

Proposed Re-Introduction of the Northern
Sea Otter Enhydra lutris lutris to British
Columbia, Canada

ECOLOGICAL RESERVES COLLECTION
GOVERNMENT OF BRITISH COLUMBIA
VICTORIA, B.C.
V8V 1X4

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1. Introduction

The introduction of sea otters to British Columbia is presently planned and sponsored by the Fisheries Research Board of Canada, and the B.C. Department of Recreation and Conservation. Several meetings to discuss a possible introduction were held in Victoria in 1967, and involved members of the Commercial Fisheries Branch, Provincial Museum and Fish and Wildlife Branch of the Department of Recreation and Conservation. The authors were put in charge of planning and coordinating the project at the field level.

2. Justification

The purpose of our introduction is simply to re-establish this biologically and historically unique mammal to its rightful place in the Canadian fauna : the economic value of sea otter fur is of secondary importance. The low dispersal rate of sea otters and the 2,000 mile gap between northern and southern populations would appear to preclude natural re-population of Canadian waters for many years.

Sea otters were once abundant on the British Columbia coast (1), (2), (3). Their decline was entirely attributable to

human exploitation, and there are presently no residual populations on the B.C. Coast (3), (4). Most of their former habitat has not been significantly altered or degraded and will likely retain its pristine characteristics until well into the future.

The Canadian sea otter trade centered on the West Coast of Vancouver Island and the Queen Charlotte Islands. Nootka sound was a particularly active area for many years following Captain James Cook's voyage there in 1778. However, sea otters were probably more continuously distributed along the outer B.C. Coast than the outer Washington Coast (2) because the abundance of small islands and the irregular shoreline of the former area provided greater shelter during severe storms. The latest records of sea otters on the B.C. Coast are "Grassie Island, Kyuquot (1929), Nootka Island (November 15th, 1909)" (3). Occasional reports of sea otters on our coast at the present time appear to involve the land otter.

There is no significant fishery for abalone or other shellfish within any of the areas of former sea otter abundance thus we do not anticipate any conflict with commercial interests.

3. Administration

Sea otters in Canadian waters would be classed as "marine animals" under section 2 (c) of the Fisheries Act (Federal) and thus would fall within the jurisdiction of the Federal Department of Fisheries. That Department has informed the B.C. Fish and

Wildlife Branch that it has no objection to the proposed introduction (5). The Fisheries Research Board of Canada and the Canadian Wildlife Service both favor the introduction.

Regulations for the protection of sea otters in Canadian waters, as well as elsewhere, were contained in the original international agreement for the conservation of the Pacific fur seal resource in 1911. According to Mr. W.R. Hourston, Pacific Region Director, Canada Department of Fisheries (5), "These specific regulations were, however, not included in Canadian War Orders and Regulations, PC4112 of May 30th, 1944, which terminated the Pacific Sealing (Convention) Act 1938 and established "The Pelagic Sealing Regulations" which were regulations for the protection of fur seals. The above regulations were set aside by provisions of the Pelagic Sealing (Provisional Agreement) Act assented to May 14th, 1948, which was replaced by the present act, "The Pacific Fur Seals Convention Act," proclaimed December 16th, 1957. There is no reference to sea otters in this latter act."

Regulations to protect introduced sea otters can be enacted under Section 34 of the Fisheries Act. The Department of Fisheries has stated its willingness to consider any recommendations of the B.C. Fish and Wildlife Branch with respect to such regulations.

Sea otters appear to receive protection under the British Columbia Wildlife Act, although these regulations could be

ultravires. In Section 2 of that act sea otters are included within the definition of "fur-bearing animal". The definition of "game", also in Section 2, includes fur bearing animals, and the definition of "wildlife" includes game. Thus under Section 3 (1) and (2) any person wishing to take sea otters must obtain a license issued under the Wildlife Act. Section 78 (a) allows the Lieutenant-Governor in Council to make regulations "to specify open seasons or closed seasons, or both, for any sex or species of wildlife..."

4. Site Selection

Because historical records suggested the West Coast of Vancouver Island and the Queen Charlotte Islands were areas of major sea otter abundance, only potential habitat within those areas was investigated. On June 1st, 1967, Don Blood was accompanied by Mr. Karl W. Kenyon, Marine mammal biologist, U.S. Bureau of Sport Fisheries and Wildlife, on a five-day survey of sea otter habitat in British Columbia. The purpose of that survey was to look for areas where a proposed transplant of otters from Alaska might best be expected to remain and survive (6). On June 1st, 1967, we made a low level flight in calm sunny weather along the entire west coast of Vancouver Island. Potential habitat was rated on marine charts on the basis of Mr. Kenyon's experience in Alaska. Kenyon stated that "By comparing visually this coast with areas in the Aleutian

Islands and along the Alaska Penninsular where sea otters are abundant, it appears that much of the coast offers satisfactory sea otter habitat" (6). He felt that several localized areas offered "ideal habitat".

Kenyon also surveyed some areas in the Queen Charlotte Islands by boat. While suitable habitat undoubtedly exists there, we have decided against a Queen Charlotte site because of difficulties in surveillance and protection.

In addition to the geographical factors observed from the air, factors of present and future human disturbance have been taken into account. Sites near shipping channels, heavy fishing activity, villages, settlements or silt-laden rivers were eliminated.

Lastly, the food resources of a few of the better sites were investigated by us and Dr. D. Quayle, marine invertebrate biologist, of the Fisheries Research Board, Pacific Biological Station, Nanaimo, B.C. This involved a seven-day field survey by boat during early September, 1967 (7). On the strength of this and earlier surveys the Bunsby Islands (vic. $127^{\circ}31' W$; $50^{\circ}06' N$) were considered to present optimum conditions for the release. Both variety and abundance of invertebrates eaten by sea otters was noted. The following taxa were abundant :

Gastropoda	<u>Haliotis kantschatkana</u>	Abalone	
	<u>Astraea gibberosa</u>	Turban shell	
	<u>Diadora aspera</u>	Keyhole limpet	
	<u>Acmea spp</u>	Limpets	
Pelecypoda	<u>Mytilus californianus</u>	California mussel	
	<u>M. edulis</u>	Blue mussel	
	<u>Mya truncata</u>	Soft shell clam	
	<u>Clinocardium nuttalli</u>	Cockle	
	<u>Saxidomus giganteus</u>	Butter clam	
Amphineura	<u>Cryptochiton stelleri</u>	Chiton	
	<u>Katherine tunicata</u>	Chiton	
Echinodermata	<u>Strongylocentrotus franciscanus</u>	} Sea urchins	
	<u>S. purpuratus</u>		
	<u>S. drobachiensis</u>		
	<u>Parastichopus californiensis</u>	Sea cucumber	
Arthropoda	<u>Cancer productus</u>	Shore crab	
	<u>Pagurus spp.</u>	Hermit crabs	

In summary, the Bunsby Islands offer the following attributes :

1. No evidence of pollution by oil, silt etc., and no indication that this will be a future problem.
2. Isolation from all but incidental boat traffic.
3. Well removed from centers of population and industry.
4. Excellent juxtaposition of islands, points and reefs offering both sheltered and exposed water and plenty of shallow feeding area.
5. Suitable and abundant food supply.

5. Transportation Planning

Until the recent announcement that the U.S. Atomic Energy Commission, in cooperation with the Alaska Department of Fish and Game, was to airlift sea otters from Amchitka to a number of release sites, we had only given serious consideration to boat transport. The 177 foot Fisheries Research Board of Canada vessel "G.B. Reed" was reserved for a two-week period in August 1968. It would have been fitted with large tanks on the deck, through which ample sea water was circulated at all times. The otters were to have been transported directly from capture site to release site in the vessel. This would result in a minimum of animal handling and keep them in their natural environment - clean, cold, sea water. Funds were budgeted, to become available in April 1968, for the construction of tanks, purchase of food, and transportation of personnel to and from Alaska. Use of the "G.B.Reed" would not have involved any capital outlay.

We based our planning to date on boat transport in the belief that chances for survival would be better than by air. Vania reported that 12 otters died, probably of overheating, during a four hour flight in a Grumman Goose (8). Kenyon (6) stated that "Experiments in transplanting sea otters over long distances have shown that survival is very low when animals are carried in cages in aircraft. Fur soiling and transport to and from the

aircraft present many serious problems."

The plan to transport otters by air from Amchitka would suggest that some of these difficulties have been overcome. Assuming successful air transport, we are prepared to receive otters at Comox (120 air miles from the release site) if jet transport is used, or at Port Hardy (40 miles from release site) if a turbo-prop aircraft is used. Details of transport from airport to release site cannot be finalized until the weight and bulk of animals and containers is known. It is suggested, however, that one or more large helicopters be used to transfer the animals from airport to release site with a minimum of delay. Arrangements are being made with Customs to expedite rapid clearance should the animals be brought into Port Hardy which is not a customs "Port of Entry".

If necessary, it may be possible for us to construct saltwater holding facilities at Port Hardy or Comox so that the animals could recuperate before the final leg of the journey. However, with the extra handling involved, such measures may not materially enhance the animals chances of reaching the release site in a healthy, robust state.

6. References

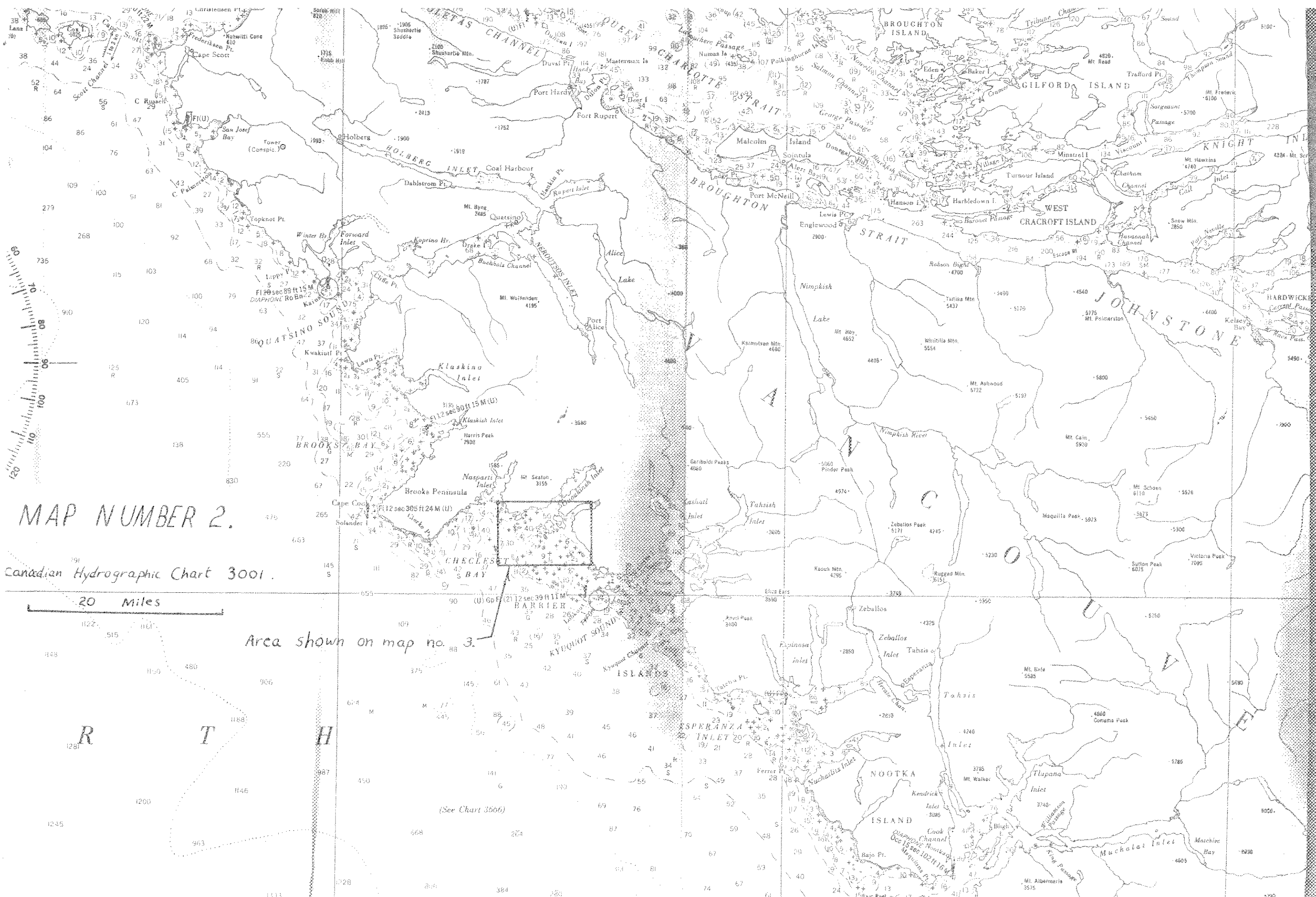
- (1) Nicholson, G. 1965. Vancouver Island's West Coast 1762-1962. Morriss Printing Company Ltd., Victoria, B.C. 356 pp.
- (2) Scheffer, V.B. 1940. The sea otter on the Washington Coast. Pacific Northwest Quarterly, Vol.10, 1940. 370-388.

- (3) Cowan, I. McT. and C.J. Guiguet. 1956. The mammals of British Columbia. B.C. Prov.Museum, Handbook No.11, 413 pp.
- (4) Blood, D.A. 1967. Notes on the sea otter in British Columbia. Wildlife Review, B.C. Fish and Wildlife Branch, IV (5): 14-16
- (5) Letter from W.R. Hourston, Pacific Region Director of the Department of Fisheries, to Dr. J. Hatter, Director of the B.C. Fish and Wildlife Branch, dated July 11, 1967.
- (6) Kenyon, K.W. 1967. Survey of Sea Otter (Enhydra lutris) Habitat in British Columbia, 1-5 June 1967. Typescript report in files of B.C. Fish and Wildlife Branch, Victoria. 9 p.
- (7) MacAskie, Ian. 1967. Report on a suitable release site for sea otters. Typescript report in files of B.C. Fish and Wildlife Branch, Victoria. 2 p + 2 maps.
- (8) Vania, J. and E. Klinkhart. 1966. Alaska Department of Fish and Game, Marine Mammal Report for 1965. pp 8-15.

Nanaimo, B.C.
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MAP NUMBER 1.





MAP NUMBER 2.

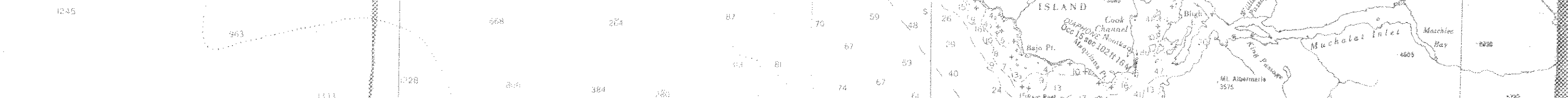
Canadian Hydrographic Chart 3001.

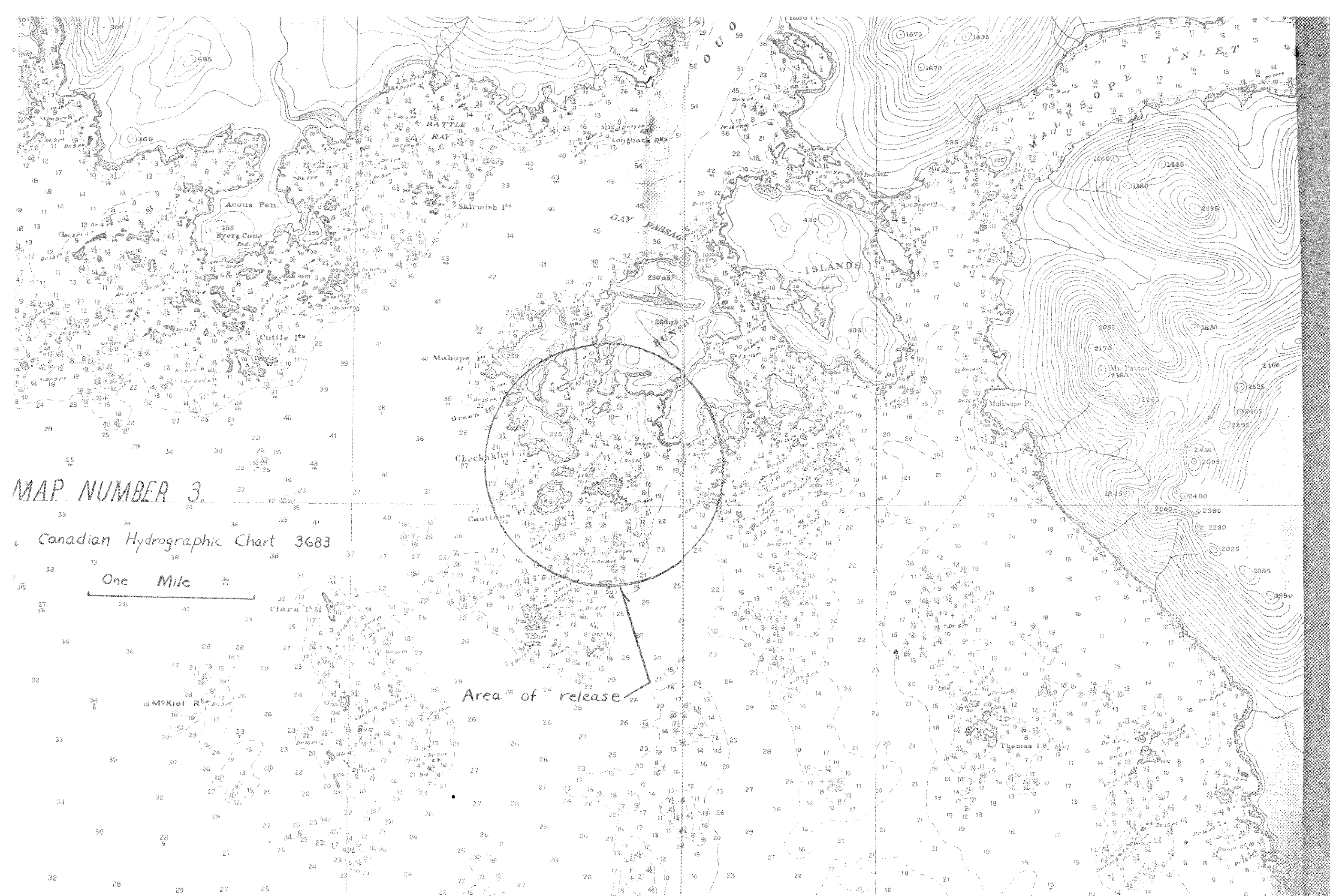


Area shown on map no. 3.

(See Chart 3566)

R T H





MAP NUMBER 3

Canadian Hydrographic Chart 3683

One Mile

Area of release

