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FISHERIES AND ENVIRONMENT CANADA

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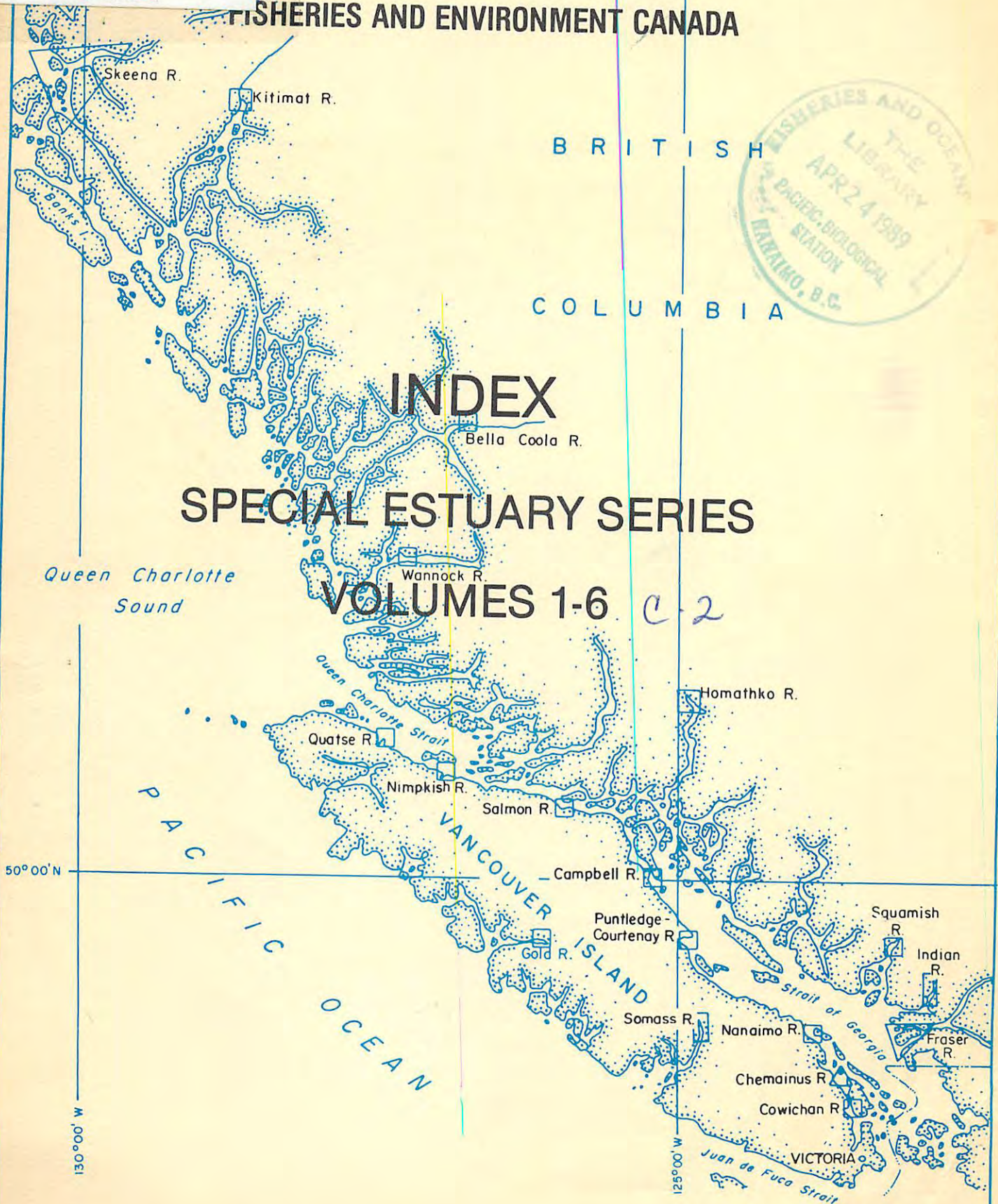
C O L U M B I A



INDEX

SPECIAL ESTUARY SERIES

VOLUMES 1-6 *C-2*



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FISHERIES AND ENVIRONMENT CANADA

INDEX

SPECIAL ESTUARY SERIES

VOLUMES 1-6

ESTUARY WORKING GROUP

DEPARTMENT OF FISHERIES AND THE ENVIRONMENT

REGIONAL BOARD PACIFIC REGION

By

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MARCH 1, 1979

*** Deceased March 15, 1978.**

PREFACE

This INDEX concludes the review of work on 7 of the estuaries of British Columbia commenced in 1974. It was decided during the early 1970's by the Estuary Working Group of the Regional Board of the Pacific Region of the Federal Department of Fisheries and the Environment to collate and summarize all the environmental work that has been conducted on 18 "critical" estuaries of the province. The selected estuaries consist of the Fraser, Squamish, Skeena, Kitimat, Indian, Homathko, Wannock and Bella Coola on the British Columbia mainland coast and the Cowichan, Chemainus, Nanaimo, Campbell, Courtenay, Somass, Quatse, Salmon, Gold and Nimpkish on Vancouver Island. They were chosen on the basis of living resource potential and threat from development. Their locations are shown on the cover of this volume. The Special Estuary Series, the first 6 volumes of which are indexed here for authors and subject matter, have been comparatively widely distributed in major academic libraries of the province, as well as in reference holdings of governmental, educational and private environmental establishments.

When this INDEX was initiated in 1976, Dr. Neal M. Carter was contracted to do the work. Unfortunately, he was unable to continue after indexing the first volume in the Series. However, he was able to guide Adelle J. Leaney in carrying on the indexing of further volumes.

Dr. Carter was well qualified to index scientific works. He had had a brilliant scientific career following the acquisition of his Ph.D. in Biochemistry at McGill University, with: a post-doctoral fellowship in Germany; several years at the Pacific Biological Station in Nanaimo, conducting the first oceanographic work on the Pacific Coast of Canada, including the earliest publications on fjords of British Columbia; Director of the Pacific Fisheries Experimental Station of the Fisheries Research Board in Prince Rupert, and later in Vancouver; and finally, Associate Editor of the Journal of the Fisheries Research Board of Canada. He also edited for many years the Fisheries Research Board's Progress Reports of the Pacific Coast Stations, which were designed to inform fishermen and interested lay persons on current research work in fisheries. Following retirement in 1962, Dr. Carter continued assisting the Office of the Editor of the Fisheries Research Board in Ottawa with

indexing of its various publications. He was responsible for two index volumes, "Index and List of Titles, Fisheries Research Board of Canada and Associated Publications, 1900-1964", and the follow-up one for 1965-1972, which brought together all work of the Fisheries Research Board and its earlier counterparts from 1900 to 1972. He provided annual indexes for the Journal of the Fisheries Research Board after 1972 until 1977, when finally at the age of 75 he felt it was time he retired from indexing.

Dr. Neal M. Carter was also a very avid mountaineer. From his student days as an active participant in the Varsity Outdoor Club in the University of British Columbia through his many years as a member of the B.C. Mountaineering Club and the Alpine Club of Canada, Dr. Carter climbed many mountains in western Canada. He did this in part for recreation, but true to his character, he felt that something more tangible than recreation should be derived from these alpine pursuits. Accordingly, he always carried basic survey instruments on these expeditions to enable him to conduct some mapping. His early engineering training helped in this regard. Dr. Carter was also credited with carrying out some of the earliest photogrammetric surveying of B.C.'s coastal mountains. For his contributions to mountain exploration, Dr. Carter was made an Honorary Life Member of the Alpine Club of Canada.

Dr. Neal Marshall Carter passed away after an active and productive career on March 15, 1978, while vacationing in the Caribbean and engaging in some recreational diving among coral reefs. He will be long remembered not only for his contributions to science and to mountaineering, but also for his friendly nature and his remarkable ability to provide encouragement in counselling people, particularly students and young scientists, on many matters. We owe him a great deal for fostering scientific research in the marine environment and in fisheries on the Pacific Coast of Canada. It is a pleasure to acknowledge his enthusiastic participation in the preparation of this INDEX, one of the last technical projects in which he was involved.

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INTRODUCTION TO SPECIAL ESTUARY SERIES INDEX

SYMBOLS

The symbols listed below indicate the following:

- 3: designates volume from which information cited (see page iv)
- : 48 designates page on which information is cited
- :IBO: means mentioned *In Bibliography Only*
- :(344) indicates a bibliographic reference source

EXAMPLES

- 5: 76, 77, 80(257) referenced information located in *Volume 5*, on pages 76, 77 and 80 and referenced in the *bibliography* of that volume on page 257.
- 1:213, 239(475, 479); 2:IBO:(329, 333, 334) relevant information cited in *Volume 1* on pages 213 and 239, and referenced in *bibliography* of that volume on pages 475 and 479. Additional source information may be found in the *bibliography* of *Volume 2* on pages 329, 333 and 334.

NOTE

- 1 - "re" is often used in the index references to imply "in relation to", etc.
- 2 - All authors mentioned in the Special Estuary Series are indexed. However, it should be noted, that in the present index the primary author has not been specified.
- 3 - During preparation of the Index, errors in the spelling of some names mentioned in Special Estuary Series volumes have been noticed. The authors of this Index have attempted to correct these wherever possible.
 - P. 1 Abbott-Smith, K.B. instead of Abbot-Smith, as in text.
 - P.14 Aro, K.V. instead of Aro, K.U., as in text.
 - P.27 Blackbourn, D.J. instead of Blackbourne, D.J., as in text.
 - Blackbourn, J. instead of Blackbourne, J., as in text.
 - P.44 *Sambucus* instead of *Sambaccus*, as in text 6:201.
 - P.54 *Cirsium* instead of *Cirscium*, as in text 1:281.
- 4 - Organisms are listed alphabetically by genus and then by the specific name. Common names, when given, refer the reader to the scientific names.

SPECIAL ESTUARY SERIES

- No. 1 The Fraser River Estuary Status of Environmental Knowledge to 1974.
- No. 2 The Squamish River Estuary Status of Environmental Knowledge to 1974.
- No. 3 The Skeena River Estuary Status of Environmental Knowledge to 1975.
- No. 4 The Cowichan-Chemainus River Estuaries Status of Environmental Knowledge to 1975.
- No. 5 The Nanaimo River Estuary Status of Environmental Knowledge to 1976.
- No. 6 The Kitimat River Estuary Status of Environmental Knowledge to 1976.

ACKNOWLEDGEMENT

We thank Rose Dawson and Colleen Yuen for their painstaking efforts in typing, proof-reading and correcting this Index prior to its printing.

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 : 19(266) (late Pleistocene geoclimatic units)
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Eastwood, G.E.P.

- 4:IBO:(268) (replacement magnetite on Vancouver Island)

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 northern maidenhair (*see* *Adiantum pedatum*)
 oak (*see* *Gymnocarpium dryopteris*)
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Fern-leaved Goldthread (*see* *Coptis asplenifolia*)

Fertilizers

- 1:210 (leachates from agricultural, re contribution of nutrients to natural waters)
 :IBO:(358) (Fraser Valley soils)

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- bearded (*see* *Festuca subulata*)
 fescue grass (*see* *Festuca rubra littoralis*)
 foxtail (*see* *Festuca megalura*)
 red (*see* *Festuca rubra*)
 reed (*see* *Festuca arundinacea*)
 sheep (*see* *Festuca ovina*)
 western (*see* *Festuca occidentalis*)

Festuca arundinacea (reed fescue; beach grass)

- 1:131, 132, 134, 142 (on islands of river's South Arm)
 4:212 (in species list)

Festuca megalura (foxtail fescue)

- 4:212 (in species list)

Festuca occidentalis (western fescue)

- 4:122 (re Douglas-fir-salal-lichen associations)

Festuca ovina (sheep fescue)

- 1:283; 5:181 (in species list)

Festuca rubra (fescue; fescue grass; red fescue)

- 1:283; 2:207; 3:229; 5:180, 181; 6:204 (in species list)
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- 1:129 (in estuary grass & forb community)
 :134 (in Boundary & Mud Bays)

Festuca subulata (bearded fescue)

- 3:229 (in species list)

Few-flowered Shooting Star (*see* *Dodecatheon pauciflorum*)

Figueira, A.J.G.

- 5:IBO:(254) (synopsis of Canadian marine zooplankton)

Finch

- gray-crowned rose (*see* *Leucosticte tephrocotis*)
 Hepburn rosy (*see* *Leucosticte tephrocotis littoralis*)
 house (*see* *Carpodacus mexicanus*)
 purple (*see* *Carpodacus purpureus*)

Finegan, R.P.

- 1:IBO:(475) (sewage & pesticides in marine environment)

Fir

- balsam or lovely (*see* *Abies amabilis*)
 Douglas (*see* *Pseudotsuga menziesii*)
 grand (*see* *Abies grandis*)

Fireweed (*see* *Epilobium angustifolium*)

Fish and Wildlife Branch

- 1:IBO:(443) (hunter-use of lower B.C. mainland foreshore & public shooting grounds)

Fish Processing (*see also* Canneries; Cannery effluents; Fisheries and fishery resources; Food processing industries effluents)

- 1:IBO:(415); 2:IBO:(295); 3:IBO:(348) (re animal food)

- : (482); 3:IBO:(394) (wastewater characteristics)

- 3: 93, 94, 149 (cold storage plant capacities; products of reduction plants; smokehouses; filleting plants)

- : 95 (wages & salaries; expansion potential)

- :135 (establishment; initial extent of)

- :149 (general information; effluent characteristics & factors affecting)

- :149, 150 (halibut processing & wastes)

- :150 (groundfish - pre-sale processing, production methods, marketable products, waste products - usage & disposal of)

- :150, 151 (salmon processing & wastes)

- :151 (herring & crab production & wastes)

- :152 (shrimp production & wastes)

- :152, 153 (re rendering fish processing wastes; marketable products; effluent characteristics; consequences of high suspended solids, low oxygen concentrations & poor aesthetics)

- :153, 154 (environmental & biotic effects)

- :154 (aesthetics; oil & grease concentrations; implications of)

- :154 (research needs)

- :171 (gaseous & particulate emissions; factors effecting odour)

- :253-254 (dischargers identification numbers, locations, amounts & effluent quality; comment with respect to river & estuarine pollution sources)

Fisher (*see* *Martes pennanti*)

Fisher, H.D.

- 1:323(442) (hair seal resident colony in Boundary Bay)

- 2:IBO:(314) (B.C. harbour seal status with particular reference to the Skeen River)

- 3:124(372) (estuary seal population & habitat)
 :125(372) (seals noted in Lakelse Lake & Terrace)
 :126(372) (hauling-out sites of Skeena River harbour seals)

Fisheries and Fishery Resources (*see also* Fishing, recreational; Coastline)

- 1:xvii (crabs off Sturgeon Bank, Boundary & Mud Bays)

- :xvii (Fraser River probably most important in North America for salmon)

- : 97-100 (oysters, clams, crabs & shrimps as resources of estuary)

- : 98 (map of major clam, oyster, crab, shrimp & scallop beds & fishing areas in Fraser River)

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:120 (pink salmon)

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:121 (chinook salmon)

:121-122 (coho salmon)

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:123 (eulachon)

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:(406, 425); 2:IBO:(290, 301); 3:IBO:(359); 4:IBO:(295) (abundance; distribution; commercial exploitation on Canadian west coast)

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3:214(348) (Skeena River anadromous fish escapement)

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1:IBO:(476) (summaries of fisheries research re pollution problem)

Fisheries Operations Directorate

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- : 84(347) (steelhead runs on the Sustut River)
- :106(366) (importance of Flora Bank eelgrass beds)
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- : 10 (amphibolite, hornblende, granulite, migmatite, plagioclase, schist re metamorphism)
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- : 22 (amphibole, quartz, chlorite, feldspar, illite, mica, montmorillonite, vermiculite, re clay mineralogy)

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- 1:IBO:(487, 488) (geological map of Coquitlam & Pitt Lake)
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- : (260) (B.C. coast mountain plutonic & associated rocks)
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Salvelinus namaycush (lake trout)

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- 3:235 (in species list)

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- 1:328(453) (census of raptorial birds of Fraser River delta)
- :IBO:(453, 454) (various raptorial birds census reports)

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- 6: 64(264) (re Kitimat destructive wave)
- :125(279) (Kitimat's potential as an oil receiving terminal)
- :161 (re smelter emissions & effect on surrounding environment)
- :IBO:(257) (drop in sea floor blamed in \$600,000 loss)

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- 1:IBO:(471) (at Ladner Slough - harbour project planned by Delta)
- 6:161(286) (re foliage fluoride levels)
- :IBO:(286) (Alcan emissions to be scrutinized)

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- 3:IBO:(385) (socio-economic survey)

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- 2:108 (common in Arbutus subzone)
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- 4:IBO:(283) (bibliography on marine & estuarine oil pollution)

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