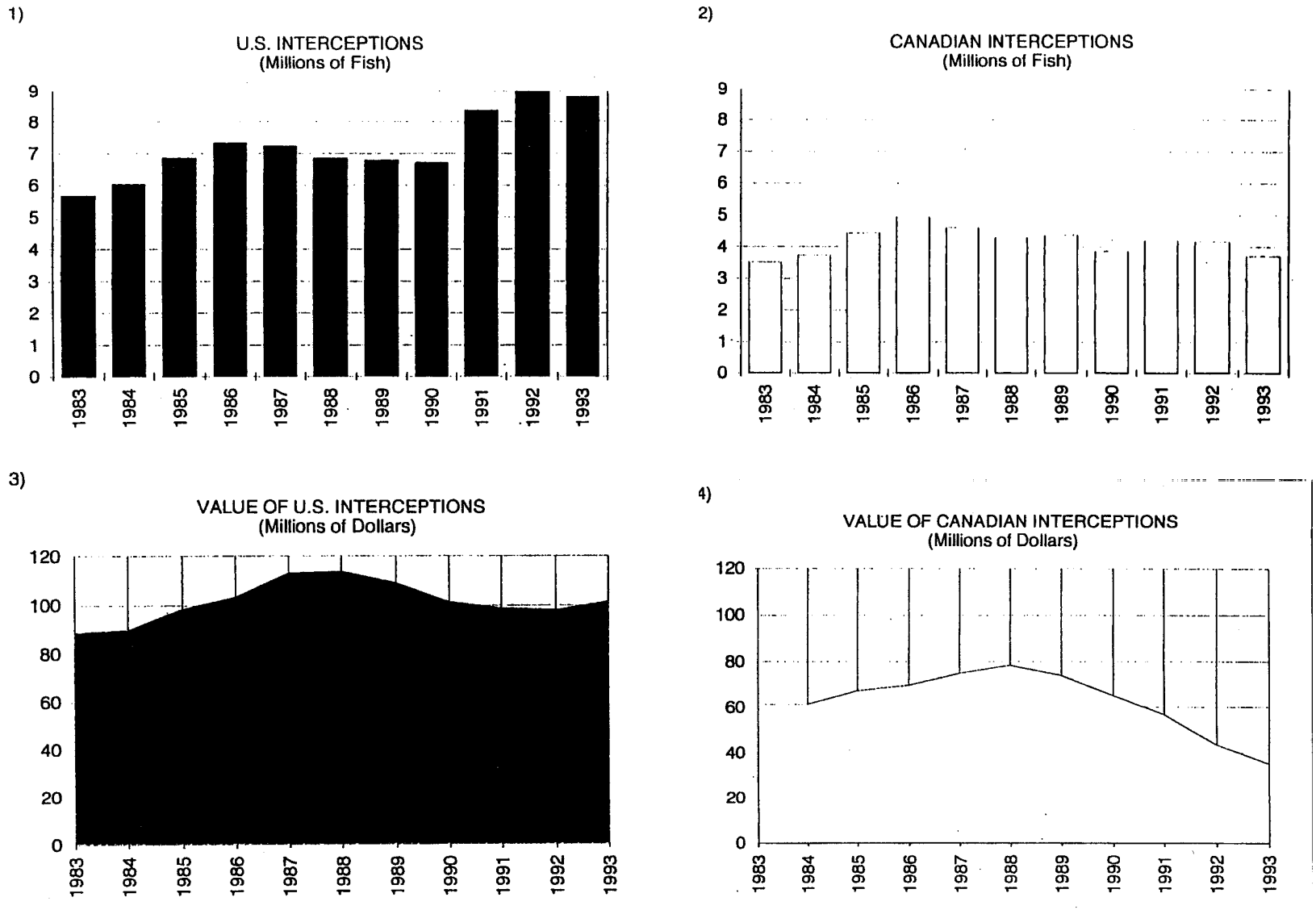
c. The third was to provide a formula for sharing the benefits accruing from implementation of the Treaty (the so-called "equity principle").

This sharing provision was based on principles that both our countries cooperatively fought for in the negotiation and implementation of the International North Pacific Fisheries Convention (1954-1993) and in the negotiation of the United Nations Convention on the Law of the Sea (1974-1982). The thrust of those principles was very simple in concept: namely, that each country should receive 'the benefit of its own salmon production.

Since the Treaty was signed in 1985, overall United States interceptions of Canadian origin salmon have risen to nearly nine million fish from six million, a whopping 50% increase (see Figure 1 on Page 44).. . While Canadian interceptions of United States origin salmon has decreased to close to 3.1 million from 5 million, a 40% decrease.

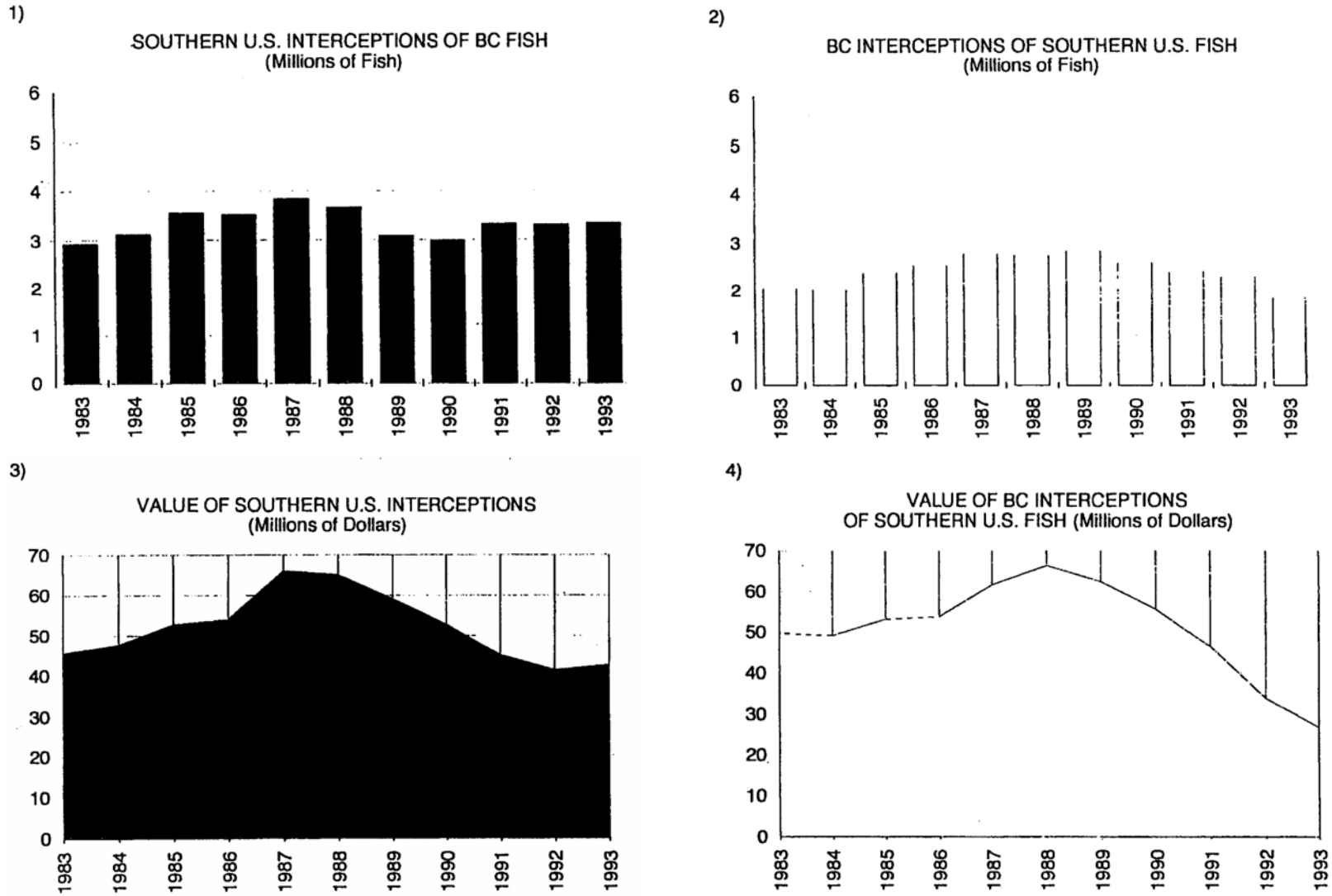
Virtually all of the increased United; States interception occurred in Alaskan: fisheries (see Figures 2 and 3 on Pages 45 and 46). Indeed, since the Treaty came into force in 1985, Alaskan interceptions of Canadian salmon have increased by almost 90%.

Regardless of anybody's reading of the "equity" principle of the Treaty, such a state of affairs" certainly not what either country envisaged when the. Treaty was concluded and nobody could say that such & result has been fair.



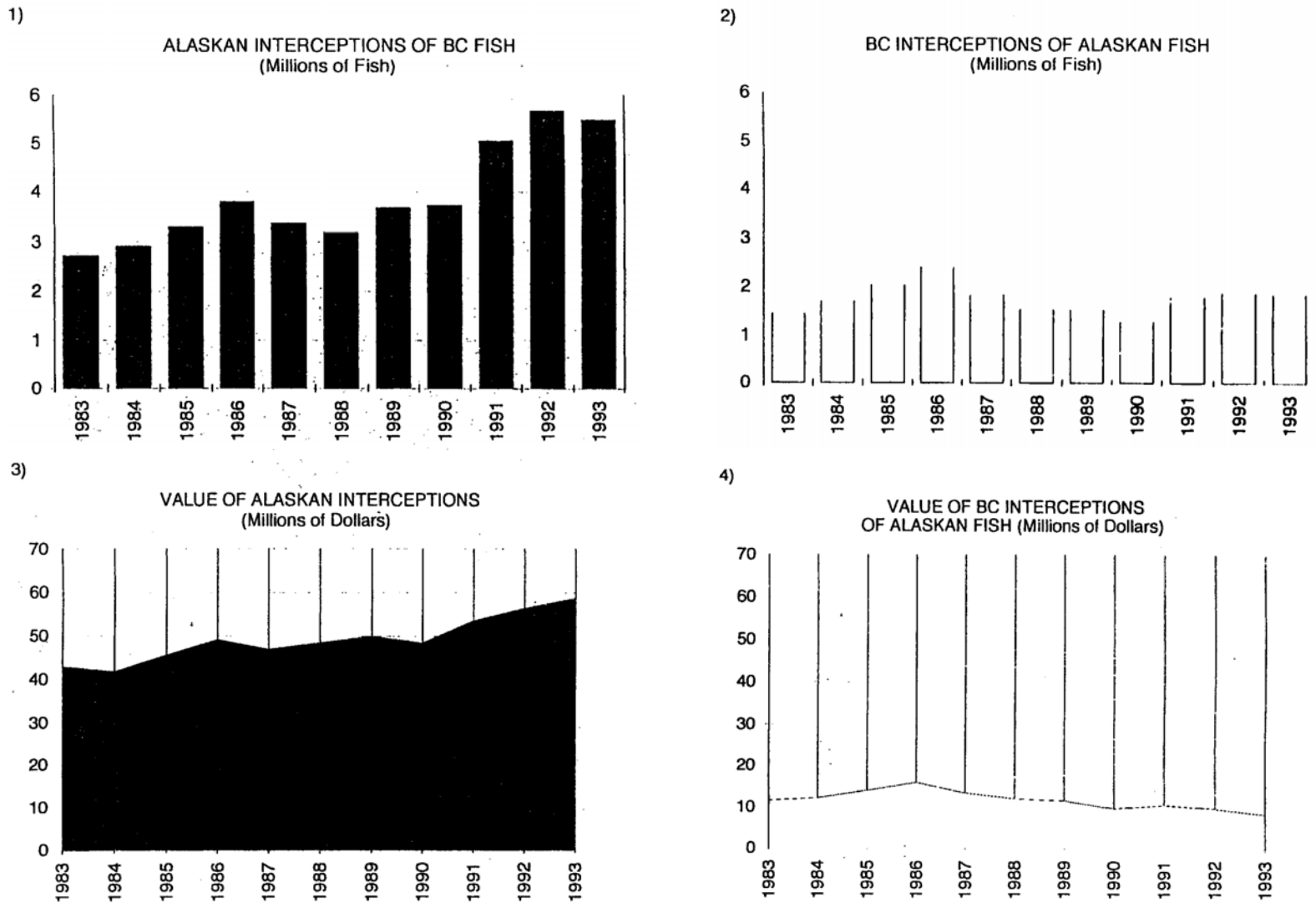
Note: All data represent four year moving averages and $ figures are in constant 1990 dollars.

Figure 1: U.S. and Canadian Interceptions of Fish



Note: All data represent four year moving averages and $ figures are in constant 1990 dollars.

Figure 2: Southern U.S. Interceptions of B.C. Fish and B.C. Interceptions of Southern U.S. Fish



Note: All data represent four year moving averages and $ figures are in constant 1990 dollars.

Figure 3: Alaskan and British Columbian Interceptions of Fish

When we look at the net levels of interception an interesting picture emerges (see Figure 4 on Page 48). The top diagram of Figure 4 illustrates the balance of interceptions by species that occurred during the pre-Treaty period. From this diagram it can be seen that the balance was in Canada's favour for chinook and coho salmon but in the United States favour for chum pink and sockeye salmon. The centre diagram of Figure 4 illustrates the balance of interceptions in the first four years of Treaty implementation. The only significant change is the increased United States interceptions of sockeye by about 500,000. The bottom diagram Figure 4 illustrates the balance of interceptions in the 1990-93 period. The significant change in this time period is the imbalance in Canada's favour of chinook and coho has almost entirely disappeared, while United States interceptions of sockeye have increased a further 500,000. No matter how you value the balance of interceptions, the 1990-93 interception balance cannot be considered consistent with the "equity" principle of the Treaty.

Canada knows there are many in the United States who have little interest in who is ahead or behind in interceptions. With United States stocks spiralling downward, concern is focused on conservation problems. It is obviously in Canada's interest, and required by the terms of the Pacific Salmon Treaty, to work actively with the United States to return the stocks to a healthy state. Canada would be prepared to consider doing more, but only if progress can be made in meeting Canadian concerns, namely acknowledgement and action to address the growing interceptions of Canadian origin salmon.

To date, U.S. negotiating positions have attempted to trivialize the issue of interceptions. From Canada's perspective, this is not acceptable. Figure 5, on Page 49, outlines the total wholesale value of the Canadian salmon catch. When the Treaty was signed in 1985, the imbalance in interceptions as a percentage of the total wholesale value was generally less than 10%. However, in the recent time period, this percentage has grown to approximately 15% and will likely grow further.

Where do we go from here?

Canada is the meat in the sandwich of competing United States interests. Without the full participation of Alaska in the Treaty process, the interests of the two countries would continue to be grossly unbalanced to Canada's disfavour. No overall solution can be reached without

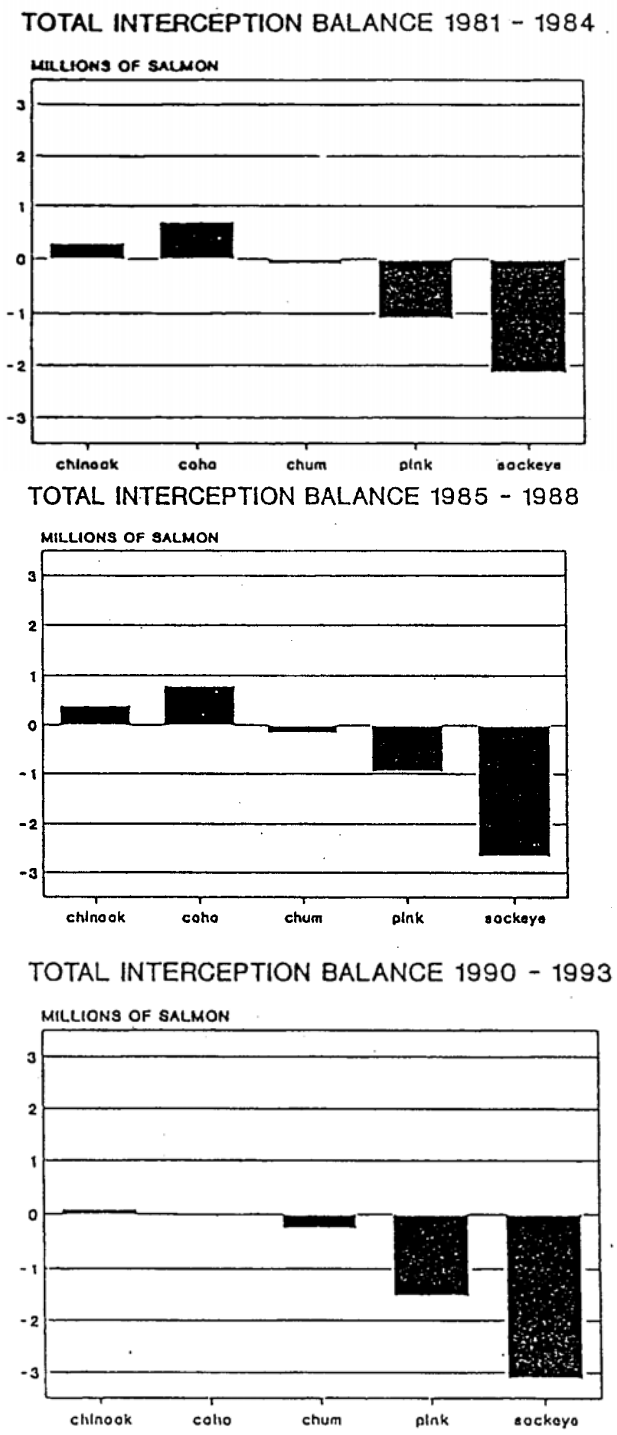


Figure 4: Canadian Interceptions (numbers) of U.S. Salmon Less U.S. Interceptions of Canadian Salmon

Note: Bars above zero represent an interception advantage to Canada and less than zero an advantage to the U.S.

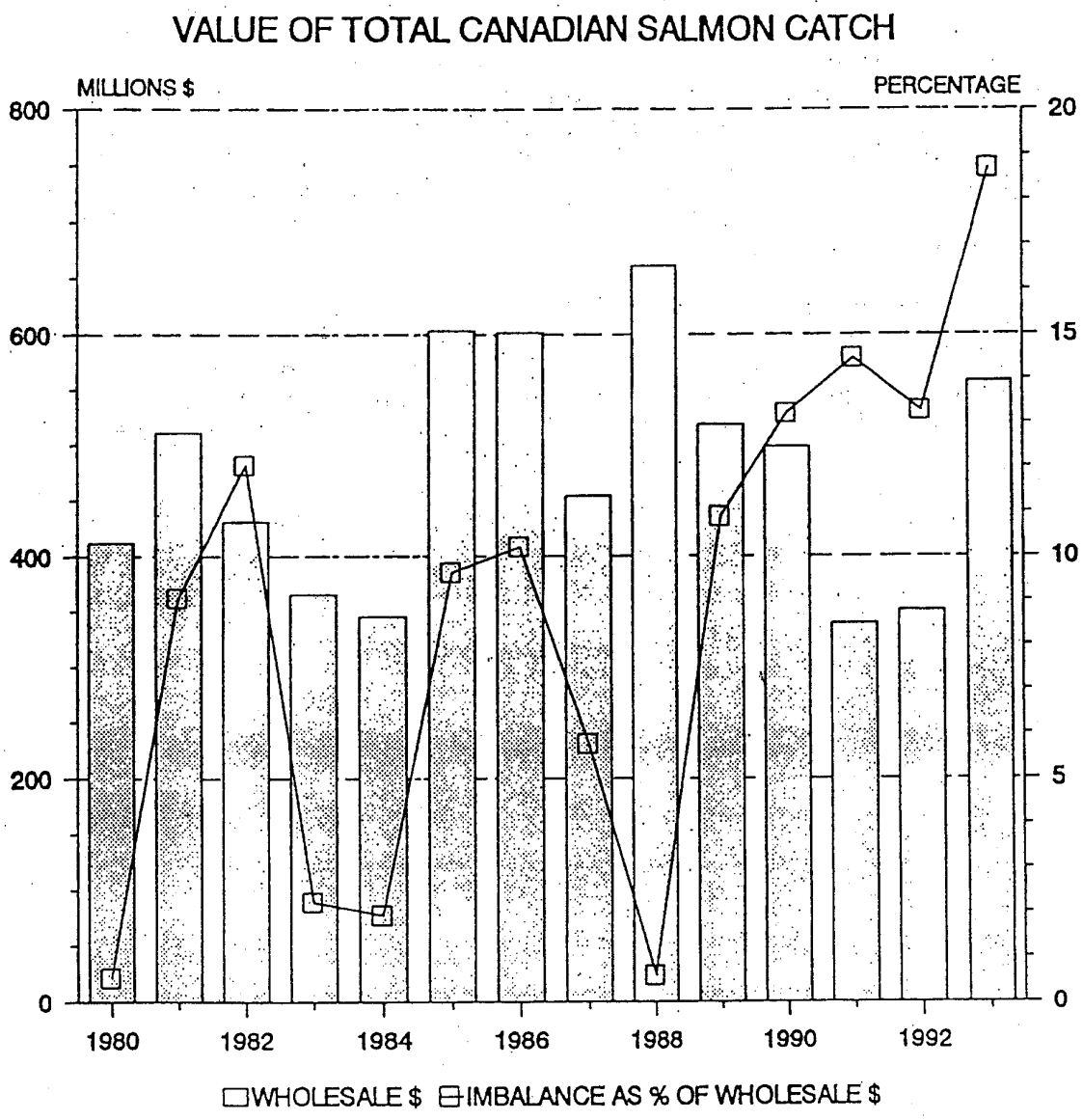


Figure 5: Value of Total Canadian Salmon Catch

Note: Value of the total Canadian salmon catch in wholesale dollars and. the percentage the imbalance in interceptions represents as a percentage of total value.

Alaskan willingness to respond to legitimate Canadian concerns. We hold nothing against Alaskans! The interests of our northern fishing communities and those of Alaska are parallel. To some extent we can understand how Alaskans, whose fish are not being intercepted to any extent by Canadians, find it difficult to accept restrictions of their fisheries to benefit Canada within terms of the Treaty. However, if Alaska took a more positive approach, Canada would be much more willing to explore possibilities for increasing benefits to Alaska within the Treaty.

We must point out that the Treaty is an agreement between the governments of the United States and Canada and not between Canada and Alaska. It therefore seems to us that it is up to the United States to rationalize the differing interests of its northern and southern constituencies. If it **is** impossible to bridge these differences, we see no immediate solution to the problems that confront us within the Treaty. These are not intractable problems. We faced similar problems on the eve of finally concluding the Pacific Salmon Treaty in 1985. Solutions were found by the United States then. We are convinced that solutions can be found now. What is needed is the political will in the United States to find a solution.

A U.S. Perspective on Problems with the Pacific Salmon Treaty

Daniel D. Huppert

The breakdown in Pacific Salmon Treaty negotiations stems largely from differences in attitude and approach toward salmon interceptions. Canada demands that US interceptions of Canadian salmon be balanced with Canadian interceptions of US salmon. Canadian negotiators take this balancing as necessary to meet the Treaty's "equity " promise, and they resist fishing quotas and seasons that do not reduce the US advantage on interceptions. U.S. negotiators are concerned about conservation of dwindling salmon stocks in the southern part of the treaty area; they have a lower estimate of the interception imbalance; and they view the

"abundance-based" management strategy pursued in U.S. fisheries as reasonable and responsible.

As indicated by the two previous speakers, we have experienced declining abundance of coho and chinook salmon in rivers of Washington and Oregon and increasing abundance of pink and sockeye salmon in British Columbia and Alaska. This divergence in salmon abundance trends, without significant change in fishing regime, has caused the excess US interceptions of Canadian salmon. Because the Canadians have been unable to induce the U.S. to reduce its harvest of Canadian fish, Canada has engaged in actions emblematic of a "salmon war". During 1994 these actions included aggressive fishing on the lower west coast of Vancouver Island to catch salmon migrating into US waters and temporarily charging a $1500 transit fee to US fishing vessels moving through the "inside passage" from Washington State to Alaska.

From the U.S. perspective, the balancing of interceptions in Alaska and in southern British Columbia is a complex and perplexing problem. Salmon management issues in the northern and southern portions of the Pacific Salmon Treaty region differ in these important respects:

a. Salmon stock conservation is a critical issue in the south, but not in the north;

b. Changes in harvest patterns are needed in the south but not in the north; and

c. Regional political power and will to make changes in the current fishing regime under the Treaty differ between regions.

In this short presentation, I will:

a. Review the U.S. objectives and accomplishments under the U.S./Canada Salmon Treaty;

b. Describe briefly the state of salmon conservation in the various areas affected by the treaty;

c. Describe the "abundance-based" management procedures used in U.S. salmon management, which lead to disparities in interceptions under current circumstances; and

d. Explain how the political system in the U.S. creates the impression that Canada must negotiate with separate sovereign entities and

(designated by species, river reach, and spawning season) in the Pacific Northwest region of the U.S. that are depleted and at some risk of extinction. A most dramatic case is the Columbia River chinook salmon, which has experienced long-term decline in harvests. (See Figure 1 on Page 55). The combination of hydro-power dams, irrigation dams and diversions, forestry and grazing practices, poor ocean survival, and other land developments in the Columbia basin have driven some stocks to near-extinction. The U.S. National Marine Fisheries Service has listed the Snake River sockeye, fall chinook, and spring/summer chinook as endangered under the Endangered Species Act. One consequence has been the closure of the gill net fishery in the Columbia River.

Coho and chinook salmon spawning in many other rivers of the Pacific Northwest are in similarly poor shape. Sport and commercial ocean harvests of salmon have been at a rather low ebb since 1983, culminating in a regulated closure of the ocean fishery during 1994 (see Figure 2 on page 55). Very low abundance of coho salmon in coastal streams combined with listing of Columbia River Basin chinook as endangered were the reasons for these closures. In Washington State's Puget Sound, there are some depleted coho salmon runs as well. Overall, the State's coho salmon need to be rehabilitated through a mix of improved freshwater habitat, lower fishing rates, and improved ocean feeding conditions. A particular problem for both the coho and chinook salmon conservation efforts is that the Canadian fishery off Vancouver Island takes significant portions of US stocks of these species. In the case of Puget Sound origin coho salmon, the Canadian fishery takes more fish than the US fishery. In summary, salmon are abundant and the fishery is booming off southeastern Alaska. Although some Canadian stocks mix in with Alaskan fish, the stocks seem to be well conserved and the Alaskan's have no self-interest reasons to curtail fishing or to engage in extraordinary measures to avoid incidental taking of Canadian fish. In the south, salmon stocks from many important river systems are depleted and in need of rehabilitation. The U.S. has closed down both Columbia River and coastal troll fisheries in an attempt to increase the size of spawning escapements in those rivers. Canadian fishing continues to expand in those areas that take significant amounts of those depleted fish stocks.

While Canada continues to insist on treaty measures to balance salmon interceptions, the US has other priorities. In the northern area, Alaskan fishery managers see salmon plenty as an opportunity to maintain high harvest levels. Where Canada sees excess taking of their fish, the U.S.

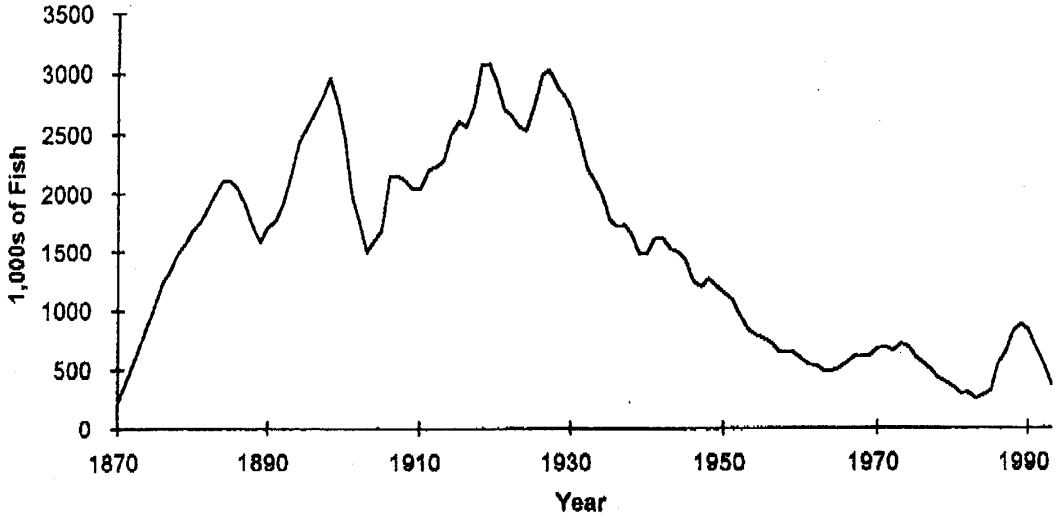


Figure 1: Columbia River Commercial Harvests: Numbers of Fish over a Five Year Running Average

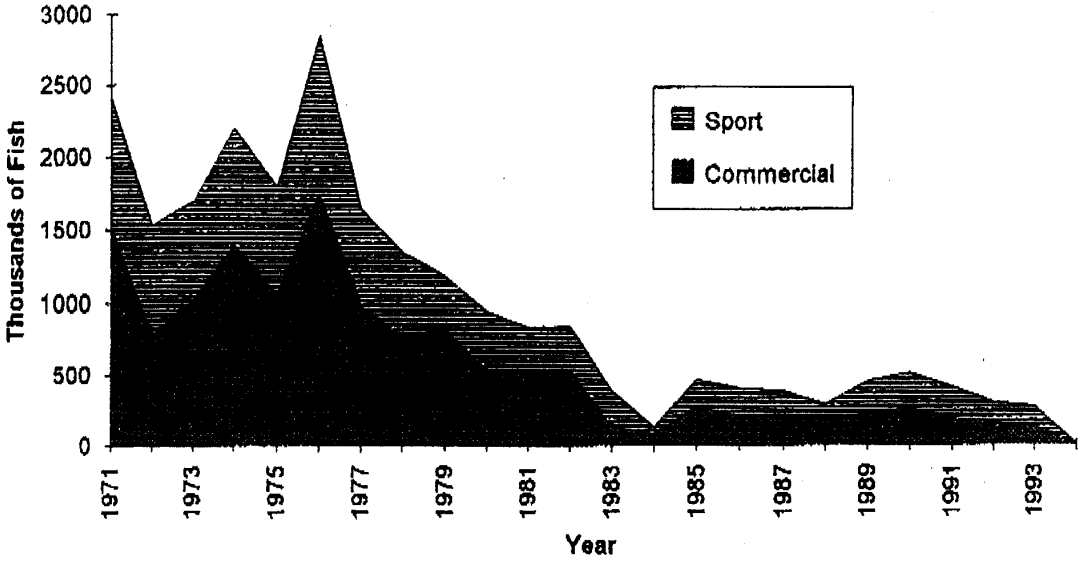


Figure 2: Washington State Ocean Salmon Harvests: Chinook Plus Coho

sees a normal level of incidental taking of migratory fish. Using an "abundance-based" harvest strategy, the Alaskans have expanded. harvest levels in parallel with increasing salmon run size. The increased take of Canadian fish, in their view, simply follows common sense harvest methods, when fish populations are at high levels. Excessive focus on counting and balancing the number of interceptions is disparaged as "bean counting", not conservation. In the southern area, our primary concern is to reduce exploitation of the depleted and endangered fish runs, counting on a return to favorable ocean conditions and improved management of freshwater habitats to restore the runs. Continued Canadian harvests of these depleted stocks, in part as a means to bring pressure on U.S. negotiators, is seen a short-sighted and mean. In the longer term, resurgent southern stocks of coho and chinook will be extremely valuable to both nations, and the short term "salmon war" strategy of Canada could prove extremely destructive. Overall, the U.S. is less inclined to view the current imbalance in interceptions as a critical problem, since the causes for the current situation are reversible over the long haul, and the harvest management systems deal rationally with specific conditions in the two disparate regions.

Canadian officials often complain that they are negotiating with internal U.S. regional interests rather than with a cohesive U.S. position. Canadians suggest that the U.S. work out an allocation of benefits and costs amongst regions and interest groups before coming to the negotiating table. In particular, balancing the Alaskan interests against those of Washington, Oregon, and the t treaty Indian tribes in the Pacific Northwest is viewed as an obligation of the U.S. federal government. The existence of diverse national interests is not accepted as a rationale for continued excess U.S. interceptions of Canadian salmon.

As a matter of practical political policy, however, it is unlikely that the U.S. will provide a coherent national position on salmon interceptions anytime soon. One reason for this, of course, is the substantial de-centralization of political power and management authority that is engineered into the U.S. federal system. The President cannot run the Executive Branch without funds for programs, and these are provided by the Congress. The President can negotiate international treaties, but the treaties must be ratified by the U.S. Senate. This multilateral approach is also built into the U.S. Section of the Pacific Salmon Commission. There are four representatives: one from Alaska, one from Oregon, one from a treaty Indian tribe, and one U.S. government

official. Decisions are by consensus, and the federal official does not vote! So, the Canadian complaint has a basis, and this is rooted in the U.S. approach to government and fishery negotiation.

Given the U.S. penchant for devolving political power to regional interests, two additional factors militate against development of a coherent Pacific salmon policy that includes Alaska fisheries. First, because the Alaskans are, in a sense, "upstream" from the other competing regions, fish spawning in Alaska are not subject to harvest in Canada or in the southern U.S. to any considerable extent. Hence, there is no Alaskan self-interest in sacrificing any of their salmon harvests to assist in balancing international interceptions for "equity" reasons. They have essentially nothing to gain from such a balancing. Second, the Congressional elections in November, 1994, gave the Republican Party a majority in both the U.S. Senate and the House of Representatives. Both Alaskan Senators are now senior members of the majority party, and Alaska's sole Representative (Bob Young) has been appointed Chair of the House Natural Resources Committee. This places Alaska in a very strong position to guide and control agency appropriations, senior Executive Branch appointments, and treaty ratification in ways that protect Alaskan salmon interests. My conclusion is that Canada-US negotiations to resolve the interception balance problem must proceed without any significant involvement of Alaskan salmon fisheries.

Panel 3: General Discussion

Audience:

Would it be an option to broaden the issues? Would it be diplomatically advantageous to link harvesting issues with processing and trade issues? What about a possible trade-off with the A-B Line in Dixon Entrance? Could the hake issue be added to the salmon pie?

Bud Graham:

Broadening the pie is theoretically possible, but as a practical matter the Canadian position on the salmon issues has to strike a balance among Canadian stake-holders. At present neither government is talking about linkage. This approach would have to be considered at the policy level.

Audience:

Are there any incentive programmes in place in the U.S. with respect to "buy backs"? How limited is this alternative?

Daniel Huppert:

There is no explicit policy regarding buying back licenses and the like, but the possibility is there. The salmon fleets are small and have few alternatives.

Audience:

Would the panel comment on the Yukon issues? Would someone address the issue of the health of the salmon stocks and of the aquatic environment in general?

Bud Graham:

The Yukon is at present detached from the Pacific Salmon Treaty negotiations because the Alaska delegation has not yet been brought in. Inclusion of the Yukon question was opposed by the Canadian delegates, who agreed there were different issues at stake. Negotiations on these issues have taken place under a different regime. A fund was created to make good on a pledge to restore chum and coho stocks in the Yukon. The question of how to share the

benefits is left open. The Yukon fears a trade-off to meet southern demands.

As to the salmon stocks in British Columbia, they are generally in good health, both for spawning and harvesting purposes, although there may be increasing concern with the chinook and coho, particularly in the Gulf of Georgia. The recent Walters Report for the David Suzuki Foundation gave no specific examples of overfishing. Sharing of stocks occurs among highly diverse users: aboriginal, sport, and commercial.

David Huppert:

There are greater stock health problems in the South. In particular, coho and chinook are suffering from severe habitat degradation.

- PANEL 4 -

SECURITY ISSUES AND CANADA'S DEFENCE ROLE IN THE PACIFIC

Panel Chair: James A. Boutilier

Panel Introduction

We now come to the fourth and final panel in this Maritime Awards Society of Canada Forum. Let me make a number of points that may underscore the formal presentations by my two co-panellists and provide more thought for subsequent discussion with the audience.

During the course of the day we have steadily expanded the geographic scope of our deliberations. We began by focusing on shipbuilding and ship repair facilities in Esquimalt and Vancouver. Then, we moved outwards to look at the complex and inter-related issues of coastal management in the Georgia Basin, an area encompassing not only the Straits of Juan de Fuca and Georgia but also the approaches to Seattle. Subsequently, we turned our attention to salmon fisheries stretching all the way from Oregon to the Gulf of Alaska. Now, we must examine the entire Pacific region and Canada's security agenda therein.

A fundamental feature of fisheries and marine pollution are their trans-border nature. Similarly security is a trans-border concern. Closely related to trans-border considerations is the fact that the definition of security has changed dramatically in the post-Cold War period. Whereas it traditionally related to military calculations, security is now perceived in a much more comprehensive and inclusive way. At the heart of contemporary analysis of security in the Pacific is economic security. Quite

clearly, if a state operates at an economic disadvantage, the larger security of that nation may be in jeopardy in terms of standards of living, diplomatic leverage, and so forth. Included within the definition of security today are many non-traditional threats, many of which have trans-border implications. Thus the unregulated flow of refugees or the massive production of particulates from the consumption of soft, sulphur-laden coal in China has implications for the security of far-off Canada.

The apparent simplicities of the Cold War are over. In Soviet parlance, the correlation of forces has now dramatically changed in the Asia-Pacific region. We are now looking at a new security geometry. in which the great Soviet Pacific fleet is mouldering at its moorings. Analysts are concerned by the security implications of rapid economic growth in China; and the reduction of American forces in the Pacific is a source of anxiety in many quarters. What do all these changes mean for Canada at a time when its defence and foreign policies are being re-articulated?

One point seems clear: the Pacific is a quintessentially maritime area and many of the threats to security in the future are likely to be maritime in nature. Those threats include disputes over fisheries (of the sort discussed in our Salmon Fisheries panel), competing claims to islands, competition over undersea resources like gas and oil, and the integrity of sea-lanes of communication. In addition, we must contemplate the worrisome growth of regional navies, larger and more lethal than before.

There appears to have been a sea-change in Ottawa's vision of the Pacific. Whereas key decision-makers were one fixated on Washington, Bonn and London, the Prime Minister's visit to Asia in November, 1994, suggests an eleventh-hour recognition of the importance of Asia to Canada's long-term security. However, much remains to be done. While our trade with Asia is increasing in absolute terms, it is shrinking in relative terms. Similarly, while the transfer of more modern warships to Esquimalt reflects a greater official awareness of the Pacific, the transfer occurs at a time when we are doing less rather than more overall in the realm of defence.

Security Issues in the Pacific: 1995

Charles M.W. Thomas

Any consideration of trade, transport or war in the Pacific Basin is dominated by the great ocean. Atlantic expectations are simply doubled in the Pacific. Distances, fuel requirements, the size of swell and wave, the fetch and ferocity of storms, and the consequence of error are all magnified. Traders and warriors familiar with Europe, where the continental powers enjoy internal lines of communication and established infrastructure, find the Pacific very different. There is less inherent bias in favour of the old and established. For a young and ambitious country like Canada, latterly recognizing its Pacific frontage, there is promise of a stunning economic opportunity.

Yet that opportunity does not come without cost and risk. Compared to established and known structures in Europe and North America, the Pacific is unorganized territory. Our security relationships with Europe and the United States have been bounded and organized within NATO and NORAD and Joint Defence Agreements. Over a period of several decades Canadians knew that for relatively small investments they had the comfort of a large security blanket, and, in addition, even had opportunity to express opinion and to be influential. No such common security framework exists in the Pacific. There is no structure within which political and security responsibilities and cost are discussed, let alone shared. While there are no active immediate threats to security in the Pacific Basin, there are significant realities of the sort that classically lead to conflict and war. There are resource-rich states and those that are poor and ambitious. There are burgeoning populations and countries which are mostly empty space. There is every form of government from democracy to dictatorship. Military equipment is widespread, significant, and increasing. There are some huge armies; significant navies with submarine and nuclear capability; and weapons are spreading. The historical policeman, the US Navy, can no longer maintain world-wide oceanic control in the face of local opposition. In every country investments in military capability are occurring despite the evident need to spend those monies on other national priorities.

The maritime security issues have a familiar ring. Every time somebody buys a submarine, all the other maritime trading nations worry. What submarines do best is sink other peoples' ships either by torpedo or mine, and they are hard to identify and harder to catch and kill. The narrow, deep-water passages at Malacca and through Indonesia remain vulnerable to closure, and the other deep water route is around Australia. Time is at stake, about seven to ten days, and closure would result in more costly oil, and have an impact upon the economies of our trading partners.

In all these matters the question for Canadians is, should we care? Does it matter to Canada if submarines or mines disrupt the normal trading patterns and the established sea-lanes of communication? We don't have a merchant navy. It is a big ocean and the action might well be a long way away. We might even cynically perceive a trading advantage, because somebody else's "cost of goods sold" will go up. We have to decide if disruptions in maritime commerce are going to be a threat to our future as a trading nation.

There are other considerations. The countries of the Pacific Rim have huge and often rapidly growing populations. Is that reality a market opportunity or a threat to stability? Will the desire for consumer goods stimulate economies, or will the growth of unfulfilled expectations breed instability and war? Will the Pacific ocean be claimed and divided and maybe fought over, as the ability to exploit the riches on and beneath the seabed becomes ordinary technology? Do we see the ocean as a global resource, or is it ours to exploit? Is it also our moat and our first line of defence? When we trade across that ocean, should we regard the various kinds of government as merely variety and evolution in process, or are they the stuff of revolution and war? Is the disappearance of biomass from the ocean the consequence of government errors and omission and user communities' greed and avarice, or is it also high seas piracy? Is this a security concern? Is driftnetting a security problem? Should we stop the practice and try to recover driftnets that pose threats to shipping?

This recitation of potential security issues is not unique to the Pacific region and its ocean. They follow the patterns of governments, of greed and folly, which have characterized human conflict, whatever the geography. In the Pacific Basin, however, security issues, are singularly undefined, little considered, and without inter-governmental structures to aid in resolution.

How does a Canadian talk sensibly about security issues in the Pacific? Canadians avoid discussion of security issues, and certainly in official Canada the security issue in the Pacific has all the attractiveness of Pandora's box. The recent official acknowledgement of the strategic importane of the Pacific came with the Perrin Beatty (nuclear submarines) White Paper. The new geographic focus was to be west and north. Submarines were to reflect recognition of our three-ocean reality. In the interim, until three-ocean capability arrived, the second ocean was to be recognized and the Navy's initiatives to balance the fleet between the Atlantic and Pacific were not opposed. As it turned out, the submarines went down the tubes and that, I might suggest, was, the last consideration of any meaningful capability to play a major role in Pacific security issues. Certainly there is very little other evidence in official circles of a desire to "think Pacific" in defense and security terms. London, Paris, Brussels, NATO, and all the other European organizations and conferences have their own appeal and offer career opportunities and a comfortable familiarity for Euro-centered diplomats and politicians, which cannot be matched by Jakarta, Islamabad, and Canberra. Moreover, for a very long time that European priority was fully justified by the security and defence realities facing Canada. Logic and comfort became habit.

It is also true that Canada doesn't have much to contribute to any discussion of security issues. We have avoided the necessary capital investment that makes armed forces meaningful and are now busy slashing and cutting in the face of a deficit crisis. As a consequence, Canada can be said to prefer to talk and walk softly while carrying a big megaphone. However, as our capability in the security arena continues to diminish, the question will become, who wants to listen? This diminished influence is, I fear, particularly acute in the Pacific.

We had better face reality. I don't think Canada is going to send significant ground forces across the Pacific into any situation that calls for participation beyond the provision of a few observers. I suggest we don't have a suitably equipped army and we couldn't support it at great distance in a combat situation, if we did have it. We lack significant national will to spend either our diminishing resources of dollars or the blood of our young. Even the current U.N. activities are but a sop to collective conscience. Peacekeeping, as invented by Lester Pearson, in which Canada has made large emotional and diplomatic investments, is not now possible. The warring parties don't want peace. Somebody who has the necessary guns wants to win. The UN effort is reduced to the provision of

humanitarian aid to those about to be pillaged and shot. In the Pacific region, were local conflicts to break out, we would have to recognize the spectre of a messy regional war involving really big numbers. Canada won't be a player in big messy land wars.

In my view, the Air Force is much the same. Transport of figurehead volumes of emergency relief supplies is possible. Meaningful force, involving the fighter bombers, is improbable. There are too few Canadian fighter bombers to send any significant numbers anywhere in the Pacific Basin, which is too far from Canada because of the unique logistic support the airplanes require. We never bought any smart weapons, so our bomber capability is less than real and full of risk. Peasants with rifles can shoot down fancy airplanes, if the airplanes have to operate in a low and vulnerable mode in order to deliver bombs. Moreover, the CF18s are getting old. If Canada wants a deployable fighter bomber capability, then we have to prepare now to spend some billions of dollars on new airplanes and weapons. That is unlikely in the fiscal and political climate, and therefore our national ability to project power using airplanes is going to approach zero. Vietnam surely demonstrated the ineffectiveness of conventional bombs in persuading an Asian nation, or perhaps any nation, to change its course of action.

The Navy has some small chance of being useful. A six-ship task group is not going to bring the Pacific Basin to its knees, or to its senses either, but it can be useful. With twelve CPFs and four updated 280s, one foreign-going six-ship task group on each coast is about the scope of our Navy. The ships are, however, modern, paid-for, blue-water-capable, and global in reach. With their own support ships, each task group is self-contained and, given the weapon fit in the CPFs and updated 280s, they can both protect themselves and control a significant piece of ocean space. Whether governments will be prepared to use them and accept the risk of casualties and loss of ships and people is moot. However, because these competent ships exist, the decision options for government also exist. The Navy is, in my opinion, the only service with a contribution to make to Pacific security, and that fact alone would justify an expansion of naval capability and the continuation of the frigate production line.

In closing, let me try to capsulate my view of the Pacific as it affects Canada. There is in the Pacific Basin every promise of unlimited economic opportunity. There is also every potential for an unbounded security liability. As a nation we lust after the economic opportunity, but are neither ready nor able to respond to the risks involved.

Historical Dimensions of Canada's Defence Policy in the Pacific

David Zimmerman

In Canada to-day we have a growing need to shift our small defence resources towards the defence of the Pacific region. Canada's defence commitments in the Pacific region are already vast. The Canadian Maritime Pacific area of operations extends some 1700 kilometers to the west of Vancouver Island and north to the Alaskan coastline. The Aleutian Islands, Alaska and its panhandle describe the northwestern, northern and most of the eastern boundary of the area. On the south, the boundary is an imaginary line due west of the Strait of Juan de Fuca. This area contains major routes for sea and air trade between North America and Asia and for North American domestic trade. Fully 25% of all oil imported into the lower 48 United States comes from Alaska via the port of Valdez and along the west coast of Canada.

This area is only a small part of the potential areas of interest for the Canadian forces, but it is the principal area of concern that relates to the most basic defence priority of sovereignty protection and promotion. Since 1939, it has received a much smaller share of the defence resources available than those committed to the Atlantic maritime areas.

In essence, Canadian defence policy and, some would say, economic and diplomatic policy, concerning the Pacific was one of indifference, ignoring that we have been since 1871 a Pacific nation. This policy of indifference remained unchanged until the late 1970's. Neither of the defence White Papers of 1964 and 1971 mentions the Pacific as being of any serious concern. The only interest in strategic planning for the regions raised throughout the Trudeau years involved the mainly parochial concerns of exerting control over our sovereign territory. Trudeau's policy was more directed against the United States than any other country.

The Asia-Pacific region continued to be forgotten despite some fundamental changes that have taken place in the region beginning in the late 1960's. First and foremost is the tremendous growth in trade with the countries of the Pacific Rim. By the early 1980's Canada was trading more with the Pacific region than it was with all other areas other than the United States. By the beginning of this decade we were trading more with Asia-Pacific than with all of Europe, the Middle East, Latin America and Africa combined.

Also in the last thirty years our cultural links with Europe and our racial hostility towards Asia-Pacific peoples, which were so strong at the start of the Cold War, have both dramatically diminished. Widespread Asian immigration has taken place in the last thirty years, and people from that region now are one of our fastest growing population groups. Asian immigrants have legitimate arguments that it is just as important for us to have close ties with their homelands, as it is for us to continue our close relations with our NATO allies.

It can be argued that changes in our economic, political and cultural structure should not, by themselves, have led to an alteration of our defence and foreign policy priorities. By the early 1970's there was a growing military threat as well. This new threat was the emergence of powerful air and naval forces from our closest neighbour across the Pacific, the Soviet Union. The growth of a large Soviet Pacific fleet and maritime air power in the 1970's and 1980's led to some very serious discussions concerning our need to expand our defence resources on the west coast. Little was done, however, except for an important local initiative taken by the Commander, Maritime Command Pacific, to begin to participate in the RIMPAC exercises. A major re-orientation of defence priorities towards the Pacific Rim did not begin until the publication of the ill-fated 1987 White Paper on Defence.

The White Paper called for a substantial improvement in Canadian defence resources in the Pacific, but these were to be provided by an expansion of the armed forces through human-resource growth and massive new equipment acquisitions, such as nuclear submarines, more Aurora patrol aircraft, and modern naval helicopters. However, within two years of its publication, economic and political concerns, and a lack of real commitment by the Conservative government, made it apparent that this grandiose scheme would not be implemented. This occurred before the unexpected collapse of the Warsaw Pact and the Soviet Union. In brief, we had a policy commitment, but not the resources to carry it out.

What occurred in the 1980's were mere tokens, such as the transfer to Esquimalt of one Tribal class destroyer, then our most modern warship, completed in the early 1970's and equipped with two Sea King helicopters. This was subsequently followed with the transfer to the West Coast of a second helicopter-equipped ship.

Yet, despite the failure of the government to follow through with the 1987 White Paper, the need to shift our focus away from the Atlantic has continued, at least on paper, to be given high priority. In the post-Cold War period, which we are just now entering, there are no longer any serious immediate security threats to North America or to Europe. The first defence policy paper of this brave new world, which appeared in the summer of 1991, presented a more balanced approach to Canadian defence. This document revealed the Mulroney government's commitment to remove most of our troops from NATO assignments in Europe. While NATO and NORAD commitments remain important, they will no longer dominate.

The 1992 Defence Policy Paper recognized that Pacific nations want more than rhetoric: they want Canada to show some commitment to the region. It stated:

a. The maritime forces of the future will be asked to respond to a new set of challenges. The focus for the Canadian Navy, first and foremost, will be the Canadian areas of maritime responsibility off our east and west coasts. As the classic threat in Europe declines, the importance of protecting the sea lanes of communication across the Atlantic will diminish.

b. Despite these trends, Canada will retain the capacity to contribute to NATO forces assigned to the sea-control mission in the North Atlantic.

c. Increased Canadian presence in the Pacific will enhance sovereignty, enable the Navy to carry out national roles more effectively, and signal Canada's increasing interest in Pacific security.

The defence policy paper recognized that our interest in the area is "primarily economic". The paper concluded that the need to increase our presence in the Asia-Pacific region, plus the necessity of providing more effective fishery protection, environmental surveillance and drug interdiction, will lead to better distribution of our defence resources.

On paper, we are entering the end of our period of ignoring the Pacific dimension of defence. There are some positive signs that this re-orientation will take place. Already, half of the commissioned City-class frigates are based at Esquimalt. The 1994 White Paper confirms that the new Liberal government will continue with the policy of equal distribution of our maritime forces. Whether actual policy will develop to implement these changes is yet to be seen. Down-sizing at a time of a great budgetary crisis may take precedence over this re-allocation. The relationship of defence to foreign policy is still dimly understood in the Lester Pearson Building, and inertia might see the retention of a now obsolete Atlantic focus.

Panel 4: General Discussion

Audience:

I have enjoyed the two presentations, but am surprised that no attention has been given to the lack of a merchant marine in this country.

Audience:

Canada is indeed acquiring a merchant shipping capability but it is largely invisible because it is under foreign registry.

Audience:

Something like 75% of Canada's waters lie in the Arctic or sub-Arctic. What priority do the panelists think should be given to increasing our security capabilities in these waters? Second, why are we not building more frigates?

Charles Thomas:

The Canadian Navy has absolutely no Arctic capability. This sacrifice was made in the 1950's. Without highly capable submarines, able to operate effectively under the ice, Canadian naval presence in the region will continue to be non-existent. As to the frigate programme, the first four of the original design have now been constructed and paid for.

David Zimmerman:

You have to build what is required now. It takes too long to play catch-up after the need arises.

Audience:

Some suggest that, with the convening of the ASEAN Regional Forum, security issues in the Pacific have been sufficiently addressed. Should Canada take heart from this apparent stabilization?

Charles Thomas:

The situation in the Pacific is still highly fluid. With continuing sales of old Soviet weapons and the reduction of the U.S. military presence in the Pacific, the situation is far from stabilized.

David Zimmerman:

History reveals many changes are unforeseeable and occur quickly. The capacity to react quickly is crucial to national security.

Audience:

Should we not distinguish between disarmament and neutrality? Disarmament, it seems to me, will leave us defenceless. We should arm as Sweden does, as a neutral country. Even a policy of non-alignment would require that we have the ability to protect our interests.

Charles Thomas:

Current Canadian defence policy is that our present armament is the extent of our future armament. Only reductions in capability are foreseeable.

Audience:

Canada's first naval casualties in the 20th Century were in the Pacific. We should always keep in mind that the Pacific surprises.

- FORUM 95: CONCLUDING COMMENTS -

Forum Chairman: Douglas M. Johnston

This inaugural Forum was held at the right time and the right place. The one constant motif in all four panel discussions and in all corridor conversations was the timeliness of a community-based initiative such as this in Greater Victoria. Thanks to an energetic core group of retired naval officers and officials on Lower Vancouver Island, it has proved possible to reach beyond the original Maritime Awards Society of Canada goal of establishing a nation-wide system of scholarships in ocean-related studies to an equally challenging Society goal of providing an annual public Forum for expert analysis and general discussion of current issues in Canadian ocean policy and management. What has started this year as a modest local endeavour might now become a regular event with the promise of growth into a larger-national undertaking.

The inter-relationship of virtually all ocean policy matters seems as obvious as that of all facets of the marine environment. Despite the possession of a three-ocean coast-line and an immense projection of national ocean space, Canada has a rather low level of collective ocean consciousness. In maritime circles it is fashionable to assign the blame for this to the land-locked mind-set of our officials and fellow citizens in Ontario and Quebec. Yet the remedy surely lies in our own hands, with each of us who have been professionally involved in ocean affairs throughout our lives.

The 1995 Forum was designed so as to capture the widest possible constituency of Victorians interested in the current problems of ocean use and management without losing entirely the benefits of focus. The balancing of scope and focus will be an annual test for the designers of the Society's Forum in the years to come. Most issues come and go over a span of years, but the challenge to build and maintain our capabilities as an ocean management nation will not diminish.

Whatever the topics and format may be in a given year, the purpose of the Society's Forum will always be to serve the public interests in all aspects of national ocean policy and management.

Readers of this report on our first Forum are asked to note that our second Forum will be held in April of 1996, again on the campus of the University of Victoria. We promise an even more ambitious and exciting programme. Please support our efforts by bringing a friend with you.

APPENDIX - A

FORUM PARTICIPANTS

Boutilier, James A., PhD.

Dr. Boutilier is Professor of History at Royal Roads Military College. He is a prolific author on a wide range of defence and naval topics with a special interest in Pacific strategic studies.

Copping, Andrea, PhD.

Professor Andrea Copping of the University of Washington is a senior scientist with the Washington Sea Grant Programme and the Pacific Northwest Research Programme. Dr. Copping serves as Chair of the British Columbia/Washington Environmental Cooperation Council established by the two governments under their 1992 Environmental Cooperation Agreement.

Dobell, Rod, B.Sc., M.Sc., PhD.

Professor Dobell was named Francis G. Winspear Professor of Public Policy at the University of Victoria in 1991 following a seven-year term as President of the Canadian Institute for Research in Public Policy. He has served as a policy advisor in the Government of Canada, Deputy Secretary of the Federal Treasury Board (Planning), and as Director of the School of Public Administration at the University of Victoria.

Frazer, Jack, M.P., O.M.M., M.Sc., C.D.

Mr. Frazer is Member of Parliament for Saanich and the Gulf Islands. He has served with distinction in the R.C.A.F. for 38 years in all regions of Canada, in Europe, the United States, and Africa, retiring as a Colonel in 1987. Included in his career was a two-year period flying with the "Golden Hawks" aerobatic team.

Graham, Bud, B.Sc., M.Sc., RPBio.

Mr. Graham is the Director, Fisheries Management Sector (Pacific) in the Federal Department of Fisheries and in that Department has also served as Chief, International and Intergovernmental Affairs.

Hodge, R. Anthony, PhD.

Dr. Hodge, the former President of Friends of the Earth Canada, has recently been re-appointed by the Minister of Environment to the National Round Table on Environment and Economy, where he has served as Chair of the Task Force on Reporting on Progress Towards Sustainability. In this role he was principal author of the Round Table's recent report to the Prime Minister on this subject.

Huppert, Daniel D., PhD.

Professor Huppert teaches economics and fisheries at the School of Marine Affairs, University of Washington, and coordinates the curriculum in fisheries management with the School of Fisheries. He has had extensive experience with the National Marine Fisheries Service, the primary agency for marine fisheries research and management in the United States, and he has served on the scientific and statistical committees for regional fishery management councils on the Pacific Coast and Alaska. His current research interests include the economics of endangered salmon recovery in the Columbia River basin and development of individual fishing quotas in the North Pacific groundfish fisheries.

Johnston, Douglas M.., M.A., LL.B., M.C.L., LL.M., J.S.D.

Professor Johnston, the Forum Chairman, is a specialist in marine and environmental law and policy and has published very extensively in these fields over the last thirty-five years. He is co-founder of the Dalhousie Ocean Studies Programme and of the Southeast Asian Programme in Ocean Law, Policy and Management and, currently, is a senior associate of the Centre for Asia-Pacific Initiatives at the University of Victoria. Current research interests include the theory of treaty-making and the status of fishery issues in the North Pacific.

Kedgley, Graham K., C.A.(N.Z.), M. Comm., M.C.I.T.

Mr. Kedgley, before establishing his own consulting firm specializing in transport, international marketing, inter-governmental relations and finance, had many years experience in the British Columbia transportation industry as President of a bulk loading terminal company, Chairman of the North Fraser Harbour Commision and as the British Columbia Coal Co-ordinator. As a management consultant, he has been involved in all facets of the ship building industry and provided on-going advice to Public Works Canada on rate structures for the Esquimalt Graving Dock.

McLaren, T. Arthur, P.Eng., Fellow SNAME (NewYork), Fellow RNIA (London), Fellow IME (London)

Mr. McLaren has been active in the management... of British Columbia shipyards since 1946, in particular as President and Managing Director of Allied Shipbuilders Ltd. since 1949. Over the years, Mr. Mclaren has been involved in every possible sector of the British Columbia ship-building industry.

Martin, Michael A., C.D.

Rear Admiral Martin's last naval appointment was Commander, Maritime Forces Pacific and Commander, Pacific Region. Since retirement he has been active as a consultant over a wide range of marine related issues. Recently he was Vice President and Acting President of the British Columbia Ferry Corporation.

Shepard, Michael, PhD.

Dr. Shepard is a private consultant specializing in fisheries. He has served in the federal Department of Fisheries as Director of International Fisheries Policy, which included participation in the UN Conference on the Law of the Sea, international fisheries commissions, negotiations of Canadian bilateral fishing treaties, and the extension of the Canadian fisheries jurisdiction to 200 miles. As a private consultant, he has been engaged as Special Negotiator for Canada in the Pacific Salmon Treaty with the U.S. and Chief Adviser to the Federal Departments of External Affairs and Indian and Northern Affairs in arbitrations of boundary and trade disputes on First Nation claims.

Thomas, Charles M.W., C.M.M., C.D.

Vice Admiral Thomas recently retired from the Canadian Armed Forces. He has served as Commander, Maritime Command, based in Halifax, and his final appointment was Vice Chief of Defence Staff.

Truscott, Joseph

Mr. Truscott is Chief, Resource Analysis Planning in the Aquaculture Industry Development Group of the Aquaculture and Commercial Fisheries Branch of the British Columbia Ministry of Agriculture, Fisheries and Food. A specialist in coastal fish and shellfish resources, he lectures frequently on resource management issues.

Ward, Thomas C.

Mr. Ward was for many years the General Manager of Vancouver Shipyards Co. Ltd. and the Vancouver Drydock Company. He is a former Chairman of the Canadian Maritime Industries Association and has been a member of many government and industry task forces looking into various aspects of the ship building and ship repair industry in British Columbia. He is currently Senior Vice President of the Engineering and Construction Division of the British Columbia Ferry Corporation responsible for, among other things, the ten-year capital programme and the modernization of the Corporation's fleet.

Zimmerman, David, B.A., M.A., PhD.

Dr. Zimmerman is Professor of History at the University of Victoria and Director of the Pacific and Maritime Strategic Studies Group.

APPENDIX - B

CORPORATE SPONSORS

British Columbia Ferry Corporation

The vessels of the British Columbia Ferry Corporation take passengers and vehicles (over twenty-two million and eight million respectively in 1994) to more places along the British Columbia coast than any other carrier. The Crown Corporation's forty ships provide safe and efficient service on twenty-four different routes every day of the year. Destinations include Victoria, Vancouver Island, the Gulf Islands, and the Sunshine Coast. British Columbia Ferry vessels also sail the spectacular Inside Passage from Port Hardy (on the northern tip of Vancouver Island) to Prince Rupert and across to the Queen Charlotte Islands.

In 1995, the British Columbia Ferry Corporation celebrates its 35th anniversary.

MIL Systems Engineering Inc. (Pacific)

MIL Systems Engineering Inc., Pacific, (MSEI(P)), was established in 1988 with the aim of offering and providing quality naval architecture and marine engineering services to marine related government departments, agencies and industries in the Pacific Region.

The staff of MSEI(P) is a composite of experienced and well qualified engineering and technical personnel whose past performance in each of their respective fields is recognized throughout various government and industrial organizations. Their experience, in total, provides an in-depth resource and capability for project achievement with a high degree of technical responsibility in marine sectors including: ship design; ship production technology; ship systems design and ship trials.

The breadth of experience of the MSEI(P) work-force experience allows a balanced theoretical and practical approach to solving marine related problems.

MSEI(P) is a subsidiary of MIL Systems Engineering Inc. with head offices in Ottawa and is Canada's leading firm of Naval Architects.

Seaspan
Vancouver Shipyards
Vancouver Shipyards (Esquimalt)

The Seaspan family includes the largest tug and barge system, shipbuilding, and ship repair facilities on the Pacific Coast. Vancouver Shipyards have been in business since 1902. Vancouver Shipyards (Esquimalt) operates the largest ship repair facility on the coast from its location on Esquimalt Harbour. Vancouver Shipyards, in North Vancouver, in addition to ship repair, is active in the construction of ocean-going vessels, passenger and vehicle ferries, offshore supply and seismic research vessels, marine structures, specialty barges, and Arctic-class ships.