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INVESTIGATION OF PRINCE EDWARD ISLAND STREAMS
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INVESTIGATION OF PRINCE EDWARD ISLAND STREAMS
September 5-10, 1936.

In company of Messrs. James Catt and H.A. Lynch a survey was made of a number of Prince Edward Island streams for the purpose of selecting sites for building dams and constructing circular trout rearing ponds. At least one site was to be selected in each of the three counties. Temperature, oxygen content and pH value records were made, more particularly in the streams which were chose as possible sites, namely, Brooklyn (Kings Co.), Cardigan (Kings Co.), Milton-Gentner (Queens Co.), Dunk (Queens Co.) and Kane's (Prince Co.). Observations were also made upon the flora and fauna of the streams. The data upon the physical and chemical conditions of the water are presented in the accompanying table.

The Prince Edward Island streams are very largely spring fed. Thus it is to be expected that the levels noted during the investigation would be but slightly lower, if at all, during the drier summer season. A steady water supply would seem to be assured.

The temperature of the streams reflects the abundance of springs. Generally the recorded temperatures were rather low for the best trout growth (18-20°C.). This is more particularly the case with Brooklyn stream where temperatures of 10.8° and 11.0°C. were found (September 7 and 10). Summer temperatures would of course run higher. Also by damming the water would be warmed depending upon the period of retention in the pond, depth

of water, etc. In the case of Vesey's brook the effect of pond warming was noted. The surface of Hardy's mill pond had a temperature of 15.6°C. (11:00 A.M.). Over half a mile lower the temperature was 11.4°C. (9:40 A.M.), while below Thompson's pond it was up to 16.5°C. (11:30 A.M.). Again on Green's brook, below Myer's dam the temperature was 17.2°C., and about a mile above, 12.9°C. Although the temperature of certain of the streams might be somewhat low and thereby retard trout growth, this condition is decidedly favourable for keeping down mortality amongst the stock, noreso if fish are crowded. It is to be noted that Kane's river had a considerably higher temperature than found elsewhere (16.1° to 16.25°C. on September 8).

The dissolved oxygen content of the waters was favourable, being a little below or above the saturation point. The pH values are alkaline, but not unfavourably so.

The flora of the streams was quite rich in rooted aquatics. Potamogeton perfoliatus, Ranunculus trichophyllus and Myiophillum spicatum (?) were abundant, or common, in the streams investigated. The fauna is also considered rich. Mayfly and stonefly nymphs, caddis fly and simuliid larvae, and snails (*Lymnaea*, *Physa*, etc.) were abundant. A more detailed account of these forms will have to wait identification of the species involved.

At present the streams support a large population of small speckled trout, and in some cases young salmon are to be found. Certain reasons, among others, might be cited why the Island

streams are good trout waters: (1) a good flow of water throughout the year maintained by the numerous springs, (2) Moderate to low water temperatures which when low may retard growth but decrease mortality, (3) an abundant food supply, (4) favourable chemical conditions of the water, i.e. oxygen content, pH value, (5) plenty of suitable spawning areas. Certain of these characters make for good rearing ponds.

The water conditions in the streams on which sites for rearing ponds have been selected are on the whole favourable, except, in certain instances, the low temperature recorded, which would no doubt be higher in summer and raised by damming. In view of the results, however, it would seem desirable to ascertain both the yearly and diurnal fluctuations of the water temperature in these streams.

M. W. Smith,
Atlantic Biological Station,
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PRINCE EDWARD ISLAND WATERS, SEPTEMBER 1936.

Locality	Date	Time	Temperature		Oxygen content cc. per litre	T Sat.	pH value
			Air	Water			
Ing's brook, below mill pond, below spring.	Sept. 3	2:05 P.M.	19.5	16.3			
spring flowing into Ing's brook	3	2:20 "		8.0			
Ing's mill pond, surface	3	2:30 "		17.1			
Cardigan, main stream	19	3:40 "	17.5	13.7			
" " ,right branch	19	1:40 "		12.6	7.20	94.9	7.9
" " , left branch	19			11.7			
" " , left branch	19			11.6	7.14	92.5	7.8
" " , right branch	19			13.1			
" " , right branch	19			12.6	7.24	96.8	7.9
" about 100 yds. above road	19	3:05 "		12.5			
Cardigan, right branch at road	19	3:10 "		11.85			
Milton stream (Head of North river)							
" At Highway bridge	4	10:55 A.M.	15.7	10.2			
" Above junction with Sexton's stream	4	11:32 "		12.2			
" Surface of still water at junction with Sexton's stream	4	11:36 "		12.5			
" Above junction with Sexton's stream	10	4:55 P.M.	17.8	12.6	7.39	97.4	8.5
Sexton's stream (Head of North River) Above road	4	11:00 A.M.		11.7			
" Above junction with Milton stream	4	11:41 "		11.4			
"	10	4:59 P.M.	17.8	12.7	7.34	97.0	8.2
" Surface of still water at junction with Milton stream	4	11:37 A.M.		11.9			

PRINCE EDWARD ISLAND WATER (CONTINUED)

Locality	Date	Time	Temperature		Oxygen content		pH value
			Air	Water	o.c.	% sat.	
Little Tignish stream	Sept. 8	9:55 A.M.	17.2	14.8			
Green's brook, below Myer's dam	8	11:05 "	17.3	17.2			7.8
" about 1 mile up	8	11:17 "		12.9			
Rix stream at Roseville, below old dam	8	11:33 "		14.5			8.4
Spring flowing into Rix at Roseville	8	11:39 "		12.0			7.6
Kane's river, short distance above tide	8	1:42 P.M.	16.3	16.1	7.29	103.2	8.2
" about $\frac{1}{2}$ mile up	8	3:34 "		16.25			
"	8	3:48 "		16.2			
Dunk river, just above hatchery bridge	9	10:12 A.M.	16.2	13.5			8.2
" at Wall's bridge	9	10:53 "		13.7			8.1
" at power dam, surface of pond	9	3:00 P.M. 11:55 A.M.		14.1 14.0	7.89	107.3	
Brook entering Dunk at Wall's bridge	9	10:45 A.M.		9.1			7.8
Southwest brook (Dunk) at Myer's mill, below pond	9	11:18 A.M.		15.0			8.5
Myer's mill pond, surface	9			13.7			8.7