APPENDIX 1

Identification of Sampling Areas - Northeastern New Brunswick

Shellfish Area Designation	Growing Area Name	Coastline Description	Water Sampling Frequency (Runs / year)	Water Quality Sample Stations	Number of Samples per year
NB-01-020-003	New Mills	Hamilton Point to Black point	5	12	60
NB-01-020-004	Heron Island	Waters of Heron Island and Shoal Bay	5	12	60
NB-01-030-001	Nash Creek	Black Point to Fenderson Beach	5	10	50
NB-01-030-002	Armstrong Brook / Jacquet River	Fenderson Beach to Little Belldune Point	5	2	10
NB-02-010-004	Beresford Beach	North Nigadoo to Youghall Beach	5	5	25
NB-02-020-001	Bathurst Harbour	Youghall Beach to Belloni Point	5	6	30
NB-02-030-002	Stonehaven	Cranberry Cape to Grindstone Point	2	2	4
NB-02-040-002	Anse Bleue	W. end of Hwy 320 to N/E of Pte Maisonnette	2	1	2
NB-03-010-001	Baie de Caraquet	N/ E of Pte de Maisonnette to Pte near Le Bouthillier	5	46	230
NB-03-010-002	Bas-Caraquet	Pte near Le Bouthillier to Pte des Blanchard	5	22	110
NB-03-020-001	Pokesudie Island	Pte Des Blanchard to Pte à Mailloux	5	11	55
NB-03-020-002	Baie St-Simon (North)	Pte à Mailloux to Pte aux Bouleaux	5	15	75
NB-03-020-003	Baie St-Simon (South)	Pte aux Bouleaux to east of Pte Brûlé	5	19	95
NB-03-020-004	Havre de Shippagan	East of Pte Brûlé to N.E of Pte à Peinture	5	21	105
NB-03-030-001	Baie de Lamèque	N.E. of Pte à Peinture to N of Pte Alexandre	5	16	80
NB-03-030-002	Baie de Petite-Lamèque	N. of Pte Alexandre to Pte de Petite Lamèque	5	9	45
NB-03-030-003	Grande Batture	Pte de Petite Lamèque to E. of L.Shippagan	5	11	55
NB-03-030-004	Miscou Harbour	E. of L.Shippegan to Harper Point	5	14	70
NB-03-040-001	Shippagan Beach	Shippegan Gully to Petit-Pokemouche Gully	5	2	10
NB-03-040-002	Baie de Pokemouche	Petit-Pokemouche Gully to Green Point	5	7	35
NB-03-050-001	Baie de Tracadie	Green Pt to Pte-à-Bouleaux	5	21	105
NB-03-050-002	Grande Rivière Tracadie	Pte-à-Bouleaux to Pte-à-Barreau	5	20	100
NB-04-010-001	Tabusintac Bay	Pte-à-Barreau to Old Sea Gully	5	38	190
NB-04-020-001	Neguac Bay	Old Sea Gully to S.-W. shrore Hay Island	5	36	180
NB-04-020-002	Burnt Church	S.-W. shrore Hay Island to Rocky Point	5	10	50
NB-04-020-003	Portage Island	All surrounding waters	5	8	40
			TOTAL	376	1871

APPENDIX 2

EC MARINE SAMPLING STATION MAPS FOR NORTH-EAST NEW BRUNSWICK

ANNEXE 2

CARTES D'ÉCHANTILLONNAGE DE STATIONS MARINES POUR LE NORD-EST DU N.-B.

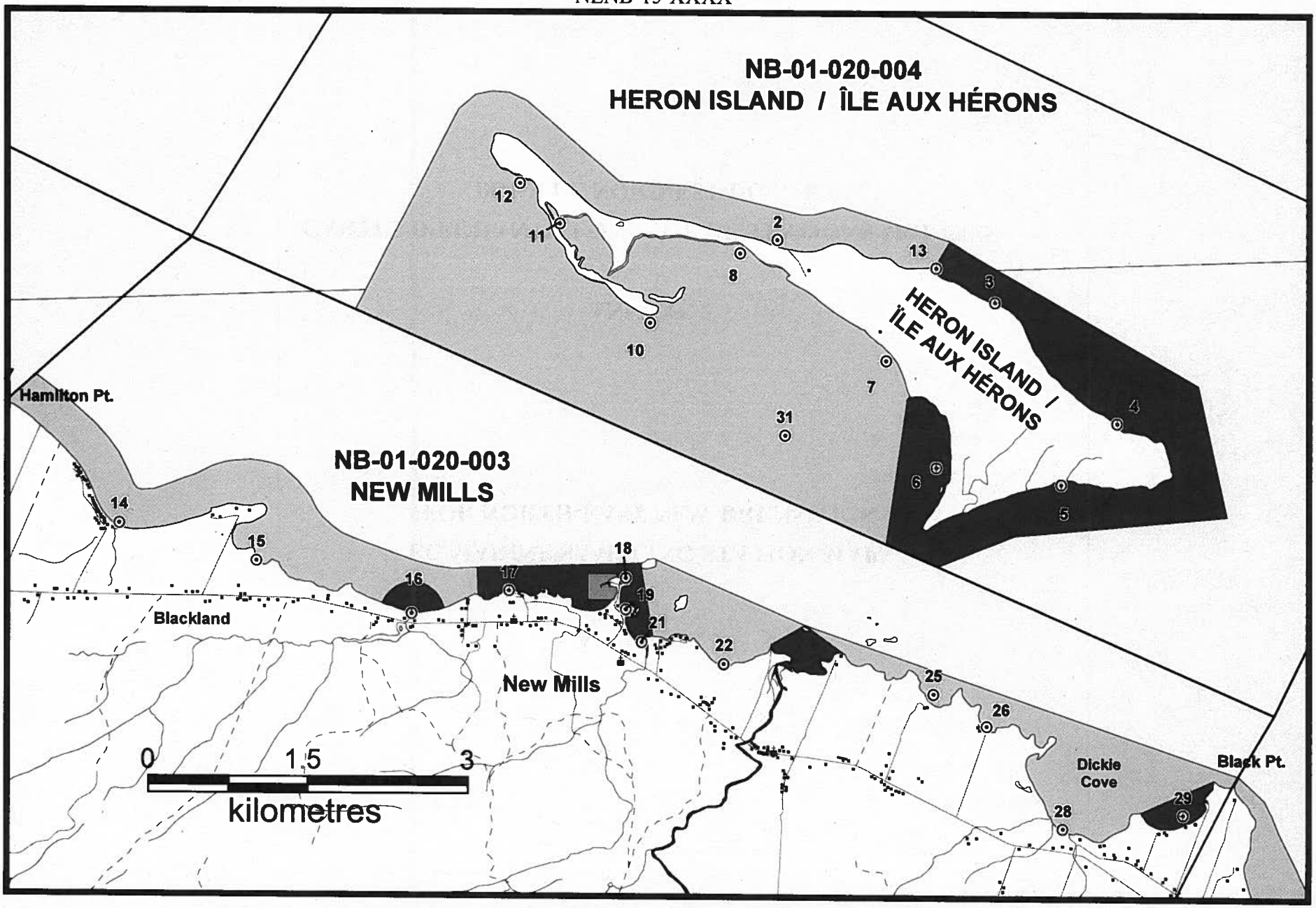


Figure 1 **New Mills & Heron Island / Île aux Hérons (NB-01-020-003 & NB-01-020-004)**

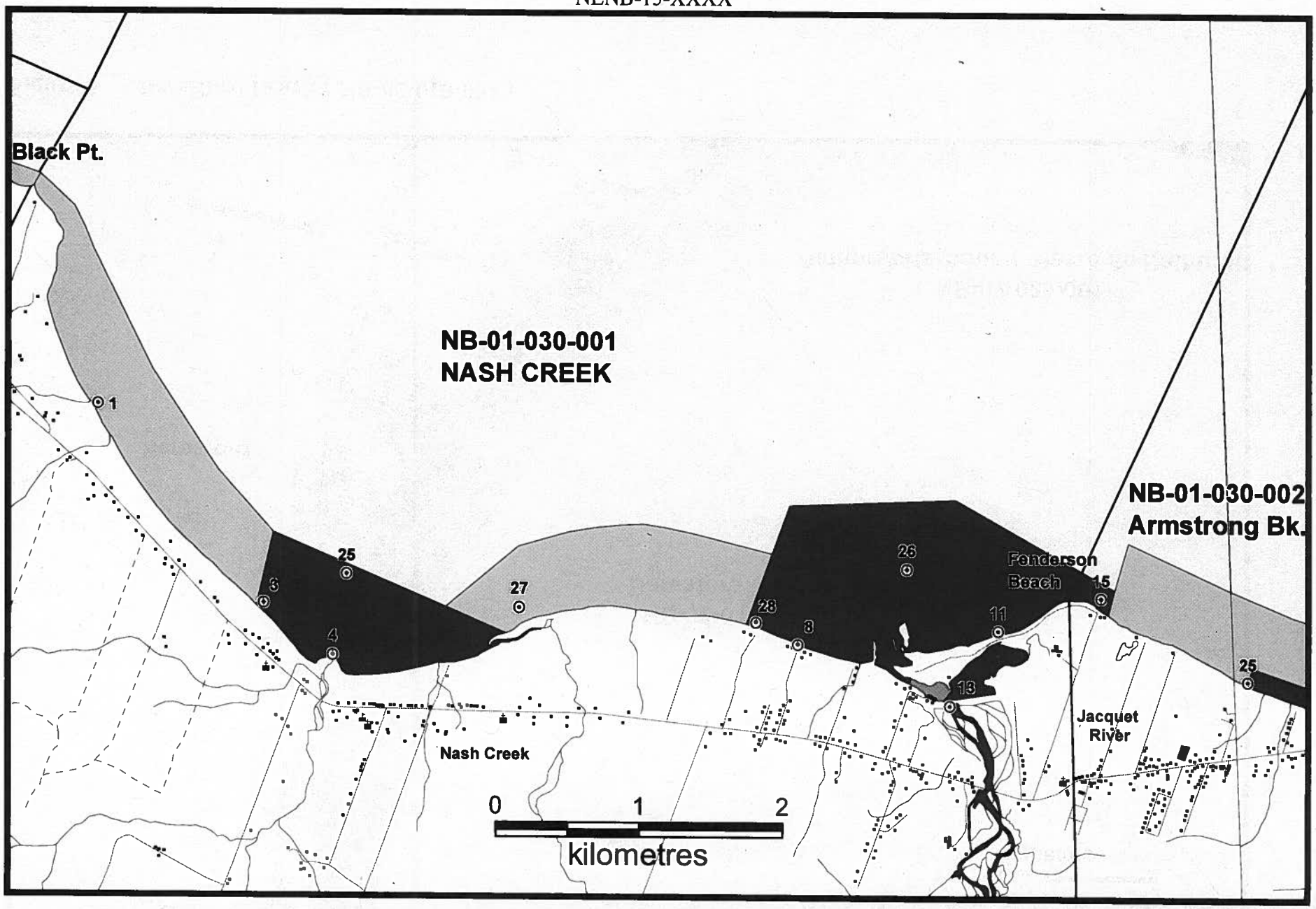


Figure 2 **Nash Creek (NB-01-030-001) & Ruis. Armstrong Brook (NB-01-030-002)**

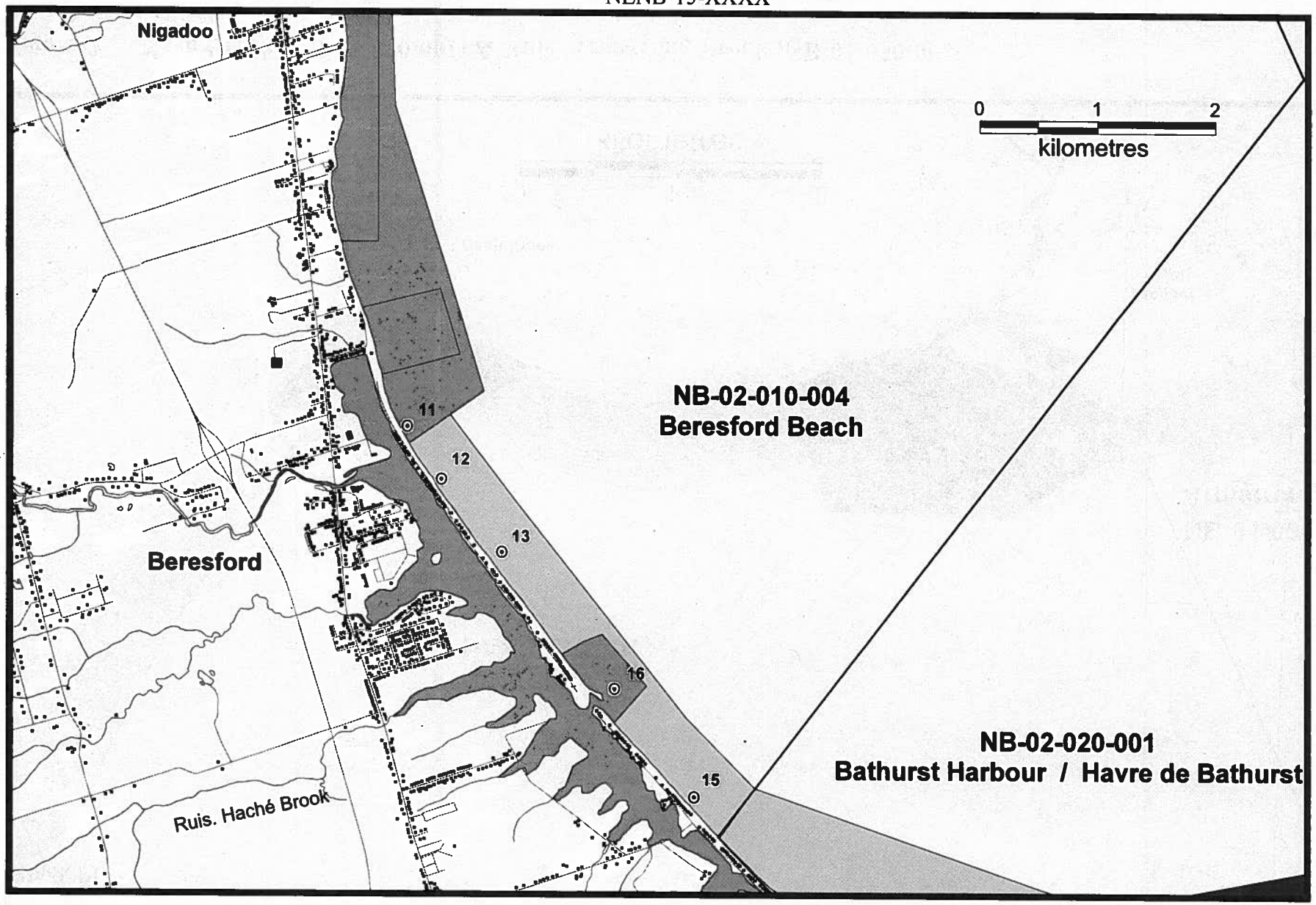
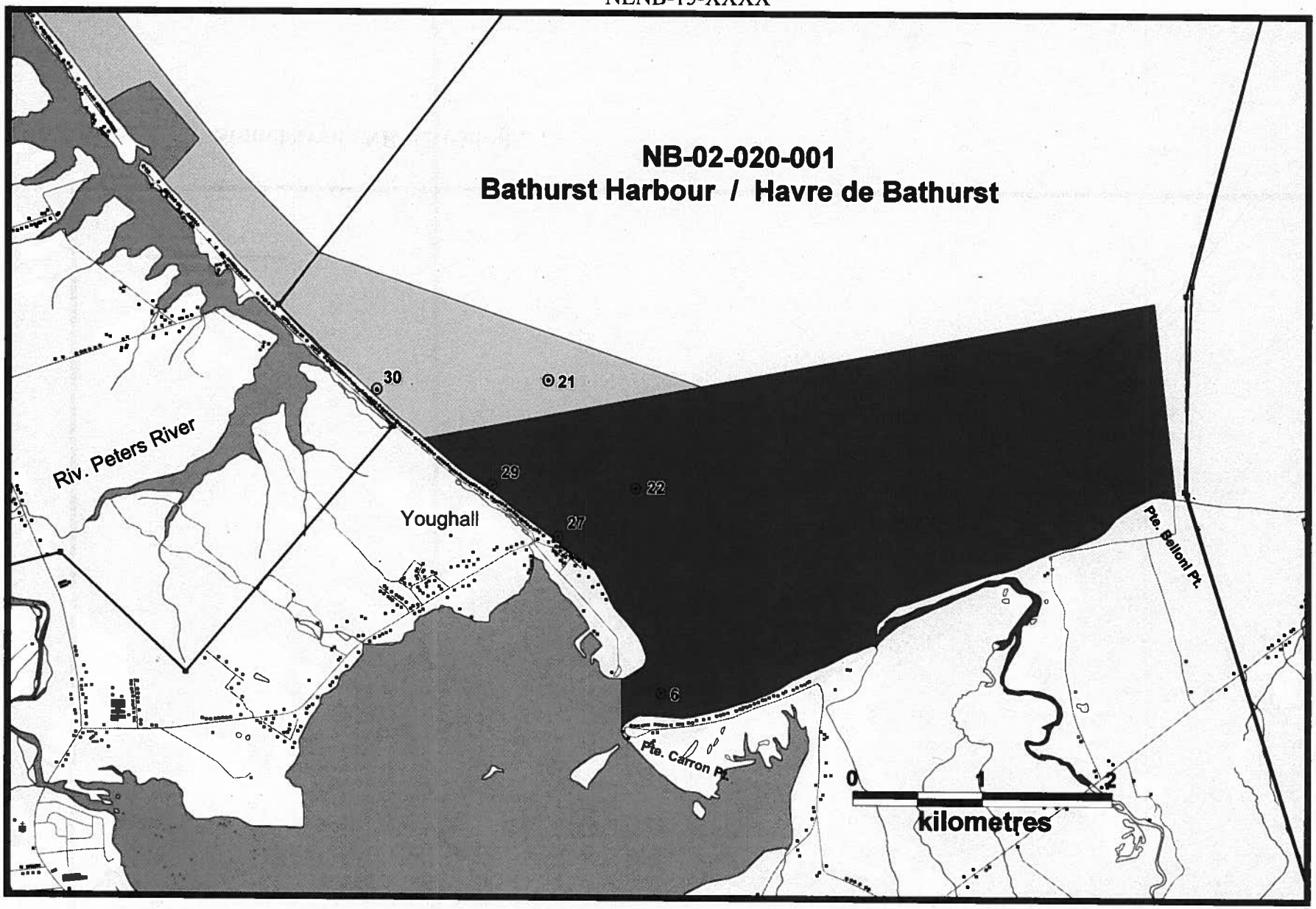


Figure 3 Beresford Beach (NB-02-010-004)



igure 4 Bathurst Harbour / havre de Bathurst (NB-02-020-001)

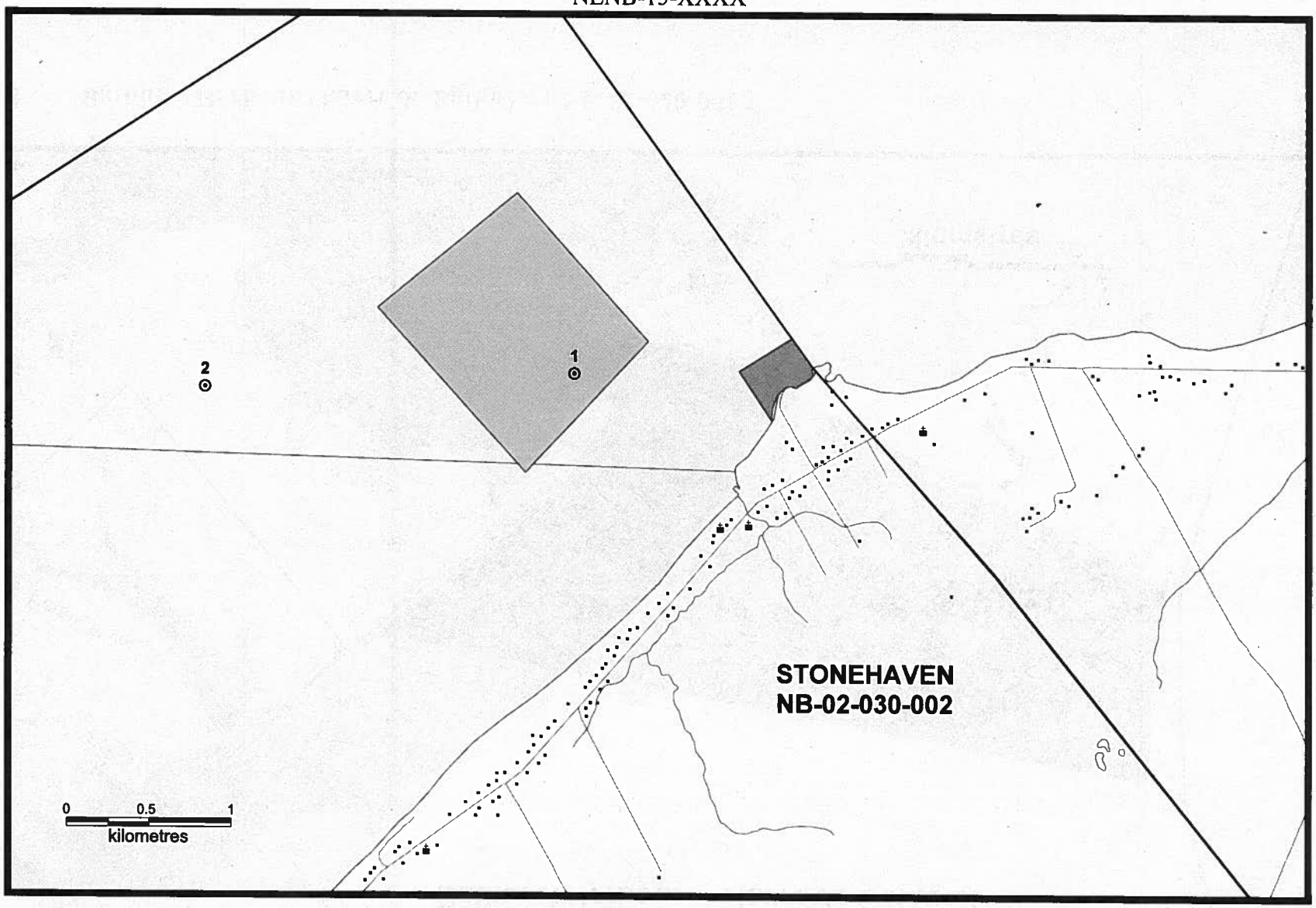


Figure 5 Stonehaven (NB-02-030-002)

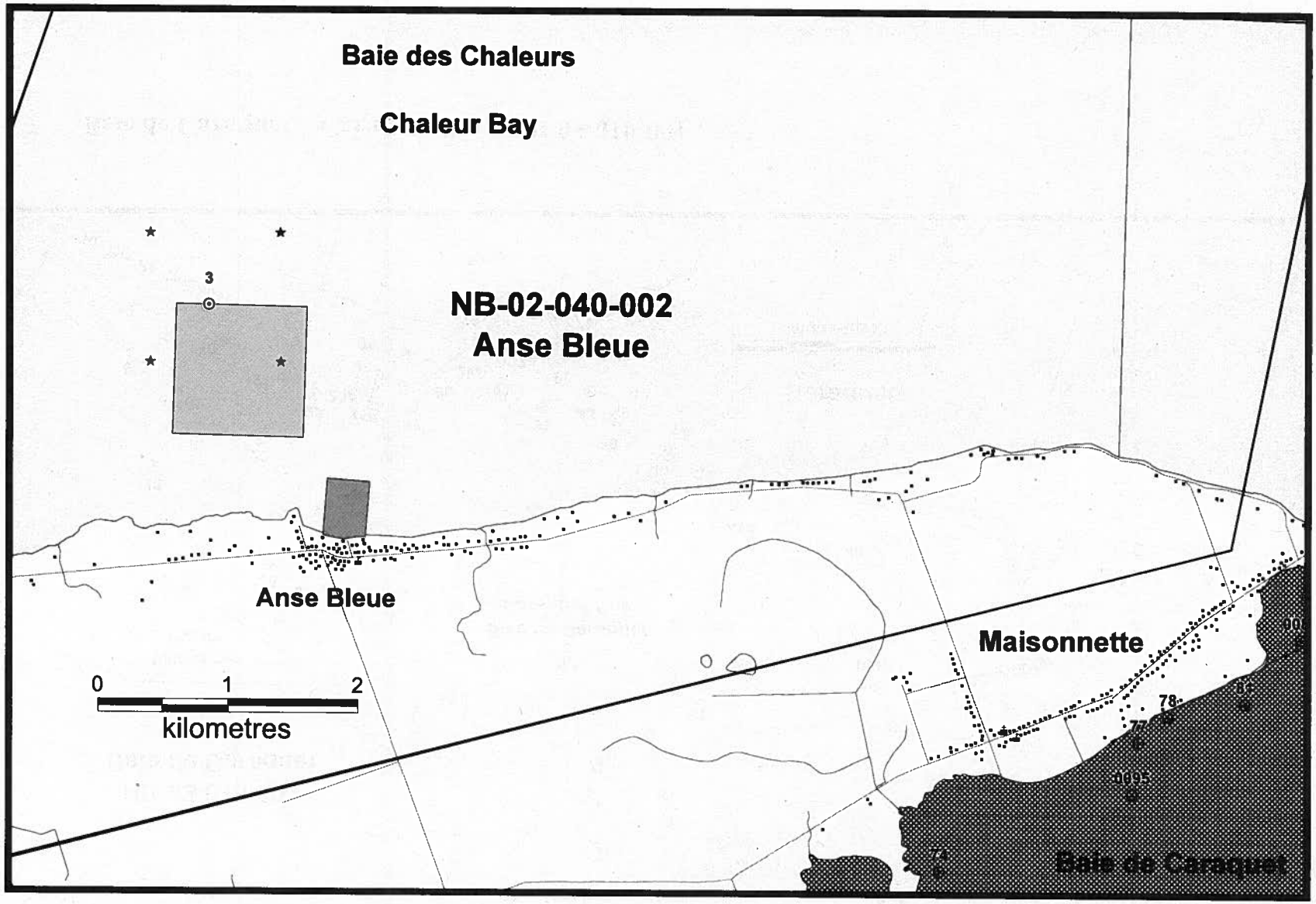


Figure 6 Anse-Bleue (NB-02-040-002)

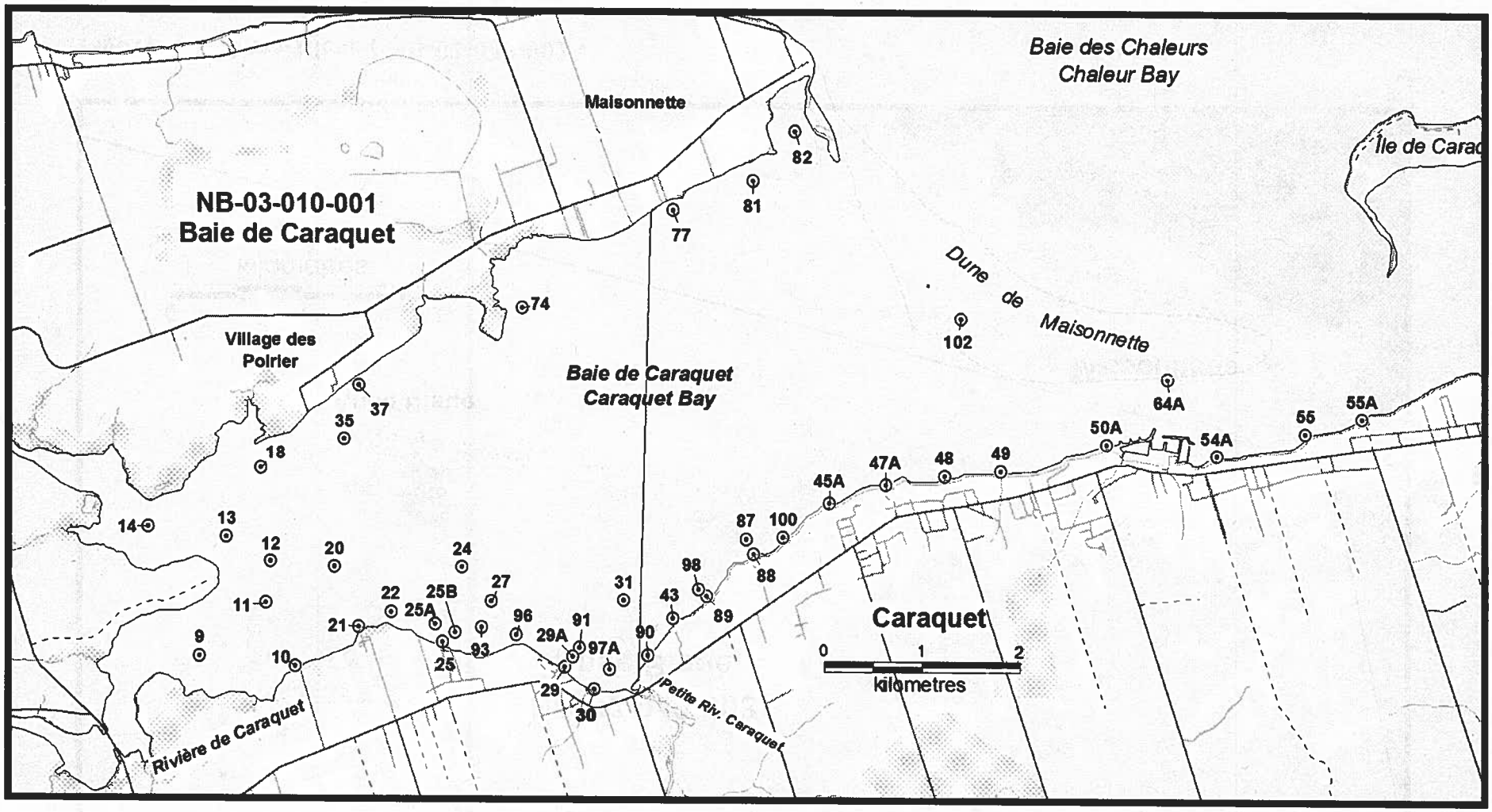


Figure 7 Baie de Caraquet / Caraquet Bay (NB-03-010-001)

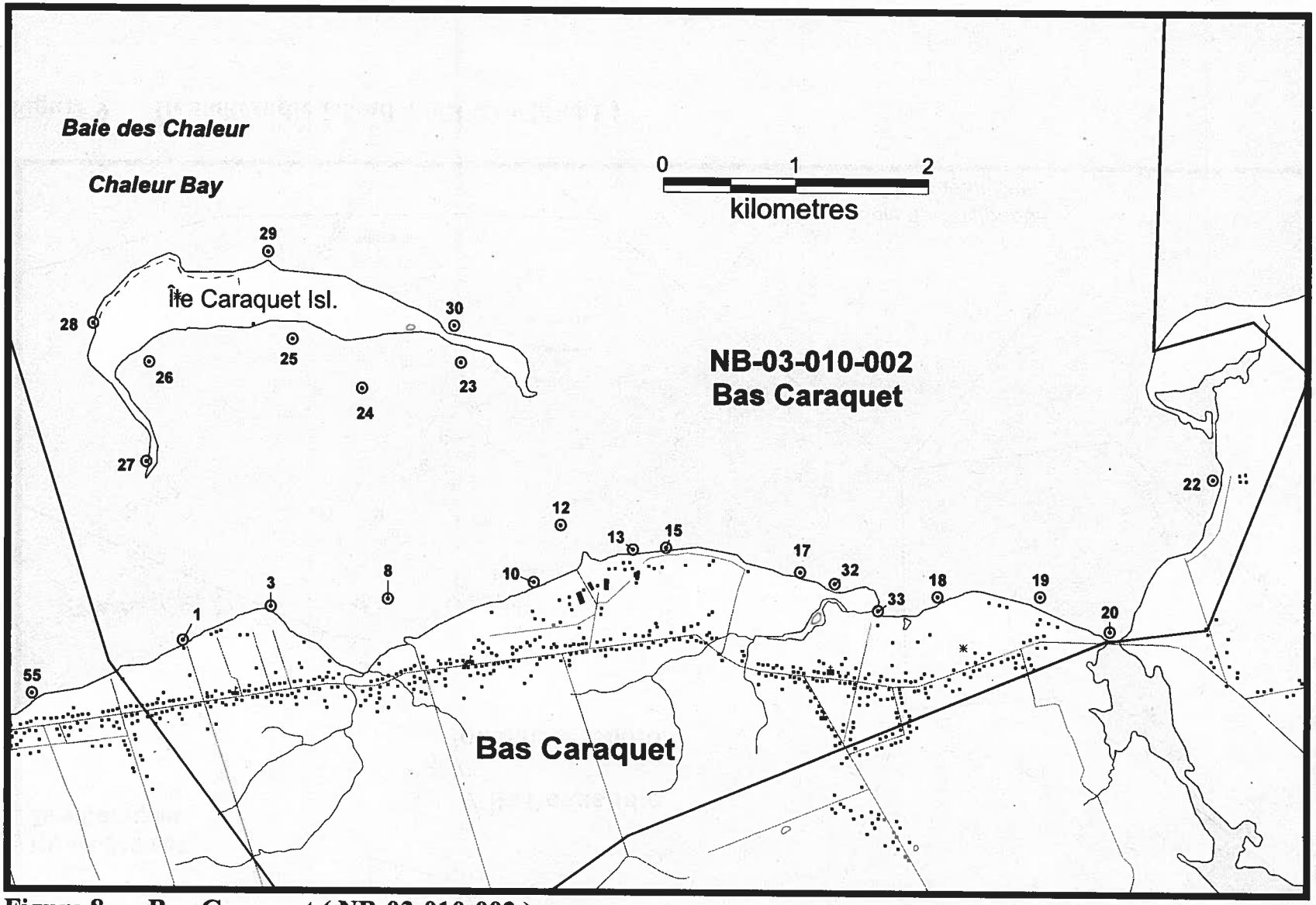


Figure 8 Bas-Caraquet (NB-03-010-002)

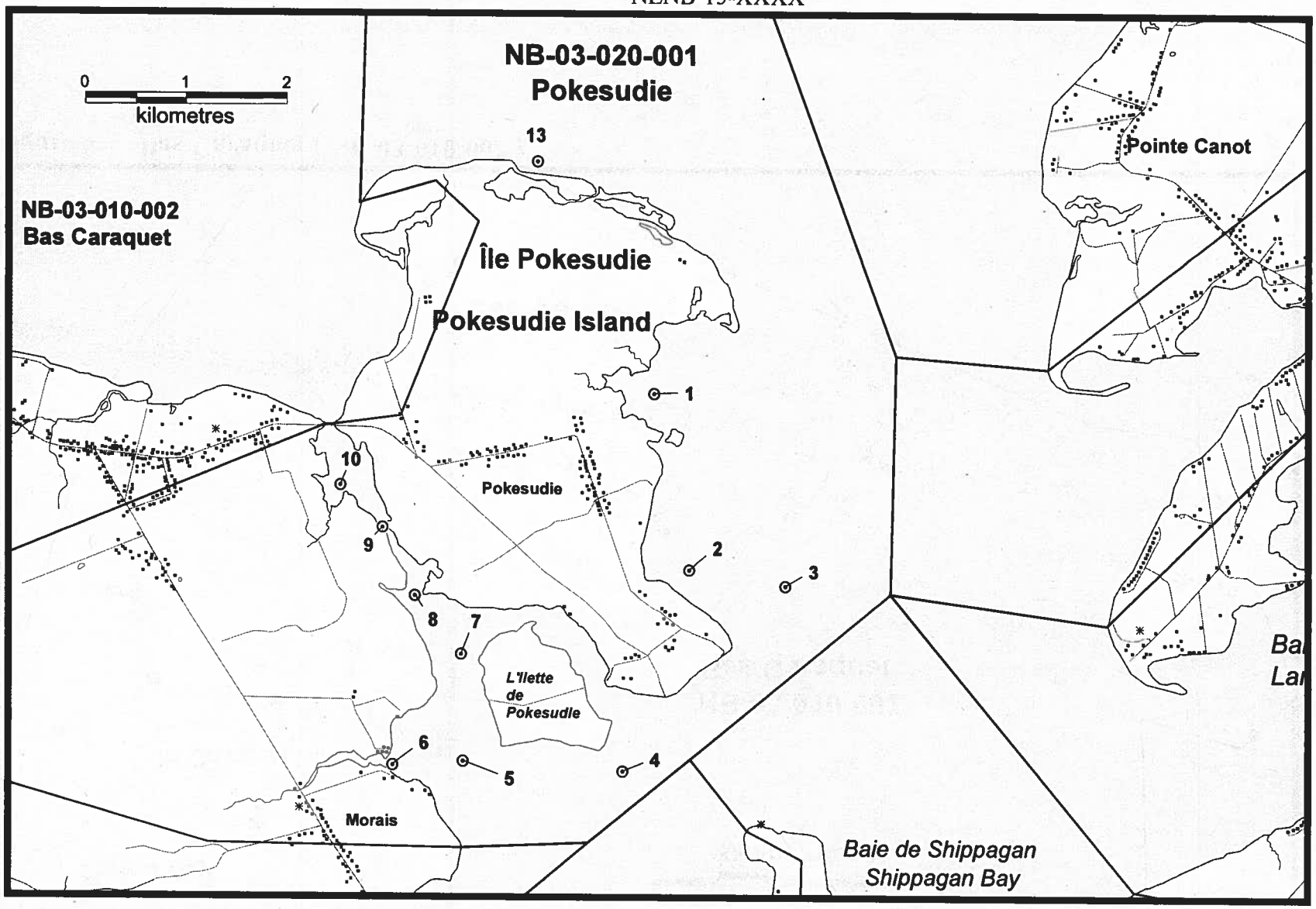


Figure 9 Île Pokesudie Island (NB-03-020-001)

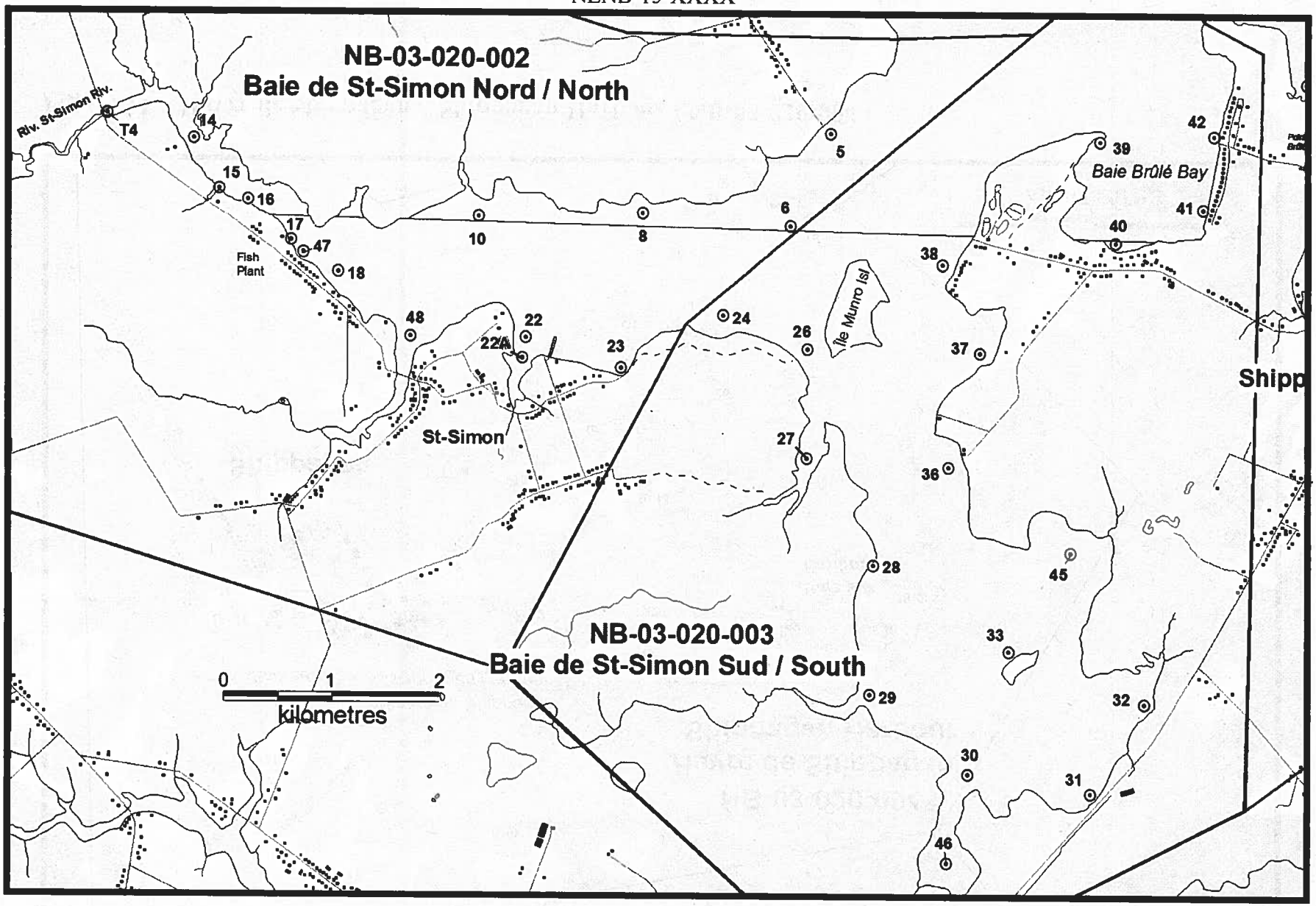


Figure 10 **Baie St-Simon Nord & Sud / St-Simon Bay North & South (NB-03-020-003)**

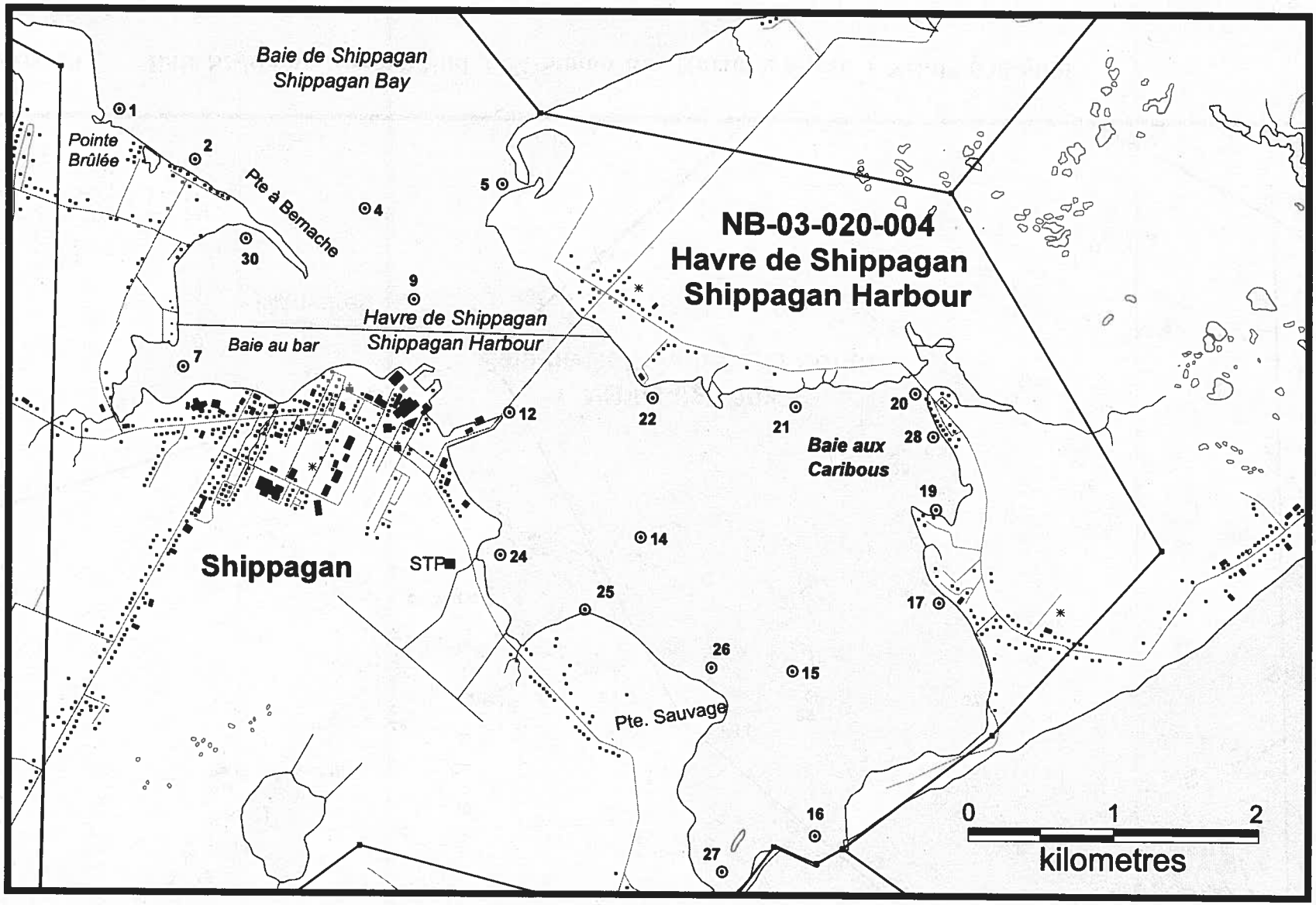


Figure 11 Havre de Shippagan / Shippagan Harbour (NB-03-020-004)

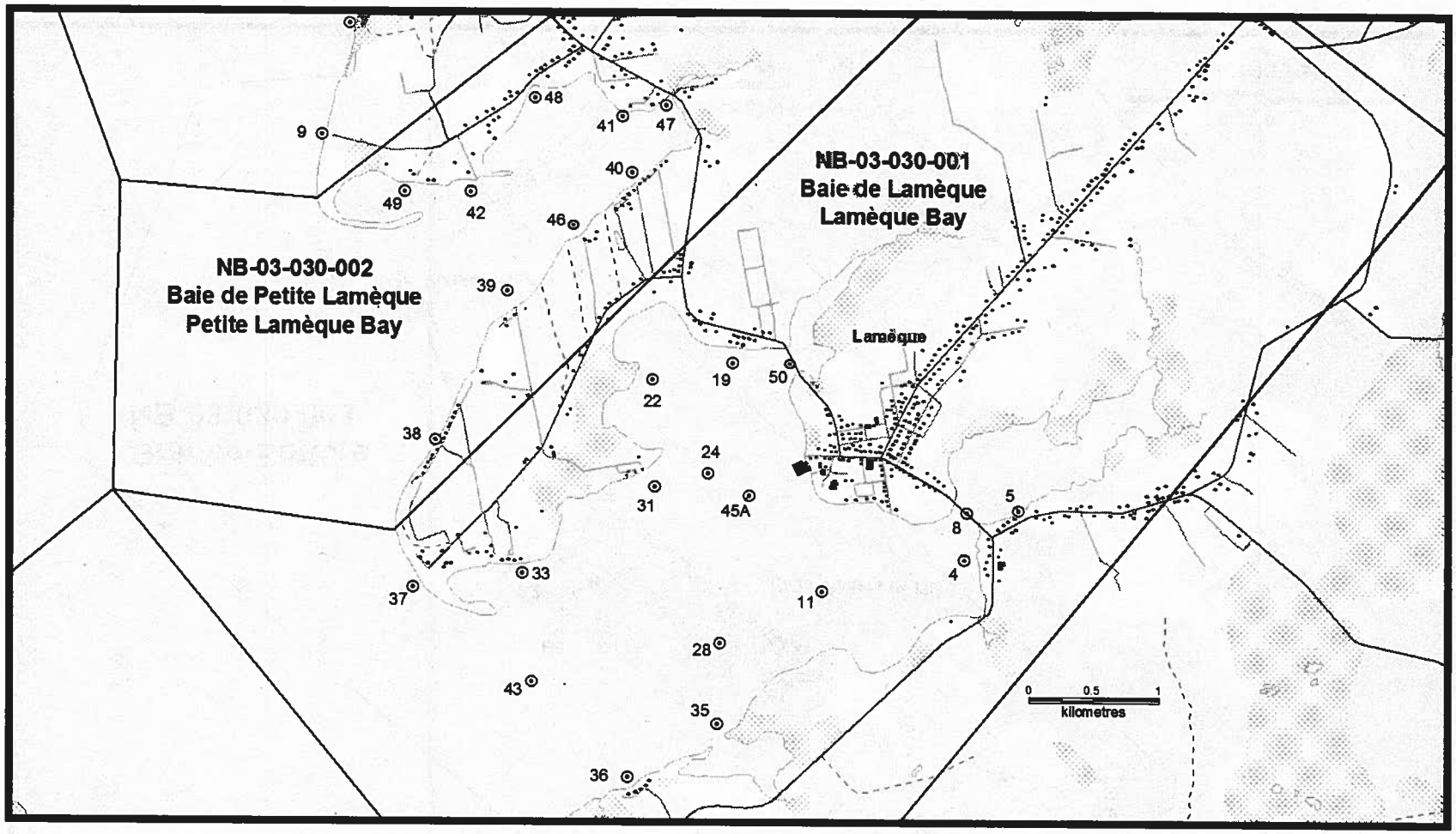


Figure 12 Baie de Lamèque / Lamèque Bay (NB-03-030-001) & Baie de Petite Lamèque / Petite Lamèque Bay (NB 03-030-002)

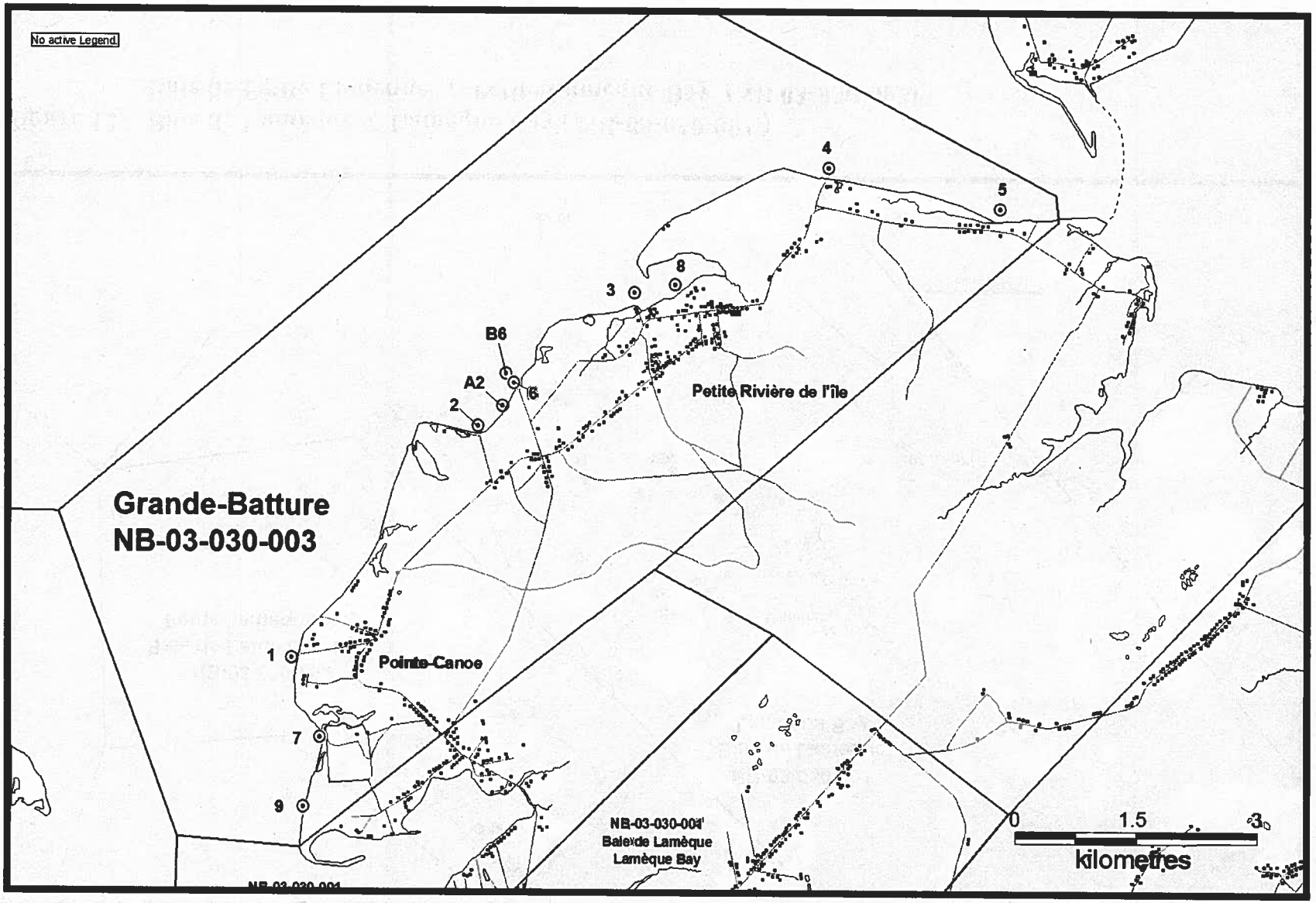


Figure 13 Grande Batture (NB-03-030-003)

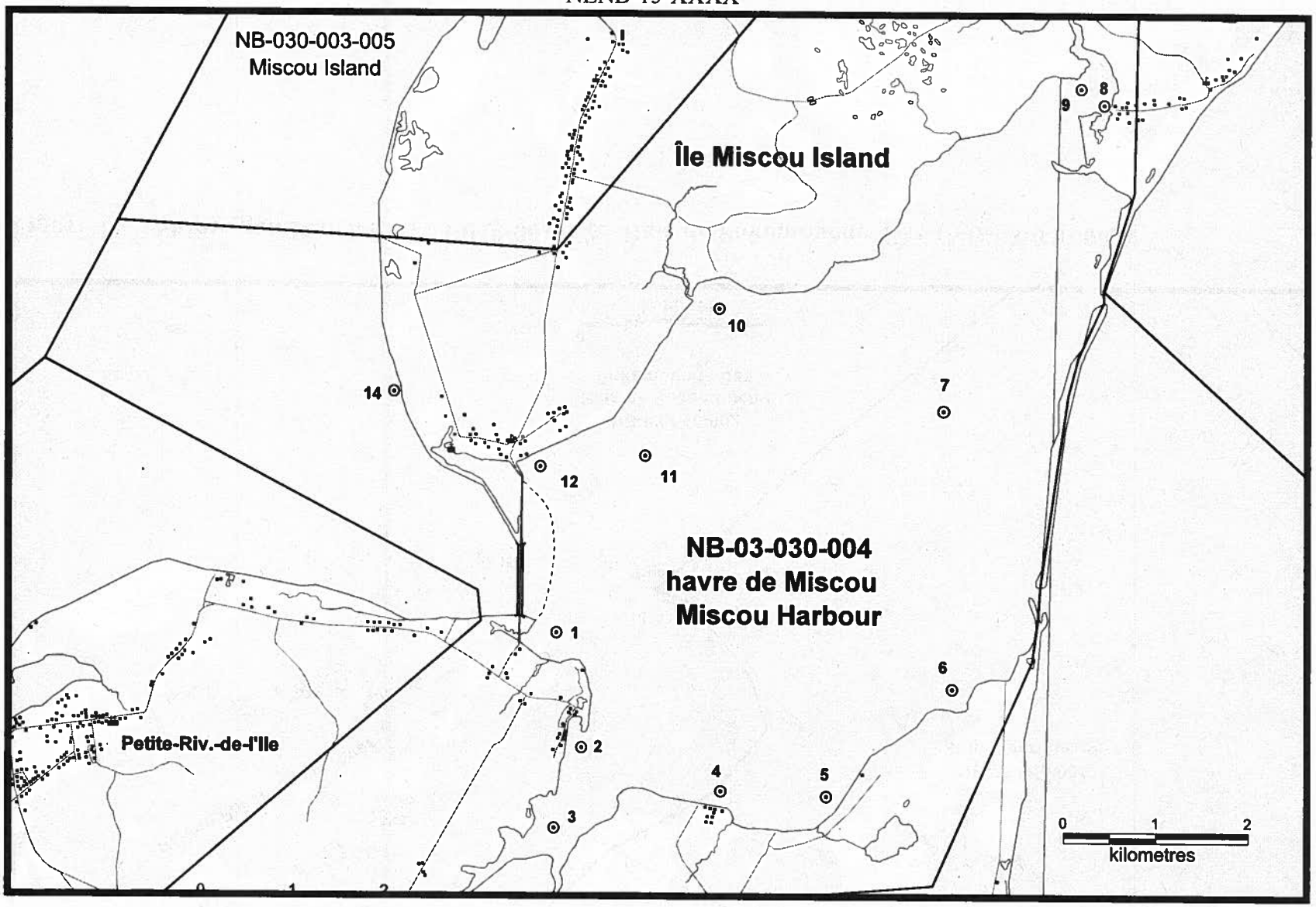


Figure 14 Havre Miscou / Miscou Harbour (NB-03-030-004)

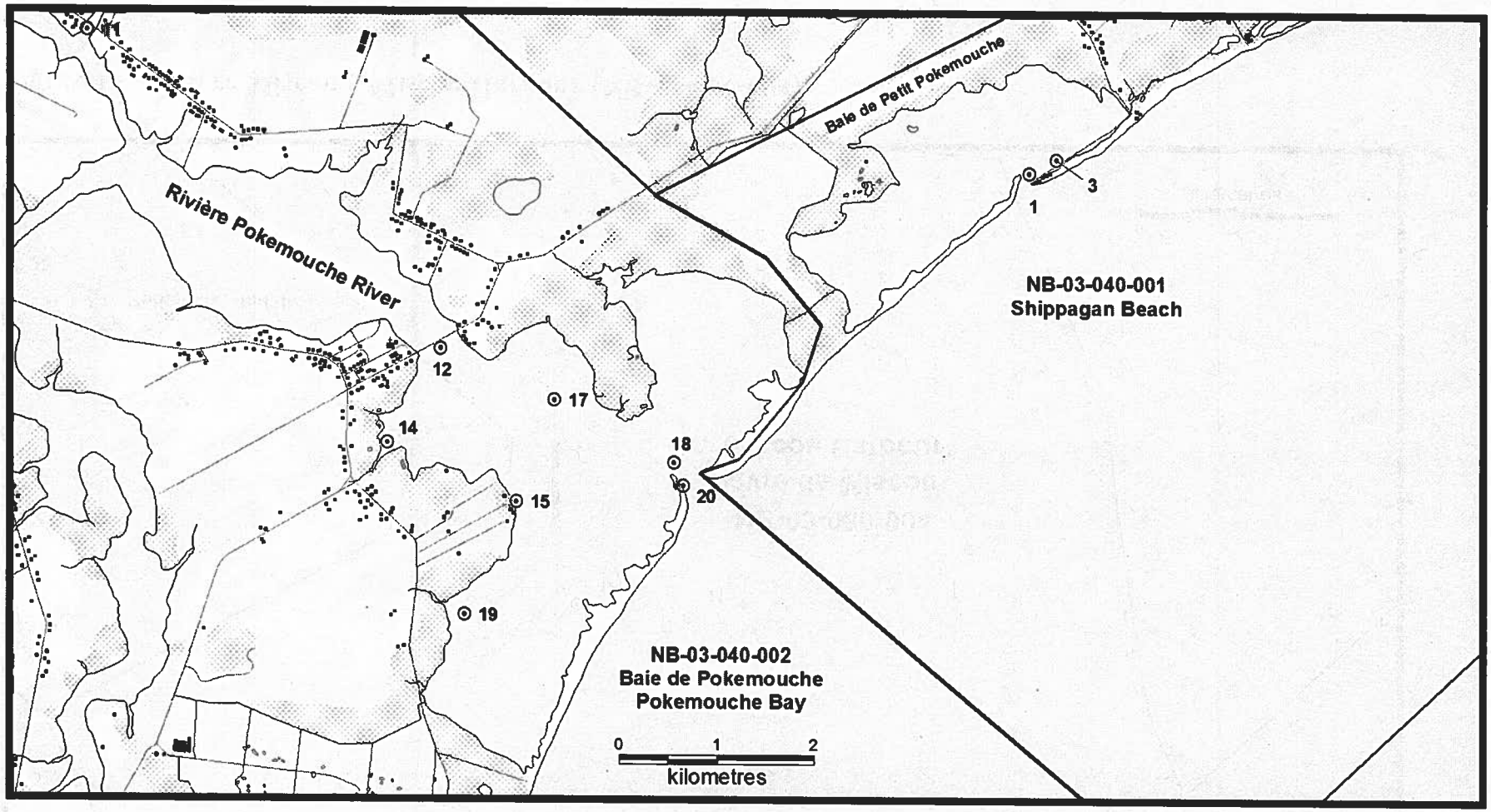


Figure 15 Shippagan Beach (NB 03-040-001) & Baie de Pokemouche Bay (NB-03-040-002)

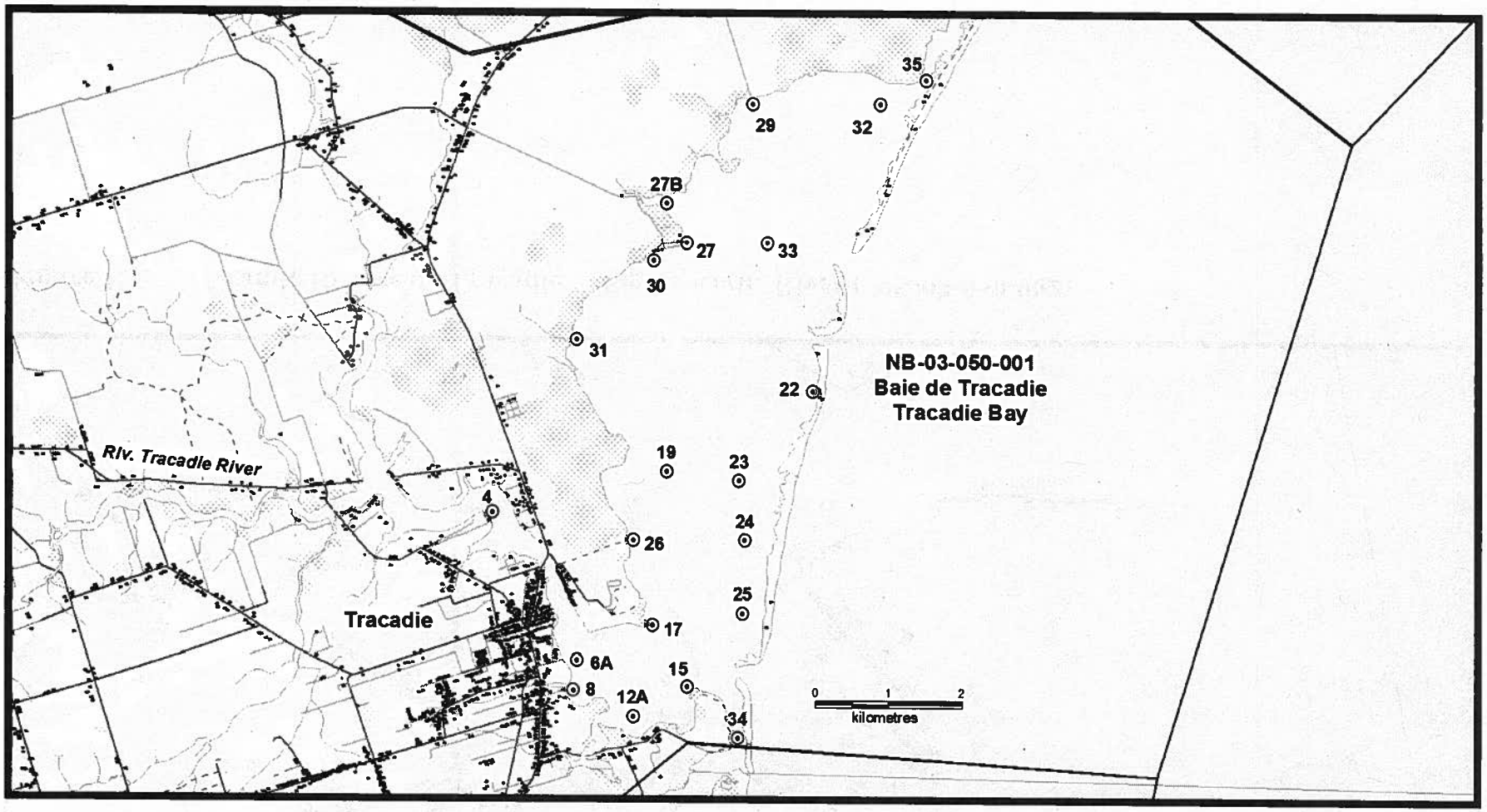


Figure 16 **Baie de Tracadie / Tracadie Bay (NB-03-050-001)**

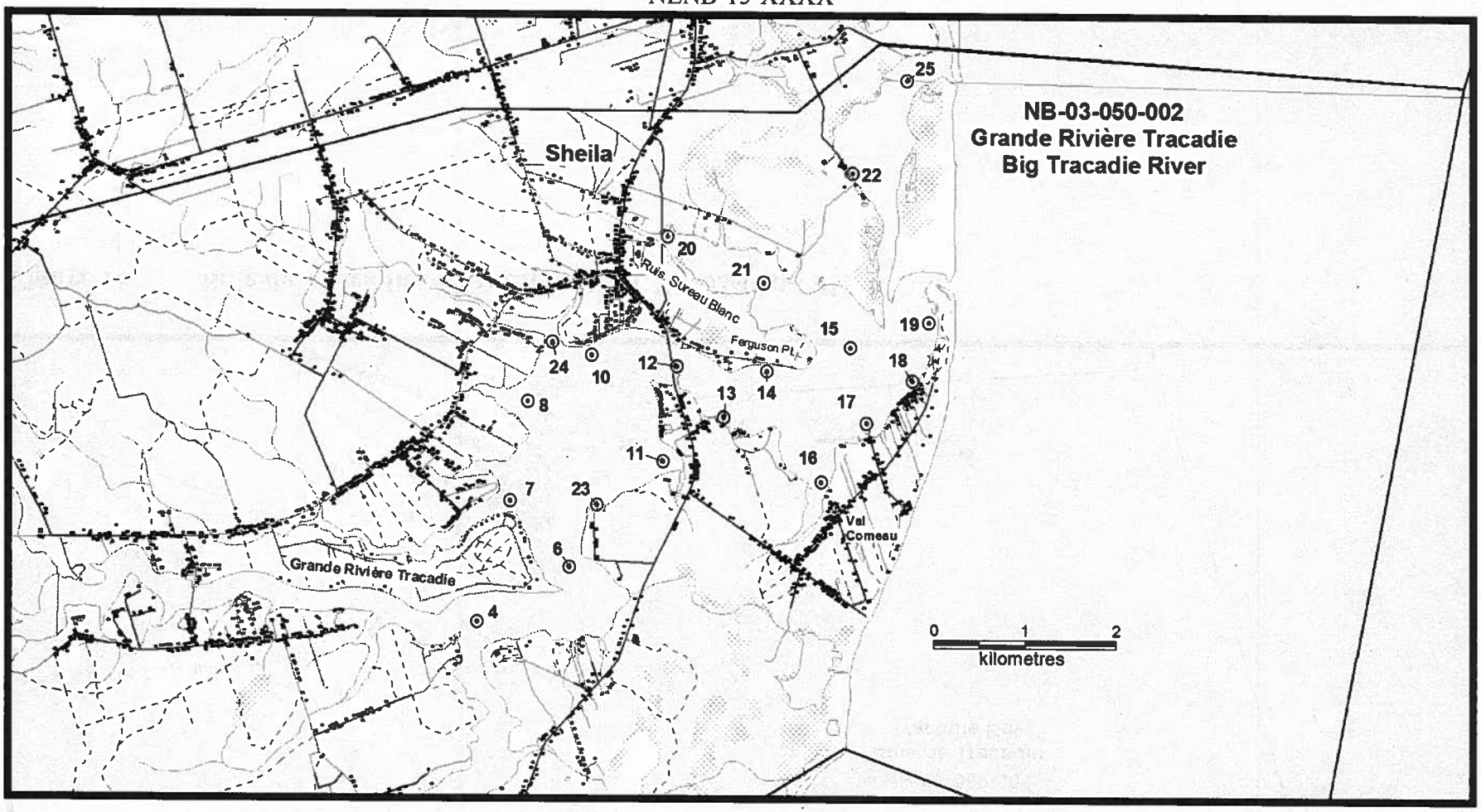


Figure 17 **Grande Rivière de Tracadie / Big Tracadie River (NB-03-050-002)**

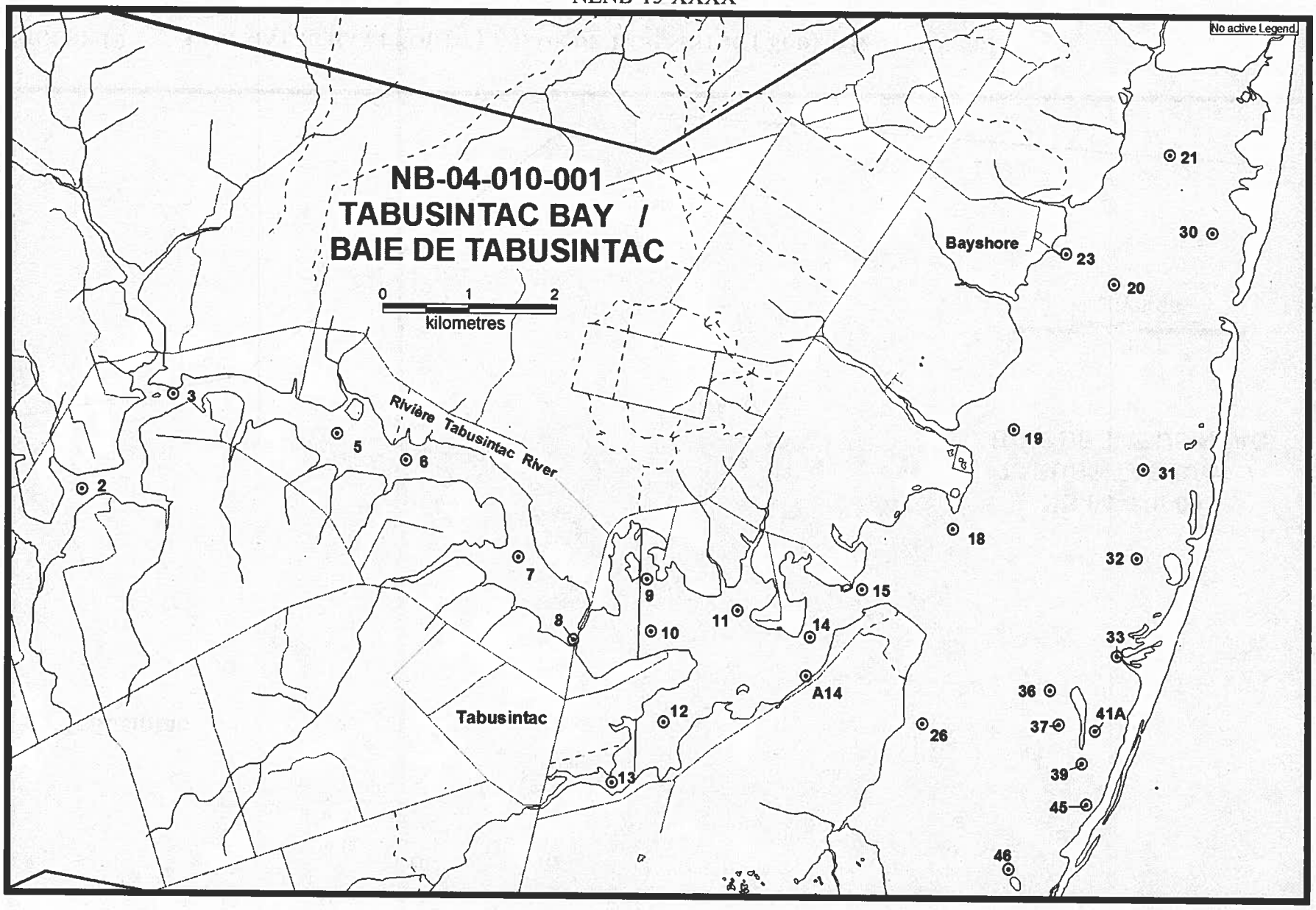


FIGURE 18 **TABUSINTAC RIVER AND BAY (NORTH), NB-04-010-001**

RIVIÈRE & BAIE DE TABUSINTAC (NORD), NB-04-010-001

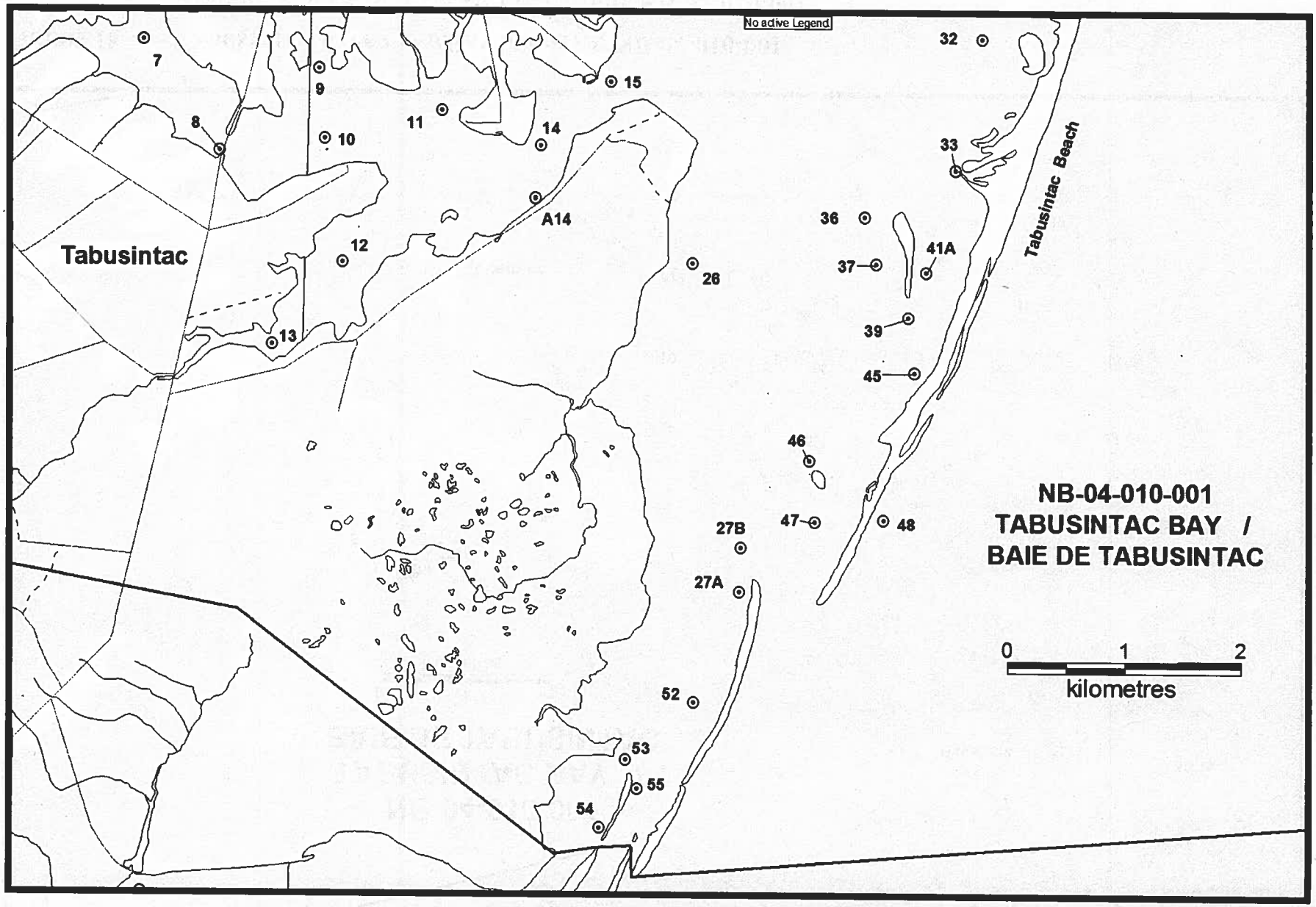


FIGURE 19 **TABUSINTAC BAY (SOUTH) / BAIE DE TABUSINTAC (SUD) NB-04-010-001**

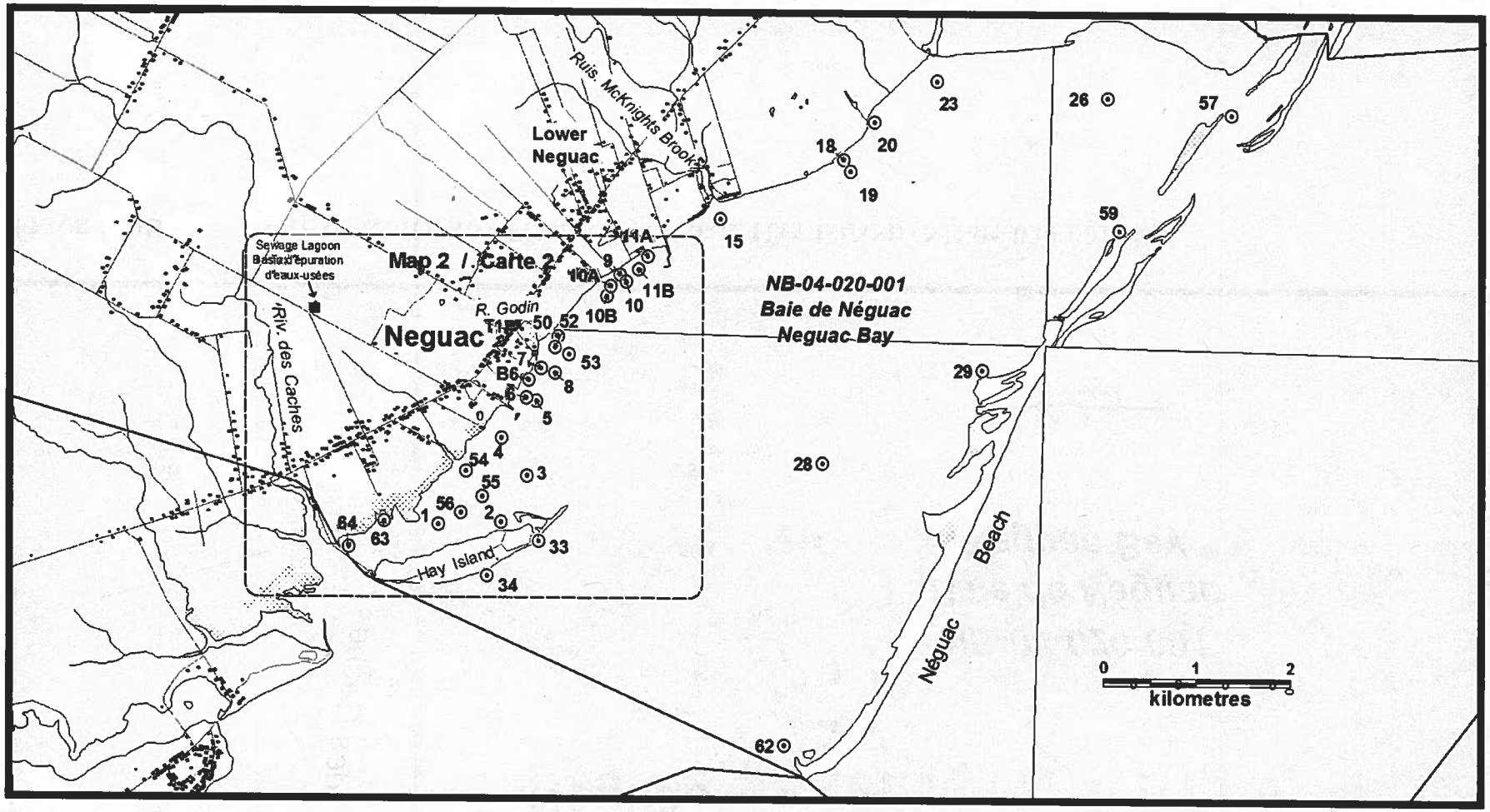


FIGURE 20A **BAIE DE NÉGUAC / NEGUAC BAY (NB-04-020-001)**

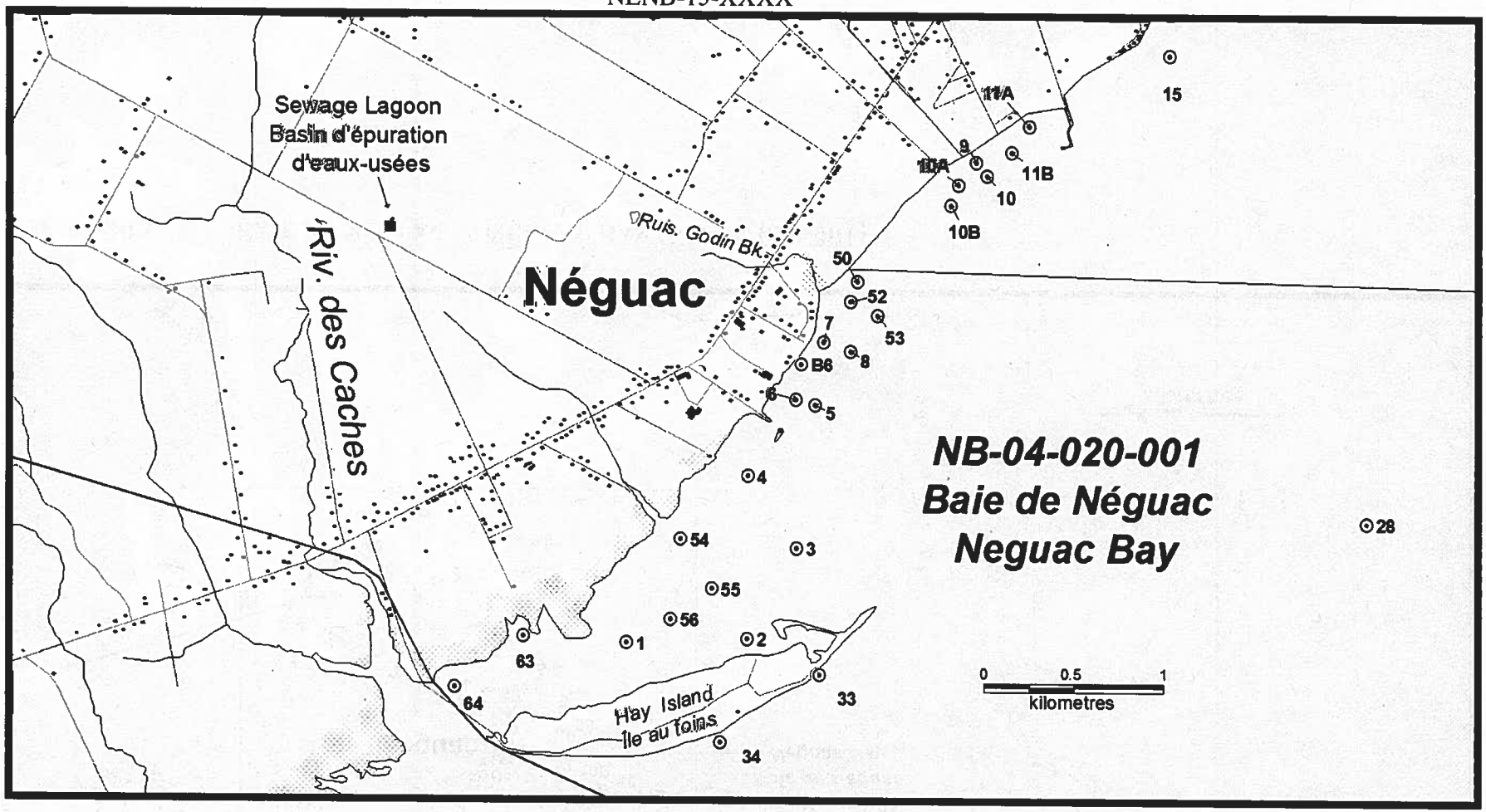


FIGURE 20B **NÉGUAC & ÎLE AUX FOINS / NEGUAC & HAY ISLAND (NB-04-020-001)**

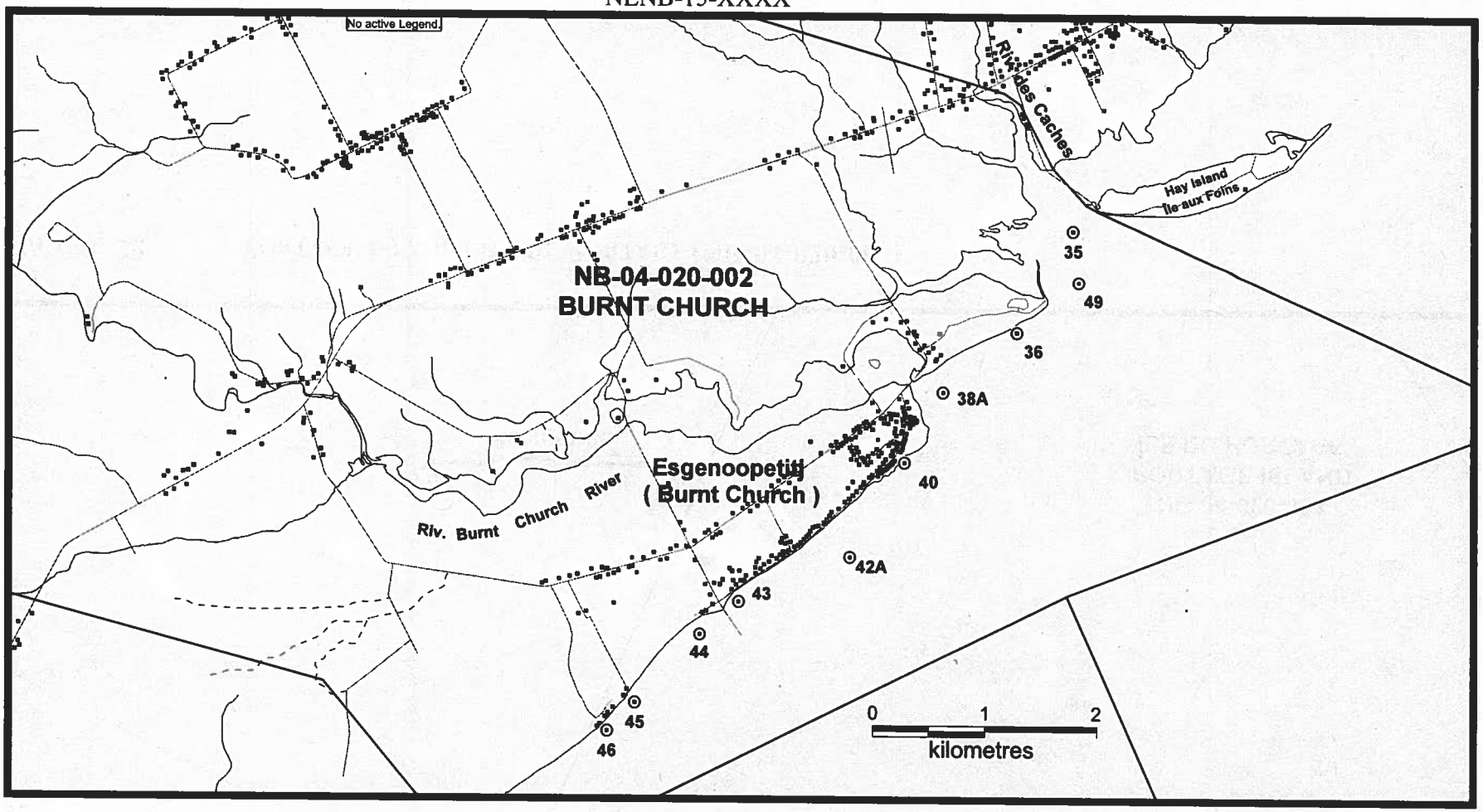


FIGURE 21 BURNT CHURCH / ESGENOOPETITJ (NB-04-020-002)

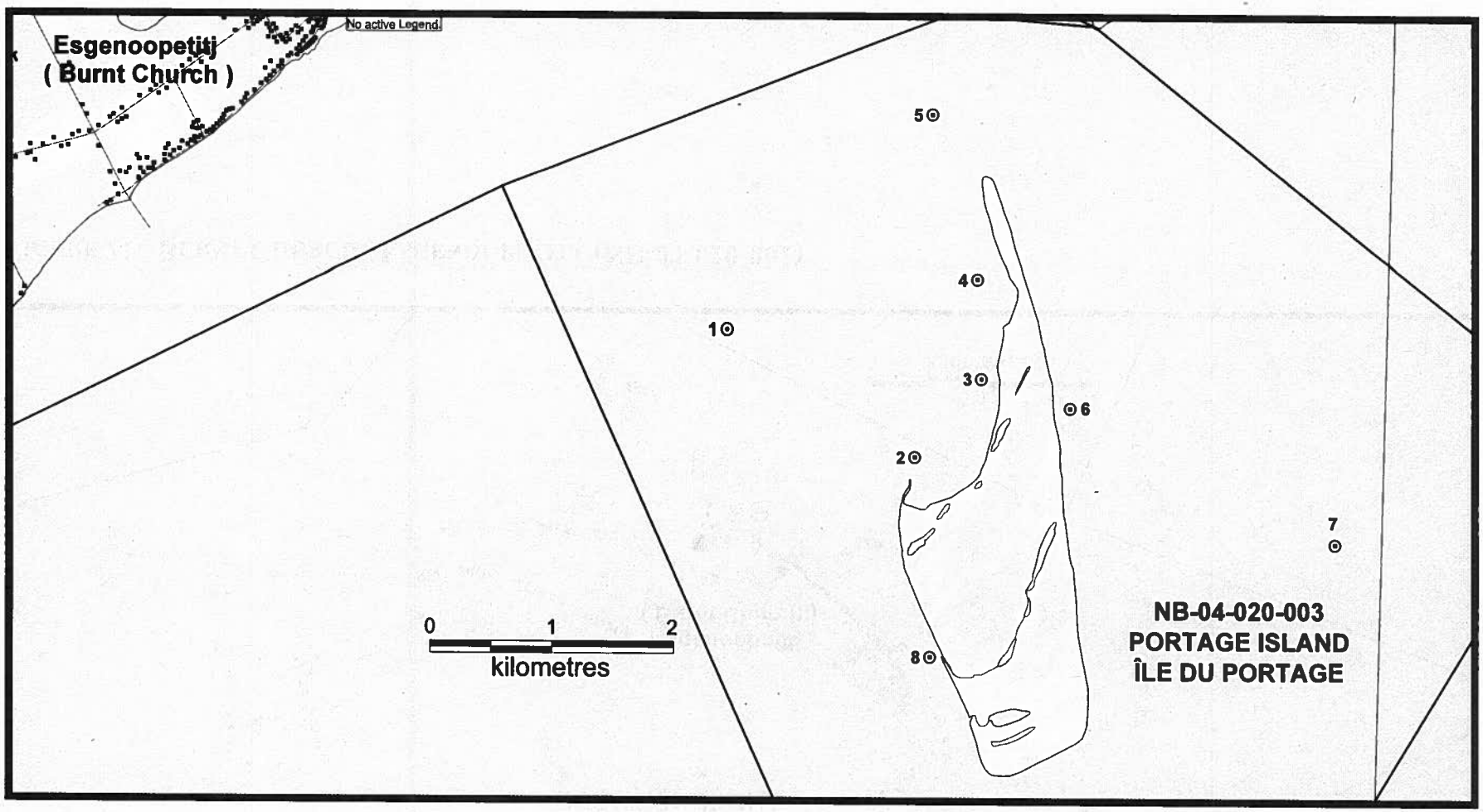


FIGURE 22 **PORTAGE ISLAND / ÎLE DU PORTAGE (NB-04-020-003)**

APPENDIX 3

Marine Water Quality Sampling Station Descriptions for Northeastern NB

Sampling Station Location for NEW MILLS (NB-01-020-003)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
14	705235	5317650	47.9812	-66.2497
15	706525	5317300	47.9776	-66.2326
16	707983	5316805	47.9727	-66.2133
17	708900	5317025	47.9743	-66.2009
18	710000	5317150	47.9751	-66.1861
19	710000	5316850	47.9724	-66.1863
21	710150	5316550	47.9697	-66.1844
22	710925	5316350	47.9676	-66.1742
25	712900	5316075	47.9645	-66.1479
26	713400	5315775	47.9616	-66.1413
28	714117	5314816	47.9528	-66.1322
29	715250	5314950	47.9536	-66.1170

Sampling Station Location for HERON ISLAND (NB-01-020-004)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
2	711425	5320325	48.0032	-66.1655
3	713475	5319750	47.9973	-66.1383
4	714625	5318625	47.9868	-66.1235
5	714100	5318050	47.9818	-66.1308
6	712925	5318200	47.9836	-66.1465
7	712450	5319200	47.9927	-66.1523
8	711075	5320200	48.0022	-66.1703
10	710225	5319550	47.9966	-66.1820
11	709375	5320475	48.0052	-66.1929
12	709000	5320850	48.0087	-66.1977
13	712920	5320075	48.0004	-66.1456
31	711500	5318500	47.9867	-66.1654

Sampling Station Location for NASH CREEK (NB-01-030-001)

Station	UTM (ZN 19 NAD 27)		Lat	Long
	Easting	Northing		
1	716175	5313725	47.9423	-66.1052
3	717310	5312375	47.9298	-66.0907
4	717805	5311994	47.9262	-66.0843
8	721041	5312072	47.9258	-66.0410
11	722436	5312171	47.9262	-66.0223
13	722100	5311650	47.9216	-66.0271
25	717900	5312550	47.9311	-66.0828
26	721800	5312600	47.9302	-66.0306
27	719100	5312325	47.9287	-66.0668
28	720750	5312225	47.9272	-66.0448

Sampling Station Location for ARMSTRONG BROOK (NB-01-030-002)

Station	UTM (ZN 19, NAD 27)		Lat	Long
	Easting	Northing		
15	723150	5312400	47.9280	-66.0126
25	724170	5311825	47.9225	-65.9993

Sampling Station Location for BERESFORD BEACH (NB-02-010-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
11	297660	5287425	47.7104	-65.6974
12	298000	5286900	47.7058	-65.6927
13	298525	5286175	47.6995	-65.6853
15	300105	5284285	47.6830	-65.6634
16	299425	5285200	47.6909	-65.6729

Sampling Station Location for BATHURST HARBOUR (NB-02-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
6	303275	5280975	47.6542	-65.6198
21	302400	5283375	47.6755	-65.6325
22	303075	5282550	47.6683	-65.6231
27	302475	5282175	47.6647	-65.6309
29	301965	5282570	47.6681	-65.6379
30	301075	5283300	47.6744	-65.6501

Sampling Station Location for STONEHAVEN (NB-02-030-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	321700	5291600	47.7550	-65.3790
2	319450	5291515	47.7537	-65.4089

Sampling Station Location for ANSE BLEUE (NB-02-040-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
3	343250	5301000	47.8451	-65.095

Sampling Station Location for BAIE DE CARAQUET (NB-03-010-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
9	345625	5293100	47.7747	-65.0605
10	346600	5293000	47.7740	-65.0475
11	346300	5293630	47.7796	-65.0517
12	346350	5294050	47.7834	-65.0512
13	345900	5294300	47.7856	-65.0573
14	345100	5294400	47.7863	-65.0680
18	346250	5295000	47.7919	-65.0529
20	347000	5294000	47.7831	-65.0425
21	347250	5293400	47.7778	-65.0389
22	347575	5293550	47.7792	-65.0347
24	348300	5294000	47.7834	-65.0251
25	348100	5293250	47.7766	-65.0276
25A	348025	5293430	47.7782	-65.0286
25B	348233	5293345	47.7775	-65.0258
27	348600	5293650	47.7803	-65.0210
29	349350	5293000	47.7747	-65.0108
29A	349430	5293103	47.7757	-65.0098
30	349650	5292775	47.7727	-65.0067
31	349950	5293670	47.7808	-65.0030
35	347100	5295300	47.7948	-65.0416
37	347250	5295850	47.7998	-65.0398
43	350450	5293500	47.7794	-64.9963
45A	352050	5294670	47.7903	-64.9753
47A	352630	5294855	47.7921	-64.9677
48	353225	5294945	47.7931	-64.9598
49	353800	5295000	47.7937	-64.9521
50A	354875	5295275	47.7964	-64.9379
54A	356000	5295160	47.7956	-64.9228
55	356905	5295398	47.7980	-64.9108
55A	357480	5295550	47.7995	-64.9032
64A	355500	5295950	47.8026	-64.9297
74	348910	5296650	47.8074	-65.0179
77	350450	5297650	47.8167	-64.9977
81	351270	5297950	47.8196	-64.9869
82	351700	5298450	47.8242	-64.9813
87	351200	5294300	47.7868	-64.9866
88	351275	5294150	47.7855	-64.9855
89	350800	5293725	47.7815	-64.9917
90	350200	5293125	47.7760	-64.9995
91	349500	5293200	47.7765	-65.0089
93	348500	5293400	47.7781	-65.0223
96	348850	5293325	47.7775	-65.0176
97A	349808	5292978	47.7746	-65.0047
98	350710	5293790	47.7821	-64.9929
100	351575	5294320	47.7871	-64.9816
102	353390	5296560	47.8076	-64.9581

Sampling Station Location for BAS-CARAQUET (NB-03-010-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	358039	5295803	47.8019	-64.8958
3	358700	5296060	47.8043	-64.8871
8	359580	5296120	47.8050	-64.8753
10	360679	5296251	47.8065	-64.8607
12	360880	5296680	47.8104	-64.8582
13	361360	5296480	47.8087	-64.8517
15	361620	5296515	47.8091	-64.8482
17	362689	5296336	47.8077	-64.8339
18	363726	5296156	47.8063	-64.8200
19	364500	5296160	47.8065	-64.8097
20	365025	5295900	47.8042	-64.8026
22	365800	5297050	47.8147	-64.7926
23	360125	5297900	47.8212	-64.8686
24	359380	5297700	47.8192	-64.8785
25	358860	5298070	47.8224	-64.8856
26	357780	5297890	47.8206	-64.8999
27	357760	5297140	47.8138	-64.9000
28	357360	5298180	47.8231	-64.9056
29	358675	5298725	47.8283	-64.8883
30	360075	5298175	47.8236	-64.8694
32	362950	5296250	47.8069	-64.8304
33	363280	5296050	47.8052	-64.8259

Sampling Station Location for POKESUDIE ISLAND (NB-03-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	368280	5296150	47.8072	-64.7592
2	368630	5294400	47.7915	-64.7540
3	369590	5294240	47.7902	-64.7412
4	367970	5292400	47.7734	-64.7622
5	366380	5292500	47.7739	-64.7835
6	365680	5292460	47.7734	-64.7928
7	366360	5293560	47.7835	-64.7840
8	365900	5294140	47.7886	-64.7904
9	365580	5294820	47.7946	-64.7948
10	365160	5295240	47.7983	-64.8006
13	367125	5298450	47.8276	-65.7753

Sampling Station Location for BAIE ST-SIMON NORTH (NB-03-020-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
T4	359000	5290900	47.758	-64.8814
5	365745	5290745	4737580	-64.791
6	365370	5289890	47.7503	-64.7961
8	364000	5290000	47.7510	-64.8144
10	362470	5289970	47.7504	-64.8348
14	359840	5290680	47.7562	-64.8701
15	360070	5290216	47.7521	-64.8669
16	360340	5290125	47.7478	-64.8631
17	360735	5289740	47.7479	64.8578
18	361170	5289450	47.7454	-64.8520
22	362910	5288850	47.7404	-64.8286
22A	362875	5288660	47.7387	-64.8290
23	363800	5288575	47.7381	-64.8166
47	360850	5289625	47.7469	64.8563
48	361840	5288860	47.7403	-64.8429

Sampling Station Location for BAIE ST-SIMON SOUTH (NB-03-020-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
24	364750	5289060	47.7427	-64.8041
26	365530	5288750	47.7400	-64.7936
27	365525	5287750	47.731	-64.7934
28	366146	5286759	47.7223	-64.7848
29	366110	5285560	47.7115	-64.7849
30	367020	5284830	47.7051	-64.7726
31	368160	5284650	47.7037	-64.7573
32	368660	5285480	47.7113	-64.7509
33	367400	5285960	47.7153	-64.7679
36	366840	5287660	47.7305	-64.7758
37	367130	5288720	47.7401	-64.7723
38	366780	5289530	47.7473	-64.7772
39	368240	5290685	47.7580	-64.7581
40	368390	5289740	47.7495	-64.7558
41	369200	5290060	47.7526	-64.7451
41A	369140	5290070	47.7527	-64.7459
42	369300	5290740	47.7587	-64.7440
45	367975	5286875	47.7237	-64.7605
46	366825	5284000	47.6976	-64.7749

Sampling Station Location for SHIPPAGAN HARBOUR (NB-03-020-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	370160	5291225	47.7632	-64.7331
2	370680	5290880	47.7602	-64.7256
4	371850	5290550	47.7575	-64.7099
5	372800	5290725	47.7593	-64.6973
7	370600	5289450	47.7474	-64.7262
9	372190	5289920	47.7519	-64.7052
12	372850	5289150	47.7451	-64.6962
14	373760	5288300	47.7377	-64.6838
15	374810	5287380	47.7296	-64.6695
16	374970	5286250	47.7195	-64.6671
17	375820	5287860	47.7341	-64.6562
19	375800	5288500	47.7398	-64.6566
20	375640	5289300	47.7470	-64.6590
21	374830	5289200	47.7460	-64.6698
22	373950	5289165	47.7455	-64.6815
24	372790	5288175	47.7363	-64.6967
25	373375	5287800	47.7331	-64.6888
26	374250	5287400	47.7297	-64.6770
27	374325	5286000	47.7171	375780
28	375780	5289000	47.7443	-64.6570
30	371100	5290200	47.7542	-64.7198

Sampling Station Location for LAMEQUE BAY (NB-03-030-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
4	377180	5293650	47.7864	-64.6397
5	377595	5294025	47.7899	-64.6343
8	377200	5294000	47.7896	-64.6395
11	376090	5293400	47.7840	-64.6542
19	375400	5295150	47.7996	-64.6639
22	374780	5295020	47.7983	-64.6721
24	375210	5294300	47.7919	-64.6662
28	375300	5293000	47.7802	-64.6646
31	374800	5294200	47.7909	-64.6716
33	373780	5293530	47.7847	-64.6850
35	375285	5292385	47.7747	-64.6646
36	374590	5291975	47.7709	-64.6738
37	372940	5293420	47.7835	-64.6962
43	373850	5292700	47.7772	-64.6839
45A	375525	5294140	47.7905	-64.6619
50	375835	5295150	47.7997	-64.6581

Sampling Station Location for PETITE LAMEQUE BAY (NB-03-030-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
38	373110	5294550	47.7937	-64.6943
39	373720	5295610	47.8034	-64.6864
40	374630	5296540	47.8119	-64.6746
41	374550	5297035	47.8164	-64.6758
42	373380	5296450	47.8109	-64.6912
46	374165	5296200	47.8088	-64.6807
47	374885	5297125	47.8172	-64.6713
48	373875	5297175	47.8175	-64.6848
49	372875	5296450	47.8108	-64.698

Sampling Station Location for GRANDE BATTURE (NB-03-030-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	372100	5298725	47.8311	-64.7090
2	374400	5301600	47.8574	-64.6791
A2	374700	5301850	47.8597	-64.6752
3	376340	5303255	47.8727	-64.6536
4	378750	5304800	47.8870	-64.6219
5	380875	5304300	47.8829	-64.5933
6	374850	5302150	47.8624	-64.6732
B6	374750	5302250	47.8633	-64.6746
7	372450	5297750	47.8224	-64.704
8	376845	5303355	47.8737	-64.6469
9	372240	5296895	47.8147	-64.7066

Sampling Station Location for MISCOU HARBOUR (NB-03-030-004)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	382425	5304025	47.8807	-64.5725
2	382700	5302775	47.8695	-64.5685
3	382400	5301900	47.8616	-64.5723
4	384220	5302300	47.8655	-64.5481
5	385375	5302250	47.8653	-64.5326
6	386750	5303425	47.8761	-64.5145
7	386650	5306450	47.9033	-64.5167
8	388400	5309800	47.9337	-64.4941
9	388150	5309975	47.9353	-64.4975
10	384200	5307550	47.9127	-64.5497
11	383400	5305950	47.8982	-64.5600
12	382250	5305825	47.8969	-64.5753
13	386875	5309300	47.9290	-64.5144
14	380650	5306650	47.9040	-64.597

Sampling Station Location for SHIPPAGAN BEACH (NB-03-040-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	369845	5282915	47.6884	-64.7338
3	370150	5283090	47.6901	-64.7304

Sampling Station Location for POKEMOUCHE BAY (NB-03-040-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
12	363860	5281140	47.6712	-64.8135
14	363310	5280180	47.6625	-64.8205
15	364630	5279580	47.6574	-64.8028
17	365020	5280620	47.6668	-64.7979
18	366240	5279980	47.6613	-64.7815
19	364100	5278425	47.6469	-64.8095
20	366335	5279740	47.6592	-64.7801

Sampling Station Location for TRACADIE BAY (NB-03-050-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
4	355510	5265740	47.5309	-64.9196
6A	356660	5263755	47.5134	-64.9037
8	356610	5263350	47.5097	-64.9042
12A	357425	5262995	47.5067	-64.8933
15	358160	5263400	47.5105	-64.8837
17	357690	5264230	47.5178	-64.8902
19	357875	5266300	47.5365	-64.8884
22	359875	5267400	47.5468	-64.8622
23	358870	5266180	47.5356	-64.8751
24	358950	5265370	47.5284	-64.8738
25	358920	5264390	47.5196	-64.8739
26	357430	5265370	47.5280	-64.8940
27	358155	5269420	47.5647	-64.8857
27B	357875	5269950	47.5693	-64.8896
29	359050	5271300	47.5817	-64.8744
30	357700	5269175	47.5623	-64.8916
31	356650	5268100	47.5524	-64.9052
32	360800	5271300	47.5821	-64.8511
33	359250	5269425	47.5649	-64.8711
34	358850	5262700	47.5044	-64.8743
35	361415	5271620	47.5851	-64.8431

Sampling Station Location for GRANDE RIVIERE TRACADIE (NB-03-050-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
4	353760	5256290	47.4456	-64.9397
6	354770	5256890	47.4512	-64.9265
7	354120	5257620	47.4576	-64.9354
8	354310	5258700	47.4674	-64.9332
10	355010	5259210	47.4753	-64.9363
11	355800	5258050	47.4721	-64.9241
12	355950	5259090	47.4619	-64.9133
13	356464	5258535	47.4712	-64.9116
14	356930	5259040	47.4664	-64.9046
15	357850	5259300	47.4710	-64.8986
16	357530	5257830	47.4735	-64.8865
17	358025	5258475	47.4603	-64.8902
18	358532	5258940	47.4662	-64.8839
19	358710	5259570	47.4705	-64.8773
20	355850	5260500	47.4762	-64.8751
21	356900	5260000	47.4839	-64.9134
22	357875	5261200	47.4906	-64.8867
23	355075	5257575	47.4574	-64.9227
24	354580	5259350	47.4733	-64.9299
25	358475	5262225	47.4999	-64.8791

Sampling Station Location for TABUSINTAC BAY (NB-04-010-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
2	342400	5245650	47.3472	-65.0865
3	343450	5246750	47.3574	-65.0730
5	345350	5246300	47.3538	-65.0477
6	346150	5246000	47.3513	-65.0370
7	347450	5244900	47.3417	-65.0194
8	348100	5243950	47.3333	-65.0105
9	348950	5244650	47.3398	-64.9995
10	349000	5244050	47.3344	-64.9986
11	350000	5244300	47.3369	-64.9855
12	349150	5243000	47.3250	-64.9963
13	348550	5242300	47.3186	-65.0040
14	350850	5244000	47.3344	-64.9742
A14	350800	5243550	47.3303	-64.9747
15	351450	5244550	47.3395	-64.9664
18	352500	5245250	47.3460	-64.9527
19	353200	5246400	47.3565	-64.9439
20	354350	5248100	47.3721	-64.9292
21	355000	5249600	47.3857	-64.9211
23	353800	5248450	47.3751	-64.9366
26	352150	5243000	47.3257	-64.9566
27A	352550	5240200	47.3006	-64.9504
27B	352560	5240575	47.3040	-64.9504
30	355495	5248700	47.3777	-64.9142
31	354700	5245950	47.3528	-64.9239
32	354625	5244925	47.3436	-64.9245
33	354400	5243800	47.3334	-64.9271
36	353625	5243400	47.3296	-64.9373
37	353725	5243000	47.3260	-64.9358
39	354000	5242550	47.3221	-64.9320
41A	354150	5242930	47.3255	-64.9302
45	354050	5242075	47.3178	-64.9312
46	353150	5241325	47.3109	-64.9429
47	353200	5240800	47.3061	-64.9420
48	353820	5240770	47.3060	-64.9338
52	352160	5239265	47.2920	-64.9553
53	351575	5238775	47.2876	-64.9628
54	351350	5238190	47.2823	-64.9656
55	351675	5238525	47.2853	-64.9614

Sampling Station Location for NEGUAC BAY (NB-04-020-001)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	342100	5232725	47.2310	-65.0859
2	342775	5232750	47.2313	-65.0770
3	343050	5233250	47.2359	-65.0736
4	342625	5233725	47.2401	-65.0793
5	343150	5234050	47.2431	-65.0725
6	343045	5234080	47.2434	-65.0739
B6	343075	5234275	47.2451	-65.0736
7	343200	5234400	47.2463	-65.0720
8	343350	5234350	47.2459	-65.0700
9	344050	5235400	47.2555	-65.0611
10	344100	5235300	47.2546	-65.0604
10A	343,950	5,235,275	47.2543	-65.0624
10B	343908	5235165	47.2533	-65.0629
11A	344345	5235600	47.2574	-65.0573
11B	344245	5235457	47.2560	-65.0585
15	345125	5236000	47.2611	-65.0471
18	346450	5236650	47.2673	-65.0298
19	346525	5236525	47.2662	-65.0288
20	346775	5237050	47.2710	-65.0257
23	347450	5237500	47.2752	-65.0169
26	349275	5237325	47.2740	-64.9927
28	346225	5233400	47.2380	-65.0317
29	347938	5234397	47.2474	-65.0094
33	343175	5232550	47.2296	-65.0717
34	342625	5232175	47.2261	-65.0788
50	343388	5234738	47.2494	-65.0696
52	343350	5234625	47.2483	-65.0701
53	343500	5234550	47.2477	-65.0681
54	342400	5233300	47.2362	-65.0822
55	342575	5233025	47.2338	-65.0797
56	342345	5232855	47.2775	-64.9701
57	350600	5237150	47.2727	-64.9752
59	349400	5235900	47.2612	-64.9906
62	345850	5230350	47.2105	-65.0356
63	341525	5232760	47.2311	-65.0935
64	341085	5232450	47.2282	-65.0992

Sampling Station Location for BURNT CHURCH (NB-04-020-002)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
35	341200	5231950	47.2238	-65.0975
36	340700	5231050	47.2156	-65.1038
38A	340045	5230525	47.2107	-65.1123
40	339700	5229900	47.2050	-65.1166
42A	339215	5229065	47.1973	-65.1227
43	338225	5228650	47.1934	-65.1356
44	337875	5228375	47.1908	-65.1401
45	337300	5227750	47.1850	-65.1475
46	337050	5227500	47.1827	-65.1507
49	341250	5231500	47.2197	-65.0967

Sampling Station Location for PORTAGE ISLAND (NB-04-020-003)

Station	UTM (ZN 20 NAD 27)		Lat	Long
	Easting	Northing		
1	343000	5227550	47.1846	-65.0722
2	344550	5226500	47.1756	-65.0514
3	345100	5227150	47.1815	-65.0444
4	345065	5227965	47.1889	-65.0451
5	344700	5229310	47.2009	-65.0504
6	345825	5226900	47.1795	-65.0347
7	348000	5225800	47.1701	-65.0057
8	344675	5224875	47.1610	-65.0492

APPENDIX 4

EC MARINE WATER QUALITY SAMPLING PROTOCOL

1. Introduction:

All water samples for bacteriological analyses are collected in sterile 250 mL wide-mouthed bottles (polypropylene or glass) at a depth approximately 20cm below the water surface. All water samples collected are held in an insulated cooler on ice or ice packs.

Prior to sampling, the receiving laboratory has been contacted at least 24 hours in advance to confirm sample delivery time and analysis within prescribed limits. All equipment and supplies are prepared prior to leaving. These include sample bottles, coolers, sampling rod, GPS, chart, sampling station maps with descriptions, field thermometer, pencils, markers, field book, and watch.

Sampling is carried out under various environmental conditions including adverse weather such as heavy periods of precipitation, dry conditions, and different tidal stages. Sampling stations are located through GPS or triangulation and/or using sampling station maps and descriptions. Hydrological conditions including surface water temperature and tidal cycle are recorded as well as meteorological conditions. During sample collection, all relevant information is recorded in a field book. This would include all the items listed in under 7. Sample Collection Information Recorded in Field Book below.

A temperature blank is used to determine the temperature at time of collection (measured in field) and at the time of delivery (measured by laboratory). All sample bottles are cleaned, rinsed with distilled water, sterilized and kept closed until utilised. All samples are identified with location and a sampling station number. After collection, sample is immediately placed in a clean cooler which is maintained between 0°C and 10°C. Samples are delivered to the approved laboratory within 6 hours of collection of the first sample. Samplers ensure that, prior to delivery to the laboratory, all sample bottles and field books are checked for complete and accurate information.

2. Safety Precautions:

Field staff must undergo appropriate boating and vehicle safety training.

2.1 All microorganisms must be treated with caution and are to be considered hazardous. Aseptic technique is required. All samples/ sample containers not identified as "sterile" should be treated as potential hazards and may contain pathogenic microorganisms.

2.2 Eating and Drinking are PROHIBITED while sampling.

2.3 Technicians must handle samples with caution following the assumption that all samples are potential hazards.

2.4 Coolers must be disinfected before and after each use.

2.5 Technicians must wash hands effectively, as soon as possible, after handling the samples.

2.6 Open cuts/ sores must be bandaged to prevent accidental infection; these bandages should be changed frequently.

3. Apparatus:

3.1 Insulated cooler with ice/ice packs
3.2 250ml wide-mouth sterile sample bottle (polypropylene or glass)
3.3 Sampling rod with thermometer or with stand alone armor-cased thermometer
3.4 Field log book
3.5 Sampling map
3.6 Watch with 24 hour format
3.7 Label Tape for Bottles
3.8 Pencils, Indelible waterproof felt pens
3.9 GPS, Compass
3.10 Applicable Personal Protective Equipment (PPE)

4. Interferences:

4.1 Sample bottles must remain closed at all times (opened only just prior to use) to decrease probability of contamination. Occurrences of the cap becoming loosened or removed unintentionally will increase the chance of cross contamination of the sample and it will not be truly representative of natural environment. Caps should be held with open end facing down to reduce the risk of air contamination. All accidentally opened bottles should not be used, but returned to the lab for re-sterilisation. If lots of bottles are found to have numerous loose caps, the supervisor should be notified immediately and corrective action taken as soon as possible.

4.2 Sample bottles must be kept in an insulated cooler between 0^0C and 10^0C. If samples do not arrive at the laboratory between 0 and 10^oC, the laboratory supervisor should be notified immediately. Corrective action such as continued holding on ice / ice packs or refrigeration may be employed if time permits, however explanations of non-conformances are to be recorded on the data sheets

4.3 Samples must be delivered to laboratory within 6 hours of collection of first sample to allow for 2 hours of processing. Samples outside this parameter are recorded on sample data sheets. No samples will be processed if beyond 24 hours after collection.

4.4 If sampling location is deemed inaccurate, another sample will be taken in appropriate location.

5. Procedure:

5.1 Water Quality Sampling Protocol

5.1.1 Prepare a clean, insulated cooler with an appropriate number of sterile, labelled, sample collection bottles and enough ice or ice packs suitable to maintain samples in the range of 0°C – 10°C.

5.1.2 In the field log book, record growing area identification, date of survey, sampler's names, current weather conditions (wind, air temperature, sun, % cloud cover), tidal state, and sample station numbers.

5.1.3 Navigate to sample station locations using the station map, station descriptions, and GPS / compass as required to ensure accuracy and consistency.

5.1.4 Upon reaching sample station, select a pre-labelled, sterile sample bottle. Insert bottle into the sampling rod and dip into seawater to rinse. Remove and hold bottle cap with open side facing down, ensuring that its interior does not contact any surface.

5.1.5 Plunge the sampling rod into undisturbed water up to the 20 cm mark. Allow several seconds to fill and withdraw sample. Pour off excess water to allow for an approximate 1 inch air space for subsequent agitation in the laboratory (Maintain a minimum of 200 ml sample size).

5.1.6 Replace the bottle cap aseptically ensuring that neither its interior, nor the bottle neck contacts any surface. Place bottle in cooler ensuring ice or ice packs do not contact bottle cap.

5.1.7 Observe temperature from integrated thermometer or, in the case of separate tank thermometer, plunge to a 20 cm depth, then observe.

5.1.8 In the field log book, record sample time, water temperature, and any other relevant observations such as presence of birds, boat / cabin activity, high flow rates, spills, or other possible pollution sources (See Appendix A).

5.1.9 Repeat steps 5.1.3 through 5.1.8 for all sample stations.

5.1.10 An extra sample is to be taken at the first sample station to serve as a temperature control for later laboratory use. Label as 'temperature control' or TC.

5.1.11 After completion of sampling run, transport all samples to the laboratory within a 6 hour time frame beginning with time of first sample. Ensure that adequate ice / ice packs are in place to keep temperatures between 0°C and 10°C.

5.1.12 Upon return to laboratory, transfer custody to laboratory staff and ensure that information from field log book is copied to the laboratory data collection sheet and on the Sample Log In Sheet. It is very important to remember to use aseptic technique to collect and process samples and to show accountability.

6. Acceptance Criteria and Corrective Actions:

6.1 Temperature control must be within 0°C and 10°C. Discarding of samples depends on the temperature trend of the sample and if transport time was insufficient to cool samples to the accepted parameter (i.e. did temperature of sample decrease during transport). If samples are deemed out of compliance by the laboratory supervisor, they are discarded.

6.2 All non conformances must be reported to the lab supervisor immediately.

7. **Sample Collection Information Recorded in Field Book:**

- date of each survey
- growing area identification
- name of location or site
- state of tide
- station number
- time of each sample
- water temperature (at each station)
- water temperature blank
- precipitation in last 24 – 48 hours
- sun (% cloud cover)
- wind: direction and speed
- air temperature (optional)
- height of waves(optional)
- turbidity (optional)
- other potential pollution sources (birds, anchored vessels, marine mammals, etc.)
- sampler's names

REFERENCES

1.	Compendium of Methods for the Microbiological Examination of Foods, 2nd Edition, APHA, 1984.
2.	Good Laboratory Practice.
3.	Interim Guides for the Depuration of the Northern Quahog *Mercenaria merce-naria,* Northeast Marine Health Sciences Laboratory, North Kingstown, RI, 1968.
4.	NBS Monograph 150, U.S. Department of Commerce, Washington, D.C.,1976.
5.	Official Methods of Analysis of the Association of Official Analytical Chemists, 15th Edition, 1990.
6.	Proceeding 8th National Shellfish Sanitation Workshop, 1974.
7.	Public Health Service, Public Health Report, Reprint #1621, 1947.
8.	Quality Assurance Principles for Analytical Laboratories, Association of Official Analytical Chemists, 1991.
9.	Recommended Procedures for the Examination of Sea Water and Shellfish, 4th Edition, American Public Health Association, 1970.
10.	Shellfish Sanitation Interpretation #SS-39, Interstate Shellfish Sanitation Conference, 1986.
11.	Standard Methods for the Examination of Water and Wastewater, APHA, 2005, 21st Ed. Section 9221 E, 2
12.	Title 21, Code of Federal Regulations, Part 58, Good Laboratory Practice for Nonclinical Laboratory Study, Washington, D.C.
13.	Standard Methods for the Examination of Dairy Products, 16th Edition, APHA, 1992.

CSSP ver.2007-03-31

APPENDIX 5

EVALUATION REPORT OF WATER SAMPLE COLLECTION

Canadian Shellfish Sanitation Program (CSSP)

EVALUATION REPORT OF WATER SAMPLE COLLECTION

ENVIRONMENT CANADA
SCIENCES & TECHNOLOGY BRANCH
ATLANTIC REGION – MARINE WATER QUALITY MONITORING

45 Alderney Dr.,
Dartmouth, NS
B2Y 2N6

EVALUATION REPORT OF FIELD ACTIVITY

CONTRACTOR: _____

_____

DATE OF EVALUATION : _____

DATE OF REPORT : _____

DATE OF PREVIOUS EVALUATION : _____

REPRESENTATIVE CONTRACTORS / SAMPLING-FIELD ACTIVITY :

_____	Field technician
(name)	(title)
_____	Field assistant
(name)	(title)

REPRESENTATIVE OF ENVIRONMENT CANADA :

_____	Coordinator
(name)	(title)

A copy of the checklist has been sent to the Field technician before the visit.

YES ☐

NO ☐

SUMMARY OF THE FIELD ACTIVITY EVALUATION

Visited sectors :

Schedule :

General comments :

DEFICIENCIES			RECOMMENDATIONS		
-			-		
-			-		
-			-		

CHECKLIST – SAMPLING METHOD

#	Category		Items	Conform	Deficiencies	Recommendations	Comments
1	General equipment						
		a.	Sample bottles				
		b.	Sampling rod				
3	Stations positioning						
		a.	Method – GPS and visual reference point				
4	Sampling method						
		a.	Method				
		b.	Bottle identification				
		c.	Water temperature control at onset of run				
		d.	Water temperature taken at each sample				
5	Sample transportation						
		a.	Do not exceed 6 hours (from time of first sample)				
		b.	Coolers (enough ice or ice packs) / Water TC at lab $\leq 10°C$				
6	Log book						
		a.	date / hour of beginning and ending of sampling				

		b.	number of the area, sector, subsector and station				
		c.	Hydrological conditions				
			Time of the high tide				
			Tidal phase				
			Water temperature				
			Water depth				
			Salinity				
		d.	Meteorological conditions				
			Rainfall				
			Cloud cover %				
			Wind : direction + speed (beginning/ending)				
			Air temperature (beginning/ending)				
			Wave height				
			Sea Condition				
7	Training						
		a.	Pleasure Craft Operator Card				
		b.	Restricted Operator's Certificate (Maritime)				
		c.	Marine Emergencies Duties				
		d.	Standard First Aid (offshore, working area and CPR)				