Your file Votre référence

Our file Notre référence

Environment Canada Environnement Canada

Environmental Management Gestion de l'environnement
Lands Directorate.

3rd Floor, Gulf Bldg.,
P.O. Box 365,
Halifax, N.S.

December 18, 1973.

Mr. Barry Hughson,
Canadian Wildlife Service,
Environment Canada,
P.O. Box 1590,
Sackville, N.S.

Dear Barry:

Please find enclosed a copy of my contribution to the Canso Deep Water Port Study. This along with your report was forwarded to Mr. Lee Munn of the Lands Directorate in Ottawa who is coordinating the input from the Environmental Management Service for all of the Deep Water Port Studies.

I appreciate your excellent efforts on such short notice and I indicated to Lee that separate acknowledgements should be made in the event that these reports are included in a published document.

Things are progressing nicely on the proposal for the Coastal Resources Mapping Program and we are going to attempt a "trial run" for a particular section of coastline over the next couple of weeks. I will fill you in on the details as soon as possible. In the meantime I trust that you have a merry Christmas and a prosperous new year.

Yours truly,

Gordon Beanlands

Gordon E. Beanlands.
Atlantic Regional Director,
Lands Directorate.

Encl.

DEEP WATER PORT STUDIES

STRAIT OF CANSO REGION

Quality of Shoreline for Recreation

G.E. Beanlands

Lands Directorate

December, 1973

Introduction

In attempting to determine the relative suitability of deep inshore waters for the development of large scale docking facilities a number of components must be considered which are not directly related to potential oil contamination. It is not sufficient to develop a rating system based solely on an evaluation of the ecosystems involved and their sensitivity or ability to recover from an oil spill. High priority should also be given to an assessment of the potential economic and social hardships imposed upon people as the result of marine pollution. Such hardships include degredation of the quality of shoreline and consequent reduction in economic value of recreational amenities including commercial and privately owned facilities. Dramatic population increases which are often associated with industrial developments give added importance to a consideration of the recreational uses to be made of the adjacent coastal areas.

It is not possible to objectively classify coastal lands on the basis of their suitability for recreation. Nevertheless it is generally agreed that certain natural features either enhance or detract from the quality of shoreland for general recreational purposes. It was on this basis that the Canada Land Inventory developed a classification scheme under which coastal lands were ranked on the basis of their ability to sustain a variety of recreational activities. This report will attempt to relate the results of the Canada Land Inventory to present and future deep water port developments in the Strait of Canso area and the

anticipated increase in demand for quality recreational lands along the coastline of Chedabucto Bay.

Port Development

The construction of the 100,000 b/d Gulf oil refinery and associated deep water terminal in the Strait of Canso focused attention on the potential of the area for major oil transhipment and refinery facilities. Unlike some other deep water oil terminals, however, the Strait of Canso area has undergone additional industrial growth and diversification which should be kept in perspective when evaluating the potential environmental, economic and social effects of the docking facilities and associated shipments of oil.

In addition to the Gulf refinery there is a sulphite pulp mill (Nova Scotia Forest Industries Limited), a heavy water plant (Canadian General Electric), a thermal generating plant (Nova Scotia Power Corporation) and a gypsum loading dock (Georgia Pacific Company) in the immediate Strait area, as well as a pending salt brine recovery plant (Domtar) in nearby Inhabitants Harbour. Land has been cleared on the mainland side of the Strait for another oil refinery (Shaheen Natural Resources) and plans call for a major deep water terminal to be constructed by the Nova Scotia government at a cost of $35 million. Since the latter development is to be a "common facility" further refinery and/or oil storage developments may be expected.

Possible future exploitation of offshore oil and gas deposits could have an important influence on the economic base of the Strait area. With shoreside refinery and storage facilities the area would be in a preferred position for receiving crude oil either by ship or pipeline. Already Mulgrave is serving as a supply and maintenance base for offshore drilling rigs and an expansion in these activities could also create additional employment.

Although not necessarily related to deep water oil facilities, the developing industrial complex will probably result in increased shipping activity in the Strait area and Chedabucto Bay and thereby increase the possibility of shipping accidents involving oil carriers.

Population Growth

As a result of the rapid industrialization the population in the Strait of Canso area has markedly increased. A recent survey showed that the average annual population increase in the immediate Strait area varied from 4-10% from 1966 to 1971. Most of this increase has occurred on the Cape Breton side. Port Hawkesbury has had a four-fold increase in population since 1962 and is the major commercial and residential centre. Future industrial developments planned for the area will likely maintain the population growth rate and there are indications that a town-site to house about 10,000 people may be sited on the mainland side. It is reasonable to assume that the area will be supporting 40,000 - 50,000 people by the turn of the decade.

Coastal Lands

There is a wide variety of coastline within convenient travelling distance of the Strait area and it presents a range of potential recreational uses. With the increasing population of Port Hawkesbury and other Strait communities the recreational demands for coastal lands will probably increase dramatically. Strait residents have three general areas conveniently accessible for seashore recreation: George Bay, Bras D'or Lakes and Chedabucto Bay. Attention will be focused on Chedabucto Bay in this report since it has the largest amount of presently uncommitted recreational shoreland and will likely be most severly affected by an oil spill.

Chedabucto Bay presents a variety of coastal features. The mainland shore consists mainly of mixed pebble/cobble beaches interspersed with occassional well defined sandy beaches. The Guysburough Harbour area is particularly important for water-based recreational activities and is classified as having a high capability according to the Canada Land Inventory. This general area will probably be fairly intensively developed for recreation and residential housing since it is readily accessible by road and only about 25 miles from the population centres.

The Cape Breton Island side of Chedabucto Bay presents a marked contrast to the mainland shore. The low rocky coastline is highly convoluted and areas such as Inhabitants Bay, Lennox Passage and Isle Madame provide secluded waters ideal for pleasure boating. The Inhabitants Bay area in particular is one of the better

TABLE I

Recreation Potential of Shoreland[1]
of Chedabucto Bay based on
Canada Land Inventory Classification

Total Shoreland = 125.9 square miles

C.L.I. Recreation Class	Percentage of Total Shoreland			
	Mainland Coast	Cape Breton Coast	Isle Madame	Total
2	0.64	0.73	0.38	1.75
3	2.45	1.08	0.79	4.32
4	13.85	21.75	7.37	42.97
5	16.73	8.13	13.56	38.42
6	5.34	2.25	4.95	12.54
Totals	39.01	33.94	27.05	100.00

1. Land within one half mile of coastline

recreational areas in the region - it is close to the centre of Port Hawkesbury and according to the Canada Land Inventory is well suited to inshore family boating.

Potential Recreational Uses

For the purposes of this report the coastline of Chedabucto Bay is defined as running from the town of Canso on the mainland side to Michaud Point on the south eastern coast of Cape Breton Island. This coastal zone was divided into three areas - the mainland coast, the Cape Breton coast and Isle Madame - mainly on the basis of natural differences in topography and accessability for residences living on either side of the Strait of Canso. Under the Canada Land Inventory the land within approximately one half mile of the coast was classified according to its potential to support a variety of shore-based recreational activities. It is this narrow strip of coastal land which is referred to as "shoreland" in this report.

Based on the above definitions there is a total of 125.9 square miles of shoreland around Chedabucto Bay. Table I presents the percentages of this shoreland in each of the Canada Land Inventory recreation classes represented in the area. There are no Class 1 lands since this class is reserved for large sandy beaches with warm waters suitable for swimming. There is, however, a good representation of higher quality shoreland in the region with almost 50% of the area designated as Class 4 or better. This latter area represents approximately 61 square miles of coastal land which will likely support the heaviest concentrations of summer cottages and general water-based recreational activities.

Table I also shows that better quality shoreland is not evenly distributed around the Bay. Compared with the other areas Isle Madame has relatively little high quality recreational shoreland mainly due to the rocky and exposed nature of the shoreline fronting on Chedabucto Bay.

Although there is a more even distribution of the higher classes between the mainland and Cape Breton coasts, within these areas certain patterns emerge. For example, the Guysburough River estuary and immediately adjacent coastal lands contain the bulk of the high quality sites on the mainland side. Similarily, on the Cape Breton side coastal lands having the greatest potential for recreation occur in the Inhabitants Bay area and the eastern end of Lennox Passage.

In terms of the damage arising from a marine oil spill certain coastal recreational uses stand to be more seriously effected than others. Of the 25 potential uses identified in the Canada Land Inventory three would be most seriously curtailed by the accumulation of oil on the beaches and inshore waters - family beach activities, enjoyment of summer cottages and inshore boating.

Table II shows the percentages of shoreland in each region which have a moderate-to-high capability (Class 2-4) to support these water-oriented activities. It is apparent that the less rugged terrain and well defined beaches along the mainland coast provide a better environment for family beach activities and recreational lodging (summer cottages). On the other hand, the convoluted coastline and shallow protected waters along the Cape Breton side are ideal for secluded inshore family boating.

TABLE II

Percentage of Shoreland[1] of Chedabucto Bay According to Canada Land Inventory Recreational Classes and Water Oriented Family Activities

Area	Percentage of Shoreland in C.L.I. Classes 2, 3 and 4			
	Family Beach Activities	Potential Cottage Development	Inshore Family Boating	Total
Mainland Coast	19.7	19.7	0.3	39.7
Cape Breton Coast	16.7	5.4	34.8	56.9
Isle Madame	9.4	4.8	12.2	26.4

1. Land within one half mile of coastline

In areas such as the Strait of Canso where deepwater terminals are already established, an appreciation for the general quality of shoreline and the potential recreational uses can be a useful component in developing contingency protection plans for marine oil spills. Thus, in Chedabucto Bay highest priority would be given to the protection of coastal lands around the Guysburough River where oil fouled beaches would greatly interfere with the recreational pursuits of residents and the vacationing public. Less priority might be given to protecting areas suitable for family boating since the long term effects of oil pollution would be less critical.

In other areas being considered for the establishment of deep water ports a similar comparison of the nature and extent of recreational shoreland could be a useful component in assigning development priorities. Such a comparison is possible with Canada Land Inventory data since the program was national in scope and based on a single classification system.

Information Sources

Agricultural and Rural Development Act, 1968
Canada Land Inventory, Land Capability for Recreation, Map 11F,G and C.

Nova Scotia Department of Municipal Affairs, 1971
Strait of Canso Region Atlas prepared by the Community Planning Division.

Owens, E.H. 1971
A Reconnaissance of the Coastline of Chedabucto Bay, Marine Science Paper 4, Marine Sciences Branch, Department of the Environment, Ottawa.