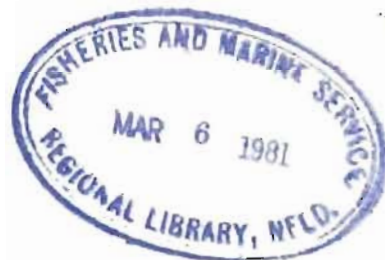


Juvenile Atlantic Salmon Stocking in Several Nova Scotia and Southern New Brunswick Salmon Streams, 1971-79

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Freshwater and Anadromous Division
Resource Branch
Department of Fisheries and Oceans
Halifax, Nova Scotia

June, 1980



**Canadian Data Report of
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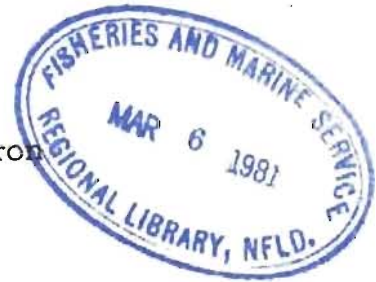
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Canadian Data Report of
Fisheries and Aquatic Sciences No. 202

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JUVENILE ATLANTIC SALMON STOCKING IN
SEVERAL NOVA SCOTIA AND SOUTHERN NEW
BRUNSWICK SALMON STREAMS, 1971-79

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ABSTRACT

Gray, R.W. and J.D. Cameron. 1980. Juvenile Atlantic salmon stocking in several Nova Scotia and southern New Brunswick salmon streams, 1971-79. Can. Data Rep. Fish. Aquat. Sci. No. 202. xi + 47 p.

This report summarizes the distribution of juvenile Atlantic salmon in seven Nova Scotia and two southern New Brunswick salmon streams from 1971-79. Data on river of release, precise release location, release date, number of juveniles released, genetic stock origin, age class, stage, size, rearing location, feed and identification mark or tag series are presented. The report reviews and summarizes hatchery stocking and other experimental stocking programs initiated to support salmon enhancement projects in the Tusket, Medway, LaHave, Sackville, East, Liscomb, St. Mary's, Petitcodiac and Point Wolfe rivers.

Key words: Salmon enhancement, Atlantic salmon, Nova Scotia, southern New Brunswick, stocking, age class, stage, rearing location, tag series, genetic stock origin.

RÉSUMÉ

Gray, R.W. and J.D. Cameron. 1980. Juvenile Atlantic salmon stocking in several Nova Scotia and southern New Brunswick salmon streams, 1971-79. Can. Data Rep. Fish. Aquat. Sci. No. 202. xi + 47 p.

Ce rapport résume la distribution des saumons de l'Atlantique juveniles ensemencés dans sept rivières de la Nouvelle-Ecosse et deux rivières du sud du Nouveau Brunswick durant les années 1971 à 1979. Les données recueillies sur les rivières ensemencées, les endroits précis d'ensemencement, la date et le nombre de saumoneaux ensemencés ainsi que l'origine génétique du "stock", le groupement d'âge, le stage de développement, la taille, le lieu d'élevage, le type d'aliénation et la marque identificatrice ou séries d'étiquettes sont présentés. Le rapport passe aussi en revue et résume les programmes d'ensemencement de pisciculture ou autres programmes expérimentaux institués afin de supporter des projets visant à accroître les montées de saumons reproducteurs dans les rivières Tusket, Medway, LaHave, Sackville, East, Liscomb, St. Mary's, Petitcodiac et Point Wolfe.

Mots clés: Croissement de saumons reproducteurs, saumon de l'Atlantique, Nouvelle-Ecosse, sud du Nouveau Brunswick, ensemencement, groupe d'âge, stage de développement, lieu d'élevage, séries d'étiquettes, origine génétique.

INTRODUCTION

Atlantic salmon stocks in Nova Scotia as late as 1930 contributed to a commercial fishery catch of roughly 1.4 million pounds (Anonymous 1978). Although commercial landings of salmon in Nova Scotia have historically fluctuated in response to changes in stock strength brought on by man-made environmental disruptions, particularly log driving and construction of logging dams in the early part of this century, since the 1930s salmon stocks have declined dramatically. Environmental degradation - caused by hydro development, deforestation; agricultural development, erosion and sedimentation, gravel removal, road construction, dredging, channelization, flood control, other stream alterations, water pollution and acid rain - overfishing in the distant Greenland fisheries, Canadian commercial fisheries and poaching collectively contributed to a significant decline in these salmon stocks. Commencing in the late 1960s, a further pronounced steady decline occurred, which resulted in only 68,000 pounds of commercially caught salmon being landed in 1971. Concomitant with these stock declines has been a noticeable shift in the number and proportion of multi-sea-winter salmon and in run timing of most salmon stocks along the Nova Scotia Atlantic coast.

In response to these problems, the Resource Development Branch of the federal Fisheries Service embarked on a modest salmon enhancement program, to try to stem the downtrend in specific stocks and expand these stocks where rehabilitative technology could be applied effectively within the existing fiscal framework. A multidisciplinary approach to salmon enhancement was initiated, whereby bio-engineering feasibility studies were undertaken to identify opportunities and develop runs in previously inaccessible habitat or habitat which could be restored through pollution abatement. Following these background biological and engineering assessments, design and construction of fish-passage and pollution-abatement facilities were undertaken, and biologists selected or developed genetically suitable broodstock strains for rearing in the hatchery program. Often, during these initial phases of a project, it was necessary to tag and release different genetic stocks to determine which would provide maximum benefits for the project. Concurrently, hatcheries experimented with different rearing and nutritional regimes to produce a higher quality juvenile salmon for stocking and, consequently, better survival. Stocking entailed the release of juvenile salmon throughout the best spawning and nursery habitat in a watershed, in accordance with its biological capacity to rear them and accommodate returning adults. Thus, in recent years, this multidisciplinary approach to salmon enhancement has paid dividends, in that each aspect was uniquely important and the overall success of the program was only as good as its weakest link.

This report summarizes the stocking program in seven Nova Scotia and two southern New Brunswick salmon streams from 1971 to 1979. While hatchery stocking forms the main component of this report, two instances of stocking from stream-side incubators are outlined.

MATERIAL AND METHODS

Hatchery stocking in support of salmon enhancement projects has been carried out since 1874 (Carey 1968). In this report, stocking is summarized for several rivers where it was initiated in response to the construction of new fishways (Tusket Falls, Morgan Falls, Ruth Falls and Liscomb Falls) or the modification of existing facilities (Indian Falls, Harmony Mills and East River Sheet Harbour). In a few instances, stocking was carried out to supplement natural production, when surplus juvenile salmon were available from hatchery rearing programs.

SELECTION OF STOCKING SITES

Biological data collected from stream surveys were used to outline the location and distribution of potential spawning and nursery habitat in a watershed. Stocking sites for the different juvenile stages were chosen to maximize habitat utilization and survival, by releasing fry and parr in their appropriate habitat types. Secondly, release sites were chosen on the basis of their accessibility; however, four-wheel-drive vehicles and rubber rafts were often used to transport young salmon to otherwise inaccessible areas in a stream.

STOCKING RATE

Juvenile salmon were released at densities established in accordance with the calculated fish-rearing capacity of the stream, and taking into consideration the availability of spawning gravel to accommodate returning adults which would "home" back to the release area or release tributary. By spreading juvenile salmon throughout a watershed, it was possible to reduce predation and intra- and inter-specific competition. Usually, stocking densities were below those suggested by Elson (1957); wherever possible, sites were located at least two miles apart. This approach was adopted to maximize the survival of stocked fish, the progeny of select broodstock strains.

GENETIC STOCK ORIGIN

Donor broodstock strains were selected or developed for each enhancement project. While it was not always possible to collect the most suitable broodstock strain because of its scarcity or because of fiscal constraints, in most instances, early run, multi-sea-winter salmon were selected from a donor stream which had similar physical, chemical and environmental characteristics

and which was located geographically close to the river under rehabilitation. This selection process was necessary to increase chances that donor stocks would be biologically adapted to conditions in the new stream and that migration routes and run timing would be suitable. Broodstock development and availability has been enhanced in recent years by kelt recycling and reconditioning (Ducharme 1972; Gray et al. 1976; Hill 1978), whereby select broodstrains can be held in captivity and spawned several times.

Broodstock used in these enhancement projects are defined according to their genetic origin when captured in the wild and, later, by the river of recapture when they return as hatchery-reared salmon. The following definitions apply to genetic broodstock strains identified in the tables of this report or which are being collected at the present time for future stocking in these enhancement projects.

Big Salmon - wild Atlantic salmon collected for broodstock in the Big Salmon River.

East - wild Atlantic salmon collected for broodstock in the East River Sheet Harbour.

East (HR) - hatchery-reared Atlantic salmon which were released as juveniles in the East River Sheet Harbour and returned as adults to that system, where they were collected for broodstock; hatchery-return salmon are identified by an adipose clip or tag.

East (RK) - wild or hatchery-reared Atlantic salmon collected in the East River Sheet Harbour for broodstock; these salmon were reconditioned after spawning, recycled in facilities at East River and spawned a second or third time in captivity.

LaHave - wild Atlantic salmon collected for broodstock in the LaHave River.

LaHave (Salmon) - wild multi-sea-winter Atlantic salmon collected for broodstock in the LaHave River.

LaHave (Grilse) - wild 1-sea-winter Atlantic salmon collected for broodstock in the LaHave River.

LaHave (HR) - hatchery-reared Atlantic salmon which were stocked as juveniles in the LaHave River and returned as adults to that system, where they were collected for broodstock; hatchery-return salmon are identified by an adipose clip or tag.

LaHave (RK) - wild or hatchery-reared Atlantic salmon collected in the LaHave River for broodstock; these salmon were reconditioned after spawning, recycled in facilities at East River Sheet Harbour and spawned a second or third time in captivity.

Liscomb - wild Atlantic salmon collected for broodstock in the Liscomb River.

Liscomb (HR) - hatchery-reared Atlantic salmon which were released as juveniles in the Liscomb River and which returned as adults to that system, where they were collected for broodstock; hatchery-return salmon are identified by an adipose clip or tag.

Medway - wild Atlantic salmon collected for broodstock in the Medway River.

Medway (Salmon) - wild multi-sea-winter Atlantic salmon collected in the Medway River for broodstock.

Medway (Grilse) - wild 1-sea-winter Atlantic salmon collected in the Medway River for broodstock.

Medway (HR) - hatchery-reared Atlantic salmon which were stocked as juveniles in the Medway River and returned as adults to that system, where they were collected for broodstock; hatchery-return salmon are identified by an adipose clip or tag.

Medway (RK) - wild or hatchery-reared Atlantic salmon collected in the Medway River for broodstock; these salmon were reconditioned after spawning, recycled in facilities at East River Sheet Harbour and spawned a second or third time in captivity.

Restigouche - wild Atlantic salmon collected for broodstock in the Restigouche River.

River Philip - wild Atlantic salmon collected for broodstock in River Philip.

St. Mary's - wild Atlantic salmon collected for broodstock in the St. Mary's River.

St. Mary's (Salmon) - wild multi-sea-winter Atlantic salmon collected for broodstock in the St. Mary's River.

St. Mary's (Grilse) - wild 1-sea-winter Atlantic salmon collected for broodstock in the St. Mary's River.

Tusket - wild Atlantic salmon collected for broodstock in the Tusket River.

Tusket (HR) - hatchery-reared Atlantic salmon which were stocked as juveniles in the Tusket River and returned as adults to that system, where they were collected for broodstock; hatchery-return salmon are identified by an adipose clip or tag.

RELEASE DATE

Atlantic salmon hatchery-reared smolts were usually released during the normal period of wild-smolt migration. In a few instances, evidence of smolt behaviour in the hatchery ponds, particu-

larly at Yarmouth and Mersey - both southern hatcheries - necessitated an earlier smolt release than would occur normally.

AGE-CLASS - JUVENILE STAGE

In recent years, greater emphasis has been placed on producing more advanced stages of juvenile salmon in the hatchery program. Present rearing programs are designed to rear slower growing individuals to the fall fingerling stage for stocking, while retaining the larger, faster growing fish for smolt stocking. Thus, maximum use is made of hatchery rearing space, particularly if the cheaper, earlier juvenile stages can be effectively deployed in enhancement projects where natural competition and predation are low. In most cases, juvenile salmon are released in the spring or late fall, when water temperatures are low and adequate river flows are assured. Assessment of stocking these early stages is ongoing, to improve the utilization of all juvenile salmon stages and reduce rearing costs.

By adjusting temperature and rearing regimes, it has been possible to produce 1-yr smolts at some hatcheries. This approach is being expanded, since better quality smolts are produced at lower cost and tend to return as older, larger salmon for spawning (Gray 1973; Ritter and Newbould 1977). Although "cold-water" hatcheries must still rear two-year smolts, changes in fish culture techniques have reduced overwintering problems during the second winter and 2-yr smolt quality has steadily improved.

The following juvenile stages have been released in Maritime rivers in recent years in support of the enhancement program.

- 0+ fry - unfed fry or early fry stages after initiation of feeding.
- 0+ parr - fall fingerlings - usually released in September-November of the first year of rearing.
- 1+ parr - yearling parr - normally released in the spring; sometimes juveniles are released in the fall as PYP (post-yearling parr).
- 1+ smolt - yearling smolt - normally released in May or June from southern hatcheries.
- 2+ smolts - 2-yr smolt - normally released in May or June from "cold-water" hatcheries.

MARKING OR TAGGING

Except where identified, all hatchery-reared juvenile salmon beyond the fry stage (0+ fry) were adipose clipped prior to release. In order to evaluate tag loss, some experimental groups also had a right maxillary clip.

Smolt tagging was carried out accord-

ing to the technique described by Eisner and Ritter (1979). Groups of smolts were tagged and released for the following purposes:

- to assess the performance of select genetic stocks released into specific rivers,
- to evaluate downstream fish-passage facilities,
- to test different salmon diets,
- to evaluate the release of young salmon in the fall as post-yearling parr versus releasing them in the spring as 2-yr smolt,
- to evaluate early-spring versus late-spring smolt release,
- to evaluate the contribution of salmon versus grilse progeny, recycled kelt progeny and hatchery-reared progeny,
- to evaluate the performance of 1-yr versus 2-yr smolt.

FISH DISEASE

Since the identification of bacterial kidney disease (BKD) by the fluorescent antibody technique (FAT) in most Nova Scotia hatcheries, biologists have been compelled to follow certain policy guidelines in the stocking of hatchery-reared salmon, as laid down in "Approved Policy Guidelines for Bacterial Kidney Disease (BKD)" (MacEachern, Memo 5200-1, April 4, 1979). While this policy could be considered fairly liberal in application, it provides for some control in the distribution of BKD-infected hatchery-reared juvenile salmon.

UNFED FRY FROM STREAM-SIDE INCUBATORS

Unfed fry originating from stream-side incubators were released in 1976 above Harmony Mills on the Medway River and in 1979 in the Grants River, a tributary of East River Sheet Harbour. Fry were collected by siphoning them into plastic, screw-cap containers and transporting them to the release location by truck or rubber raft. Unfed fry were released into stream sections having no known natural salmon populations. Areas selected for fry distribution had shallow water, 7.5-45.0 cm in depth, 2-8 metres in width, and a gravel or coarse sand substrate. Fry were distributed throughout each site to achieve a planting density of less than 500 individuals per 100 square metres of stream. Natural movements of young fry both upstream and downstream of the release site resulted in a further distribution, thereby approaching a near "normal" resident fry density. The objective of dispersing fry in this manner was to provide protection and reduce predation by trout, eels, other fish and

fish-eating birds.

RESULTS

Annual stocking of juvenile Atlantic salmon in the Tusket, Medway, LaHave, Sackville, East River Sheet Harbour, Liscomb, St. Mary's, Petitcodiac and Point Wolfe rivers from 1971 to 1979, is summarized (Tables 1-53). Information on release location, release date, number of juveniles released at each stocking site, genetic-stock origin, age class and juvenile stage, size, diet and mark or tag series is outlined. Maps of the various watersheds where salmon stocking has occurred since 1971 are presented (Figs. 1-10) and topographic map coordinates and military grid references of specific stocking sites in each river are summarized (Appendices A-I).

TABLE 1. Hatchery-reared Atlantic salmon smolt released in the Tuskett River in 1973 to evaluate downstream fish-passage facilities.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Tuskett Falls power canal	River Philip	2+ smolt	T1	May 14	500	V90,000-V90,499
				15	500	V90,500-V90,999
				16	500	V91,000-V91,499
				22	500	V91,500-V91,999
				23	500	V92,000-V92,499
				24	500	V92,500-V92,999
				28	500	V93,000-V93,499
	Big Salmon	1+ smolt		29	500	V93,500-V93,999
				30	500	V94,000-V94,499
				Jun 4	500	V94,500-V94,999
				5	500	V95,000-V95,499
				6	500	V95,500-V95,999
				11	500	V96,000-V96,499
				12	450	V96,500-V96,949

¹Tagged salmon smolts also have an adipose clip.

TABLE 2. Hatchery-reared Atlantic salmon smolt released in the Tuskett River in 1974 to evaluate downstream fish-passage facilities.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Tuskett Falls power canal	River Philip	2+ smolt	T1	May 21	600	Q82,000-Q82,599
				22	600	Q82,600-Q83,199
				23	600	Q83,200-Q83,799
				28	600	Q83,800-Q84,399
				29	600	Q84,400-Q84,999
				30	600	Q85,000-Q85,599
				Jun 4	600	Q85,600-Q86,199
				5	600	Q86,200-Q86,799
				6	600	Q86,800-Q87,399
				11	600	Q87,400-Q87,999
				12	600	Q88,000-Q88,599
				13	452	Q88,600-Q89,052

¹Tagged salmon smolts also have an adipose clip.

TABLE 3. Hatchery-reared Atlantic salmon smolt released in the Tuskett River in 1975 to evaluate downstream fish-passage facilities.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Tuskett Falls power canal	River Philip	2+ smolt	T1	May 20	450	K80,001-K80,449
				21	450	K80,450-K80,900
				22	450	K80,901-K81,350
				27	450	K81,351-K81,800
				28	450	K81,801-K82,250
				29	450	K82,251-K82,700
				Jun 3	450	K82,701-K83,150
				4	450	K83,151-K83,600
				5	450	K83,601-K84,050
				10	450	K84,051-K84,500
				11	450	K84,501-K84,950
				12	450	K84,951-K85,400

¹Tagged salmon smolts also have an adipose clip.

TABLE 4. Hatchery-reared juvenile Atlantic salmon released in the Carleton River, a tributary of the Tusket River, in 1978.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Carleton River	LaHave (HR)	1+ smolt	C2	Apr 27	1,125	Adipose clip
			C3		1,956	
			C4		2,916	
			C6		1,000	
			C7		876	
			C10		3,078	
			C11		2,225	
		1+ parr	May 1	C1	1,000	
				C2	1,330	
				C4	760	
				C5	2,000	
				C6	600	
				C7	1,700	
				C8	1,800	
				C9	1,800	
				C10	1,800	
				C11	2,000	

¹Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

TABLE 5. Hatchery-reared Atlantic salmon parr released in the Tusket River in 1979.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series			
Carleton River	LaHave	1+ parr	C1	Apr 27	938	Adipose clip			
			C4	May 2	842				
			C5	4	3,552				
			C7	2	830				
			C9	2	830				
			C10	2	830				
			C11	2	830				
			Tusket				T2	Apr 27	938
								May 3	840
							T3	3	841
							T4	Apr 28	385
	May 4	899							
T6	4	1,213							
East Branch			T7	Apr 28	875				
			E1	May 2	830				
			E2	2	831				
			E3	3	840				
			E4	3	841				
			E5	3	840				
			E6	3	840				
			E7	3	832				
Silver River			S1	3	3,343				

¹Progeny resulted from mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

TABLE 6. Hatchery-reared Atlantic salmon smolt released in the Tusket River in 1979.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Carleton River	LaHave	1+ smolt	C1	Apr 27	1,063	Adipose clip
			C4	May 2	172	
			C7	2	170	
			C9	2	170	
			C10	2	170	
Tusket			C11	2	170	
			T2	Apr 27	1,063	
				May 3	160	
			T3	3	160	
			T4	Apr 28	1,541	
East Branch				May 4	480	
			T6	4	352	
			T7	Apr 28	1,115	
			E1	May 1	2,999	
				2	170	
			E2	2	170	
			E3	Apr 30	2,999	
				May 3	160	
Silver River			E4	3	160	
			E5	3	160	
			E6	3	160	
			E7	3	158	
			S1	3	657	

¹Progeny resulted from mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

TABLE 7. A summary of hatchery-reared juvenile Atlantic salmon released in the Tusket River, 1973-79.

Year of release	Number released			Total
	1+ parr	1+ smolt	2+ smolt	
1973		4,450	2,500	6,950
1974			7,052	7,052
1975			5,400	5,400
1978	14,790	13,176		27,966
1979	23,840	14,579		38,419

TABLE 8. Hatchery-reared Atlantic salmon smolt released in the Medway River in 1971.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Below Ponhook Lake	Medway	1+ smolt	M3	Apr 26	4,895	R00,000-R04,999
				May 11	4,898	R05,000-R09,999
				12	4,899	R15,000-R19,999
	Restigouche	2+ smolt		13	4,797	R68,000-R72,999
				10	2,997	R20,000-R23,999
				10	106,154	Adipose clip

¹Tagged salmon smolts also have an adipose clip.

TABLE 9. Hatchery-reared Atlantic salmon smolt released in the Medway River in 1972.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Below Ponhook Lake	Medway	2+ smolt	M3	May 12-17	5,000	T80,000-T84,999
				12-17	10,000	Adipose clip
	Restigouche			18	4,300	T15,000-T19,299
				18	5,000	V10,000-V14,999

¹Tagged salmon smolts also have an adipose clip.

TABLE 10. Hatchery-reared Atlantic salmon smolt released in the Medway River in 1974.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Main Branch	Medway	1+ smolt	M1	May 28	1,300	Adipose clip
			M2	28	1,300	
			M3	28	1,300	
			M4	30	1,500	
			M6	28	1,300	
			M7	28	1,300	
			Pleasant River			
	30	576				
P2	29	1,220				
Westfield River			P3	29	1,220	
			D1	29	1,300	
			D2	28	1,300	
			D3	28	1,300	
			D4	28	1,300	

TABLE 11. Hatchery-reared Atlantic salmon parr released in the Pleasant River, a tributary of the Medway River, in 1975.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Pleasant River	Medway (RK)	1+ parr	P2	Nov 7	400	Adipose clip
			P3	7	400	

TABLE 12. Hatchery-reared Atlantic salmon smolt released in the Medway River in 1976 to evaluate downstream fish-passage facilities.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Harmony Mills power canal	LaHave (HR)	1+ smolt	M8	May 10	459	G30,500-G30,999
				11	484	G30,100-G30,499
				12	488	+ A89,900-A90,000
				17	474	V97,000-V97,499
				18	471	A 3,500-A 3,999
				19	481	A 2,500-A 2,999
				19	481	A 3,000-A 3,499
				25	951	G31,000-G31,999
				26	477	A 4,500-A 4,999
				31	492	A 4,000-A 4,499
				Jun 1	487	A89,400-A89,899
				1	493	G79,500-G79,999

¹Tagged salmon smolts also have an adipose clip.

TABLE 13. Unfed Atlantic salmon fry, originating from the Morgan Falls stream-side incubator, released in the Medway River in 1976. (Release locations are above McGowan Lake.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series			
West Branch	LaHave (RK)	0+ fry	W1	Apr 29	880	None ¹			
			W2	29	880				
			W3	29	880				
			W4	28	460				
			W5	29	880				
			W6	29	406				
			W8	29	440				
			W9	29	440				
			W10	29	486				
			W11	29	880				
			W12	29	880				
			W13	29	660				
			W14	29	880				
			W15	28	460				
			W16	29	880				
			W17	29	880				
			East Branch				E3	29	880
							E4	29	880
E5	29	880							
E6	29	880							
E8	29	440							
			E9	29	880				
			E10	29	880				
			E11	29	880				

¹Unfed Atlantic salmon fry were too small to mark.

TABLE 14. Hatchery-reared juvenile Atlantic salmon released in the Medway River in 1977.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Main Branch	LaHave (RK)	1+ smolt	M5	May 25	1,948	Adipose clip
		1+ parr		25	3,464	
Harmony Mills power canal		1+ smolt	M8	Apr 12	499	H30,500-H30,999
				13	499	H31,000-H31,499
				14	491	H31,500-H31,999
				18	500	H32,000-H32,499
				19	500	H32,500-H32,999
				20	499	H33,000-H33,499
				25	500	H33,500-H33,999
				26	498	H34,000-H34,499
				27	499	H34,500-H34,999

¹Tagged salmon smolts, released to evaluate downstream fish-passage facilities at Harmony Mills, also have an adipose clip.

TABLE 15. Hatchery-reared juvenile Atlantic salmon released in the Medway River in 1978.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Main Branch	LaHave (HR)	1+ smolt	M3	May 19	1,791	Adipose clip
		1+ parr		19	342	

¹Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

TABLE 16. Hatchery-reared Atlantic salmon parr released in the Medway River in May, 1979. (Release locations are above McGowan Lake.)

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Main Branch	LaHave	1+ parr	M9	May 23	303	Adipose clip
			M10	22	1,002	
			M11	22	1,002	
			M12	22	2,500	
West Branch			W8	22	1,002	
			W10	22	1,002	
			W11	22	1,002	
			W12	22	1,002	
East Branch			E1	23	1,002	
			E2	24	1,949	
			E5	23	1,002	

¹Progeny resulted from the mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

TABLE 17. Hatchery-reared fall fingerling Atlantic salmon released in the Medway River in November, 1979. (Release locations are above McGowan Lake.)

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
West Branch	LaHave (HR)	0+ parr	W4	Nov 13	2,000	Adipose clip
			W7	13	2,000	
			W8	13	2,000	
			W10	13	2,000	
			W12	13	2,000	
			W17	13	2,000	
East Branch			E1	3-9	16,000 ²	
			E2	3-9	10,000 ²	
			E4	3-9	1,000	
			E5	3-9	1,000	
			E7	3-9	2,000	
			E11	3-9	2,000	
			E12	3-9	3,000	
			E13	3-9	2,000	
			E14	3-9	2,000	
			E15	3-9	2,000	
			E16	3-9	2,000	
			E17	3-9	2,000	
			E18	3-9	2,000	

¹Progeny resulted from mass spawning of wild (39%) and hatchery-reared (61%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

²Fall fingerlings were distributed below site E1-E2 in riffle areas between Medway and Alma lakes.

TABLE 18. A summary of Atlantic salmon stocking in the Medway River, 1971-79.

Year of release	Number released					Total
	0+ fry	0+ parr	1+ parr	1+ smolt	2+ smolt	
1971				125,643	2,997	128,640
1972					24,300	24,300
1974				17,275		21,010
1975			800			800
1976	18,752			5,757		24,509
1977			3,464	6,433		9,897
1978			342	1,791		2,133
1979		59,000	12,768			71,768

TABLE 19. Hatchery-reared juvenile Atlantic salmon released in the LaHave River in 1971.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Above Morgan Falls	Medway	1+ smolt	L1	May 26	4,892	R10,000-R14,999
		1+ parr		27	8,820	"T" Brand
				27	620	"H" Brand

¹Tagged Atlantic salmon smolts and branded smolts also have an adipose clip.

TABLE 20. Hatchery-reared juvenile Atlantic salmon released in the LaHave River in 1972.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Above Morgan Falls	Medway (grilse)	1+ smolt	L1	May 30	3,400	T90,000-T93,399
				Jun 6	5,000	T95,000-T99,999
	Medway	2+ smolt		May 24	5,000	T85,000-T89,999
				24	1,450	Adipose clip
	1+ parr	24	6,790			

¹Tagged Atlantic salmon smolts also have an adipose clip.

TABLE 21. Hatchery-reared juvenile Atlantic salmon released in the LaHave River in 1973.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series ¹
Above Morgan Falls	Medway	2+ smolt	Various sites ²	May 8	3,998	Q14,000-Q17,999 + "H" Brand
				10	3,973	Q10,000-Q13,999 + "X" Brand
	Medway			10	10,555	"E" Brand
	LaHave (salmon)	1+ smolt		10	3,196	"T" Brand
	LaHave (grilse)			10	1,000	"T" Brand
	Medway (salmon)			Jun 4	4,970	Q18,000-Q22,999
	Medway	1+ parr		4	8,000	"C" Brand
				4	4,000	"U" Brand
				4	26,357	Adipose clip
		LaHave			4	4,776

¹Tagged Atlantic salmon smolts and branded fish also have an adipose clip.

²Stocking site numbers not recorded.

TABLE 22. Hatchery-reared fall fingerling Atlantic salmon released in the LaHave River in 1973. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Main Branch	Medway	0+ parr	L3	Nov 6	3,400	None
			L4	6	4,432	
North River			N1	Dec 3	8,073	
			N3	Nov 6	7,400	
North Branch			N4	7	5,430	
			B1	7	8,000	
			B2	6	7,408	
				6	7,500	

TABLE 23. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1974. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Main Branch	Medway (salmon)	2+ smolt	L1, L3	May 2	2,380 ²	1,477	Q95,750-Q96,499
	Medway		L3	14	666		+G75,750-G76,499 Adipose clip
Ohio River	Medway (grilse)		L5	13	1,000		
			A1	14	667		
North River	Medway (salmon)		A2	6	2,272 ²	1,444	A55,000-A55,749
			A3	6	2,273 ²	1,492	+A75,500-A76,249 Q95,000-Q95,749 +G75,000-G75,749
			A4	14	666		Adipose clip
North River	Medway		N1	2	2,380 ²	1,477	A55,750-A56,499
			N2	13	1,131		+A76,250-A76,999
			N3	13	1,000		Adipose clip

¹Tagged Atlantic salmon smolt and untagged smolt have an adipose clip and a right maxillary clip.

²Food for these groups - Silvercup.

TABLE 24. Hatchery-reared Atlantic salmon smolt and parr released in the LaHave River in 1974. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Main Branch	Medway (salmon)	1+ smolt	L3 - L5 L7 ²	May 23	4,793 ³	883	A56,500-A56,999
							+A77,000-A77,399
					1,197 ⁴	1,197	A77,500-A77,999
							+A57,000-A57,499
							+Q97,000-Q97,199
Ohio River	Medway (grilse)		A1-A4, A6 ²	21	4,932 ³	3,904	A58,500-A59,499
							+A79,000-A79,999
							+Q98,500-Q99,499
							+G78,500-G79,499
North River	Medway		N1, N2, N4 & N5 ²	22	4,783 ³	3,974	A57,500-A58,499
							+A78,000-A78,999
							+G77,500-G78,499
							+Q97,500-Q98,499
Main Branch	LaHave	1+ parr & smolt	L1	24	1,500		Adipose clip
Ohio River	Medway	1+ smolt	L5	24	700		
					1,000		
					900		
					800		
North River	LaHave	1+ parr	S2	24	900		
					1,100		
					835		
					850		
North River	LaHave	1+ smolt	N3	24	850		
			N4	24	160		

¹ Tagged Atlantic salmon smolts also have an adipose clip and right maxillary clip.

² Approximately equal numbers of smolts released at each site.

³ Food for these groups - Silvercup.

⁴ Food for these groups - Ewos.

TABLE 25. Hatchery-reared Atlantic salmon parr released in the LaHave River in July, 1975. (Release location is above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Ohio River	LaHave (RK)	1+ parr	A1	Jul 15	640	Adipose clip
			A2	15	640	
			A4	15	1,500	
			A6	15	640	
			A7	15	1,500	

TABLE 26. Hatchery-reared Atlantic salmon parr released in the LaHave River in October-November, 1975, as part of the spring-fall release experiments. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Main Branch	LaHave (RK)	1+ parr	L1,L5,L7 ²	Oct 17	3,500	3,500	K53,000-K54,999 +K95,000-K99,999
			L4	Nov 10	1,000	1,000	A85,100-A89,399
Ohio River			A4, A7 ²	Oct 15	2,995	2,995	A90,000-A92,799 +A93,400-A93,599
			A3	Nov 10	988	988	A85,100-A89,399
North River			N2, N4 ²	Oct 16	3,480	3,480	K53,000-K54,999 +K95,000-K99,999
			N1, N3 ²	Nov 10	2,000	2,000	A85,100-A89,399

¹Tagged Atlantic salmon smolts also have an adipose clip.

²Approximately equal numbers of tagged smolts released at each site identified.

TABLE 27. Hatchery-reared Atlantic salmon smolt released in the LaHave River in May, 1976, as part of the spring-fall release experiments. (Release site is above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
North River	LaHave (RK)	2+ smolt	N2	May 11	1,778		Adipose clip
			N3	6	1,994	1,994	G1,000-G4,999
			N4	6	2,000	2,000	G1,000-G4,999

¹Tagged Atlantic salmon smolts also have an adipose clip.

TABLE 28. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1976. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Avg. length (cm)	Mark or tag series ¹
			L4	30	4,247 ²	16.3	A13,000-A14,999
			L5	22	7,545 ²	18.0	A41,600-A44,999
			L7	21	5,189 ²	18.0	A41,600-A44,999
			L8	20	3,864 ²	18.0	A41,600-A44,999
			S2	27	1,651 ²	16.8	A10,000-A12,999 +A40,000-A41,599
			A6	28	2,928 ³	16.8	A10,000-A12,999 +A40,000-A41,599
North River			N1,N2	May 5	515	18.0	Adipose clip
				Apr 23	8,425 ²	16.8	A10,000-A12,999 +A40,000-A41,599

¹Tagged Atlantic salmon smolt and untagged smolt have an adipose clip.

²Not all smolts released were tagged; exact numbers tagged are not recorded.

³All 2,928 smolts were tagged.

TABLE 29. Hatchery-reared Atlantic salmon parr released in the LaHave River in 1976. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Avg. length (cm)	Mark or tag series
Main Branch	LaHave (HR)	1+ parr	L1	May 25	1,406	11.9	Adipose clip
			L5	25	1,250	11.9	
Ohio River			A1	26	1,298	14.5	
			A2	26	900	14.5	
			A3	26	900	14.5	
			A4	26	900	14.5	
			A5	26	900	- ¹	
			A7	26	900	- ¹	
North River			N3	25	1,000	11.9	
			N4	25	1,000	11.9	
			N5	25	1,000	11.9	

¹Length not recorded.

TABLE 30. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1977. (Release location is above Morgan Falls.)

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ²
					released	tagged	
Main Branch	LaHave (RK)	2+ smolt	L3	May 16	3,623 ³	2,000	P18,000-P19,999
			L4	17	3,748 ⁴	2,000	P40,000-P41,999

¹Atlantic salmon smolts stocked from Cobequid Hatchery consisted of 26% Medway (RK) progeny; they are identified here as predominantly LaHave (RK) progeny.

²Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

³Food - high fat.

⁴Food - regular fat.

TABLE 31. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1977. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹	
					released	tagged		
Above Morgan Falls	LaHave (HR)	1+ smolt	R1, L2	Apr 19-21	6,250 ^{2,4}	2,500	P05,000-P07,499	
				19-21	6,250 ^{2,5}	2,500	P07,500-P09,999	
	LaHave (RK)		A1-A4, N1,N3	Apr 25-				
				May 2	14,530 ^{2,4}	2,500	P00,000-P02,499	
	LaHave (HR)		L7,N2	Apr 25-				
				May 2	14,363 ^{2,5}	2,500	P02,500-P04,999	
	LaHave (RK)		A6,A7 N2	May 18-19	8,541 ^{2,4}	2,500	P52,500-P54,999	
				18-19	6,245 ^{2,5}	2,500	P50,000-P52,499	
Main Branch	LaHave (HR)	L1		30		90 ³	Adipose clip	
	LaHave (RK)	L2		16,26	3,516 ³			
	LaHave (HR)	L2		26		80 ³		
	LaHave (RK)	L3		26	2,396 ³			
	LaHave (HR)	L4		19	2,338 ³			
	LaHave (RK)	L5		24	2,144 ³			
	LaHave (HR)	L5		Apr 14,15	5,786 ²			
	LaHave (RK)	L8		May 16	2,835 ³			
	LaHave (HR)	R1		19	1,119 ³			
	LaHave (RK)	S2		Apr 12,13	5,376 ²			
	LaHave (HR)	S2		May 25	900 ³			
	Ohio River	LaHave (HR)	A5		30	80 ³		
		LaHave (RK)	A7		17	1,317 ³		
	North River	LaHave (HR)	N1		25	1,440 ³		

¹Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

²Size - large.

³Size - small.

⁴Food - high fat.

⁵Food - regular diet.

TABLE 32. Hatchery-reared Atlantic salmon parr released in the LaHave River in 1977. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series
					released		
Main Branch	LaHave (HR)	1+ parr	L1	May 30	2,152		Adipose clip
	LaHave (RK)		L2	16,26	3,308		
	LaHave (HR)			26	1,926		
	LaHave (RK)		L3	26	2,595		
	LaHave (HR)		L4	19	3,506		
	LaHave (RK)		L5	24	3,506		
			L8	16	2,415		
			R1	19	2,379		
Ohio River		S2	25	1,350			
		A5	30	1,926			
North River	LaHave (RK)		A7	17	960		
	LaHave (HR)		N1	25	2,160		

TABLE 33. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1978.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ²
					released	tagged	
<u>Above Morgan Falls</u>	LaHave (HR)	1+ smolt	A5,L7,N4,N5 ³	May 17-18	4,563 ⁴ ¹⁶	2,500	H90,000-H92,499
			Al,A3,L3,L4,N1 ³	12-16	7,449 ⁵ ¹⁶	2,500	H95,000-H97,499
			Al-A3,L3,L4,N1 ³	Apr 21-25	7,175 ⁵ ¹⁶	2,500	H97,500-H99,999
			A5,L7,N4,N5 ³	May 17-18	4,563 ⁴ ¹⁷	2,500	H92,500-H94,999
			Al-A3,L3,L4,N1 ³	Apr 21-25	7,175 ⁵ ¹⁷	4,000	M00,000-M03,999
			Al,A3,L3,L4,N1 ³	May 12-16	7,449 ⁵ ¹⁷	4,000	M04,000-M07,999
			A4,L5,S2,RL ³	Apr 26-27	9,287 ⁵ ¹⁸	5,000	M08,000-M12,999
Main Branch			L1	May 5	5,710		Adipose clip
			L3	29	1,834		
			L5	Apr 28	2,229		
			L6	May 19	2,939		
			L8	24	289		
			S4	Apr 28	2,505		
Ohio River			A6	May 24,29	3,408		
			A7	24	289		
North River			N2	25	2,392		
			N3	23	2,881		
<u>Below Morgan Falls</u>							
Below #103 Highway Bridge				30	1,170	400	P37,500-P37,899

¹Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

²Tagged Atlantic salmon and untagged smolts have an adipose clip.

³Approximately equal numbers of smolts released at each site.

⁴Size - medium.

⁵Size - large.

⁶Food - high fat.

⁷Food - regular fat.

⁸Food - Zeigler.

TABLE 34. Hatchery-reared Atlantic salmon parr released in the LaHave River in 1978. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
	L6	19	561			
	L7	17	602			
	L8	24	916			
	S4	24	916			
Ohio River			A5	18	456	
			A6	24,29	1,157	
North River			A7	24	916	
			N2	25	101	
			N3	23	119	
			N4	17	602	
			N5	18	602	

¹Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

TABLE 35. Hatchery-reared Atlantic salmon smolt released in the LaHave River in 1979.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ²
					released	tagged	
Above Morgan Falls	LaHave	1+ smolt	L3	May 2	4,851	4,000	W35,000-W38,999
			A2,A3,A5,A6,A7, L2,L4,N1 ³	16-17	15,091	4,000	W53,000-W56,999
Main Branch			L5	16	1,500		Adipose clip
			L7	15	1,501		
			L8	14	1,501		
			R1	15	1,500		
			S2	15	1,500		
			S4	15	1,501		
Ohio River			A1	17	1,964		
North River			N3	16	1,500		
			N5	14	1,501		

¹Progeny resulted from mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

²Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

³Approximately equal numbers of smolts released at each site.

TABLE 36. Hatchery-reared Atlantic salmon fall fingerlings released in the LaHave River in October-November, 1979. (Release locations are above Morgan Falls.)

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Main Branch	LaHave (HR)	0+ parr	L5	Nov 1	2,000	Adipose clip
			R1	Oct 24	1,000	
			R2	24	1,000	
			R3	24	1,500	
			S1	Nov 1	2,000	
			S2	Oct 24	3,000	
			S3	24	2,000	
			S4	Nov 1	2,000	
			A4	Oct 24	2,000	
			A5	24	2,000	
Ohio River			A6	24	1,500	
			A4	Oct 24	2,000	
				24	2,000 ²	
North River			N2	Nov 1	2,000	
			N4	1	1,000 ²	
			N5	1	2,000	
			N6	1	1,000	
			N7	1	1,000	
			S7	1	1,000	
				1	1,000	

¹Progeny resulted from mass spawning of wild (39%) and hatchery-reared (61%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

²Fall fingerlings distributed to these sites by rubber raft.

TABLE 37. A summary of Atlantic salmon stocking in the LaHave River, 1971-79.

Year of release	Number released				Total
	0+ parr	1+ parr	1+ smolt	2+ smolt	
1971		9,440	4,892		14,332
1972		6,790	8,400	6,450	21,640
1973	51,643	43,133	9,166	18,526	122,468
1974		5,235	17,118	14,435	36,788
1975		18,883			18,883
1976		11,454	40,678	5,772	57,904
1977		28,183	95,204	7,371	130,758
1978		7,108	73,236		80,344
1979	30,000		33,910		63,910

TABLE 38. Hatchery-reared Atlantic salmon fall fingerlings released in the Sackville River in October, 1979.

Release location	Genetic stock origin ¹	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
Below Hefler's Sawmill	LaHave (HR)	0+ parr	S1	Oct 30	1,000	Adipose clip
			S2	30	1,000	
			S3	30	1,000	
			S4	30	1,000	
				30	1,000 ²	
			S5	30	1,000	
				30	1,000 ³	

¹Progeny resulted from mass spawning of wild (39%) and hatchery-reared (61%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

²Fall fingerlings distributed by rubber raft between Site #3 and #4.

³Fall fingerlings distributed by rubber raft between Site #4 and #5.

TABLE 39. Hatchery-reared Atlantic salmon underyearling parr released in the East River in 1974.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series		
Above Ruth Falls	St. Mary's	0+ fry	A5	Aug 15	8,064	None		
			A6	15	8,063			
			A7	15	2,000			
			A8	14	7,324			
			A9	14	7,323			
			0+ parr	E8	Oct 8		1,997	Adipose clip
				E9	8		2,000	
				E12	10		1,000	
				E13	8		1,475	
				10	1,000			
		E14		8	3,000			
				10	1,000			
		E15		10	829			
		E16		8	2,000			
		E17	8	1,492				
			10	1,000				
					E18	7	1,695	
					E19	7	1,999	
			E20	7	2,000			
			E23	8	997			
			E25	8	1,993			

TABLE 40. Hatchery-reared Atlantic salmon parr and smolt released in the East River in 1974.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series	
Below Ruth Falls	St. Mary's	2+ smolt	E1	May 8	9,011	Adipose clip	
	River Philip			8	600		
Above Ruth Falls	St. Mary's	1+ parr	E3	Oct 9	2,000		
				E4	9		1,990
				E5	9		2,601
				E26	9		950

TABLE 41. Hatchery-reared juvenile Atlantic salmon released in the East River in 1975.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released tagged		Mark or tag series ¹
Below Ruth Falls	St. Mary's	2+ smolt	E1	May 21	1,200 ²	1,200	K38,200-K39,399
				21	1,000 ²	1,000	K39,500-K40,499
				21	1,100 ²	1,100	K41,800-K42,899
				21	1,100 ³	1,100	K37,000-K38,099
				21	959 ³	959	K43,000-K43,999
				21	1,100 ³	1,100	K40,600-K41,699
				21	498 ⁴	498	K38,100-K38,199
				21			+K39,400-K39,499
				21			+K40,500-K40,599
				21			+K41,700-K41,799
				21			+K42,900-K42,999
				20	9,820		Adipose clip
				22	1,486		
		1+ parr		Oct 9	2,999	2,999	G72,000-G74,999
				17	2,994	2,994	K50,000-K52,999
				20	3,999	3,999	G86,000-G89,999
Malay Falls Power Canal		2+ smolt	E2	May 26-Jun 18	5,916 ⁵	5,916	K86,000-K91,999
Little Fifteen Mile Stream	East (RK)	0+ parr	E19	Oct 21	709		Adipose clip

¹Tagged Atlantic salmon smolts also have an adipose clip.

²Food for these groups - Silvercup.

³Food for these groups - EWOS.

⁴Food for this group - Silvercup and EWOS.

⁵Groups of 500 tagged smolts released on separate days to evaluate downstream fish passage at Malay Falls.

TABLE 42. Hatchery-reared juvenile Atlantic salmon released in the East River in 1976.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Below Ruth Falls	St. Mary's	2+ smolt	E1	Apr 22-27	9,921	9,921	H0,000-H9,999
Malay Falls Power Canal			E2	May 18-Jun 2	2,707 ²	2,707	G10,300-G13,199
Above Ruth Falls	St. Mary's ⁵	1+ parr	A5,A6,A8,E9	Oct 18	2,100 ³	2,000	A15,000-A16,999
Fifteen Mile Stream			E16,E19-E21	18	2,000 ⁴	2,000	A18,000-A19,999
			E3	Jul 5	1,000		Adipose clip
			E4	5	1,000		
			E5	5	1,500		
			E26	5	1,500		

¹Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

²Equal numbers of tagged smolts released on separate days to evaluate fish passage at Malay Falls.

³Average length - 18.3 cm.

⁴Average length - 14.9 cm.

⁵Progeny resulted from mass spawning of broodstock collected from the commercial salmon trap in the estuary (75%) and from seining the West Branch (25%).

TABLE 43. Hatchery-reared Atlantic salmon smolt released in the East River in 1977.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Below Ruth Falls	LaHave (RK)	1+ smolt	E1	May 11	3,975	3,975	H15,000-H18,999
	St. Mary's	2+ smolt		20	4,000	4,000	P42,000-P45,999
		1+ smolt		19-31	32,698		Adipose clip
				23-27	15,862		
Above Ruth Falls							
Malay Falls Power Canal		2+ smolt	E2	May 16-Jun 8	3,217 ²	3,217	H35,200-H38,499
			E9,E16,A1	May 17-18	3,525	3,525	P60,000-P63,999

¹Tagged Atlantic salmon smolts have an adipose clip.

²Equal numbers of tagged smolts released on separate days to evaluate downstream fish passage at Malay Falls.

TABLE 44. Hatchery-reared Atlantic salmon smolt released in the East River in 1978.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Below Ruth Falls	LaHave (HR) ³	1+ smolt	E1	May 10	4,120 ²	4,000	M21,000-M24,999
	East;East (RK)	2+ smolt		25,29	3,992 ²	3,992	M74,000-M77,999
	St. Mary's;East			30	4,844		Adipose clip
Various sites			E1-E6	23	4,824 ^{2,4}	4,824	K85,000-K89,999

¹Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

²Food for these groups - Silvercup, regular fat.

³Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

⁴Groups of tagged smolts were released above and below obstructions to evaluate downstream fish passage.

TABLE 45. Hatchery-reared juvenile Atlantic salmon released in the East River in 1979.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Below Ruth Falls louvers	LaHave ²	1+ smolt	E1	May 10	2,420 ³	2,000	W39,000-W40,999
				10	2,000 ⁴	2,000	W41,000-W42,999
Malay Falls Power Canal	East	2+ smolt	E2	9	4,580	3,982	W18,000-W21,999
				22	1,096 ⁵	1,096	W82,000-W82,999
Malay Falls Power Canal & Anti-dam	St. Mary's (grilse)		E2-E6	14-22	6,898 ⁵	6,898	W83,000-W89,999
Grant's River -Various sites	Medway, LaHave	0+ fry	G1,G2	11-16	47,228		None

¹Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

²Progeny resulted from the mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

³Food for this group - Silvercup, high fat.

⁴Food for this group - Silvercup, regular fat.

⁵Groups of tagged smolts were released above and below obstructions at Malay Falls and Anti-dam to evaluate downstream fish passage.

TABLE 46. A summary of Atlantic salmon stocking in the East River, 1974-79.

Year of release	Number released					Total
	0+ fry	0+ parr	1+ parr	1+ smolt	2+ smolt	
1974	32,774	25,477	7,541		9,611	75,403
1975		709	9,992		24,179	34,880
1976			9,100		12,628	21,728
1977				19,837	43,440	63,277
1978				4,120	13,660	17,780
1979	47,228			4,420	12,574	64,222

TABLE 47. Hatchery-reared Atlantic salmon smolt released in the Liscomb River in 1977.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Little Liscomb	LaHave (RK)	1+ smolt	L1	May 9	1,984	1,984	H19,000-H19,999
				24	1,991	1,991	+P15,000-P17,999
							P46,000-P46,699
West Liscomb	LaHave (RK)	1+ smolt	W2	9	1,985	1,985	+P48,800-P49,399
				24	2,000	2,000	+P47,400-P48,099
							H19,000-H19,999
	St. Mary's ²	2+ smolt	W2				+P15,000-P17,999
							P46,700-P47,399
							+P48,100-P48,799
							+P49,400-P49,999

¹Tagged Atlantic salmon smolts also have an adipose clip.

²Progeny resulted from mass spawning of broodstock collected from the commercial salmon trap in the estuary (75%) and from seining the West Branch (25%).

TABLE 48. Hatchery-reared juvenile Atlantic salmon released in the Liscomb River in 1978.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Little Liscomb	East; East (RK)	2+ smolt	L1	May 23	2,000 ²	2,000	M70,000-M71,999
				May 31, Jun 6	6,784 ²		Adipose clip
	LaHave (HR) ³ St. Mary's ⁴	1+ smolt		1,3,8	2,351 ²	2,000	M17,000-M20,999
				1,3	2,281 ²	2,000	M13,000-M16,999
West Liscomb	East; East (RK)	1+ parr		1,3	712		Adipose clip
		2+ smolt	W2	24	1,996 ²	1,996	M72,000-M73,999
				Jun 1,8	6,784 ²		Adipose clip
	LaHave (HR) ³ St. Mary's ⁴	1+ smolt	W2	May 26,30	15,806 ²		
				Jun 2,5,9			
				May 1,3,8	2,351 ²	2,000	M17,000-M20,999
			1,3	2,220 ²	2,000	M13,000-M16,999	
			1,3	712		Adipose clip	

¹Tagged Atlantic salmon smolts also have an adipose clip.

²Food for these groups - Silvercup, regular fat.

³Progeny resulted from mass spawning of wild (19%) and hatchery-reared (81%) broodstock collected at Morgan Falls fishway; they are identified here as predominantly LaHave (HR).

⁴Progeny resulted from mass spawning of broodstock collected mainly from seining the West Branch of the St. Mary's River.

TABLE 49. Hatchery-reared Atlantic salmon smolt released in the Liscomb River in 1979.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹	
					released	tagged		
Little, West Liscomb	LaHave ²	1+ smolt	L1,W2	May 8	2,208 ²	2,000	W43,000-W44,999	
				8	2,206 ²	2,000	W45,000-W46,999	
	St. Mary's (Gr) St. Mary's (Sal) St. Mary's; East (HR) ⁴	2+ smolt		10-11	3,991	3,991	W26,000-W29,999	
				10-11	3,994	3,994	W22,000-W25,999	
				10-11	4,000	4,000	W57,000-W59,999 +W70,000-W70,999	
Little Liscomb	St. Mary's (Sal)		L1	22	1,790		Adipose clip	
			L2	9	2,070			
				16	1,821			
				16	1,811			
West Liscomb	St. Mary's; East (HR) ⁴		W2	8,29	2,840			
	St. Mary's (Sal) St. Mary's; East (HR) ⁴		W3	15	2,003			
				16	1,536			
	St. Mary's (Gr) St. Mary's (Sal) St. Mary's; East (HR) ⁴	1+ smolt		W4	28	990		None
					22	1,946		Adipose clip
		2+ smolt			17	2,004		
					15	2,000		
					16,17,22	7,254		
		East (HR) ⁵ St. Mary's (Gr)	1+ smolt		W5	28	990	
17						2,063		Adipose clip
St. Mary's; East (HR) ⁴	2+ smolt		W6	8,17,22	5,188			
East (HR) ⁵ St. Mary's; East (HR) ⁴	1+ smolt		B1	28	1,023		None	
				9,15	3,835		Adipose clip	
St. Mary's; East (HR) ⁴	2+ smolt			28	1,023		None	

¹Tagged Atlantic salmon smolts and untagged smolts have an adipose clip.

²Food for these groups - Silvercup, regular fat.

³Progeny resulted from mass spawning of wild (71%) and hatchery-reared (29%) broodstock collected at the Morgan Falls fishway; they are identified here as predominantly wild LaHave.

⁴Progeny resulted from mass spawning of broodstock collected mainly from seining the West Branch of the St. Mary's River; a few were taken from the Ruth Falls fishway, East (HR), and commercial salmon trap in the St. Mary's estuary.

⁵Progeny resulted from mass spawning of wild (21%) and hatchery-reared (79%) broodstock collected at the Ruth Falls fishway; they are identified here as predominantly East (HR).

TABLE 50. A summary of Atlantic salmon stocking in the Liscomb River, 1977-79.

Year of release	Number released			Total
	1+ parr	1+ smolt	2+ smolt	
1977		3,969	3,991	7,960
1978	1,424	9,203	33,370	43,997
1979		8,440	50,146	58,586

TABLE 51. Hatchery-reared juvenile Atlantic salmon released in the St. Mary's River in 1972-74.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
East St. Mary's							
Little Lake	Restigouche	2+ smolt	E4	May '72	9,621	7,879	T60,000-T67,999
Little Lake	Restigouche;		E4	May '73	870		R82,100-R82,699
	St. Mary's		E4	May '74	4,670	769	+R82,800-R84,399
Little Lake	Restigouche						R82,000-R82,099
							+R89,300-R89,999
East St. Mary's	St. Mary's	0+ fry	Various sites (E1-E4)	Jun 18-27, '74	31,954		None
West St. Mary's	St. Mary's		Various sites (W1-W4)		32,849		

¹Tagged Atlantic salmon smolts also have an adipose clip.

TABLE 52. Hatchery-reared juvenile Atlantic salmon released in the Petitcodiac River in 1973 and 1975.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number released	Mark or tag series
<u>1973</u>						
West Petitcodiac	Big Salmon	1+ parr	Various sites (W1-W5)	Jun 4	1,370	Adipose clip
				5	2,130	
				6	2,200	
				7	1,830	
				8	1,610	
Pollett			Various sites (P1-P11)	4	3,600	
				5	3,660	
				6	3,660	
				7	2,670	
				8	1,302	
<u>1975</u>						
West Petitcodiac	Big Salmon	0+ fry	W1	Jul 10	1,500	None
			W2	10	1,500	
			W3	10	1,500	
			W4	10	1,500	
			W5	10	1,500	
Pollett			P1	10	1,500	
			P2	10	1,500	
			P3	10	1,500	
			P4	10	1,500	
			P5	10	1,500	
			P6	10	1,500	
			P7	10	1,500	
			P8	10	1,500	
			P9	10	1,500	
			P10	10	1,500	
			P11	10	1,500	

TABLE 53. Hatchery-reared Atlantic salmon smolt released in the Point Wolfe River in 1974.

Release location	Genetic stock origin	Age class (yr) Stage	Stocking site number	Release date	Number		Mark or tag series ¹
					released	tagged	
Above dam	Big Salmon	2+ smolt	P1	Jun 18	7,485	7,485	A52,500-A54,999 +A82,500-A84,999 +Q92,500-Q94,999
			P1	20	4,385	Adipose clip	

¹Tagged Atlantic salmon smolts also have an adipose clip.

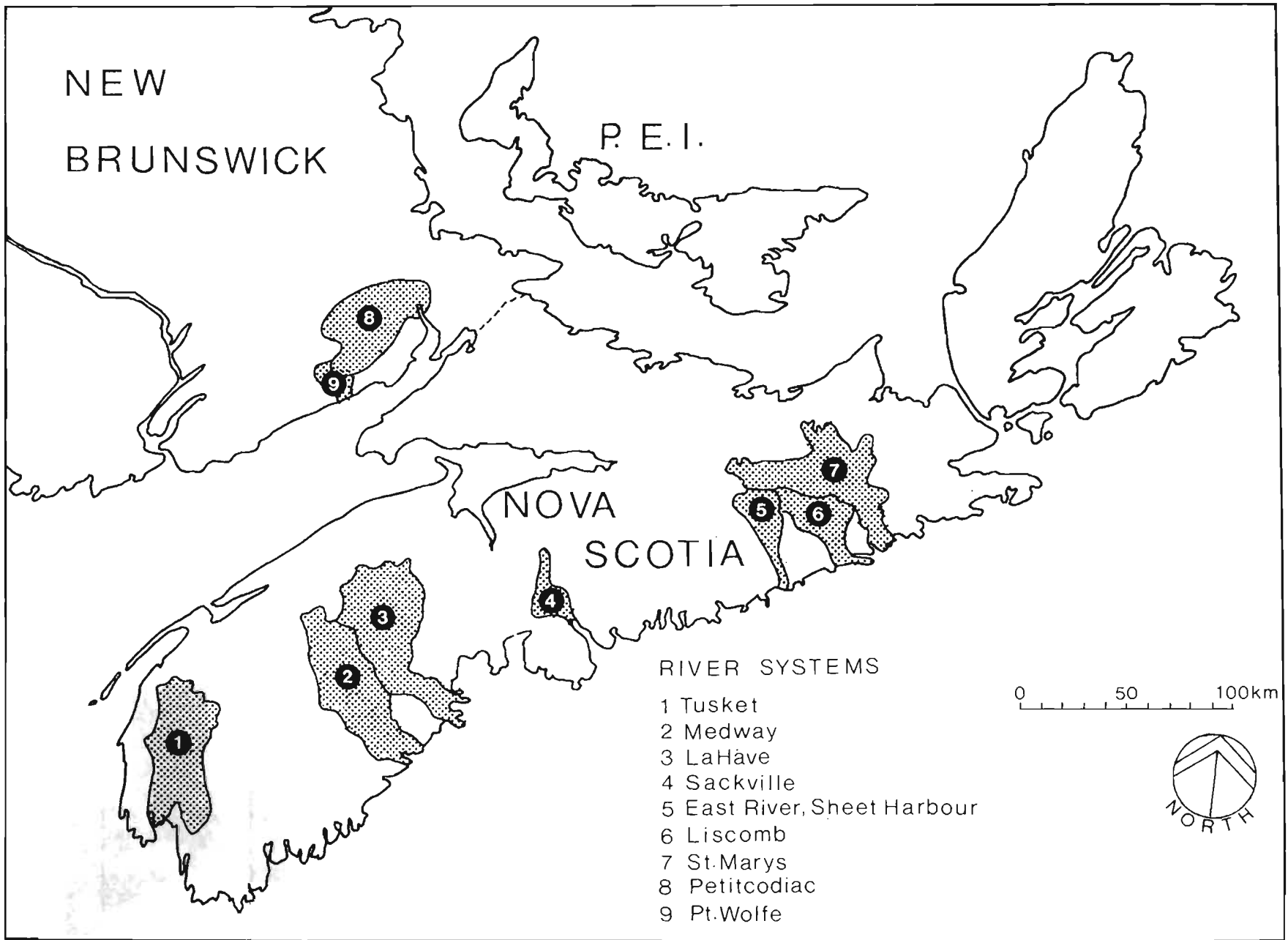


FIG. 1. Location map of the river systems in Nova Scotia and southern New Brunswick stocked with juvenile Atlantic salmon, 1971-79.

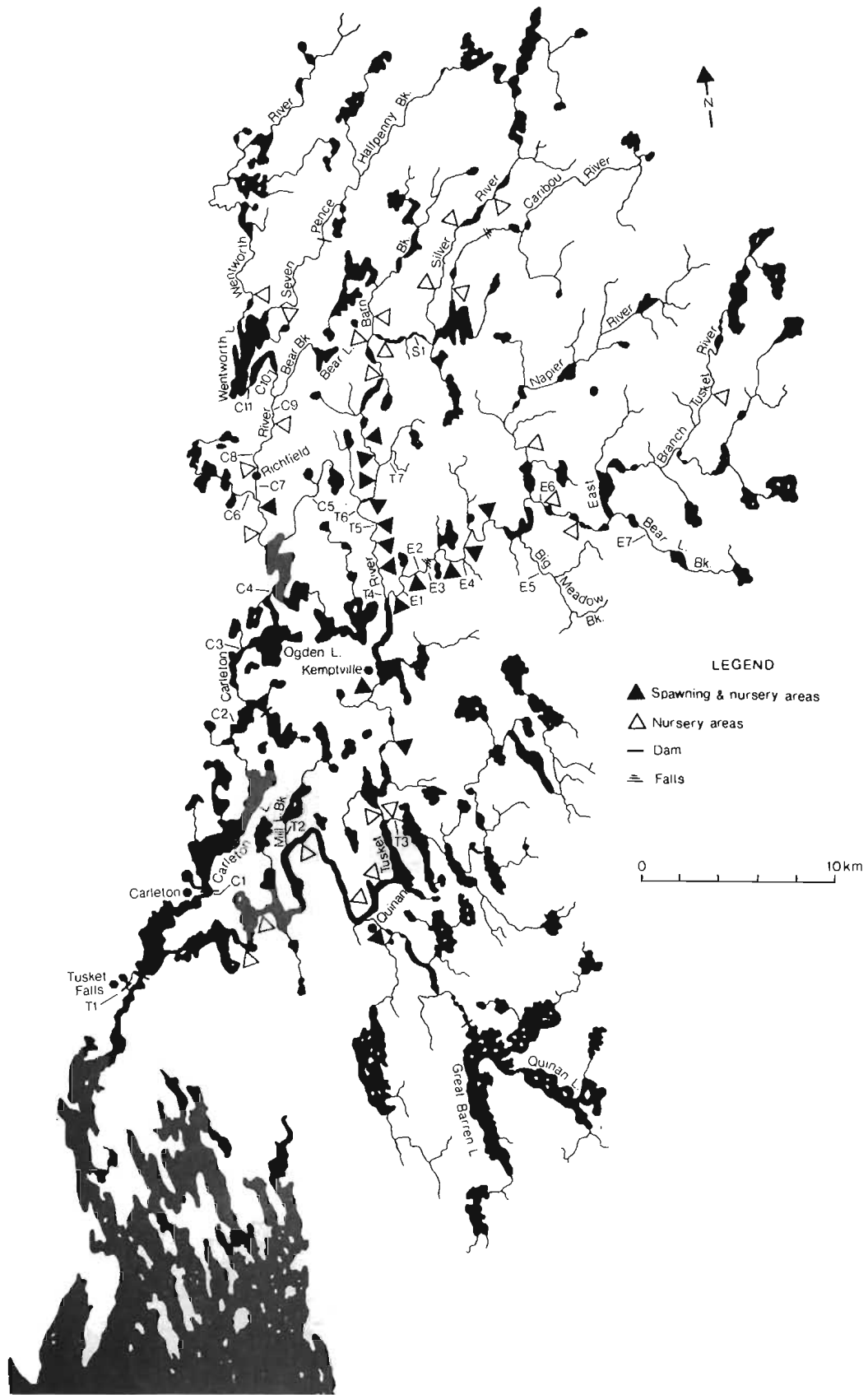


FIG. 2. Juvenile Atlantic salmon stocking sites on the Tusket River system.

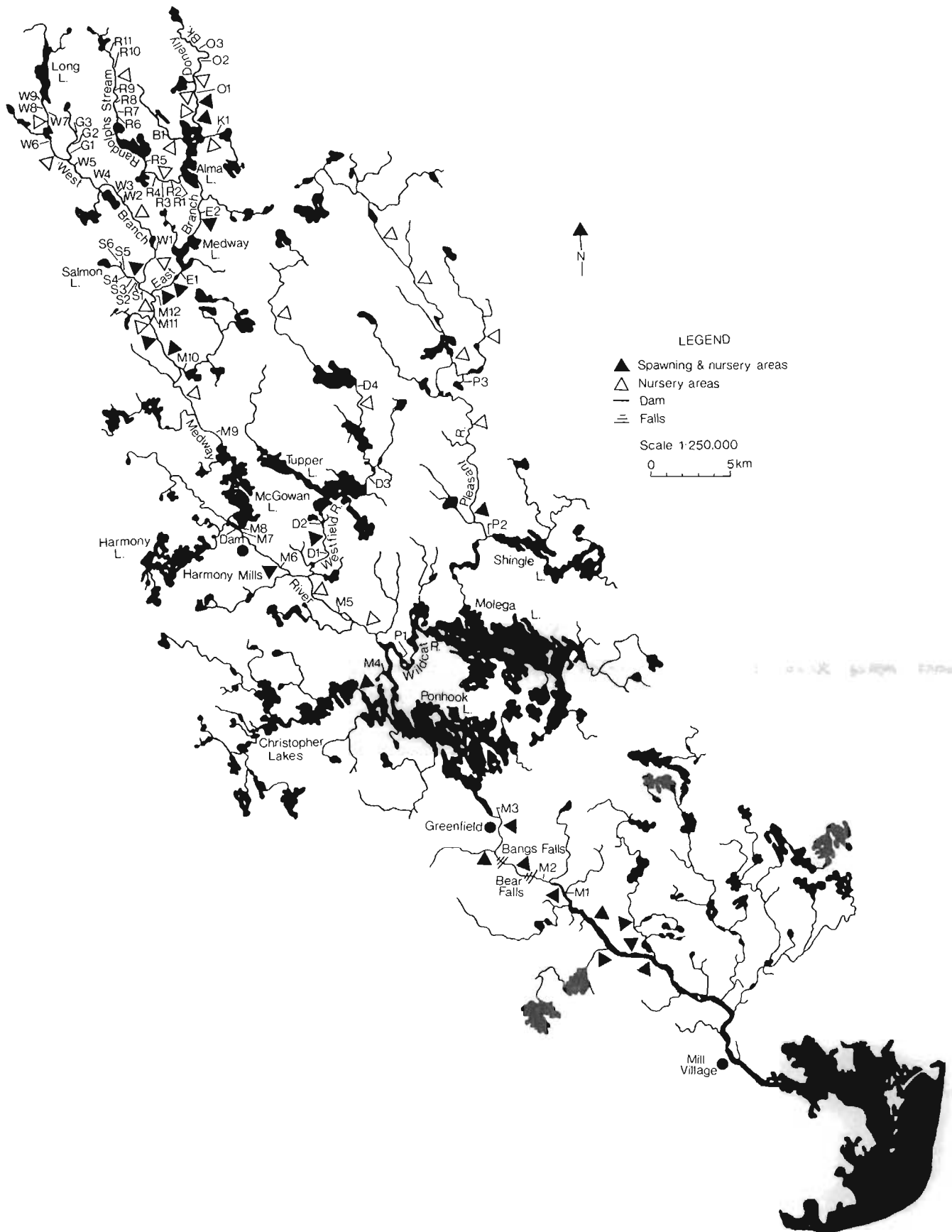


FIG. 3. Juvenile Atlantic salmon stocking sties on the Medway River system.

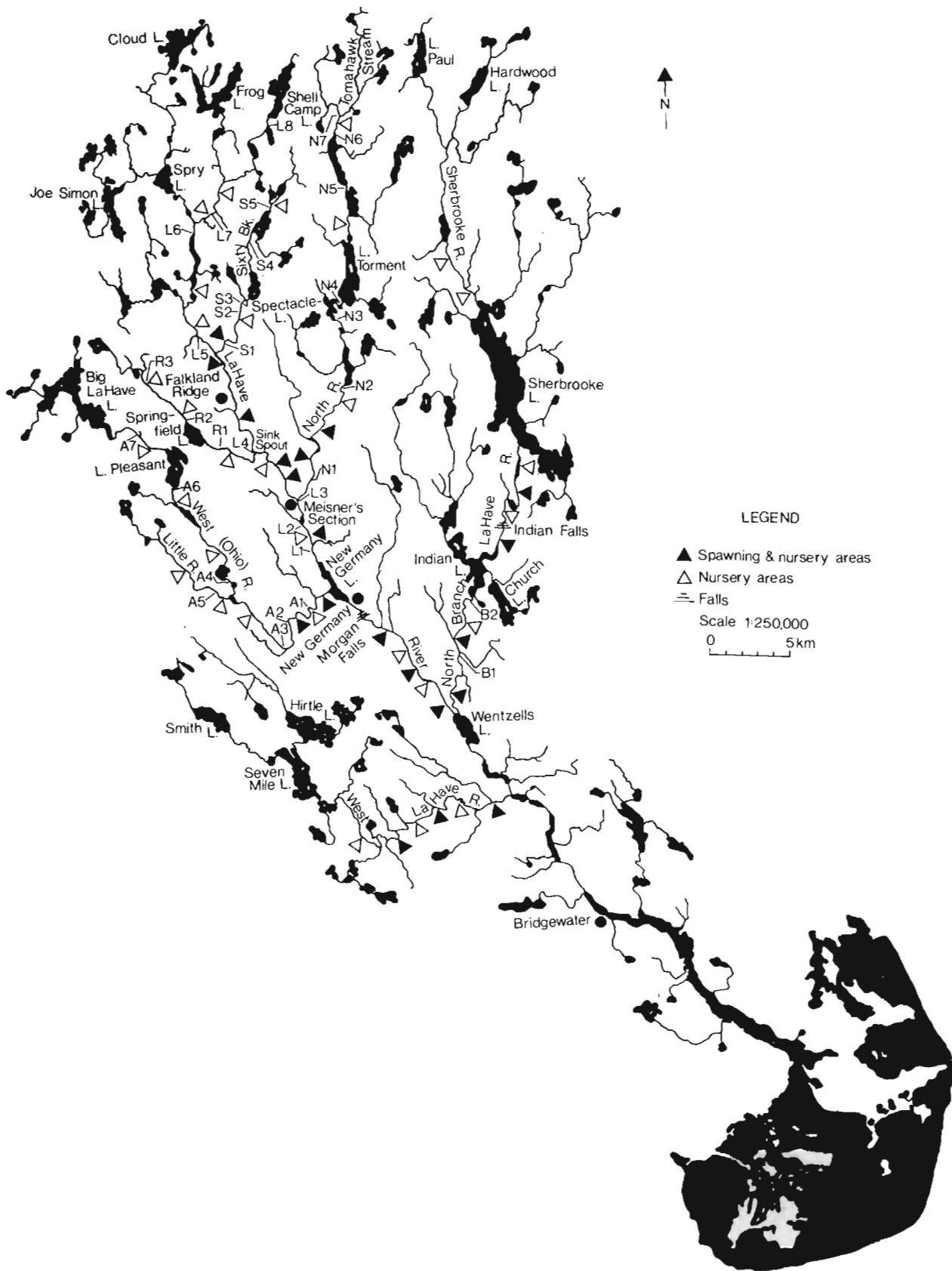


FIG. 4. Juvenile Atlantic salmon stocking sites on the LaHave River system.

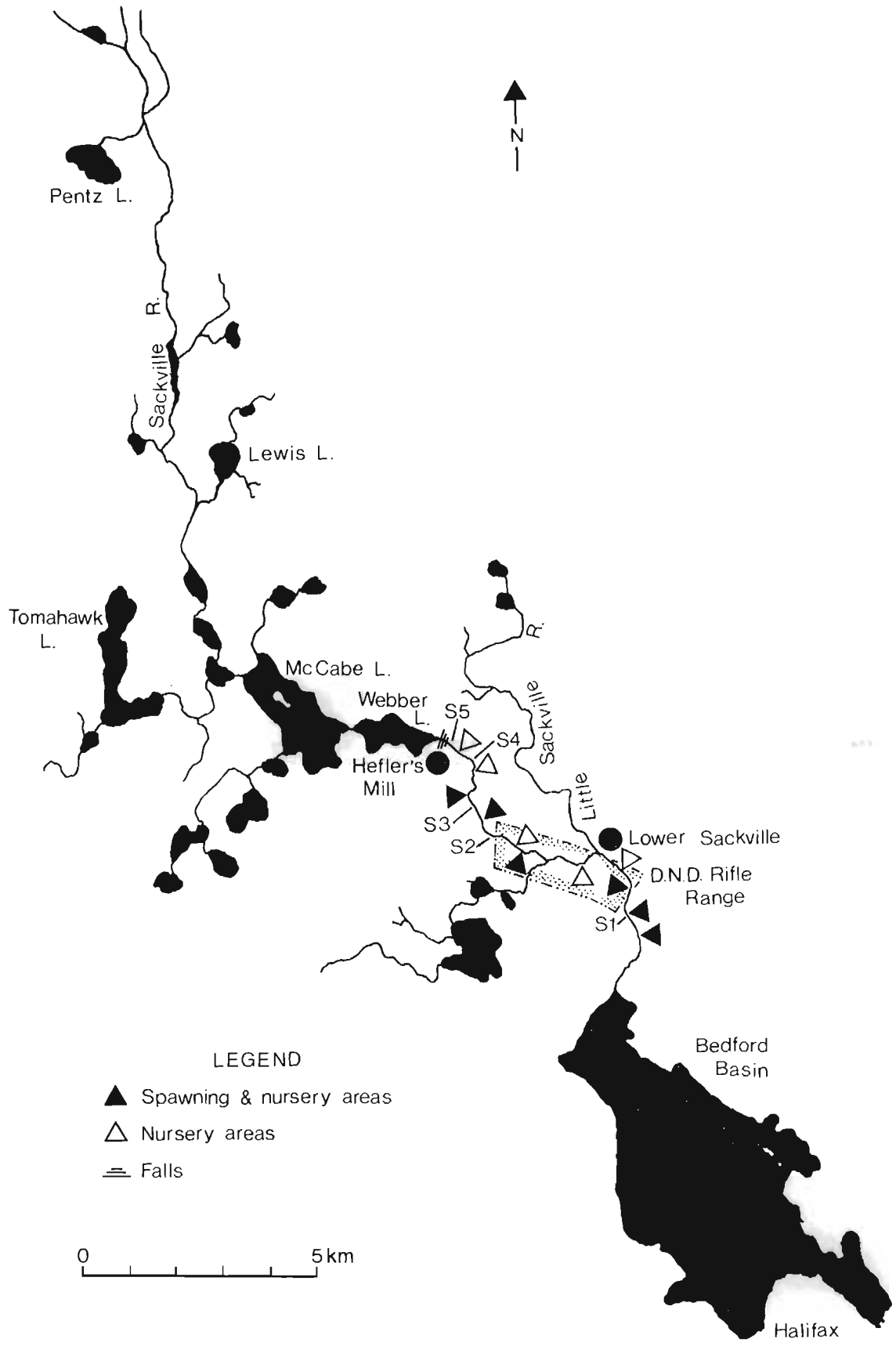


FIG. 5. Juvenile Atlantic salmon stocking sites on the Sackville River system.

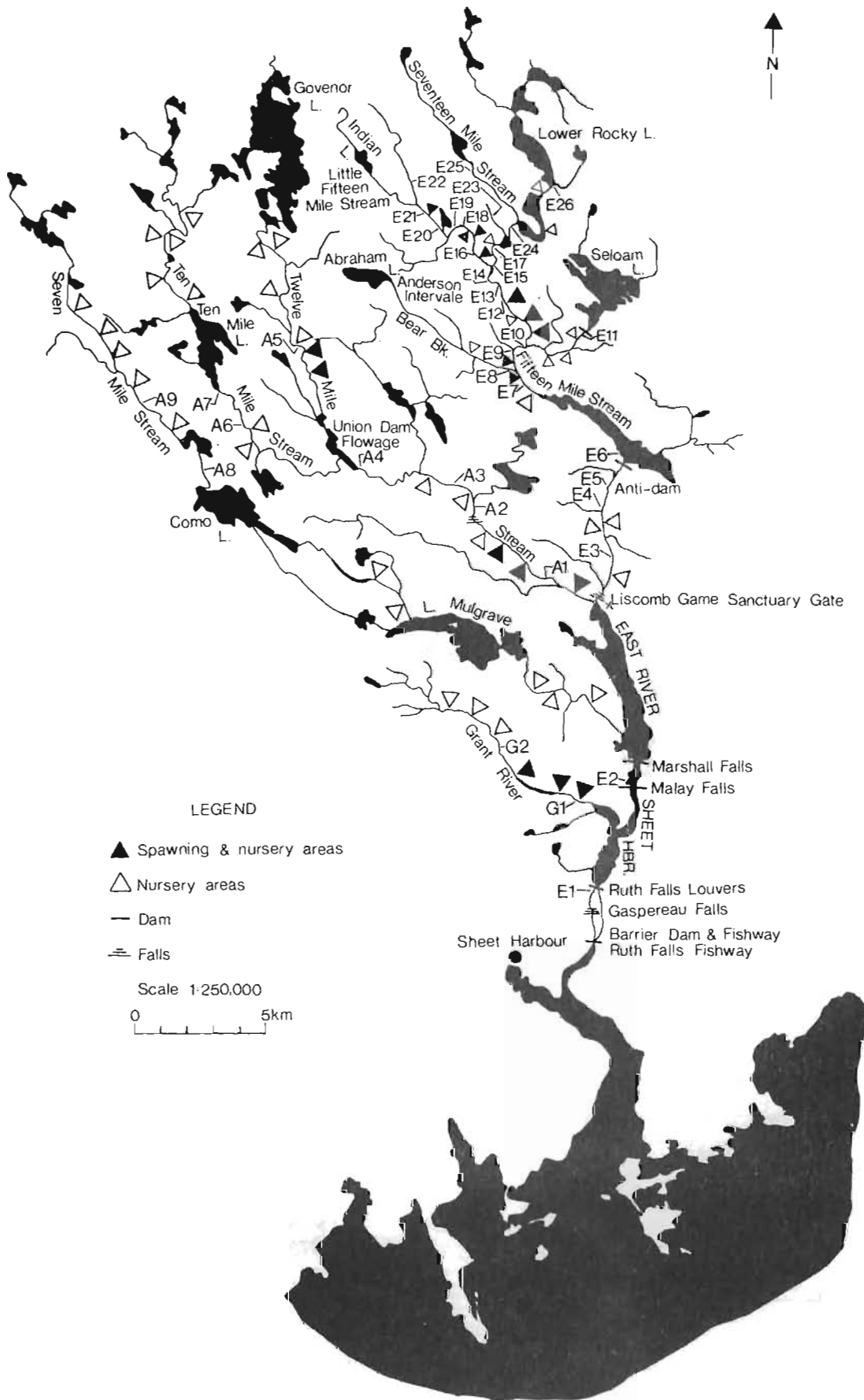


FIG. 6. Juvenile Atlantic salmon stocking sites on the East River Sheet Harbour system.



FIG. 7. Juvenile Atlantic salmon stocking sites on the Liscomb River system.

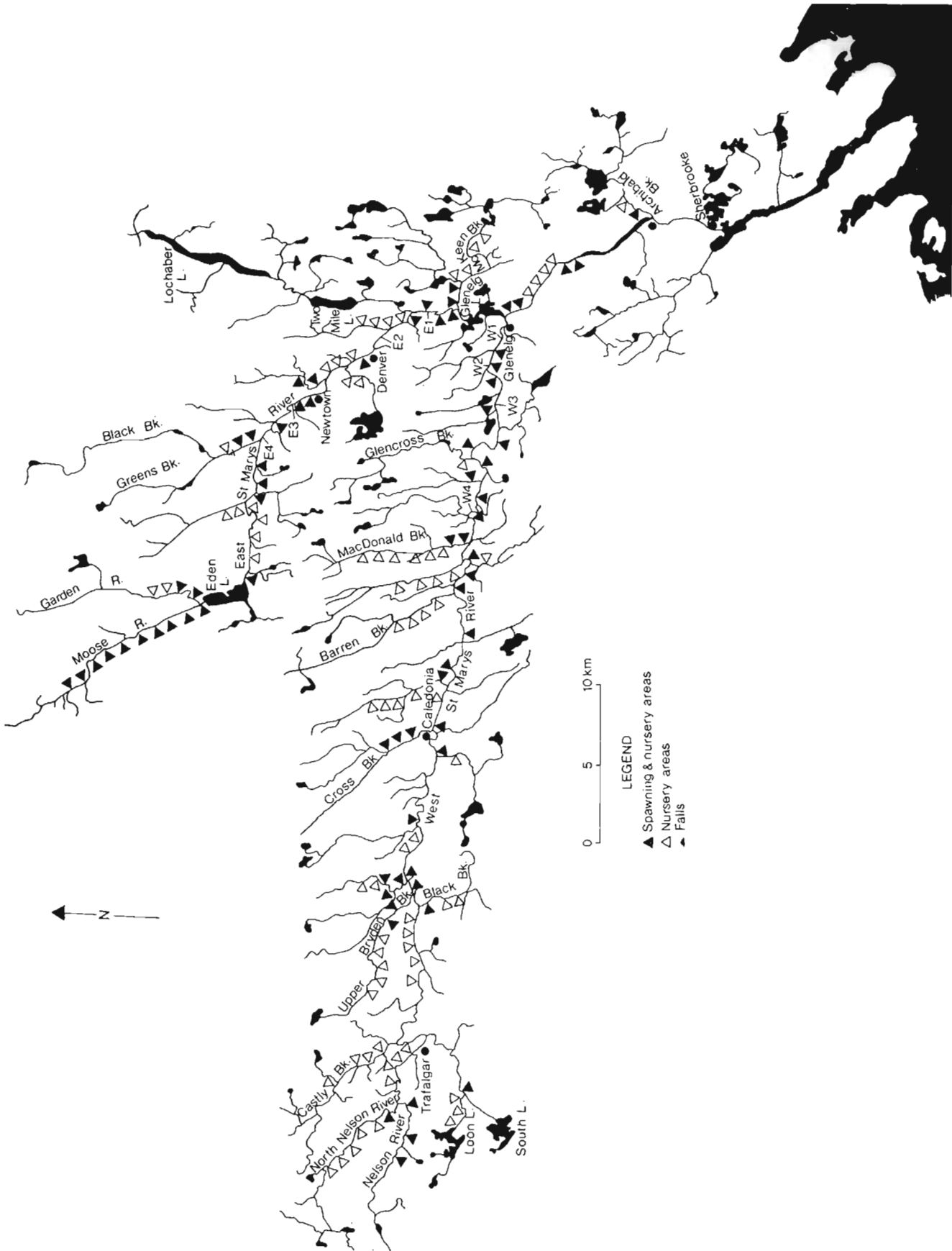


FIG. 8. Juvenile Atlantic salmon stocking sites on the St. Mary's River system.

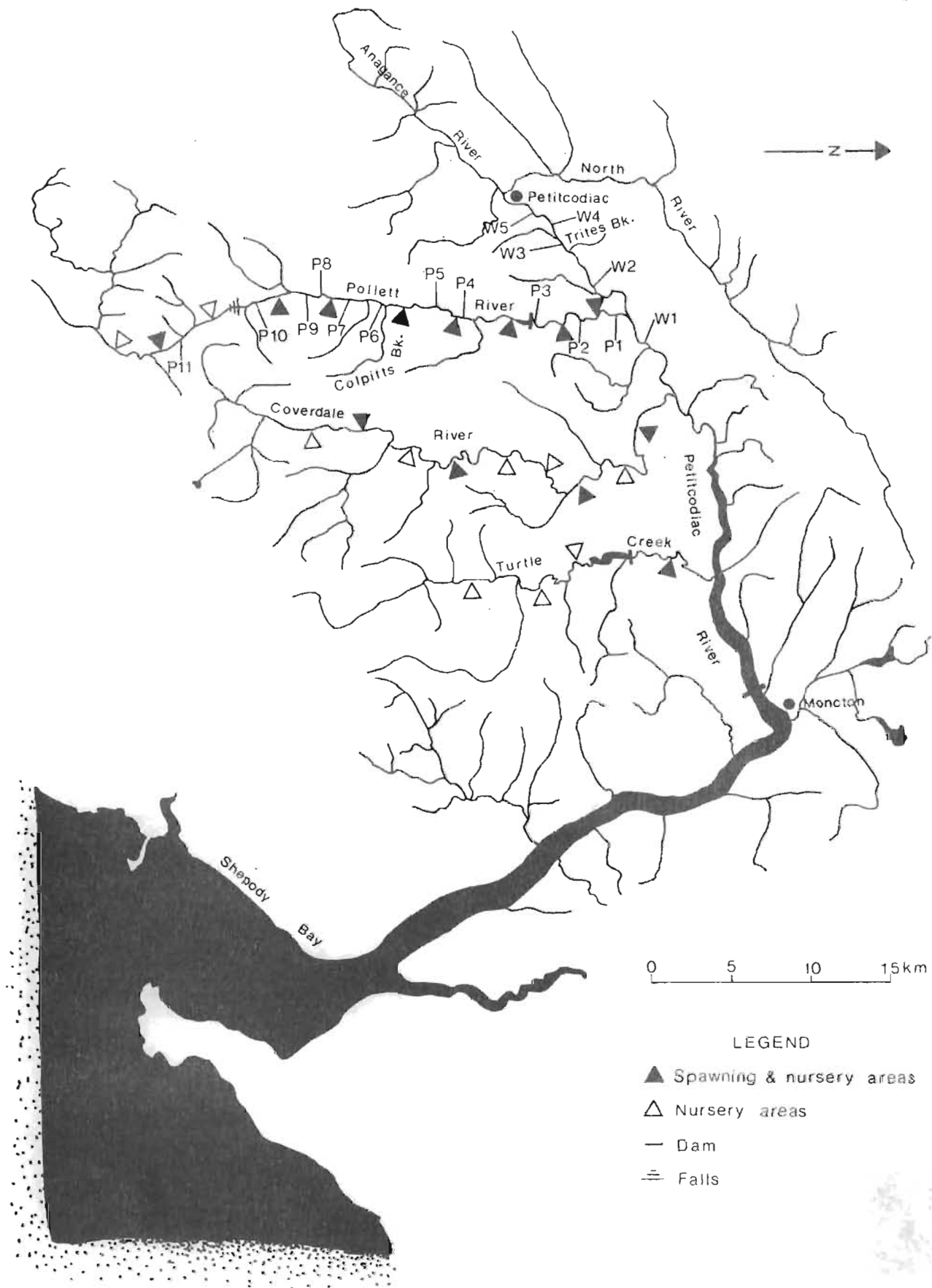


FIG. 9. Juvenile Atlantic salmon stocking sites on the Petitcodiac River system.

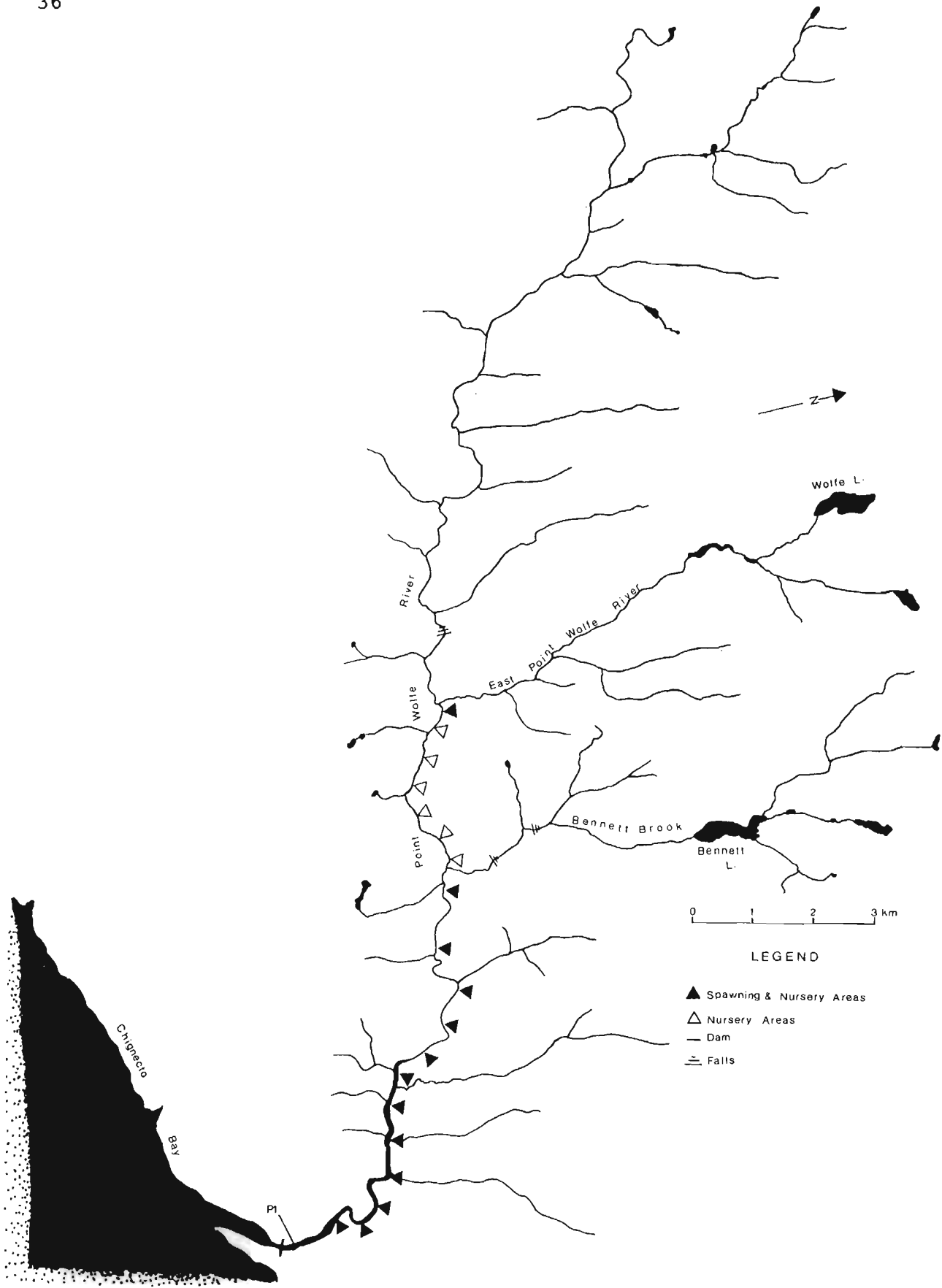


FIG. 10. Juvenile Atlantic salmon stocking sites on the Point Wolfe River system.



The upwelling box incubator at Ruch Falls and Atlantic salmon enhancement staff releasing unfed fry in Grant River, East River Sheet Harbour.



Juvenile Atlantic salmon are transferred from hatchery tank trucks to smaller 4-wheel drive vehicles or rubber rafts, which are used by salmon enhancement staff to stock remote headwater nursery areas.

APPENDIX A

TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
TUSKET RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Main Tusket River					
T1	Tusket Falls Power Canal	20P/13	609632	43°53'05"	65°58'20"
T2	Mill Lake Brook	20P/13	688710	43°57'25"	65°52'52"
T3	Brook from Kegeshook Lake	20P/13	746725	43°58'25"	66°48'30"
T4	North Kemptville	21A/4	733844	44°04'40"	65°50'00"
T5	Bridge on main Tusket	21A/4	722884	44°06'52"	65°50'50"
T6	Main Tusket	21A/4	716892	44°07'15"	65°51'10"
T7	Whistler Brook	21A/4	726911	44°12'20"	65°50'30"
S1	Silver River	21A/4	748984	44°12'20"	65°49'05"
East Branch					
E1	North Kemptville	21A/4	742845	44°04'50"	65°49'19"
E2	East Branch Tusket	21A/4	755858	44°05'35"	65°48'15"
E3	East Branch Tusket	21A/4	759864	44°05'55"	65°47'56"
E4	East Branch Tusket	21A/4	764866	44°06'03"	65°47'40"
E5	Big Meadow Brook	21A/4	813866	44°06'10"	65°43'57"
E6	East Branch Tusket	21A/4	816896	44°07'45"	65°43'50"
E7	Bear Lake Brook	21A/4	871882	44°07'05"	65°39'32"
Carleton River					
C1	Below Reynards Lake	20P/13	646678	43°55'40"	65°55'18"
C2	Below Lake Fanning	21A/4	658771	44°00'45"	65°55'15"
C3	Below Ogden Lake	21A/4	660814	44°03'03"	65°55'16"
C4	Below Parr Lake	21A/4	671842	44°04'30"	65°54'30"
C5	Salmon Lake Brook	21A/4	691896	44°07'30"	65°53'11"
C6	Richfield	21A/4	658898	44°07'35"	65°55'30"
C7	Richfield	21A/4	662900	44°07'42"	65°55'21"
C8	Bear Brook	21A/4	661917	44°08'35"	65°55'30"
C9	Bear Brook	21A/4	669940	44°09'52"	65°54'54"
C10	Below Privilege Lake	21A/4	669964	44°11'06"	65°54'56"
C11	Below Wentworth Lake	21A/4	654951	44°10'25"	65°56'05"

APPENDIX B

TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
MEDWAY RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Main Medway River					
M1	Fisheries cabin	21A/2	574985	44°13'40"	63°30'47"
M2	Bear Falls	21A/2	556998	44°14'20"	64°48'30"
M3	Greenfield	21A/3	531035	44°16'15"	64°50'30"
M4	Echo Lodge	21A/7	457121	44°45'50"	64°51'05"
M5	South Brookfield	21A/7	428151	44°22'25"	64°58'25"
M6	Westfield Bridge	21A/6	388176	44°23'40"	65°01'30"
M7	Harmony Bridge	21A/6	364196	44°24'50"	65°03'20"
M8	McGowan Lake	21A/6	365201	44°25'05"	65°03'30"
M9	New Albany	21A/11	346254	44°27'55"	65°04'45"
M10	Below Perch Lake	21A/11	324293	44°29'50"	65°06'30"
M11	Mersey camp	21/All	303325	44°31'35"	65°08'08"
M12	Below junction east & west branches	21A/11	303336	44°32'10"	65°08'05"

APPENDIX B - cont'd

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Pleasant River					
P1	Wildcat River	21A/7	471123	44°20'55"	65°54'55"
P2	Tory Bridge	21A/7	517205	44°25'25"	64°51'45"
P3	Tumblem	21A/10	493295	44°30'20"	64°53'50"
Westfield River					
D1	Lower Westfield	21A/7	416186	44°24'20"	64°59'20"
D2	Upper Westfield	21A/7	413208	44°25'30"	64°59'40"
D3	Halfway Brook	21A/7	443236	44°27'00"	64°57'30"
D4	Round Lake Brook	21A/7	431285	44°29'35"	64°58'30"
West Branch					
W1	Salmon Lake Stream	21A/11	294343	44°32'35"	65°08'50"
W2	Salmon Lake Stream	21A/11	293345	44°32'45"	65°09'00"
W3	Salmon Lake Stream	21A/11	291346	44°32'50"	65°09'05"
W4	Salmon Lake Stream	21A/7	287347	44°32'50"	65°09'20"
W5	Salmon Lake Stream	21A/11	286347	44°32'50"	65°09'25"
W6	Salmon Lake Stream	21A/7	284352	44°33'10"	65°09'40"
W7	Old dam site	21A/11	303365	44°33'43"	65°08'12"
W8	Below Russell Stillwater	21A/11	283392	44°35'10"	65°09'45"
W9	Russell Stillwater	21A/11	277396	44°35'30"	65°10'15"
W10	Above Russell Stillwater	21A/11	275399	44°35'40"	65°10'25"
W11	Below Bog Lake Brook	21A/11	255412	44°36'15"	65°11'55"
W12	Bog Lake Brook	21A/11	250417	44°36'35"	65°12'45"
W13	Bog Lake Brook	21A/11	253425	44°37'00"	65°12'10"
W14	Bog Lake Brook	21A/11	255427	44°37'10"	65°11'60"
W15	East Stony Lake Stream	21A/7	239423	44°36'55"	65°12'10"
W16	Below Long Lake	21A/11	235443	44°37'50"	65°13'30"
W17	Below Long Lake	21A/11	233450	44°38'20"	65°13'40"
W18	Below Long Lake	21A/11	234452	44°38'30"	65°13'40"
East Branch					
E1	Below Medway Lake	21A/11	320352	44°33'06"	65°06'55"
E2	Below Alma Lake	21A/11	331394	44°35'20"	65°06'10"
E3	Randolphs Stream	21A/11	317405	44°36'00"	65°07'15"
E4	Randolphs Stream	21A/11	306405	44°36'00"	65°08'00"
E5	Randolphs Stream	21A/11	302407	44°36'00"	65°08'25"
E6	Randolphs Stream	21A/11	297411	44°36'20"	65°08'50"
E7	Below Croker Lake	21A/11	295418	44°36'40"	65°08'55"
E8	Randolphs Stream	21A/11	277440	44°37'50"	65°10'20"
E9	Randolphs Stream	21A/11	277445	44°38'10"	65°10'20"
E10	Randolphs Stream	21A/11	276451	44°38'25"	65°10'30"
E11	Randolphs Stream	21A/11	276454	44°38'30"	65°10'20"
E12	Randolphs Stream	21A/11	274475	44°39'40"	65°10'40"
E13	Randolphs Stream	21A/11	272482	44°40'00"	65°10'50"
E14	Kelly Lake Brook	21A/11	338435	44°37'40"	65°05'45"
E15	Birch Bridge Brook	21A/11	310430	44°37'18"	65°07'45"
E16	Donnelly Brook	21A/11	325462	44°39'00"	65°06'52"
E17	Donnelly Brook	21A/11	325479	44°40'00"	65°06'50"
E18	Donnelly Brook	21A/11	328485	44°40'15"	65°06'40"

APPENDIX C
TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
LAHAVE RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Main LaHave River					
L1	Above New Germany Lake	21A/10	608362	44°34'13"	64°45'10"
L2	Below Meisners Section	21A/10	600385	44°35'22"	64°45'43"
L3	Meisners Section	21A/10	595397	44°36'05"	64°46'15"
L4	Cherryfield	21A/10	563430	44°37'40"	64°48'40"
L5	Faulken Ridge Bridge	21A/10	526504	44°41'40"	64°51'35"
L6	Peters Stillwater	21A/10	521565	44°44'55"	64°52'10"
L7	Donneln	21A/15	534582	44°45'48"	64°51'10"
L8	Shell Camp Stream	21A/15	566639	44°49'00"	64°48'45"
R1	Mason Meadow Brook	21A/10	540433	44°37'45"	64°50'15"
R2	Roop Brook	21A/10	520450	44°38'40"	64°52'00"
R3	Roop Brook	21A/10	498470	44°39'45"	64°53'35"
S1	Sixty Brook	21A/10	544496	44°41'10"	64°50'22"
S2	Sixty Brook Bridge	21A/10	553519	44°42'32"	64°49'40"
S3	Below Lower Sixty Lake	21A/10	554526	44°42'45"	64°49'35"
S4	Below Upper Sixty Lake	21A/15	554567	44°45'05"	64°49'25"
S5	Below East Twin Lake	21A/15	572590	44°46'12"	64°48'20"
Ohio River					
A1	Ripert Run	21A/10	613344	44°33'10"	64°44'50"
A2	Simpson Road bridge	21A/10	592320	44°31'45"	64°46'25"
A3	Hemford	21A/10	587303	44°30'55"	64°46'38"
A4	Below Rocky Lake	21A/10	553347	44°33'15"	64°49'15"
A5	Little West River	21A/10	545338	44°32'42"	64°49'55"
A6	Below Lake Pleasant	21A/10	515406	44°36'20"	64°52'20"
A7	Below LaHave Lake	21A/10	488439	44°38'05"	64°54'20"
North River					
N1	Highway bridge, North River	21A/10	602407	44°36'37"	64°45'50"
N2	Below Peter Veinots Stillwater	21A/10	621475	44°40'10"	64°44'25"
N3	Below Spectacle Lake	21A/10	610520	44°42'32"	64°49'40"
N4	Below Lake Torment	21A/10	613527	44°43'00"	64°45'00"
N5	Lakeview	21A/15	620577	44°45'55"	64°44'35"
N6	Tomahawk Brook	21A/15	608633	44°48'45"	64°45'39"
N7	Tomahawk Brook	21A/15	612647	44°49'22"	64°45'23"
North Branch					
B1	MacKays Bridge	21A/10	695316	44°31'40"	64°38'30"
B2	Below Indian Lake	21A/10	707542	44°33'05"	64°37'35"

APPENDIX D
TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING STIES ON THE
SACKVILLE RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
S1	Above DND rifle range bridge	11D/12	476548	44°44'50"	63°39'40"
S2	Bowlin private road	11D/13	452557	44°45'18"	63°41'35"
S3	Road opposite Sackville Manor	11D/13	442565	44°45'42"	63°42'22"
S4	Below Hefler's Sawmill - Highway 101	11D/13	440574	44°46'12"	63°42'28"
S5	Opposite Hefler's Sawmill	11D/13	436577	44°46'25"	63°42'45"

APPENDIX E

TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
EAST RIVER SHEET HARBOUR

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Main East Branch					
E1	Below Ruth Falls	11D/16	396779	44°57'20"	62°30'00"
E2	Malay Falls Power Canal	11D/16	407816	44°59'20"	62°29'52"
E3	Below Anti Dam	11E/1	394900	45°03'52"	62°30'00"
E4	Below Anti Dam	11E/2	392914	45°04'35"	62°30'08"
E5	Below Anti Dam	11E/2	391931	45°04'30"	62°30'15"
E6	Above Anti Dam	11E/1	397947	45°06'25"	62°29'35"
E7	Below Bear Brook	11E/2	355976	45°07'58"	62°32'51"
E8	Bear Brook	11E/2	353978	45°08'05"	62°33'02"
E9	Junction, Seloam Lake Road	11E/2	353987	45°08'35"	62°33'03"
E10	Below Anderson Interval	11E/2	358989	45°08'40"	62°32'39"
E11	Below Seloam Lake	11E/2	383999	45°09'11"	62°30'41"
E12	Anderson Interval	11E/2	350008	45°09'40"	62°33'13"
E13	Anderson Interval	11E/2	348012	45°09'55"	62°33'25"
E14	Above Anderson Interval	11E/2	345013	45°09'57"	62°33'40"
E15	Junction Little Fifteen	11E/2	343020	45°10'20"	62°33'47"
E16	Main Sanctuary Road	11E/2	341022	45°10'26"	62°33'55"
E17	Main Sanctuary Road	11E/2	343028	45°10'45"	62°33'49"
E18	Indian Lake Road	11E/2	330035	45°11'10"	62°34'45"
E19	Indian Lake Road	11E/2	329033	45°11'00"	62°34'55"
E20	Indian Lake Road	11E/2	323034	45°11'05"	62°35'21"
E21	Indian Lake Road	11E/2	319037	45°11'15"	62°35'40"
E22	Indian Lake Road	11E/2	313045	45°11'42"	62°36'08"
E23	Main Sanctuary Road	11E/2	338040	45°11'23"	62°34'14"
E24	Below Seventeen Mile Lake	11E/2	352037	45°11'17"	62°33'06"
E25	Rocky Lake Road	11E/2	335057	45°12'19"	62°34'26"
E26	Below Rocky Lake	11E/2	366052	45°12'02"	62°32'00"
Grant River					
G1	Lower Grant River	11D/15	385813	44°59'05"	62°30'40"
G2	Upper Grant River	11D/15	355827	45°00'00"	62°33'00"
Seven, Ten and Twelve Mile streams					
A1	First Bridge, Twelve Mile Stream	11E/2	367898	45°03'45"	62°32'04"
A2	Ragged Falls	11E/2	339920	45°04'55"	62°34'12"
A3	Twelve Mile Stream	11E/2	332935	45°05'45"	62°34'45"
A4	Below Union Dam Flowage	11E/2	294938	45°05'56"	62°37'35"
A5	Abrahams Lake Road	11E/2	268986	45°08'32"	62°39'32"
A6	Ten Mile Lake Road	11E/2	249955	45°06'51"	62°41'04"
A7	Below Ten Mile Lake	11E/2	236970	45°07'41"	62°42'00"
A8	Beaver Dam Road	11E/2	235936	45°05'50"	62°42'09"
A9	Beaver Dam Road	11E/2	207966	45°07'26"	62°44'15"

APPENDIX F
 TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
 REFERENCES OF STOCKING SITES ON THE
 LISCOMB RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Main-West Liscomb rivers					
W1	Below Big Stillwater Lake	11E/1	699878	45°02'30"	62°06'45"
W2	Below Ladle Lake	11E/1	641949	45°06'20"	62°11'10"
W3	Crooked Brook	11E/1	510006	45°09'35"	62°21'10"
W4	Archie's Rips	11E/1	480019	45°10'15"	62°23'25"
W5	Seloam Lake Road	11E/1	438036	45°11'10"	62°26'30"
W6	Below Rush Lake	11E/1	425043	45°11'30"	62°27'30"
W7	Below Big Liscomb Lake	11E/1	416076	45°13'25"	62°28'10"
B1	Below Big Brook Lake	11E/1	474063	45°12'35"	62°23'40"
Little Liscomb River					
L1	Above Yankee Lake	11E/1	655997	45°08'55"	62°10'00"
L2	Little Liscomb	11E/1	595033	45°10'55"	62°14'35"
H1	Hardwood Lake Brook	11E/1	660004	45°09'25"	62°09'35"
H2	Hardwood Lake Brook	11E/1	663040	45°11'15"	62°09'20"

APPENDIX G
 TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
 REFERENCES OF STOCKING SITES ON THE
 ST. MARY'S RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
East River St. Mary's					
E1	Aspen	11E/8	735164	45°18'00"	62°03'45"
E2	Denver	11E/8	719186	45°19'15"	62°05'00"
E3	East River St. Mary's	11E/8	652261	45°23'15"	62°10'05"
E4	New Town	11E/8	675235	45°21'47"	62°08'15"
West River St. Mary's					
W1	Glenelg	11E/8	720116	45°15'20"	62°05'00"
W2	Archibald's Road	11E/8	702125	45°15'45"	62°06'20"
W3	Lake Road	11E/8	683117	45°15'25"	62°07'50"
W4	Upper Smithfield	11E/8	611129	45°16'05"	62°13'10"

APPENDIX H

TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
PETITCODIAC RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
Pollett River					
P1	Below Kay Settlement	21H/4E	384948	45°59'24"	65°05'14"
P2	Kay Settlement	21H/4E	385930	45°58'30"	65°05'10"
P3	The Glades	21H/4E	381898	45°56'37"	65°05'20"
P4	Below Covered Bridge	21H/4E	381856	45°54'23"	65°05'08"
P5	Pollett River	21H/4E	374836	45°53'18"	65°05'45"
P6	Above Colpitts Brook	21H/4E	372806	45°51'40"	65°05'37"
P7	Blakney	21H/4E	369788	45°50'42"	65°06'03"
P8	Blakney	21H/4E	365770	45°49'35"	65°06'22"
P9	Blakney	21H/4E	365760	45°49'12"	65°06'18"
P10	Elgin	21H/4E	366735	45°47'52"	65°06'10"
P11	Church Corner	21H/4E	382688	45°45'19"	65°04'47"
Petitcodiac River					
W1	Main Petitcodiac River	21I/3	398970	46°00'34"	65°04'15"
W2	Bridge at River Glade	21H/4E	365938	45°58'50"	65°06'38"
W3	Below Trites Brook	21H/4E	346927	45°58'12"	65°08'07"
W4	Petitcodiac East	21H/4E	329915	45°57'30"	65°09'22"
W5	Petitcodiac East	21H/4E	319903	45°56'50"	65°10'05"

APPENDIX I

TOPOGRAPHIC MAP COORDINATES AND MILITARY GRID
REFERENCES OF STOCKING SITES ON THE
POINT WOLFE RIVER

Stocking site number	Name	Map sheet number	Grid reference	Latitude	Longitude
P1	Above dam - upstream from headpond	21H/1	429461	45°33'12"	65°00'37"

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