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The Fraser River Inventory (F.R.I.): An Overview

by M.M. Wayne, J.A. Morrison, B.D. Tutty

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Vancouver, B.C. V6E 2P1



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Les numéros 1 à 25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer. Les numéros 26-160 ont été publiés à titre de Rapports statistiques du Service des pêches et de la mer, Ministère des Pêches et de l'Environnement. Le nom de la série a été modifié à partir du numéro 161.

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THE FRASER RIVER INVENTORY (F.R.I.):

AN OVERVIEW

by

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ABSTRACT

The Fraser River Inventory (F.R.I.) system is a resource and foreshore information data base for the Lower Fraser River and estuary. The data base established between 1976 to 1979 incorporates information on the following categories; Fauna, Foreshore Vegetation, Land Use, Commercial Drift Fishing Zones, Water Lots, Effluent Outfalls, Chemical Sampling Data, Dredging, and Flood Control Pump Structures. The information that was compiled in the computerized data base system is available as a reference report maintained by the Habitat Protection Division, Pacific Region.

Key words: Computerized data base, Fraser River estuary

RÉSUMÉ

Le système de l'inventaire du fleuve Fraser est une base de données sur les ressources et la zone littorale du bassin inférieur et de l'estuaire du fleuve. Constituée entre 1976 et 1979, cette base de données rassemble des informations appartenant aux domaines suivants: faune, végétation littorale, utilisation des terres, zones de pêche commerciale aux filets dérivants, lots d'eau, décharges d'effluents, données d'échantillonnage des produits chimiques, dragage et structures de pompage pour la prévention des crues. L'information versée dans le système informatique est utilisable sous la forme d'un rapport de référence tenu à jour par la Division de la protection de l'habitat de la Région du Pacifique.

Mots clés: base informatique de données, estuaire du fleuve Fraser

1.0 BACKGROUND

1.1 The Fraser River Inventory (F.R.I.)

The Fraser River Inventory system (F.R.I.) is a computerized data base developed by the Habitat Protection Division that summarizes information for eleven major information data categories.

1.2 Development of F.R.I.:

In light of the Department of Public Works' proposal to construct a self-scouring navigation channel in the South Arm of the Fraser River, this Department believed that it was mutually beneficial to fund a program to develop a common data base. The Department of Public Works shared in the development cost of Phase I of the F.R.I. data base (covering the region between New Westminster to Steveston on the South Arm of the Fraser River). A computer data system with map plotting capabilities was utilized by Fisheries and Marine Service to store resource and foreshore use data.

The F.R.I. program (Phase II) was expanded in 1978 by the Fisheries and Marine Service to incorporate resource information for use by the Federal-Provincial Fraser River Estuary Task Force. This expanded area included the North and Middle Arms of the Fraser River, the Fraser River mainstem from New Westminster upstream to the mouth of Kanaka Creek, as well as Pitt River, Roberts Bank, Sturgeon Bank and Boundary Bay.

2.0 F.R.I.: PHASE I - RESOURCE AND
FORESHORE USE DATA CATEGORIES, 1976-78

The Phase I inventory area is illustrated in Figure 1.

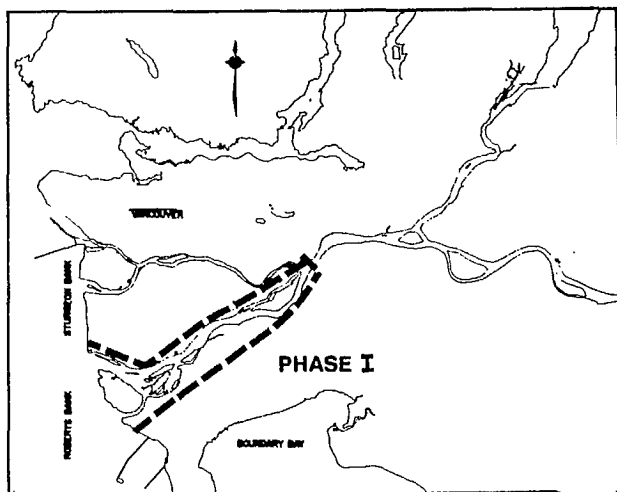


FIGURE 1: PHASE I - INVENTORY
AREA

Excerpts of the final reports of the following data categories are contained in Appendix I.

2.1 Fauna:

The F.R.I. system presents sampling data on 51 fish species, 53 invertebrate species, 57 waterfowl species and 30 other biota such as, mammals, reptiles etc.

This data was obtained from Fisheries and Marine Service investigations on the proposed Vancouver Airport expansion (includes unpublished data), benthos studies by the Pacific Environment Institute, Fraser River dredge monitoring programs, Canadian Wildlife Service waterfowl surveys, Westwater Research Centre studies, consultant reports and theses.

The F.R.I. data base synthesis of original data includes:

- species distribution information
- sampling agency, report title and sampling sites
- fish habitat and food species information

2.2 Foreshore Vegetation:

A survey of foreshore marsh vegetation was completed in 1976. Vegetation areas were described in terms of species present, distribution patterns of the species within the marsh, and the extent of coverage of the foreshore marsh.

The relative abundance of major species was rated in order of increasing frequency as, rare, sporadic, common, abundant and dominant.

The plant community distribution and location patterns were described as:

- | | |
|------------|---|
| Random | - No apparent pattern of the plant species. |
| Stratified | - Dominant plant species occurred in a progressive order landward. |
| Mosaic | - Non-ordered contagious distribution of dominant species. |
| Uniform | - Predominately one species. |
| Strip | - A narrow foreshore band of marsh vegetation. |
| Upland | - Upland marsh. |
| Remnant | - Marsh area which is limited, and apparently reduced by foreshore development. |
| Scattered | - Small marsh pockets. |

2.3 Commercial Fishing:

F.R.I. identified the major commercial gill net drift salmon fishing areas.

2.4 Land Use:

Land use data for foreshore areas was compiled in 1976 from the British Columbia Assessment Authority (BCAA) and includes:

- municipal zoning designations within Richmond and Delta
- District Lot or section numbers
- owner's name (excluding residential and some commercial properties)
- indication of the present land use

2.5 Water Lots:

Information obtained from the Fraser River Harbour Commission (FRHC) records in 1976 includes:

- FRHC assigned file numbers
- water lot acreage
- description of water lot use
- status:
 - lease (implies upland ownership with a term >1 year)
 - permit (implies non-ownership of the upland and/or term of 1 year)
 - outside the FRHC jurisdiction

2.6 Effluent Outfall Information:

Effluent outfall data (1977) from the Waste Management Branch, formerly the Pollution Control Branch (PCB), provides PCB number, pollutant source, and volumes or concentrations of permitted constituent parameters.

In addition, outfall sites that could not be correlated to known PCB records have been noted.

2.7 Chemical Sampling Locations:

Data from Westwater Research Centre, B.C. Research, and Fisheries and Marine Service reports and unpublished data includes:

- the agency and the report name
- the sample location and site code
- the parameters investigated (minimum and maximum values recorded)
- comments and general observations

2.8 Development Sites:

Marina development, landfill and other types of river-oriented development activities are identified (1976/77) from Fisheries and Marine Service's records and referral process.

This data identified areas subject to development pressure and as a result indicates development trends.

2.9 Dredging:

Navigation channel maintenance dredge zones and sand borrow sites, (1976/77) are indicated. Data includes:

- applicant and purpose of dredge activity.
- volume dredged.
- type of dredging.
- conditions, if any, on dredging approval.
- cross-referenced to data regarding juvenile salmonid entrainment by suction dredge operations.

2.10 Flood Control Structures:

Pumphouse data, (1977), identified the location and discharge capacity.

2.11 Steveston Oil Spill Data:

This includes spill description and bio-assay results of the 1977 Steveston Harbour oil spill.

3.0 F.R.I.: PHASE II - 1978-79:

Phase II of the F.R.I. program (Figure 2) expanded the area to include resource information for the entire region under study by the Federal-Provincial Fraser River Estuary Task Force.

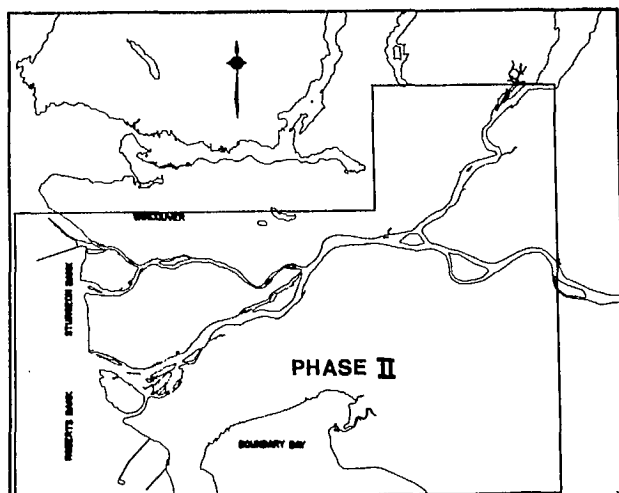


FIGURE 2: PHASE II - INVENTORY AREA

3.1 Fauna:

Sampling information on 54 fish species and approximately 80 invertebrate species was compiled from Fisheries and Marine Service investigations, Pacific Environment Institute studies, Westwater Research Centre programs, consultant reports and theses.

3.2 Foreshore Vegetation:

Tidal marsh species composition, relative abundance and distribution patterns were surveyed by the Habitat Protection Division in the summer of 1978. In addition marsh areas were calculated for the North and Middle Arms of the Fraser River.

4.0 F.R.I. REPORTS AND MAP PLOTS

4.1 How to Use Them:

A reference report set maintained by the Habitat Protection Division, Pacific Region, contains computer generated maps (plots) and reports (data print-outs) which have been produced for all of the resource and foreshore categories. Features on the map plots are identified by a reference number known as a "polygon" number which serves as a cross-reference number to information contained in the reports.

In order to access information the following steps must be executed:

Step 1. Identify the item of interest, such as, "the marsh habitat regions in the vicinity of Tilbury Island".

Step 2. Determine which map is required from the Plot File Index (Table 1) i.e. Map 14.

EXCERPT FROM PLOT FILE INDEX

<u>Item</u>	<u>Plot No.</u>	<u>Scale</u>	<u>Comments</u>
MARSH AREAS	13	1:12000	Steveston to Deas Island (South Arm)
	14	1:12000	Deas Island to Annacis Island (South Arm)

TABLE 1: INDEX FILE OF PLOTTED MAPS

Item	Plot No.	Scale	Comments
OVERVIEW, PLOT ONLY PF1D1117	1	1:50000	North, Middle, Main Arms to Port Mann, Sturgeon & Roberts Banks, Boundary Bay
WATER LOTS PF5D1205	2	1: 6000	Water lots & legal lots plotted together, plot 2, Ladner; plot 3, Steveston-Deas; plot 4, Tilbury to Annacis; plot 5, Annacis to trifurcation; plot 6, Overview of District lot & section nos. Location of lots is approximated by a line or point along the shore.
LEGAL LOTS PF6D1205	3	1: 6000	
PF7D1205	4	1: 6000	
PF8D1205	5	1: 6000	
	6	1:50000	
REFERRALS & DEVELOPMENTS PF10D1205	7	1:50000	South Arm, Sturgeon and Roberts Bank, Boundary Bay
FLOOD CONTROL STRUCTURES PF9D1205	8	1:50000	South Arm
DREDGING PF3D1118	9	1:5000	South Arm.
POLLUTION SOURCES PF3D1205	10	1:12000	Pollution sources & chemical sample sites plotted together, plot 10, Steveston to Deas Island; plot 11, Deas Island to Annacis Island.
CHEMICAL SAMPLE SITES PF4D1205	11	1:12000	
OIL SPILL DATA PF2D0112	12	1:50000	South Arm.
COMMERCIAL FISHING INFO.			
MARSH AREAS PF1D0110	13	1:12000	Steveston to Deas Island. (South Arm)
PF2D0110	14	1:12000	Deas Island to Annacis Island. (South Arm)
FAUNAL GENERAL INFO.	N/A	Report only	
FAUNAL FISH INFORMATION PF1D0106	15	1:12000	Steveston to Deas Island. (South Arm)
PF2D0106	16	1:12000	Deas Island to Annacis Island. (South Arm)
FISHSS1	17	1:25000	Roberts Bank.
FISHSS2	20	1:25000	Sturgeon Bank, North, Middle, South Arms to Kanaka Creek.
FAUNAL INVERTEBRATES INVSS1	21	1:25000	Roberts Bank, Boundary Bay, mouth of South Arm.
PF1D0112	18	1:25000	Steveston to Tilbury Island (South Arm)
INVSS2	22	1:25000	Sturgeon Bank, North, Middle and South Arm to Barnston Island.
FAUNAL WATERFOWL INFO. PF2D1118	19	1:50000	South Arm.
VEGETATION ZONES Plot only MWV1	23	1:50000	Roberts, Sturgeon Banks, Boundary Bay, River Arms

Step 3.

Inspect the map and locate the Tilbury area, (Figure 3). Each area of marsh will be marked in red and have a 5 digit reference (polygon) number.

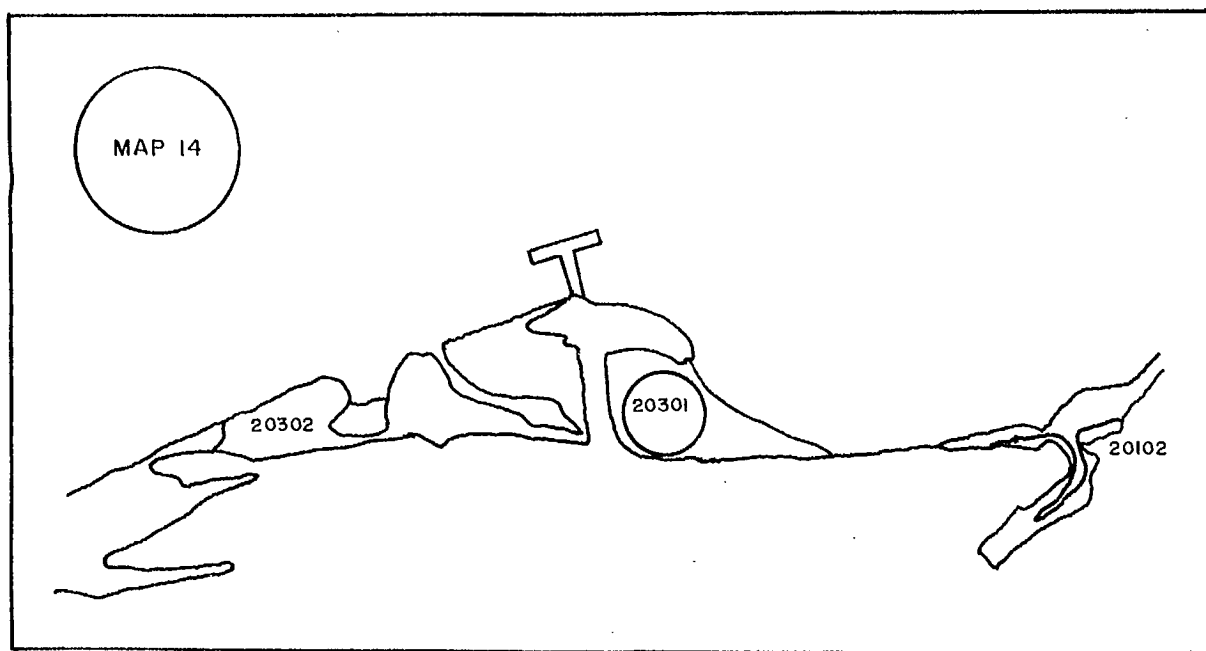


FIGURE 3: EXCERPT FROM F.R.I. MAP 14

Step 4.

Record the map reference number(s)
e.g. 20301.

Step 5.

Turn to the beginning of the marsh section in the reference volume where a Cross-reference Index (Figure 4) lists the Map Reference Number, F.R.I. File Number and the Page Number where this information is located.

FRASER RIVER INVENTORY: MAIN ARM. MARSH COMMUNITIES		
CROSS INDEX.		
MAP REFERENCE NO.	FRI FILE NO.	REPORT PAGE NO.
20204	422	40
20205	423	41
20301	424	41
20302	425	42

The diagram shows two horizontal arrows. The first arrow points from the circled number 20301 in the 'MAP REFERENCE NO.' column to the circled number 424 in the 'FRI FILE NO.' column. The second arrow points from the circled number 424 in the 'FRI FILE NO.' column to the circled number 41 in the 'REPORT PAGE NO.' column.

FIGURE 4: EXCERPT FROM THE MARSH REPORT CROSS INDEX

Step 6. Turn to the appropriate page (page 41) [Figure 5] and locate the applicable information which corresponds to the File and Map Reference Numbers.

Page 41

FRI FILE NUMBER424

*GENERAL LOCATION IS MAIN ARM GRAVESEND REACH DELTA
*FRI MAP REFERENCE NUMBER 20301

*MARSH
GENERAL DISTRIBUTION PATTERN: UNIFORM

*SAMPLE METHOD: VISUAL ASSESSMENT
*DATE : 76/09/01
*SAMPLED BY : M. WAYNE & J. MORRISON, H.P.D.
FISHERIES & MARINE SERVICE

*COMPOSITION :	*GENUS:	*COMMON NAME:	ABUNDANCE:
	SCIRPUS VALIDUS	SOFTSTEM BULRUSH	DOMINANT
	EQUISETUM SP.	HORSETAIL	SPORADIC

FIGURE 5: EXCERPT OF THE MARSH REPORT (PAGE 41)

4.2 Reproduction of Existing F.R.I. Reports and Maps:

Storage files containing the information for the F.R.I. reports and maps are being stored at the Fisheries and Oceans' computer centre in Patricia Bay, Vancouver Island. In order to obtain copies requests must be forwarded to the Computer Services Division identifying the specific file number, name and tape containing the information. The F.R.I. map and report tape storage files and numbers are contained in Table 2.

TABLE 2: FRI REPORT AND MAP COMPUTER STORAGE INDEX

<u>PLOT NUMBER & NAME</u>	<u>FILE #</u>	<u>FILE NAME</u>	<u>STORAGE TAPE</u>
#1, #6 Overview Plot of the Study Area	24	FRI*PF1D1117	U00288 (FS06)
#2 Water and Legal Lots (Ladner)	75	FRI*PF5D1205	U00294
#3 Water and Legal Lots (Steveston to Deas Island)	76	FRI*PF6D1205	U00294
#4 Water and Legal Lots (Tilbury Is. to Annacis Is.)	77	FRI*PF7D1205	U00294
#5 Water and Legal Lots (Annacis Is. to Trifurcation)	78	FRI*PF8D1205	U00294
#7 Referrals and Developments (South Arm, Banks, Boundary Bay)	80	FRI*PF10D1205	U00294
#8 Flood Control Structures (South Arm)	79	FRI*PF9D1205	U00294
#9 Dredge Sites (South Arm)	93	FRI*PF3D1118	U00288 (FS06)
#10 Pollution Sources and Chemical Sampling Sites (Steveston to Deas Is.)	73	FRI*PF3D1205	U00294
#11 Pollution Sources and Chemical Sampling Sites (Deas Is. to Annacis Is.)	74	FRI*PF4D1205	U00294
#12 Steveston Harbour Oil Spill & Commercial Fishing Drift Areas	69	FRI*PF2D0112	U00352
#13 Marsh Areas (Steveston to Deas Island)	34	FRI*PF1D0110	U00352
#14 Marsh Areas (Deas Is. to Annacis Is.)	35	FRI*PF2D0110	U00352
#15 Fish Sampling Sites (Steveston to Deas Is.)	103	FRI*PF1D0106	U00294
#16 Fish Sampling Sites (Deas Is. to Annacis Is.)	104	FRI*PF2D0106	U00294
#17 Fish Sampling Sites (Roberts Bank)	19	FRI*FISHSSPLOT1	U00666 (FS14)
#18 Invertebrate Sampling Sites (Steveston to Tilbury Is.)	68	FRI*PF1D0112	U00352
#19 Waterfowl Sampling Sites (South Arm)	92	FRI*PF2D118	U00288 (FS06)

TABLE 2 (Continued)

- 13 -

<u>PLOT NUMBER & NAME</u>	<u>FILE #</u>	<u>FILE NAME</u>	<u>STORAGE TAPE</u>
#20 Fish Sampling Sites (Sturgeon Bk., North, Middle Arms)	20	FRI*FISHSSPLOT 2	U00666 (FS14)
#21 Invertebrate Sampling Sites (Roberts Bk., Boundary Bay)	25	FRI*INVSSPLOT 1	U00666 (FS14)
#22 Invertebrate Sampling Sites (Sturgeon Bk., North, Middle Arms)	26	FRI*INVSSPLOT 2	U00666 (FS14)
#23 Vegetation Zones (River Arms, Banks, Boundary Bay)	14	FRI*MWVE1	U00374 (FS11)
<u>REPORT NAME</u>	<u>FILE #</u>	<u>FILE NAME</u>	<u>STORAGE TAPE</u>
Legal Lots (South Arm)	119	FRI*RP01D1121	U00288 (FS06)
Water Lots (South Arm)	120	FRI*RP02D1121	U00288 (FS06)
Referrals & Development (South Arm, Banks, Boundary Bay)	132	FRI*RP01D1123	U00288 (FS06)
Flood Control Structures (South Arm)	46	FRI*RP01D0111	U00352
Dredge Site Information (South Arm)	47	FRI*RP02D0111	U00352
Pollution Sources (South Arm)	40	FRI*RP01D0109	U00352
Chemical Sampling Site Information (South Arm)	43	FRI*RP02D1124	U00294
Steveston Harbour Oil Spill Information	42	FRI*RP03D0109	U00352
Commercial Fishing Information (South Arm)	75	FRI*RP01D0112	U00352
Marsh Information (South Arm)	76	FRI*RP02D1107	U00352
Faunal General Information (South Arm)	43	FRI*RP04D0109	U00352
Fish Sampling Data (South Arm)	42	FRI*RP03D1124	U00294
Fish Sampling Data (Banks, North, Middle Arms)	99	FRI*FFIREPT	U00881
Fish Cross Index for Banks, North & Middle Arms		XU.A9050.BS. SORTX001	Block Bros. #FF1871 Label 2

TABLE 2 (Continued)

<u>REPORT NAME</u>	<u>FILE #</u>	<u>FILE NAME</u>	<u>STORAGE TAPE</u>
Invertebrate Sampling Data (Steveston to Tilbury Is.)	41	FRI*RP02D0109	U00352
Invertebrate Sampling Sites (Banks, North, Middle Arms)	3	S2KPOS#INVRREPT	U00870
Invertebrate Cross-Index for Banks, North and Middle Arms		XU.A9050.BS. SORIX002	Block Bros. #FF1871 Label 3
Waterfowl Sampling Data (South Arm)	77	FRI*RP03D0111	U00352

5.0 DISCUSSION OF SYSTEM DESIGN:

For those persons or agencies considering initiation of a computerized data base/resource information inventory system, it is of value to discuss the advantages and disadvantages of the system developed for F.R.I.

ADVANTAGES

- the program structure permits ready incorporation of additional data, information for new geographic areas, and information of totally new information categories.
- in an on-line system, immediate information retrieval is available via a remote terminal, requests may be formulated in an English language format, and information requested reflects the user's area of interest and is not limited by an established set of retrieval inquiries.
- information may be requested by topic or geographic area (e.g. salmon sampling sites in Ladner Marsh).
- graphic information is presented as points, lines or polygons, not limited to a grid designation.
- mapping limits/scales and type of information are established by the user.

DISADVANTAGES

- initial information loading is labour intensive (common to any large scale data base).
- updating of variable or changing information is difficult, further data base development focused on static information or data only.
- development is costly, a satisfactory return on development costs is only realized through long term application of the system.

6.0 SUMMARY

The Habitat Protection Division has compiled a comprehensive resource data base on the Lower Fraser River estuary/delta. A reference set of computer maps and data reports reflects basic overview and site-specific information of resource and foreshore uses.

The master set of F.R.I. reports is maintained by the Habitat Protection Division, Resource Services Branch, Pacific Region, and is available for review by the public and other agencies.

APPENDIX I

Report Excerpts of:

1. Fauna
2. Foreshore Vegetation
3. Commercial Fishing
4. Land Use
5. Water Lots
6. Effluent Outfall Information
7. Chemical Sampling Locations
8. Development Sites
9. Dredging
10. Flood Control Structures
11. Steveston Oil Spill Data

REPORT EXCERPTS

1. FAUNA:

i. FISH

.....
 FRI FILE NUMBER 1308

*GENERAL LOCATION IS	MAIN ARM	DELTA	BARBER ISLAND	ISLAND GROUP
*REPORT CODE IS	AIR			
*FRI MAP REFERENCE NUMBER	27429			

*FAUNAL FISH INFORMATION

*AGENCY : HABITAT PROTECTION DIVISION CONTACT B. HILLABY
 *REPORT : FISHERIES RESOURCES AND FOOD WEB COMPONENTS OF THE FR. ESTUARY
 *SITE CODE: B S32

10 SAMPLES FROM 730328 to 730802

*METHODS, GEAR & COMMENTS

BEACH SEINE SALMON CAUGHT APR 11 TO JUL 4

*FAUNAL SPECIES INFORMATION

ONCORHYNCHUS	TSHAWYTSCHA	CHINOOK SALMON	SALMON	JUVENILE
CATCH = 82	APR 11(17), APR 25(30), MAY 9(22), MAY 24(7),	38 MM to 68 MM		
HABITAT USE IS FEEDING 11%	ECHINOIDEA, 33%	CHELONETHIDA, 44%	INSECT LARVAE	
ONCORHYNCHUS	KETA	CHUM SALMON	SALMON	JUVENILE
CATCH = 69	APR 11(26), APR 25(34), MAY 9(7),	28 MM TO 46 MM		
HABITAT USE IS FEEDING 89%	HARPACTICOID			
COTTUS	ASPER	PRICKLY SCULPIN	COTTID	
CATCH = 60				
HABITAT USE IS FEEDING 13%	CHIRONOMID PUPAE	67%	CHIRONOMID LARVAE	
LEPTOCOTTUS	ARMATUS	STAGHORN SCULPIN	COTTID	
CATCH = 17				
GASTEROSTEUS	ACULEATUS	THREE SPINE STICKLEBACK	STICKLEBACK	
CATCH = 18				
HABITAT USE IS FEEDING 58%	HARPACTICOID 16%	CHIRONOMID LARVAE		
PLATICHTHYS	STELLATUS	STARRY FLOUNDER	FLOUNDERS	
CATCH 68				

.....

ii. INVERTEBRATES

FRI FILE NUMBER 1584

*GENERAL LOCATION IS MAIN ARM SEA REACH DELTA WESTHAM ISLAND ISLAND GROUP
*REPORT CODE IS PSO
*FRI MAP REFERENCE NUMBER 27332

*FAUNAL INVERTEBRATES

*AGENCY : PACIFIC ENVIRONMENT INSTITUTE CONTACT C.D. LEVINGS & B.D. CHANG
*REPORT : PRELIMINARY STUDY OF INFLUENCE OF CURRENT VELOCITIES ON BENTHOS
*SITE CODE: S9

DRIFT SAMPLE

*METHODS, GEAR & COMMENTS

NYLON NET BAGS, 200-500 GM FUCUS, 12-15 DAYS, SECOND HIGHEST ABUNDANCE NUMBERS

*FAUNAL SPECIES INFORMATION

COROPHIUM	SPINI	GAMMARIDS	AMPHIPODS	1415/.01 GM.	98% TOTAL
UNIDENTIFIED		CHIRONOMID	DIPTERANS	ABUNDANCE	24/.01GM

iii. WATERFOWL

FRI FILE NUMBER 1032

*GENERAL LOCATION IS MAIN ARM DELTA ANNACIS ISLAND PURFLEET PT.
*REPORT CODE IS MBU
*FRI MAP REFERENCE NUMBER 5008

*FAUNAL WATERFOWL

*AGENCY : CANADIAN WILDLIFE SERVICE, CONTACT M. WILLIAMS, CWS (FOR E. TAYLOR)

*REPORT : MIGRATORY BIRD USE, S. ARM, FRASER RIVER, 1977

*SITE CODE: 13C

17 SURVEYS TOTAL

WATERFOWL (CONT'D.)

.....
*METHODS, GEAR & COMMENTS
VISUAL ASSESSMENT
DATA FOR NOV/76 TO MAR/77.
*FAUNAL SPECIES INFORMATION

DUCKS		
CATCH = 47	NO. SPECIES 3	
MERGANSERS		
CATCH = 12	NO. SPECIES 1	
HERONS		
CATCH = 9	NO. SPECIES 1	
GULLS		
CATCH = 2	NO. SPECIES 1	
RAPTORS		
CATCH = 1	NO. SPECIES 1	

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2. FORESHORE VEGETATION:

FRI FILE NUMBER 507

*GENERAL LOCATION IS MAIN ARM LADNER REACH RICHMOND ISLAND GROUP
*FRI MAP REFERENCE NUMBER 21607

*MARSH
GENERAL DISTRIBUTION PATTERN: RANDOM

*SAMPLE METHOD: VISUAL ASSESSMENT
*DATE : 76/09/01
*SAMPLED BY : M. WAYNE AND J. MORRISON, H.P.D. - FISHERIES & MARINE SERVICE

*COMPOSITION :	*GENUS:	*COMMON NAME:	*ABUNDANCE:
	CAREX SP. .	SEDGE	ABUNDANT
	SCIRPUS VALIDUS	SOFTSTEM BULRUSH	ABUNDANT
	TYPHA LATIFOLIA	CAT-TAIL	COMMON
	SIUM SUAVE	WATERPARSNIP	SPORADIC

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5. WATER LOTS:

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***FRI FILE NUMBER *** 1139

*GENERAL LOCATION IS MAIN ARM GRAVESEND REACH DELTA TILBURY ISLAND
*FRI MAP REFERENCE NUMBER 28902

*WATER LOT STATUS: LEASE
*FRHC FILE: PD-1 AREA : 5.23 AC
*CONTROLLER: DOW DOW CHEMICALS OF CANADA
*COMMENTS : EXP. 1983, OUTFALL PCB PE00041 01

*GENERAL USE PETROCHEMICAL INDUSTRY
*TYPE OF USE & COMMENTS BERTH
 GENERAL CONSISTING OF WATER INTAKE

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6. EFFLUENT OUTFALL INFORMATION:

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FRI FILE NUMBER 1789

*GENERAL LOCATION IS MAIN ARM WOODWARD REACH RICHMOND LULU ISLAND
*FRI MAP REFERENCE NUMBER H1611

*POLLUTION SOURCE
*PCB NUMBER : PL01975 01
*SOURCE : OUTFALL
*HPD TYPE & DESCRIPTION: EFFLUENT CANNERY EFFLUENT
*PCB TYPE & DESCRIPTION: FOOD PROCESSING FISH CANNERY
*CONTROLLER : DFP, DELTA FOOD PROCESSORS

SUBMERGED OUTFALL
SCREENS, AIR FLOTATION

BOD MAX 560 LBS/DAY
SS MAX 175 LBS/DAY
RESNF 105 MAX 3 LB 1000 LB
FLOW MAX 160000 I GAL/DAY
FLOW MAX AV 80000 I GAL/DAY
BOD MAX 9.8 LB 1000 LB

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8. DEVELOPMENT SITES:

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FRI FILE NUMBER 712

*GENERAL LOCATION IS MAIN ARM GRAVESEND REACH DELTA TILBURY ISLAND TILBURY SLOUGH
*FRI MAP REFERENCE NUMBER 24805

*REFERRALS AND DEVELOPMENTS

*FISHERIES FILE : 5902-121-50-2

*HPD FILE CODE : 77-09 REFERRAL SOURCE: DREDGING

*REFERRAL NAME : BCDC B.C. DEVELOPMENT CORP.

*PROPOSAL TYPE : FILL

DREDGING - LAND FILL FOR BARGE BERTHING FACILITY AT BURR LANDING. CENTENNIAL DREDGING ADVISED THAT SPOIL MATERIAL WOULD BE STOCKPILED AT SHERREL SPOIL SITE(77.04).

*AGENCY : HABITAT PROTECTION DIVISION, FISHERIES & MARINE SERVICE, CONTACT P. SOOKACHOFF.

*DATE RECEIVED: 76/06/01

*STATUS : APPROVED

*COMMENTS : CONDITIONAL APPROVAL PROVIDING SHERREL SPOIL SITE

*AGENCY : INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

*DATE RECEIVED: 76/07/01

*STATUS : APPROVED

*AGENCY : HABITAT PROTECTION DIVISION, FISHERIES & MARINE SERVICE, CONTACT SOOKACHOFF

*DATE RECEIVED: 77/07/01

*COMMENTS : ON-SITE INSPECTION REVEALED SHERREL SPOILSITE INCREASED BY AN AREA OF APPROXIMATELY 3.5 ACRES. SOME COVERING INTERTIDAL MARSH.

*COMMENTS : DISCUSSIONS BETWEEN BCDC, FMS, EMS, IWD, F&W RE INTERTIDAL FILL. REMOVAL OF SAND FROM FORESHORE REQUESTED.

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9. DREDGING:

FRI FILE NUMBER 734

*GENERAL LOCATION IS MAIN ARM CITY REACH DELTA ANNACIS ISLAND ST. MUNGO'S BEND

*FRI MAP REFERENCE NUMBER 37902

*DREDGE SITE

*GENERAL USE DREDGING
*TYPE OF USE COMMENTS ANNUAL DREDGE AREA

*DREDGING INFORMATION

*CHANNEL CLEARING AND MAINTENANCE VOLUME (M3): 229000 AREA (M2): 130000

*DREDGE UNIT: MOBILE SUCTION HOPPER DREDGE DPW 312

*CONTROLLER : DPW DEPT. PUBLIC WORKS

*COMMENT : FOR FAUNAL CATCH SEE C20 = 0756

10. FLOOD CONTROL STRUCTURES:

FRI FILE NUMBER 1853

*GENERAL LOCATION IS MAIN ARM ANNACIS CHANNEL NEW WESTMINSTER LULU ISLAND QUEENSBOROUGH

*FRI MPA REFERENCE NUMBER 42811

*FLOOD CONTROL STRUCTURE

*TYPE & DESCRIPTION PUMPSTATION, UNIT NO. 1, 1968, 50 HP., 12000 USGPM, AXIAL FLOW, VERTICAL SHAFT

*TYPE & DESCRIPTION FLOODBOXES, 1 of 48 IN. DIAM. CORRUGATED PIPE

11. STEVESTON OIL SPILL DATA:

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FRI FILE NUMBER 1769

*GENERAL LOCATION IS MAIN ARM CANNERY CHANNEL RICHMOND LULU ISLAND

*FRI MAP REFERENCE NUMBER 37510

*OIL

*SOURCE : OIL SPILL

*CONTROLLER: CANFISCO, CANADIAN FISHING COMPANY LTD.

SITE OF LEAK FROM ABANDONED 6 IN. FILLER PIPE FROM CANNERY CHANNEL TO OIL STORAGE TANKS. OIL FIRST SIGHTED 1900 HOURS AUG. 30/77. ESTIMATED 2/3 OF 20,000G BUNKER B OIL HOLDING TANK HAD ESCAPED, YIELDING 10-14,000G SPILLAGE. FURTHER ESTIMATED THAT UP TO 75% OF OIL WAS RETAINED IN CANFISCO AREA WITH RESTRAINING BOOMS. PORTION OF SLICK REACHED GEORGIA STRAIT BELIEVED TO FORM A SLICK LOCATED 5-10 MI. NE OF ACTIVE PASS. EVENING HIGH TIDE CARRIED A FEW ISOLATED PATCHES ONTO THE TOPS OF MARSH GRASSES ON STURGEON BANKS. BY 1200 HRS. AUG. 30/77 OIL SLICK OFF ACTIVE PASS HAD LARGELY EMULSIFIED AND SPREAD OVER MUCH LARGER AREA EXTENDING AT LEAST AS FAR SOUTH AS POINT ROBERTS.

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