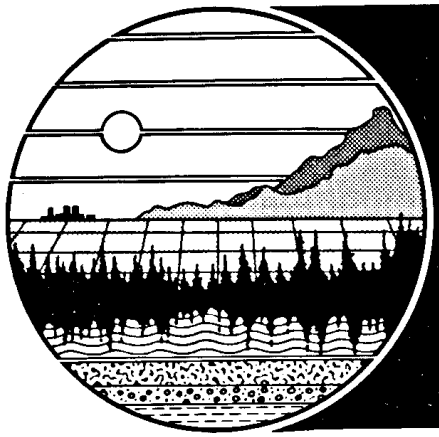

LANDS DIRECTORATE

DIRECTION GÉNÉRALE DES TERRES

THE LAND USE IMPACT OF SMALL CRAFT HARBOURS: A PRELIMINARY INVESTIGATION

WORKING PAPER No. 11

Environment Canada Environnement Canada

Canada

THE LAND-USE IMPACTS OF SMALL-CRAFT HARBOURS: A PRELIMINARY INVESTIGATION

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ABSTRACT

As a part of the program to identify the land use impacts of federal policies and programs, the Small Craft Harbours program of the Department of Fisheries and Oceans was selected for preliminary study. The approach taken to the study is discussed, emphasizing a "from the top down" methodology. Four regions of Canada are surveyed, examining a wide range of small-craft harbours, in order to identify existing or potential land use effects of the facilities. Land use effects include the land occupied for harbour facilities and associated services, the commerical and recreational uses attracted to the harbour vicinity, some physical problems such as erosion, and further reaching effects through service provision and job focus and the attendant residential and commercial land uses. The significance of these effects varies from slight through to the major significance of specific large scale facilities such as Steveston or Wheatley. The conclusions are that small-craft harbours have various land use impacts through the provision of services to transient recreational boaters, and through the distribution of harbour facilities in a given region.

RÉSUMÉ

Dans le cadre des études d'identification des impacts des programmes fédéraux sur l'utilisation des terres, le Programme des ports pour petits bateaux du Ministère des Pêches et Océans a été sélectionné pour faire l'objet d'une étude préliminaire. Dans la première partie de ce document, on décrit l'approche utilisée en mettant l'accent sur la méthodologie qui consiste à faire l'étude de ce Programme en partant de la première phase de sa conception jusqu'à sa mise en oeuvre. On tente ensuite d'identifier les impacts réels ou potentiels de cette activité sur les terres en examinant un large eventail de ports pour petits bateaux dans quatre régions du Canada. Les impacts sur les terres qui ont été identifés incluent les superficies utilisées pour l'installation des services portuaires, les services commerciaux et de loisirs localisés près des ports, les problèmes d'érosion et, finalement, l'effet d'entraînement résidentiel et commercial créé par la présence d'un port dans une région donnée. Les impacts sur les terres liées à la présence de ports pour petits bateaux varient de faibles à très importants.

C'est le cas pour les ports de Steveston ou Wheatley où les impacts identifiés sont considérables. Les conclusions de l'étude indiquent que les ports pour petits bateaux ont divers impacts sur l'utilisation des terres et ce, par suite des services requis pour la pêche commerciale, pour les bateaux de plaisance ainsi que par l'effet d'entraînement qu'ils exercent sur les activités commerciales et résidentielles dans leurs environs immédiats.

ACKNOWLEDGEMENTS

This study was the first federal program impact study to be undertaken, and therefore, since 1979 when it commenced, many people have helped. The original survey work was conducted by Theresa White-Lobsinger with the help of the Small Craft Harbours Branch headquarters staff. Regional Branch staff aided the researchers in all areas of Canada, and were most cooperative and friendly in their help and advice. Craig Taylor, who has since left Environment, was the instigator of this project and saw it through the first stages. Editorial work was done by Maret Liivamae, and typing by Carole Aubin. Many thanks to all.

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PREFACE

This paper is one of a series of reports on the land-use impacts of federal policies and programs. Despite the fact that the jurisdiction over the regulation and control of land use within the provinces belongs to the provincial governments, the federal government realizes that its policies and programs can and do influence the way Canadians use the land resource. Therefore, it is important that the federal government be aware of the actual or potential effects of its various policies on land and its use. To achieve this goal, the Lands Directorate of Environment Canada has undertaken this series of studies on the impact of federal policies and programs.

Within the federal government, there are over 400 programs that have been identified for their potential impact on land use. These programs have been classified according to their socio-economic sector (agriculture, urban, transport, etc.), the means by which they can affect land (ownership, regulation, financial assistance, research, etc.), and whether or not the program has direct or indirect effects on land use. It is not possible to examine all of these programs, so a selection is being made on the basis of this classification. These studies are intended as overviews of the land-use effects of a program rather than as assessments of the effectiveness or efficiency of a program.

The Small Craft Harbours program of the Department of Fisheries and Oceans is an example of a transportation service provided through ownership and financial subsidy. The program has both direct effects on land use, through site ownership, and indirect effects on the land surrounding the site through the provision of a focal point for subsidiary services.

This program is one of the first to be examined for land-use effects. Therefore, this report is not as comprehensive in its examination of small-craft harbours or as exhaustive in identifying land-use impacts as later reports will be. One of the prime aims in undertaking this study was the development of a methodology for assessing land-use impact - hence, the title "Preliminary Investiation."

The information in this and other reports in this series is intended to accomplish two important goals. First, the information should be of use to those charged with administering the programs studied, making them aware of the actual and important potential impacts of their actions on land use. Administrators will therefore be in a better position to assess the full consequences of given actions. Second, federal policy makers responsible for broad government actions will be informed of the effects that certain types of programs have on land use and will therefore be better able to appreciate the consequences of those actions. The implication is not that the land-use impacts of any program are necessarily of great national significance, nor that land-use effects should be a major concern in decision making. However, it is hoped that, contrary to past experience, the land-use effects of government actions will be properly considered, and in those cases that warrant, these effects will be taken into account and given appropriate weight in final plans and actions.

CHAPTER 1: THE STUDY

The Small Craft Harbours program is authorized under the Fishing and Recreational Harbours Act; responsibility for the program lies with the Department of Fisheries and Oceans, Fisheries and Marine Services. The purpose of the program is to provide harbours for the commercial fishing fleet, other commercial small vessels (tugs, log salvers, etc.), and transient service to recreational craft. Only in the area of recreation are governments other than the federal government involved through the shared-cost Marina Assistance program and the Tourist Wharf program (15% of national budget). The entire Small Craft Harbours program involves the purchase of land for access to water and of water lots for the capital construction of harbour facilities, as well as the administration and maintenance of the facilities. The assumption is that in the process of providing this service, the Small Craft Harbours program affects land use directly through the land which is owned and indirectly influences surrounding land through the harbour's attraction of other facilities.

This paper is a report of the findings of the Lands Directorate staff who, in the summer of 1978, undertook a pilot study to identify and, where possible, detail and quantify the effects on land use of small-craft harbours. A secondary aim was to develop and explore methodologies for assessing land-use impacts. The report consists of three parts: Approach (Chapter 2); Regional Studies (Chapters 3-6); Summary of Findings (Chapter 7). Since the chapters are independent of one another, and the approaches used are deliberately different, the entire paper need not be read sequentially.

CHAPTER 2: APPROACH

A harbour can be either natural or man-made, and either in a habitable or a remote area. Whatever the situation, a water/land relationship existed before human actions. Impacts result from actions being taken to develop, use, enhance, or create facilities for human use in this natural setting. Therefore, the land-use impacts of the Small Craft Harbours program are created through actions such as wharf construction, dredging, etc. The provision of harbour services, the denial of services, or the removal of previous services also affect land use. A comprehensive review of land-use impacts would cover all of these, but this is a preliminary report, so it is only able to touch on those aspects that arose through the research, leaving further in-depth analysis to be done.

There are some 2,400 small-craft harbours under the jurisdiction of the Small Craft Harbours Branch of the Department of Fisheries and Oceans. These harbours were transferred from the Department of Transport in 1969 and had a variety of uses ranging from transportation and fishing to recreation.

The assessment of the land-use impact of any government program can range from a relatively simple report on the acreage and the use made of the land (as reported in the Central Real Property Inventory of the Department of Public Works) to a more complex analysis of the secondary and tertiary effects on land use.

In the case of the Small Craft Harbours program, both approaches are possible, though with differing levels of quantification, accuracy, and confidence. Determining the acreage and use of a harbour is straightforward, but attempting to define important effects on surrounding land uses, such as the attraction of fish-packing plants, yacht clubs, stores, etc., and the harbour's function in terms of these land uses, would be more beneficial. In order to demonstrate fully a cause-effect relationship one would ideally set up detailed case studies in which one could experimentally remove an existing harbour, or create a new harbour, and study the effects on land use in a variety of locations and circumstances. This approach, however, is not practical. Using other indicators, such as the observed relationships between harbours and land use, the opinions of users, officials and researchers, and where possible, reports of incidents, can help in assessing land-use effects.

The water-oriented nature of the Small Craft Harbours program means that this study of land-use impact necessarily focuses on activities related to water and the transition to water-related activities provided by the harbour. It is possible to establish initially how, for instance, a harbour affects land use by creating jobs in a packing plant receiving fish directly from boats; however, the same principle can be extended further to include housing services, farmland, etc., though the linkages and relationships will be less clear. This report limits itself generally to effects that are readily observable and to those likely to be significant. Not all harbours will have similar effects on land use, but the range of factors discovered will help define the types of potential impacts that can be expected and should be considered in harbour development.

The approach adopted to investigate the land-use impacts of the Small Craft Harbours program began with a survey of the information available at the Small Craft Harbours Branch Headquarters in Ottawa. This survey, conducted under contract by Theresa White-Lobsinger, involved a review of micro-fiche and computer records and project files for information regarding small-craft harbour installations and any land-use effects that could be identified. The information collected included the physical area occupied by each harbour, past ownership, the location of harbours relative to surrounding communities, and the finances of acquisition and maintenance. Descriptions of the property, the use of the property, and any revenue since 1969 were also noted. The project files were consulted to determine if there had been any land-related problems regarding the projects implemented at the sites.

Each harbour has been classified by the Small Craft Harbours Branch according to type of activity. Group 1 harbours include all off-shore fishing harbours; group 2A harbours are the primary in-shore fishing harbours; group 2B harbours are the secondary in-shore fishing harbours; group 3 consists of the minor fishing harbours. The 2A harbours are considered high-growth harbours; the 2B group are those required for the necessary geographic spread of harbours to support the fishing vessels; group 3 is experiencing very little activity, so federal government involvement with these may cease. This classification system varies somewhat from region to region, but it indicates the wide

range of activities taking place in small-craft harbours across Canada and provides an insight into the geographic distribution of certain harbours.

Part of the contracted survey involved selecting, in consultation with the Small Craft Harbours Branch, a five percent sample of all small-craft harbours from the order-in-council listing. The sample has a geographic base only insofar as the order-in-council list of harbours is organized by province and electoral district. The Small Craft Harbours Branch had never mapped the location of all of its harbours, so a proper geographic sample was impractical. In addition to this five percent sample, a few of the larger fishing harbours, mainly group 1 harbours, were added in order to include the prime fishing harbours that have more active and dynamic programs. These were specially selected, because it was thought that the land-use effects of fishing harbours might be more significant than those of other smaller harbours and because a direct sampling would not adequately identify them. The five percent sample has no statistical significance, but was made in order to provide an adequate group for detailed information gathering and analysis. The information assembled for each harbour was organized on the following basis: a) name of harbour; b) location; c) history of land acquisition, including date of government acquisition, purchase price, and comments; d) description of the facility, including physical attributes, use, and finances. This information has not been reproduced here, but is available from both the Small Craft Harbours Branch and the Lands Directorate.

On the basis of the overview provided by this information, Lands Directorate staff, in consultation with Small Craft Harbours Branch staff, selected areas and specific harbours for detailed field investigation. Four areas of Canada, with a total of 78 small-craft harbours, were selected for cursory or in-depth investigation. The four areas selected were Nova Scotia, Ontario, British Columbia and the two prairie provinces of Saskatchewan and Manitoba. This selection provided a wide geographic distribution and encompassed the entire scope of Small Craft Harbour Branch activities and harbour types.

The approach followed by the researchers in each of the regions deliberately varied in order to explore alternate methodologies. Each started with a visit to the regional office of the Small Craft Harbours Branch where discussions took place to identify the possible land-use impacts of the harbours under the jurisdiction of that regional office. A selection was then made of either a suitable cross-section of harbours or of specific harbours to be investigated for land-use impact. It was attempted, where possible, to investigate not only harbours that were important to the Small Craft Harbours program, because they were large and represented substantial financial investments, but also those harbours that were small with little or no financial investment. The goal was for the selection to be as representative as possible of the range of harbours, rather than of the emphasis placed on various harbours by the Branch through budget allocations or human effort. Where logistics allowed, harbours were selected that were part of the original five percent sample gathered for preliminary data analysis. Before proceeding into the field, the files for each of the selected harbours, including any correspondence indicating possible land-use problems or conflicts, were reviewed for familiarization with the harbours.

Field investigations were then carried out at the selected harbours and interviews were conducted with wharfingers, harbour users, and surrounding landowners and users to identify the impact on land use of the small-craft harbour facilities. When necessary, further consultation was made with the regional staff of the Small Craft Harbour Branch to define problems or less obvious land-use effects. As will be evident in the following chapters, it is at this stage, and in the analysis of findings, where the approaches differed in each region.

Summaries were written for each region, documenting the findings and commenting on difficulties arising from the research approach. These reports are provided in chapters 3 to 6 of this paper.

CHAPTER 3: BRITISH COLUMBIA REGION

E.W. Manning and J.D. McCuaig

In the Pacific Region there are approximately 215 individual small-craft harbours. While there are some inland facilities on lakes and rivers, over 90% of small-craft harbours in British Columbia are Pacific coast harbours. The majority of small-craft harbours in British Columbia consist of a wooden pier structure extending from the shore to deep water, with a float or series of floats joined to the pier by a ramp that allows for substantial tidal differences.

Most of the small-craft harbours of British Columbia were originally under the control of the Department of Transport and were put in place to serve a commercial fishing and transportation function. That is, they served the transportation and the fishing requirements of the small communities of the Pacific coast, many of which had no road access. Recent years have seen the development of road access to many of these coastal communities, thus changing the function of many of the harbours. The elimination of coastal freight traffic was coincidental with a rapid rise in recreational boating.

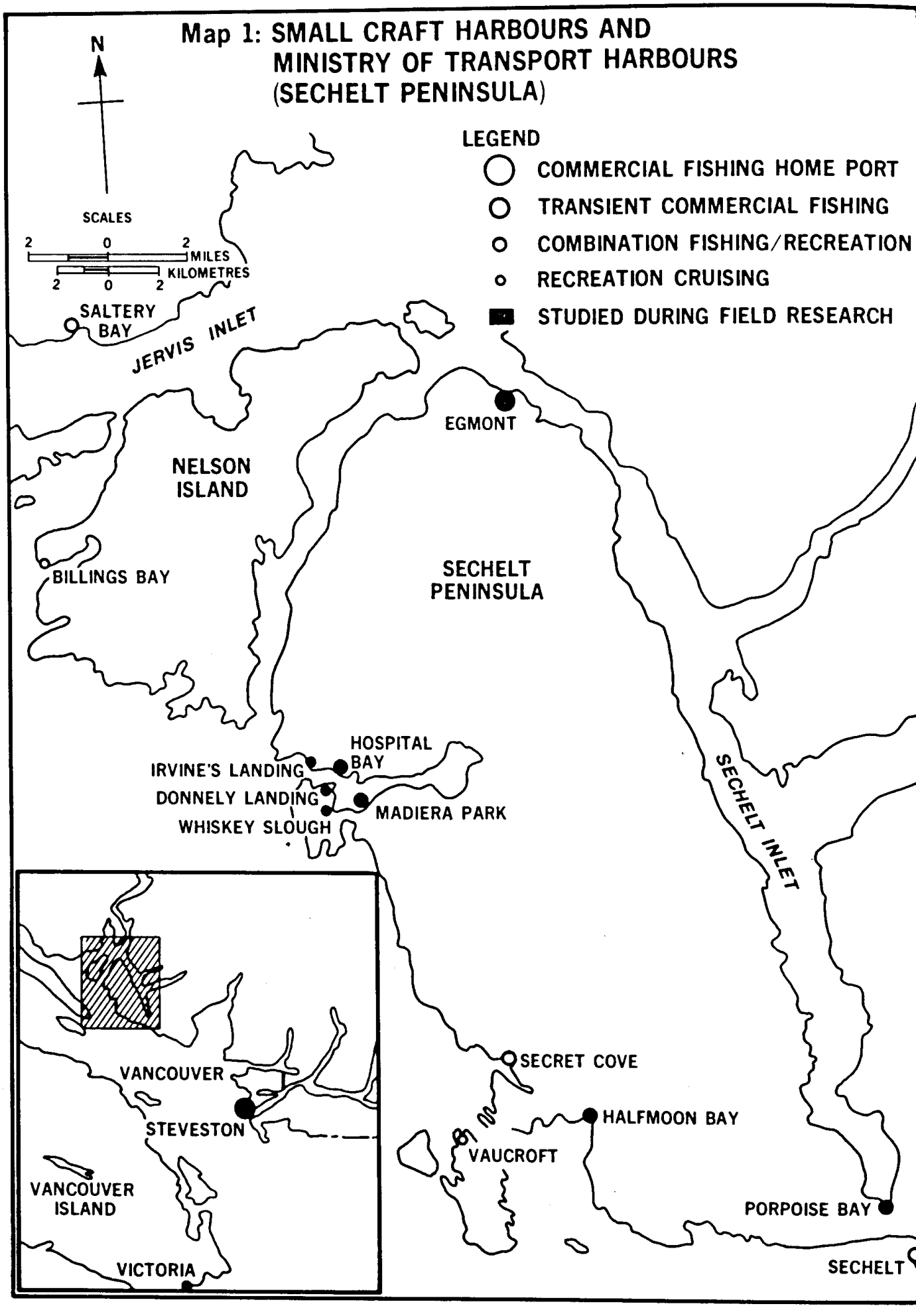
In 1971, the Department of Transport (DOT) turned over control, including the planning, programming, and operating, of many of its harbours to the (then) Department of Fisheries and the Environment. In essence, after a review of their facilities, all those harbours that were no longer required for the transport of goods and people, or were not profitable, were transferred to the Small Craft Harbours (SCH) administration. Consequently, SCH administration received control of a wide variety of harbours, including fishing and recreation harbours, some with a transit tie-up function, and others where the original function had virtually ceased to exist. Unfortunately, the records of the harbours prior to their transfer to the SCH administration were not readily available.

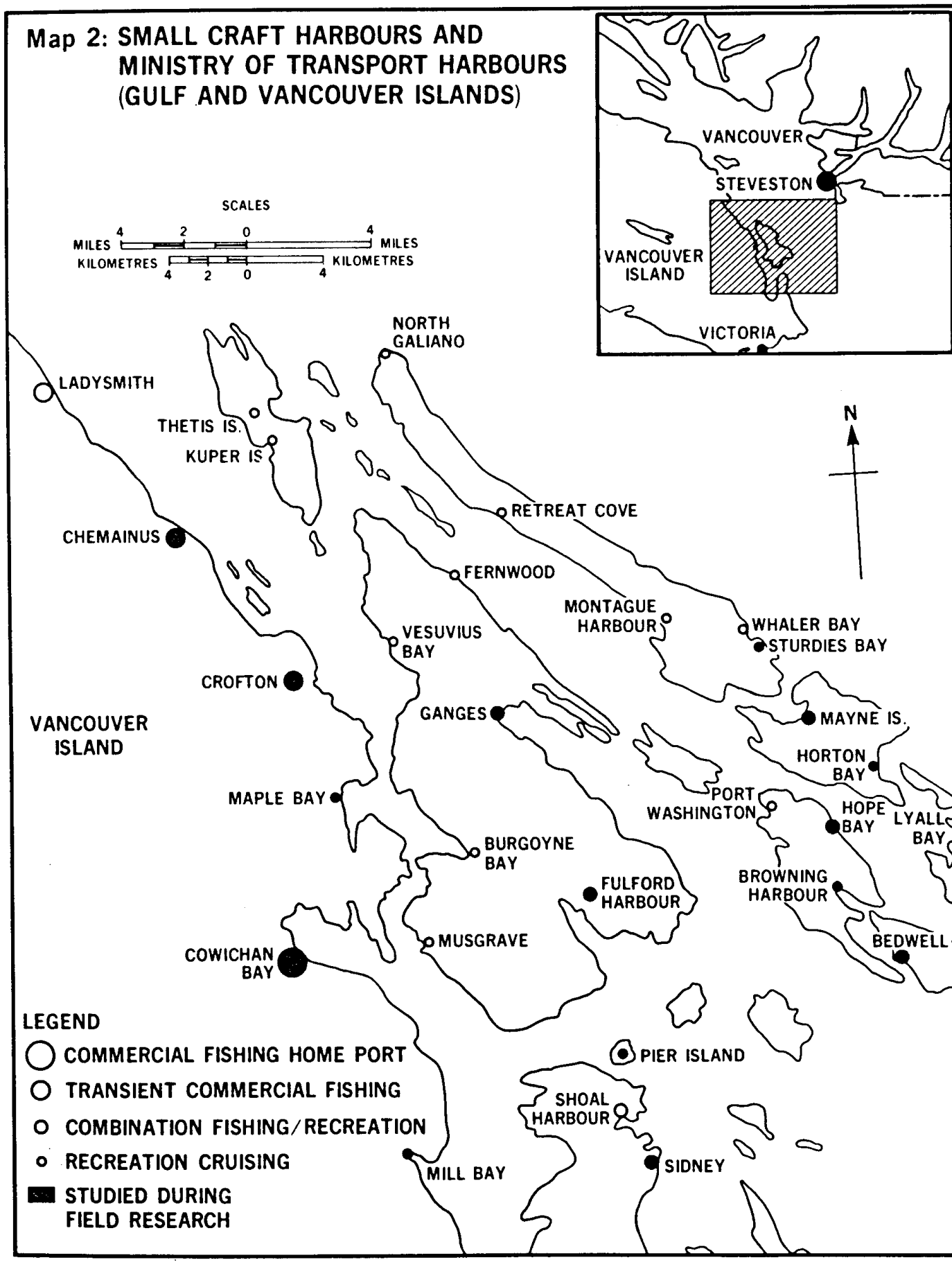
Discussions with SCH authorities and with the Islands Trust, who are responsible for the planning of land and water-related activities for the bulk of the Gulf Islands system, resulted in the selection of a representative sample of harbours for individual review. Attention of the researchers was clearly directed initially towards those harbours where harbour managers or planners were aware of recurring problems or of substantial developments. Additional investigation of the files added harbours where there was little of direct consequence to the harbour managers. The precise selection of harbours was partly dictated by the logistics of access, so more remote harbours could not conveniently be reviewed, and partly by a desire to view as wide a range of harbours as possible. Nevertheless, from a review of the files and of summary materials available at the SCH office in Vancouver, the researchers are confident that a representative cross-section of harbours, ranging from the largest to the smallest and including harbours that serve specific fisheries, recreational, and transit functions, and those with no obvious function, has been included (see Maps 1 and 2). The only obvious omissions are the remote harbours, such as those on the west coast of Vancouver Island, which still provide transport access and are focal points for these communities. Further work to assess the impacts on land use of these may be required.

Steveston

The small-craft habour at Steveston is, or will be when completed to capacity, the largest facility under SCH administration in the Pacific Region. The present facilities consist of a number of fisheries camps (wharves with some net storage and repair facilities), acquired from private entrepreneurs. Most of these are in marginal condition. There has also been a facility used primarily to moor a dredge in SCH control for some time.

At present, the Steveston small-craft harbour is used for mooring approximately 50 fishing boats, with facilities leased to Queen Charlotte Fisheries, B.C. Packers, B.A. Oil, Chevron Canada, Quality Fish Company, Tosi Enterprises Limited Netloft, and Nelson Brothers Fisheries. The federal facility is dwarfed by the adjacent private facilities, belonging principally to B.C. Packers. Adjacent to the federal small-craft harbour, B.C. Packers operates the largest cannery in Canada, and associated with it, operates fish-boat docking, boat repair, net repair, and storage facilities for several hundred fish boats. The direct impact of federal facilities is consequently the provision of alternatives for the fishing fleet for mooring, etc. Fish boats associated with the canneries receive many services under a paternalistic system, but they also get a lower fish price in return. Independent boats can sell to buyers for up to 50¢/lb more for


Map 1: SMALL CRAFT HARBOURS AND MINISTRY OF TRANSPORT HARBOURS (SECHELT PENINSULA)
N
SCALES
2 0 2 MILES
2 0 2 KILOMETRES
LEGEND
COMMERCIAL FISHING HOME PORT
TRANSIENT COMMERCIAL FISHING
COMBINATION FISHING/RECREATION
RECREATION CRUISING
STUDIED DURING FIELD RESEARCH
SALTERY BAY
JERVIS INLET
EGMONT
NELSON ISLAND
BILLINGS BAY
SECHELT PENINSULA
HOSPITAL BAY
IRVINE'S LANDING
DONNELY LANDING
MADIERA PARK
WHISKEY SLOUGH
SECHELT INLET
VANCOUVER
STEVESTON
VANCOUVER ISLAND
VICTORIA
SECRET COVE
HALFMOON BAY
VAUCROFT
PORPOISE BAY
SECHELT


Map 2: SMALL CRAFT HARBOURS AND MINISTRY OF TRANSPORT HARBOURS (GULF AND VANCOUVER ISLANDS)
SCALES
MILES 4 2 0 4 MILES
KILOMETRES 4 2 0 4 KILOMETRES
VANCOUVER
STEVESTON
VANCOUVER ISLAND
VICTORIA
N
NORTH GALIANO
LADYSMITH
THETIS IS.
KUPER IS
RETREAT COVE
CHEMAINUS
FERNWOOD
MONTAGUE HARBOUR
WHALER BAY
STURDIES BAY
VESUVIUS BAY
CROFTON
VANCOUVER ISLAND
GANGES
MAYNE IS.
HORTON BAY
MAPLE BAY
PORT WASHINGTON
HOPE BAY
LYALL BAY
BURGOYNE BAY
FULFORD HARBOUR
BROWNING HARBOUR
MUSGRAVE
BEDWELL
COWICHAN BAY
PIER ISLAND
SHOAL HARBOUR
MILL BAY
SIDNEY
LEGEND
COMMERCIAL FISHING HOME PORT
TRANSIENT COMMERCIAL FISHING
COMBINATION FISHING/RECREATION
RECREATION CRUISING
STUDIED DURING FIELD RESEARCH

salmon, but must find their own tie-up, service, and storage facilities.

A major point of interest is the planned re-development and enlargement of the federal small-craft harbour at Steveston through the acquisition of private facilities. The aim is to concentrate much of the private fishing fleet from the rest of the Lower Mainland and Lower Fraser River in that location. Associated with this development has been the purchase of land by the federal government and the integration of the planning of the harbour and foreshore development with the planning of the community of Steveston and of the Richmond district. One direct land-use impact of this projected growth has been a rapid rise in the price of unpurchased waterfront land. In addition, an old cannery on the site, acquired by the federal government, has been tentatively designated as an historic building by Parks Canada and is intended for an interpretative centre on the fishing industry.

At present, the Steveston facility has little shoreside impact, but the potential effects are much greater. Steveston marks a movement by SCH into foreshore development with a subsequently enlarged impact on land. More land will be acquired, streets will be closed, access changed, and if the projected demand for berthing of independing fishing vessels materializes, further shore-based facilities to service an increased fish-boat population could potentially be required. This could take the form of private netlofts, private repair facilities, and many other activities associated with the fishing industry. However, more fish-landing facilities would probably not be necessary, since the bulk of the fish landing on the west coast takes place through the fish packers which then unload directly into cannery facilities at the private cannery wharves. The expansion of berthing will, however, further consolidate Steveston's position as the west coast's primary fishing port, based on both private and public facilities.

A further consequence of the relocation of fish boats to this location may be the abandonment of private fish-wharfing facilities at other locations on the Fraser River, and perhaps, in the Vancouver harbour area. Eventual plans allow for over 1,000 fish boats, including those already associated directly with the canneries, to be located at Steveston, though only if there is sufficient demand.

Ganges

Ganges is a relatively large small-craft harbour with a breakwater and two wharves, including one marina-like facility, electricity, and a resident wharfinger. Half of the floats have been set aside for permanent fish-boat mooring, and the other half are available for transient mooring, with some pleasure craft moored semi-permanently. The policy at Ganges is to displace pleasure craft as demand for fish-boat mooring grows.

The two SCH wharves at Ganges are directly adjacent to the downtown area, with one wharf to the northeast and the other to the south. Ganges is a regional center on Saltspring Island with tourist and vacation facilities, so the wharves serve as water-access points to the commercial area of the town. Some of the market for the town's stores does come from the water, since it provides the easiest access from vacation homes and waterborne transients. However, the greater part of the town's market arrives by motor vehicle. Ganges also has a Transport (MOT) wharf that once served as a steamer port on the regular coastal steamer service. Several private marinas are also found in the same bay.

At the south wharfhead, there is parking for approximately 50 vehicles, and an information booth on the site serves both waterborne visitors and those arriving by car. A public park also located at the wharfhead receives some use by those mooring their craft on the wharf. It is clear that the existence of the federal small-craft harbour and associated services is a major factor in the planning of Ganges; a plan is presently being developed under the auspices of the Islands Trust. The construction of the breakwater has facilitated development of the site in its role as a centre of the community.

Hope Bay

Hope Bay on North Pender Island was formerly a steamer wharf providing access to the eastern side of North Pender Island. A store is located immediately adjacent to the wharf, and before the upgrading of the roads on North Pender, the wharf provided the principal means of access to the area served by the store. Hope Bay is now served by road via the B.C. Ferry which brings motor-vehicle traffic to Otter Bay on the north end of North Pender Island. Discussion with the operators of the store at Hope Bay indicated that a small amount of their business comes by boat, using the SCH wharf, though the bulk of customers arrives by land. A small number of private

craft are moored at the dock and the facility is used by a nearby Bible Camp for some of its boating and swimming activities. Apart from the store, there are no other land uses apparently affected by the existence of the small-craft harbour and there are no reports of such on file. This is typical of many of the smaller harbours in that there is no appreciable effect on either land or water.

Horton Bay

Horton Bay is a small SCH facility located on the southeastern end of Mayne Island. The primary use is for transient recreational boating, and one fish buyer works from the harbour. There are a few private craft, apparently locally-owned pleasure boats, moored to the float and there is trail access at the wharfhead to a road a short distance away. There are no onshore facilities and no commercial activity related to the small-craft harbour within half a mile. There is parking for two or three cars on the road and "no trespassing" signs are displayed on adjacent properties. Also, one house boat is at anchor in the bay and the occupant will sell fish to those hailing him from the SCH dock. At one time, this wharf was the principal means of steamer access to the southern part of Mayne Island, but the present roads and ferry service have removed this function. Land-use is negligible.

Browning Harbour

Browning Harbour is a well-maintained single-float wharf serving no particular function. The wharf abuts a small path leading approximately 200 feet up to a road, but there are no signs noting the existence of the dock and there was only one boat tied to the float at the time of inspection. Across the bay there are two large well-used marinas that satisfy all of the permanent boat-storage requirements of this end of North Pender Island and are more accessible from the settlements on the island. If this facility has any land-use impacts, they are not susceptible to measurement.

Bedwell Harbour

Bedwell Harbour on South Pender Island is a Canada Customs post for water traffic across the American/Canadian border. The wharf serves as a tie-up for foreign and Canadian craft going through Canada Customs as well as for a store and a pub located in Bedwell Bay. The store primarily serves boaters, while the local inhabitants go to other stores located on North Pender. Similarly, the principal traffic for the pub is from the water. Because the customs post and wharf are open for only four months of the year, the store and pub stay open for the same period. In 1977, over 8,000 boats went through customs at this location. In addition to these, there were many local landings associated with the store and pub. It is evident that without the wharf the viability of the store or pub would be in question. There is also a small lodge in Bedwell Bay with its own marine tie-up facilities. A major problem of the site is lack of potable water, and demand for water fill-up by boats is perceived as a local problem. The land-use impacts relate primarily to the various related facilities in the vicinity.

Mill Bay

Mill Bay, located on Vancouver Island north of Victoria, is a small facility used primarily by local residents for access to the shore and to their pleasure craft. The wharfhead is down a residential street in the community of Mill Bay, and the small parking area near the head of the wharf is adjacent to two landscaped dwellings. The residences appear to have no relationship with the dock, and apart from the two or three parking spaces at the wharfhead, there is no visible land-use impact for this facility.

Crofton

Crofton is a small-craft harbour associated with a ferry facility. There are substantial commercial and industrial activities surrounding the small-craft harbour, but it is difficult to assess the effects of the small-craft harbour on these land uses because of the influence of the ferry landing. The harbour serves resident commercial fishermen and transient vessels and has a parking facility.

Maple Bay

The harbour is located in the community of Maple Bay and is immediately adjacent to a parking area. It is a typical float facility with mixed uses. No shore-side effects, apart from the parking, were evident.

Porpoise Bay

Porpoise Bay is located near the community of Sechelt, B.C. A number of vessels are berthed permanently at this wharf, and a small-scale bait business uses the wharf. The pier and float are adjacent to Tyee Airways Limited's facility where several float planes are based. There is direct access from a major road and adjacent properties have "no trespassing"

signs. A commercial marina/park development (full tourist facility) has been proposed for adjacent land, but it is being opposed by residents and by the local wildlife club. There is apparently no direct link between the proposed activities and the government wharf.

Egmont

Egmont is the home base for 11 fish boats, 12 recreational boats, and one tug boat and provides temporary landing facilities for many boats fishing in Rivers Inlet and adjacent waters. Near the head of the wharf is a general store and a marina with its own wharf and associated floating gas station. Parking near the head of the government wharf is a local concern. Some of the business for the general store comes from boats tying up at the government wharf.

Pender Harbour

Pender Harbour has several SCH facilities serving a vacation-oriented region. Pender Harbour itself is a heavily-indented, irregularly shaped inlet with a large number of small bays and a dense cottage settlement. For the communities in Pender Harbour, boat is the preferred means of transportation since the distance between places is much longer by road than by water. For example, the road between Irvine's Landing and Donnelly's Landing is approximately 22 miles, though by water, the distance is approximately half a mile. The two small-craft harbours reviewed in Pender Harbour are Irvine's Landing, and Hospital Bay. Donnelly's Landing was a small-craft harbour, but was declared surplus and sold.

a) Irvine's Landing

Irvine's Landing is a typical pier with float located in a small bay in Pender Harbour. There is a small restaurant/store near the wharfhead and a marina adjacent to the government wharf. In the summer of 1978, one of the floats was moved to another site (Whiskey Slough) in Pender Harbour. The owner of the store and restaurant at the wharfhead contends that his business dropped dramatically after the removal of the extra float on August 15, 1978. Most of his restaurant business arrives by boat from the cabins and communities around Pender Harbour and the inability to tie-up freely has resulted in a rapid drop in his clientele. Overcrowding of the remaining float has also been reported. However, the shopkeeper's contention of a decline in business due to the removal of the wharf must be seen in the context of the August weather that year. In the last half of August, 1978, the record rainfall may have been at least as important as the removal of the extra float in accounting for a decline in business for that period.

b) Hospital Bay (Garden Bay)

Hospital Bay is home port for three fish boats, six recreational boats, one pile driver, two tugs, two log salvers, and it provides access to Taylor's Garden Bay store and post office approximately 100 feet away. Taylor's store has its own wharfing facilities, but these are heavily occupied for permanent berthing, so a substantial proportion of the boat access to the store uses the government wharf. Shoreside access is difficult with little space for parking and a road along the bottom of an escarpment. There were no other specific land-use impacts.

c) Donnelly's Landing

Donnelly's Landing was a wharf reported not to be extensively used. No boats used the somewhat exposed facility for permanent berthing, and the sole purpose of the dock was to serve Hasen's store. Consequently, the landing dock was declared surplus to federal government requirements and was put up for sale. The possible land-use effect of this action is probably restricted to the store, though there is also alternative access.

Conclusions

Through the onsite review of small-craft harbours and the cursory inspection of others, some general conclusions regarding the effects on land use of the Small Craft Harbours program in the Pacific Region have been made:

1. In general, the shore-related impact of the harbours is minimal. There are some exceptions, principally those few larger harbours with substantial permanent fisheries-related berthing or with recreational/resort facilities, though even these do not have extensive shore-related impacts. (Irvine's Landing, Ganges)

2. Steveston is a noteable exception that demonstrates the program's potential to affect land use by providing a focal point for large shore-based development, and thereby becoming an important factor in the overall planning and economic development of an adjacent community.

3. Small-craft harbours can have an effect on other activities, principally in those cases where the harbours previously served as principal access points to an island or to a community. (Hope Bay, Bedwell Harbour, Egmont)

4. Because of the substantial private industrial and marina activity on the west coast, few small-craft harbours have land-related effects that can be readily separated from the more substantial effects of larger commercial operations adjacent to them. (Crofton, Steveston)

5. Those harbours that serve principally as home bases for fisheries vessels do not usually have onshore fisheries-related industries, because the bulk of the west coast fishery is based on off-loading from fishboat to packer while still in the fishing grounds. (Tsehum, Steveston, Egmont, Ganges)

6. In some cases (Pender Harbour, Bedwell Harbour), the location of commercial facilities, such as stores and restaurants, is in part justified by the fact that water access is convenient at that point.

7. Many of the small-craft harbours on the west coast no longer serve the same function that they did when they were originally introduced. Consequently, while the location of commercial facilities at wharfhead was important in the past, there is little relationship between the wharf and adjacent commercial operations at present. (Horton Bay, Browning Harbour)

8. Some land-use effects at wharfheads can be found as a consequence of the land/water traffic. These take the form of telephones, community notice boards, and parking facilities. (Irvine's Landing, Ganges, Hope Bay, Maple Bay)

9. Some impacts discovered around transit wharves include problems of trespass (Horton Bay, Porpoise Bay) and litter which was reported in many of the files. These directly affect only the immediately adjacent landowners.

10. One impact noted in a number of the files is the demand for sanitation facilities and water and electrical services. In some of the smaller Gulf Islands, the demand for fresh water by transit boats may overtax the existing small-scale water systems (Bedwell Bay).

As noted above, the small-craft harbours in the Pacific Region had few effects on land use. Impacts do, however, occur and should be considered when planning new facilities -- especially in cases such as Steveston Harbour and attendant developments. The impacts observed are not likely of sufficient magnitude to affect seriously the installation of new facilities if they are required for sound social or economic reasons. Nonetheless, possible land-use effects may be of some guidance to those engaged in the planning process. These conclusions can only apply to the harbours that were viewed and investigated, and not necessarily to remote or isolated harbours where the impacts would be more pronounced and less oriented to recreational boaters.

CHAPTER 4: PRAIRIE REGION

J.D. McCuaig

In the Prairie Region, there are 65 small-craft harbours. Most of these are recreational harbours, with the majority of fishing harbours being found in Manitoba. The harbours vary greatly in condition from heavily-used modern cement structures to wooden structures with signs warning that, because of unsafe conditions, persons using the facilities do so at their own risk.

After discussions with the Small Craft Harbours authorities, a representative sample of harbours for individual review was selected on the basis of the different types of harbours in the prairies as well as for reasons of logistics. The files on each harbour were studied in detail before the harbours were visited and the land-use effects were subsequently observed and documented. A wide variety of harbours was encountered, ranging from ones that were impossible to find through to harbours that were major fishing, commercial, and recreational centres for large towns. Following is a brief description of the small-craft harbours examined, outlining the activities and the effects on land use of each.

Regina Beach

The town of Regina Beach is a popular resort centre for the city of Regina (see Map 3), with many recreational facilities and cottages. The small-craft harbour is the only one available to the public and is in constant use for recreational fishing and boating. Regina Beach is a major recreational centre, and the harbour is a focal point of activity in the town. A marina and boat rental are located beside the dock, and a boat ramp has been placed there by the provincial Department of Tourism and Renewable Resources. Also associated with the small-craft harbour is a large public beach. Because the harbour provides a locale for land and water activities, there are land-use effects either directly or indirectly related to the harbour. On a holiday weekend in summer, the area roads are lined with cars, whose occupants are using the beach or the dock. The harbour provides essential public access to Last Mountain Lake and enhances the recreational orientation of the area.

Saskatchewan Beach

Saskatchewan Beach is theoretically a small-craft harbour located in association with a Regional Park. Neither the Small Craft Harbours people in Winnipeg nor the researcher were able to locate this property, so it is to be removed from the small-craft harbours list. Not surprisingly, there were no discernible effects on land use at this location!

Netley's Creek

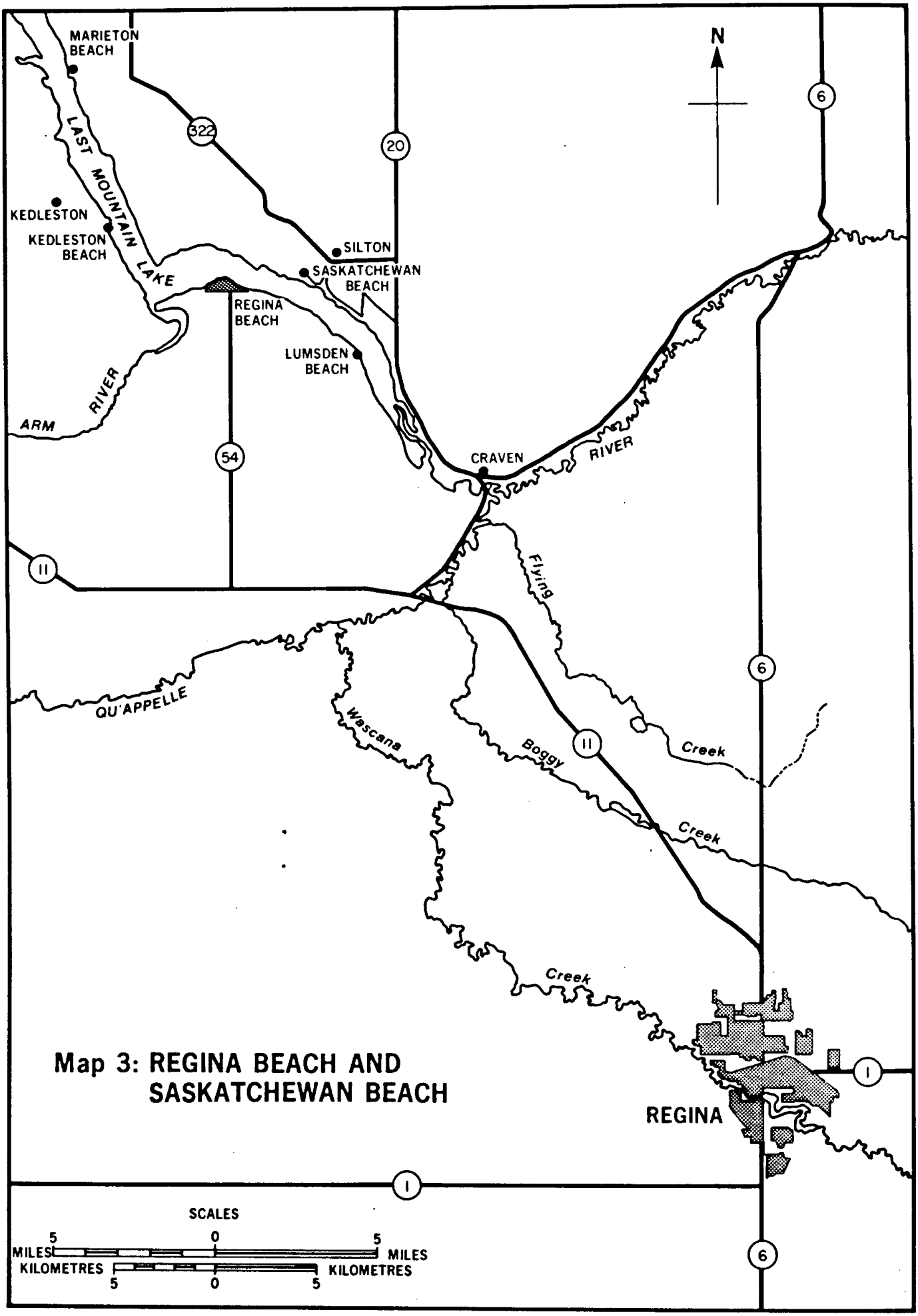
This relatively new small-craft harbour is located north of Selkirk at the south end of Lake Winnipeg (Map 4). This is exclusively a recreational small-craft harbour for small boats and fishing, and associated with it is a small campground and a fast-food restaurant. The small-craft harbour provides a boat-launching site and a point of departure for fishing expeditions. The primary effects on land use are the camping and other facilities, as well as the recreational activity and access to southern Lake Winnipeg created by the harbour. There is little or no other access to the lake in this immediate area.

Winnipeg Beach

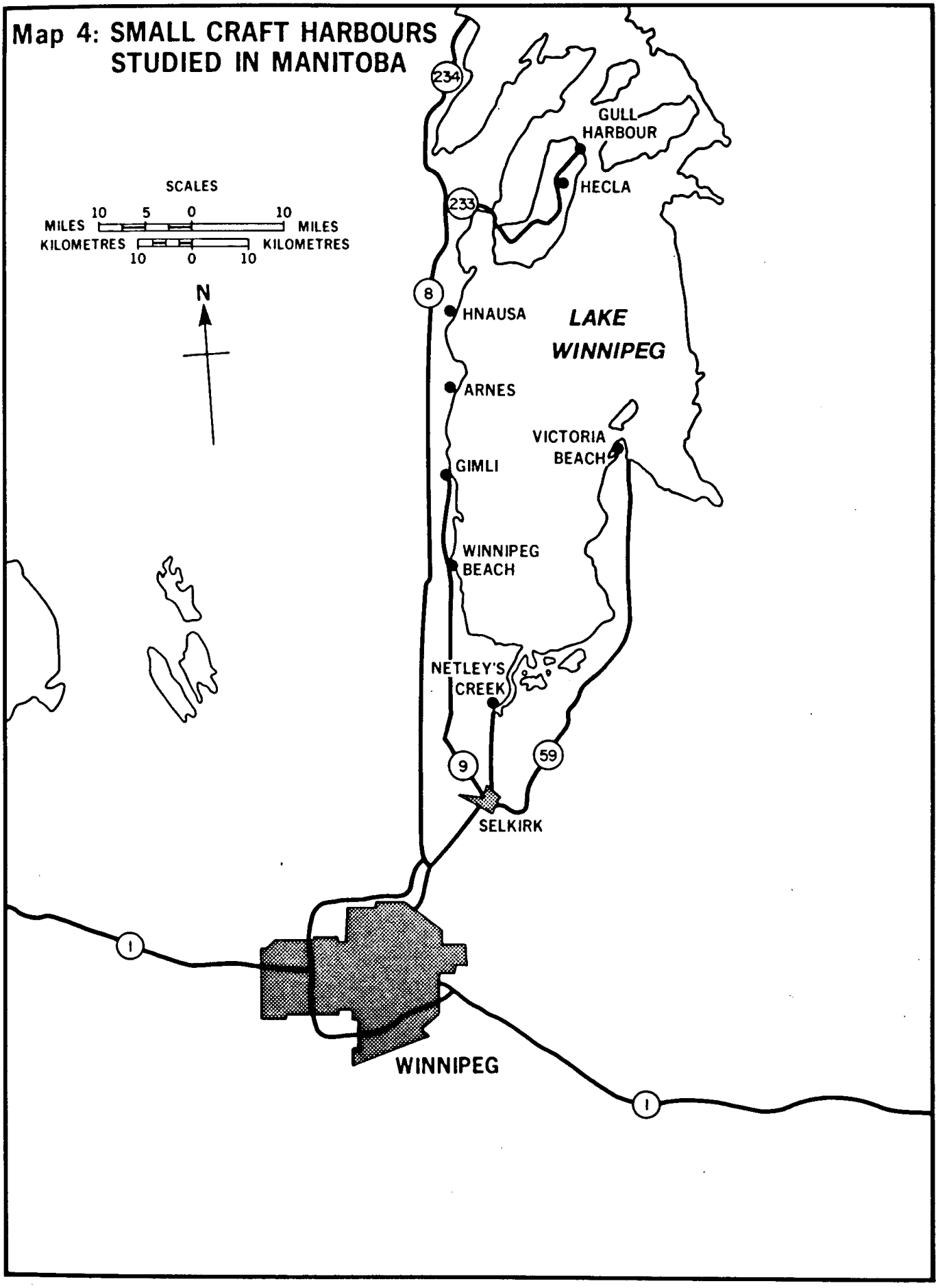
This area is an important resort centre for the city of Winnipeg, with many cottages and a large permanent community. There is a resident theatre company and several other major attractions. The small-craft harbour with breakwater is a large, well-constructed and sheltered facility enabling the docking of small boats. Located inland from the small-craft harbour is a large commercial marina and boat-docking area taking advantage of the breakwater's shelter. Surrounding the harbour is a major municipal campground and park. This is a well-used facility with a great deal of recreational attraction, and it provides the only major public dock at Winnipeg Beach. The land-use effects of the harbour relate to the recreational and commercial activities surrounding the facility. The harbour has provided sheltered anchorage where none existed before and has enhanced recreational activity in the area.

Gimli

This community is based, in part, on the fishing industry that depends on the three major docks provided by the Small Craft Harbours Branch. One dock consists of a cement breakwater sheltering and making possible the harbour; a step facilitates recreational fishing over the side. There are also provisions for small boats and larger



Map 3: REGINA BEACH AND SASKATCHEWAN BEACH


Map 4: SMALL CRAFT HARBOURS STUDIED IN MANITOBA
SCALES
10 5 0 10
MILES MILES
KILOMETRES KILOMETRES
10 0 10
N
234
GULL HARBOUR
HECLA
233
8
HNAUSA
LAKE WINNIPEG
ARNES
VICTORIA BEACH
GIMLI
WINNIPEG BEACH
NETLEY'S CREEK
9
59
SELKIRK
1
WINNIPEG
1

craft on the inside of the breakwater. The centre of the three docks is devoted mainly to commercial fishing vessels. The third dock, although public, is leased for mooring to the Gimli Yacht Club at a price of 2¢ per foot per day. This dock site is at a major intersection of the two main streets of Gimli. The foreshore area contains a fish-processing plant, a museum, and the private yacht club, all of which are attracted by or related to the small-craft harbour. Inasmuch as this is the only facility of its type in Gimli, the effects on land use are significant. The harbour provides a central location for the town's commercial and recreational activities and complements existing development.

Arnes

Arnes is a remote port on the west side of Lake Winnipeg used mainly for fishing and for some recreational boating. While a small fish-processing plant at the port operates intermittently, there is minimal impact on surrounding land use. The nearest settlement is over one mile away, with only a road and the plant at the harbour which is also exposed and in poor repair.

Hnausa

This small-craft harbour consists of a single large dock for fishing and recreational boating which does not appear to be particularly well used. Associated with this dock is a large fish-processing plant established by the provincial government under the Fund for Rural Economic Development (FRED). Hnausa is a considerable distance from Winnipeg, so its recreational attraction is minimal; apart from a few local boats, the harbour is mainly used as a port of refuge. Because it is located away from settlement, the harbour's effect on land use is limited to the FRED project. The employment provided by the fish-processing plant, however may have a secondary impact on land use in surrounding communities through housing and employment opportunities.

Hecla and Gull Harbour

These small-craft harbours are located in Hecla Provincial Park and are an important attraction for yachting, boating, and fishing, as well as for commercial fishing. There is a fish-processing plant at Hecla and a hotel and provincial campground at Gull Harbour. Both of these small-craft harbours appear to be well patronized by park visitors arriving by water and by land. Those coming by land must pay a $1.50 entrance fee to the park. These harbours serve as the main point of access between land and water in this area and as a centre for various land activities.

Victoria Beach

This is a popular small-craft harbour located within a provincial park. The road access directly to this harbour is limited in the summer by the park authorities, creating some disagreement between the Small Craft Harbours administration and the Provincial Park authorities, because one condition for the provision of a small-craft harbour is direct public and vehicular access. Victoria Beach is used by many small craft and serves as a harbour of refuge in a fairly unpopulated area of Lake Winnipeg. The harbour and the park, here go together to provide a comprehensive recreational facility, but the park cannot be considered as an effect of the harbour.

Conclusions

In general, Prairie small-craft harbours have small but varying effects on land use. Some have a locally significant impact, especially in cases where there is commercial fishing. These harbours have a significant effect on the land use and the economy of the surrounding community. Of all the small-craft harbours investigated, Gimli was by far the largest and most important to its community, because it both provides an essential service and attracts related commercial and recreational activities.

CHAPTER 5: ONTARIO REGION
V.P. Neimanis

In the Ontario Region of the Small Craft Harbours program, there are over 400 harbours. For reasons of time and logistics, only three harbours were examined in detail: Port Dover, Rondeau Bay, and Wheatley (see Map 5). These large harbours were specifically selected for their effect on land use and are not necessarily representative of small-craft harbours throughout the province. Each harbour is described below in terms of location, background, and land-use impacts, and where possible, the effects on land use have been quantified. Conclusions on the Ontario region follow the harbour discussions.

Port Dover

(i) Geographic Location

Port Dover is located at the mouth of the Lynn River on Lake Erie's northern shore. It is situated some 30 miles (50 km) south of Brantford (75,000 population), with the town of Simcoe (14,000 population) some 6 miles (10 km) to the northwest. The town of Port Dover (3,500 population) totally surrounds the small-craft harbour.

(ii) Background

The form of the facilities at Port Dover, upgraded in the later 1960's, is shown in Map 6. The harbour consists of an east and west pier, with a large artificially-filled site along the east pier that berths approximately 20 commercial fishing vessels. The types of facilities available and listed for Port Dover by the Small Craft Harbours Branch are: 8 foot (2.4 km) draft, gas available, dockage, and a nearby store for supplies and ice. Within a one mile radius of the port there is a phone, liquor store, and accommodation (hotel/motel). For about a mile along the banks of the Lynn River, there is strip development with extensive private dock facilities, including a private yacht club. The government dock provides no public recreational boat launching.

(iii) Land-Use Impact

Port Dover historically has been and continues to be a significant fishing harbour for Lake Erie, and the upgrading and building program served to reinforce the harbour's existing function. Four fishing firms presently lease federal land here, and a recent decision by Omstead Foods will see construction of more facilities in this area in addition to their established operations in Wheatley. The largest fishing concern at Port Dover is operated by the Meisners and fronts on the west pier on non-federal lands. They have several of their own boats and buy catch from a number of single owner-operated fishing craft. There are no public loading and unloading facilities for fish, so the Meisners chose not to locate on the federal wharf, even though their operation does generally profit by the sheltered harbour facilities.

The impact of the small-craft harbour lies mainly through its modern, sheltered docking facilities and its creating a sheltered entrance off Lake Erie. The sheltered entrance is a definite advantage for commercial craft, though it also serves the private recreational craft stationed on Lynn River.

There has been no public development for recreational boating, so all docking and operations launching is on private lands. Expansion of facilities for recreational craft along the west pier has been suggested, but had not materialized at the time of the study.

The harbour has caused some interference in natural processes and has resulted in some shoreline erosion. The extent and degree to which this can be attrituted to the harbour has not been, and perhaps cannot be, quantified.

The small-craft harbour operation does generate local employment opportunities, but the extent to which this is due to the actual harbour development in the area is questionable. Table 1 indicates that the employment associated with fishing at Port Dover amounts to 171 jobs that generate a total gross income of some $2 million annually (Table 2).

Rondeau Bay

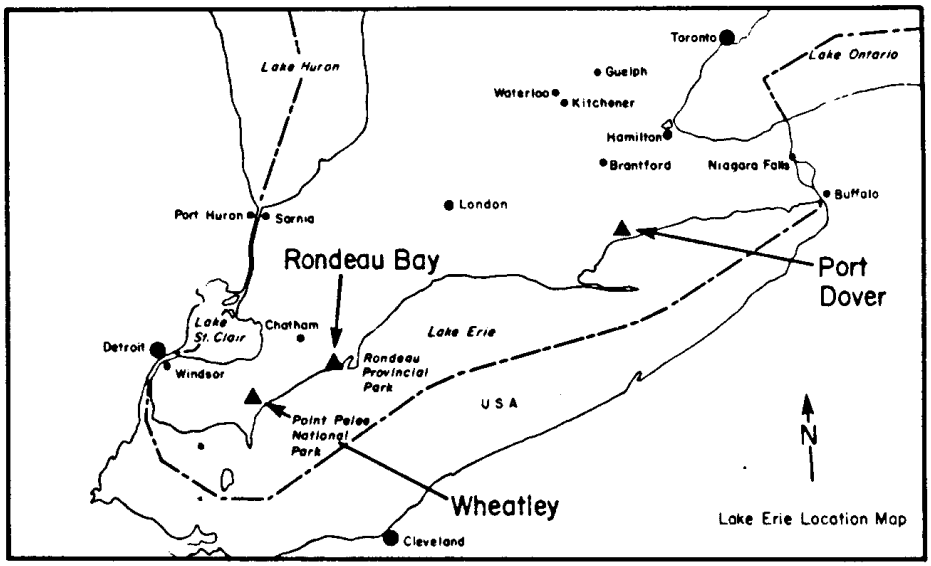
(i) Geographic Location

The Rondeau Bay harbour is located at Erieau, Ontario, about 20 miles (32 km) southeast of Chatham (40,000 population). Erieau is situated on a sand formation between Rondeau Harbour and Lake Erie and is essentially a small cottage community, with a year-round population of only some 500 people.

(ii) Background

The form of the facilities at Rondeau Bay is shown in Map 7. The harbour consists of a

Map 5: SITES INVESTIGATED FOR LAND USE IMPACT IN SOUTHERN ONTARIO



▲ Small Craft Harbour

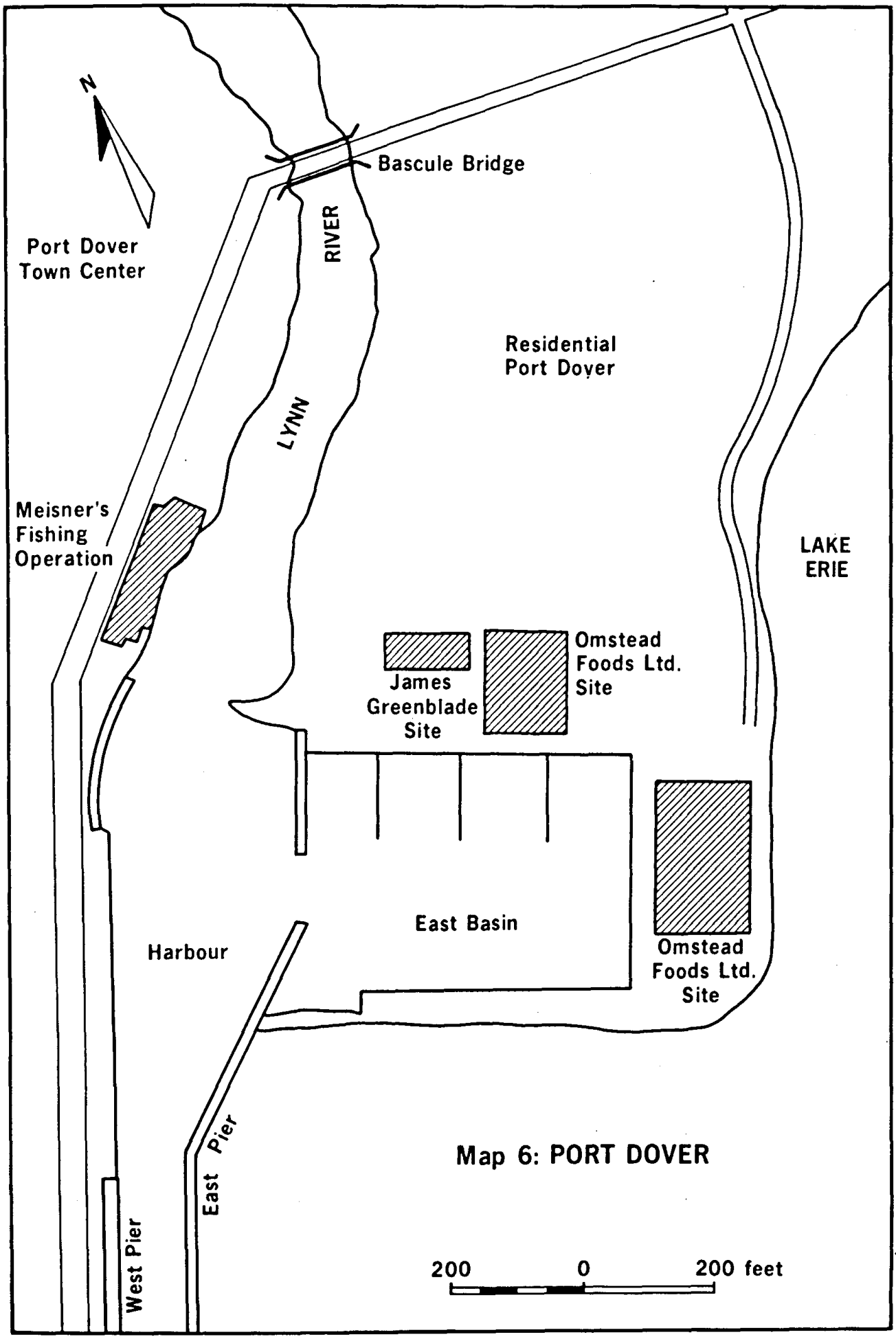

N
Bascule Bridge
Port Dover
Town Center
RIVER
LYNN
Residential
Port Dover
Meisner's
Fishing
Operation
LAKE
ERIE
James
Greenblade
Site
Omstead
Foods Ltd.
Site
East Basin
Harbour
Omstead
Foods Ltd.
Site
East Pier
West Pier
Map 6: PORT DOVER
200
0
200 feet

Table 1

Total Number Employed[1] in the Lake Erie Fishing Industry by Main Port of Operation or Location of Processor

	Owner Operators	Processing[3] Employees	Deckhands	Total	Percentage
Wheatley	35	297	125	457	45.7
Port Dover	29	82	60	171	17.1
Kingsville	13	16	39	68	6.8
Erieau	11	29	26	66	6.6
Port Stanley	10	29	24	63	6.3
Windsor	0	37	0	37	3.7
Port Rowan	11	0	13	24	2.4
Colchester	3	13	6	22	2.2
Port Burwell	6	0	13	19	1.9
Port Colborne	4	4	8	16	1.6
Port Maitland	5	0	10	15	1.5
Blenheim	0	12	0	12	1.2
eamington	0	10	0	10	1.0
Pelee Island	3	0	4	7	.7
Sturgeon Creek	1	0	4	5	.5
Port Bruce	2	0	3	5	.5
Dunnville	0	2	0	2	.2
Fort Erie	1	0	0	1	.1
TOTAL	134[2]	531	335	1,000	100.0

1 It should be noted that processing employment is calculated on a man-year basis, while deckhand and owner/operator employment is calculated on a seasonal basis.

2 Four of the 138 did not identify a main port of operation.

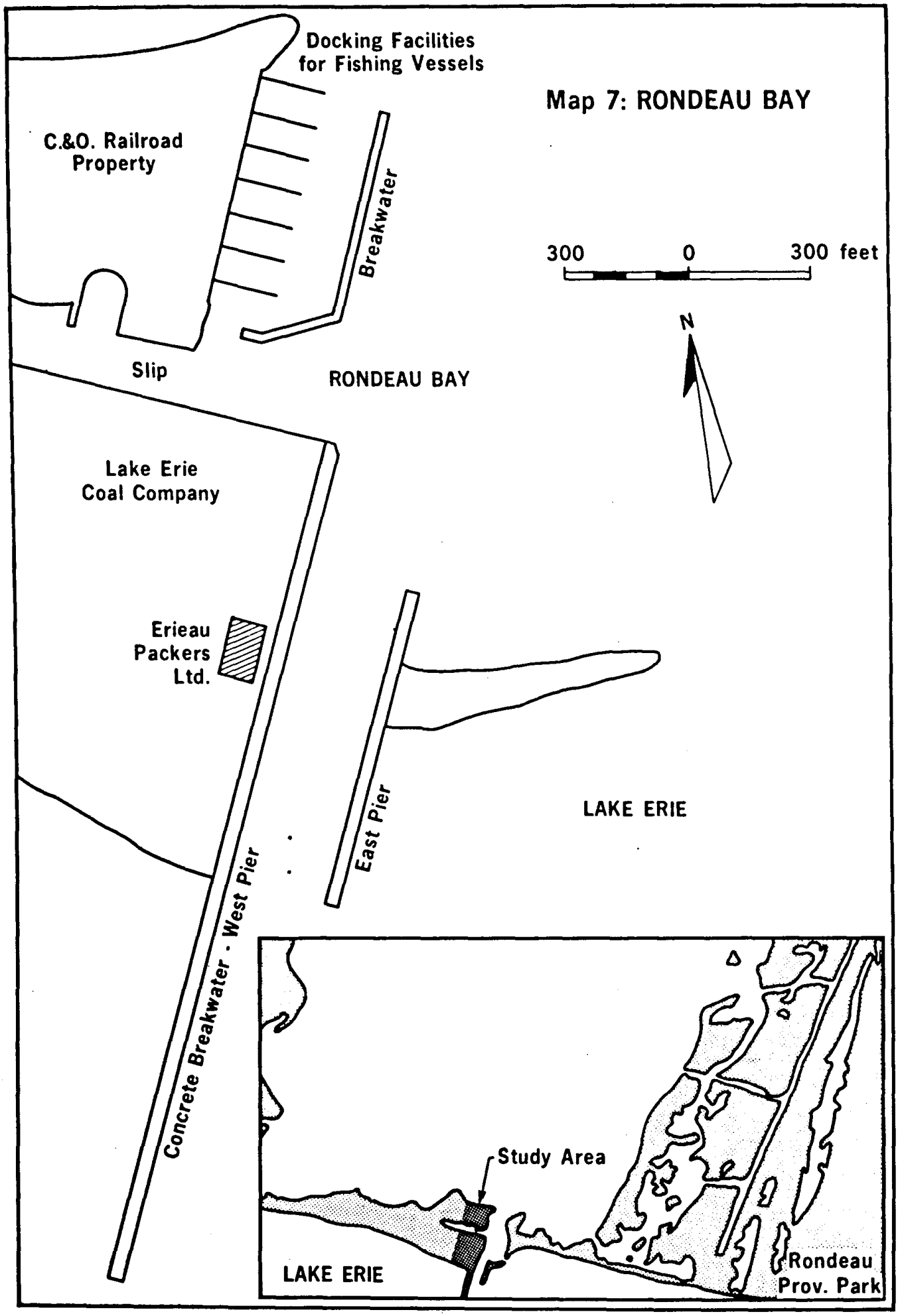
3 The number of processing employees is calculated on the basis of processing employment during 1977. Deckhand and owner/operator employment information is for 1976.

Source: Survey of Commercial Fishermen North Shore Lake Erie Study. Sinclair, W.F. 1978.

Table 2

Gross Fishing Income of Owner/Operator
Lake Erie Commercial Fishermen by
Main Port of Operation (1976)

Location	Under $10,000	$10,000-$30,000	$30,001-$60,000	$60,001-$100,000	$100,001-$120,000	$120,001-$140,000	$140,001-$160,000	$160,001-$200,000	Over $200,000	No Response	Gross Total Income
Wheatley	3	5	6	8	3	3	4	1		3	6,593,500
Port Dover	6	9	6	6						2	2,035,500
Kingsville	2	3	8								742,500
Erieau		5	1	2	2					1	1,104,500
Port Rowan	8	2								1	
Port Stanley	1	4	3	1				1			862,500
Port Burwell		1	4	1							356,500
Port Maitland	1	4									
Other	9	2	4	3							1,307,000
TOTAL	30	35	32	21	5	3	4	1	0	7	13,002,000


Map 7: RONDEAU BAY
Docking Facilities for Fishing Vessels
C.&O. Railroad Property
Breakwater
300 0 300 feet
N
Slip
RONDEAU BAY
Lake Erie Coal Company
Erieau Packers Ltd.
East Pier
LAKE ERIE
Concrete Breakwater - West Pier
Study Area
LAKE ERIE
Rondeau Prov. Park

1000 foot breakwater and an east and west pier with a separate capacity for small berthing in Rondeau Harbour. The breakwater was constructed in 1972. The types of facilities listed for Rondeau Bay by the Small Craft Harbours Branch are: 8 foot draft, dockage, and store and ice available nearby. Within easy access of the pier, there are camping and eating facilities. There is no public boat-launching ramp associated with this federal site.

(iii) Land-Use Impact:

Rondeau Bay has historically functioned as a small fishing harbour for Lake Erie, though its operations are on a smaller scale than those at Wheatley and Port Dover. The breakwater construction in 1972 created a protected entrance to the harbour as well as to Rondeau Harbour proper. The piers and berth areas were acquired from the Chesapeake and Ohio Railroad and the Lake Erie and Detroit Railway Companys who used the site as a transhipment point between Canada and the United States for coal and salt. Before the SCH facilities, fishermen and Erieau Packers Limited depended on arrangements with the rail and coal companies to use the coal company wharf. The federal government has had a direct impact by upgrading the facilities previously in use at an estimated cost of $291,000.

The construction of the harbour and breakwater has contributed, in part, to a general shoreline erosion problem. A sand spit protecting Rondeau Harbour has been eroding, and the shore west of the harbour has required fortification by stones. The difference in the sediment transport on both sides of the breakwater is clearly evident.

The expansion of berthing facilities in part of the harbour development has resulted in ample space for accommodation of the migrating fishing fleet from neighbouring Wheatley. The recreational craft are catered to by Erieau Marina, a private enterprise that also owns Erieau Packers, the only fish-processing plant associated with the harbour. Along the former coal company slip, there is also a small fisheries drydock apparently associated with Erieau Marina. While there is no public launching here, the Rondeau Harbour area has numerous private marinas located along its shore.

The greatest Small Craft Harbours impact on Rondeau Bay has been one of bolstering commercial fishing fleet in Erieau which previously operated here. Considering that the transhipment function of the harber has been terminated by the Lake Erie and Detroit Railway Company, the support of fishing operations can be seen as having some economic benefit to the area as a whole. This, however, cannot be fully quantified. Sixty-six jobs are associated with the fishing industry at Erieau (Table 1), and the commercial fishermen gross over $1 million annually (Table 2).

Expanding and improving the recreational aspects of this site is feasible, but this must be evaluated within the context of the entire marina development in the Rondeau Harbour region.

Wheatley

(i) Geographic Location

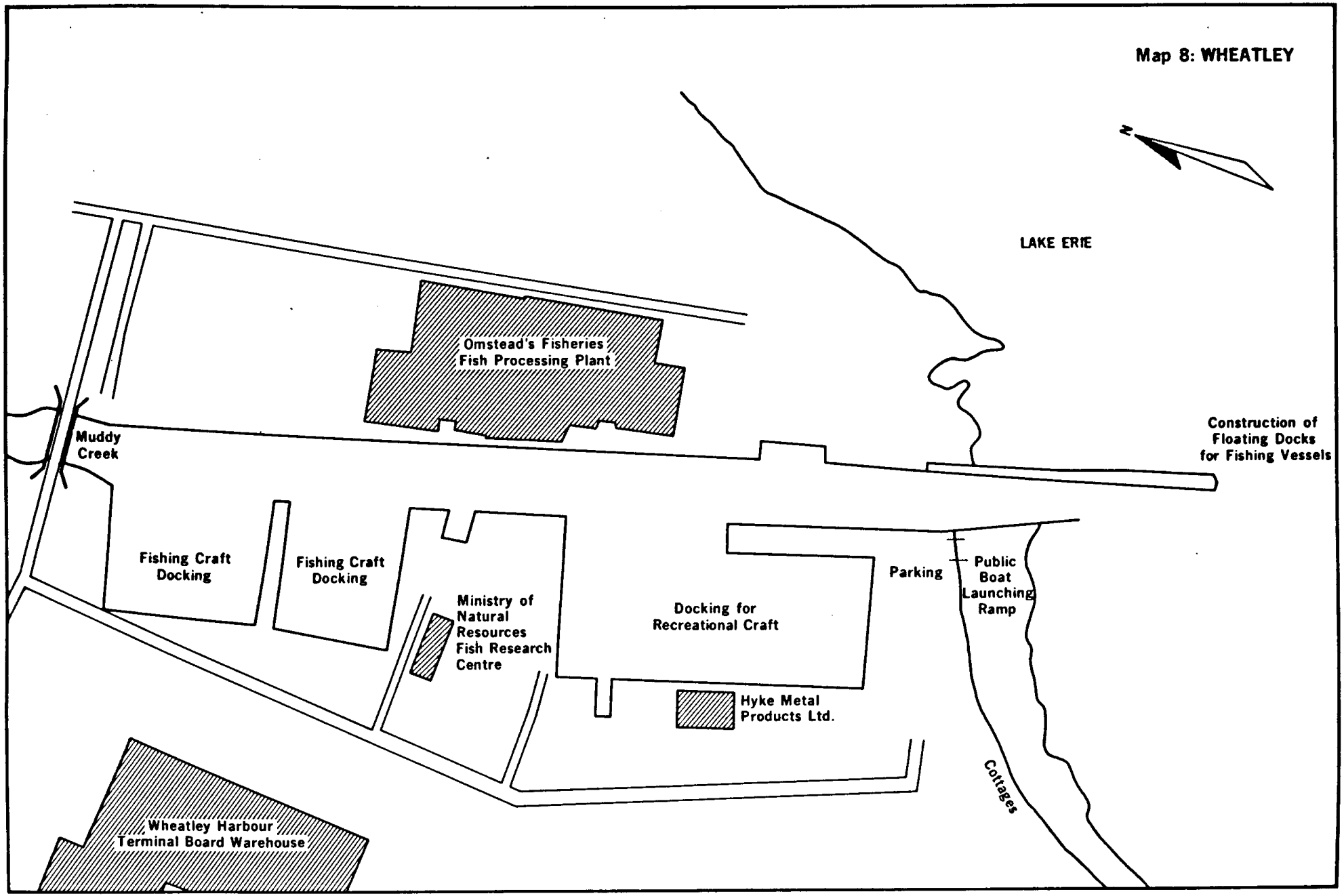
Wheatley Harbour is located at the mouth of Muddy Creek on the north shore of Lake Erie. The harbour is located two miles (3 km) south of the town of Wheatley (1,600 population), which is some six miles (10 km) east of Leamington (11,000 population). Wheatley is the world's largest freshwater fishing harbour.

(ii) Background

The form of the facilities at Wheatley is shown in Map 8. The harbour consists of an 800 foot (244 m) breakwater with two separate berthing facilities that serve both commercial fishing and small recreational craft. The harbour has undergone extensive capital expenditure, and finishing work is still in progress with construction of floating docks for commercial fishing craft still underway at the mouth of the harbour. The facilities listed for Wheatley by the Small Craft Harbours Branch are: 9 foot draft (2.7 m), and dockage only. There is a public boat-launching ramp, built in 1977, and a nominal fee of $2.00 per day or $12.00 per season is charged for using this facility.

(iii) Land-Use Impact

Wheatley has historically been the largest commercial fishing harbour on Lake Erie. Recently, with extensive renovations ($1.5 million), facilities for both recreational and commercial fishing craft have been upgraded. Omstead Food Limited has large fish-packing plants at the harbour, employing some 500 people from the area (Table 1). Although the Omstead operation is by far the most prominent, there are two other fishermen whose land borders the harbour facility. There is also a lift-out site leased by Hyke Metal Products which builds steel-hulled pleasure craft. The provincial government also has a


Map 8: WHEATLEY
N
LAKE ERIE
Omstead's Fisheries
Fish Processing Plant
Muddy
Creek
Construction of
Floating Docks
for Fishing Vessels
Fishing Craft
Docking
Fishing Craft
Docking
Ministry of
Natural
Resources
Fish Research
Centre
Docking for
Recreational Craft
Parking
Public
Boat
Launching
Ramp
Hyke Metal
Products Ltd.
Cottages
Wheatley Harbour
Terminal Board Warehouse

fish research station that is situated on a land parcel jutting into the harbour and separating the fishing and recreational craft docking facilities.

Since Wheatley has long been an important fishing harbour, federal efforts in the area have reinforced these functions, and the Omstead operations have naturally profited by the improvements in harbour facilities. Wheatley Harbour's gross income by fishing amounts to $6.5 million annually (Table 2).

The creation of a public boat-launching site and the installation of modern floating docks for recreational craft have been new additions, so their full impact and potential use have yet to be realized. Recreational dockage has not generated ancillary activities proximal to the harbour, since use of the site is still limited. No food, gas, or store functions are immediately available.

The reaction of Omstead Foods to the presence of recreational craft in the area has been one of mild disapproval. They point to the interference of such craft in the harbour itself and to some nuisance with fishing and netting operations. It appears, however, that such conflicts may be more perceived than actual at this time.

The impact of federal investment has been to ensure the continuing prominence of Wheatley as the largest, most important fishing harbour; recreational boating has also profited. It is, unfortunately, not possible to quantify this impact in terms of a dollars and cents value, although federal improvements have resulted in a net positive gain for both the fishermen and the recreational boaters.

The harbour facility has contributed to the overall shoreline erosion problem, particularly that experienced at Point Pelee. The pier and the new floating dock facilities interfere with the natural sediment transport cycle along the north shore of Lake Erie. This erosion indirectly affects other shore-oriented activities along the Erie shore.

Conclusions

Based on the sampled study sites, the following conclusions on Small Craft Harbours in Ontario can be advanced:

1. Small-craft harbours reinforce the existing pattern of commercial fishing activity along Lake Erie by upgrading existing harbour facilities.

2. The Small Craft Harbours Branch subsidizes commercial fishing operations through extensive capital investments, yet, in return, offers such facilities at below market rates to fishing entrepreneurs.

3. Small-craft harbours can contribute to shoreline erosion problems by altering natural deposition cycles, thereby indirectly affecting a wide variety of uses located along the shoreline. Such drawbacks result in additional costs to other shoreline users not normally assumed by the problem source (i.e. Small Craft Harbours).

4. Small-craft harbours can influence the use of recreational craft by the presence or absence of facilities catering to this function. Public facilities can generate a number of ancillary functions catering to recreational boating; however, the extent of this relationship remains unmeasurable based on the findings of this study.

5. Small-craft harbours attract activities related to the fishing industry; fish-packing and processing plants may be located in proximity to wharf facilities. These activities, in turn, generate demands such as housing for workers, transportation for distribution, and so forth.

In addition to the substantive conclusions above, a number of methodological comments can be made. The field survey could not precisely determine all the cause and effect relationships. This study focused more on site specific impacts and did not assess the harbour's effect on the wider surrounding region. Direct impacts on land-based uses could be established, but data on the indirect and, frequently, important effects on such sectors as employment, transportation, or housing could not be obtained without considerable additional in-depth research.

CHAPTER 6: NOVA SCOTIA REGION

E.M. Peterson and J.D. McCuaig

As part of a wider study to identify and assess the effects on land use of the federal Small Craft Harbours (SCH) program, selected areas of Nova Scotia were examined. Contact with the SCH administration and with personnel in the Halifax regional office pointed to two areas in the province that would provide a good cross-section of harbours to study.

The criteria for selection included the size of the harbour, the type of activity (commercial and/or recreational), variations in commercial activity (ground fishing or lobster fishing), population, and tourism. The first area chosen was along the south shore from Clark's Harbour to Halifax, which offers a variety of ground fishing and lobster fishing as well as a heavily-travelled tourist area. The second part examined is from Antigonish to Wallace Bay; it is an exclusively lobster-fishing area and, particularly on the PEI to Caribou ferry route, it is frequented by tourists (Map 9).

Of the more than 450 small-craft harbours in Nova Scotia, 36 were observed (see Table 3). At the busiest harbours, local residents and individuals with commercial interest in the facilities were interviewed.

The Harbours

The south shore route from Clark's Harbour to Halifax presented a diversity of harbours. Both ground and lobster fishing are carried on commercially and there are specific tourist areas.

From Clark's Harbour on Cape Sable Island through to The Hawk, Barrington, Shelburne, Port Hebert, Hunt's Point, Liverpool, and Lunenburg, commercial ground fishing is the main activity. Large and small fish-processing plants are scattered along the coast. None of the government wharves were large, and in some cases, two wharves, rather than one, were available. None of the wharves were identified as federal facilities, though the regional office said that signs were being prepared.

The distribution of these facilities is coincident with residential development, and new housing starts are common along the coast. No pattern of new housing related to small-craft harbours, other than the wide distribution, was discernible. Few properties seemed to be for sale, and residents indicated most of the buyers now were Halifax commuters, hobby farmers, or out-of-province residents.

Several fishermen noted that the many facilities enabled them to dock close to their home as opposed to their having to travel long distances up the coast should there be only one large harbour servicing the area. Some of the federal facilities have, however, fallen into disuse over the years. The regional office confirmed the observation that this arose from a decline in demand due to the small number of residents at these locations.

The remainder of the south shore route from Lunenburg through to Chester, Peggy's Cove, and Halifax presented a somewhat different situation because of the number of cottages and the recreational boating. There is some commercial ground fishing, though there is more lobster fishing. The tourist industry is protected in that there is no interference with the coastal scenery. The wharves at Peggy's Cove and Indian Harbour, for instance, blend into the natural setting and enhance the photogenic quality of the area.

There is less activitiy along the Northumberland Strait from Antigonish to Wallace Bay. The facilities are smaller, and residential developments are fewer and more concentrated. Fishing is mostly for lobster, though there is some ground fishing as well. With the "Mini Cabot Trail" from Antigonish to Malignant Cove, the PEI ferry dock at Caribou, and the cottages from Caribou to Wallace Bay, this is a popular tourist area.

The economy of this second route appears to be more closely linked with tourism and the cottages than with any fishing. There are few fish-processing plants, and some local fishermen noted that their fishing was seasonal and not the sole source of income. Most of the fishermen derived their main income from farming.

Conclusions

1. There was virtually no evidence of significant effects on land use created by individual small-craft harbours investigated in Nova Scotia. The scattered settlement pattern indicates how other considerations have affected the number of facilities. Were the federal government to establish one large harbour in an area, however, there would conceivably be considerable impact on land-use, indicating that, in the

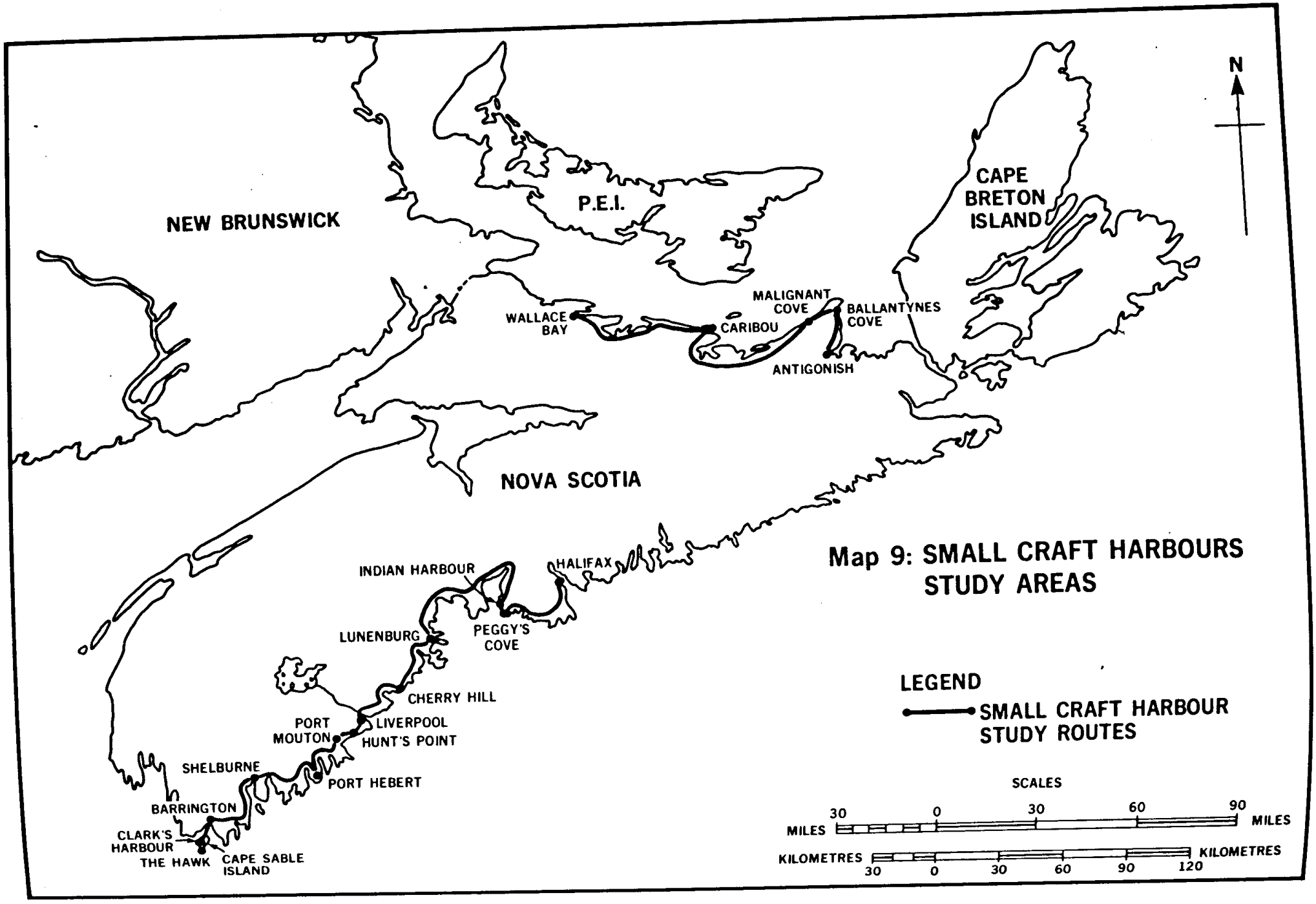

N
NEW BRUNSWICK
P.E.I.
CAPE BRETON ISLAND
NOVA SCOTIA
WALLACE BAY
CARIBOU
MALIGNANT COVE
BALLANTYNES COVE
ANTIGONISH
HALIFAX
INDIAN HARBOUR
PEGGY'S COVE
LUNENBURG
CHERRY HILL
LIVERPOOL
PORT MOUTON
HUNT'S POINT
SHELBURNE
PORT HEBERT
BARRINGTON
CLARK'S HARBOUR
THE HAWK
CAPE SABLE ISLAND
Map 9: SMALL CRAFT HARBOURS STUDY AREAS
LEGEND
SMALL CRAFT HARBOUR STUDY ROUTES
SCALES
30 0 30 60 90
MILES
MILES
KILOMETRES
KILOMETRES
30 0 30 60 90 120

Table 3

List of Small-Craft Harbours Observed in Nova Scotia

1. Clark's Harbour
2. The Hawk
3. Centreville
4. Barrington Passage
5. Barrington
6. Port Hebert
7. East Port Hebert
8. S.W. Port Mouton
9. Hunt's Point
10. East Medway
11. Vogler's Cove
12. Port Medway
13. Cherry Hill
14. Broad Cove
15. Green Bay
16. Petite Rivière
17. Crescent Beach
18. Riverport
19. Rose Bay
20. La Have
21. Mahone Bay
22. Chester
23. Indian Harbour
24. Peggy's Cove
25. West Dover
26. East Dover
27. Shad Bay
28. Antigonish
29. Ballantyne's Cove
30. Livingstone Cove
31. Merigonish
32. Little Harbour
33. Caribou
34. Toney River
35. Malagash
36. Wallace

aggregate, the scatter of harbours has a cumulative and distributive land-use effect.

One question remains: if there were no federal facilities, would there be sufficient demand for the private sector to respond and create its own? This would have marked ramifications, since domestic prices would be modified and Canada's participation in international trade would be affected. Such effects would undoubtedly also be manifested on land use in terms of residences, processing plants and recreational or commercial facilities.

2. There was a discernible corelation between the distribution of wealth and the distribution of harbours. This, however, cannot be quantifieid in terms of dollar value per facility.

3. Another observation was that the extent to which the fishing was seasonal had an impact on the demand for and the size of the small-craft harbours.

CHAPTER 7: SUMMARY OF FINDINGS

It is clear from the various regional studies that there are a number of effects on land use by the Small Craft Harbours Program. These impacts vary in significance from seemingly important to clearly unimportant. In order to summarize the findings of this brief overview, the land-use effects of the Small Craft Harbours Program have been divided into four primary categories:

1. impacts related to facilities provided for the fishing industry;
2. impacts related to facilities provided for recreational boating;
3. impacts related to the location and distribution of small craft harbours facilities;
4. potential impacts of small-craft harbours.

In addition, two particularly significant cases were found: one case represents the only evidence of physical shore problems created by a harbour, while the other case was selected because of the sheer size and the unique expansion of the program into extensive foreshore development and land ownership.

1. Effects of Services Provided for the Fishing Industry

The primary aim of the Small Craft Harbours program is to provide facilities for commercial fishing both on coastal and inland waters. The nature of the facilities varies considerably across Canada, from small facilities, used by only a few boats, to large facilities involving several docks and over 100 boats. As would be expected, the effect on land use associated with these harbours is directly related to the size of the facility.

The small-craft harbours bring together in one location the fishermen and fishing activities of a region. Harbours are often associated with residential development, although whether a facility attracts residents or vice versa is difficult to say. Small-craft harbours attract fishermen and their boats, as well as services for fishermen, such as fish-processing plants, net stores, and other related functions. Several small-craft harbours have private processing plants associated directly with them; others have stores, ice supplies, telephones, accommodation, boat construction, and water supply. Each of these activities uses land surrounding the public facility. Fish-processing plants provide a source of employment, thereby leading to secondary land-use impacts associated with the residences and commercial demands of the employees. Although many of the local stores and their services do not depend entirely for their trade on the fishing industry or the other traffic at a small-craft harbour, these do play a part in their operation. The stores and other services also enhance the appeal of a small-craft harbour. In two provinces, there are provincial research stations associated with a small-craft harbour (Wheatley and Hnausa).

In addition to the facilities provided by the Small Craft Harbours program, there is an implied subsidization of the fishing industry because of the low rates charged for dockage. These rates are not designed to recover capital expenditures, so they attract fishermen and the services for these fishermen more than commercial operations could. The mooring facilities provide permanent dockage for fishing boats during the non- fishing season as well.

The larger fishing areas are, of course, on the Atlantic and Pacific coasts. However, inland fishing is also served by the small-craft harbours, especially on the Great Lakes and on Lake Winnipeg. Both on the coasts and inland, the Small Craft Harbours Branch frequently provides the only docking facilities available at a given location. If these facilities were to be removed, service would not be available for the fishing industry and would have to be provided at private expense. In many instances, such private funding would not be available or would be more expensive.

In summary, the land-use impacts of the small-craft harbours as they relate to fishing are primarily that they provide a centre for fishing activity and its attendant services and they can attract other facilities associated with fishing. How much of the surrounding development can be attributed to a small-craft harbour is difficult to quantify, though small-craft harbours should not be discounted when considering surrounding land development.

2. Effects of Facilities Provided for Recreational Boating

Recreational boating, although of a lower priority to the Small Craft Harbours Branch than fishing, still plays an important role in the Small Craft Harbours Program. Again, as with fishing, a small-craft harbour provides a focal point for recreational activity. A harbour serves as a point of access between water and land, enabling recreational boaters to use shore facilities and providing locations for boat launching. The types of shore facilities attracted to a small-craft harbour with recreational use are such services and functions as stores, ice supplies, telephones, hotels, private marinas, boat rentals, information booths, campgrounds, restaurants, and yacht clubs. All of these use land and produce secondary land-use effects through the attendant development of residences, and other commercial activities.

Mooring facilities for recreational boats are intended for transient boaters and not for permanent or even seasonal use. In this way, the government harbours do not conflict with private marinas in the provision of services.

Especially when a small-craft harbour is the only recreational port in a community (e.g. Winnipeg Beach, Gimli, and Ballantyne Cove), the land-use effects of the harbour can be significant. In these communities, land use around the harbour, such as industrial, transport, and commercial establishments, as well as residential development, can be related in part to the harbour. The problem, though, is assessing cause and effect. Did the harbour stimulate the development, or did the development bring the harbour? In some instances, the answer could not be identified in the surveys conducted. The most likely explanation is a combination of both with the growth of a community being encouraged and supported by a small-craft harbour and the original incentive for the harbour related to the existence of a small community.

Some of the small-craft harbours, especially the smaller recreational harbours, appeared in many cases to have no impact whatsoever. There was little evidence of mooring and no shore development. Some of these harbours may never have been heavily used, whereas others may have fallen into disuse for a variety of reasons. Browning Harbour in the Gulf Islands of British Columbia is an example of such an apparently unused facility. These facilities may be dropped by the Small Craft Harbours Program in future. The land-use effects of such small harbours is negligable, but any unseen substantial impact will certainly be observed once they are removed.

At some small-craft harbours, a breakwater has been constructed by the government. This protection has been taken advantage of by private marinas and other recreational facilities. In many cases, it is the construction of this breakwater that has enabled the harbour to exist in the first place.

One small-craft harbour (South Pender) in the Gulf Islands has the distinction of being a customs port of entry, primarily for pleasure craft plying between the United States and Canada. A private marina, a store, and accommodation are all land uses dependent upon the small-craft harbour and the customs post for trade.

The provision of recreational facilities generally affect land use by providing a focal point for recreational activity. Private facilities that serve the recreational boater are also attracted by the presence of a smallcraft harbour. There are possible additional impacts related to the development of a town or community in which the harbour is located. If such a harbour ceased to exist, the shape of the surrounding community, and its land use, would be affected.

3. Impact of the Location and Distribution of Facilities

In the Nova Scotia Region section of the survey the coincidence between the location of small-craft harbours and centres of population was noted. There were some instances where a community appeared to exist solely because of the small-craft harbour. The harbours in some areas provided a centre, not only for fishing and recreation but also for employment. An entire commercial district revolving around a small-craft harbour was evident in some of the larger communities. With some 2,400 small-craft harbours distributed across Canada, and with the attraction and focal point provided by the harbours, it is apparent that the distribution of these harbours has a great deal of impact on coastal land and its use in Canada. This land-use impact tends to have local, but nevertheless important, effects.

4. Potential Impacts

What would be the result if a small-craft harbour were to be removed from a given location or placed in a given location? The posing of these questions would enable researchers to identify, at least to some degree, the importance of the land-use impact of small-craft harbours. An example of the

partial removal of a facility was found at Irvine's Landing in British Columbia. In this case, a restaurant owner claimed that the removal of one float had drastically affected his business, dating directly from the removal of the float. Donnelly's Landing, in the same area as Irvine's Landing, has been removed entirely, though the only complaint possible was from one store owner.

Because some of the small-craft harbours appeared to be so closely related to the existence of adjacent communities, one can speculate that the removal of a harbour would require either the relocation of some community activities to a similar facility or the private construction of a similar facility. Given this dependence on the small-craft harbour, at least some of the community use of land surrounding the harbour can be attributed to its existence.

5. Special Cases

One instance of erosion being caused or related to a small-craft harbour was found at Wheatley Harbour on Lake Erie in Ontario. It appears that the breakwater and facilities at Wheatley are contributing to the disruption of normal shoreline drift, causing erosion of beaches on Point Pelee. This was the only case of documented erosion problems, although there may be others.

Steveston Harbour in British Columbia marks a major change in the Small Craft Harbours Program. For the first time, Small Craft Harbours Branch is involved in foreshore development and is creating one of the largest small-craft harbours in Canada. A great deal of foreshore land here has been purchased by the Small Craft Harbours Branch from B.C. Packers and other fish companies, and a comprehensive port plan has been drawn up to provide potential facilities for commercial fishing vessels plying the waters in and around the mouth of the Fraser River. Included in the foreshore development plan are net facilities and provisions associated with fishing camps, as well as a possible historical site and interpretation centre. The Small Craft Harbours Branch anticipates that this port will provide moorage for many of the boats that presently must find accommodation along the Fraser River and along the coast at various small harbours and ports. This facility will not only affect land use because of its sheer size and its attraction, but it will have also a negative land-use impact on the ports and harbours that will no longer have these boats mooring at them. It is important to note that Steveston Harbour is a unique case in the Small Craft Harbours Program, but Steveston certainly demonstrates the potential land-use impact the program can have if it develops in this direction.

Summary

1. Approach

The approach to this study of the land-use impact of small-craft harbours in the summer of 1978 presented a number of problems. The primary question was one of identifying cause and effect, along with how land-use impact can actually be quantified. One can identify the effects on land use, but the magnitude and importance of these effects is more dififcult to assess. Further research will have to be carried out on measuring the land-use impact of government programs and on identifying sources of this impact.

The visits to the regional offices and discussions with regional officials and surrounding landowners produced the most profitable results. The preliminary survey of the program from Ottawa was also valuable in identifying the nature of the activities, the priorities, and some of the expected land uses and effects on land use surrounding harbours. Together, these helped to guide the researchers in identifying land-use impact. Generally, this work was unsuccessful in helping to develop appraoches to land-use impact identification.

2. Findings

The land-use impacts of the Small Craft Harbours Program were generally found to be insignificant when considered on a national scale, even though there were important local effects. Small-craft harbours have substantial potential to affect the use of the land surrounding the facilities. The Small Craft Harbours Program can also affect land use through the location of facilities and/or the removal of facilities. Some of the land-use impact noted in this study related primarily to the centralizing of activities and to the attraction of other land uses around the harbours.

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