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SEVENTH ANNUAL REPORT

**ON ACTIVITIES
UNDER THE
MARITIME MARSHLAND REHABILITATION ACT
FOR THE FISCAL YEAR ENDED
MARCH 31, 1956**

**CANADA DEPARTMENT OF AGRICULTURE
MARITIME MARSHLAND REHABILITATION ADMINISTRATION**

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SEVENTH ANNUAL REPORT ON ACTIVITIES UNDER THE MARITIME MARSHLAND REHABILITATION ACT - 1955/56

INTRODUCTION

The Maritime Marshland Rehabilitation Act was passed by the Parliament of Canada on June 30, 1948. The passing of this Act permitted agreements with the Provinces of Nova Scotia, New Brunswick and Prince Edward Island for the joint reclamation and development of tidal marshland. It also provided for the establishment of an organization to carry out Canada's responsibilities as defined by the Act.

The terms of the agreements define the responsibilities of Canada and the Provinces, and are briefly as follows:-

Canada provides the necessary engineering services for all works and undertakes the construction or reconstruction of protective works required to prevent tidal flooding (dykes, aboiteaux and breakwaters). Canada also maintains the protective works until this responsibility is assumed by the Province concerned.

The Provinces organize and negotiate agreements with groups of marshland owners before any work is commenced. They undertake the construction and maintenance of fresh water drainage ditches, arrange for the necessary rights-of-way and are responsible for the development and promotion of an effective land-use program.

The marshland areas of the Maritime Provinces are, for the most part, adjacent to rivers flowing into the Bay of Fundy, or lie along the banks of the upper reaches of the Bay itself. They are estimated to comprise some 95,000 acres, not all of which will be ultimately reclaimed. These particular lands or soils, high in potential fertility, have contributed greatly to the agricultural production and economy of the areas in which they are located. Some were originally reclaimed over 320 years ago and as development progressed they formed essential parts of many Bay of Fundy farms, supplementing adjacent upland holdings. Various factors have contributed to the need for national assistance in maintaining protection for these areas. Without assistance the farms concerned could not survive as productive enterprises because the upland fields alone would be inadequate.

Organization of the Maritime Marshland Rehabilitation

Administration

The Headquarters of the Administration was established during 1949 at Amherst, Nova Scotia. Work performed under the terms of the Act is directly controlled by a Director who is responsible to the Deputy Minister of Agriculture in Ottawa. The organization is as follows:-

- (a) Administration and Accounting Branch
- (b) Engineering Branch -
 - (1) Surveys and design
 - (2) Construction
 - (3) Workshop and Equipment

The Engineering Branch is directed by a Chief Engineer and is primarily composed of professional and technical personnel. District Offices are maintained at Moncton, New Brunswick and Windsor, Nova Scotia. Field construction offices, and sub-district offices are established and maintained according to the requirements of the work to be undertaken. A limited amount of construction equipment is maintained and operated to supplement that which is available from local construction firms.

In accordance with Section 8 of the Maritime Marshland Rehabilitation Act an Advisory Committee was established in 1949. The Act states "No work shall be undertaken in any Province.....unless (a) the work has been recommended by an Advisory Committee.....".

The Committee convened on two occasions during the past year to consider matters placed before it and to make recommendations respecting works to be undertaken to protect marsh areas, or projects, from tidal flooding. To date, the Committee has, apart from recommending the reclamation of specific areas, recommended that no works be carried out on seven areas in New Brunswick, and on portions of sixteen others (fourteen in Nova Scotia and two in New Brunswick).

Activities and Accomplishments to date.

No project or area is considered for reclamation unless it has been recommended by the Province concerned.

During the past year the number of areas recommended were as follows, the total to date being bracketed:

Nova Scotia	9 (99)
New Brunswick	4 (51)
Prince Edward	
Island	0 (1)
Total	13 (151)

The total acreages involved in the 151 projects, including that which has been reclaimed to date is as follows:-

	Protected	Salt or Unprotected	Total
Nova Scotia	36,416	9,835	46,251
New Brunswick	29,438	6,127	35,565
Prince Edward Island	275	----	275
	66,129	15,962	82,091

A complete list of projects, by number, showing county locations and acreages is contained in Appendix I.

The total acreage above is an increase of 6,921 acres over that reported a year ago. Much of the salt, or unprotected marsh, is adjacent to marsh presently dyked and can not be readily protected against salt water flooding. It is considered that the 82,070 acres of marsh form an integral part of 490,000 acres of adjacent farmland.

Conditions during the past year were favorable for continuing construction of required protective works. Major works were carried out on 37 areas or projects, and maintenance as required on 71 others. These works included the following (total to date in brackets):-

1. The construction of 51 (327) aboiteaux.
2. The elimination of 122 (370) aboiteaux. In such cases fewer numbers of new aboiteaux are required due to the re-design of fresh water drainage facilities.
3. The repair of 23 aboiteaux.
4. The construction of 29.3 (139.5) miles of dyke.
5. The strengthening of 3.8 (58.7) miles of existing dyke.
6. The installation or repair of 2.4 (15.5) miles of special dyke facing.
7. The installation of 4 (13) breakwaters for stream bank protection.
8. The placing of 0.635 (5.6) miles of special stream bank protection.
9. The seeding of 33.45 (137) miles of dyke right-of-way.

Construction work, on a contract basis, was carried out on sixteen projects. At the request of Nova Scotia drainage works were carried out on ten projects, the cost of which was borne by the Province. Engineering Services were provided to both Nova Scotia and New Brunswick in connection with drainage on several other projects.

During January 1956 severe fresh water flooding occurred on many projects, possibly the most critical being the Truro Dykeland Park marsh. Extremely heavy freshet conditions, as a result of thaws and rainfall, coupled with the existence of ice jams in tidal rivers, created unfavorable situations. Flows of fresh water overtopped many dykes flooding the areas normally protected against tide-water flooding. Accordingly, discharge sluices were not adequate to pass sufficient fresh water to permit immediate relief from flooding. As ice jams were released the fresh water subsided. Repairs to broken dykes were made. No aboiteaux were lost but some spillway damage resulted. Such situations are to be expected when run-off conditions are unfavorable and ice jams have developed. Consideration is being given to methods of providing more immediate relief from flooding of marsh areas after such adverse conditions, as described above, have occurred.

The Maritime Marshland Rehabilitation Administration continued to co-operate with the Experimental Farms Service with respect to the replacement and repair of marsh protective structures on farm property at Nappan, Nova Scotia. M.M.R.A. Drainage Engineers and Officials of the Nappan Experimental Farm continued investigations of drainage systems and studies of the relationship between soil moisture, temperature, water table elevation and crop yields on marshland.

In addition to undertaking the construction of standard dykes and aboiteaux, and those works involved for the Special Projects mentioned separately, certain works requiring special investigation, design and supervision, were undertaken as follows:-

- (a) Development of techniques for establishing vegetation, under adverse conditions, on exposed sections of dykes where it is believed cover of this type would be adequate protection.
- (b) Placing of rock for protection to some extremely exposed sections of dyke.
- (c) Placing of rock as a means of stream bank protection to prevent tidal streams from undercutting dyke bases.

- (d) Repair of aboiteaux on the Chegoggin Marsh, Yarmouth County, Nova Scotia, and on the Coles Island Marsh, Westmorland County, New Brunswick, the latter in co-operation with the Canadian National Railways. In each case worn out structures were strengthened and reconditioned.
- (e) Construction of a rock fill aboiteau on the Centre Burlington Marsh, Hants County, Nova Scotia. Foundation conditions were favorable and this type of material could be used to advantage in lieu of the conventional brush and earth fill.

SPECIAL PROJECTS

The Isgonish Project.

During 1954 a cost-share arrangement was approved by the Government of Canada and the Province of Nova Scotia for the construction of a combined bridge-aboiteau across the Isgonish River, Colchester County, Nova Scotia. Construction was completed during the current year, allowing Trans-Canada Highway traffic to pass over the structure in early September.

This combined effort eliminated the need for a new highway bridge, and with a short section of dyke, protects 475 acres of marshland. Thirty per cent of this area was not protected against flooding by tide water, and dykes and aboiteaux protecting the balance were in such poor condition little development or production could take place. Structures of this type are expected to have a low maintenance cost once the discharge channels have become stabilized. Also, as in the case of this project, it is usual that fresh-water drainage can be more effectively carried out.

The Dorchester Project. (Palmers Creek)

Preliminary construction of a large rock fill and concrete sluice aboiteau for this section of the Dorchester Marsh, Westmorland County, New Brunswick, was commenced the fall of 1953. The erection of this structure, with complimentary running dyke and smaller aboiteaux protects 1,760 acres of marshland in this area. This, like other larger schemes, is a follow up of the principle of constructing aboiteaux as near to the mouths of tidal streams as practicable. In this instance the need for constructing or reconstructing approximately 6,000 feet of dyke and five new aboiteaux is eliminated. Here again maintenance costs are expected to be a minimum and an additional 320 acres of new land, which could not otherwise be utilized, were reclaimed.

Delays in the completion of the structure were encountered primarily because qualified staff could not be made available for the supervision of design and construction. However, the concrete sluice, installed in 1954, and the steel gates were made operative. Closure of the main rock fill was completed in March. It is expected that final waterproofing of the fill, and the construction of connecting dyke and spillway facilities, will be completed during 1956.

The Shepody River Project.

In the fall of 1953 a contract was awarded for the construction of a large aboiteau on the Shepody River, Albert County, New Brunswick. The structure, when completed is to consist of a rock fill dam and fresh water discharge facilities with control gates. In addition to this large aboiteau the work on this project included the rebuilding of approximately three miles of

dyke and the installation of three new aboiteaux (completed prior to 1953) and the repair of two others. The area of marshland involved is approximately 5,500 acres a portion of which is already protected.

As mentioned previously the purpose of the large structure is to eliminate the need of replacing many miles of dyke and dozens of aboiteaux; to reclaim an additional 1250 acres of potentially fertile land which could not otherwise be protected against flooding of tide water; to make it possible to provide adequate fresh-water drainage facilities; and to provide permanency to the program of protection at as low a maintenance cost as possible.

At the close of the 1955/56 fiscal year construction on the main structure was advanced to the point where all land was free of tide water flooding and the structure itself was in full operation.

Construction work during the past year consisted of the completion of the permanent discharge facilities including the installation of vertical lift gates; the completion of temporary by pass facilities to enable sufficient diversion of the tidal river (rise and fall of 38.5 feet to 40.0 feet) in order that closure of the main rock fill could be undertaken; the continuation and satisfactory completion of closure of the fill; and satisfactory closure of the temporary by pass facilities.

At the end of the current year there remained to be completed the following; increasing of main fills to full cross section after settlement, including the necessary rip-rap; waterproofing, to a degree, of the main fills; completion of fresh water discharge facilities; rebuilding much of the three miles of dyke; rockfacing the dyke to provide satisfactory protection against wave action; the repair of two small aboiteaux; and the general clean up of right-of-ways and job sites.

The Tantramar River Project. (No change during current year.)

This project consists of a proposal to erect a dam across the Tantramar River to protect large marsh areas from tide water flooding. Fresh water discharge sluices would be included in the design of the dam. The construction of such a large dam near the mouth of the River would eliminate the need of constructing new dykes or reconstructing existing dykes and numerous aboiteaux.

Definite recommendations have not been submitted to the Government of Canada, pending the preparation of plans and the successful completion of the Shepody River Dam.

The Annapolis River Project. (No change during current year.)

A complete study of this Project, which was an investigation to determine the feasibility of erecting a dam across the Annapolis River, has been made. Such a structure, complete with adequate fresh-water discharge facilities, would protect approximately 4300 acres of marshland and could be modified to serve as a highway crossing. The purpose of such a structure, insofar as protection to the marshland is concerned, would be similar to that of the Shepody River Dam or a dam across the Tantramar River.

APPENDIX I

PROJECTS AS OF MARCH 31, 1956

Note:- Acreages are only shown for Bodies incorporated by the Provinces.

Acreages are based on information compiled as at 31 March 1956.

Many of the salt marsh acreages indicated lie out side dykes and cannot be reclaimed.

- (x) Portion of area out to sea some of which it is possible to reclaim.
- (o) Complete area out to sea some of which it is possible to reclaim.
- (1) Includes dyke right-of-way, creeks and roads, and soils of class 4 quality.

Project No.	Name of Marsh	Location	(1) Protected Marsh	Acreage Salt or unprotecte Marsh
<u>NOVA SCOTIA</u>				
N. S. 1	Comeau	Anna. Co.	288	22
N. S. 2	Windsor Forks	Hants Co.	465	41
N. S. 3	Falmouth Great Dyke	Hants Co.	974	41
N. S. 4	Queen Anne	Anna. Co.	477	70
N. S. 5	Dugau	Anna. Co.	177	25
N. S. 6	Saulnierville	Digby Co.	73	
N. S. 7	Annapolis River Survey	Anna. Co.		
N. S. 8	Grand Pre	Kings Co.	2533	176
N. S. 9	Woodworth	Anna. Co.	203	68
N. S. 10	Upper Belleisle	Anna. Co.	249	17
N. S. 11	Truro Dykeland Park	Col. Co.	764	25
N. S. 12	Victoria Diamond Jubilee	Col. Co.	527	75
N. S. 13	Dentiballis	Anna. Co.	349	62
N. S. 14	Elderkin (x)	Hants Co.	172	104
N. S. 15	Isgonish	Col. Co.	475	1
N. S. 16	Castle Frederick	Hants Co.	142	22
N. S. 17	Falmouth Village	Hants Co.	87	20
N. S. 18	Ryerson	Anna. Co.	78	14
N. S. 19	Bridgetown (o)	Anna. Co.		60
	Province has requested no action).			
N. S. 20	Advocate	Cumb. Co.	433	125
N. S. 21	Upper Nappan	Cumb. Co.	462	30
N. S. 22	Gaspereau River Survey	Kings Co.		
N. S. 23	Masstown (x)	Col. Co.	496	795
N. S. 24	Noel Shore (x)	Hants Co.	87	273
N. S. 25	Maitland (Province (x) has requested no action)	Hants Co.	34	
N. S. 26	Stirling Brook (o)	Hants Co.	--	99
N. S. 27	Newport Town	Hants Co.	326	80
N. S. 28	Scott's Bay (o)	Kings Co.	--	71
N. S. 29	Pre Rond	Anna. Co.	154	23
N. S. 30	Allan River (x)	Anna. Co.	123	246

Project No.	Name of Marsh	Location	(1) Protected Marsh	Acreage Salt or unprotected Marsh
N. S. 31	Fox Bow	Anna. Co.	303	13
N. S. 32	Mount Anne	Anna. Co.	162	16
N. S. 33	Windermere	Anna. Co.	163	9
N. S. 34	Moschelle	Anna. Co.	68	9
N. S. 35	Ricketson	Anna. Co.	60	5
N. S. 36	Rosette	Anna. Co.	42	6
N. S. 37	Walker	Anna. Co.	63	6
N. S. 38	St. Croix (x)	Hants Co.	220	48
N. S. 39	Round	Col. Co.	84	25
N. S. 40	Fort Belcher	Col. Co.	181	46
N. S. 41	Habitant	Kings Co.	677	--
N. S. 42	Amherst Point	Cumb. Co.	2205	346
N. S. 43	Annapolis Royal Town	Anna. Co.	84	21
N. S. 44	Converse	Cumb. Co.	773	76
N. S. 45	Barronsfield	Cumb. Co.	234	26
N. S. 46	River Hebert (x)	Cumb. Co.	1065	150
N. S. 47	Selmah	Hants Co.	171	12
N. S. 48	Centre Burlington	Hants Co.	143	80
N. S. 49	Scotch Village	Hants Co.	87	3
N. S. 50	Herbert River	Hants Co.	59	10
N. S. 51	Morse	Anna. Co.	61	3
N. S. 52	Rossway (o)	Digby Co.	--	--
N. S. 53	John Lusby (x)	Cumb. Co.	776	1247
N. S. 54	Minudie	Cumb. Co.	2528	452
N. S. 55	Seaman	Cumb. Co.	425	20
N. S. 56	Wellington	Kings Co.	3103	25
N. S. 57	New Minas	Kings Co.	276	79
N. S. 58	Granville Centre (x)	Anna. Co.	135	68
N. S. 59	Brown Salt Pond	Yar. Co.	277	--
N. S. 60	Morse Bishop	Anna. Co.	83	7
N. S. 61	Kennetcook	Hants Co.	164	23
N. S. 62	McKay	Cumb. Co.	152	1
N. S. 63	Maccan (x)	Cumb. Co.	141	77
N. S. 64	Glenholme (x)	Col. Co.	240	171
N. S. 65	Bishop Beckwith (x)	Kings Co.	549	154
N. S. 66	Flemming Marsh Body (o)	Col. Co.	--	304
N. S. 67	Onslow-North River	Col. Co.	474	70
N. S. 68	Tregothic	Hants Co.	539	23
N. S. 69	Martock	Hants Co.	1469	51
N. S. 70	Chegoggin	Yar. Co.	425	--
N. S. 71	Goose Bay	Yar. Co.	230	5
N. S. 72	Horton (x)	Kings Co.	237	229
N. S. 73	Mill	Anna. Co.	59	6
N. S. 74	Tupperville	Anna. Co.	199	15
N. S. 75	Armstrong	Hants Co.	52	4
N. S. 76	Farnham Dyke	Kings Co.	182	36
N. S. 77	Princeport	Col. Co.	43	9
N. S. 78	Athol	Cumb. Co.	116	32
N. S. 79	Chambers	Hants Co.	54	4
N. S. 80	Starr's Point	Kings Co.	289	294
N. S. 81	Lower Truro	Col. Co.	388	36
N. S. 82	Kentville	Kings Co.	67	11
N. S. 83	Messenger	Anna. Co.	127	8
N. S. 84	Bartlett's Beach (x)	Digby Co.	3	281

Project No.	Name of Marsh	Location	(1) Protected Marsh	Acreage Salt or unprotect Marsh
	(Province has requested no action)			
N.S. 85	Mantua-Poplar Grove (x)	Hants Co.	257	144
N.S. 86	Central Onslow	Col. Co.	296	26
N.S. 87	Chegnecto	Cumb. Co.	491	29
N.S. 88	Burlington (x)	Hants Co.	48	98
N.S. 89	Cogmagun (o)	Hants Co.	--	400
N.S. 90	Old Barns (o)	Col. Co.	--	173
N.S. 91	Belcher Street (x)	Kings Co.	247	174
N.S. 92	Avonport (x)	Kings Co.	263	--
N.S. 93	Green Hill (x)	Hants Co.	28	60
N.S. 94	Mosherville (o)	Hants Co.	--	102
N.S. 95	Fort Lawrence-Amherst	Cumb. Co.	3400	--
N.S. 96	Shipley	Cumb. Co.	174	--
N.S. 97	Highland Village (o)	Col. Co.	--	190
N.S. 98	Stewiacke	Col. Co.	150	--
N.S. 99	Upper Burlington (o)	Hants Co.	--	52
N.S. 100	Wentworth	Hants Co.	143	--
N.S. 101	Pereaux	Kings Co.	64	--
N.S. 102	Chebogue River	Yar. Co.	--	1150
	TOTAL.....		36,416	9,835

PRINCE EDWARD ISLAND

P. E. I. 1	Johnston River	Queens Co.	275	--
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NEW BRUNSWICK

N.B. 1	Upper Dyke (included in N.B. 51)	Albert Co.		
N.B. 2	Germantown (included in N.B. 51)	Albert Co.		
N.B. 3	Tantramar West (x)	West Co.	2317	349
N.B. 4	Allison	West Co.	196	15
N.B. 5	Westcock	West. Co.	800	225
N.B. 6	Taylor Village	West. Co.	444	105
N.B. 7	Hopewell Hill (included in N.B. 51)	Albert Co.		
N.B. 8	Coyle Landry	West. Co.	264	49
N.B. 9	Harvey (included in N.B. 51)	Albert Co.		
N.B. 10	Shepody River Survey	Albert Co.		
N.B. 11	Belliveau Village	West. Co.	185	15
N.B. 12	Pre d'en Haut	West. Co.	117	23
N.B. 13	Dorchester	West. Co.	1716	61
N.B. 14	Lower Coverdale	Albert Co.	154	15
N.B. 15	Middle Coverdale	Albert Co.	31	22
N.B. 16	Dixon Island	West. Co.	315	85
N.B. 17	New Horton (o)	Albert Co.	--	836
N.B. 18	Fox Creek	West. Co.	96	13
N.B. 19	Beaumont	West. Co.	207	33
N.B. 20	Gautreau Village	West. Co.	190	40
N.B. 21	Memramcook West	West. Co.	1019	95
N.B. 22	Tantramar River Survey	West. Co.		
N.B. 23	Memramcook River Survey	West. Co.		

Project No.	Name of Marsh	Location	(1) Protected Marsh	Acreage Salt or Unprotected Marsh
N. B. 24	Aulac	West. Co.	1957	534
N. B. 25	Dock	West. Co.	52	4
N. B. 26	Dover	West. Co.	45	7
N. B. 27	College Bridge (x)	West. Co.	708	387
N. B. 28	Upper Coverdale	Albert Co.	45	6
N. B. 29	Log Lake	West. Co.	4240	60
N. B. 30	Calkins	Albert Co.	229	20
N. B. 31	Baie Verte (o)	West. Co.	--	483
N. B. 32	Salem (Province has requested no action) (o)	Albert Co.	--	65
N. B. 33	West Coverdale	Albert Co.	246	31
N. B. 34	Coverdale (o)	Albert Co.	--	59
N. B. 35	Waterside (o)	Albert Co.	--	648
N. B. 36	Boundary Creek	West. Co.	51	1
N. B. 37	Sackville (x)	West. Co.	501	549
N. B. 38	Rockland (o)	West. Co.	--	234
N. B. 39	Chance Harbour (o)	St. John Co.		
N. B. 40	Woodpoint (x)	West. Co.	43	133
N. B. 41	Turtle Creek (x)	Albert Co.	126	92
N. B. 42	Jones (Province has requested no action)	West. Co.	74	61
N. B. 43	Creek's	Albert Co.	99	--
N. B. 44	Coles Island	West. Co.	2365	34
N. B. 45	Chartersville	West. Co.	349	31
N. B. 46	Wilson	West. Co.	157	23
N. B. 47	Hillsboro	Albert Co.	955	82
N. B. 48	McAlmon (o)	Albert Co.	--	67
N. B. 49	La Coupe	West. Co.	1422	--
N. B. 50	Black River (o)	St. John Co.	--	31
N. B. 51	Shepody River Dam (Four Marsh Bodies and unincorporated acres).	Albert Co.	5576	299
N. B. 52	Little River (o)	St. John Co.	--	130
N. B. 53	Great Marsh	West Co.	1924	--
N. B. 54	Jones Creek (o)	West. Co.	--	66
N. B. 55	Missaguash	West. Co.	223	9
	TOTAL		29,438	6,127

TOTAL BY PROVINCES

	<u>Protected</u>	<u>Salt or Unprotected</u>	<u>Total</u>
Nova Scotia	36,416	9,835	46,251
New Brunswick	29,438	6,127	35,565
Prince Edward Island	275	--	275
	<u>66,129</u>	<u>15,962</u>	<u>82,091</u>

APPENDIX II

Expenditures - Fiscal Years:	<u>1949 - 1955</u>	<u>1955 - 1956</u>
Administration	\$ 286,926.50	\$ 39,477.74
Surveys and Engineering	1,047,467.33	121,901.78
Workshop and Construction		
Supervision	1,158,993.36	340,361.08

Construction and Maintenance of Projects, and Special Surveys:

Advocate Marsh	Nova Scotia	110,768.69	121.49
Allan River Marsh	" "	6,006.83	68.40
Amherst Point Marsh	" "	135,811.61	1,110.72
Annapolis Royal Town Marsh	" "	11,154.65	14,218.38
Annapolis River Survey	" "	27,049.60	-
Armstrong Marsh	" "	488.20	12,878.78
Athol Marsh	" "	71.35	16,153.94
Avonport Marsh	" "	-	5,680.70
Barronsfield Marsh	" "	57,994.62	6,967.16
Bartlett's Beach Marsh	" "	-	2,644.17
Belcher Street Marsh	" "	-	356.12
Bishop Beckwith Marsh	" "	57,252.89	69,437.17
Burlington Marsh	" "	-	312.85
Castle Frederick Marsh	" "	44,166.92	170.23
Central Onslow Marsh	" "	7,128.19	28,127.14
Centre Burlington Marsh	" "	509.32	31,499.68
Chambers Marsh	" "	14,585.92	402.19
Chegoggin Marsh	" "	5,628.00	24,998.03
Chignecto Marsh	" "	-	572.01
Comeau Marsh	" "	36,493.36	110.44
Converse Marsh	" "	124,995.89	459.55
Dentiballis Marsh	" "	80,579.21	6,643.83
Dugau Marsh	" "	23,992.38	79.63
Elderkin Marsh	" "	20,936.95	19,778.58
Falmouth Great Dyke Marsh	" "	104,624.96	3,858.30
Falmouth Village Marsh	" "	29,798.66	1,571.20
Farnham Dyke Marsh	" "	27,619.85	4,943.19
Fort Belcher Marsh	" "	35,757.74	2,462.54
Fox Bow Marsh	" "	16,330.19	370.83
Glenholme Marsh	" "	2,256.37	-
Grand Pre Marsh	" "	112,699.72	1,290.15
Granville Centre Marsh	" "	8,262.08	14,730.72
Greenhill Marsh	" "	-	353.61
Habitant Marsh	" "	12,415.84	-
Herbert River Marsh	" "	21,225.63	579.67
Horton Marsh	" "	2,003.08	150.25
Isgonish Marsh	" "	* 117,154.16	** 47,587.66
John Lusby Marsh	" "	94,530.85	4,148.51
Kennetcook Marsh	" "	44,748.46	398.20
Kentville Marsh	" "	61.05	521.00
Lower Truro Marsh	" "	46,591.68	2,283.10
Maccan Marsh	" "	8,345.29	19,277.33
Mantua-Poplar Grove Marsh	" "	3,682.01	738.35
Martock Marsh	" "	116,481.51	4,878.59
McKay Marsh	" "	16,463.98	172.53
Masstown Marsh	" "	37,075.27	25,343.61
Messenger Marsh	" "	770.30	315.65
Mill Marsh	" "	2,599.29	2,548.56

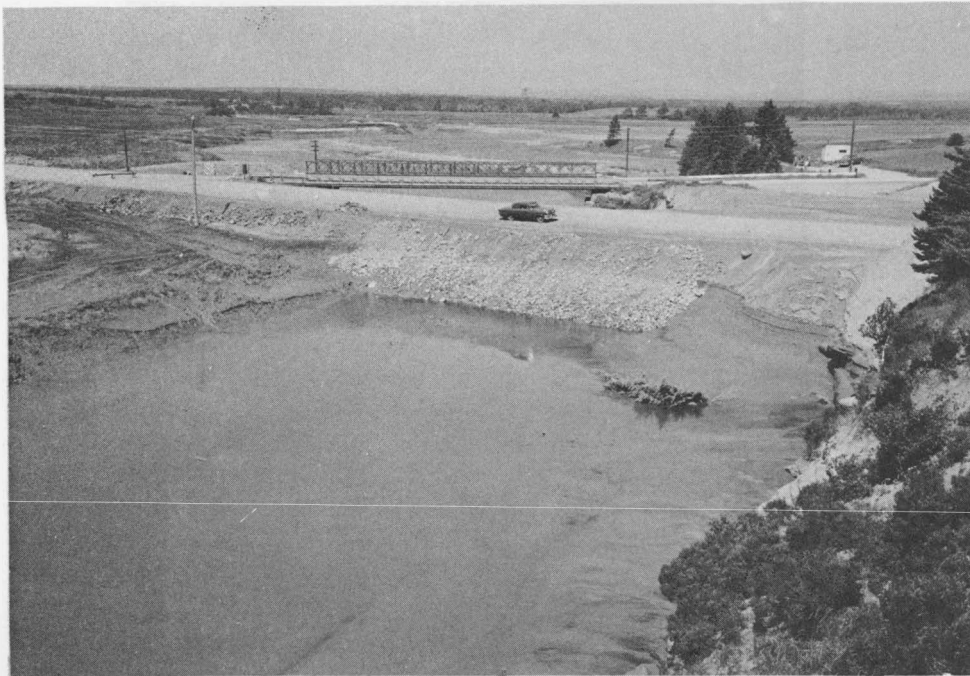
Minudie Marsh	Nova Scotia	\$ 96,617.55	\$ 18,213.75
Morse Marsh	" "	2,623.67	-
Morse Bishop Marsh	" "	846.27	151.32
Moschelle Marsh	" "	25,985.90	781.84
Mount Anne Marsh	" "	56,320.21	1,055.90
New Minas Marsh	" "	33,622.15	56,464.39
Newport Town Marsh	" "	45,900.79	-
Noel Shore Marsh	" "	2,852.17	20,355.46
Onslow North River Marsh	" "	39,631.32	18,291.33
Pre Rond Marsh	" "	6,568.71	438.80
Princeport Marsh	" "	8,863.16	28.20
Queen Anne Marsh	" "	150,170.36	7,952.93
Ricketson Marsh	" "	985.75	-
River Hebert Marsh	" "	160,725.52	59,016.50
Rosette Marsh	" "	324.29	832.06
Round Marsh	" "	14,644.02	15,533.25
Ryerson Marsh	" "	28,252.97	4,801.33
Saulnierville Marsh	" "	6,893.99	23.40
Scotch Village Marsh	" "	13,217.32	329.54
Seaman Marsh	" "	20,304.21	558.59
Selman Marsh	" "	25,726.14	19.05
Shipley Marsh	" "	-	679.97
St. Croix Marsh	" "	70,797.71	793.35
Starr's Point Marsh	" "	601.71	70,032.03
Tregothic Marsh	" "	37,546.11	1,320.28
Truro Dykeland Marsh	" "	92,486.01	2,997.19
Tupperville Marsh	" "	11,492.25	740.00
Upper Belleisle Marsh	" "	30,505.74	793.71
Upper Nappan Marsh	" "	44,677.17	7,523.23
Victoria Diamond Jubilee Marsh	" "	74,252.17	3,530.64
Walker Marsh	" "	2,142.61	337.90
Wellington Marsh	" "	24,336.01	141.41
Windermere Marsh	" "	3,120.96	41,298.21
Windsor Forks Marsh	" "	60,894.94	236.25
Woodworth Marsh	" "	19,155.09	1,866.62
Sub-total for Nova Scotia Projects		\$ 2,840,197.50	\$ 718,453.17

Allison Marsh	New Brunswick	18,525.06	65.00
Aulac Marsh	" "	179,554.06	52,182.03
Baie Verte Marsh	" "	923.03	-
Beaumont Marsh	" "	49,364.19	767.22
Belliveau Village Marsh	" "	21,693.61	62.64
Boundary Creek Marsh	" "	4,143.80	-
Calkins Marsh	" "	90,116.35	4,418.20
Chartersville Marsh	" "	45,325.60	801.73
Coles Island Marsh	" "	9,720.42	33,819.04
College Bridge Marsh	" "	45,109.48	439.94
Coverdale Marsh	" "	19.31	-
Coyle Landry Marsh	" "	37,829.77	2,510.55
Creek's Marsh	" "	9,428.56	260.67
Dixon Island Marsh	" "	60,583.94	887.37
Dock Marsh	" "	7,164.85	-
Dorchester Marsh	" "	151,553.45	65,236.26
Dover Marsh	" "	11,263.45	1,235.85
Fox Creek Marsh	" "	30,624.39	13.64
Great Marsh	" "	-	4,229.92

*Of this amount \$56,821.10 was refunded by the Province of Nova Scotia.

**In addition to this amount expenditures of \$46,745.42 were made, which amount was refunded by the Province of Nova Scotia.

Gautreau Village Marsh	"	New Brunswick	45,539.99	25,407.75
Germantown Marsh	"	"	11,909.61	-
Hillsboro Marsh	"	"	116,331.79	15,262.32
Hopewell Hill Marsh	"	"	72,406.13	-
Jones Marsh	"	"	4,803.31	-
Log Lake Marsh	"	"	19,855.41	16,573.49
Lower Coverdale Marsh	"	"	31,737.06	351.33
Memramcook West Marsh	"	"	157,288.37	7,104.36
Middle Coverdale Marsh	"	"	13,605.62	-
New Horton Marsh	"	"	1,008.95	-
Pre d'en Haut Marsh	"	"	26,314.94	4,476.67
Sackville Marsh	"	"	56,115.48	173.63
Shepody River Project	"	"	646,309.61	623,833.10
Shepody River Survey	"	"	26,334.47	-
Tantramar River Survey	"	"	23,201.48	-
Tantramar West Marsh	"	"	22,609.62	4,598.21
Taylor Village Marsh	"	"	75,593.55	217.31
Turtle Creek Marsh	"	"	11,895.99	9,258.12
Upper Coverdale Marsh	"	"	16,357.17	48.40
Upper Dyke Marsh	"	"	11,149.33	-
Westcock Marsh	"	"	126,186.06	10,654.30
West Coverdale Marsh	"	"	50,728.86	489.01
Wilson Marsh	"	"	27,705.86	14.85
Woodpoint Marsh	"	"	671.93	4.08
Sub-total for New Brunswick Projects			<u>2,368,680.91</u>	<u>885,396.99</u>
Johnston River Marsh		Prince Edward Island	19,712.52	-
Total Expenditure			<u>\$ 7,721,901.12</u>	<u>\$ 2,105,590.76</u>



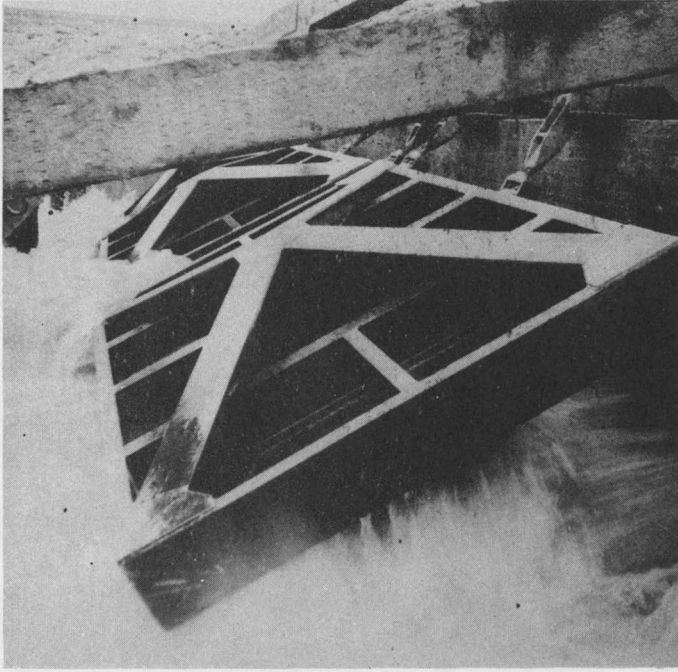
The Isgonish River crossing, Colchester Co., N.S. This combined structure, dams the river and prevents tidal flow proceeding up stream to flood the marsh; it also serves as a highway crossing replacing the bridge in the background, the latter to be removed. The fresh water outlet structure is to the left and is shown in the two following photographs. These structures were constructed by M.M.R.A., the cost being shared by Canada, and the Province of Nova Scotia. August 1955.

(Photo N.S. 15//190)



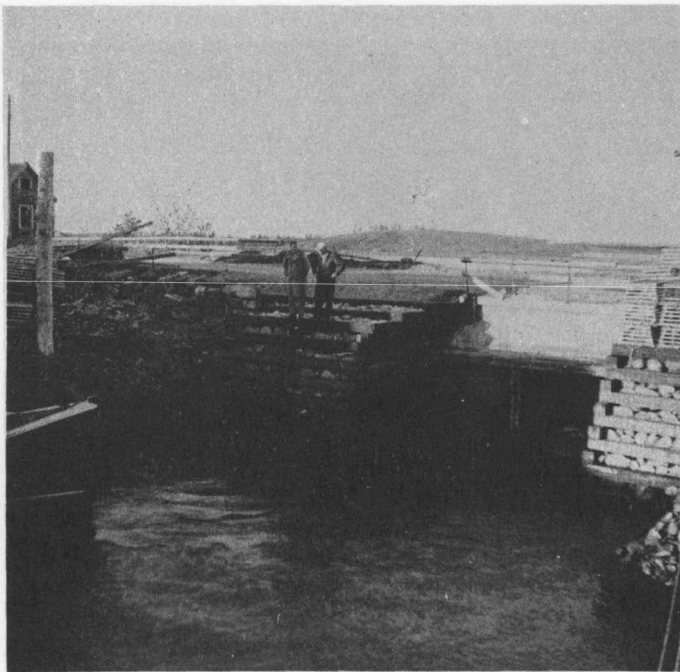
The down stream side of the fresh water control structure through which the Isgonish River has been diverted. The gates, to stop tidal flow, are being installed prior to the damming of the river itself. Trans-Canada Highway traffic will cross over this structure. June 1955.

(Photo N. S. 15//124)



Discharge of fresh water through the sluice which now permits highway traffic to cross the Isgonish River. Incoming tide closes the gates and fresh water is retained in the reservoir up stream to the structure. When the tide has receded the gates open as shown above. All land which is below the level of the highest tide, is now protected against tidal flooding, as a result of the erection of the structures illustrated in the three preceeding photographs. July 1955.

(Photo N. S. 15//215)



The reconstructed aboiteau at Chegoggin, Yarmouth Co., N.S. a short while before low tide. The old structure, concrete culvert type bridge and wooden gates, was in such a poor condition that tide water was permitted to pass and flood the area upstream. The base of the old structure was strengthened, asbestos bonded corrugated metal pipe inserted in the old culvert, concrete grout placed in the space between the two, and flap gates installed. Rock crib structures were placed to strengthen and protect the entire structure. An adequate spillway (not visible) was also constructed. Local highway traffic crosses over the aboiteau. September 1955.

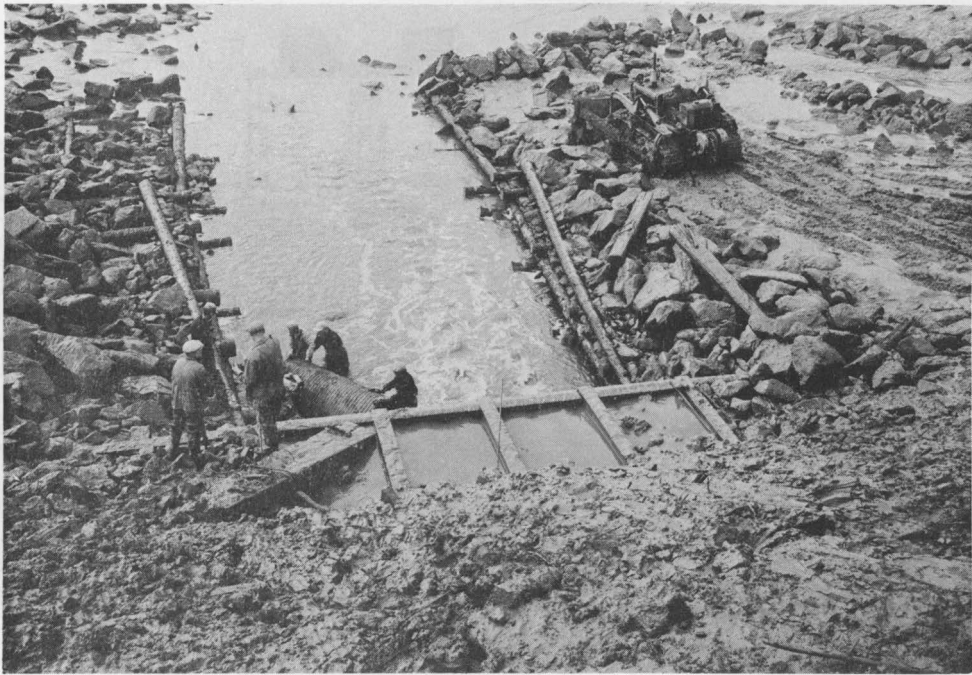
(Photo N.S. 70//15)



Closure about to be made in the rock fill dam on Palmer's Creek, Dorchester Project near Dorchester, Westmorland Co., N.B. This structure, in combination with the discharge sluice and dyke adjacent to it, does away with the need to reconstruct considerable dyke and several aboiteaux. Future maintenance costs will be reduced as a result and land which would not otherwise be reclaimed is made suitable for production. March 1956.
(Photo N.B. 13//41)

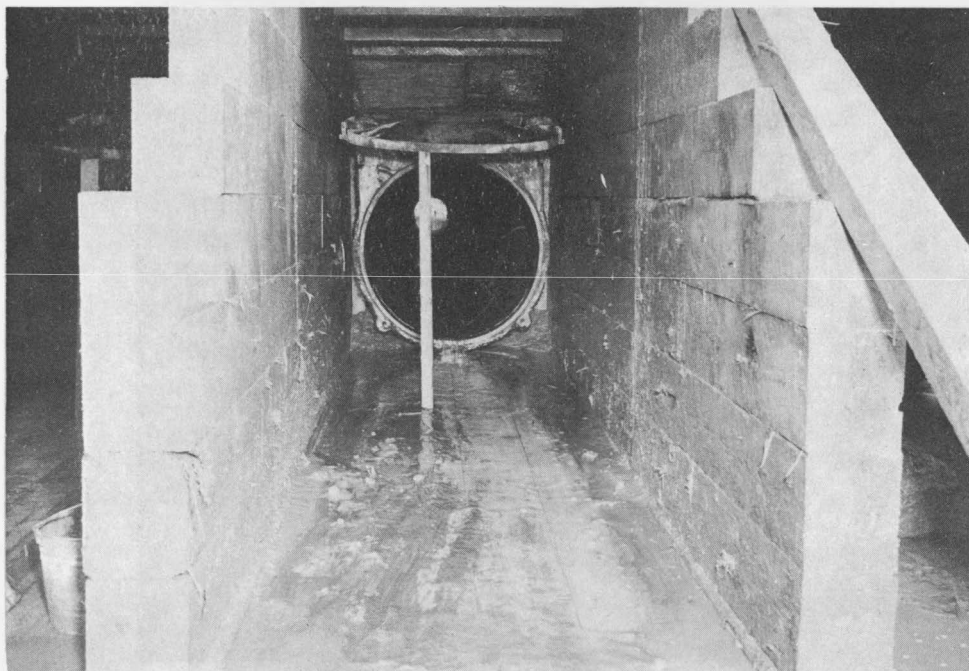


Steel gates discharging a heavy fresh water flow through the sluice at Palmer's Creek, Dorchester Project, after closure in the main fill has been completed. Fill, well above tide height, crosses the sluice to the left. Flow of fresh water ceases when incoming tide reaches the elevation of the fresh water in the reservoir upstream to the structure. March 1956.
(Photo N.B. 13//52)



Heavy repairs being made to the tidal side of an aboiteau on the Aulac River, N.B. The main line of the Canadian National Railway crosses this structure and the work was jointly undertaken to assure continued protection to the Coles Island Marsh. The repairs consisted of spillway and wingwall replacement, lining of the existing sluice with asbestos bonded corrugated metal pipe, and the installation of suitable flap gates. November 1955.

(Photo N. B. 44//10)



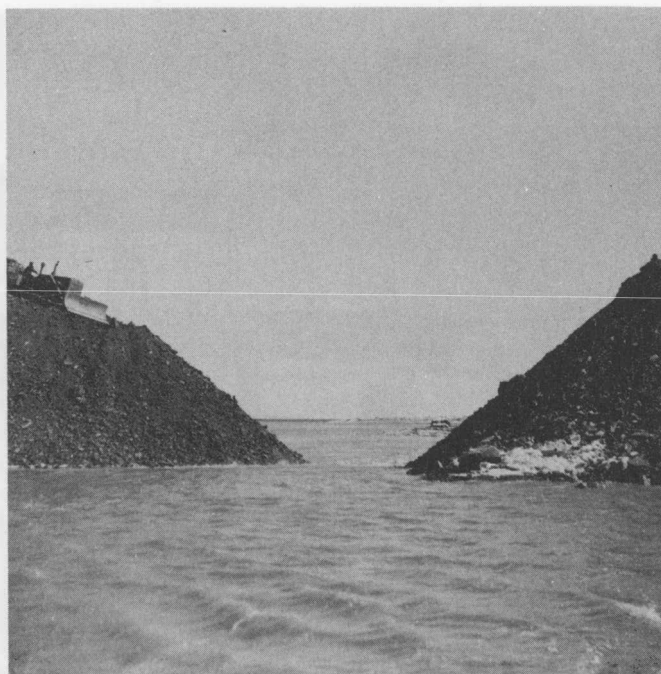
The down stream end of one section of the sluice under the railroad grade which forms a part of the protection required for the Coles Island Marsh. The flap gate is temporarily held open. November 1955.

(Photo N. B. 44//12)



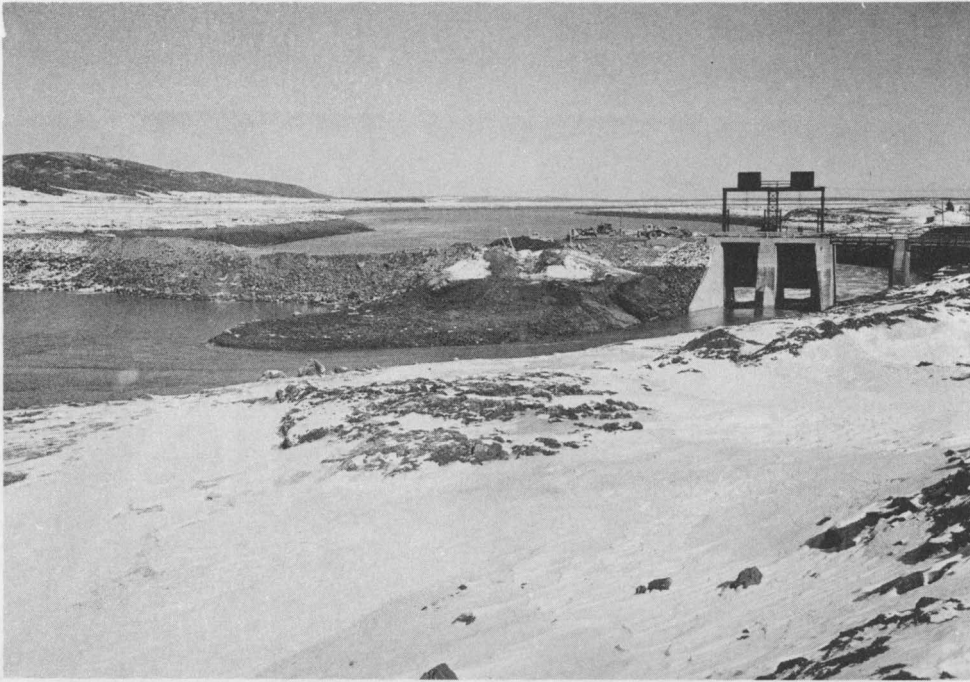
The permanent discharge gates on the left, with the temporary by-pass sluices on the right, during construction of the Shepody River Dam. The rock fill dam is to the left of the photo but closure had not yet been made pending the opening of the above by-pass facilities. When the coffer dams were removed the tidal river (rise and fall of 40 feet maximum) was partially by-passed through the above structure to permit closure of the rock fill. October 1955.

(Photo N.B. 51//337)



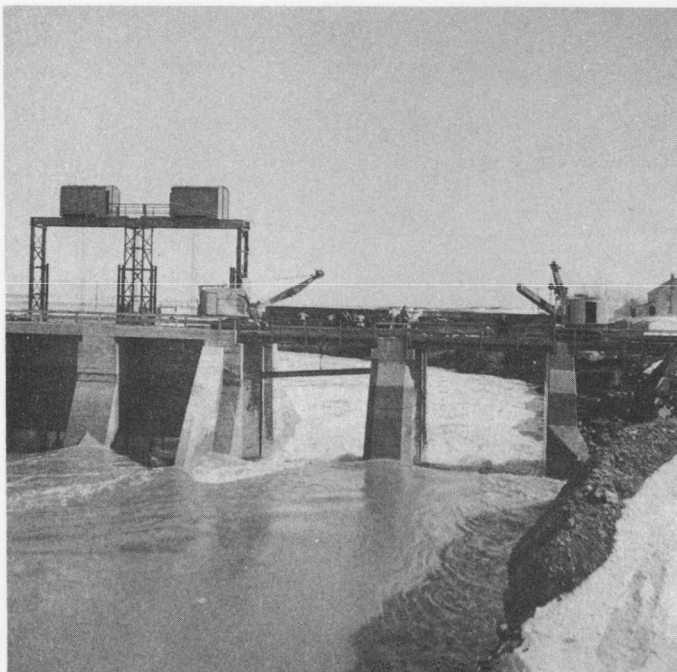
Closure about to be made in the rock fill of the Shepody River Dam. March 1956.

(Photo N.B. 51//459)



A view looking downstream, showing the rock fill dam shortly after closure was completed; on the right are the open discharge gates and by-pass sluices through which the tide was still able to flow. March 1956.

(Photo N.B. 51//479)



The upstream side of the discharge and by-pass facilities during a period of tide water out-flow, just as the first stop log was placed to shut off the by-pass. The high water mark may be noted on the concrete piers. This phase of construction occurred after closure was made in the main rock fill. March 1956.

(Photo N.B. 51//487)



Stop logs in place in the by-pass facilities required during the construction of the Shepody River Dam. Fill is being placed on both sides of the stop logs to completely close off this structure. The permanent gate facilities on the left control the outflow of fresh water and stop the flow of tide water which previously passed up stream. March 1956.

(Photo N.B. 51//503)