

APPENDIX F

Macrofaunal Distributions

APPENDIX F

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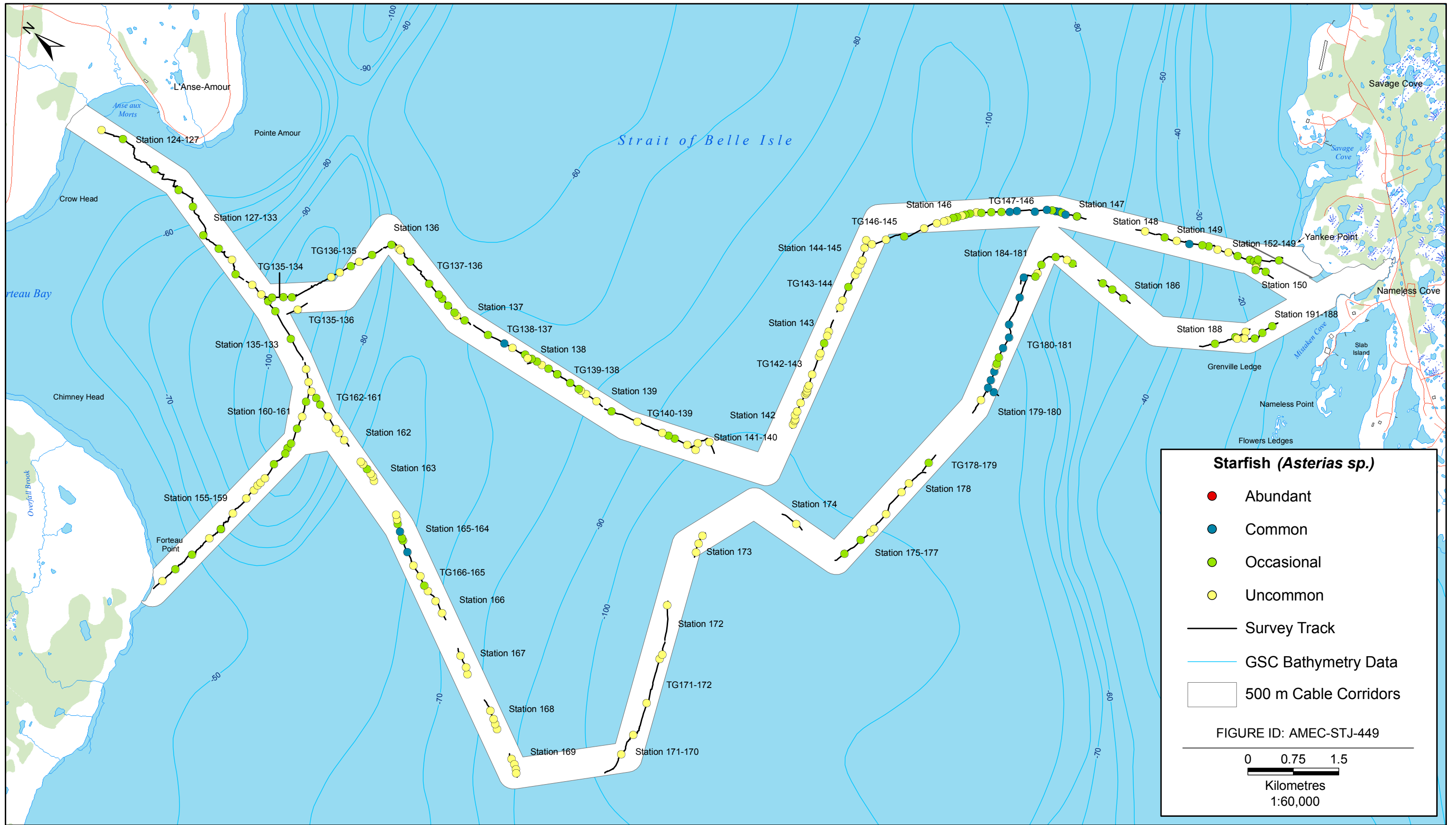


Figure F-1

Starfish (*Asterias sp.*) - 2008 Marine Survey



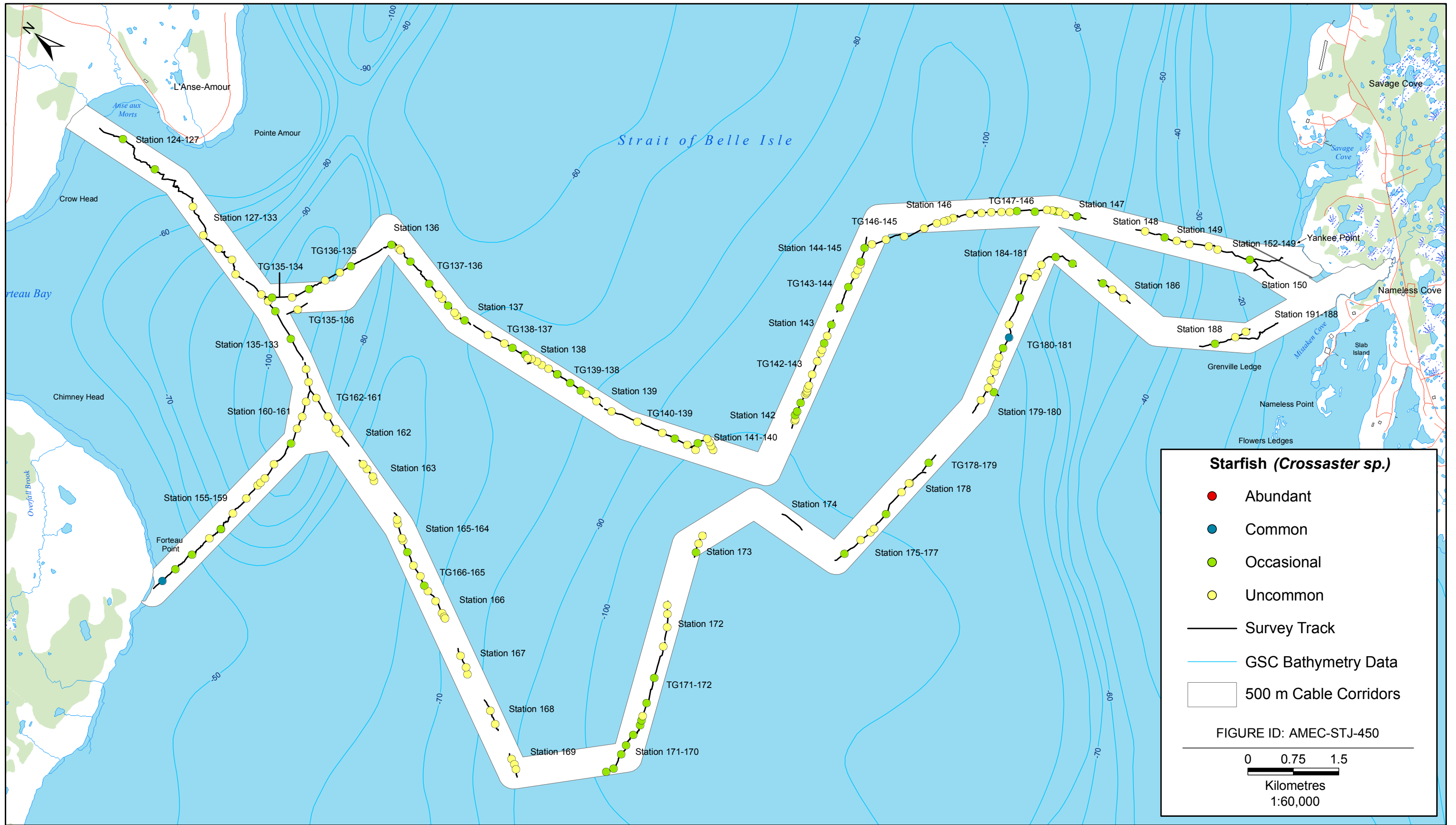


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Starfish (*Crossaster sp.*) - 2008 Marine Survey



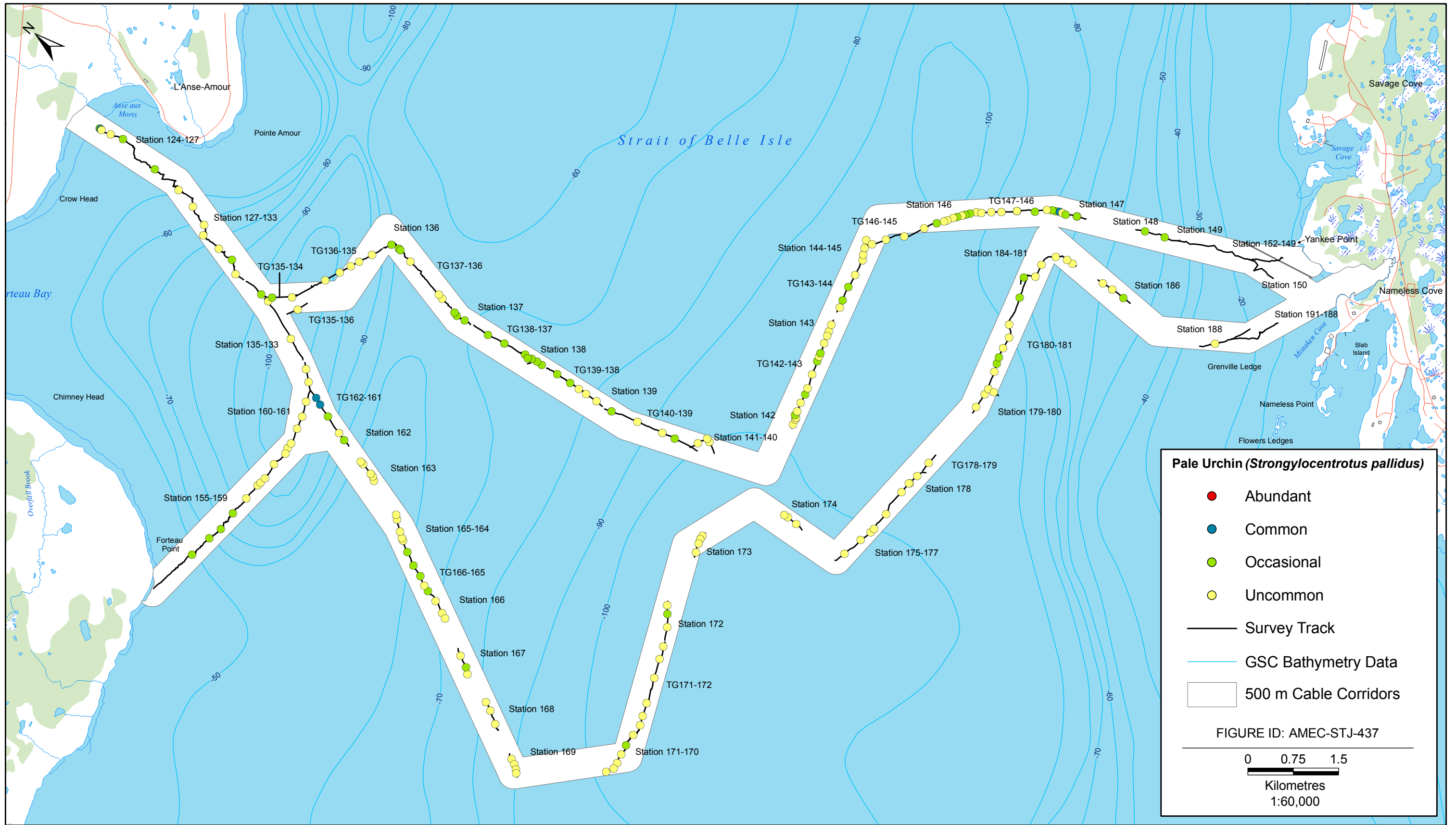


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Pale Urchin (*Strongylocentrotus pallidus*) - 2008 Marine Survey

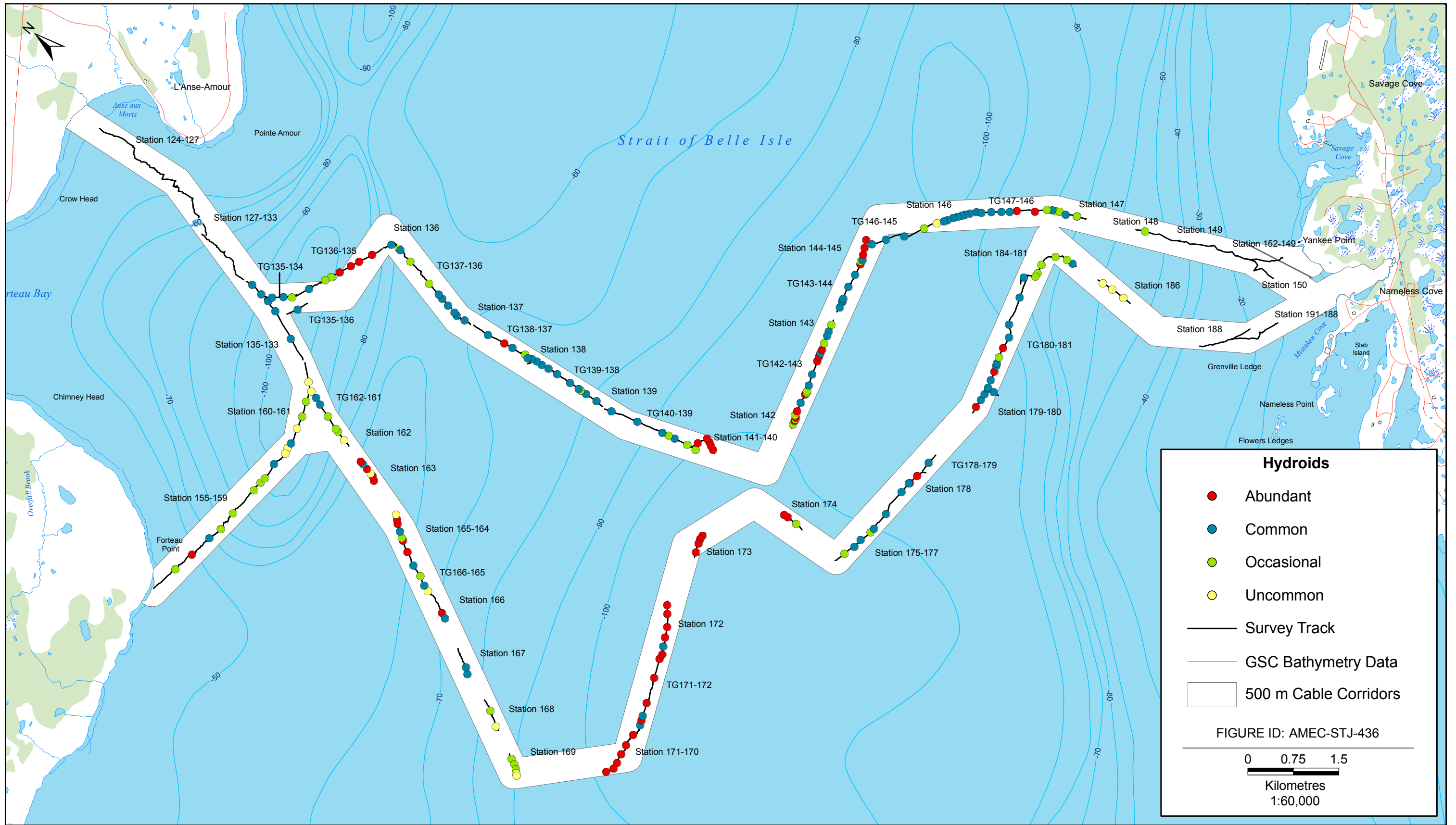


Figure F-4

Hydroids - 2008 Marine Survey



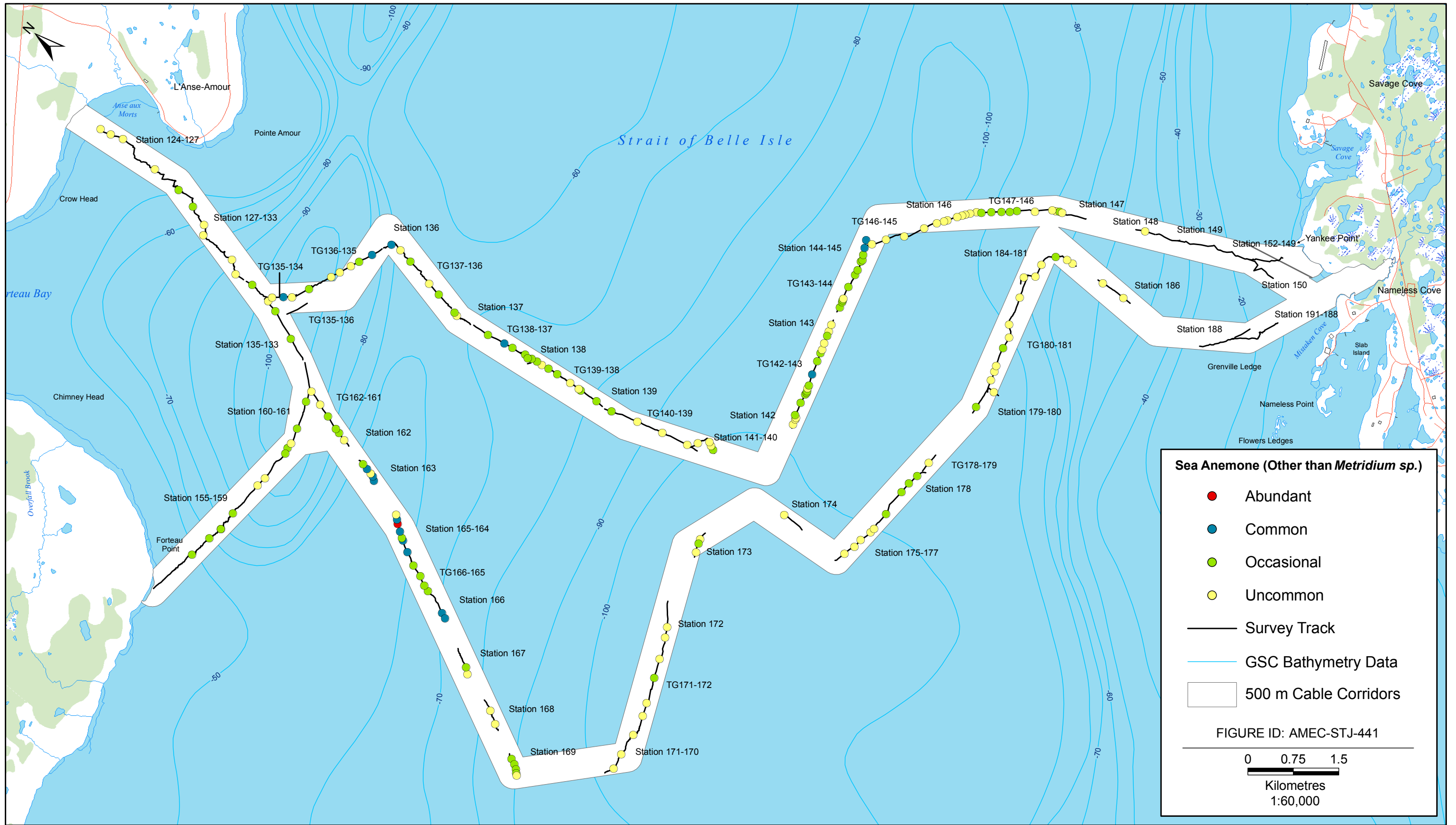


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Sea Anemone (Other than *Metridium sp.*) - 2008 Marine Survey

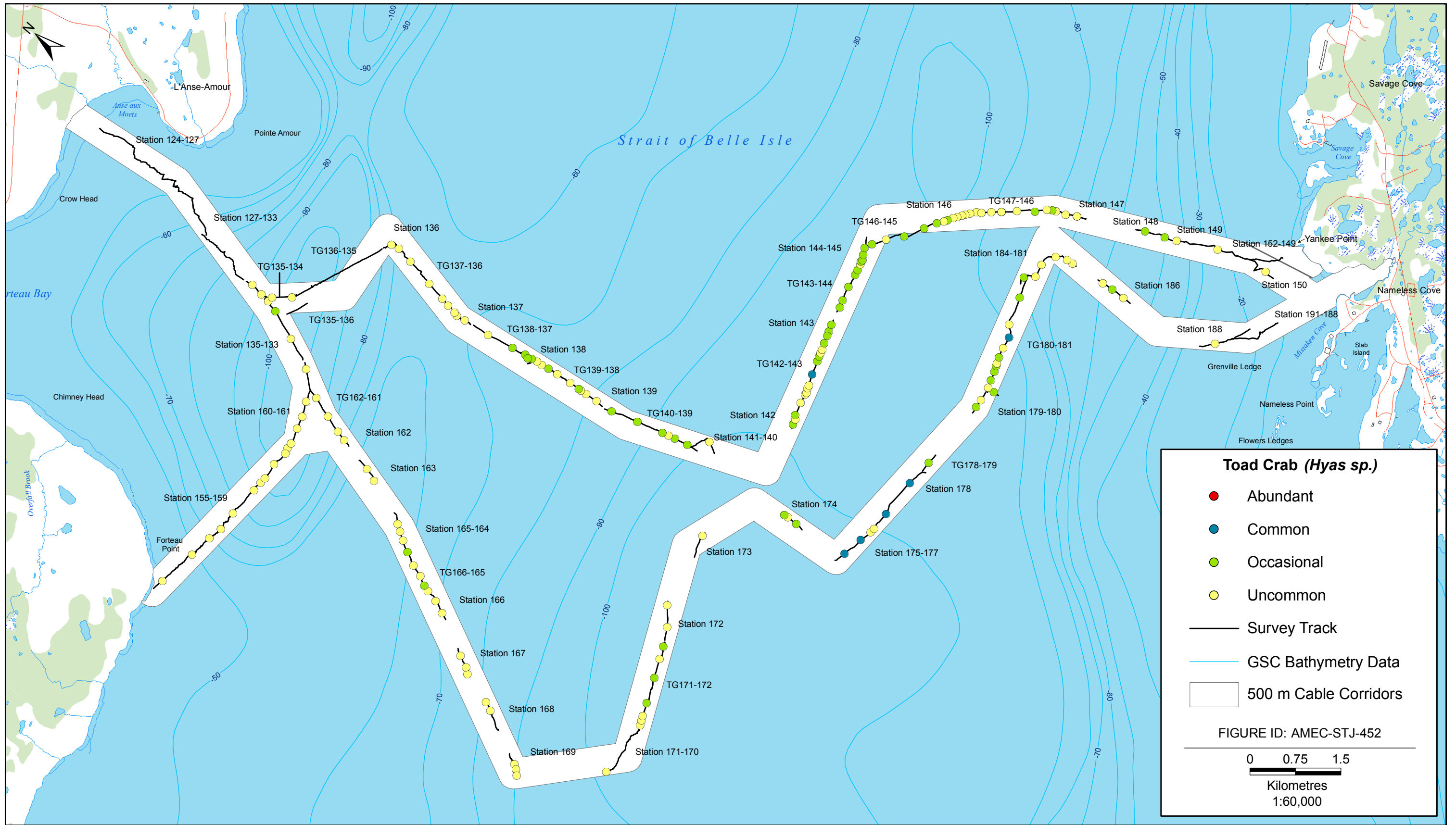


Figure F-6



Toad Crab (*Hyas sp.*) - 2008 Marine Survey

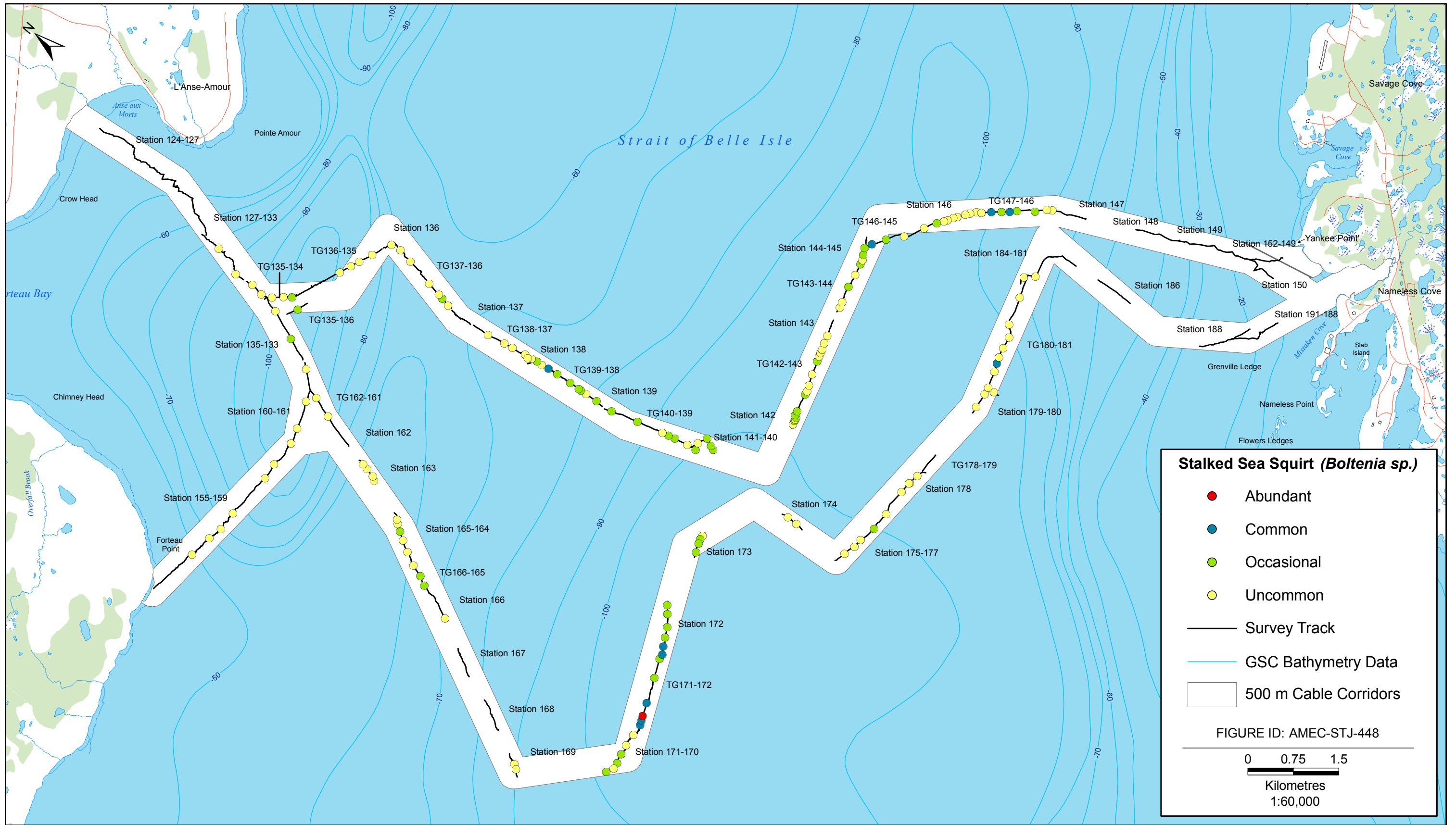


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Stalked Sea Squirt (*Boltenia sp.*) - 2008 Marine Survey

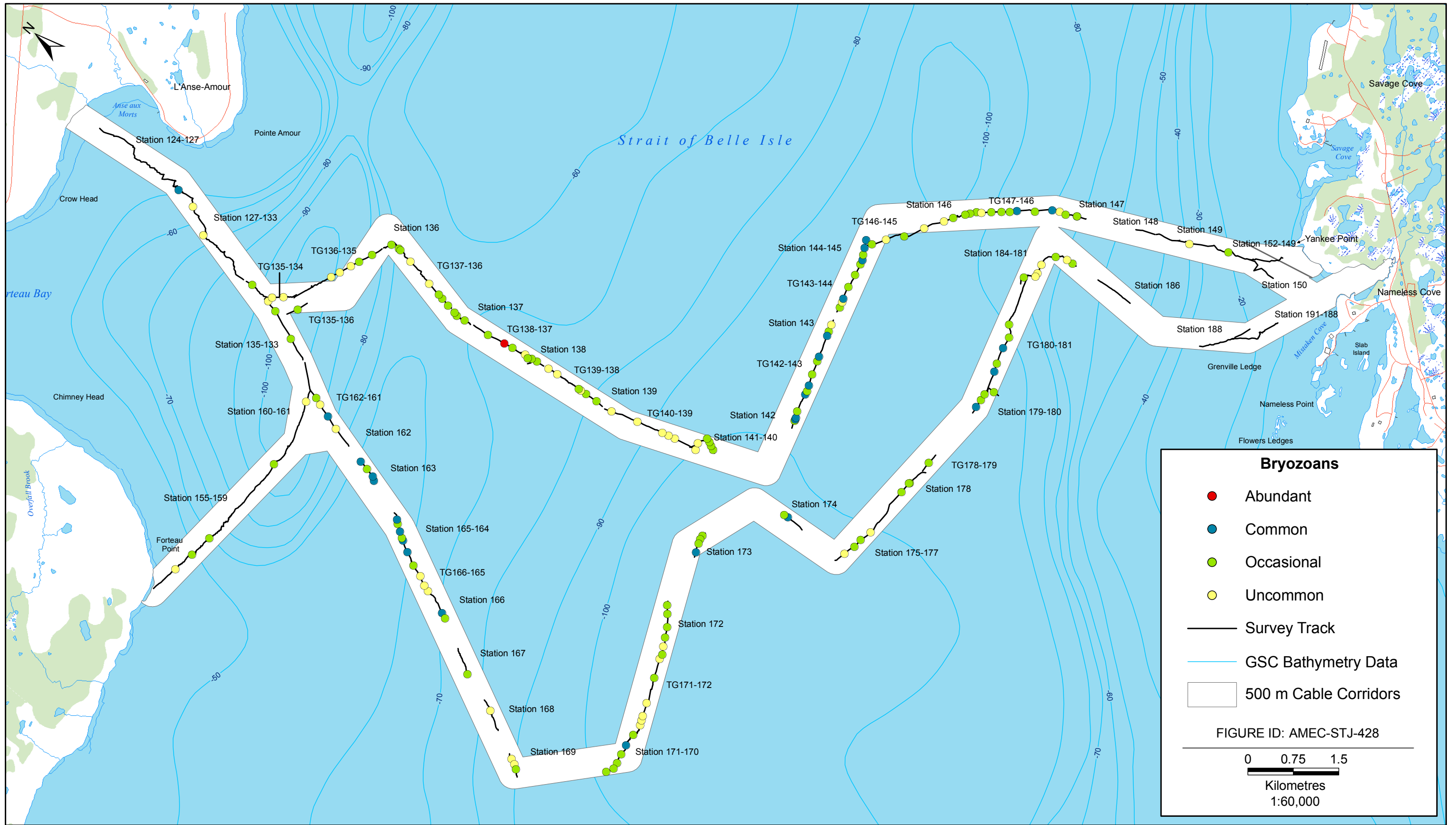


Figure F-8

Bryozoans - 2008 Marine Survey



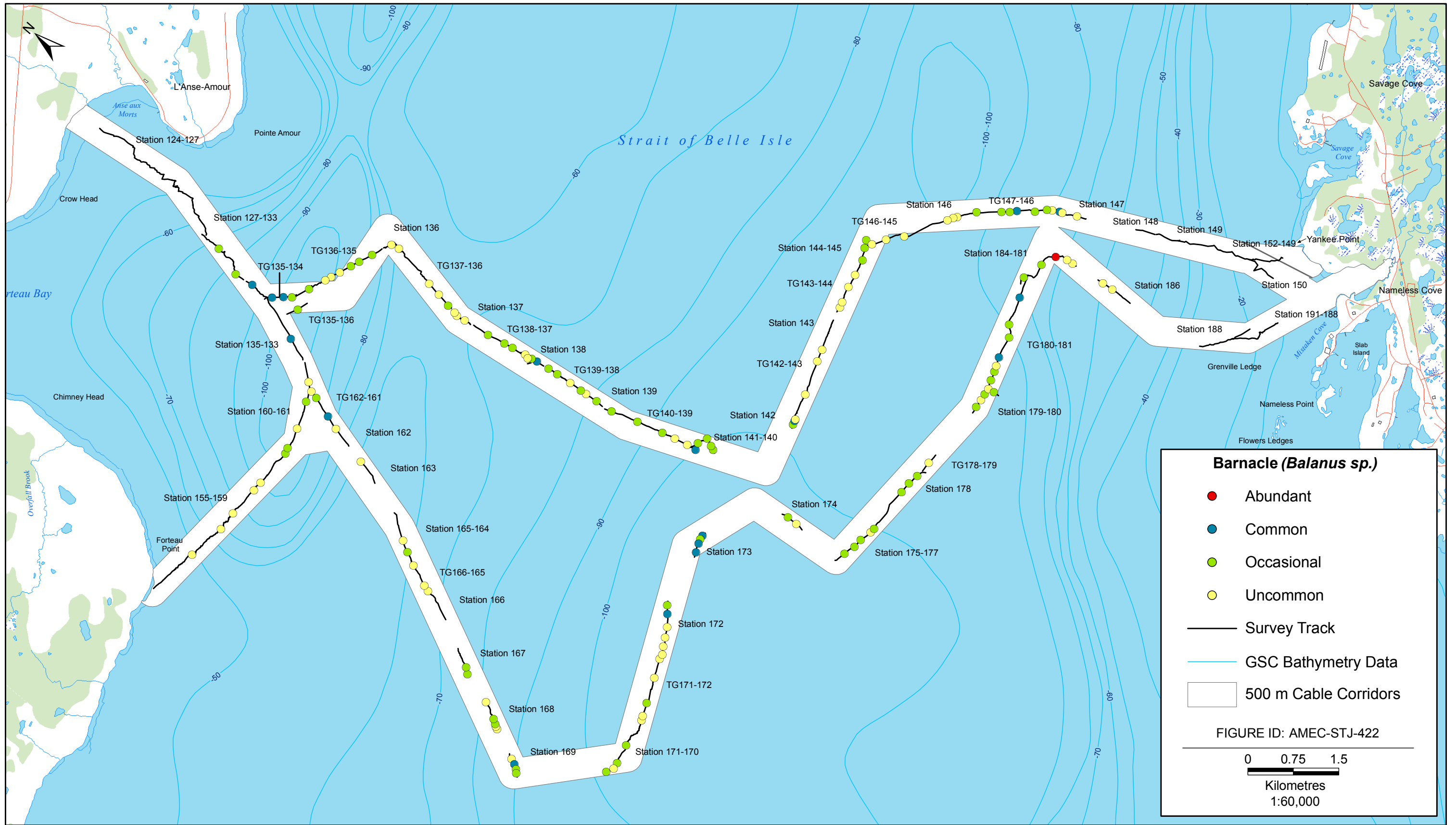


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Barnacle (*Balanus sp.*) - 2008 Marine Survey



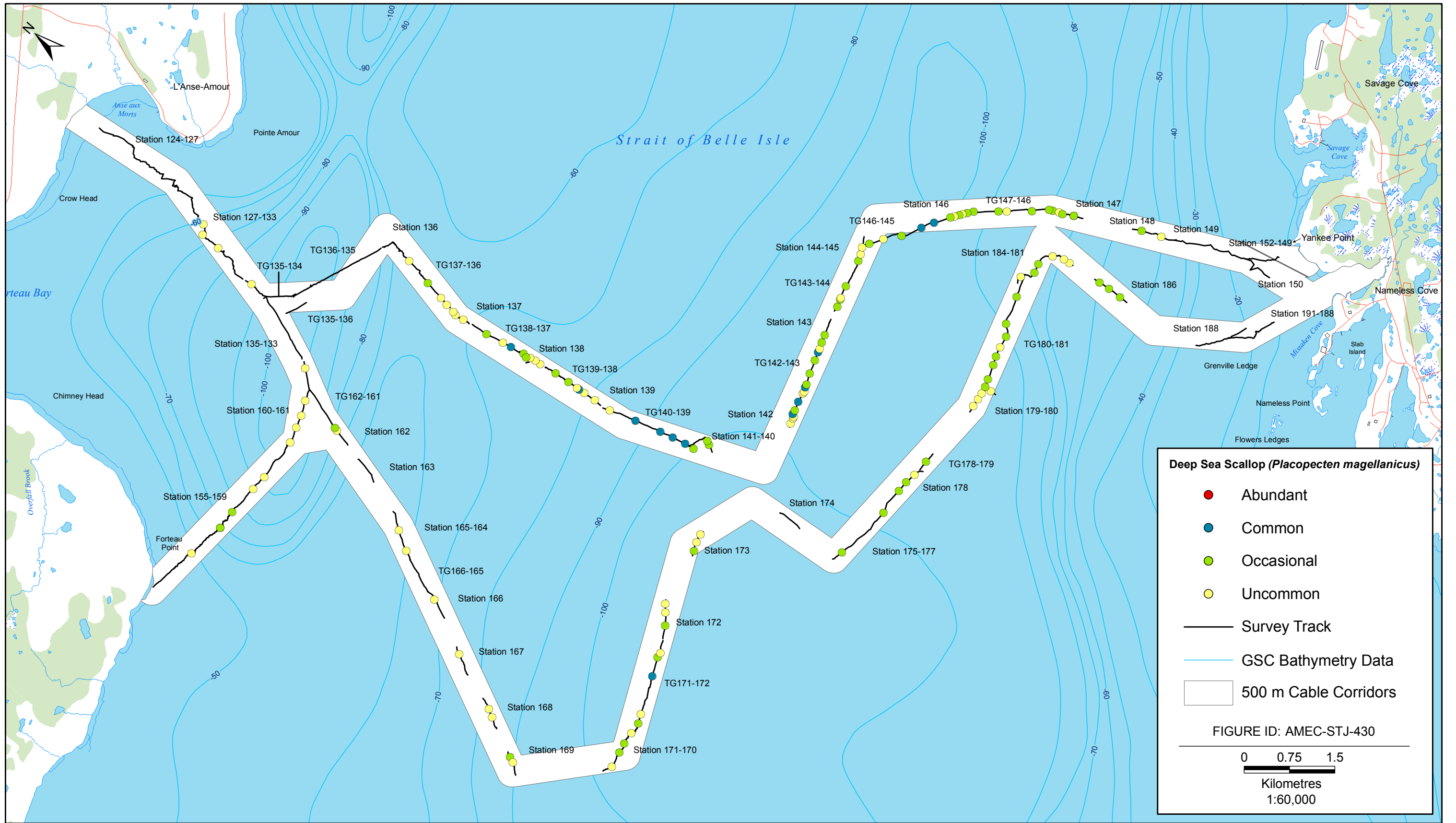


Figure F-10



Deep Sea Scallop (*Placopecten magellanicus*) - 2008 Marine Survey

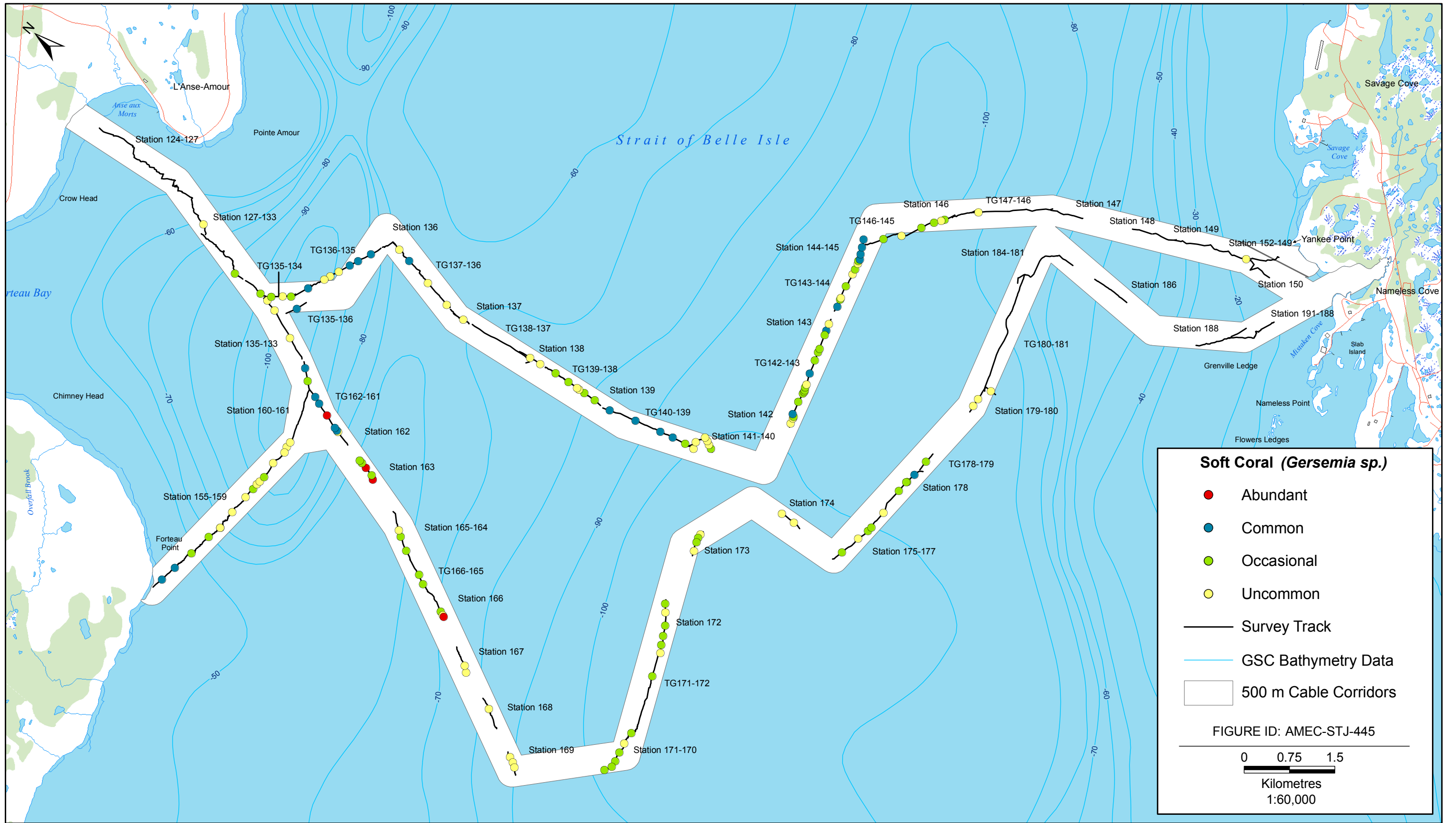


Figure F-11

Soft Coral (*Gersemia sp.*) - 2008 Marine Survey



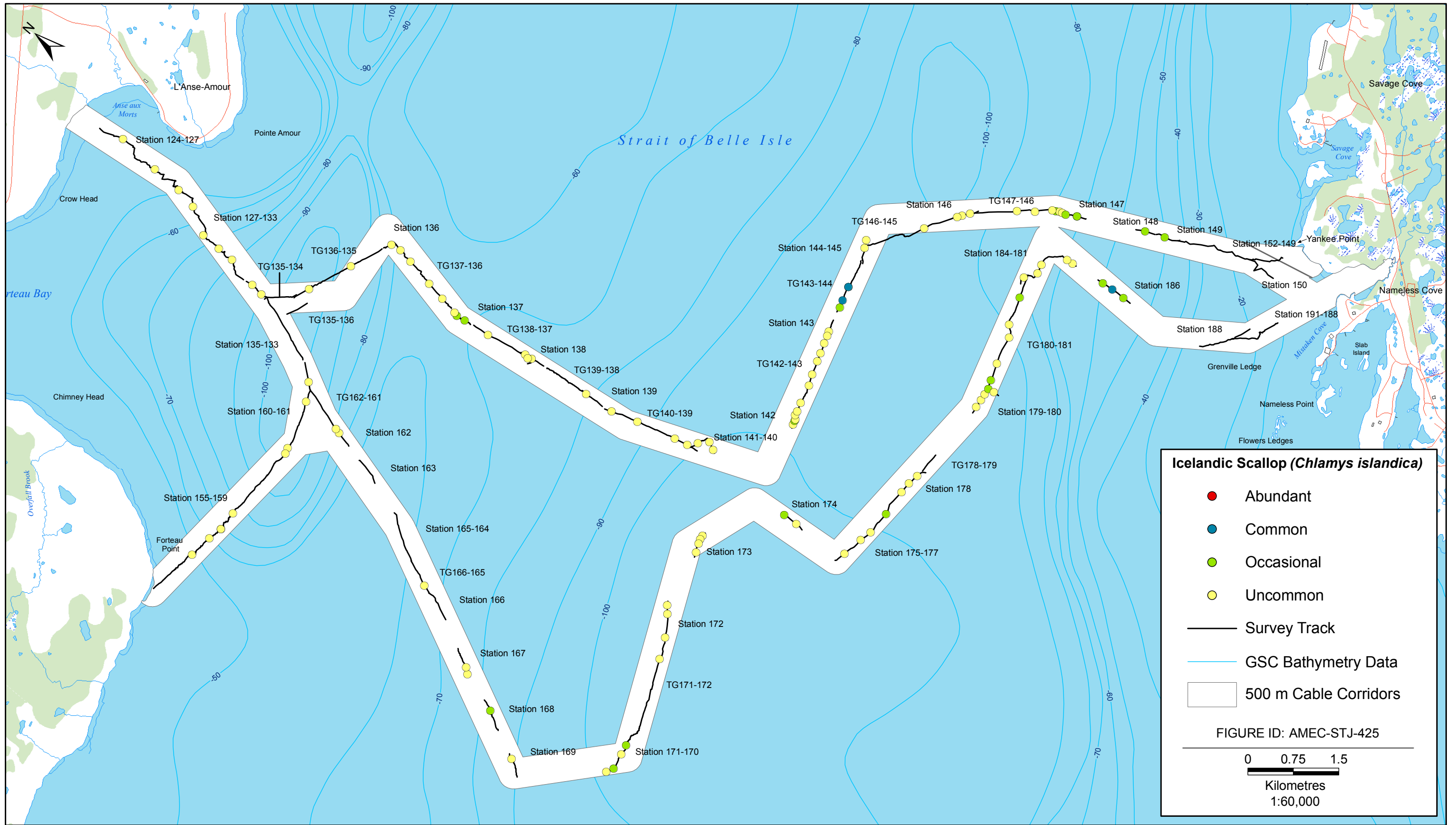


Figure F-12



Icelandic Scallop (*Chlamys islandica*) - 2008 Marine Survey

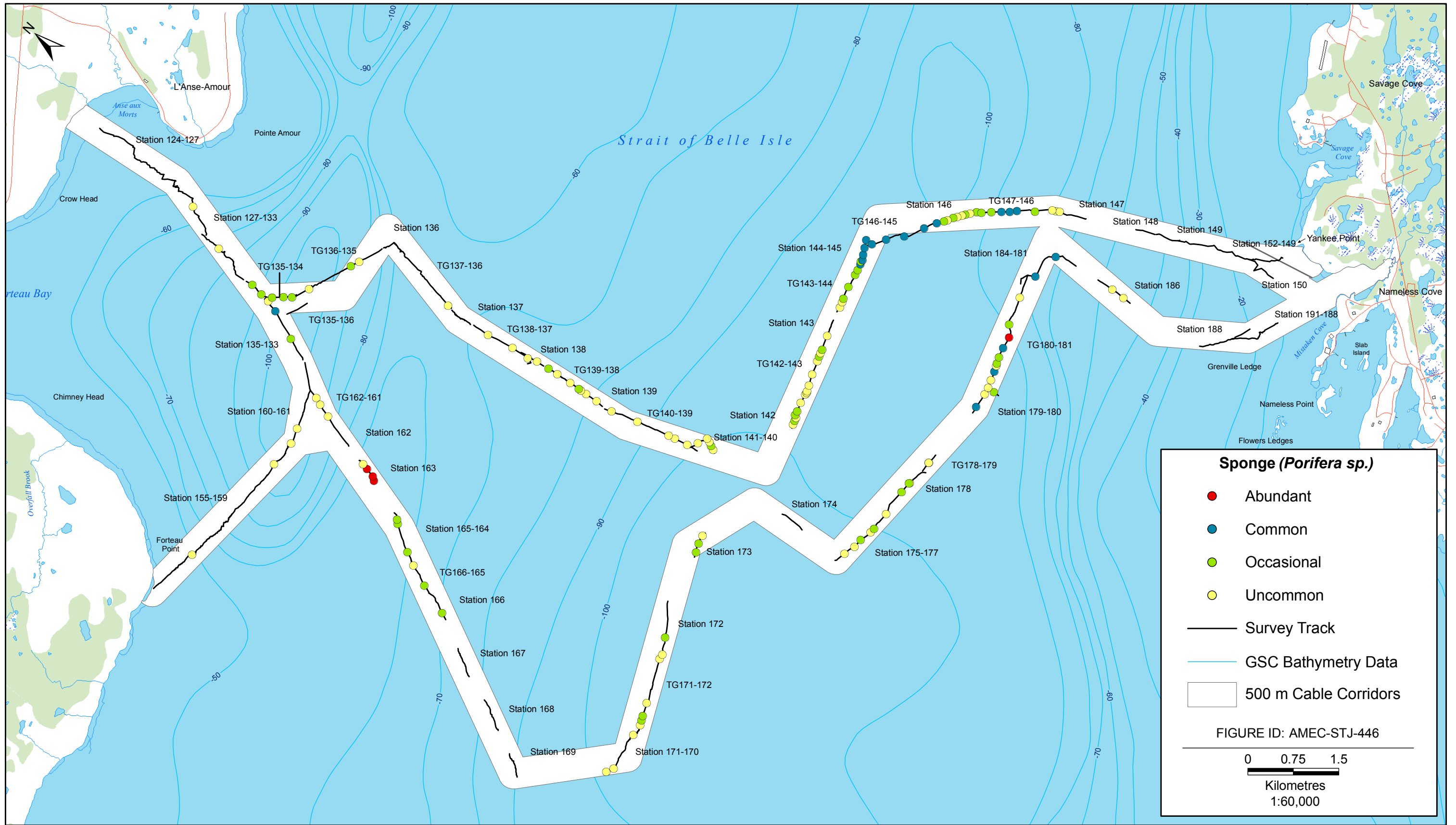


Figure F-13

Sponge (*Porifera*) - 2008 Marine Survey

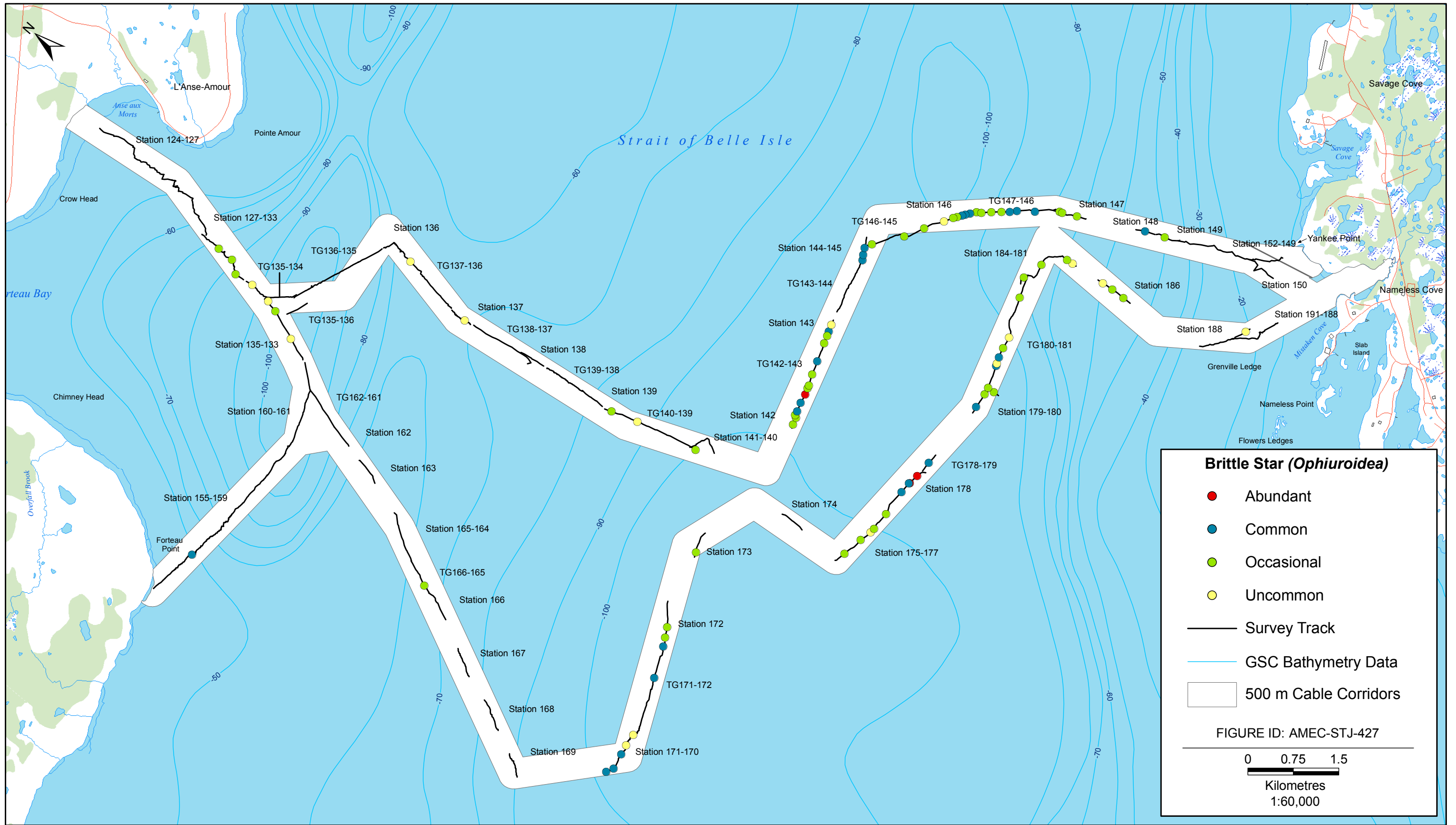


Figure F-14



Brittle Star (*Ophiuroidea* sp.) - 2008 Marine Survey

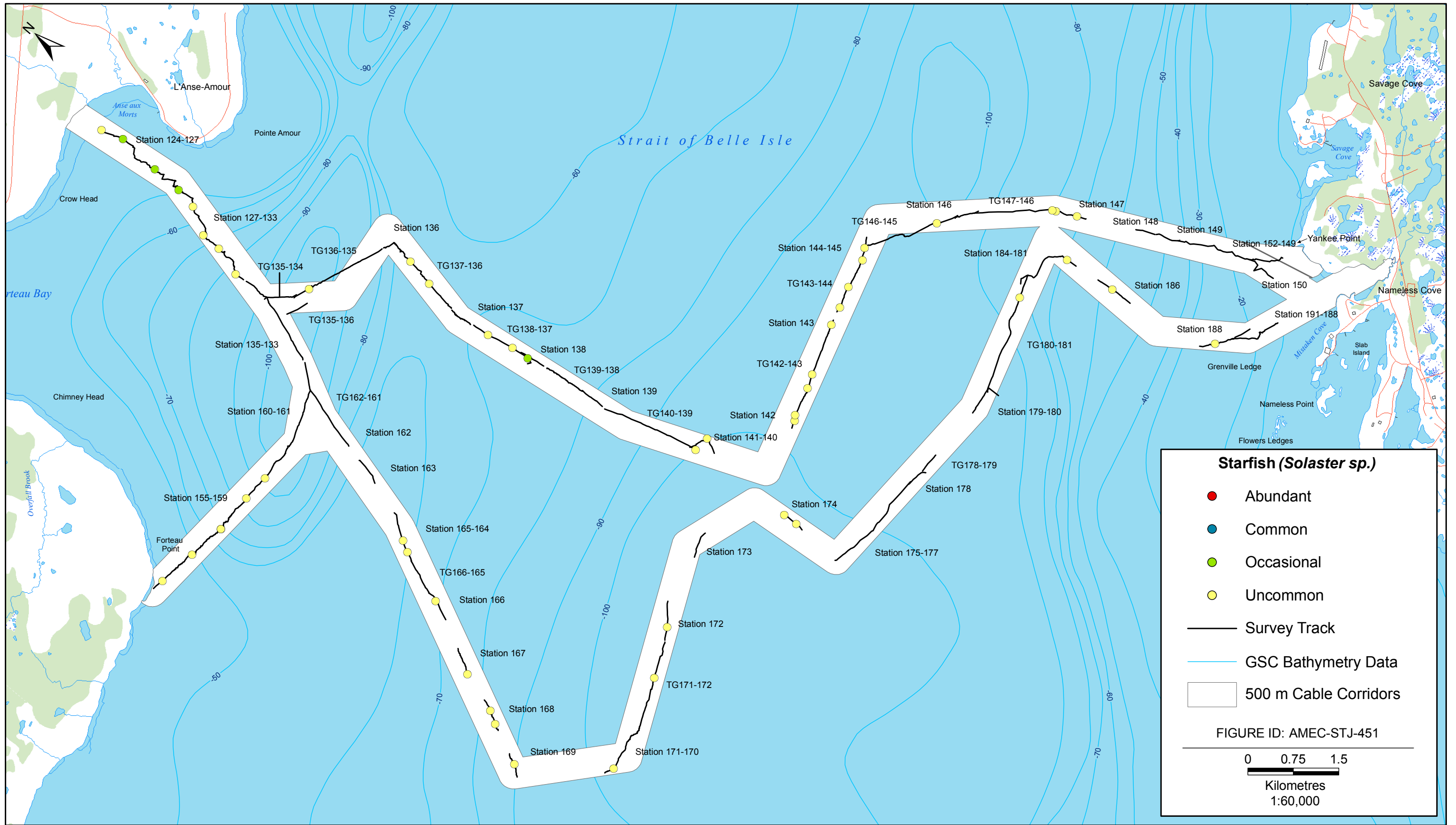


Figure F-15

Starfish (*Solaster sp.*)- 2008 Marine Survey

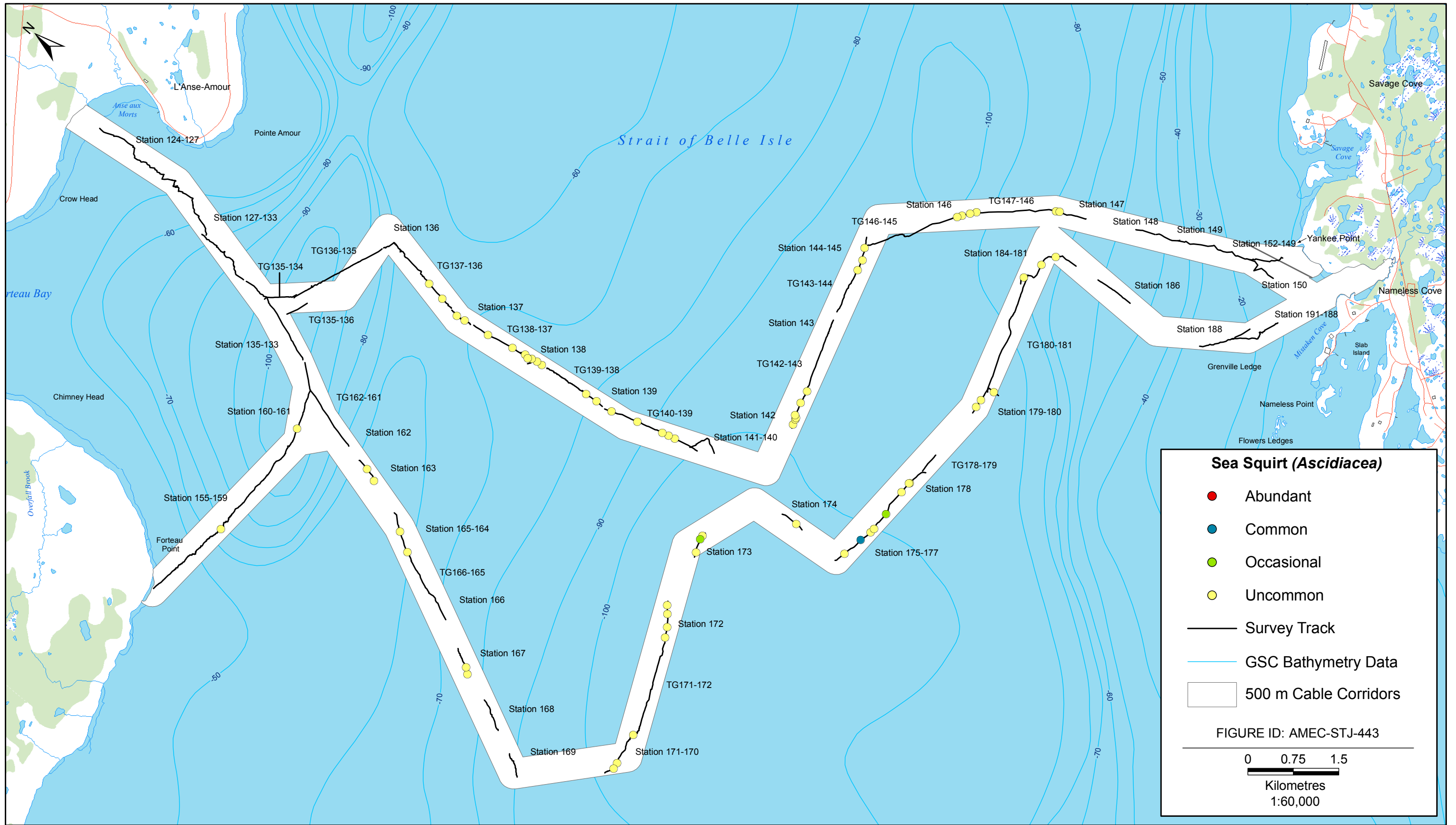


Figure F-16

Sea Squirt (Ascidacea) - 2008 Marine Survey



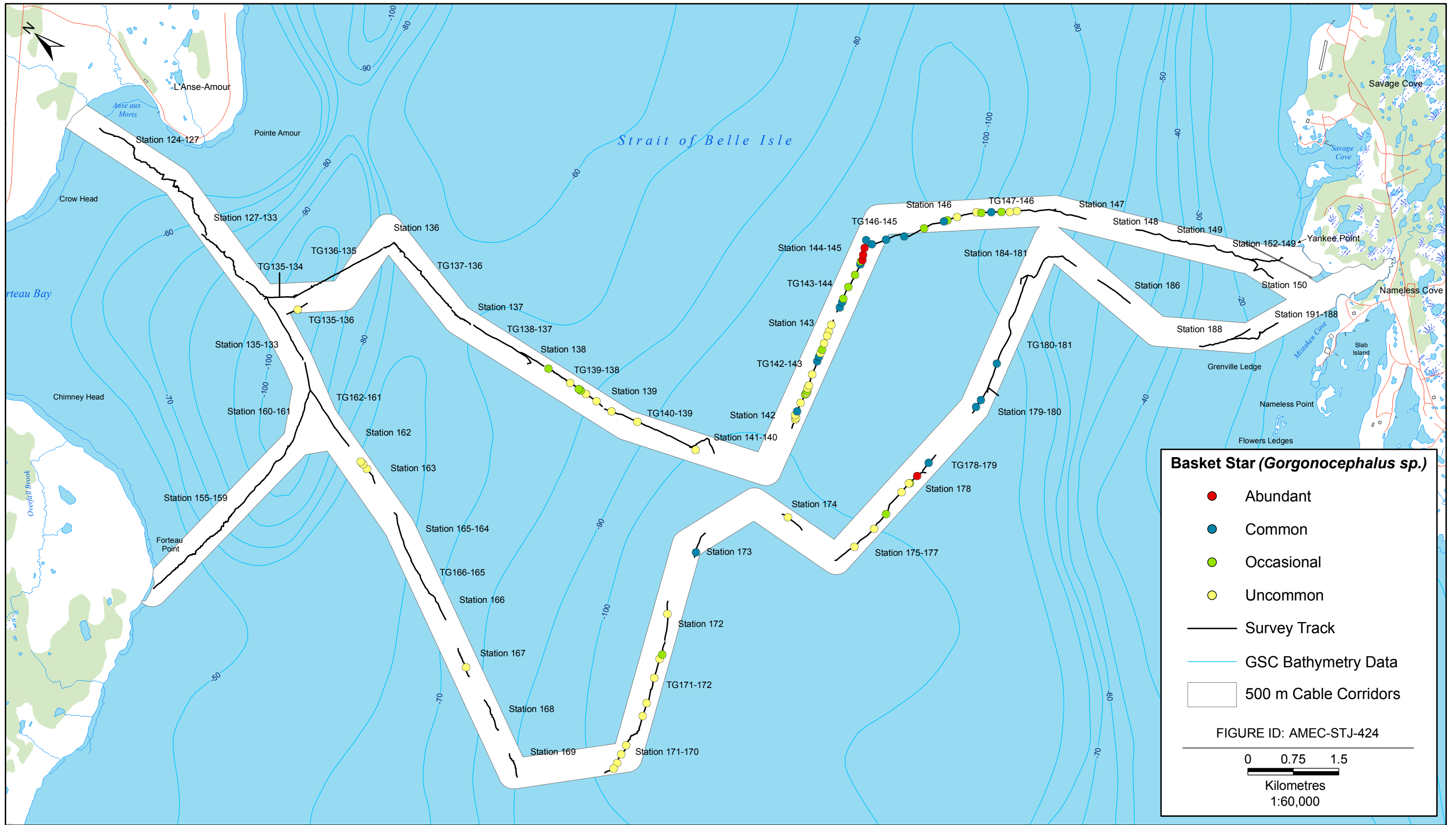


Figure F-17



Basket Star (*Gorgonocephalus sp.*)- 2008 Marine Survey

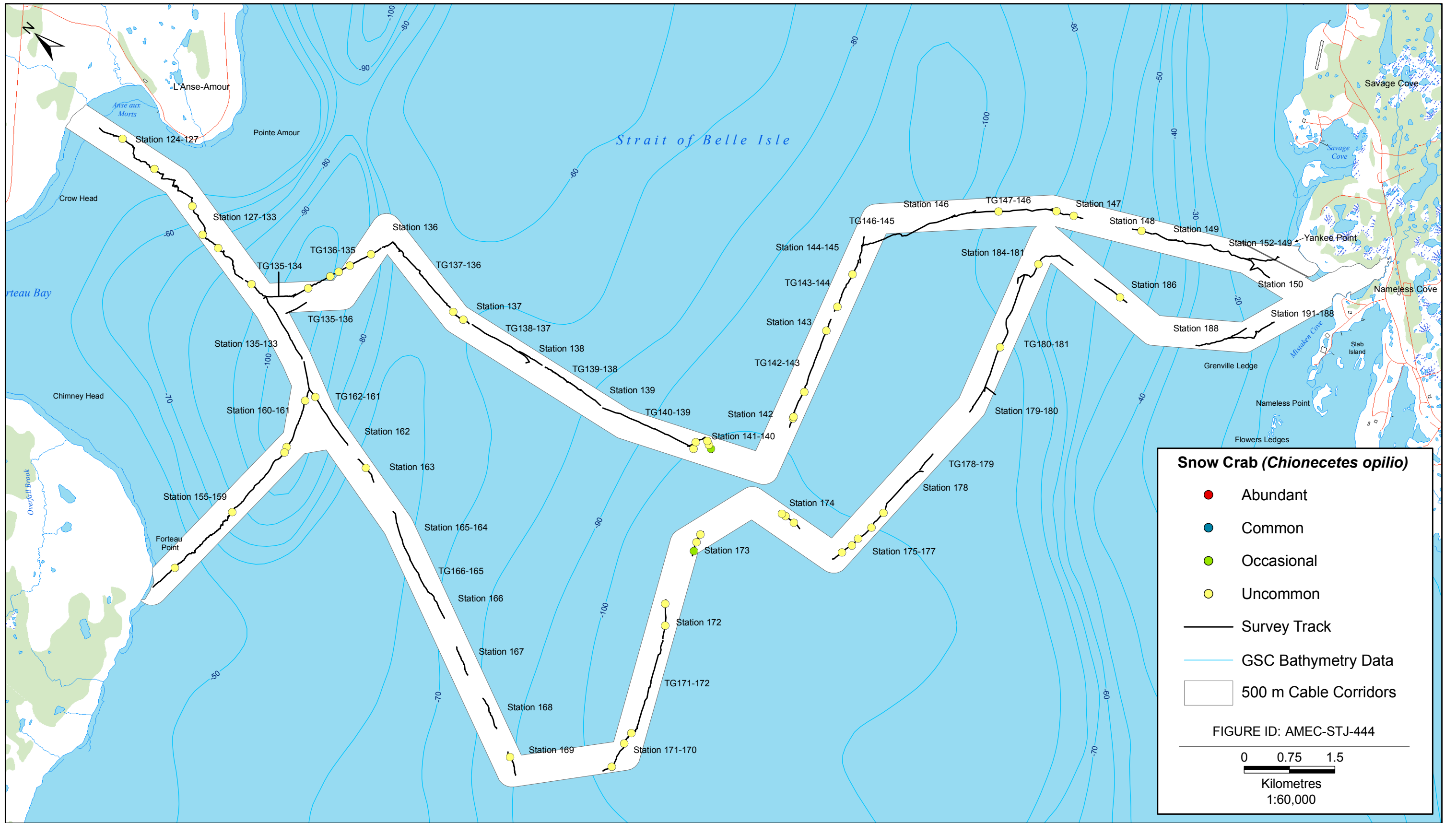


Figure F-18



Snow Crab (*Chionectes opilio*)- 2008 Marine Survey

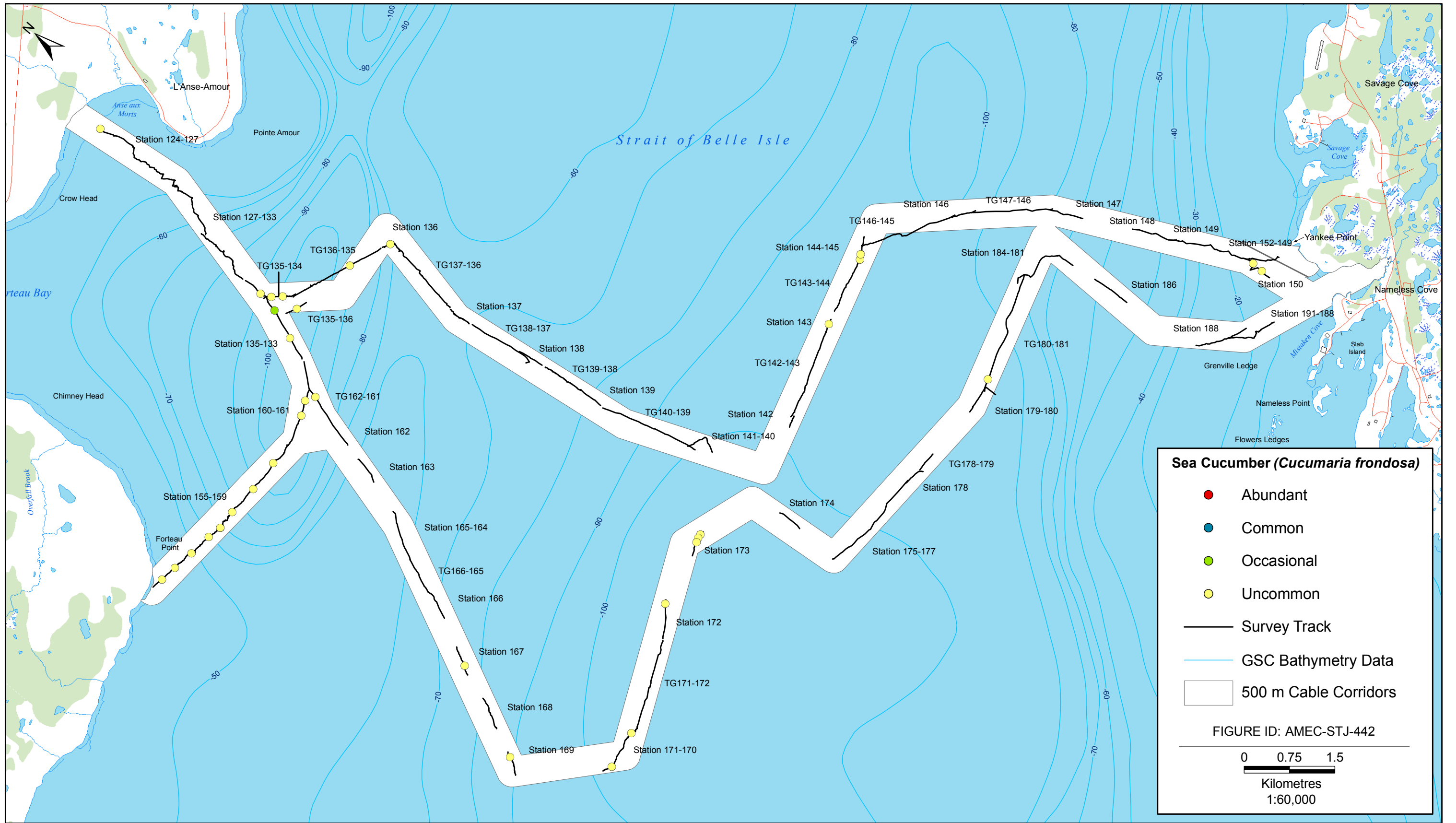


Figure F-19



Sea Cucumber (*Cucumaria frondosa*) - 2008 Marine Survey

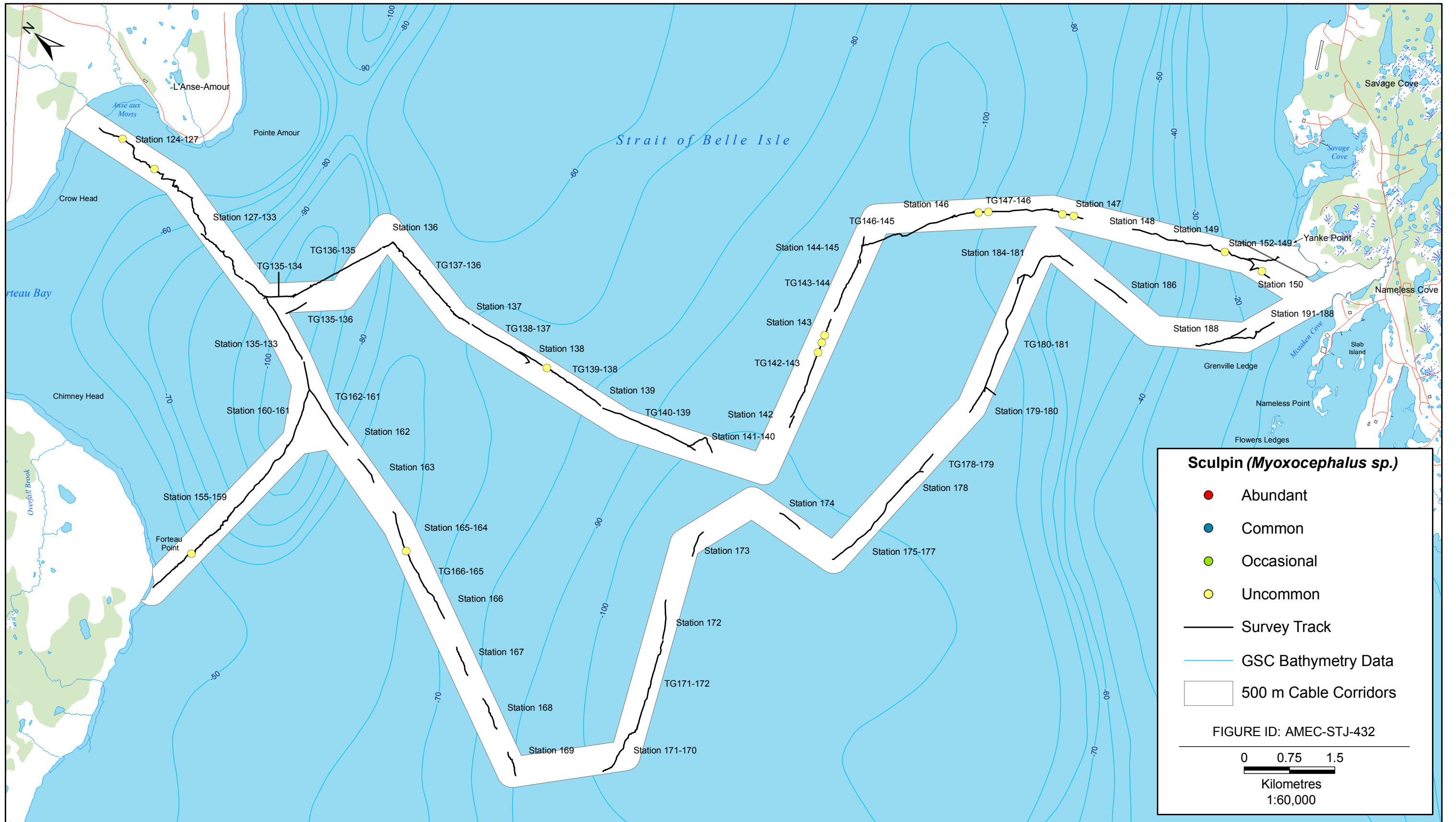


Figure F-20



Sculpin (*Myoxocephalus sp.*)- 2008 Marine Survey

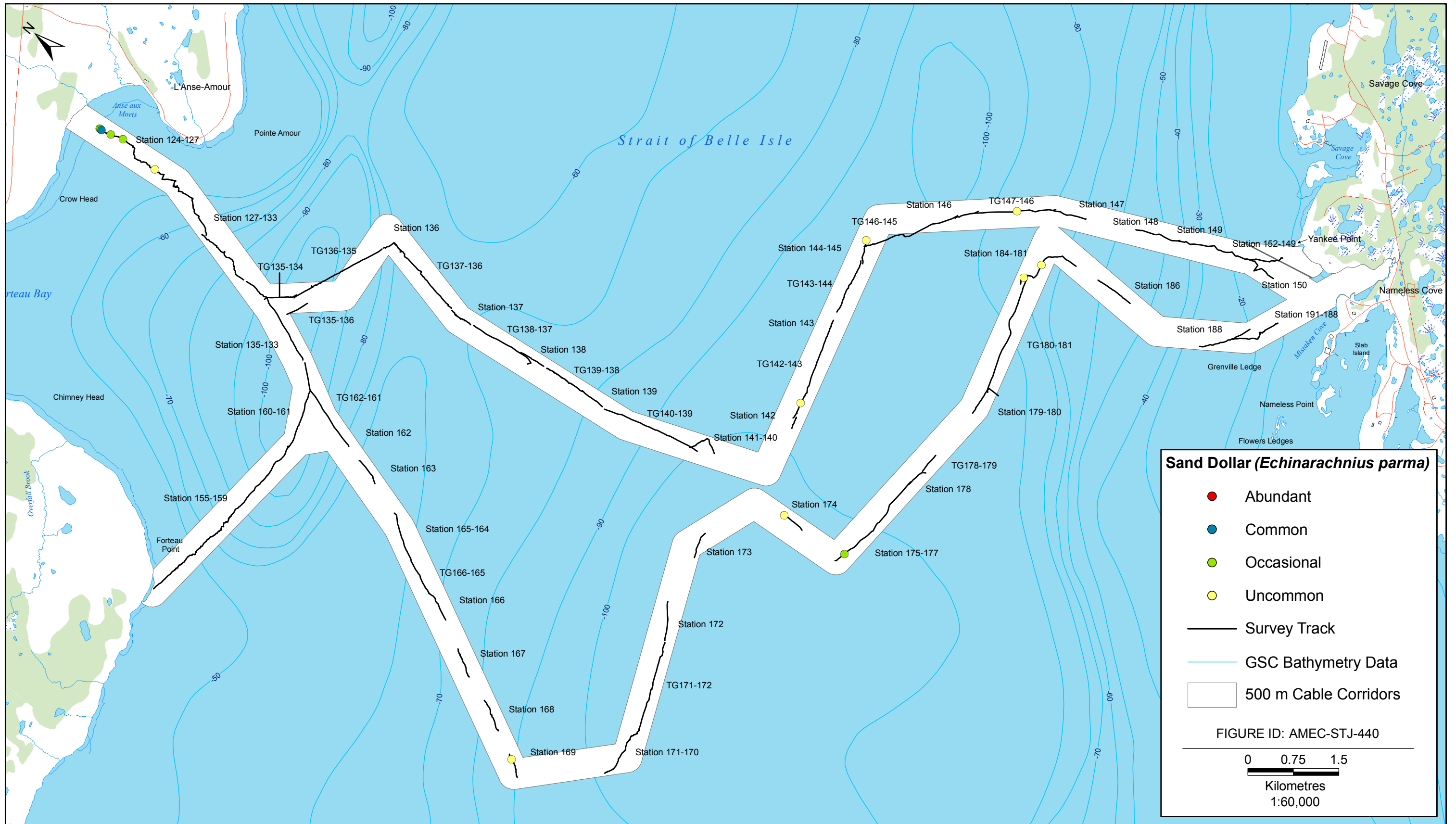


Figure F-21



Sand Dollar (*Echinarachnius parma*)- 2008 Marine Survey

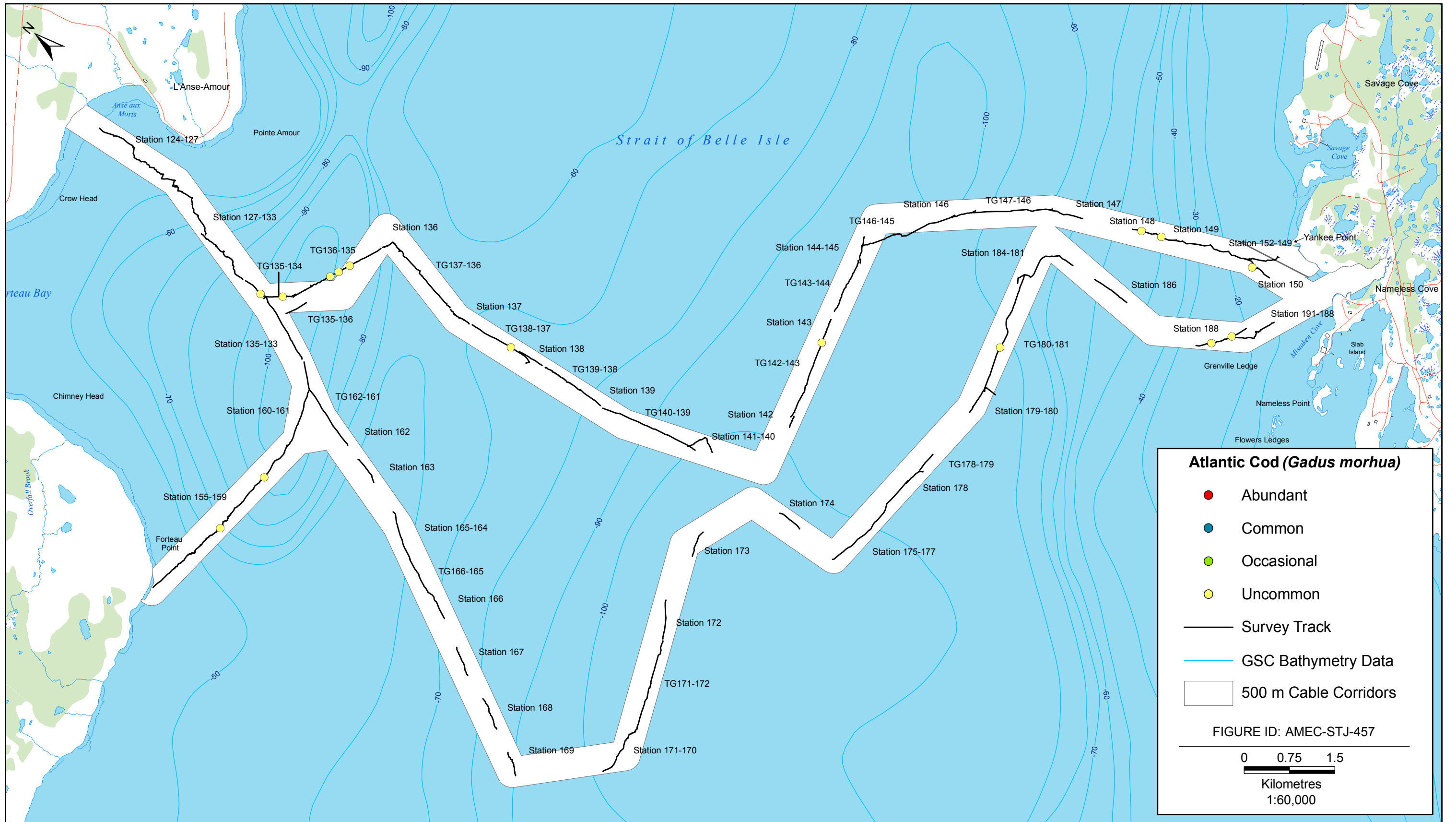


Figure F-22



Atlantic Cod (*Gadus morhua*) - 2008 Marine Survey

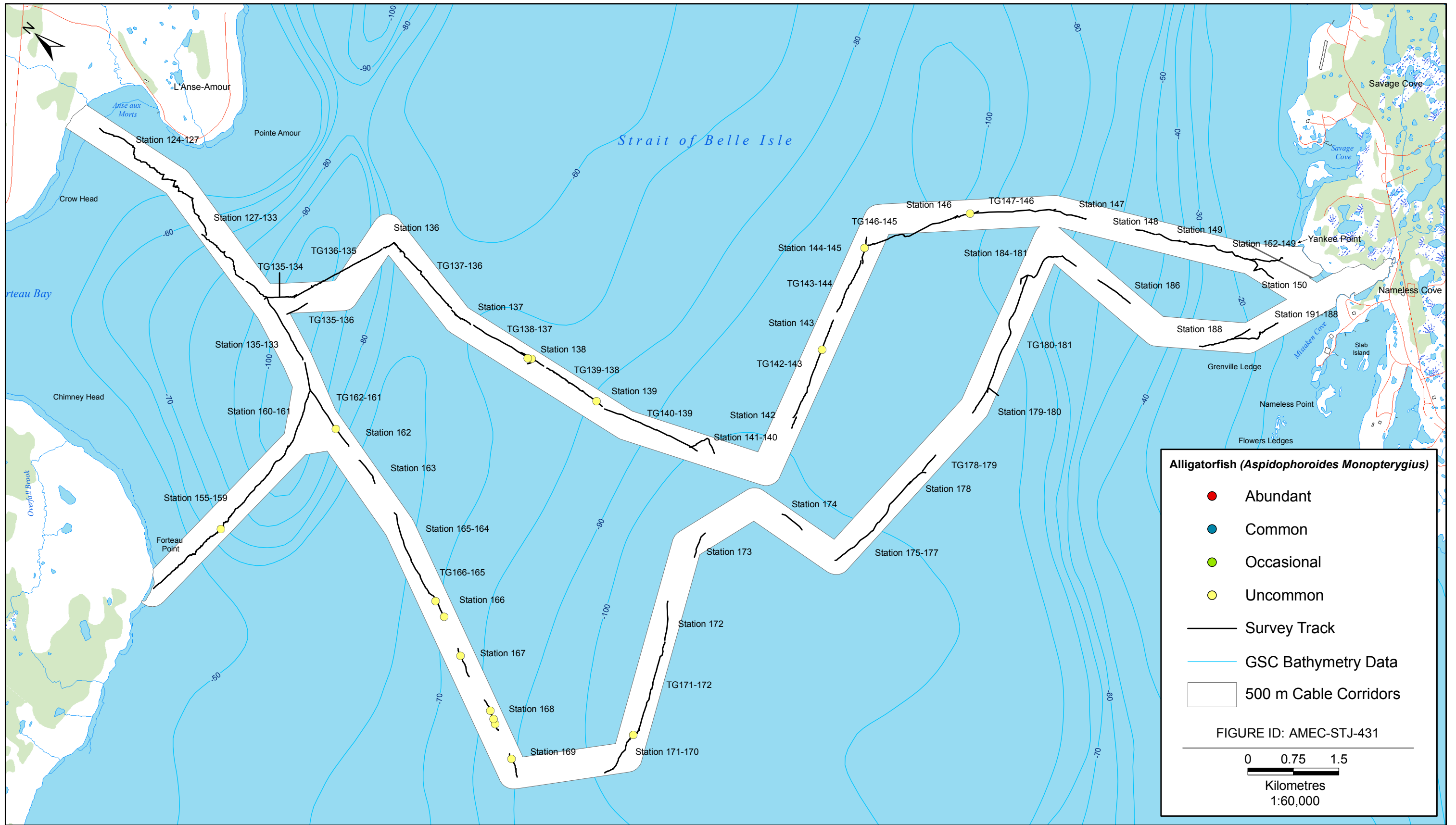


Figure F-23



Alligatorfish (*Aspidophoroides monopterygius*)- 2008 Marine Survey

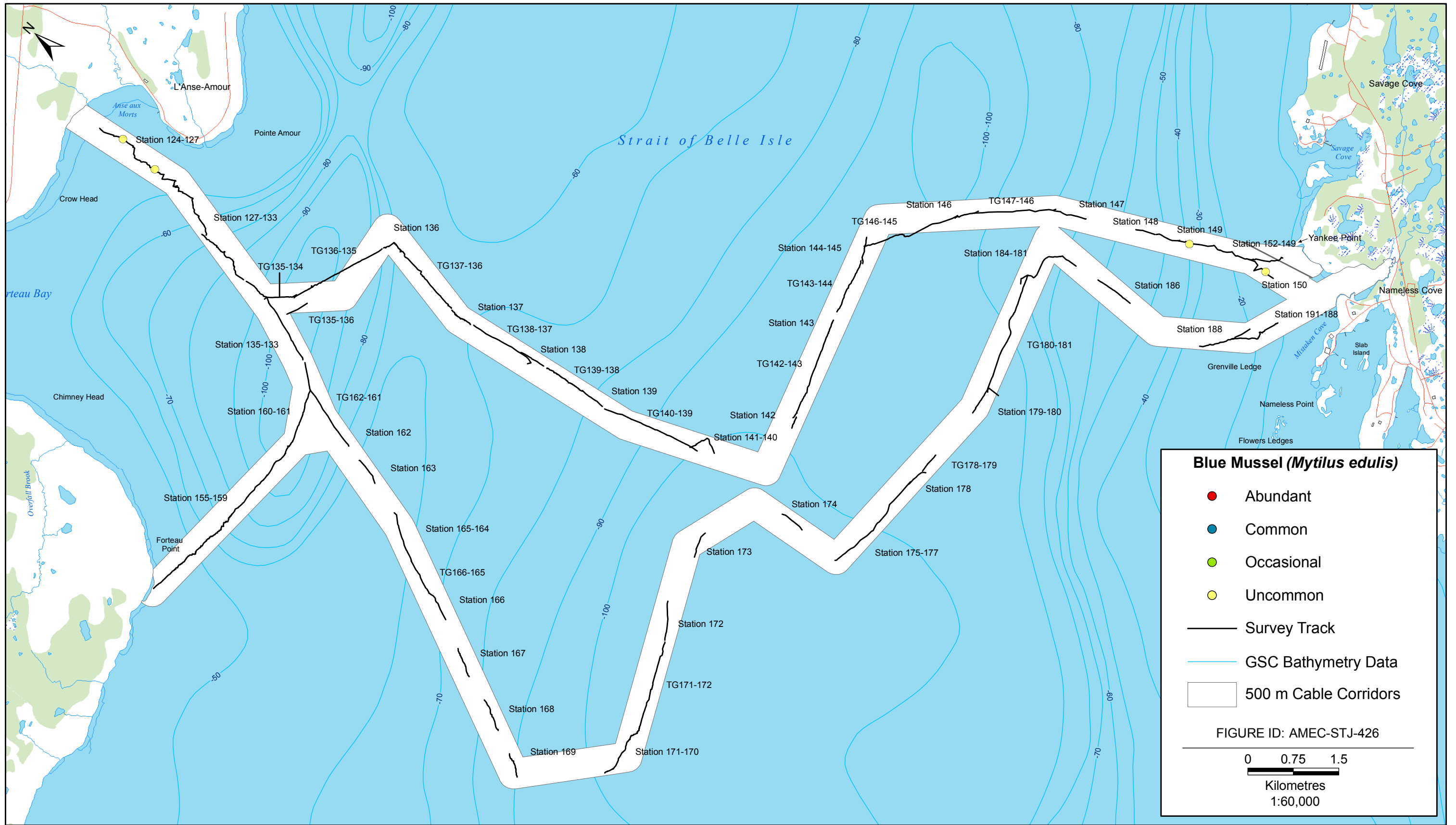


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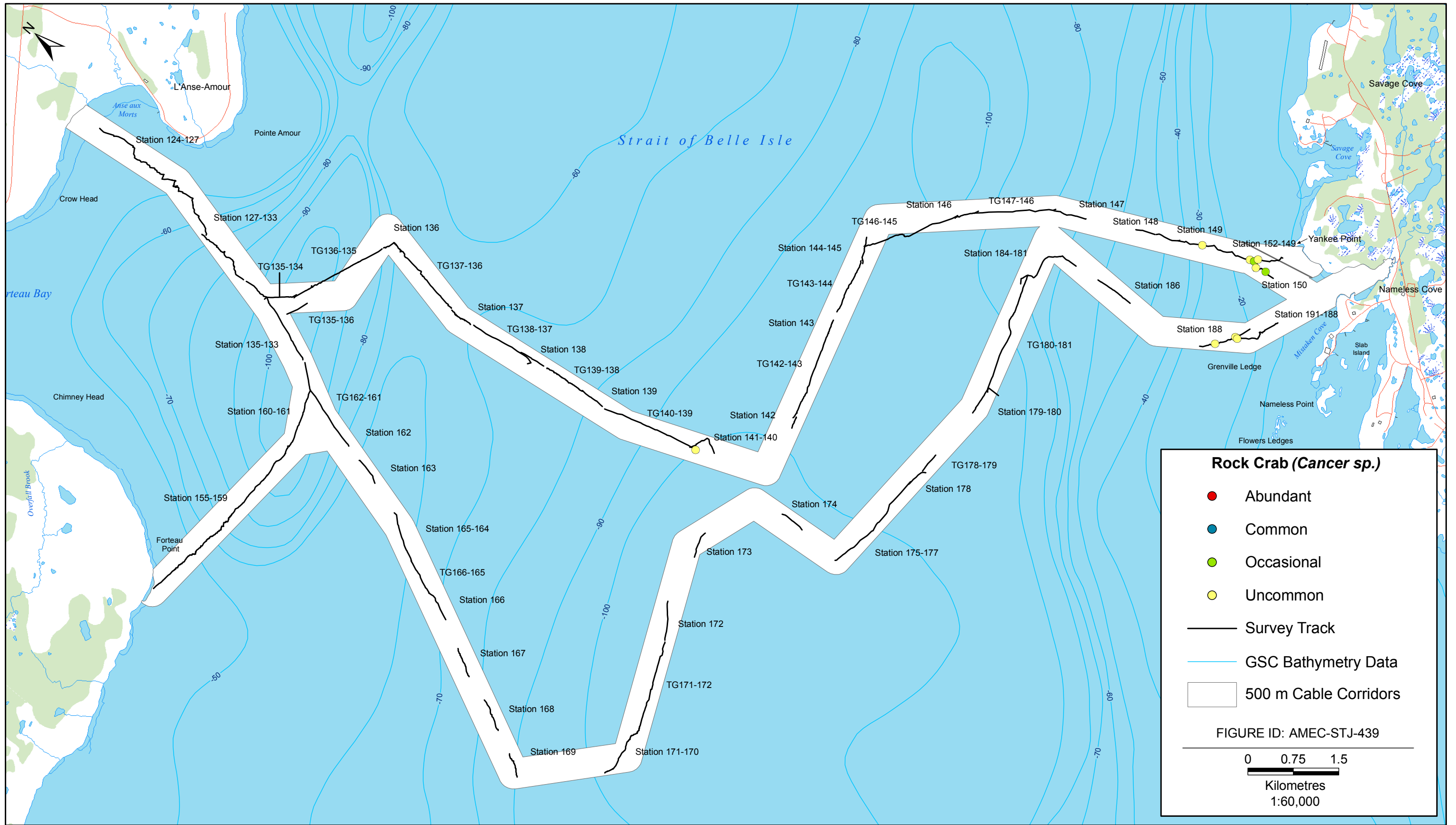


Figure F-25

Rock Crab (*Cancer sp.*)- 2008 Marine Survey



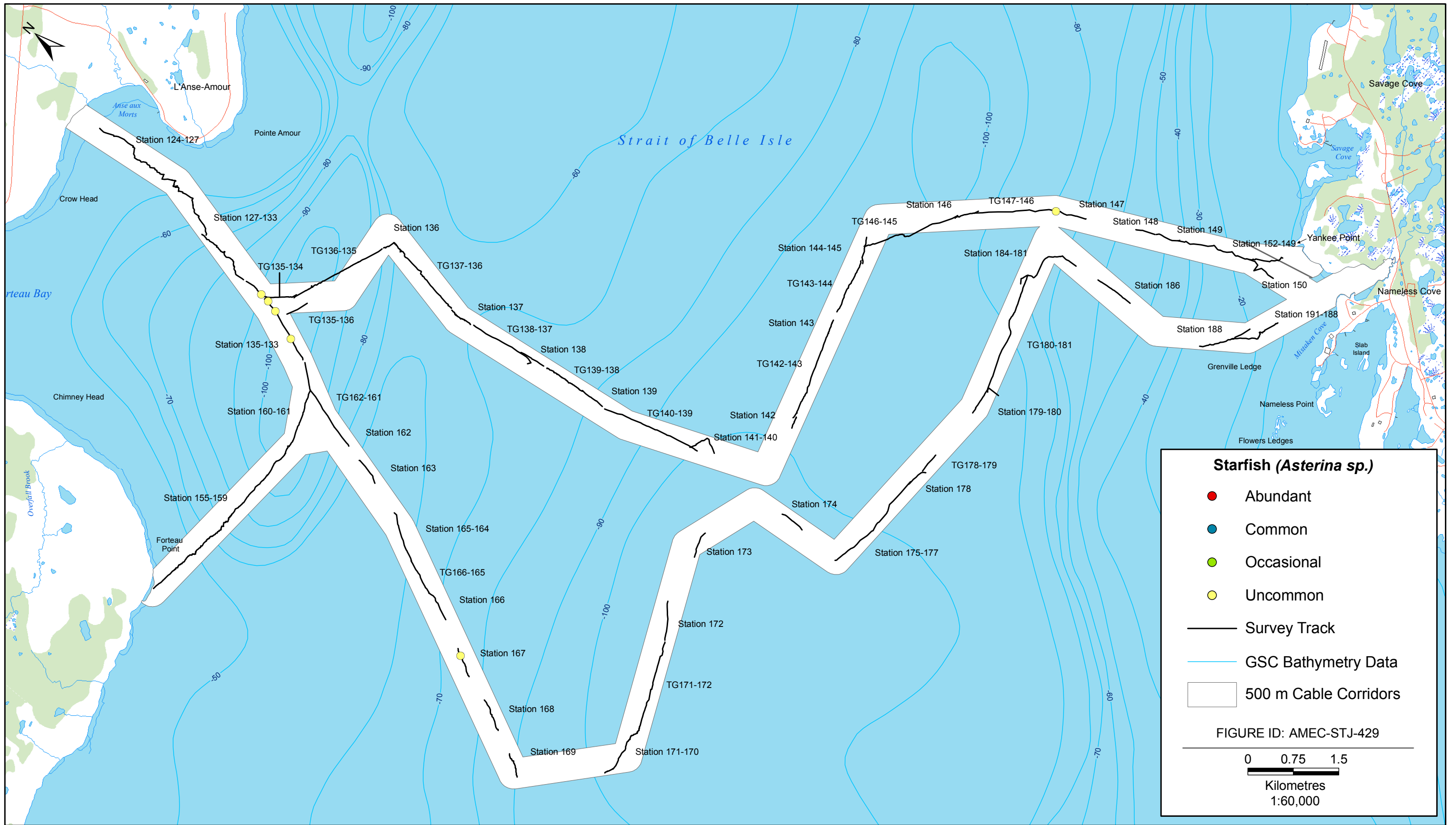


Figure F-26

Starfish (*Asterina sp.*) - 2008 Marine Survey

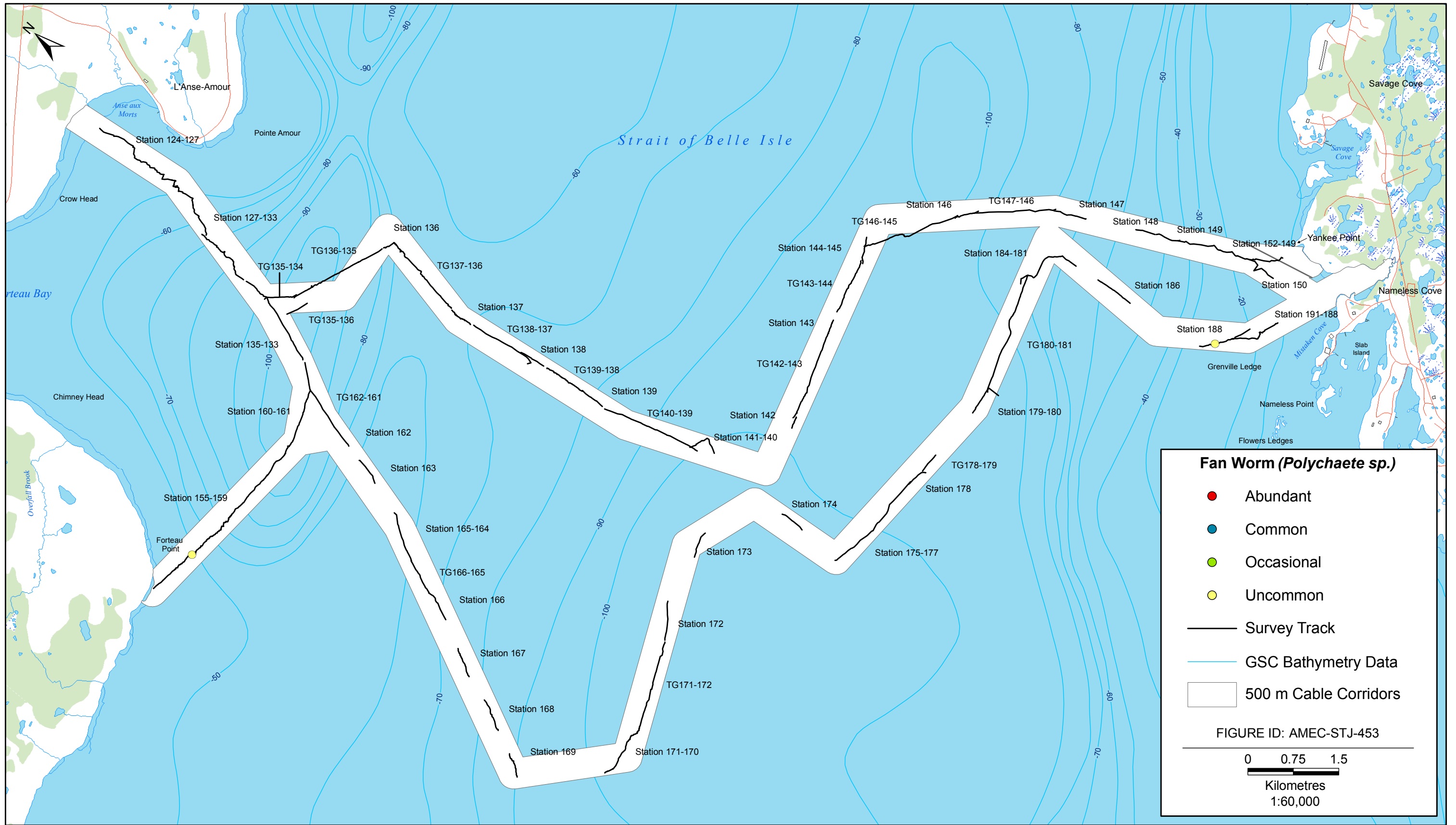


Figure F-27



Fan Worm (Polychaeta) - 2008 Marine Survey

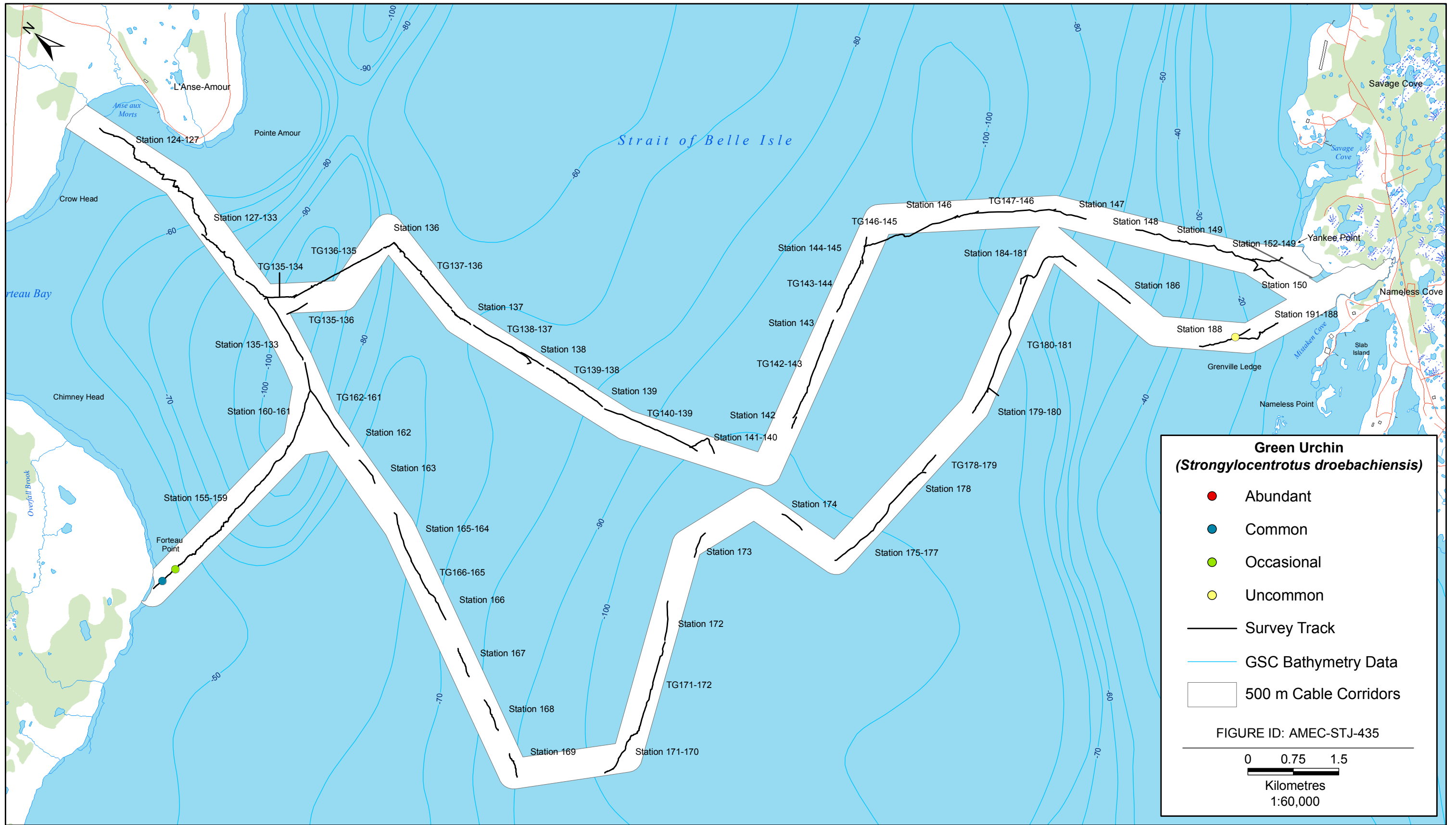


Figure F-28

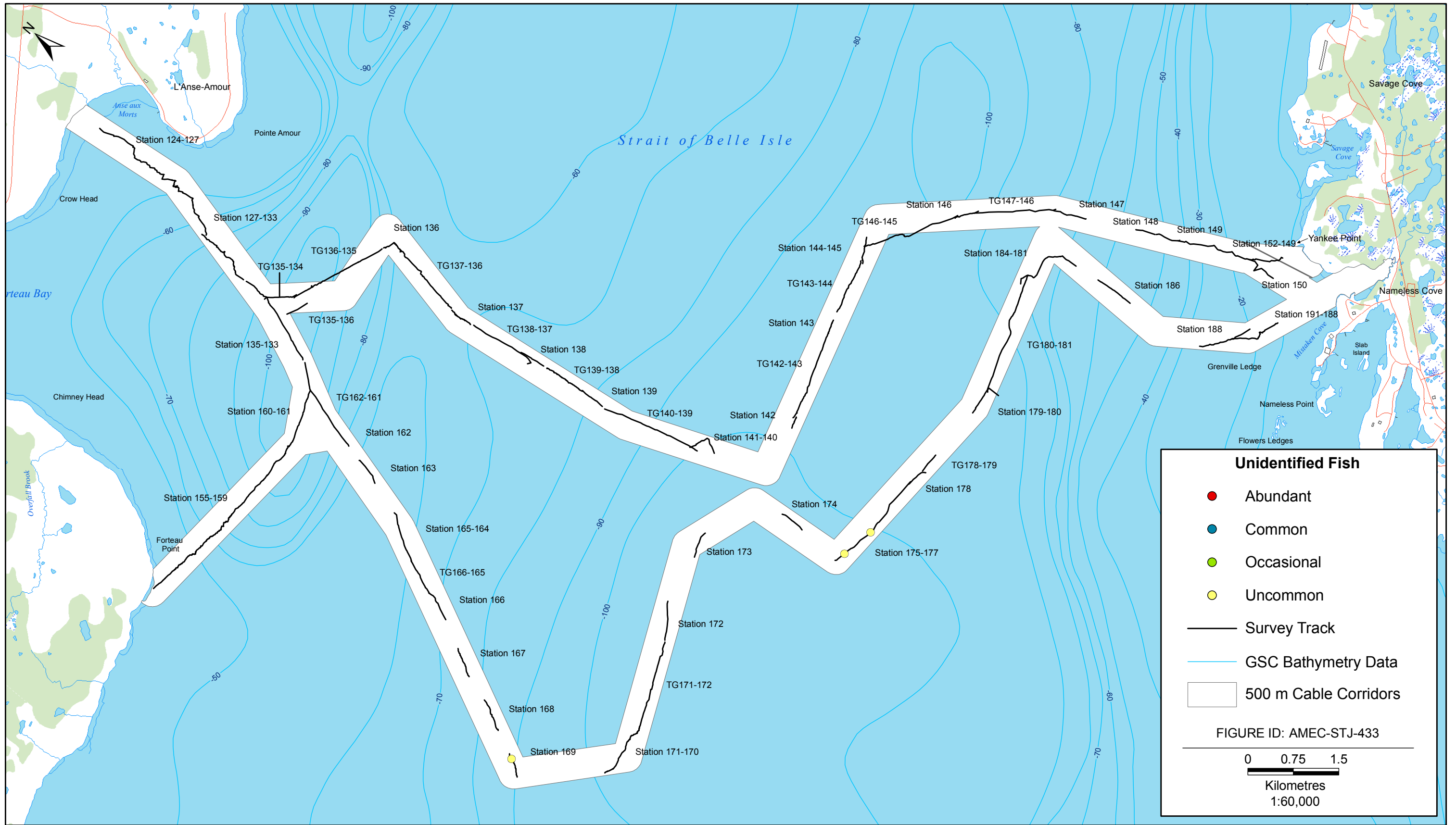


Figure F-29

Unidentified Fish - 2008 Marine Survey



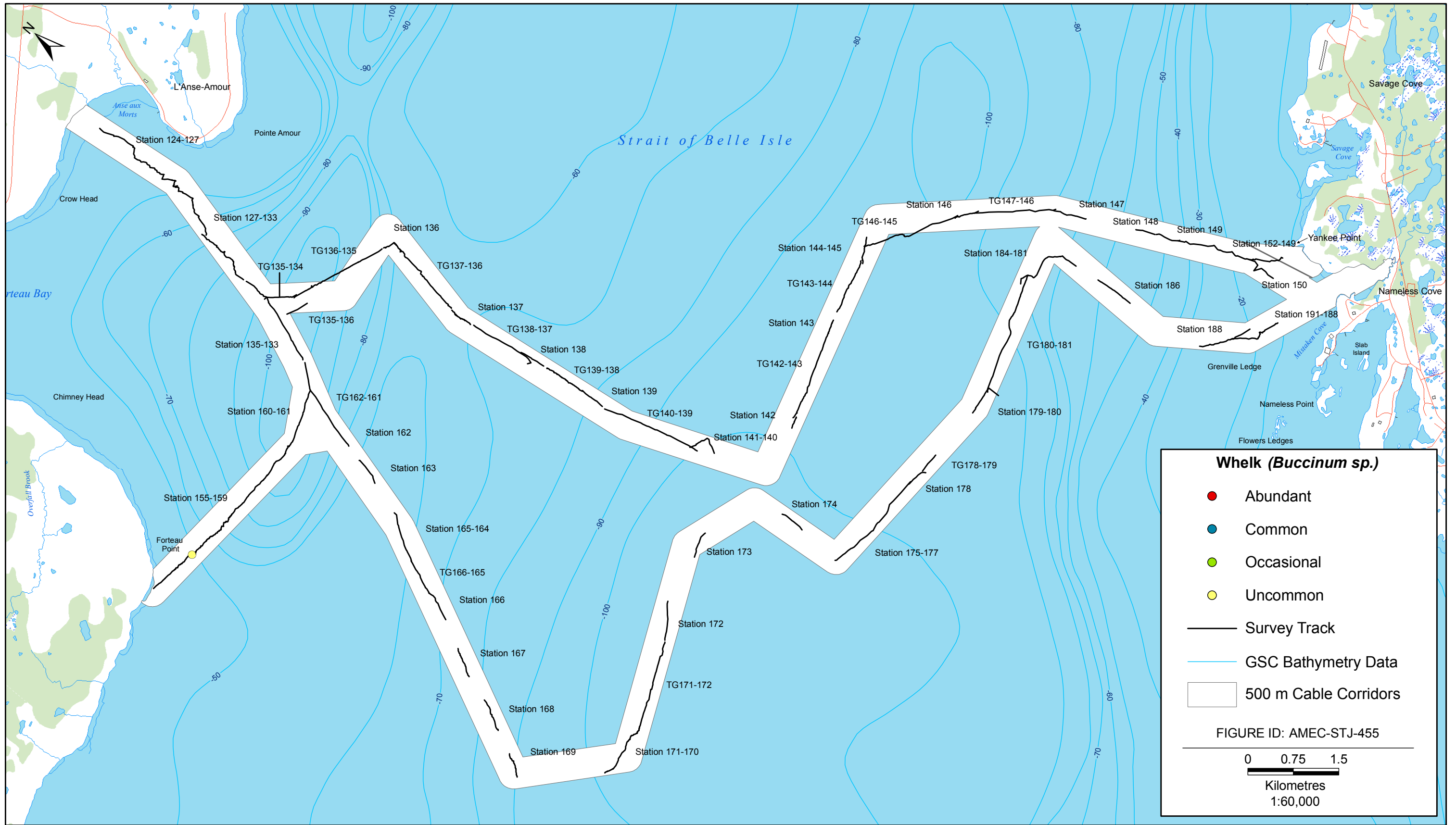


Figure F-30

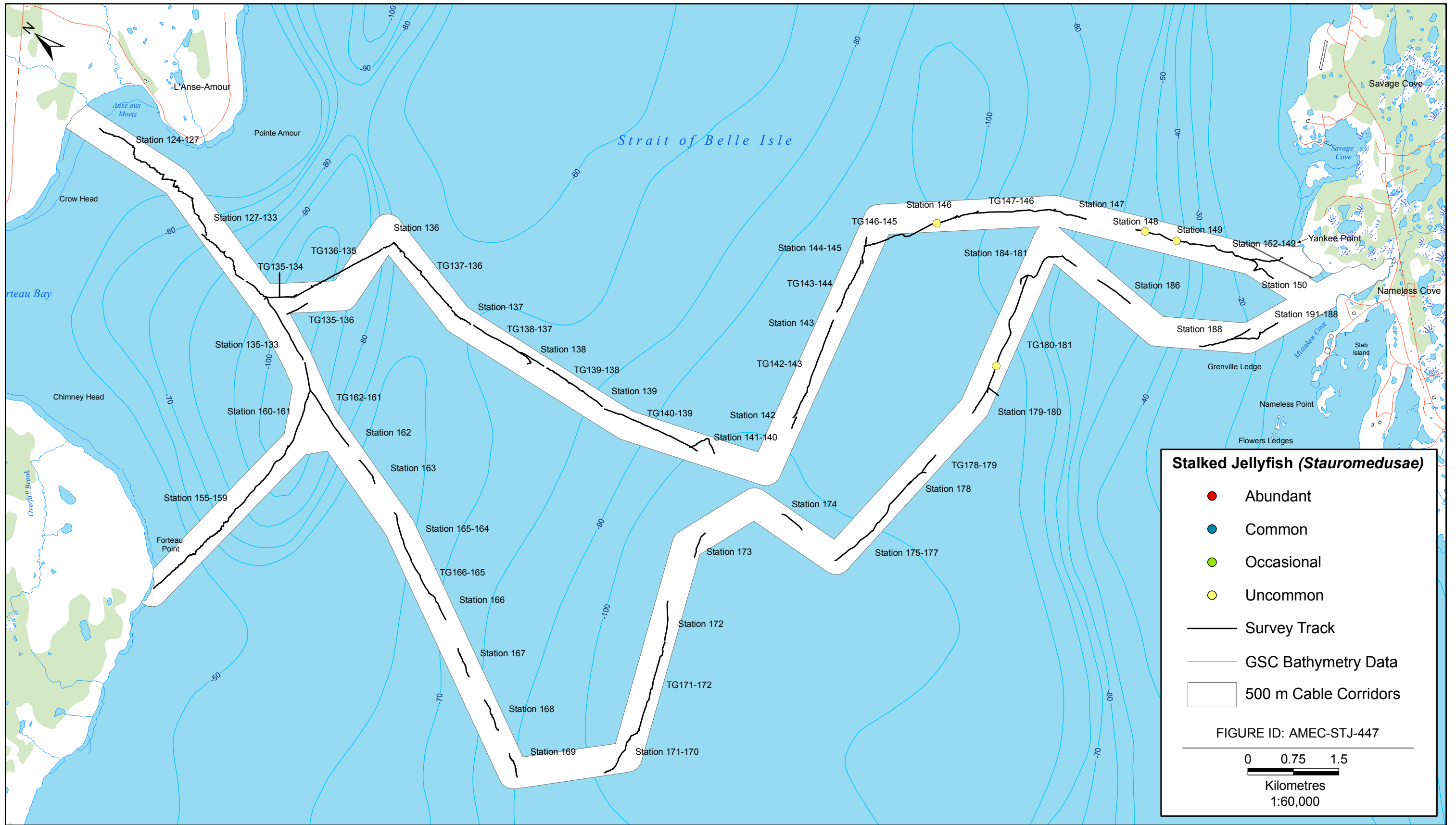


Figure F-31



Stalked Jellyfish (*Stauromedusae*) - 2008 Marine Survey

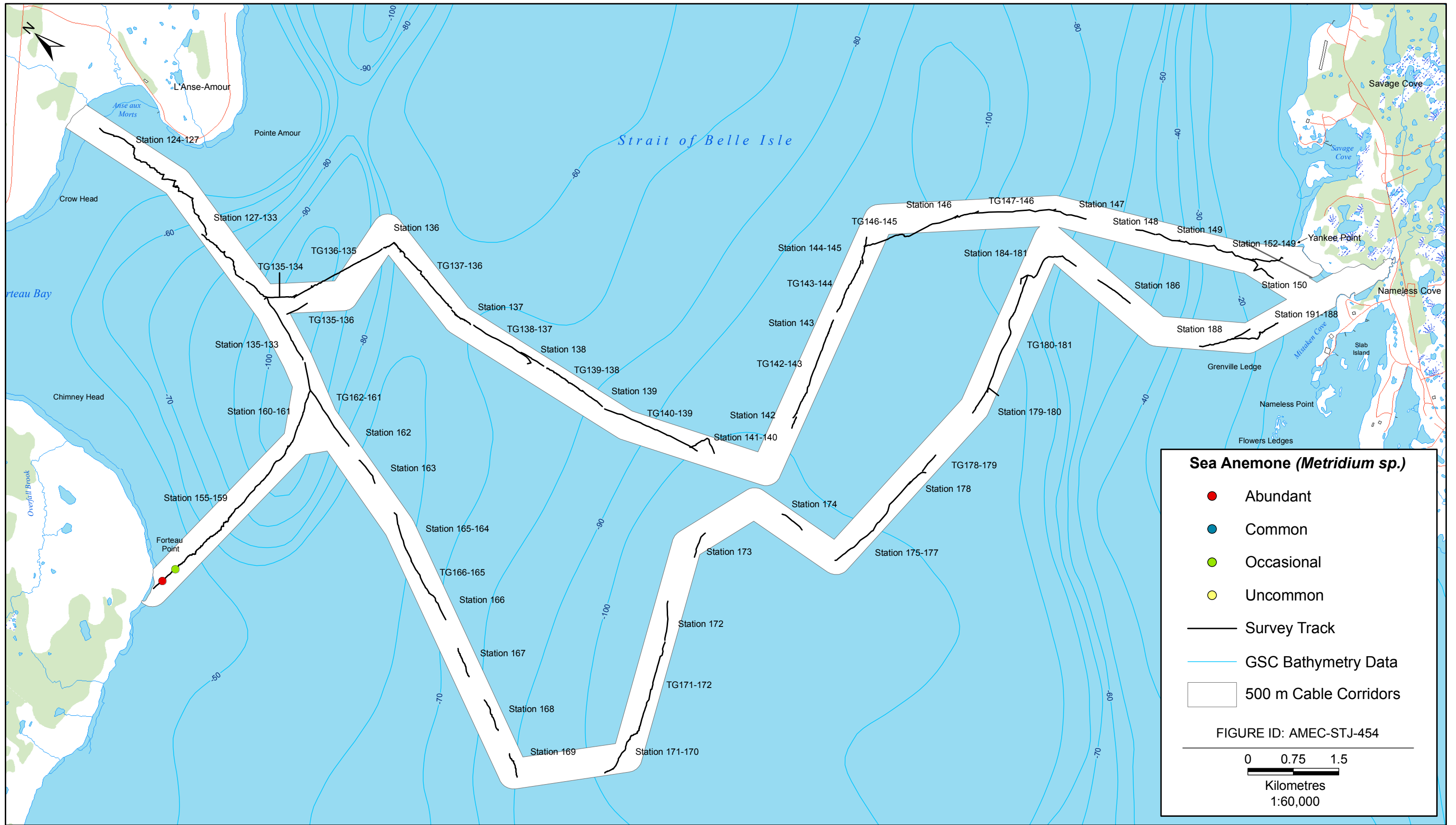


Figure F-32

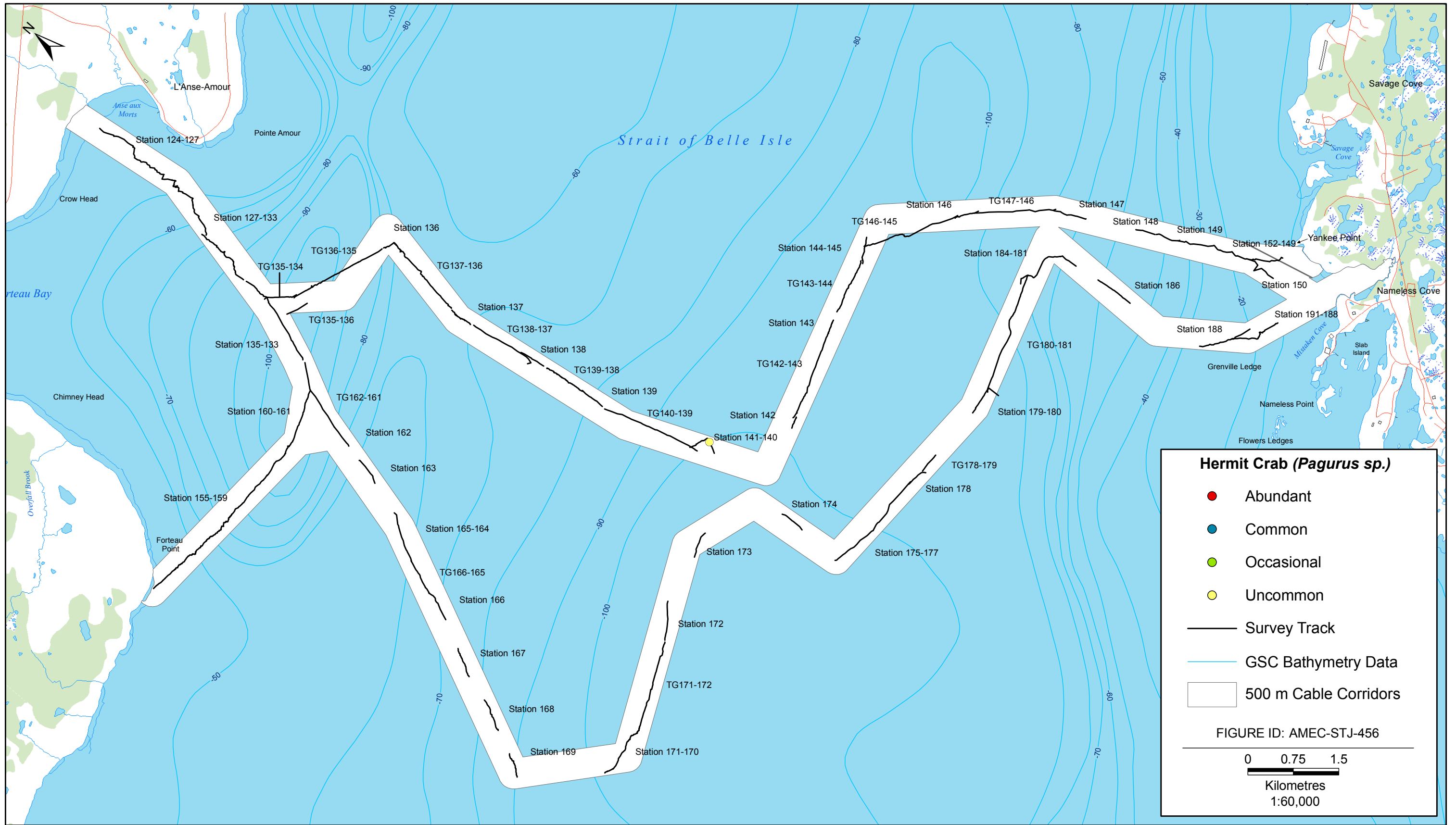


Figure F-33

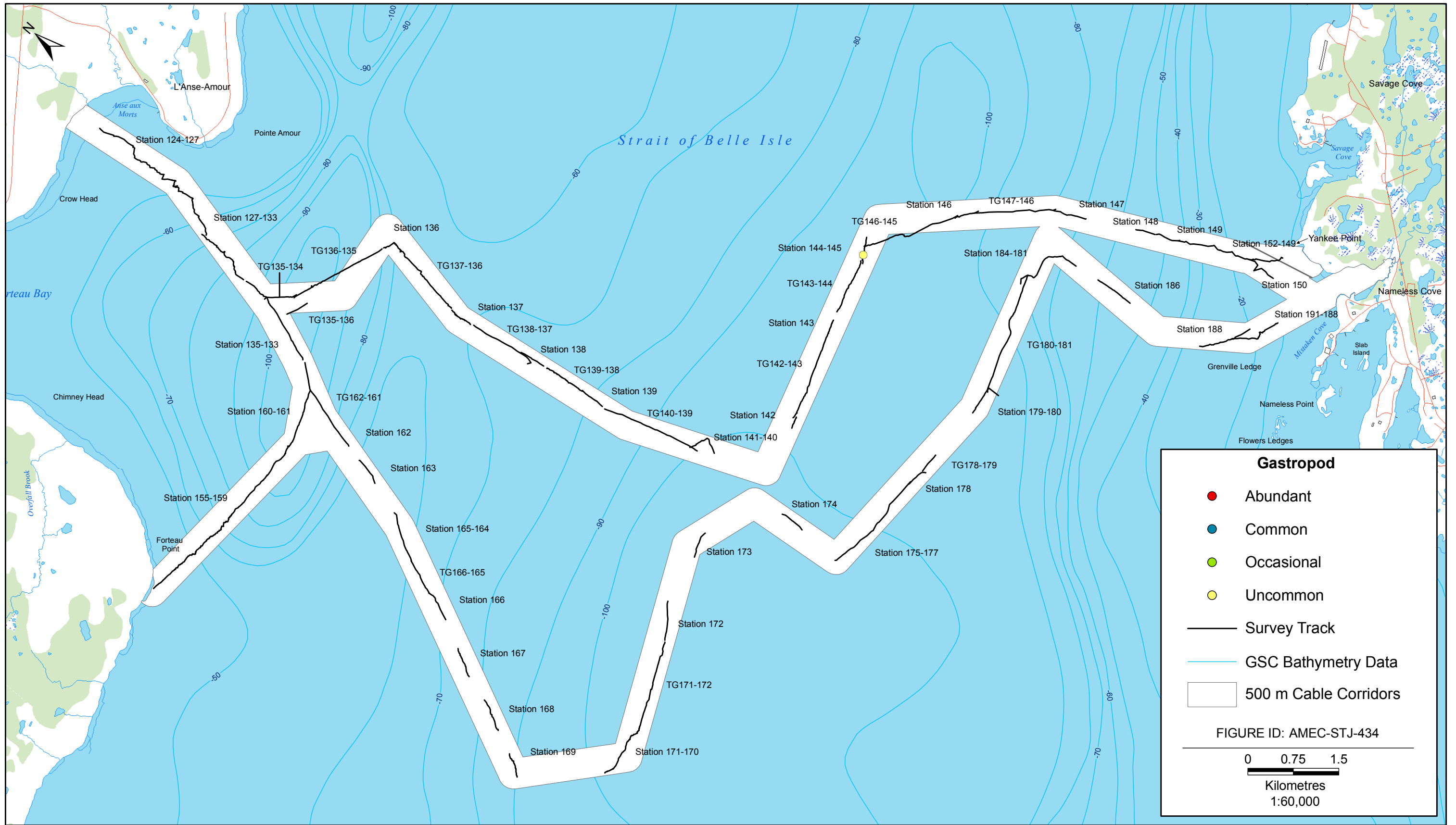


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Gastropod (Gastropoda)- 2008 Marine Survey

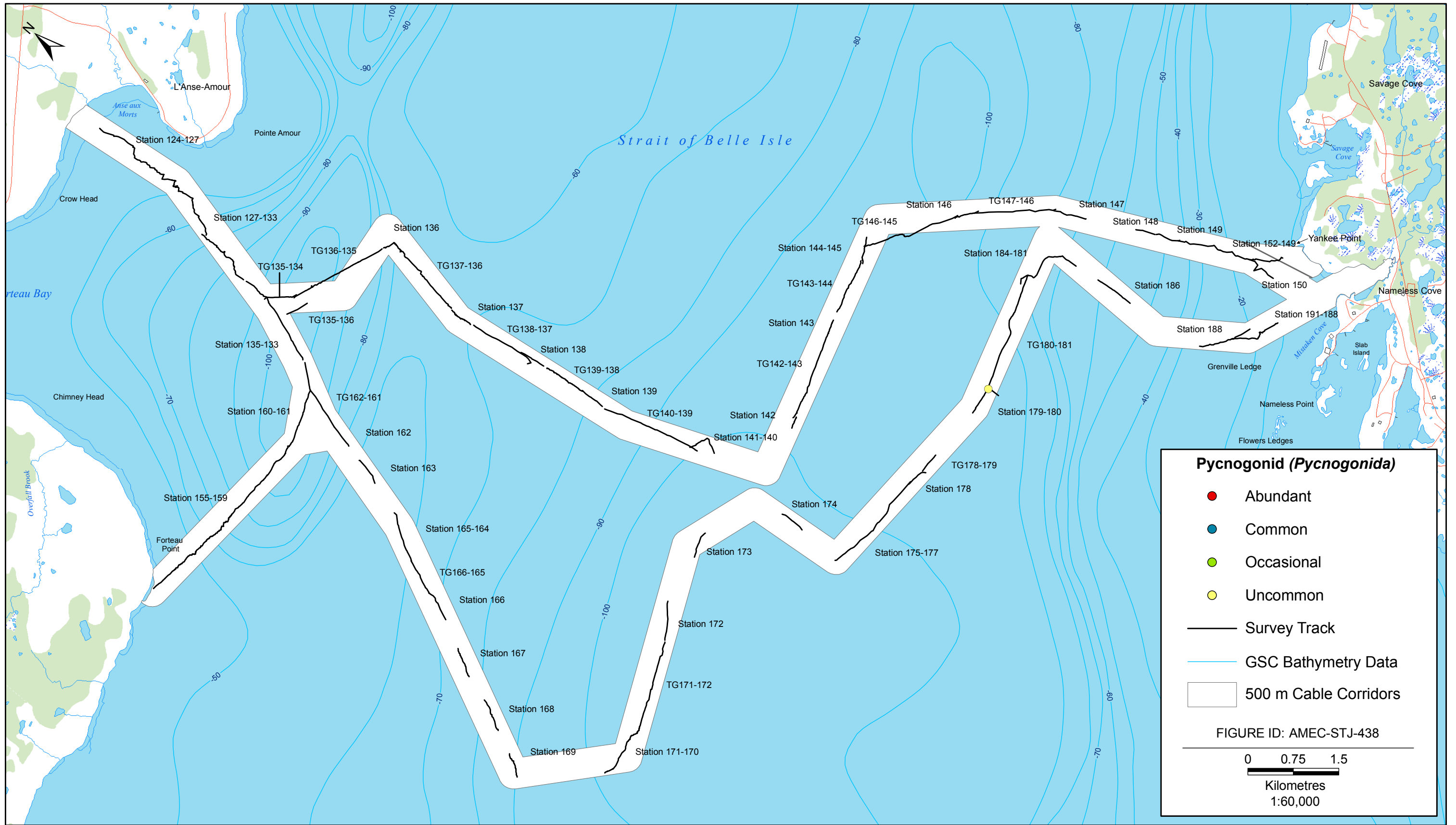


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Pycnogonid (*Pycnogonida*) - 2008 Marine Survey



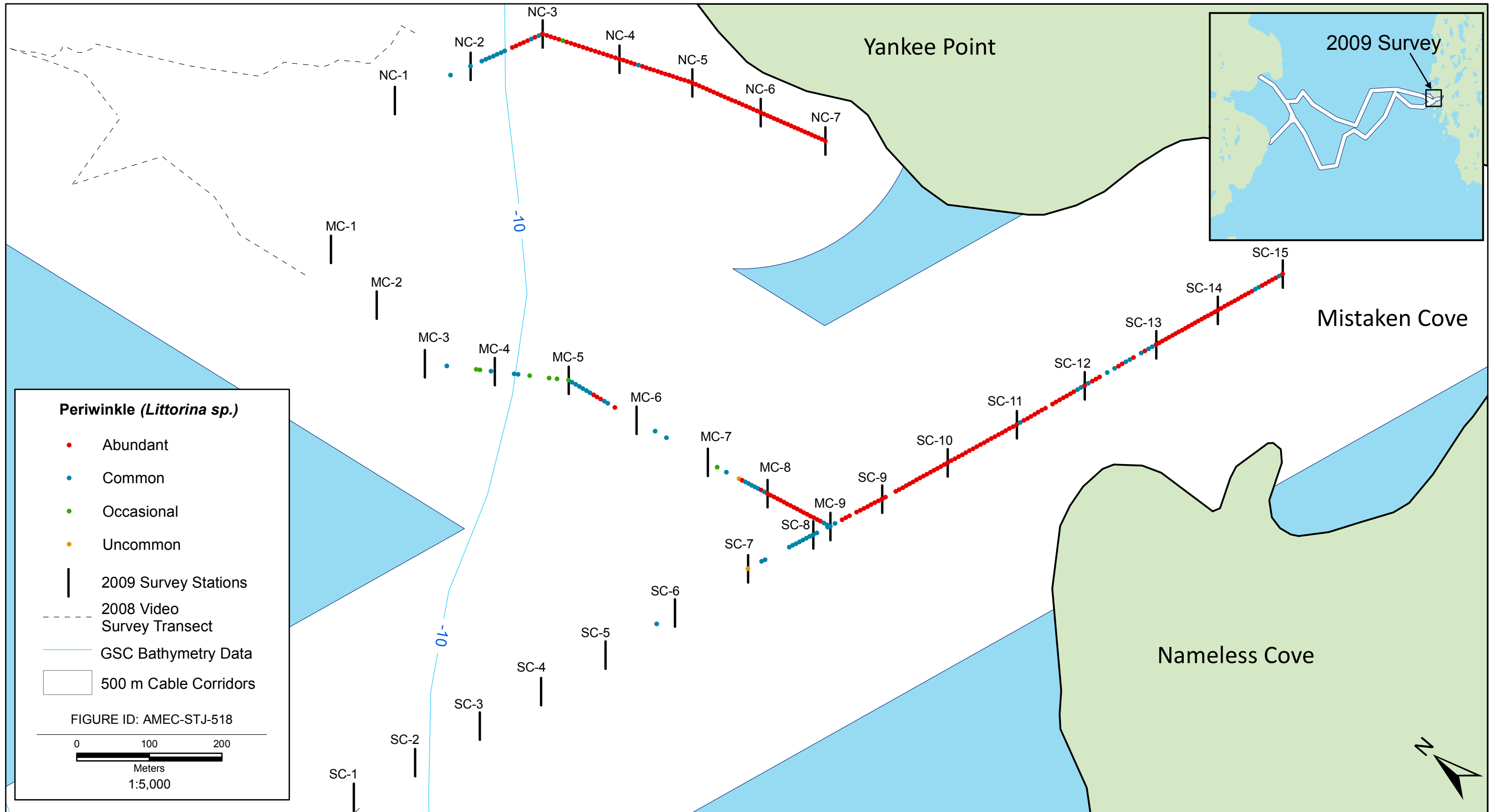


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Periwinkle (*Littorina sp.*) - 2009 Marine Survey

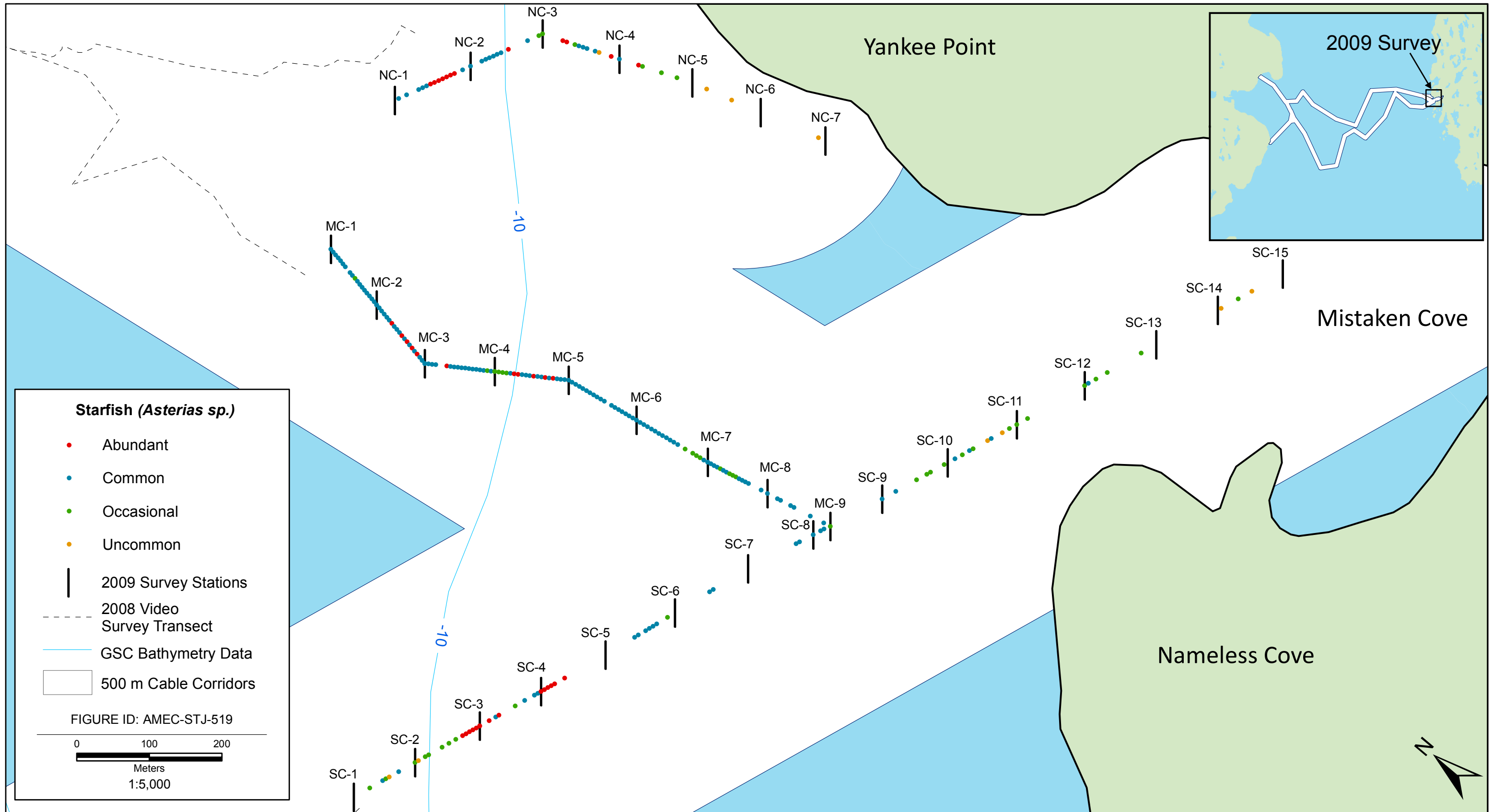


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Starfish (*Asterias sp.*) - 2009 Marine Survey

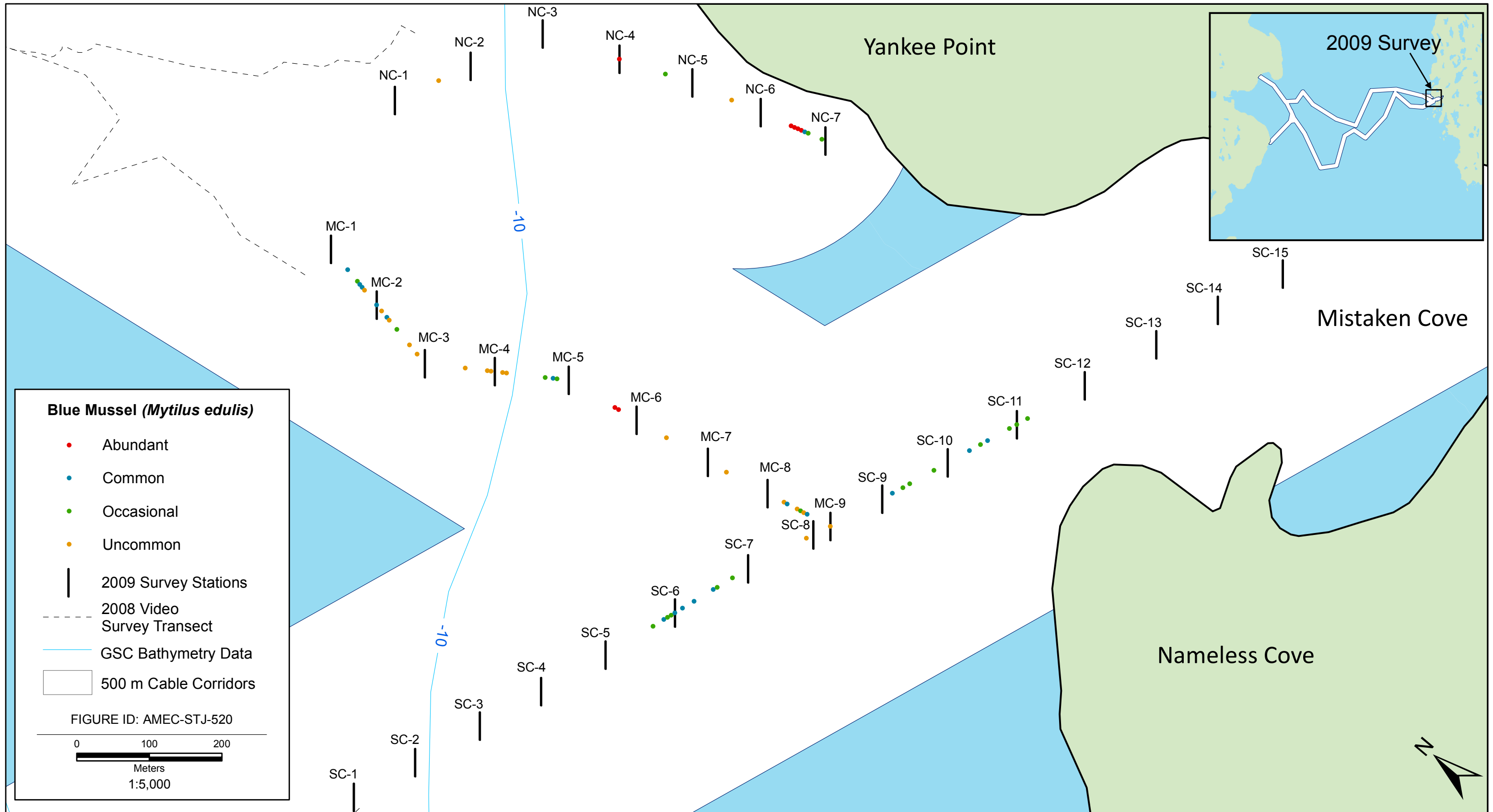


Figure F-38

Blue Mussel (*Mytilus edulis*) - 2009 Marine Survey

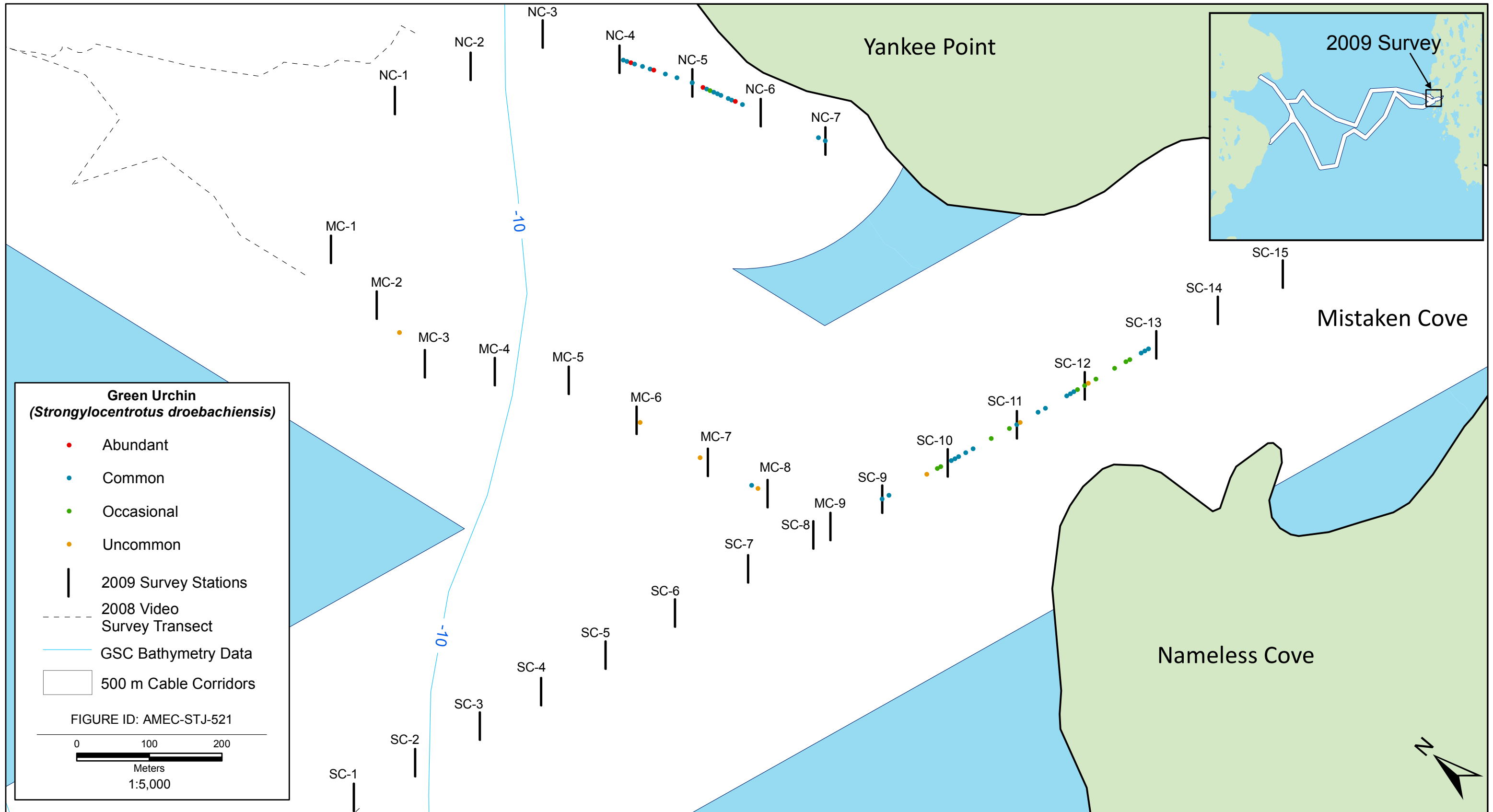


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Green Urchin (*Strongylocentrotus droebachiensis*)- 2009 Marine Survey

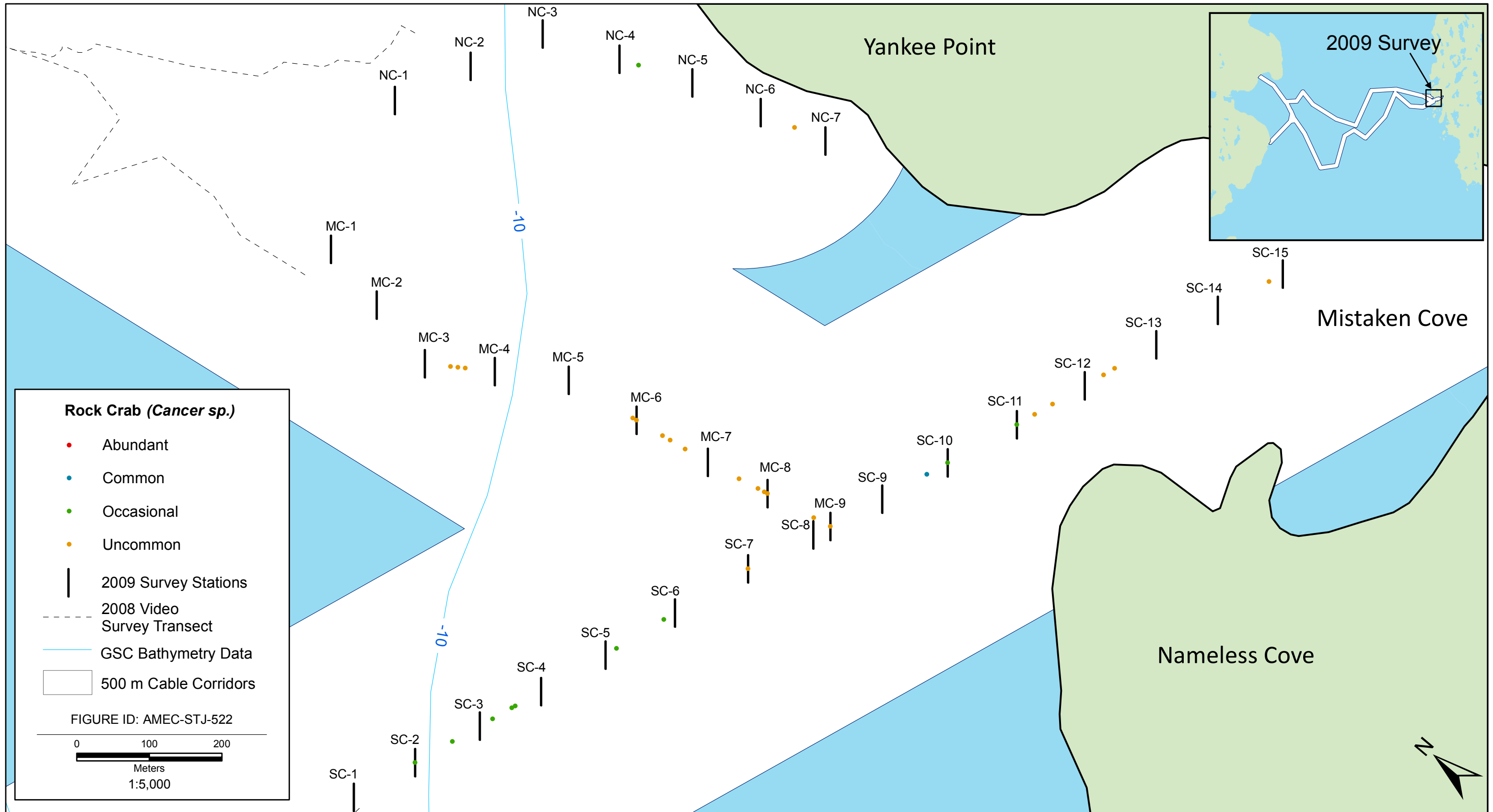


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Rock Crab (*Cancer sp.*) - 2009 Marine Survey

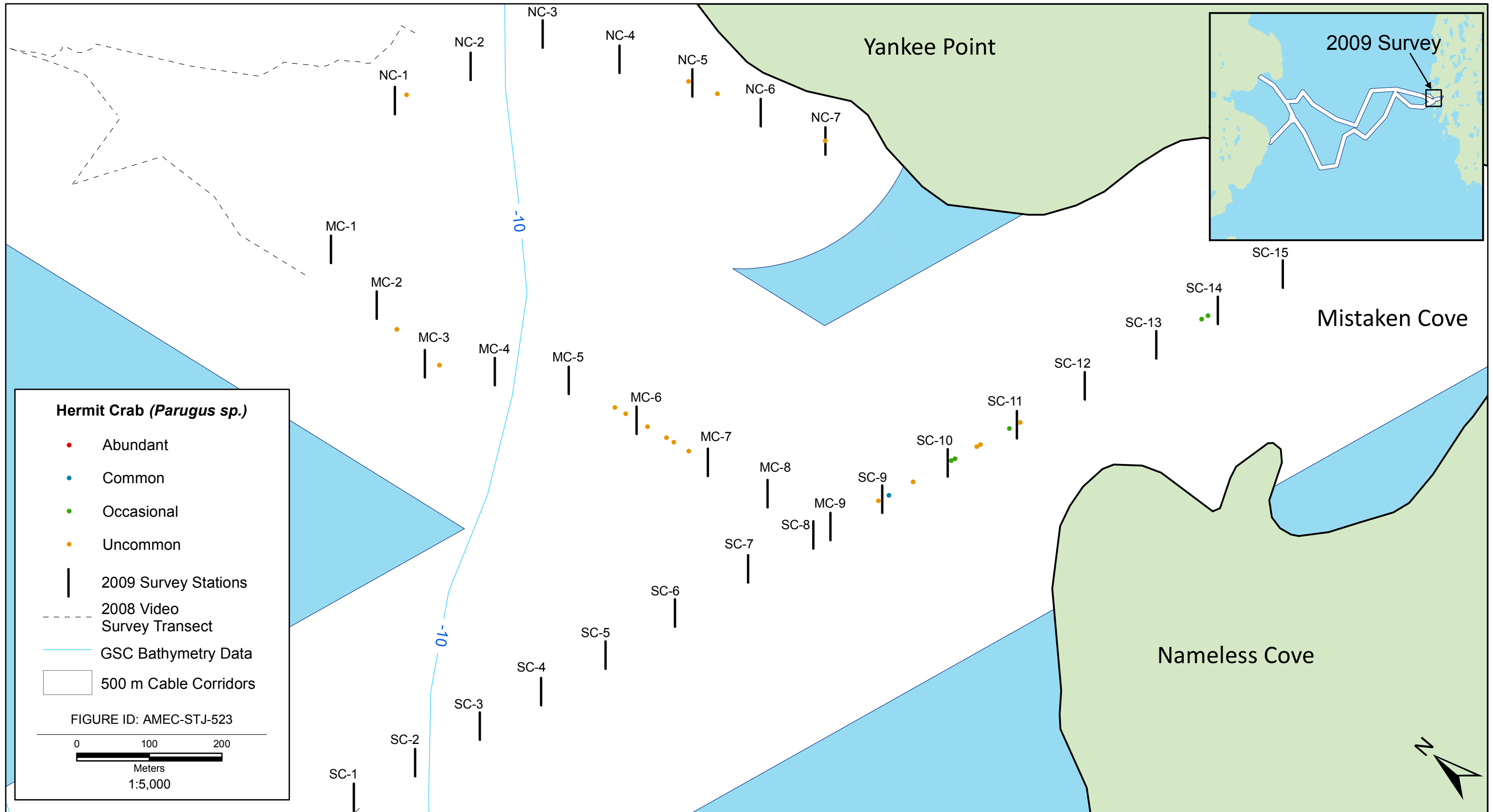


Figure F-41

Hermit Crab (*Parugus sp.*)- 2009 Marine Survey

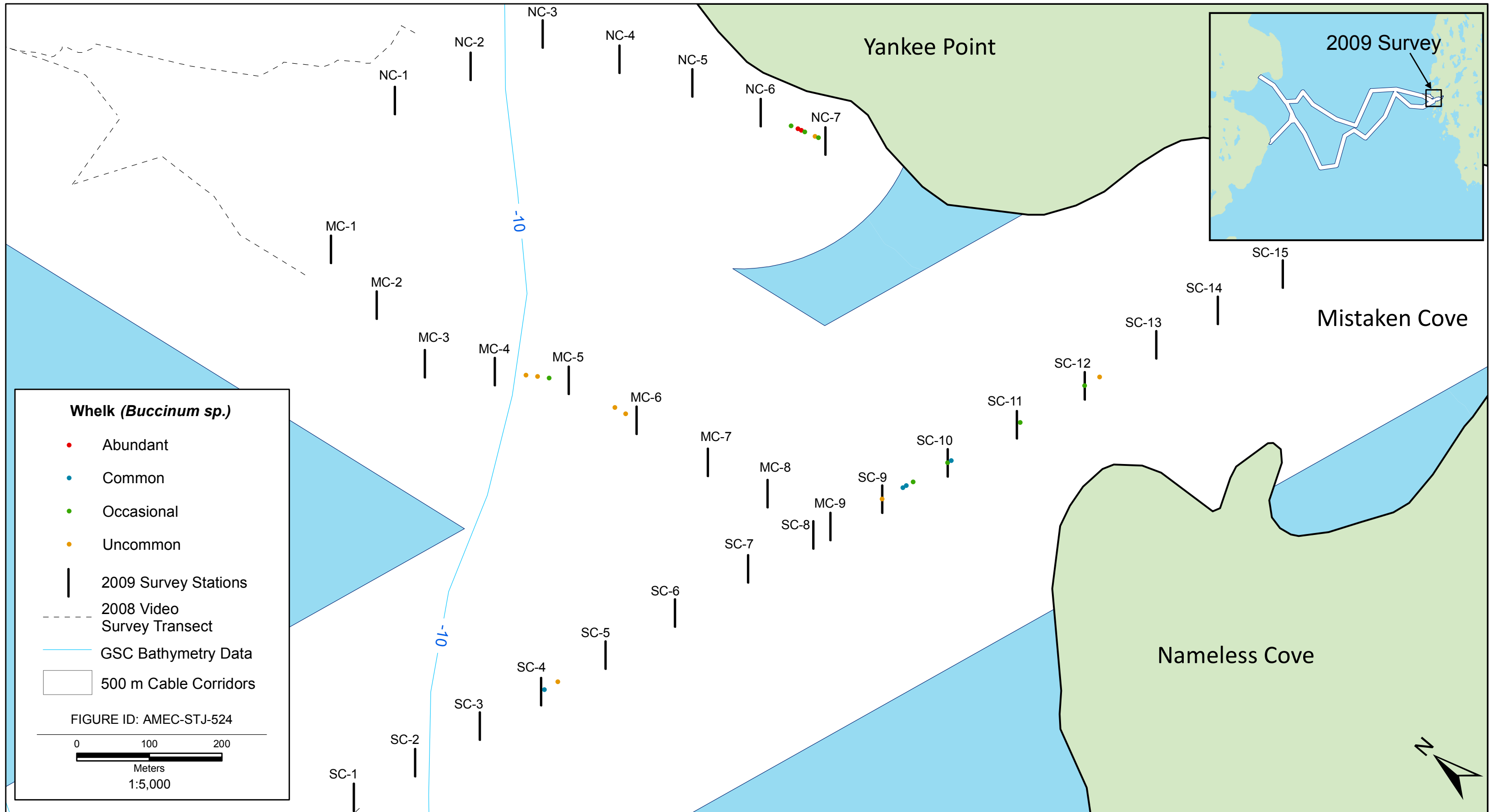


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Whelk (*Buccinum sp.*) - 2009 Marine Survey

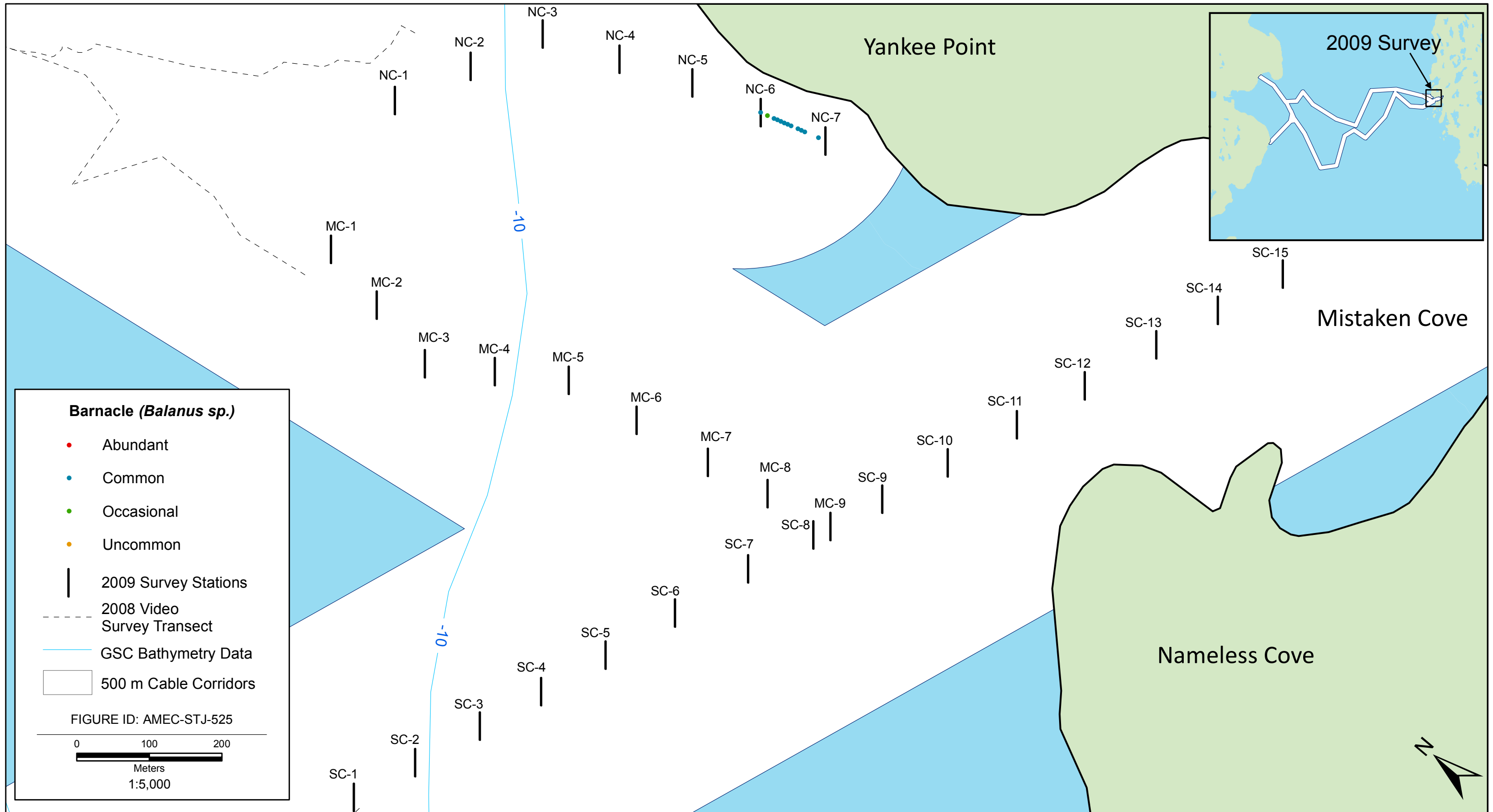


Figure F-43

Barnacle (*Balanus sp.*) - 2009 Marine Survey

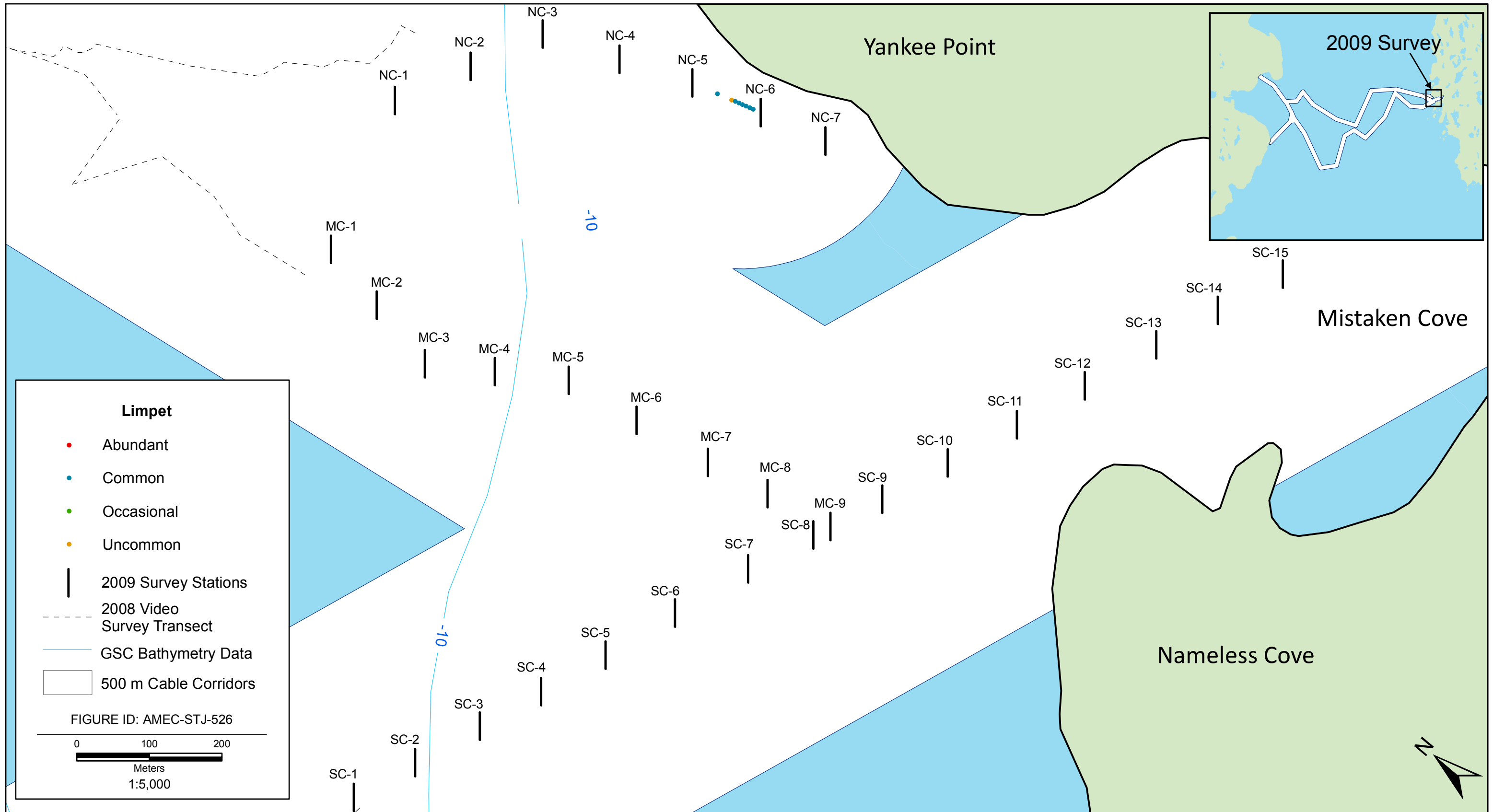


Figure F-44

Limpet (Patellogastropoda) - 2009 Marine Survey

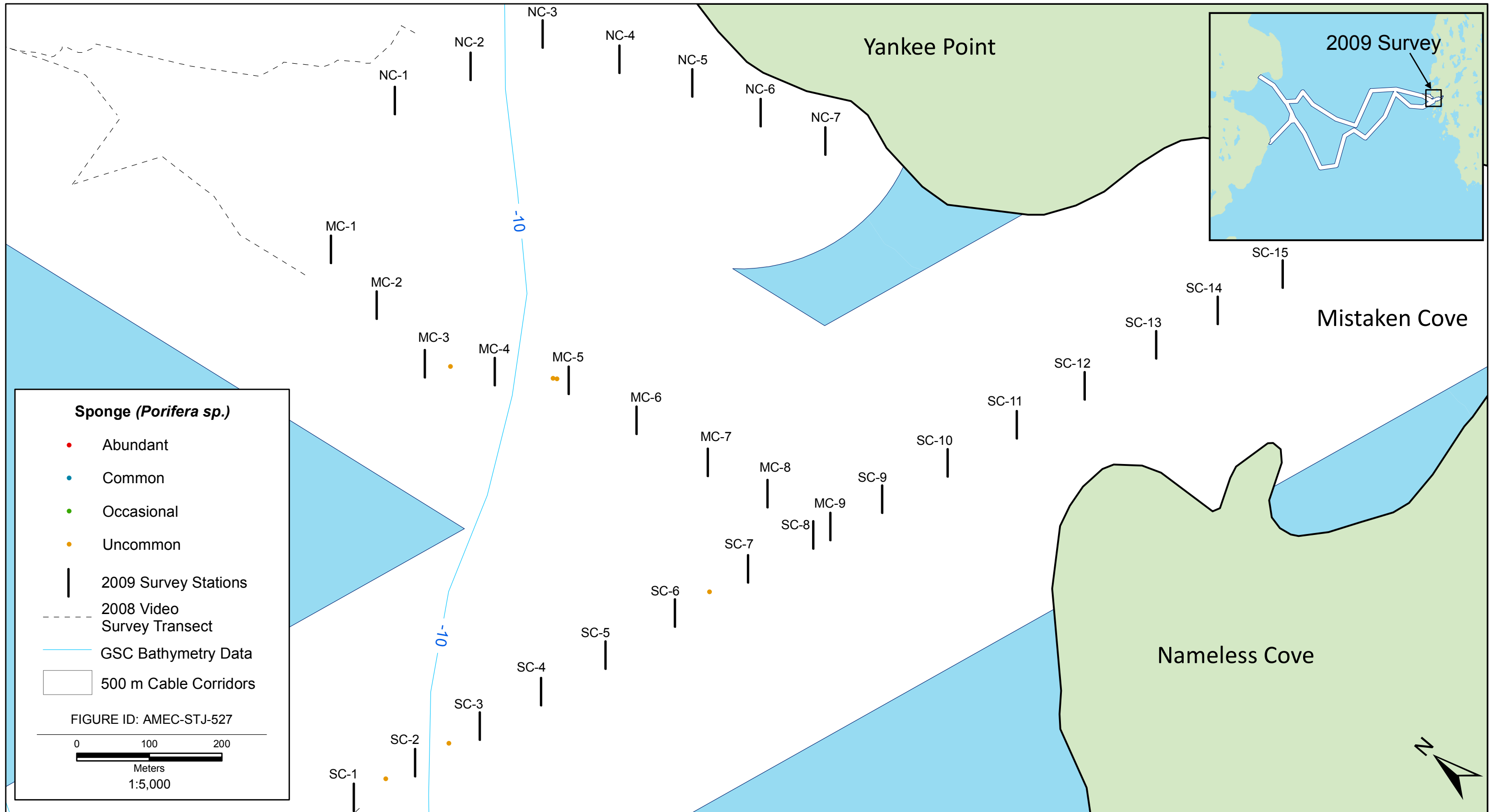


Figure F-45

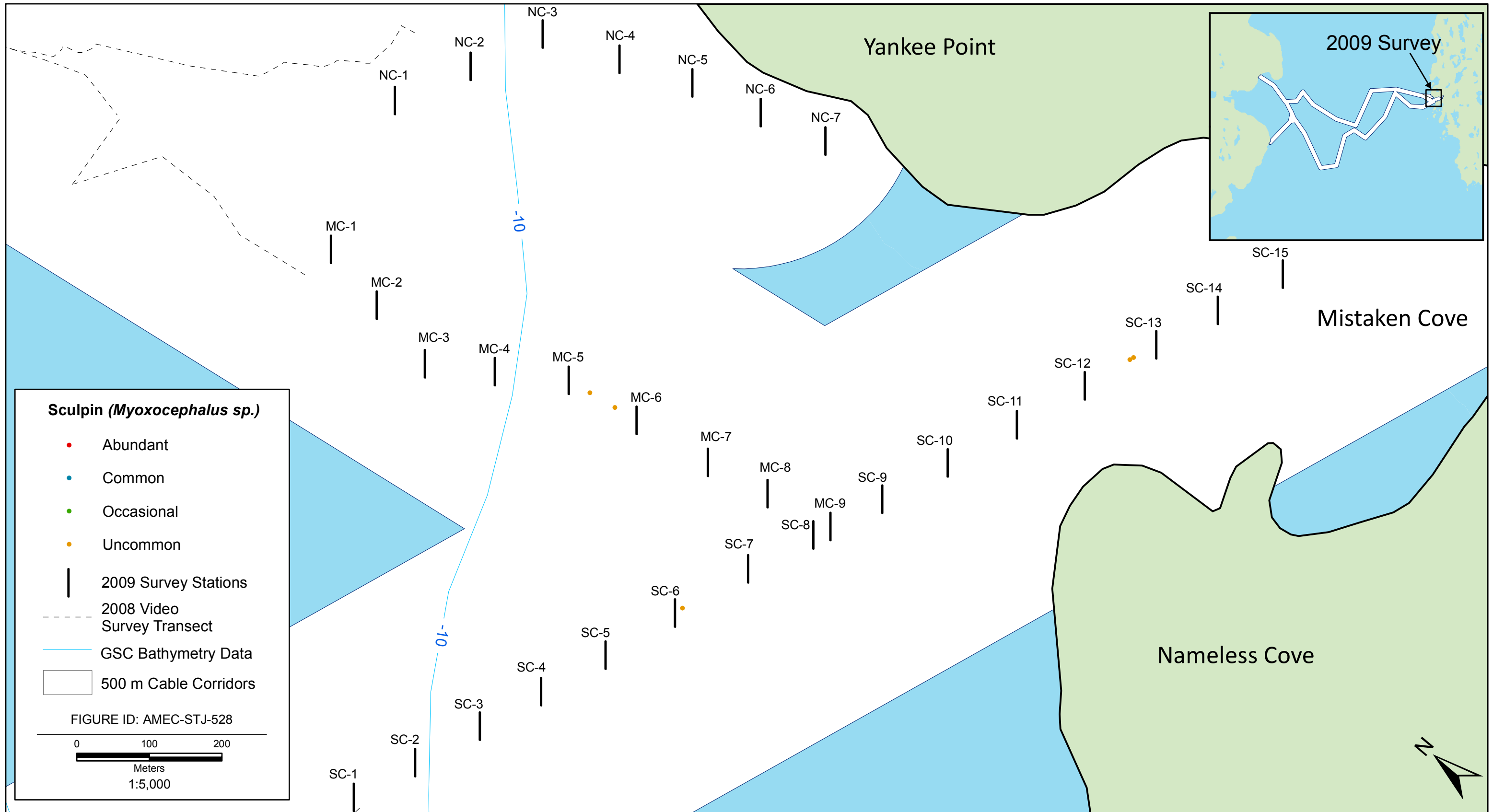


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Sculpin (*Myoxocephalus sp.*) - 2009 Marine Survey

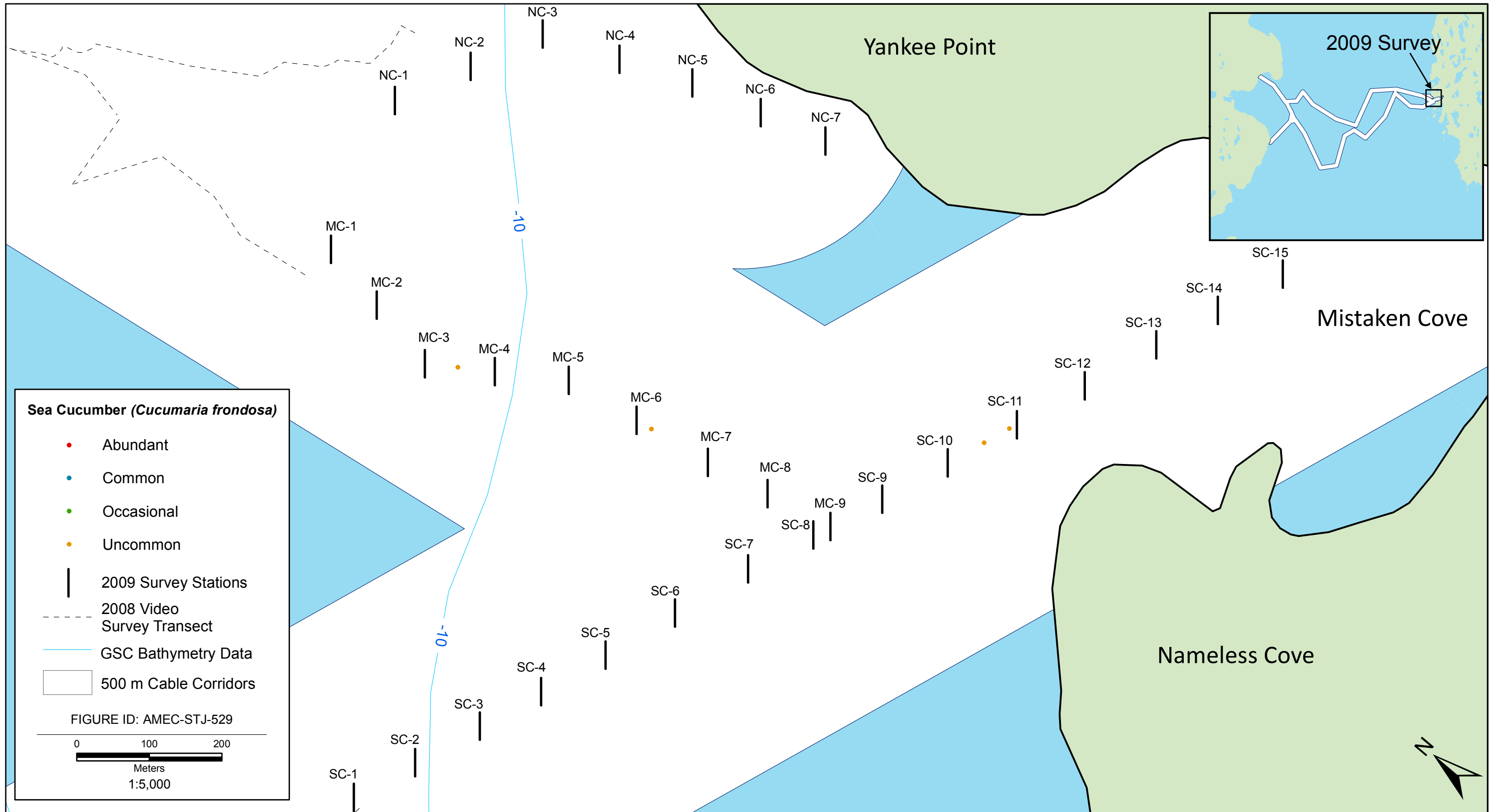


Figure F-47

Sea Cucumber (*Cucumaria frondosa*)- 2009 Marine Survey

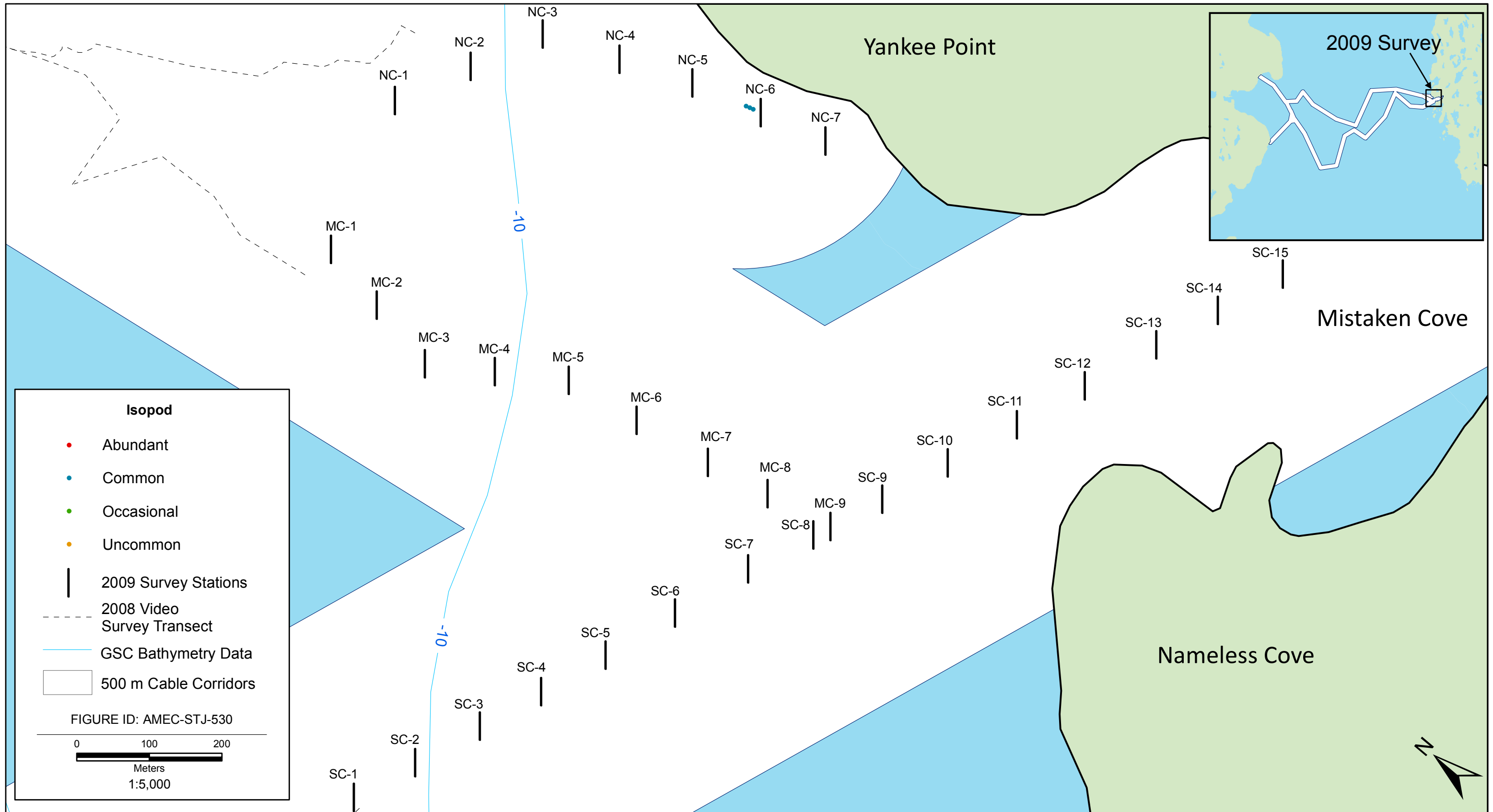


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Isopod (Isopoda)- 2009 Marine Survey

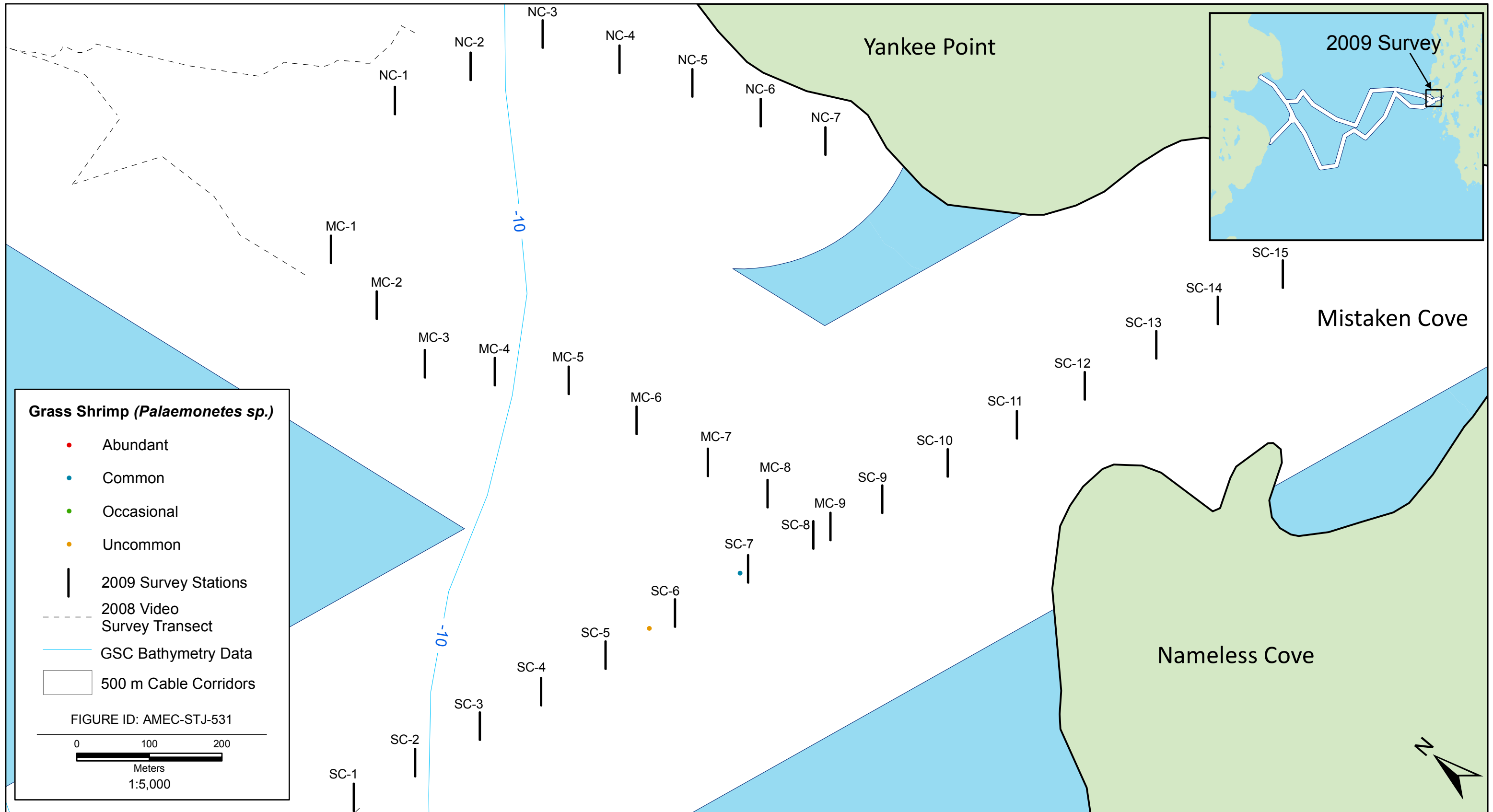


Figure F-49

Grass Shrimp (*Palaemonetes sp.*)- 2009 Marine Survey

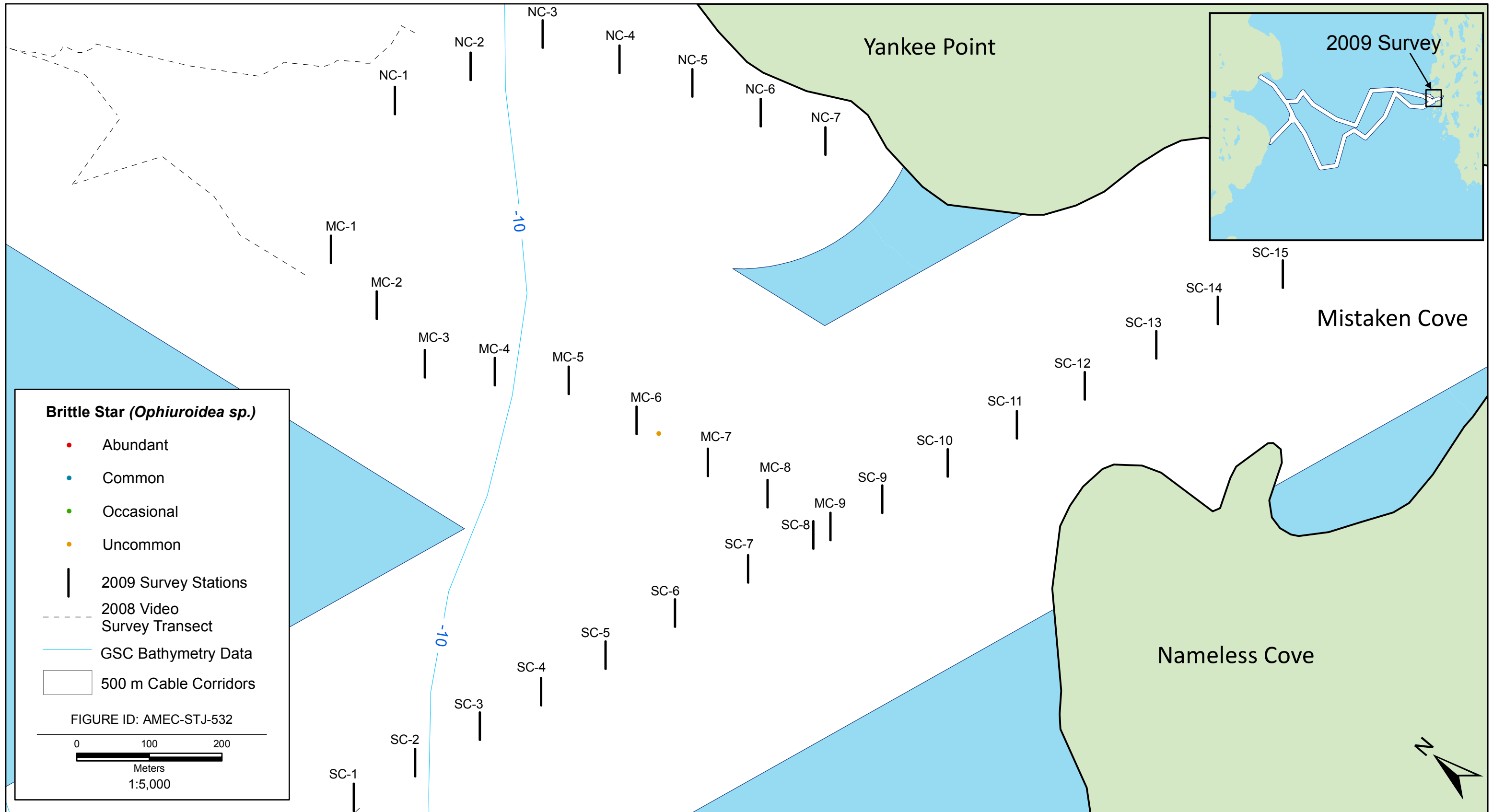


Figure F-50

Brittle Star (*Ophiuroidea sp.*) - 2009 Marine Survey

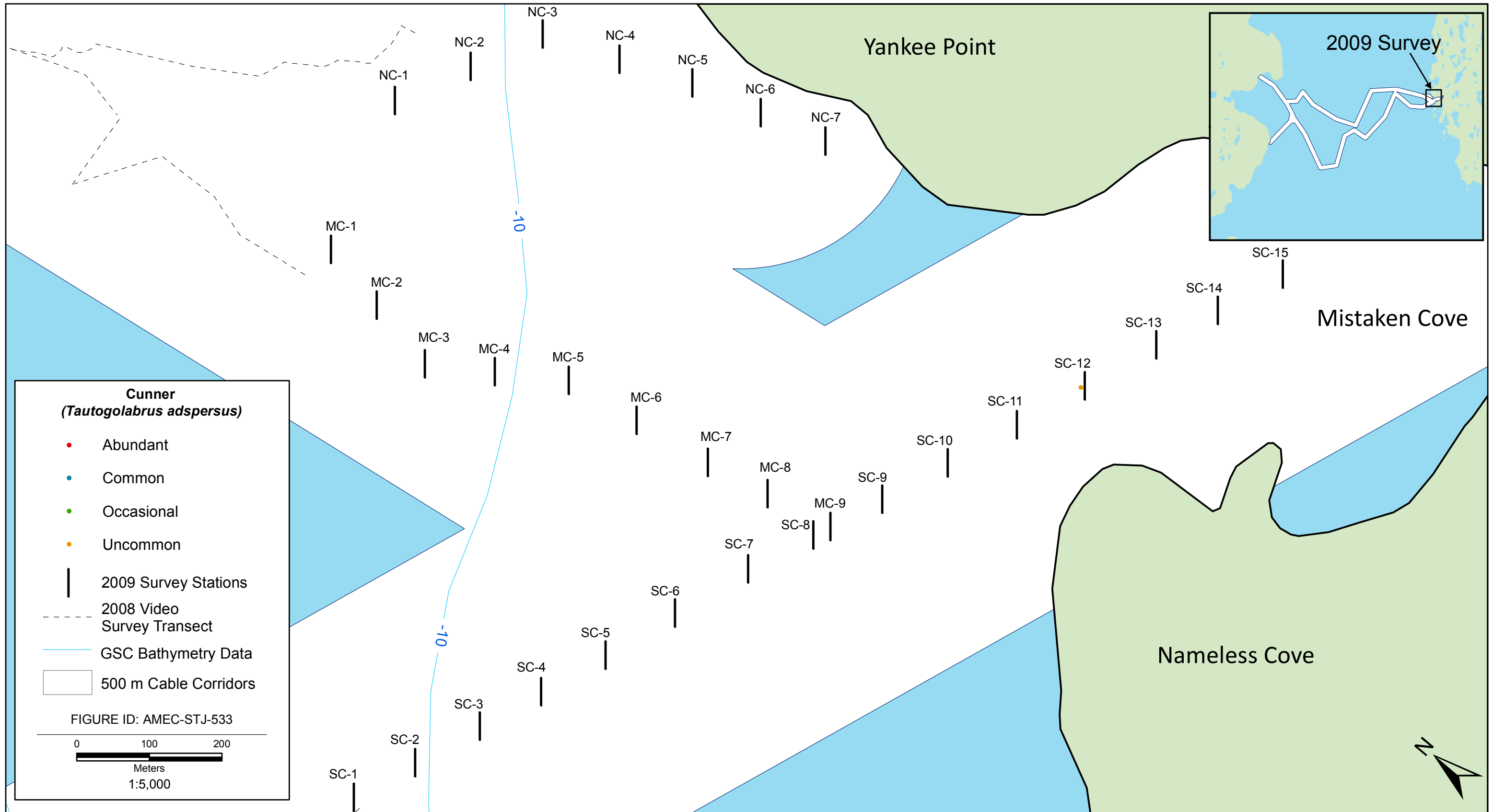


Figure F-51

Cunner (*Tautoglabrus adspersus*)- 2009 Marine Survey

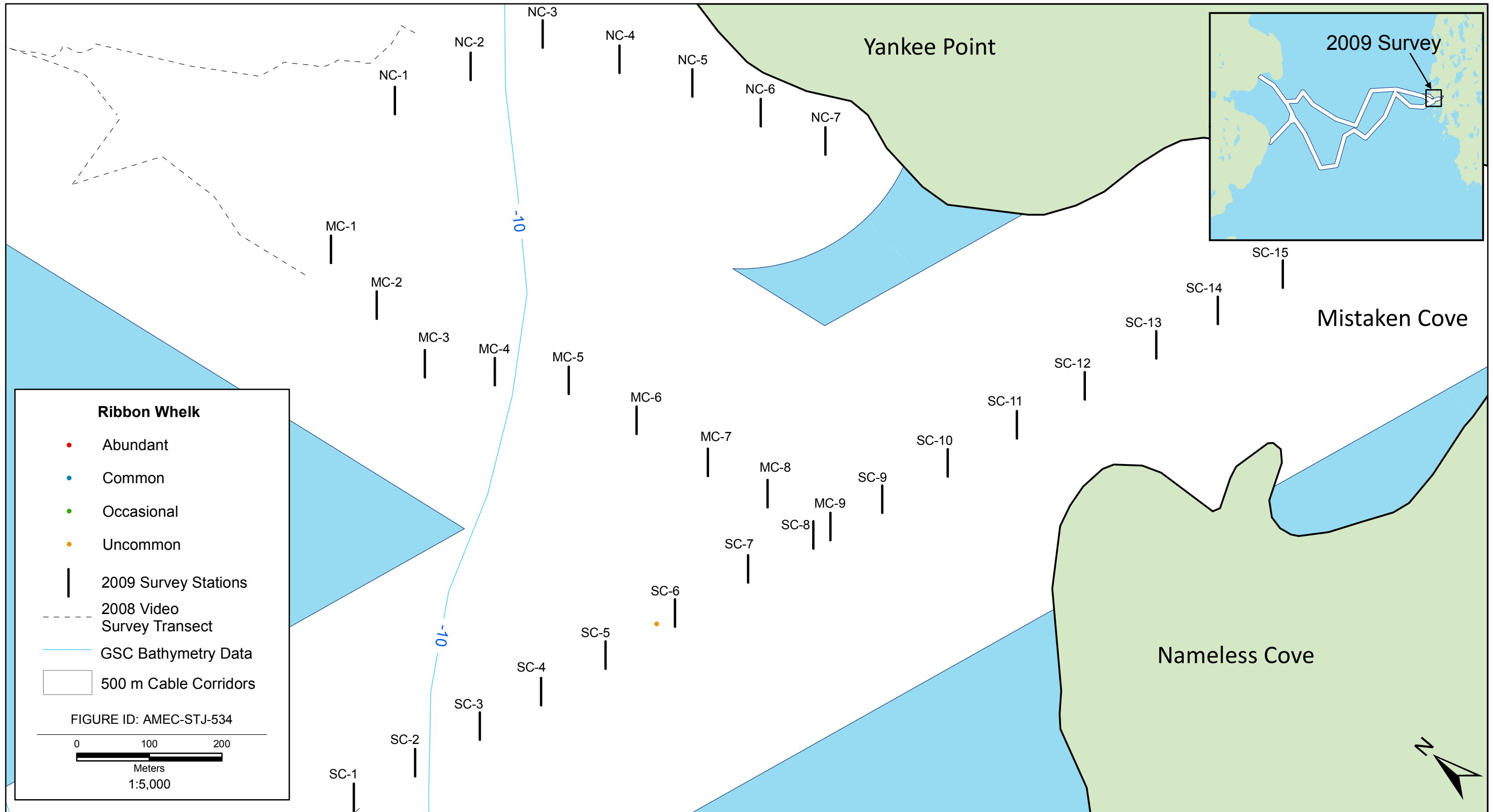


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Ribbon Whelk (Gastropoda)- 2009 Marine Survey

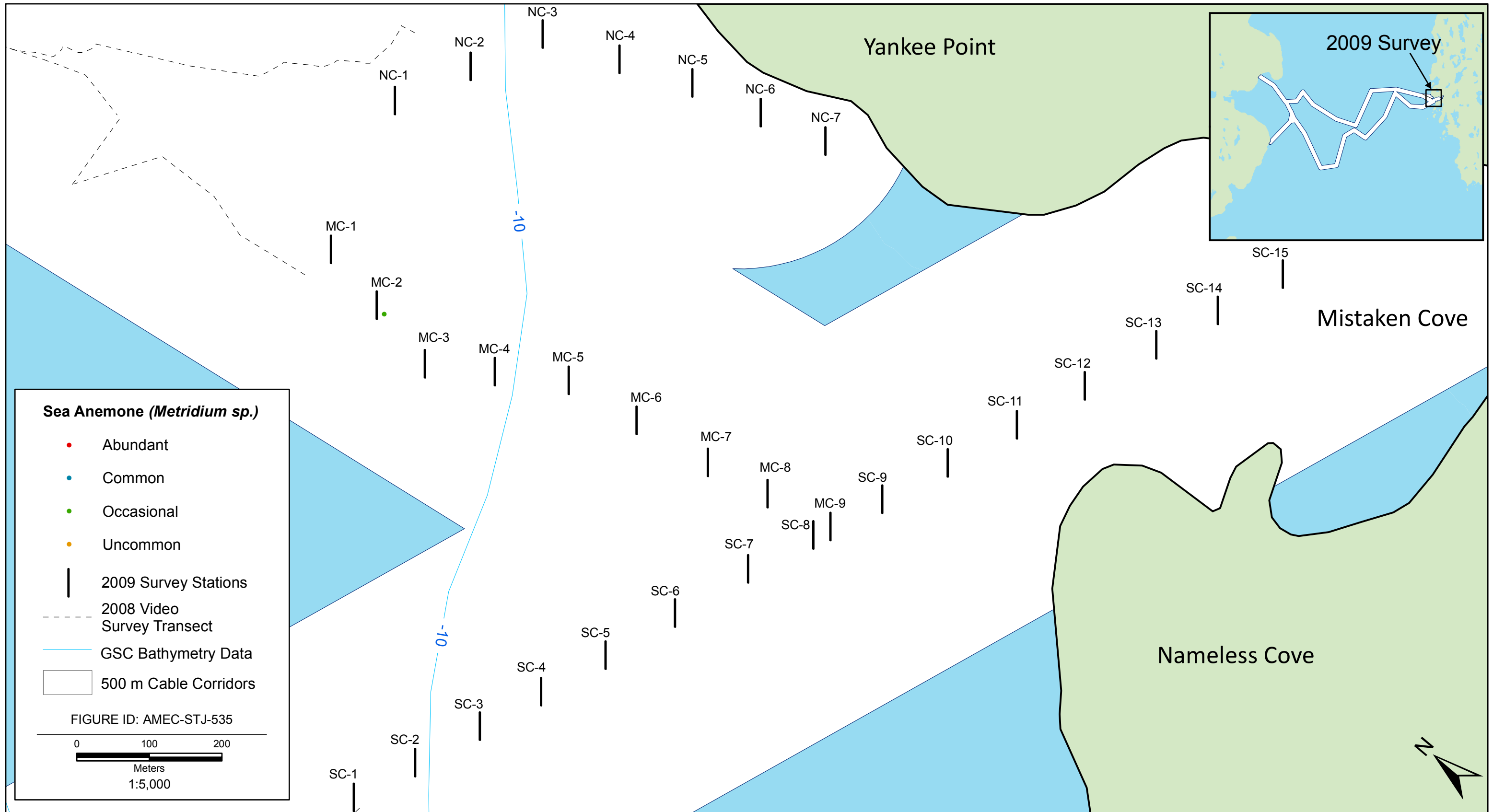


Figure F-53

Sea Anemone (*Metridium sp.*)- 2009 Marine Survey

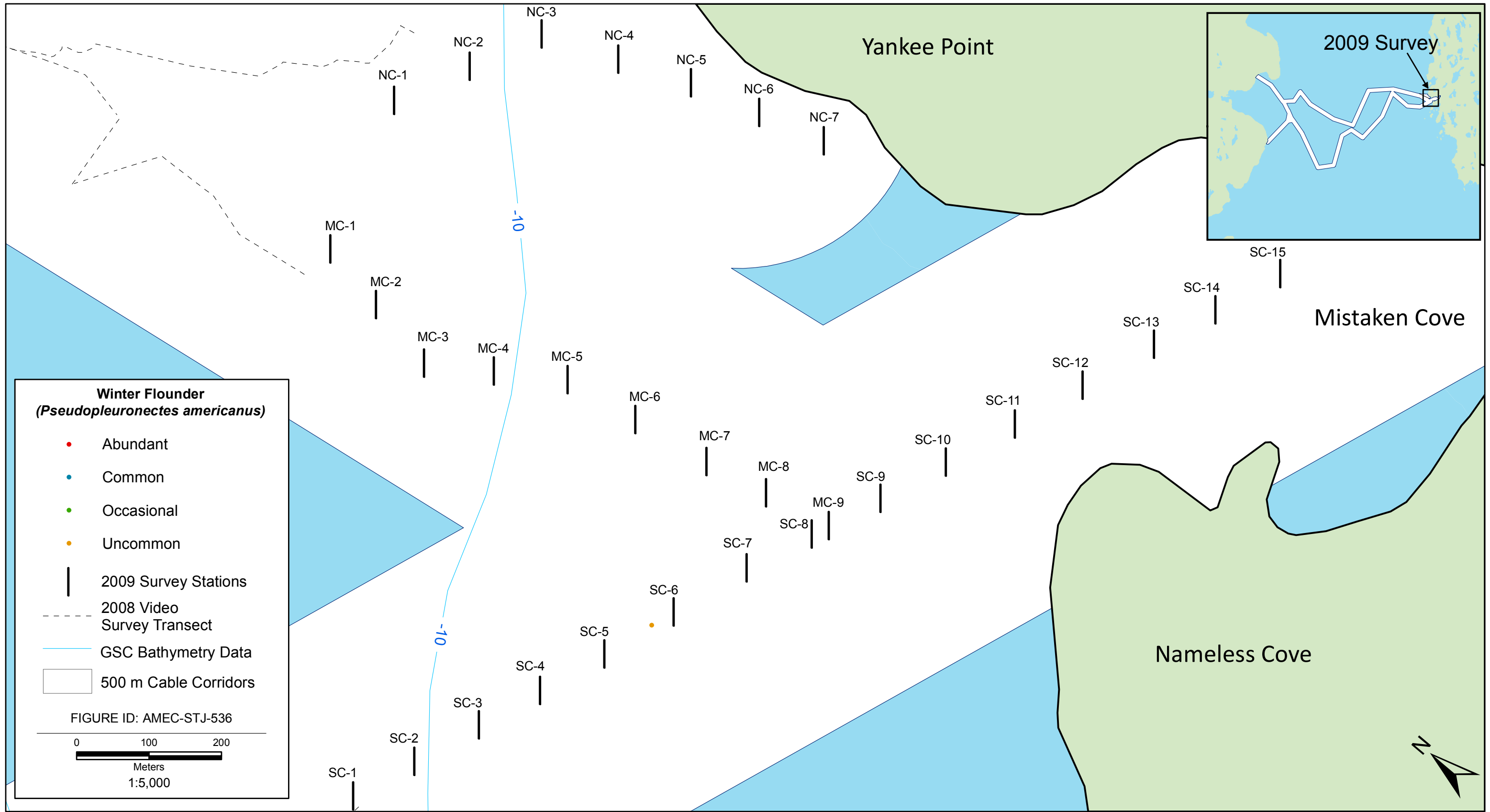


Figure F-54

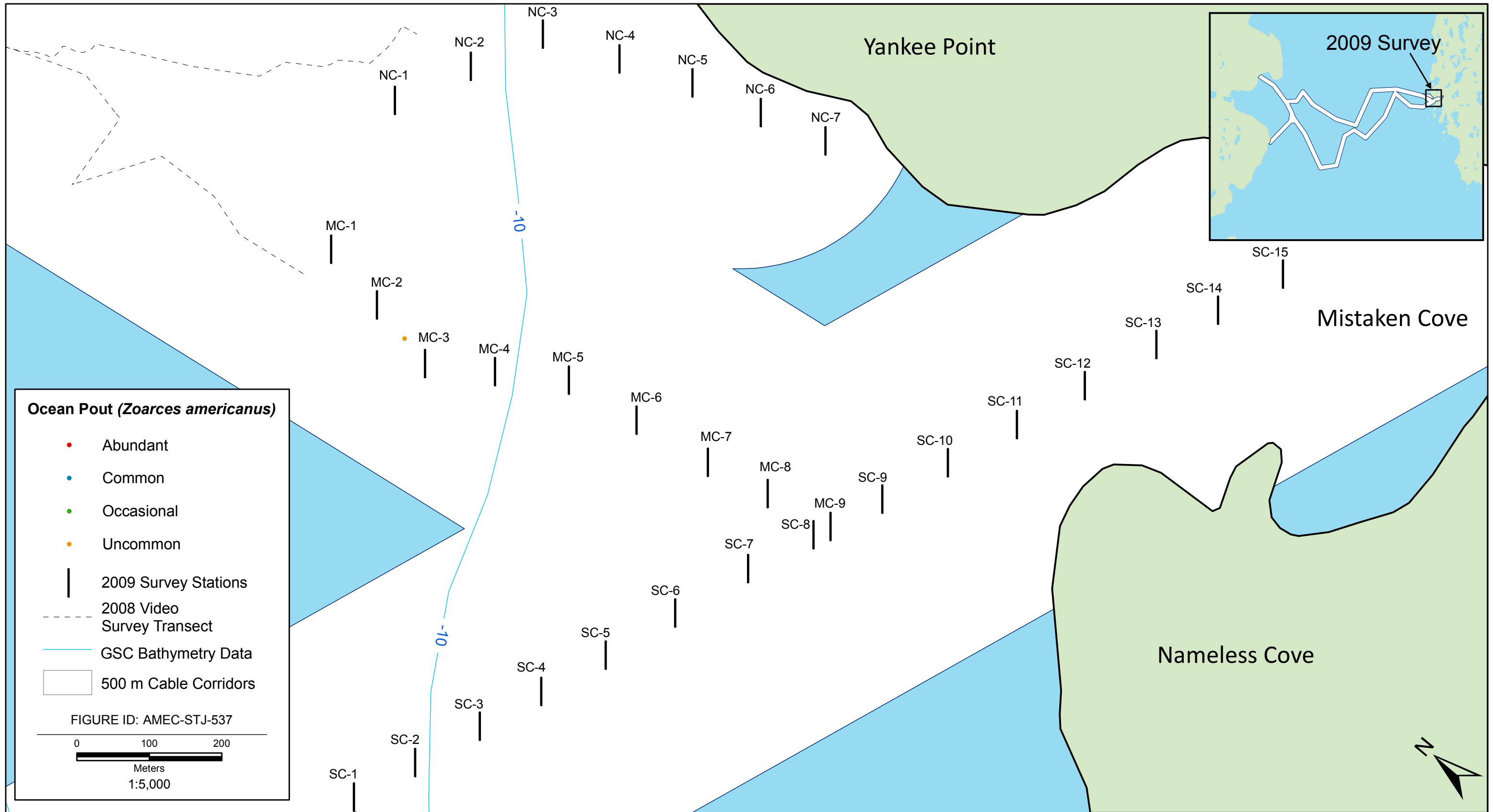


Figure F-55

Ocean Pout (*Zoarces americanus*) - 2009 Marine Survey

APPENDIX G

Depth/Substrate Charts and Tables for Macrofauna and Macroflora

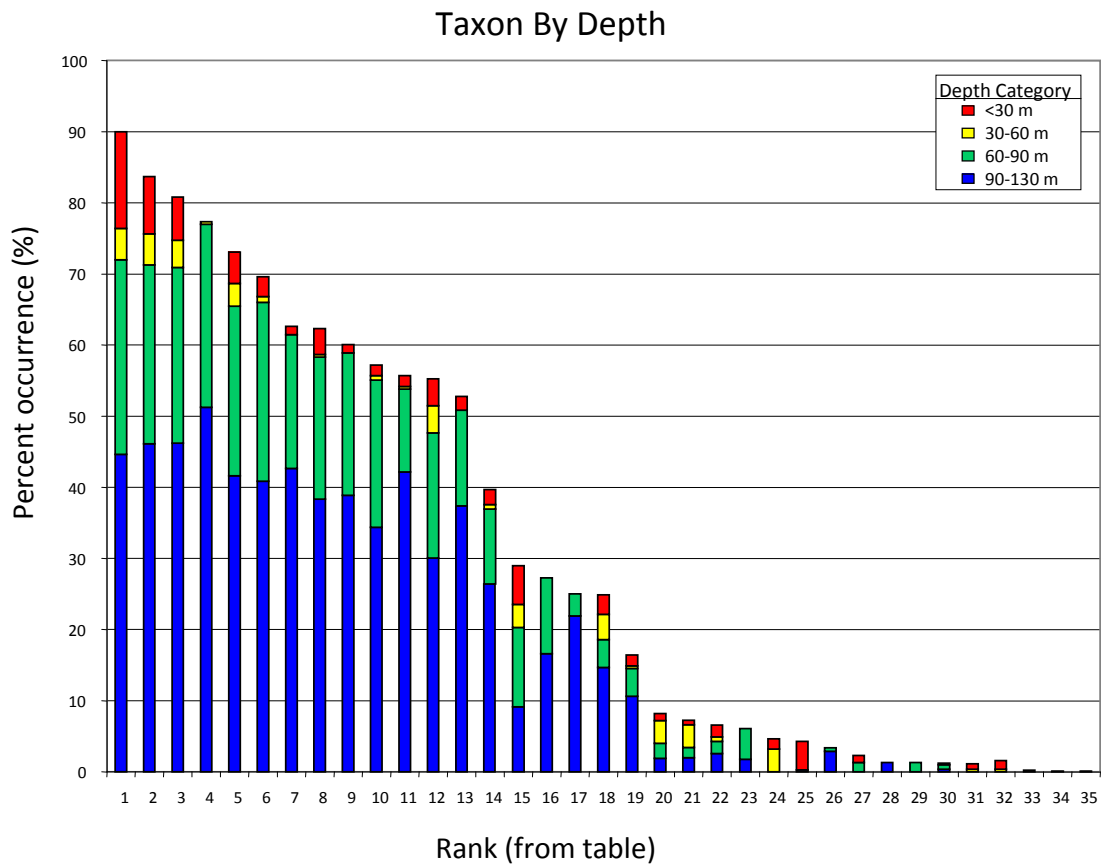
APPENDIX G

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Key to figures

Abundant	(A) Numerous (not quantifiable) observations made throughout the entire reach.
Common	(C) Numerous (not quantifiable) observations made intermittently along the reach.
Occasional	(O) Quantifiable observations made intermittently along the reach.
Uncommon	(U) Quantifiable observations made infrequently along the reach.
Coverage	(%) The amount, percentage, in which a species is found at a certain depth or on a type of substrate

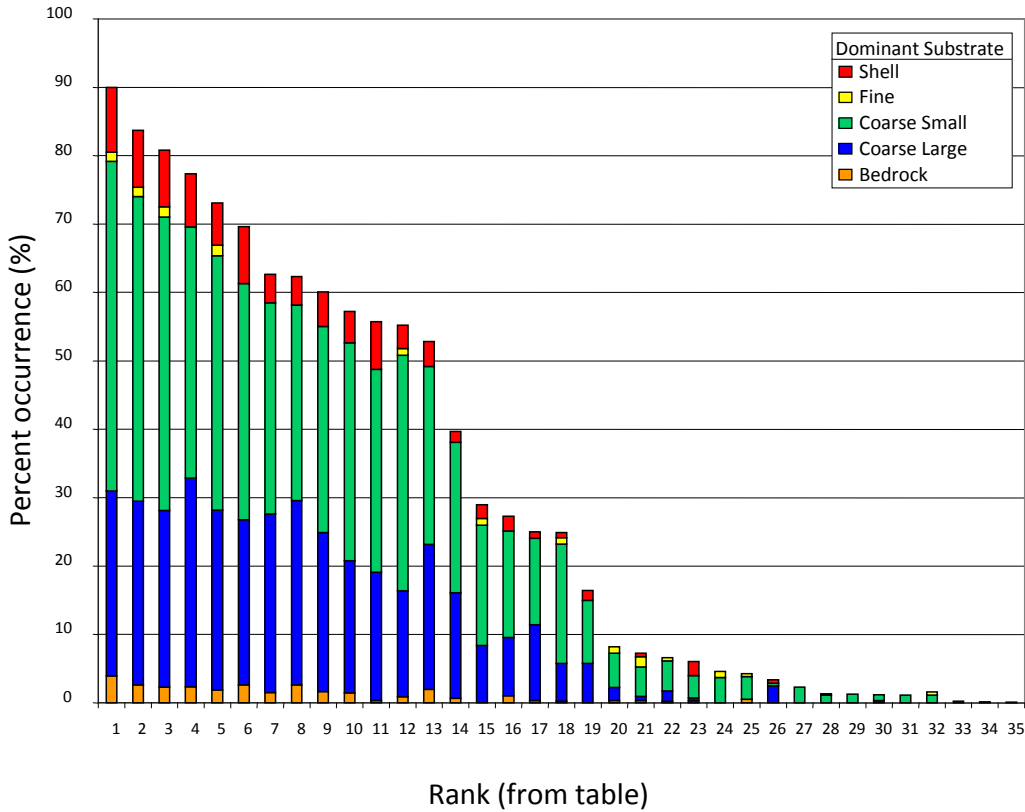


Rank*	Species	Category
1	Starfish (<i>Asterias sp.</i>)	Starfish
2	Starfish (<i>Crossaster sp.</i>)	Starfish
3	Pale urchin (<i>Strongylocentrotus pallidus</i>)	Echinoderms
4	Hydroid	Cnidarians
5	Sea anemone (other than <i>Metridium sp.</i>)	Cnidarians
6	Toad crab (<i>Hyas sp.</i>)	Crab
7	Stalked sea squirt (<i>Boltenia sp.</i>)	Tunicate
8	Bryozoa	Collonial
9	Barnacle (<i>Balanus sp.</i>)	Mollusc
10	Deep sea scallop (<i>Placopecten magellanicus</i>)	Shellfish
11	Soft coral (<i>Gersemia sp.</i>)	Collonial
12	Icelandic scallop (<i>Chlamys islandica</i>)	Shellfish
13	Sponge (Porifera)	Collonial
14	Brittle star (Ophiuroidea)	Echinoderms
15	Starfish (<i>Solaster sp.</i>)	Starfish
16	Sea squirt (Ascidiacea)	Tunicate
17	Basket star (<i>Gorgonacephalus sp.</i>)	Echinoderms
18	Snow crab (<i>Chionecetes opilio</i>)	Crab
19	Sea cucumber (<i>Cucumaria frondosa</i>)	Echinoderms
20	Sculpin (<i>Myoxocephalus sp.</i>)	Fish
21	Sand dollar (<i>Echinarachnius parma</i>)	Echinoderms
22	Atlantic cod (<i>Gadus morhua</i>)	Fish
23	Alligatorfish (<i>Aspidophoroides monopterygius</i>)	Fish
24	Blue mussel (<i>Mytilus edulis</i>)	Shellfish
25	Rock crab (<i>Cancer sp.</i>)	Crab
26	Cushion star (<i>Asterina sp.</i>)	Starfish
27	Fan worm (Polychaeta)	Other
28	Unidentified fish	Fish
29	Whelk (<i>Buccinum sp.</i>)	Mollusc
30	Stalked jellyfish (Stauromedusae)	Cnidarians
31	Sea anemone (<i>Metridium sp.</i>)	Cnidarians
32	Green urchin (<i>Strongylocentrotus droebachiensis</i>)	Echinoderms
33	Hermit crab (<i>Pagurus sp.</i>)	Crab
34	Gastropod (Gastropoda)	Mollusc
35	Pycnogonid (Pycnogonida)	Other

* Rank is based on number of reaches where taxon occurred

Figure G-1: Summary of Depth Distribution For All Macrofauna – 2008 Marine Survey

Taxon By Substrate

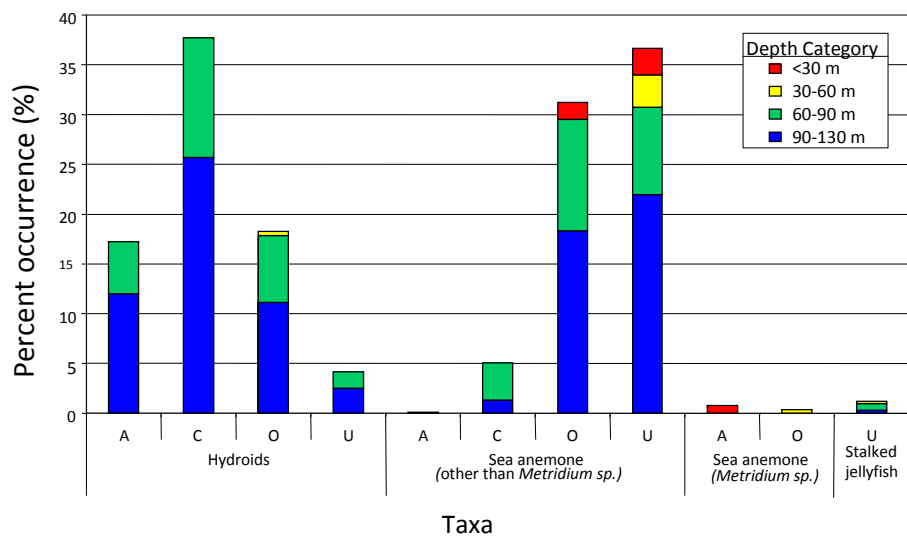


Rank*	Species	Category
1	Starfish (<i>Asterias sp.</i>)	Starfish
2	Starfish (<i>Crossaster sp.</i>)	Starfish
3	Pale urchin (<i>Strongylocentrotus pallidus</i>)	Echinoderms
4	Hydroid	Cnidarians
5	Sea anemone (other than <i>Metridium sp.</i>)	Cnidarians
6	Toad crab (<i>Hyas sp.</i>)	Crab
7	Stalked sea squirt (<i>Boltenia sp.</i>)	Tunicate
8	Bryozoa	Colonial
9	Barnacle (<i>Balanus sp.</i>)	Mollusc
10	Deep sea scallop (<i>Placopecten magellanicus</i>)	Shellfish
11	Soft coral (<i>Gersemia sp.</i>)	Colonial
12	Icelandic scallop (<i>Chlamys islandica</i>)	Shellfish
13	Sponge (Porifera)	Colonial
14	Brittle star (Ophiuroidea)	Echinoderms
15	Starfish (<i>Solaster sp.</i>)	Starfish
16	Sea squirt (Ascidacea)	Tunicate
17	Basket star (<i>Gorgonocephalus sp.</i>)	Echinoderms
18	Snow crab (<i>Chionecetes opilio</i>)	Crab
19	Sea cucumber (<i>Cucumaria frondosa</i>)	Echinoderms
20	Sculpin (<i>Myoxocephalus sp.</i>)	Fish
21	Sand dollar (<i>Echinarachnius parma</i>)	Echinoderms
22	Atlantic cod (<i>Gadus morhua</i>)	Fish
23	Alligatorfish (<i>Aspidophoroides monopterygius</i>)	Fish
24	Blue mussel (<i>Mytilus edulis</i>)	Shellfish
25	Rock crab (<i>Cancer sp.</i>)	Crab
26	Cushion star (<i>Asterina sp.</i>)	Starfish
27	Fan worm (Polychaeta)	Other
28	Unidentified fish	Fish
29	Whelk (<i>Buccinum sp.</i>)	Mollusc
30	Stalked jellyfish (Stauromedusae)	Cnidarians
31	Sea anemone (<i>Metridium sp.</i>)	Cnidarians
32	Green urchin (<i>Strongylocentrotus droebachiensis</i>)	Echinoderms
33	Hermit crab (<i>Pagurus sp.</i>)	Crab
34	Gastropod (Gastropoda)	Mollusc
35	Pycnogonid (Pycnogonida)	Other

* Rank is based on number of reaches where taxon occurred

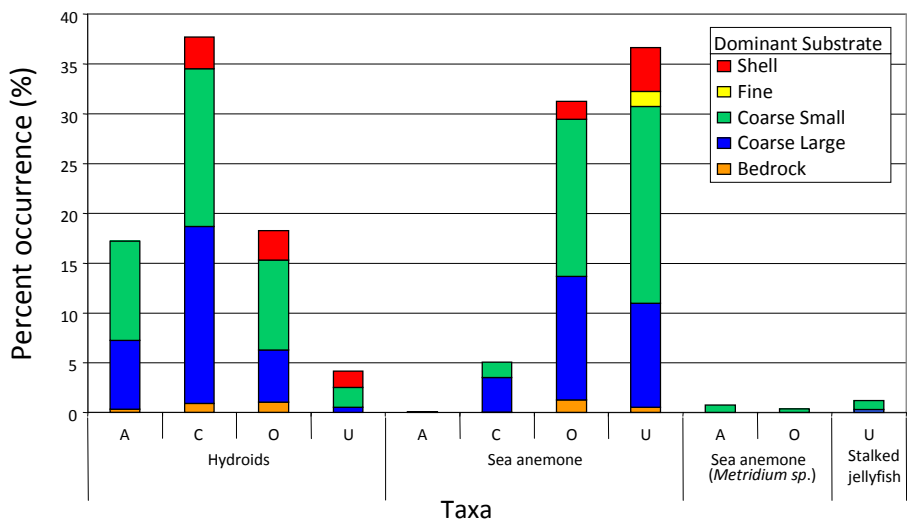
Figure G-2: Summary of Substrate Distribution for all Macrofauna – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category (m)				Combined depths total
			<30	30-60	60-90	90-130	
Hydroids	A	%			5.2	12.0	17.2
	C	%			12.0	25.7	37.7
	O	%	0.4		6.8	11.1	18.2
	U	%			1.7	2.5	4.2
Hydroids total		%	0.4	25.7	51.3	77.4	
Sea anemone (other than <i>Metridium sp.</i>)	A	%			0.1		0.1
	C	%			3.7	1.3	5.1
	O	%	1.7		11.2	18.3	31.2
	U	%	2.7	3.2	8.8	21.9	36.6
Sea anemone (other than <i>Metridium sp.</i>) total		%	4.4	3.2	23.9	41.6	73.1
Sea anemone (<i>Metridium sp.</i>)	A	%	0.8				0.8
	O	%		0.4			0.4
Sea anemone (<i>Metridium sp.</i>) total		%	0.8	0.4			1.1
Stalked jellyfish (Stauromedusae)	U	%		0.2	0.6	0.4	1.2
Stalked jellyfish (Stauromedusae) total		%		0.2	0.6	0.4	1.2

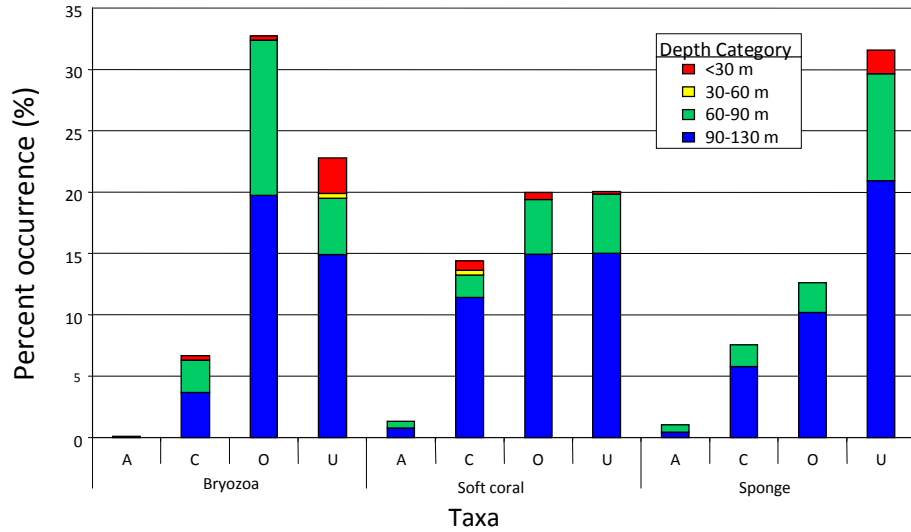
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate					Combined Substrates Total
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Hydroids	A	%	0.4	6.9	9.9			17.2
	C	%	0.9	17.8	15.8		3.2	37.7
	O	%	1.1	5.3	9.0		2.9	18.2
	U	%		0.5	2.0		1.6	4.2
Hydroids total		%	2.3	30.5	36.7		7.8	77.4
Sea Anemone (other than <i>Metridium sp.</i>)	A	%			0.1			0.1
	C	%	0.1	3.5	1.6			5.1
	O	%	1.3	12.4	15.8		1.8	31.3
	U	%	0.5	10.5	19.7	1.5	4.4	36.7
Sea anemone (other than <i>Metridium sp.</i>) total		%	1.9	26.3	37.2	1.5	6.2	73.1
Sea Anemone (<i>Metridium sp.</i>)	A	%			0.8			0.8
	O	%			0.4			0.4
Sea anemone (<i>Metridium sp.</i>) total		%			1.1			1.1
Stalked jellyfish	U	%		0.3	0.9			1.2
Stalked jellyfish total		%		0.3	0.9			1.2

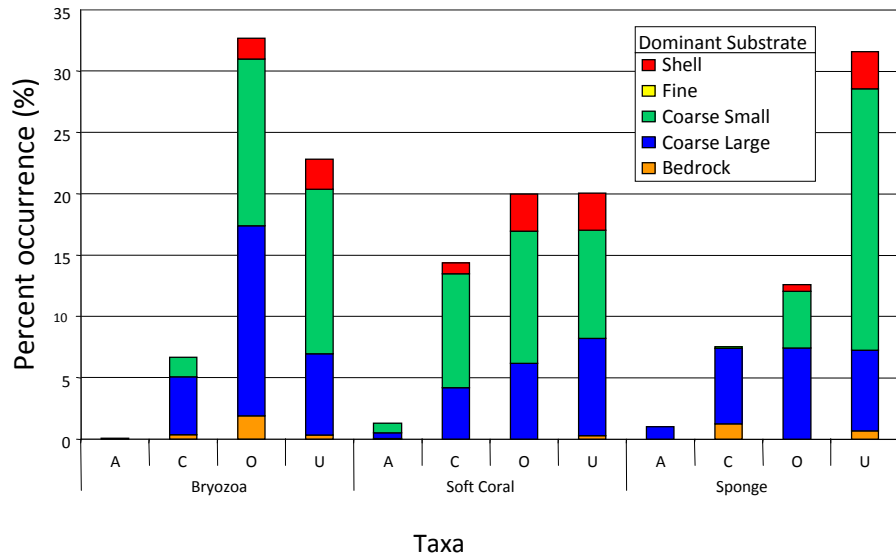
Figure G-3: Cnidarians – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category (m)				Combined depths total
			<30	30-60	60-90	90-130	
Bryozoa	A	%			0.1		0.1
	C	%	0.4		2.6	3.7	6.7
	O	%	0.4		12.6	19.7	32.7
	U	%	2.9	0.4	4.6	14.9	22.8
Bryozoa total		%	3.6	0.4	20.0	38.3	62.3
Soft coral (<i>Gersemia sp.</i>)	A	%			0.5	0.8	1.3
	C	%	0.8	0.4	1.8	11.4	14.4
	O	%	0.5		4.5	14.9	20.0
	U	%	0.2		4.8	15.0	20.1
Soft coral (<i>Gersemia sp.</i>) total		%	1.5	0.4	11.7	42.1	55.7
Sponge (Porifera)	A	%			0.6	0.4	1.0
	C	%			1.8	5.8	7.6
	O	%			2.4	10.2	12.6
	U	%	1.9		8.7	21.0	31.6
Sponge (Porifera) total		%	1.9		13.4	37.4	52.8

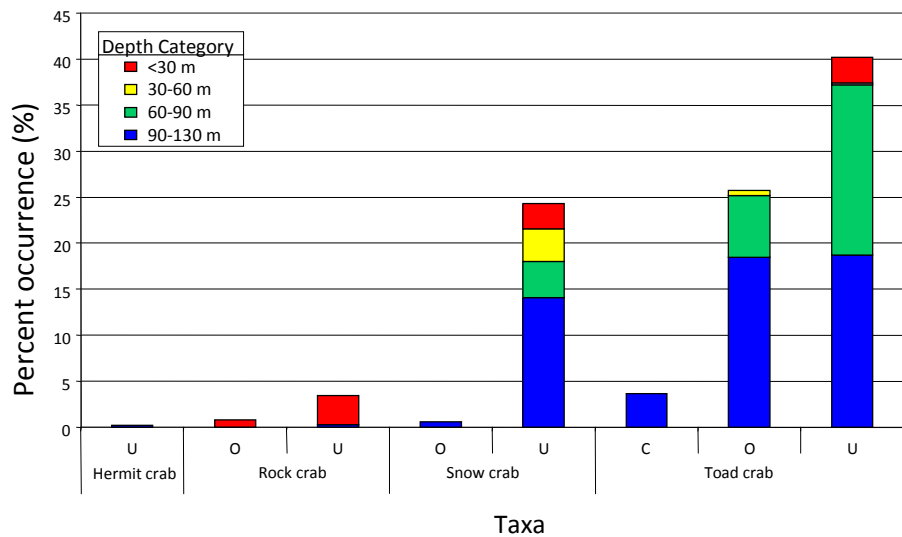
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate				Combined substrates total
			Bedrock	Coarse large	Coarse small	Shell	
Bryozoa	A	%		0.1			0.1
	C	%	0.4	4.7	1.6		6.7
	O	%	1.9	15.5	13.6	1.7	32.7
	U	%	0.3	6.6	13.4	2.4	22.8
Bryozoa total		%	2.6	26.9	28.6	4.2	62.3
Soft coral (<i>Gersemia sp.</i>)	A	%	0.1	0.5	0.8		1.3
	C	%		4.2	9.3	0.9	14.4
	O	%		6.2	10.8	3.0	20.0
	U	%	0.3	7.9	8.8	3.1	20.1
Soft coral (<i>Gersemia sp.</i>) total		%	0.3	18.8	29.6	6.9	55.7
Sponge (Porifera)	A	%		1.0			1.0
	C	%	1.3	6.1	0.2		7.6
	O	%		7.4	4.6	0.6	12.6
	U	%	0.7	6.6	21.3	3.0	31.6
Sponge (Porifera) total		%	1.9	21.2	26.0	3.6	52.8

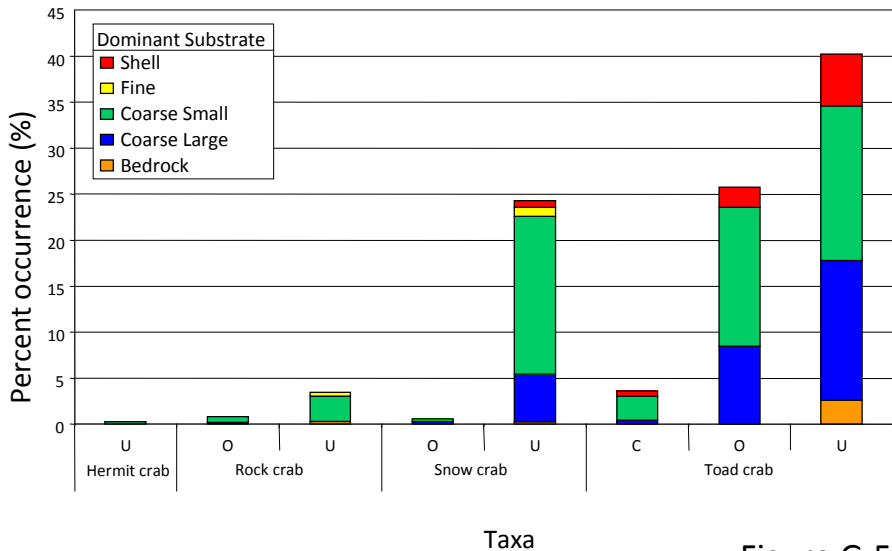
Figure G-4: Colonials – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category (m)				Combined depths total
			<30	30-60	60-90	90-130	
Hermit crab (<i>Pagurus sp.</i>)	U	%				0.2	0.2
Hermit crab (<i>Pagurus sp.</i>) total		%				0.2	0.2
Rock crab (<i>Cancer sp.</i>)	O	%	0.8				0.8
	U	%				0.3	3.5
Rock crab (<i>Cancer sp.</i>) total		%	4.0			0.3	4.3
Snow crab (<i>Chionecetes opilio</i>)	O	%				0.6	0.6
	U	%	2.7	3.6	3.9	14.1	24.3
Snow crab (<i>Chionecetes opilio</i>) total		%	2.7	3.6	3.9	14.7	24.9
Toad Crab (<i>Hyas sp.</i>)	C	%				3.6	3.6
	O	%		0.6	6.7	18.5	25.8
	U	%	2.8	0.2	18.5	18.7	40.2
Toad crab (<i>Hyas sp.</i>) total		%	2.8	0.8	25.2	40.8	69.6

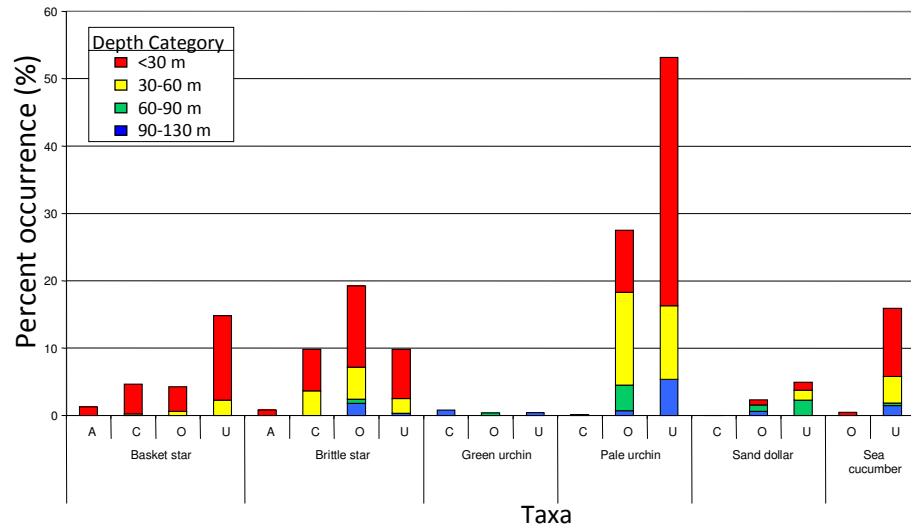
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate					Combined Substrates Total
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Hermit crab (<i>Pagurus sp.</i>)	U	%				0.2		0.2
Hermit crab (<i>Pagurus sp.</i>) total		%				0.2		0.2
Rock crab (<i>Cancer sp.</i>)	O	%	0.2			0.6		0.8
	U	%				2.7	0.4	3.5
Rock crab (<i>Cancer sp.</i>) total		%	0.5			3.4	0.4	4.3
Snow crab (<i>Chionecetes opilio</i>)	O	%		0.3		0.2		0.6
	U	%	0.2	5.2	17.2	0.9	0.7	24.3
Snow crab (<i>Chionecetes opilio</i>) total		%	0.2	5.5	17.4	0.9	0.7	24.9
Toad crab (<i>Hyas sp.</i>)	C	%		0.4	2.6		0.6	3.6
	O	%		8.5	15.1		2.2	25.8
	U	%	2.6	15.2	16.8		5.6	40.2
Toad crab (<i>Hyas sp.</i>) total		%	2.6	24.1	34.5		8.4	69.6

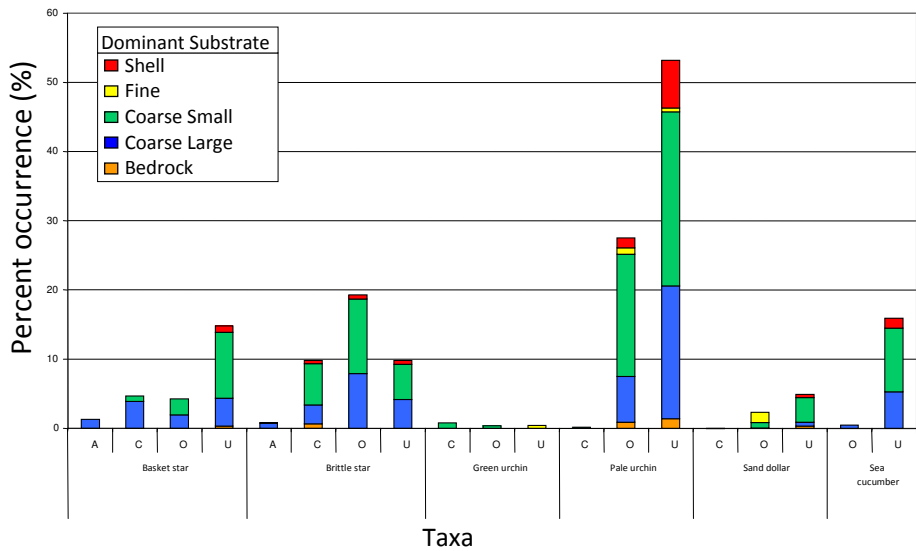
Figure G-5: Crabs – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth Category (m)				Combined Depth Totals
			<30	30-60	60-90	90-130	
Basket Star (<i>Gorgonocephalus sp.</i>)	A	%				1.3	1.3
	C	%			0.2	4.4	4.7
	O	%			0.6	3.7	4.3
	U	%			2.3	12.5	14.8
Basket Star (<i>Gorgonocephalus sp.</i>) total		%			3.1	21.9	25.0
Brittle Star (Ophiuroidea)	A	%				0.8	0.8
	C	%				6.2	9.8
	O	%	1.8	0.6	4.7	12.1	19.3
	U	%	0.3		2.2	7.3	9.8
Brittle Star (Ophiuroidea) total		%	2.1	0.6	10.6	26.4	39.7
Green Urchin (<i>Strongylocentrotus droebachiensis</i>)	C	%	0.8				0.8
	O	%		0.4			0.4
	U	%	0.4				0.4
Green Urchin (<i>Strongylocentrotus droebachiensis</i>) total		%	1.2	0.4			1.6
Pale Urchin (<i>Strongylocentrotus pallidus</i>)	C	%	0.0			0.1	0.1
	O	%	0.7	3.8	13.8	9.2	27.5
	U	%	5.4		10.9	36.9	53.2
Pale Urchin (<i>Strongylocentrotus pallidus</i>) total		%	6.1	3.8	24.7	46.2	80.8
Sand Dollar (<i>Echinarachnius parma</i>)	C	%	0.0				0.0
	O	%	0.6	0.9		0.7	2.3
	U	%		2.3	1.5	1.2	4.9
Sand Dollar (<i>Echinarachnius parma</i>) total		%	0.6	3.2	1.5	1.9	7.3
Sea Cucumber (<i>Cucumaria frondosa</i>)	O	%				0.5	0.5
	U	%	1.5	0.4	3.9	10.1	15.9
Sea Cucumber (<i>Cucumaria frondosa</i>) total		%	1.5	0.4	3.9	10.6	16.4

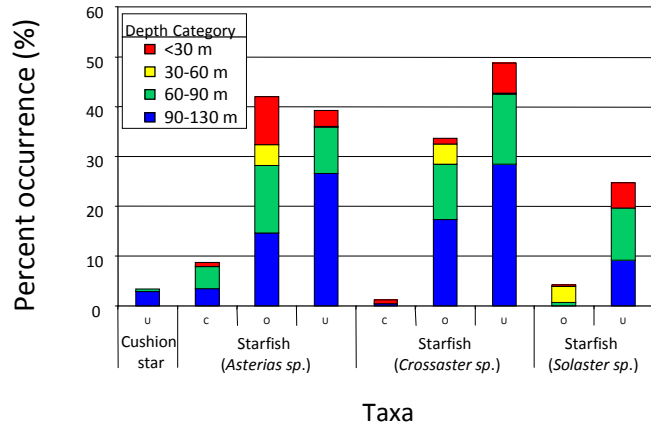
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant Substrate				Combined Substrate Totals
			Bedrock	Coarse Large	Coarse Small	Fine	
Basket star (<i>Gorgonocephalus sp.</i>)	A	%					1.3
	C	%				0.8	4.7
	O	%				2.3	4.3
	U	%	0.4	4.0	9.5		14.8
Basket star (<i>Gorgonocephalus sp.</i>) total		%	0.4	11.1	12.6	0.9	25.0
Brittle star (Ophiuroidea)	A	%					0.8
	C	%	0.7	0.7	6.0		9.8
	O	%		7.9	10.8		19.3
	U	%		4.2	5.1		9.8
Brittle star (Ophiuroidea) total		%	0.7	15.4	22.0	1.6	39.7
Green urchin (<i>Strongylocentrotus droebachiensis</i>)	C	%				0.8	0.8
	O	%			0.4		0.4
	U	%				0.4	0.4
Green urchin (<i>Strongylocentrotus droebachiensis</i>) total		%			1.1	0.4	1.6
Pale urchin (<i>Strongylocentrotus pallidus</i>)	C	%		0.1	0.0		0.1
	O	%	0.9	6.6	17.7	0.9	27.5
	U	%	1.4	19.1	25.2	0.6	53.2
Pale urchin (<i>Strongylocentrotus pallidus</i>) total		%	2.3	25.8	42.9	1.5	80.8
Sand dollar (<i>Echinarachnius parma</i>)	C	%		0.0			0.0
	O	%		0.0	0.8	1.5	2.3
	U	%	0.4	0.5	3.5		4.9
Sand dollar (<i>Echinarachnius parma</i>) total		%	0.4	0.6	4.3	1.5	7.3
Sea cucumber (<i>Cucumaria frondosa</i>)	O	%			0.5		0.5
	U	%		5.3	9.2		15.9
Sea cucumber (<i>Cucumaria frondosa</i>) total		%		5.8	9.2	1.4	16.4

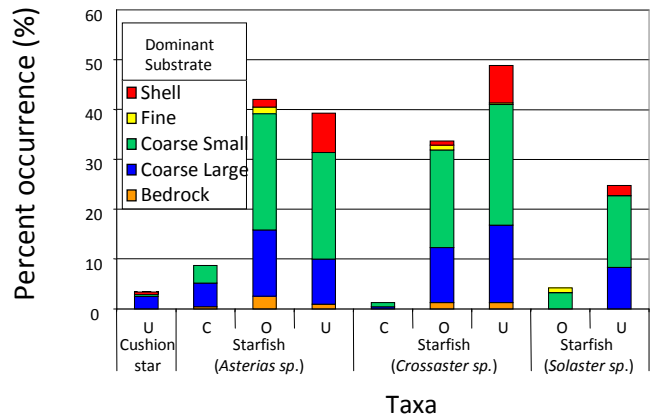
Figure G-6: Echinoderms – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category				Combined depths total
			<30	30-60	60-90	90-130	
Cushion star (<i>Asterina sp.</i>)	U	%			0.5	2.9	3.4
Cushion star (<i>Asterina sp.</i>) total		%			0.5	2.9	3.4
Starfish (<i>Asterias sp.</i>)	C	%	0.8		4.4	3.5	8.7
	O	%	9.6	4.2	13.6	14.6	42.0
	U	%	3.2	0.2	9.4	26.5	39.3
Starfish (<i>Asterias sp.</i>) total		%	13.6	4.4	27.4	44.6	90.0
Starfish (<i>Crossaster sp.</i>)	C	%	0.8			0.4	1.2
	O	%	1.1	4.2	11.0	17.4	33.7
	U	%	6.2	0.2	14.2	28.3	48.8
Starfish (<i>Crossaster sp.</i>) total		%	8.0	4.4	25.1	46.1	83.7
Starfish (<i>Solaster sp.</i>)	O	%	0.4	3.2	0.6		4.2
	U	%	5.1		10.5	9.1	24.7
Starfish (<i>Solaster sp.</i>) total		%	5.5	3.2	11.2	9.1	29.0

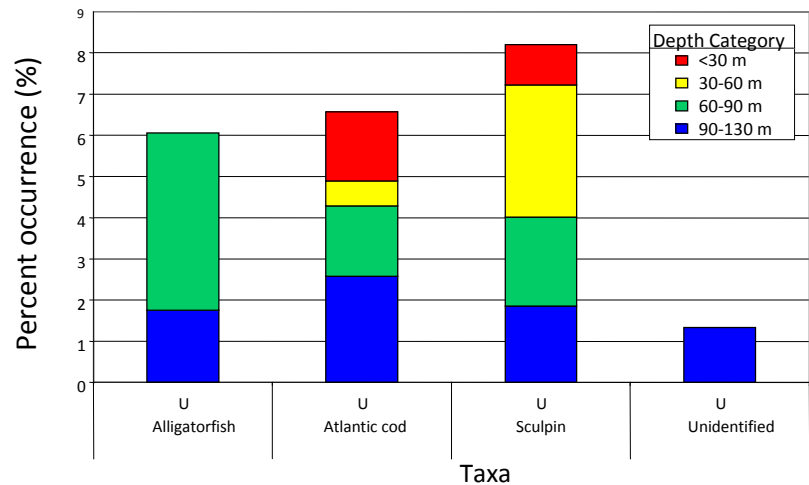
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate					Combined substrates total
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Cushion star (<i>Asterina sp.</i>)	U	%		2.5	0.4		0.5	3.4
Cushion star (<i>Asterina sp.</i>) total		%		2.5	0.4		0.5	3.4
Starfish (<i>Asterias sp.</i>)	C	%	0.4	4.8	3.5			8.7
	O	%	2.5	13.3	23.3	1.4	1.6	42.0
	U	%	1.0	9.0	21.4	7.9	7.9	39.3
Starfish (<i>Asterias sp.</i>) total		%	3.9	27.0	48.2	1.4	9.5	90.0
Starfish (<i>Crossaster sp.</i>)	C	%		0.4	0.8			1.2
	O	%	1.3	11.0	19.6	0.9	0.8	33.7
	U	%	1.3	15.4	24.2	0.4	7.5	48.8
Starfish (<i>Crossaster sp.</i>) total		%	2.6	26.9	44.5	1.4	8.3	83.7
Starfish (<i>Solaster sp.</i>)	O	%			3.3	0.9		4.2
	U	%		8.3	14.4		2.1	24.7
Starfish (<i>Solaster sp.</i>) total		%		8.3	17.7	0.9	2.1	29.0

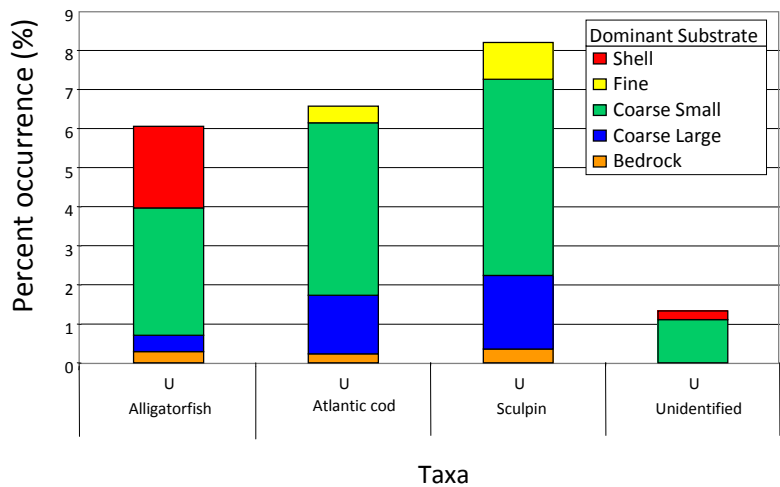
Figure G-7: Echinoderms (Starfish) – 2008 Marine Survey

Taxon by Depth



Taxa	Abundance	Coverage	Depth category				Combined depths total
			<30	30-60	60-90	90-130	
Alligatorfish (<i>Aspidophoroides monopterygius</i>)	U	%		4.3	1.8		6.1
Alligatorfish (<i>Aspidophoroides monopterygius</i>) total		%		4.3	1.8		6.1
Atlantic cod (<i>Gadus morhua</i>)	U	%	1.7	0.6	1.7	2.6	6.6
Atlantic cod (<i>Gadus morhua</i>) total		%	1.7	0.6	1.7	2.6	6.6
Sculpin (<i>Myoxocephalus sp.</i>)	U	%	1.0	3.2	2.2	1.9	8.2
Sculpin (<i>Myoxocephalus sp.</i>) total		%	1.0	3.2	2.2	1.9	8.2
Unidentified	U	%				1.3	1.3
Unidentified total		%				1.3	1.3

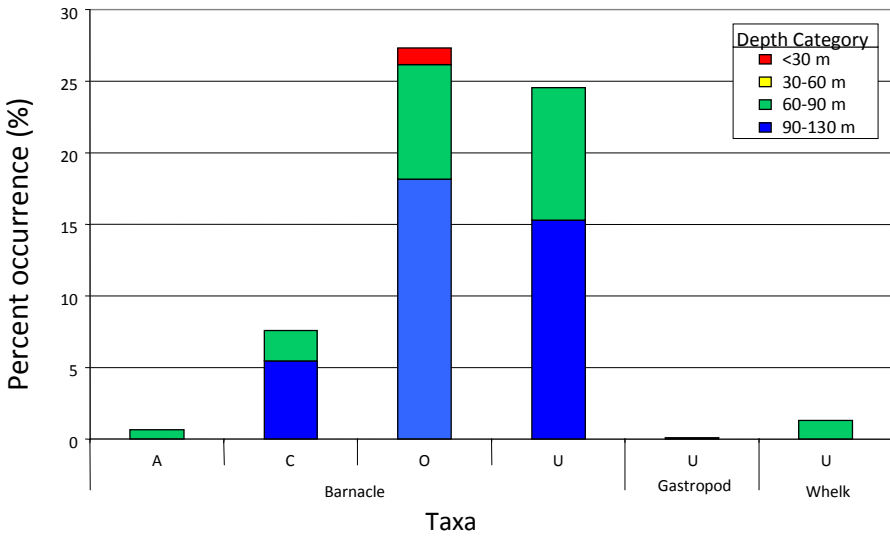
Taxon by Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate					Combined substrates total
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Alligatorfish (<i>Aspidophoroides monopterygius</i>)	U	%	0.3	0.4	3.3		2.1	6.1
Alligatorfish (<i>Aspidophoroides monopterygius</i>) total		%	0.3	0.4	3.3		2.1	6.1
Atlantic cod (<i>Gadus morhua</i>)	U	%	0.2	1.5	4.4	0.4		6.6
Atlantic cod (<i>Gadus morhua</i>) total		%	0.2	1.5	4.4	0.4		6.6
Sculpin (<i>Myoxocephalus sp.</i>)	U	%	0.4	1.9	5.0	0.9		8.2
Sculpin (<i>Myoxocephalus sp.</i>) total		%	0.4	1.9	5.0	0.9		8.2
Unidentified	U	%			1.1		0.2	1.3
Unidentified total		%			1.1		0.2	1.3

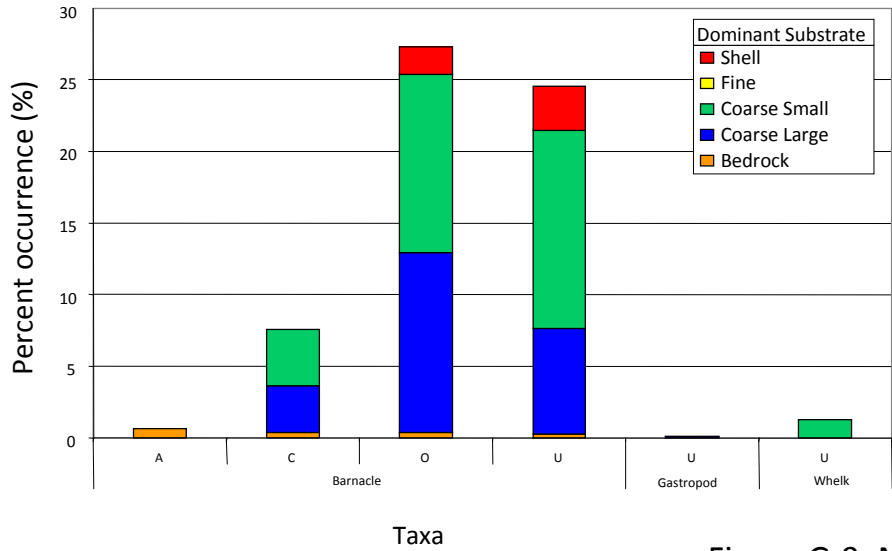
Figure G-8: Fish – 2008 Marine Survey

Taxon by Depth



Taxa	Abundance	Coverage	Depth category			Combined depths total
			<30	60-90	90-130	
Barnacle (<i>Balanus sp.</i>)	A	%		0.6		0.6
	C	%		2.1	5.5	7.6
	O	%	1.2	8.0	18.2	27.3
	U	%		9.2	15.3	24.5
Barnacle (<i>Balanus sp.</i>) total		%	1.2	20.0	38.9	60.1
Gastropod	U	%			0.1	0.1
Gastropod total		%			0.1	0.1
Whelk (<i>Buccinum sp.</i>)	U	%		1.3		1.3
Whelk (<i>Buccinum sp.</i>) total		%		1.3		1.3

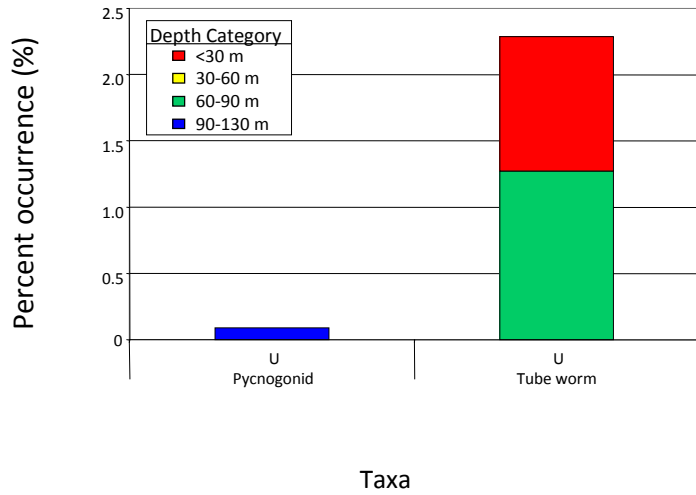
Taxon by Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate				Combined substrates total
			Bedrock	Coarse large	Coarse small	Shell	
Barnacle (<i>Balanus sp.</i>)	A	%	0.6				0.6
	C	%	0.4	3.3	3.9		7.6
	O	%	0.4	12.6	12.4	1.9	27.3
	U	%	0.3	7.4	13.8	3.1	24.5
Barnacle (<i>Balanus sp.</i>) total		%	1.6	23.2	30.2	5.0	60.1
Gastropod	U	%		0.1			0.1
Gastropod total		%		0.1			0.1
Whelk (<i>Buccinum sp.</i>)	U	%			1.3		1.3
Whelk (<i>Buccinum sp.</i>) total		%			1.3		1.3

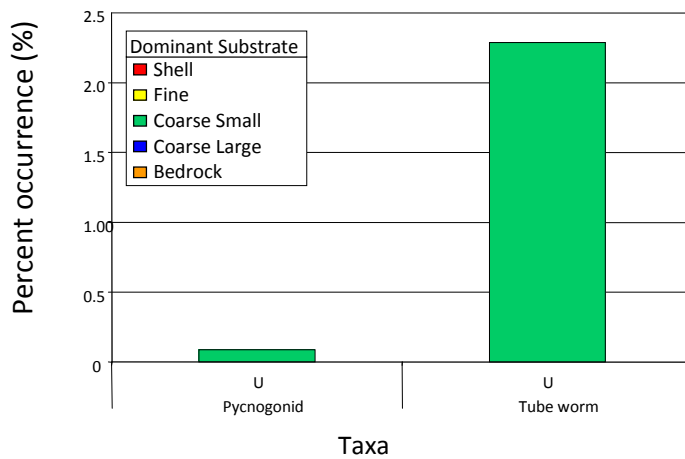
Figure G-9: Molluscs – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category			Combined depths total
			<30	60-90	90-130	
Pycnogonid (Pycnogonida)	U	%			0.1	0.1
Pycnogonid (Pycnogonida) total		%		0.1		0.1
Fanworm (Polychaeta)	U	%	1.0	1.3		2.3
Fanworm (Polychaeta) total		%	1.0	1.3		2.3

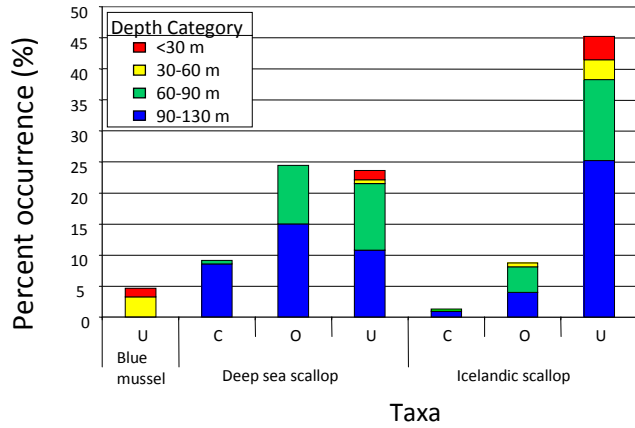
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate	Combined substrates total
			Coarse small	
Pycnogonid (Pycnogonida)	U	%	0.1	0.1
Pycnogonid (Pycnogonida) total		%	0.1	0.1
Fanworm (Polychaeta)	U	%	2.3	2.3
Fanworm (Polychaeta) total		%	2.3	2.3

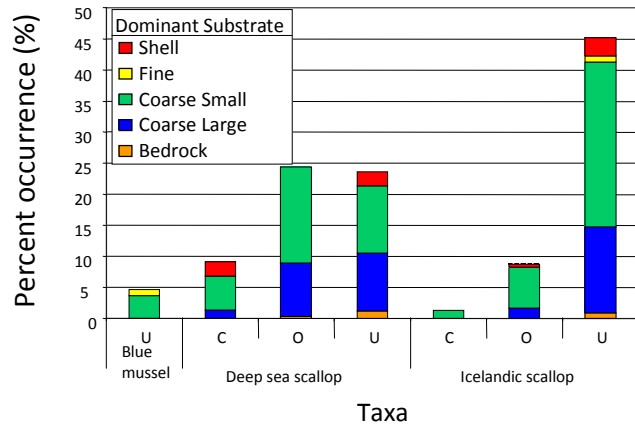
Figure G-10: Other – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth Category (m)				Combined depth totals
			<30	30-60	60-90	90-130	
Blue mussel (<i>Mytilus edulis</i>)	U	%	1.4	3.2			4.6
Blue mussel (<i>Mytilus edulis</i>) Total		%	1.4	3.2			4.6
Deep sea scallop (<i>Placopecten magellanicus</i>)	C	%			0.6	8.6	9.2
	O	%			9.4	15.0	24.4
	U	%	1.5	0.6	10.7	10.8	23.6
Deep sea scallop (<i>Placopecten magellanicus</i>) Total		%	1.5	0.6	20.7	34.4	57.2
Icelandic scallop (<i>Chlamys islandica</i>)	C	%			0.4	0.9	1.3
	O	%		0.6	4.2	3.9	8.7
	U	%	3.8	3.2	13.0	25.2	45.2
Icelandic scallop (<i>Chlamys islandica</i>) Total		%	3.8	3.8	17.6	30.1	55.2

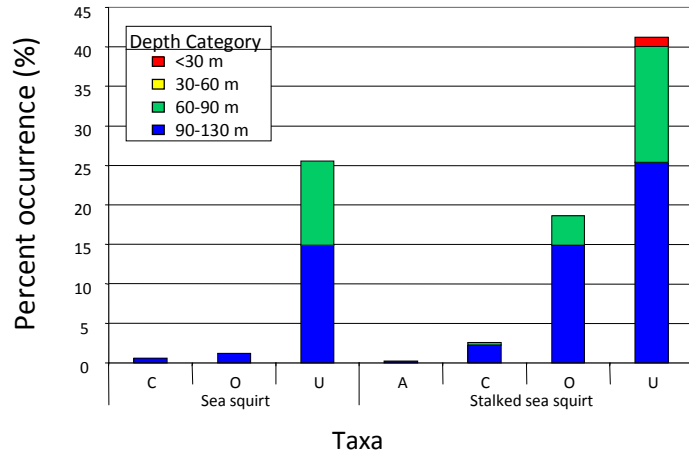
Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate					Combined substrate totals
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Blue mussel (<i>Mytilus edulis</i>)	U	%			3.7	0.9	4.6	
Blue mussel (<i>Mytilus edulis</i>) total		%			3.7	0.9	4.6	
Deep sea scallop (<i>Placopecten magellanicus</i>)	C	%		1.4	5.4	2.4	9.2	
	O	%	0.3	8.7	15.5		24.4	
	U	%	1.2	9.3	10.9	2.2	23.6	
Deep sea scallop (<i>Placopecten magellanicus</i>) total		%	1.5	19.3	31.8	4.6	57.2	
Icelandic scallop (<i>Chlamys islandica</i>)	C	%			1.3		1.3	
	O	%		1.7	6.6	0.4	8.7	
	U	%	0.9	13.8	26.6	0.9	3.0	45.2
Icelandic scallop (<i>Chlamys islandica</i>) total		%	0.9	15.5	34.4	0.9	3.4	55.2

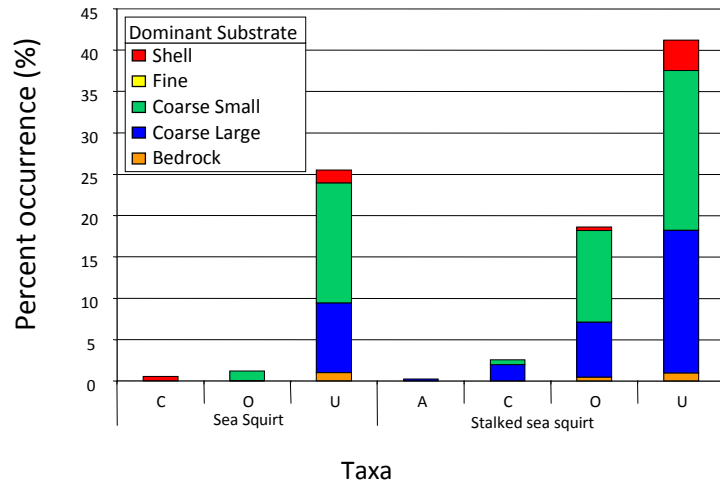
Figure G-11: Shellfish – 2008 Marine Survey

Taxon By Depth



Taxa	Abundance	Coverage	Depth category			Combined depths total
			<30	60-90	90-130	
Sea squirt (Ascidiacea)	C	%			0.6	0.6
	O	%			1.2	1.2
	U	%	10.6	14.9		25.5
Sea squirt (Ascidiacea) total						
			10.6	16.6		27.3
Stalked sea squirt (<i>Boltenia sp.</i>)	A	%			0.2	0.2
	C	%		0.3	2.2	2.6
	O	%		3.8	14.9	18.6
	U	%	1.2	14.7	25.3	41.2
Stalked sea squirt (<i>Boltenia sp.</i>) total						
			1.16	18.8	42.7	62.6

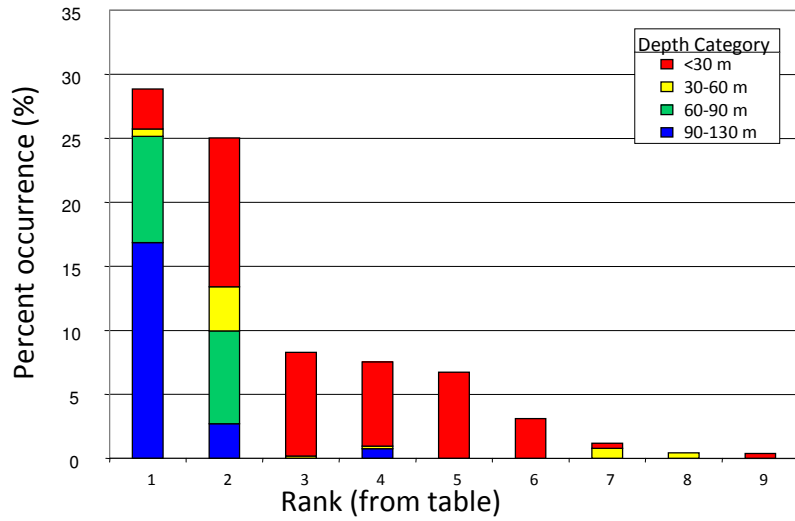
Taxon By Dominant Substrate



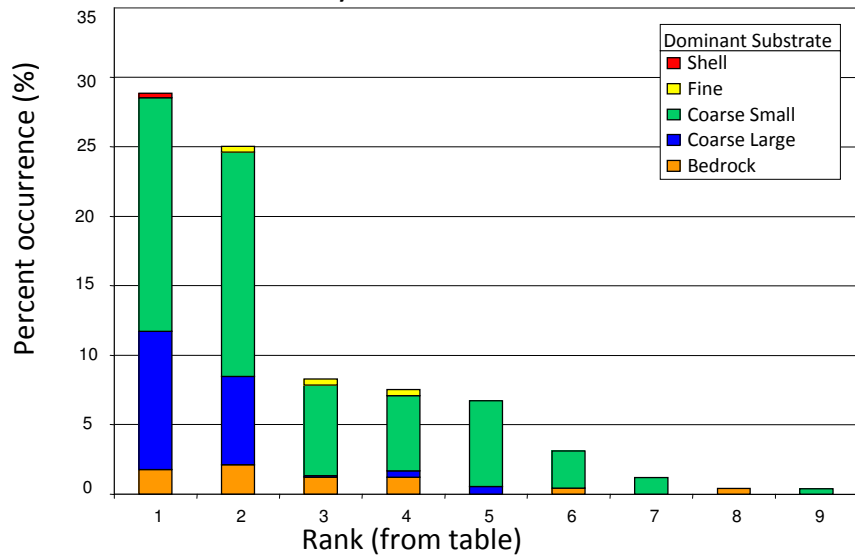
Taxa	Abundance	Coverage	Dominant substrate				Combined substrates total
			Bedrock	Coarse large	Coarse small	Shell	
Sea squirt (Ascidiacea)	C	%				0.6	0.6
	O	%		0.0	1.1		1.2
	U	%	1.0	8.4	14.5	1.6	25.5
Sea squirt (Ascidiacea) total							
			1.0	8.5	15.6	2.15	27.3
Stalked sea squirt (<i>Boltenia sp.</i>)	A	%			0.2		0.2
	C	%		2.0	0.6		2.5
	O	%	0.5	6.7	11.1	0.4	18.6
	U	%	1.0	17.3	19.2	3.7	41.2
Stalked sea squirt (<i>Boltenia sp.</i>) total							
			1.5	26.2	30.9	4.13	62.6

Figure G-12: Tunicates – 2008 Marine Survey

Taxon By Depth



Taxon By Dominant Substrate

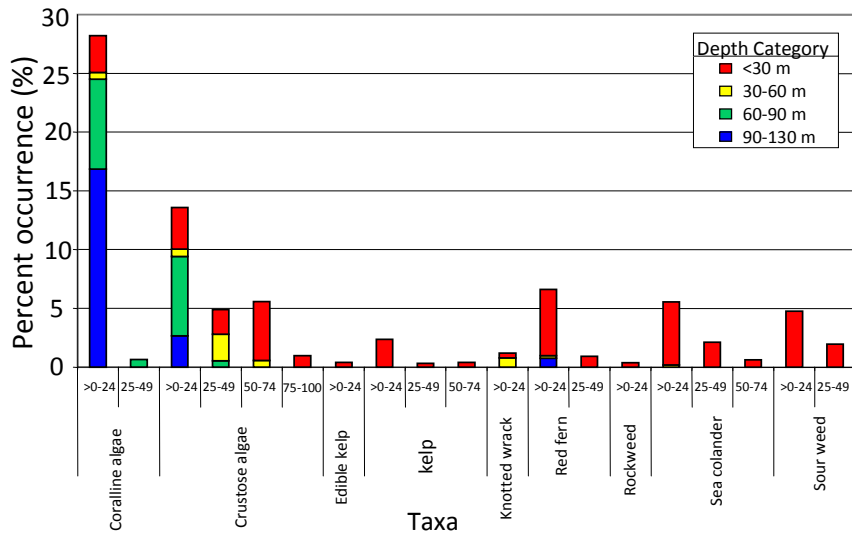


Rank*	Common Name	Category
1	Coralline algae (various species)	Red algae
2	Crustose algae (<i>Lithothamnium sp.</i>)	Red algae
3	Sea colander (<i>Agurum cribosum</i>)	Brown algae
4	Red fern (<i>Ptilota sp.</i>)	Red algae
5	Sour weed (<i>Desmarestia sp.</i>)	Brown algae
6	Kelp (<i>Laminaria sp.</i>)	Brown algae
7	Knotted wrack (<i>Ascophyllum nodosum</i>)	Brown algae
8	Edible kelp (<i>Alaria sp.</i>)	Brown algae
9	Rockweed (<i>Fucus sp.</i>)	Brown algae

* Rank is based on number of reaches where macrofaunal species occurred

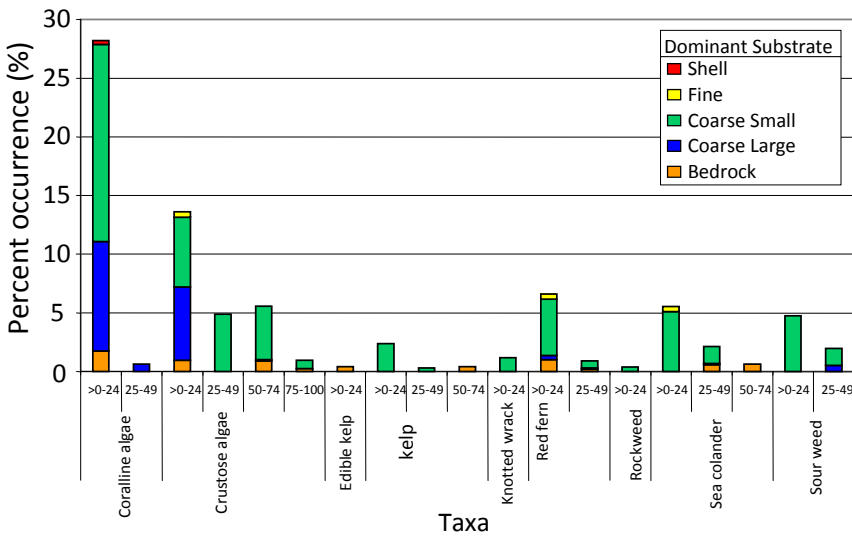
Figure G-13: Summary of Depth and Substrate Distribution for all Macroflora – 2008 Marine Survey

Taxon By Depth



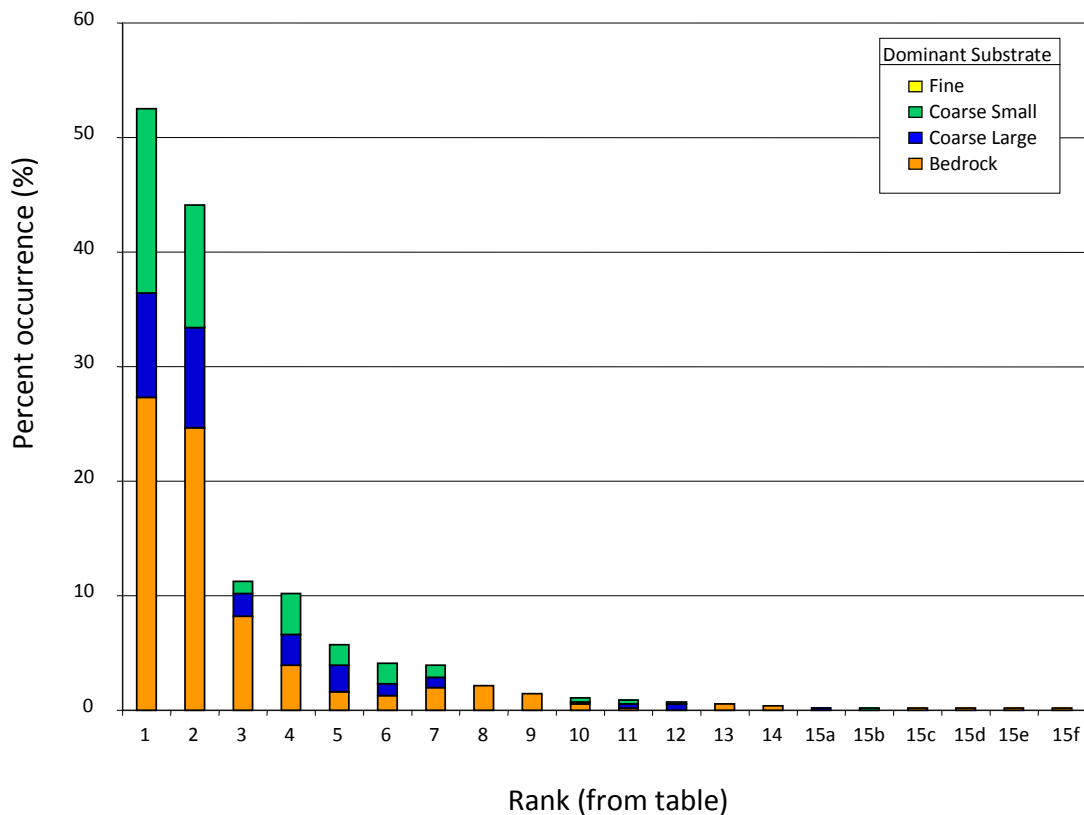
Taxa	Abundance	Coverage	Depth Category				Combined substrates total
			<30	30-60	60-90	90-130	
Coralline algae	0-24	%	3.1	0.6	7.6	16.9	28.2
	25-49	%			0.6		0.6
Coralline algae total		%	3.1	0.6	8.3	16.9	28.9
Crustose algae (<i>Lithothamnium</i> sp.)	0-24	%	3.6	0.6	6.7	2.7	13.6
	25-49	%	2.1	2.3	0.5		4.9
	50-74	%	5.0	0.6			5.6
	75-100	%	1.0				1.0
Crustose algae (<i>Lithothamnium</i> sp.) total		%	11.6	3.5	7.3	2.7	25.0
Edible kelp (<i>Alaria</i> sp.)	0-24	%	0.4				0.4
Edible kelp (<i>Alaria</i> sp.) total		%	0.4				0.4
Kelp (<i>Laminaria</i> sp.)	0-24	%	2.4				2.4
	25-49	%	0.3				0.3
	50-74	%	0.4				0.4
Kelp (<i>Laminaria</i> sp.) total		%	3.1				3.1
Knotted wrack (<i>Ascophyllum nodosum</i>)	0-24	%	0.4	0.8			1.2
Knotted wrack (<i>Ascophyllum nodosum</i>) total		%	0.4	0.8			1.2
Red fern (<i>Ptilota</i> sp.)	0-24	%	5.6	0.2		0.8	6.6
	25-49	%	0.9				0.9
Red fern (<i>Ptilota</i> sp.) total		%	6.6	0.2		0.8	7.5
Rockweed (<i>Fucus</i> sp.)	0-24	%	0.4				0.4
Rockweed (<i>Fucus</i> sp.) total		%	0.4				0.4
Sea colander (<i>Agarum cribrosum</i>)	0-24	%	5.3	0.2			5.5
	25-49	%	2.1				2.1
	50-74	%	0.6				0.6
Sea colander (<i>Agarum cribrosum</i>) total		%	8.1	0.2			8.3
Sour weed (<i>Desmarestia</i> sp.)	0-24	%	4.8				4.8
	25-49	%	2.0				2.0
Sour weed (<i>Desmarestia</i> sp.) total		%	6.7				6.7

Taxon By Dominant Substrate



Taxa	Abundance	Coverage	Dominant substrate						Combined substrates total
			Bedrock	Coarse large	Coarse small	Fine	Shell		
Coralline algae	0-24	%	1.8	9.3	16.8		0.3	28.2	
	25-49	%		0.6				0.6	
Coralline algae total		%	1.8	10.0	16.8		0.3	28.9	
Crustose algae (<i>Lithothamnium</i> sp.)	0-24	%	1.0	6.2	6.0	0.4		13.6	
	25-49	%			4.9			4.9	
	50-74	%	0.9	0.1	4.5			5.6	
	75-100	%	0.2		0.7			1.0	
Crustose algae (<i>Lithothamnium</i> sp.) total		%	2.1	6.3	16.1	0.4		25.0	
Edible kelp (<i>Alaria</i> sp.)	0-24	%	0.4					0.4	
Edible kelp (<i>Alaria</i> sp.) total		%	0.4					0.4	
Kelp (<i>Laminaria</i> sp.)	0-24	%			2.4			2.4	
	25-49	%			0.3			0.3	
	50-74	%			0.4			0.4	
Kelp (<i>Laminaria</i> sp.) total		%	0.4		2.7			3.1	
Knotted wrack (<i>Ascophyllum nodosum</i>)	0-24	%			1.2			1.2	
Knotted wrack (<i>Ascophyllum nodosum</i>) total		%			1.2			1.2	
Red Fern (<i>Ptilota</i> sp.)	0-24	%	1.0	0.4	4.8	0.4		6.6	
	25-49	%	0.2	0.1	0.6			0.9	
Red fern (<i>Ptilota</i> sp.) total		%	1.2	0.5	5.4	0.4		7.5	
Rockweed (<i>Fucus</i> sp.)	0-24	%			0.4			0.4	
Rockweed (<i>Fucus</i> sp.) total		%			0.4			0.4	
Sea colander (<i>Agarum cribrosum</i>)	0-24	%			5.1	0.4		5.5	
	25-49	%	0.6	0.1	1.4			2.1	
	50-74	%	0.6					0.6	
Sea colander (<i>Agarum cribrosum</i>) total		%	1.2	0.1	6.5	0.4		8.3	
Sour weed (<i>Desmarestia</i> sp.)	0-24	%			4.8			4.8	
	25-49	%			0.5	1.4		2.0	
Sour weed (<i>Desmarestia</i> sp.) total		%			6.2			6.7	

Figure G-14: Depth and Substrate Distribution for all Macroflora – 2008 Marine Survey



Rank*	Species	Category
1	Periwinkle (<i>Littorina sp.</i>)	Mollusc
2	Starfish (<i>Asterias sp.</i>)	Echinoderm
3	Blue mussel (<i>Mytilus edulis</i>)	Mollusc
4	Green urchin (<i>Strongylocentrotus droebachiensis</i>)	Echinoderm
5	Rock crab (<i>Cancer sp.</i>)	Crustacean
6	Hermit crab (<i>Paragus sp.</i>)	Mollusc
7	Whelk (Gastropod)	Mollusc
8	Barnacle (<i>Balanus sp.</i>)	Mollusc
9	Limpet	Mollusc
10	Sponge (Porifera)	Other
11	Sculpin (<i>Myoxocephalus sp.</i>)	Fish
12	Sea cucumber (<i>Cucumeria frondosa</i>)	Echinoderm
13	Isopod	Crustacean
14	Grass shrimp (<i>Palaemonetes sp.</i>)	Crustacean
15a	Brittle star (<i>Ophiuroidea</i>)	Echinoderm
15b	Cunner (<i>Tautoglabrus adspersus</i>)	Fish
15c	Ribbon whelk	Mollusc
15d	Sea anemone (<i>Metridium sp.</i>)	Other
15e	Winter flounder (<i>Pseudopleuronectes americanus</i>)	Fish
15f	Ocean pout (<i>Zoarces americanus</i>)	Fish

* Rank is based on number of reaches where macrofaunal species occurred
 ** All taxa ranked as 15 occurred in a single 5-m reach

Figure G-15: Summary of Substrate Distribution for all Macrofauna – 2009 Marine Survey

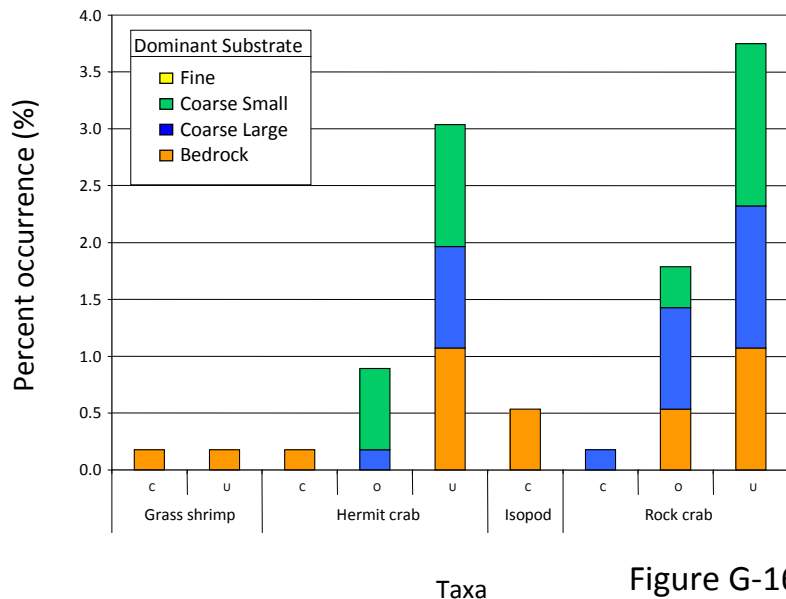


Figure G-16: Crustaceans – 2009 Marine Survey

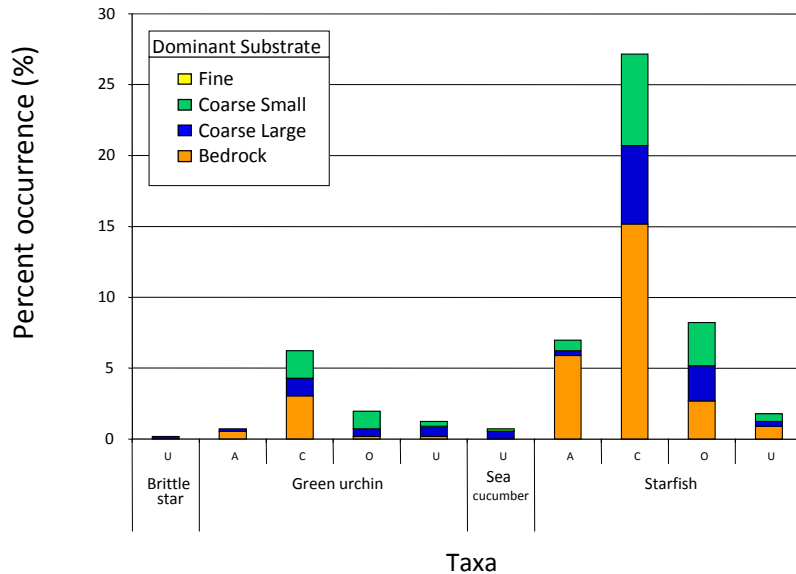


Figure G-17: Echinoderms – 2009 Marine Survey

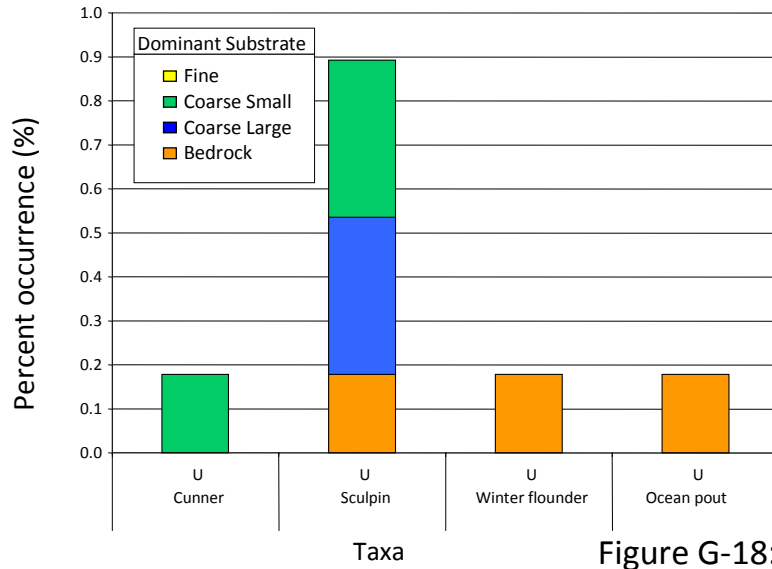


Figure G-18: Fish – 2009 Marine Survey

Taxa	Abundance	Coverage	Dominant substrate			Combined substrates total
			Bedrock	Coarse large	Coarse small	
Cunner (<i>Tautoglabrus adspersus</i>)	U	%			0.2	0.2
Cunner (<i>Tautoglabrus adspersus</i>) total		%			0.2	0.2
Sculpin (<i>Myoxocephalus sp.</i>)	U	%	0.2	0.4	0.4	0.9
Sculpin (<i>Myoxocephalus sp.</i>) total		%	0.2	0.4	0.4	0.9
Winter flounder (<i>Pseudopleuronectes americanus</i>)	U	%			0.2	0.2
Winter flounder (<i>Pseudopleuronectes americanus</i>) total		%			0.2	0.2
Ocean pout (<i>Zoarces americanus</i>)	U	%			0.2	0.2
Ocean pout (<i>Zoarces americanus</i>) total		%			0.2	0.2

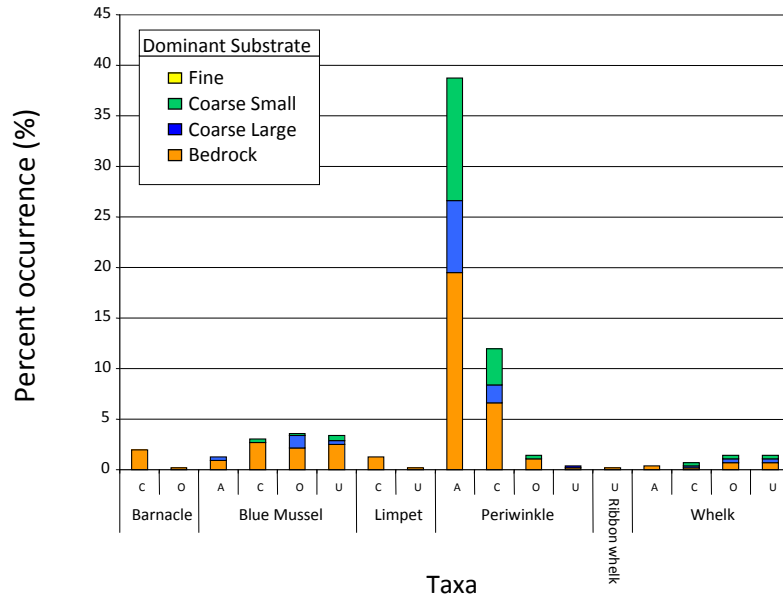
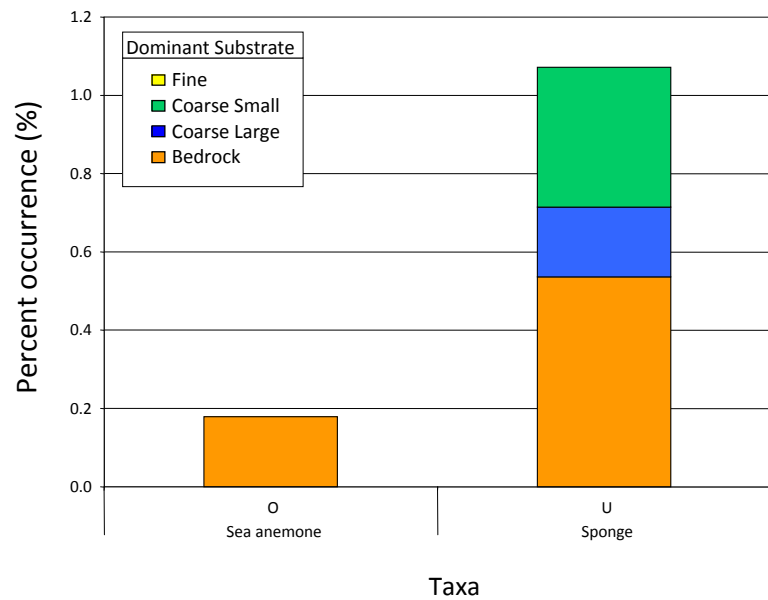


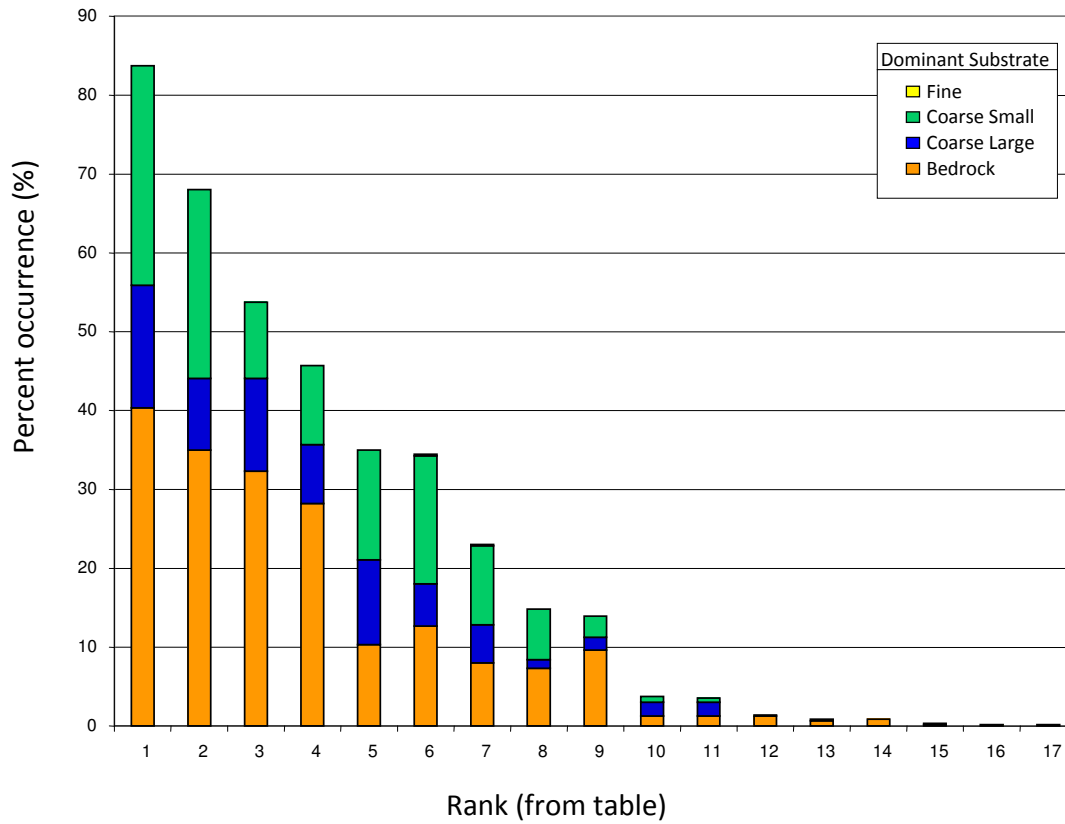
Figure G-19: Molluscs – 2009 Marine Survey

Taxa	Abundance	Coverage	Dominant substrate			Combined Substrates Total
			Bedrock	Coarse large	Coarse small	
Barnacle (<i>Balanus sp.</i>)	C	%	2.0			2.0
	O	%	0.2			0.2
Barnacle (<i>Balanus sp.</i>) total		%	2.1			2.1
Blue mussel (<i>Mytilus edulis</i>)	A	%	0.9	0.4		1.3
	C	%	2.7		0.4	3.0
	O	%	2.1	1.3	0.2	3.6
	U	%	2.5	0.4	0.5	3.4
Blue mussel (<i>Mytilus edulis</i>) total		%	8.2	2.0	1.1	11.3
Limpet	C	%	1.3			1.3
	U	%	0.2			0.2
Limpet total		%	1.4			1.4
Periwinkle (<i>Littorina sp.</i>)	A	%	19.5	7.1	12.1	38.8
	C	%	6.6	1.8	3.6	12.0
	O	%	1.1		0.4	1.4
	U	%	0.2	0.2		0.4
Periwinkle (<i>Littorina sp.</i>) total		%	27.3	9.1	16.1	52.5
Ribbon whelk	U	%	0.2			0.2
Ribbon whelk total		%	0.2			0.2
Whelk (Gastropod)	A	%	0.4			0.4
	C	%	0.2	0.2	0.4	0.7
	O	%	0.7	0.4	0.4	1.4
	U	%	0.7	0.4	0.4	1.4
Whelk (Gastropod) total		%	2.0	0.9	1.1	3.9



Taxa	Abundance	Coverage	Dominant substrate			Combined substrates total
			Bedrock	Coarse large	Coarse small	
Sea anemone (<i>Metridium sp.</i>)	O	%	0.2			0.2
Sea anemone (<i>Metridium sp.</i>) total		%	0.2			0.2
Sponge (Porifera)	U	%	0.5	0.2	0.4	1.1
Sponge (Porifera) total		%	0.5	0.2	0.4	1.1

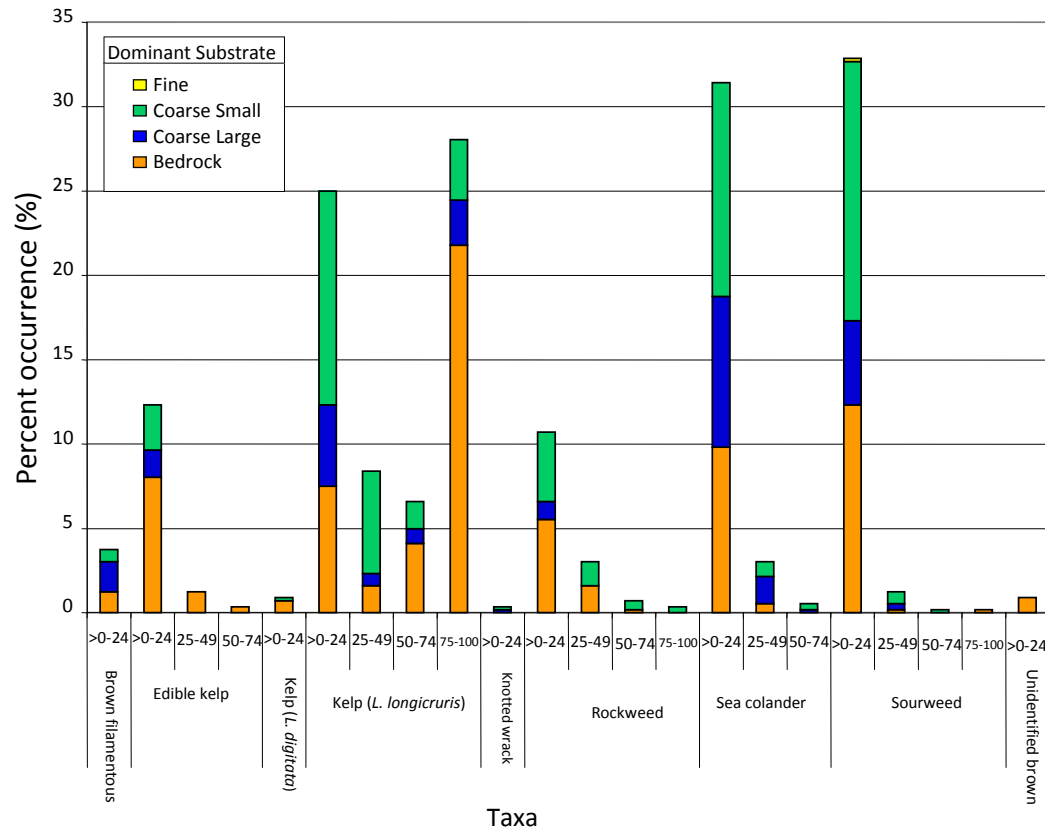
Figure G-20: Other – 2009 Marine Survey



Rank*	Species	% Area
1	Crustose algae (<i>Lithothamnium sp.</i>)	83.8
2	Kelp (<i>Laminaria longicuris</i>)	68.0
3	Coralline algae (<i>Corallina officinalis</i>)	53.8
4	Crustose algae (non <i>Lithothamnium</i>)	45.7
5	Sea colander (<i>Agarum cribrosum</i>)	35.0
6	Sourweed (<i>Desmarestia sp.</i>)	34.5
7	Red fern (<i>Ptilota sp.</i>)	23.0
8	Rockweed (<i>Fucus sp.</i>)	14.8
9	Edible kelp (<i>Alaria sp.</i>)	13.9
10	Brown filamentous algae (Phaeophyceae)	3.8
11	Green filamentous algae (Archaepplastida)	3.6
12	Dulse (<i>Palmaria palmata</i>)	1.4
13	Kelp (<i>Laminaria digitata</i>)	0.9
14	Unidentified brown algae	0.9
15	Knotted wrack (<i>Ascophyllum nodosum</i>)	0.4
16	Sea lettuce (<i>Ulva sp.</i>)	0.2
17	Cord weed (<i>Chorda sp.</i>)	0.2

* Rank is based on number of reaches where macrofaunal species occurred

Figure G-21: Substrate Distributions for all Macroflora – 2009 Marine Survey



Taxa	Abundance	Coverage	Dominant substrate				Combined substrates total
			Bedrock	Coarse large	Coarse small	Fine	
Brown filamentous algae (Phaeophyceae)	>0-24	%	1.3	1.8	0.7		3.8
Brown filamentous algae (Phaeophyceae) total		%	1.3	1.8	0.7		3.8
Edible kelp (<i>Alaria sp.</i>)	>0-24	%	8.0	1.6	2.7		12.3
	25-49	%	1.3				1.3
	50-74	%	0.4				0.4
Edible kelp (<i>Alaria sp.</i>) total		%	9.6	1.6	2.7		13.9
Kelp (<i>Laminaria digitata</i>)	>0-24	%	0.7		0.2		0.9
Kelp (<i>Laminaria digitata</i>) total		%	0.7		0.2		0.9
Kelp (<i>Laminaria longicuris</i>)	>0-24	%	7.5	4.8	12.7		25.0
	25-49	%	1.6	0.7	6.1		8.4
	50-74	%	4.1	0.9	1.6		6.6
	75-100	%	21.8	2.7	3.6		28.0
Kelp (<i>Laminaria longicuris</i>) total		%	35.0	9.1	23.9		68.0
Knotted wrack (<i>Ascophyllum nodosum</i>)	>0-24	%		0.2	0.2		0.4
Knotted wrack (<i>Ascophyllum nodosum</i>) total		%		0.2	0.2		0.4
Rockweed (<i>Fucus sp.</i>)	>0-24	%	5.5	1.1	4.1		10.7
	25-49	%	1.6		1.4		3.0
	50-74	%	0.2		0.5		0.7
	75-100	%			0.4		0.4
Rockweed (<i>Fucus sp.</i>) total		%	7.3	1.1	6.4		14.8
Sea colander (<i>Agarum cribrosum</i>)	>0-24	%	9.8	8.9	12.7		31.4
	25-49	%	0.5	1.6	0.9		3.0
	50-74	%		0.2	0.4		0.5
Sea colander (<i>Agarum cribrosum</i>) total		%	10.4	10.7	13.9		35.0
Sourweed (<i>Desmarestia sp.</i>)	>0-24	%	12.3	5.0	15.4	0.2	32.9
	25-49	%	0.2	0.4	0.7		1.3
	50-74	%			0.2		0.2
	75-100	%	0.2				0.2
Sourweed (<i>Desmarestia sp.</i>) total		%	12.7	5.4	16.3	0.2	34.5
Unidentified brown algae	>0-24	%	0.9				0.9
Unidentified brown algae total		%	0.9				0.9

Figure G-22: Brown Algae – 2009 Marine Survey

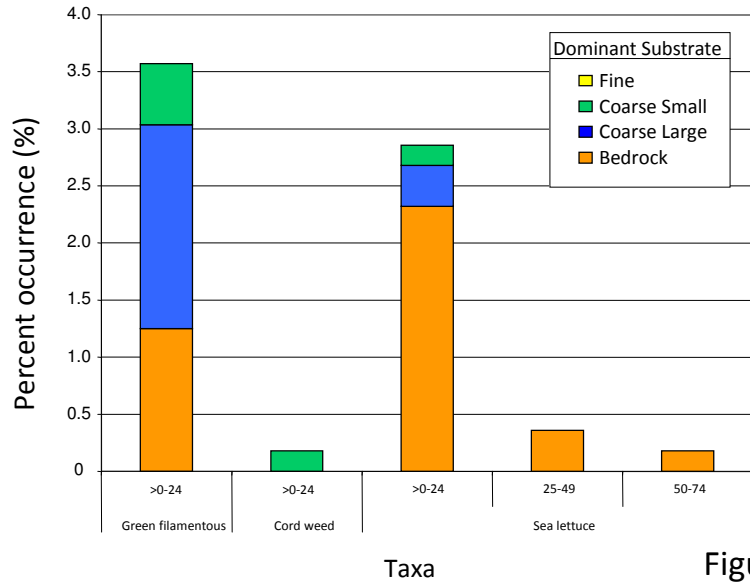


Figure G-23: Green Algae – 2009 Marine Survey

Taxa	Abundance	Coverage	Dominant substrate					Combined substrates total
			Bedrock	Coarse large	Coarse small	Fine	Shell	
Green filamentous algae	>0-24	%	1.3	1.8	0.5			3.6
Green filamentous algae total		%	1.3	1.8	0.5			3.6
Cord weed (<i>Chorda sp.</i>)	>0-24	%			0.2			0.2
Cord weed (<i>Chorda sp.</i>) total		%			0.2			0.2
Sea lettuce (<i>Ulva sp.</i>)	>0-24	%			0.2			0.2
Sea lettuce (<i>Ulva sp.</i>) total		%			0.2			0.2

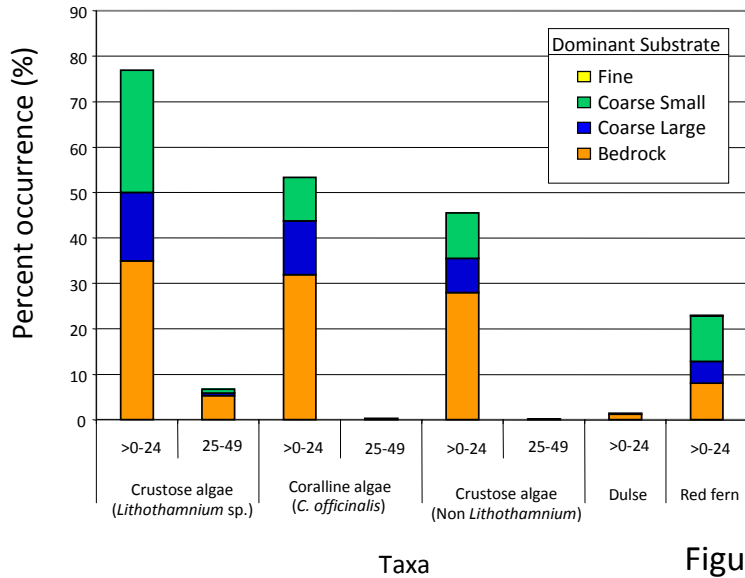


Figure G-24: Red Algae – 2009 Marine Survey

Taxa	Abundance	Coverage	Dominant substrate				Combined Substrates Total
			Bedrock	Coarse large	Coarse small	Fine	
Crustose algae (<i>Lithothamnium sp.</i>)	>0-24	%	35.0	15.0	27.0		77.0
	25-49	%	5.4	0.5	0.9		6.8
Crustose algae (<i>Lithothamnium sp.</i>) total		%	40.4	15.5	27.9		83.7
Coralline algae (<i>Corallina officinalis</i>)	>0-24	%	32.0	11.8	9.6		53.4
	25-49	%	0.4	0.0	0.0		0.4
Coralline algae (<i>Corallina officinalis</i>) total		%	32.3	11.8	9.6		53.7
Crustose algae (Non <i>Lithothamnium sp.</i>)	>0-24	%	28.0	7.5	10.0		45.5
	25-49	%	0.2	0.0	0.0		0.2
Crustose algae Non <i>Lithothamnium sp.</i> total		%	28.2	7.5	10.0		45.7
Dulse (<i>Palmaria palmata</i>)	>0-24	%	1.3	0.0	0.2		1.4
Dulse (<i>Palmaria palmata</i>) total		%	1.3		0.2		1.4
Red fern (<i>Ptilota sp.</i>)	>0-24	%	8.0	4.8	10.0	0.2	23.0
	25-49	%	0.0	0.0	0.0	0.0	0.0
Red fern (<i>Ptilota sp.</i>) total		%	8.0	4.8	10.0	0.2	23.0

APPENDIX H

Macrofloral Distributions

APPENDIX H

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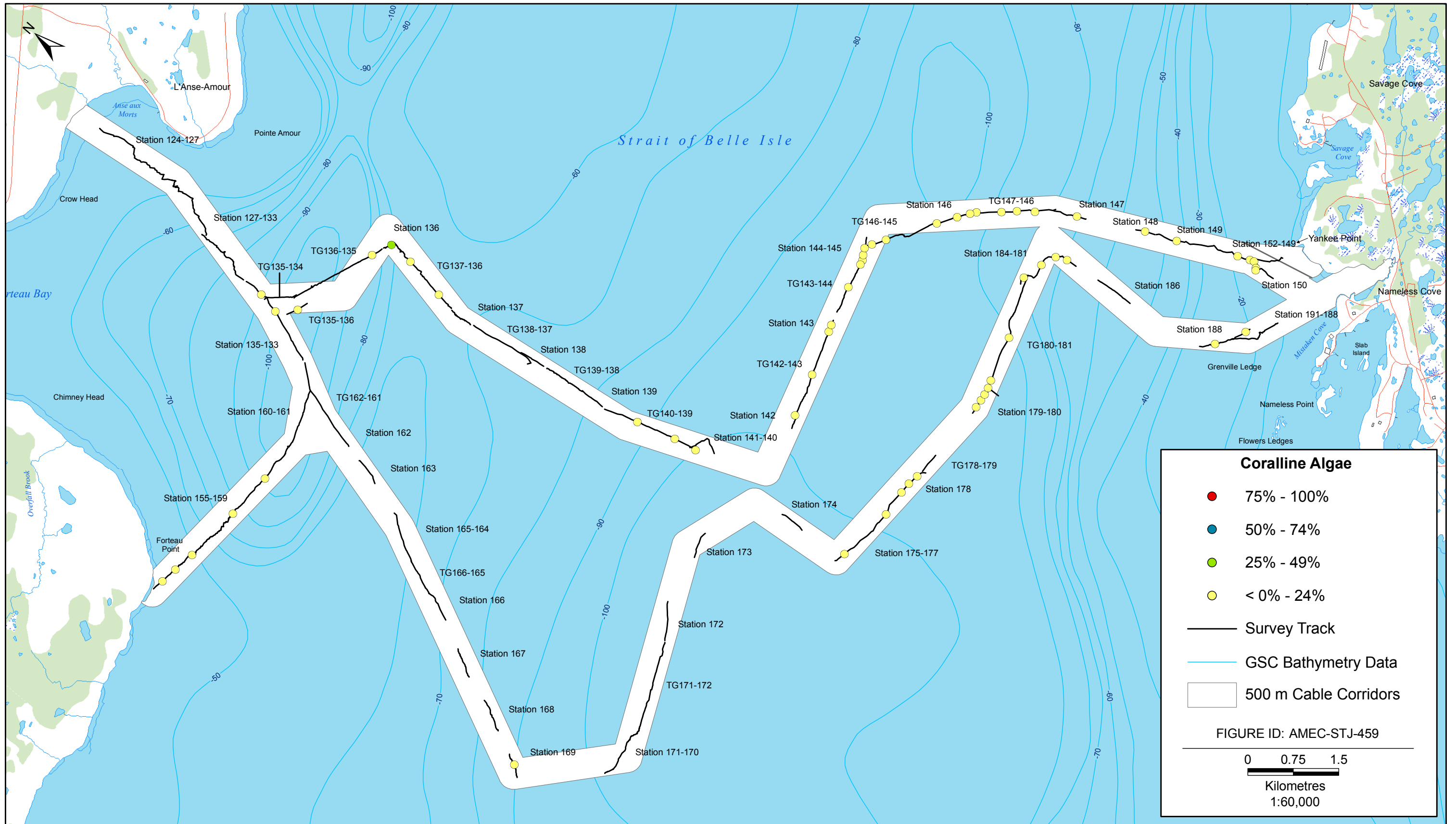


Figure H-1

Coralline Algae (various species) - 2008 Survey



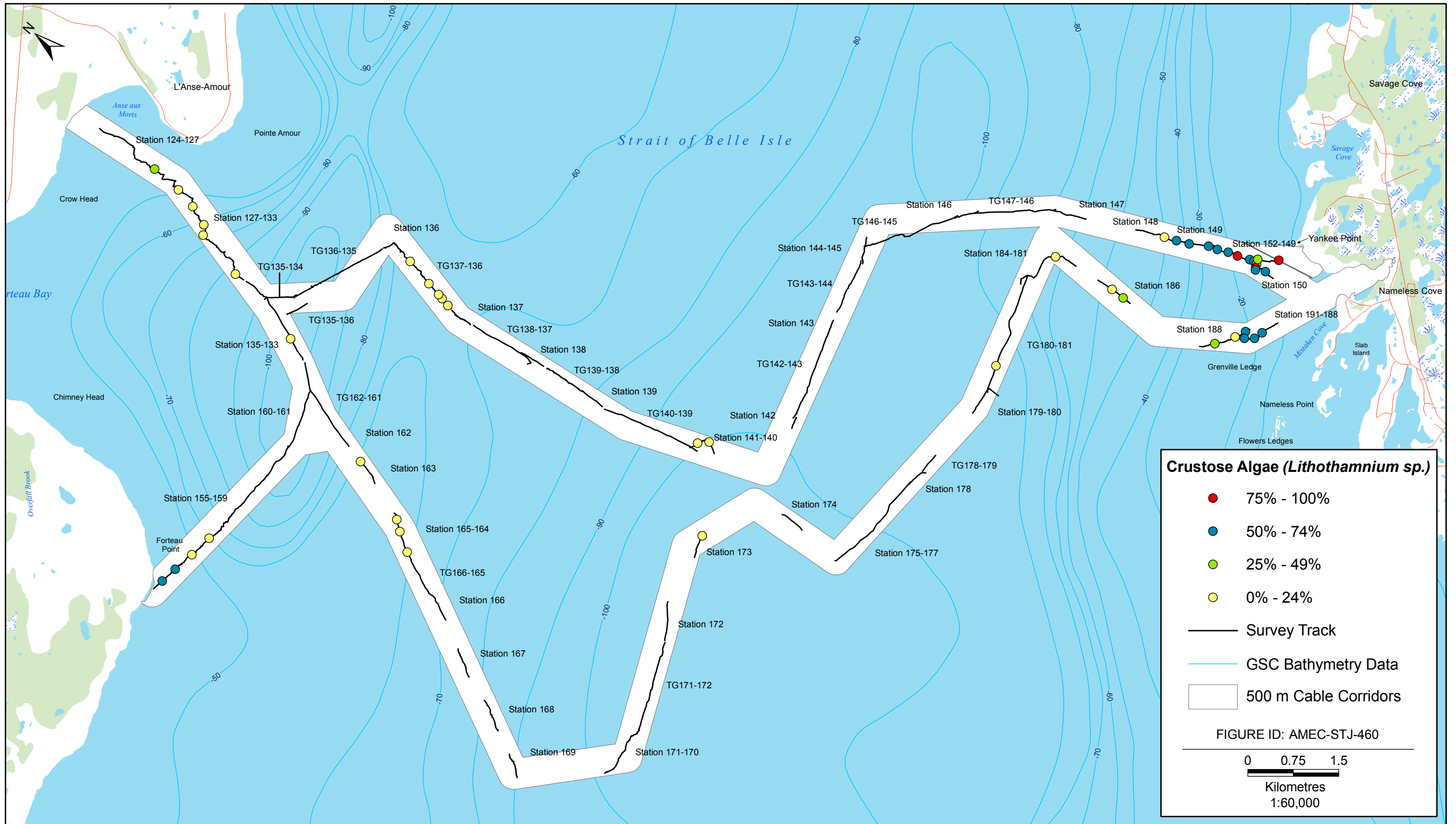


Figure H-2



Crustose Algae (*Lithothamnium sp.*) - 2008 Survey

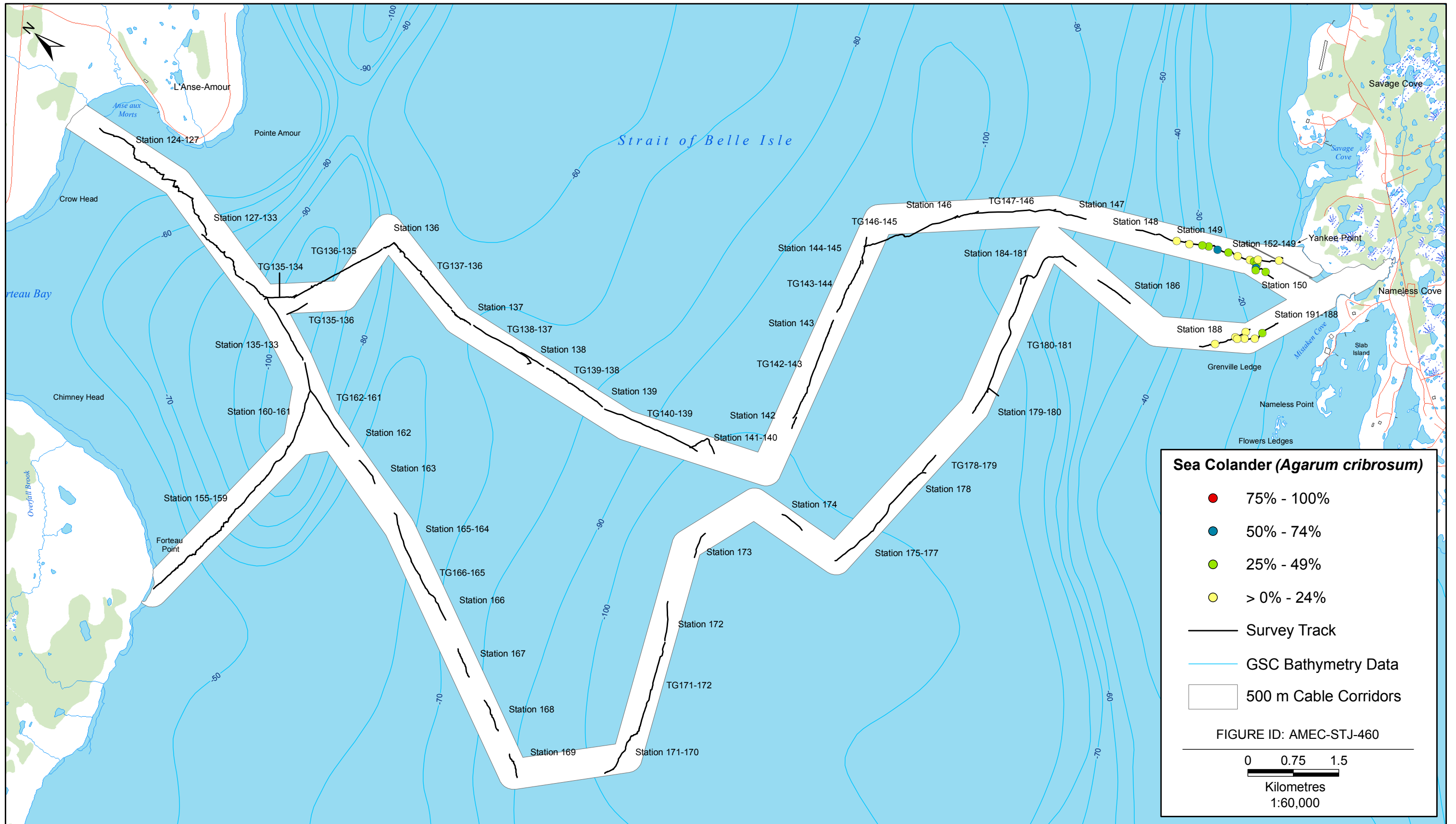


Figure H-3



Sea Colander (*Agarum cribrosum*) - 2008 Survey

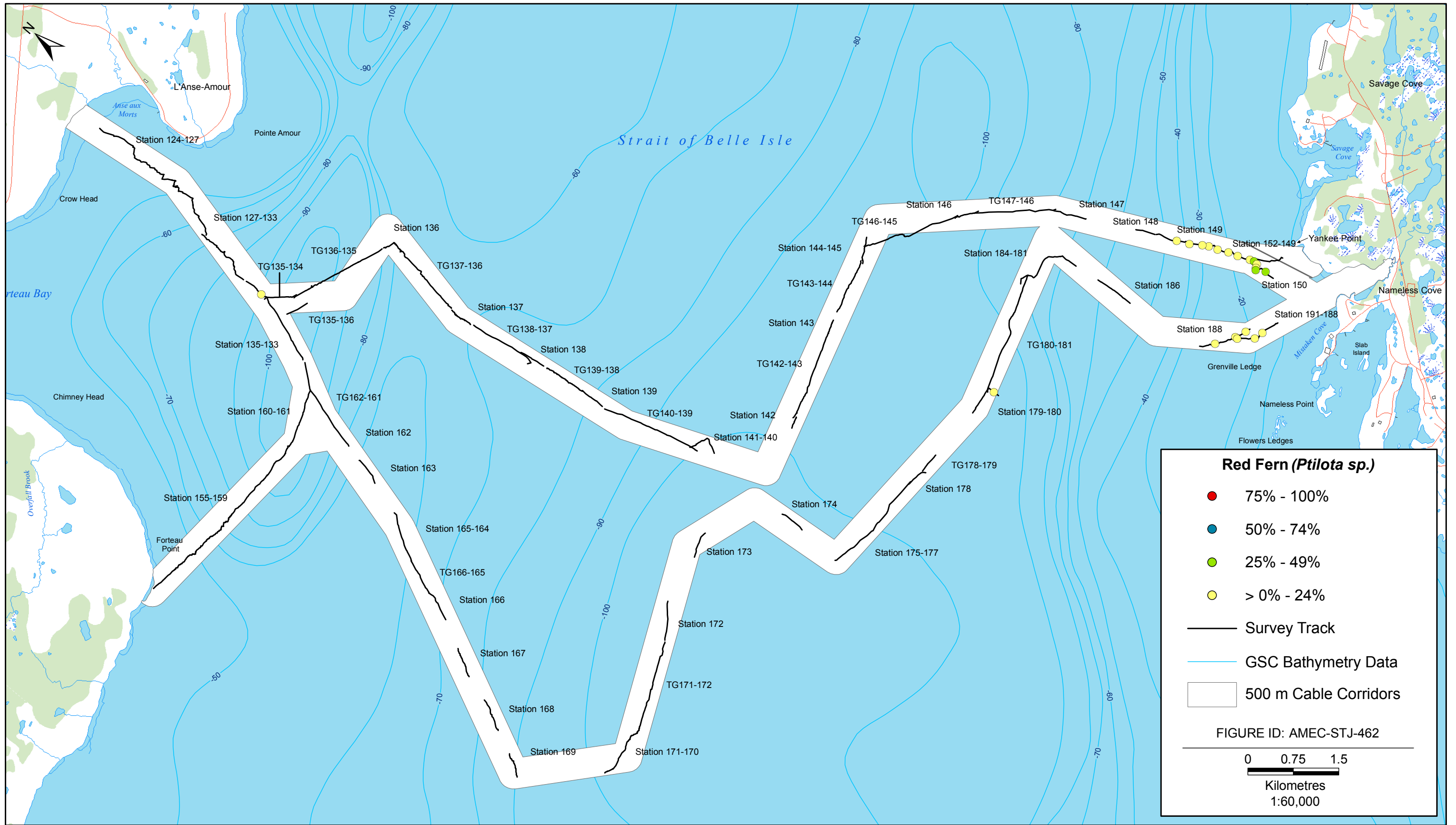


Figure H-4

Red Fern (*Ptilota sp.*) - 2008 Survey



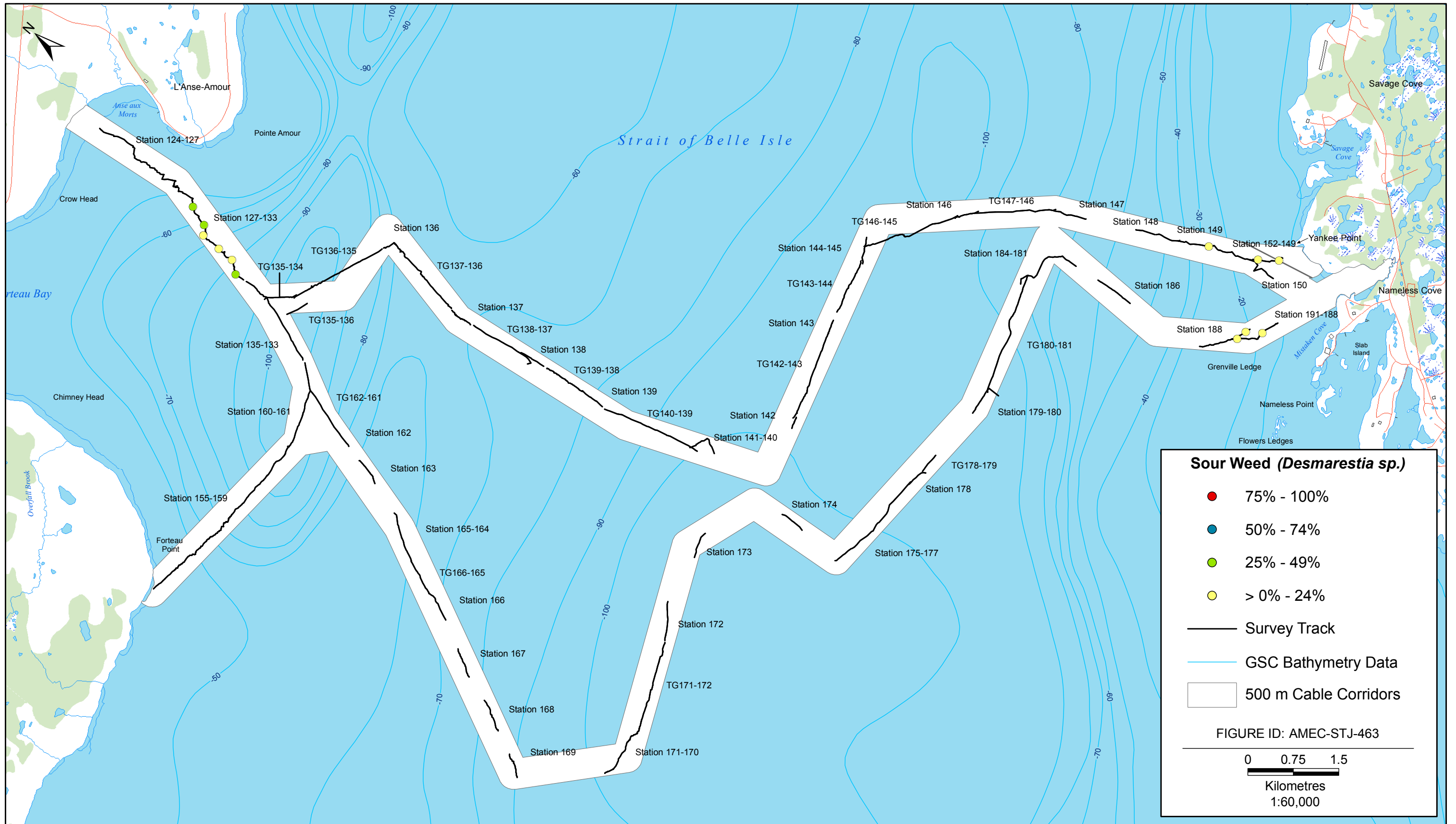


Figure H-5



Sour Weed (*Desmarestia sp.*) - 2008 Survey

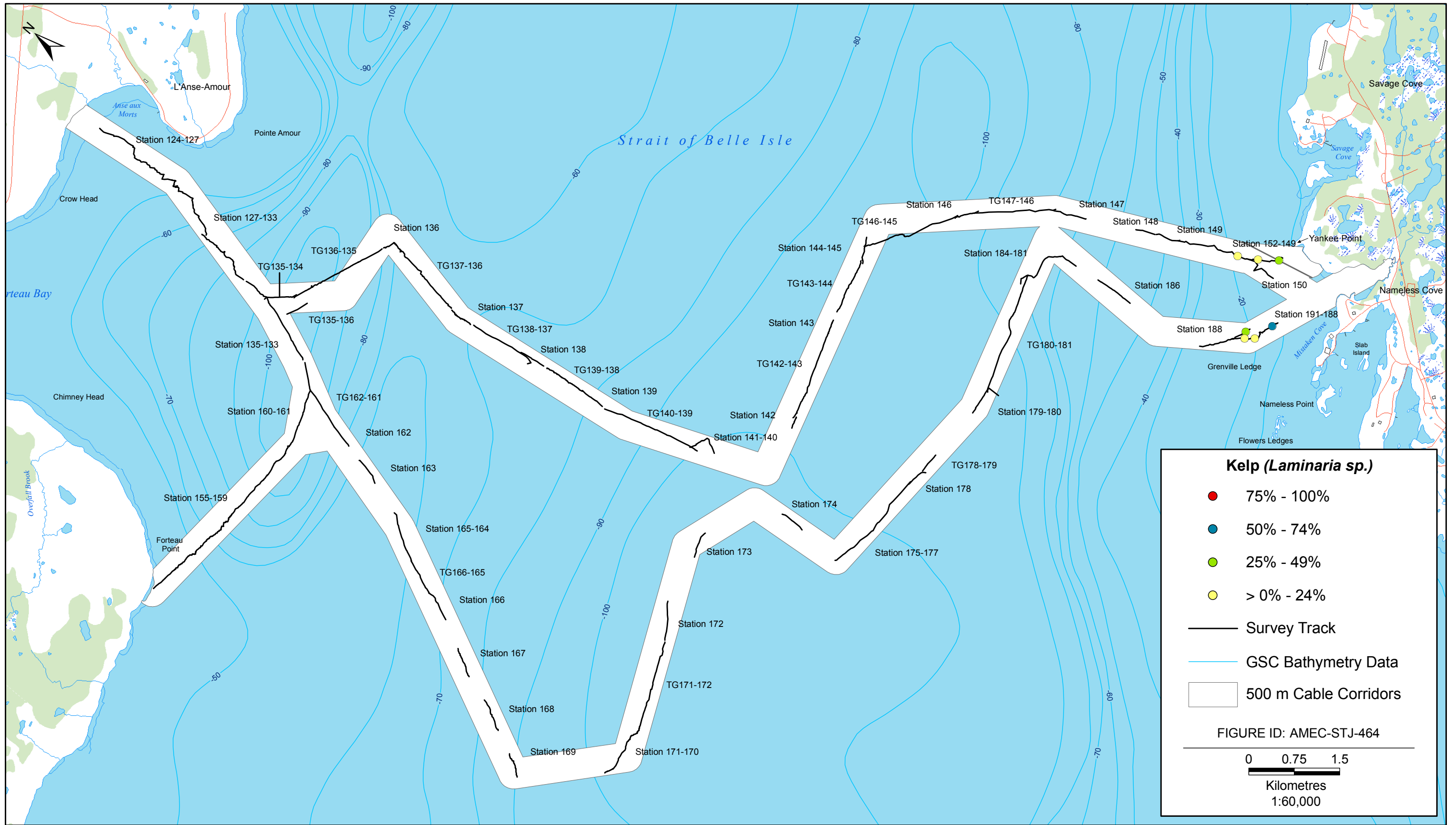


Figure H-6

Kelp (*Laminaria sp.*) - 2008 Survey



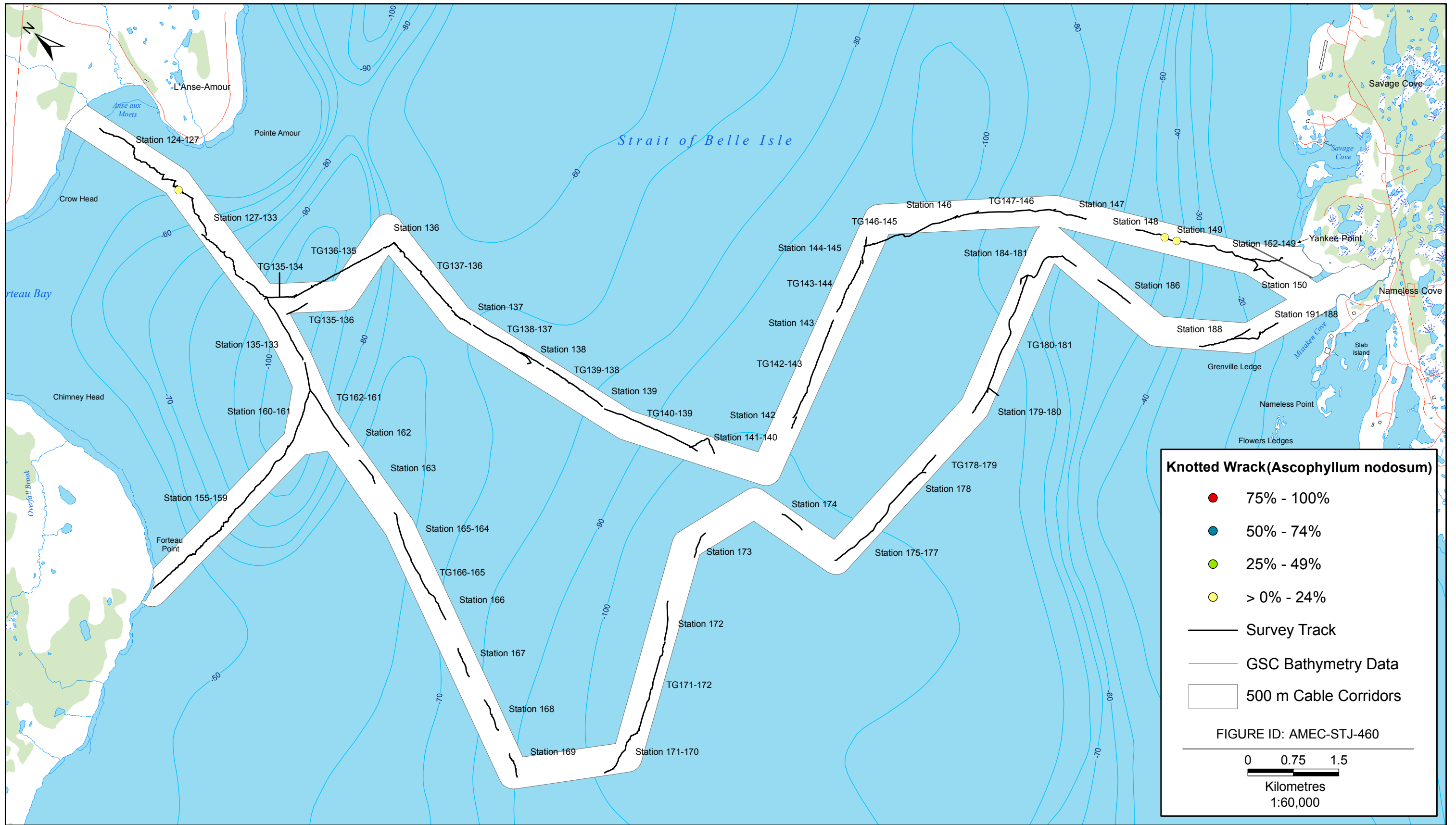


Figure H-7

Knotted Wrack (*Ascophyllum nodosum*) - 2008 Survey



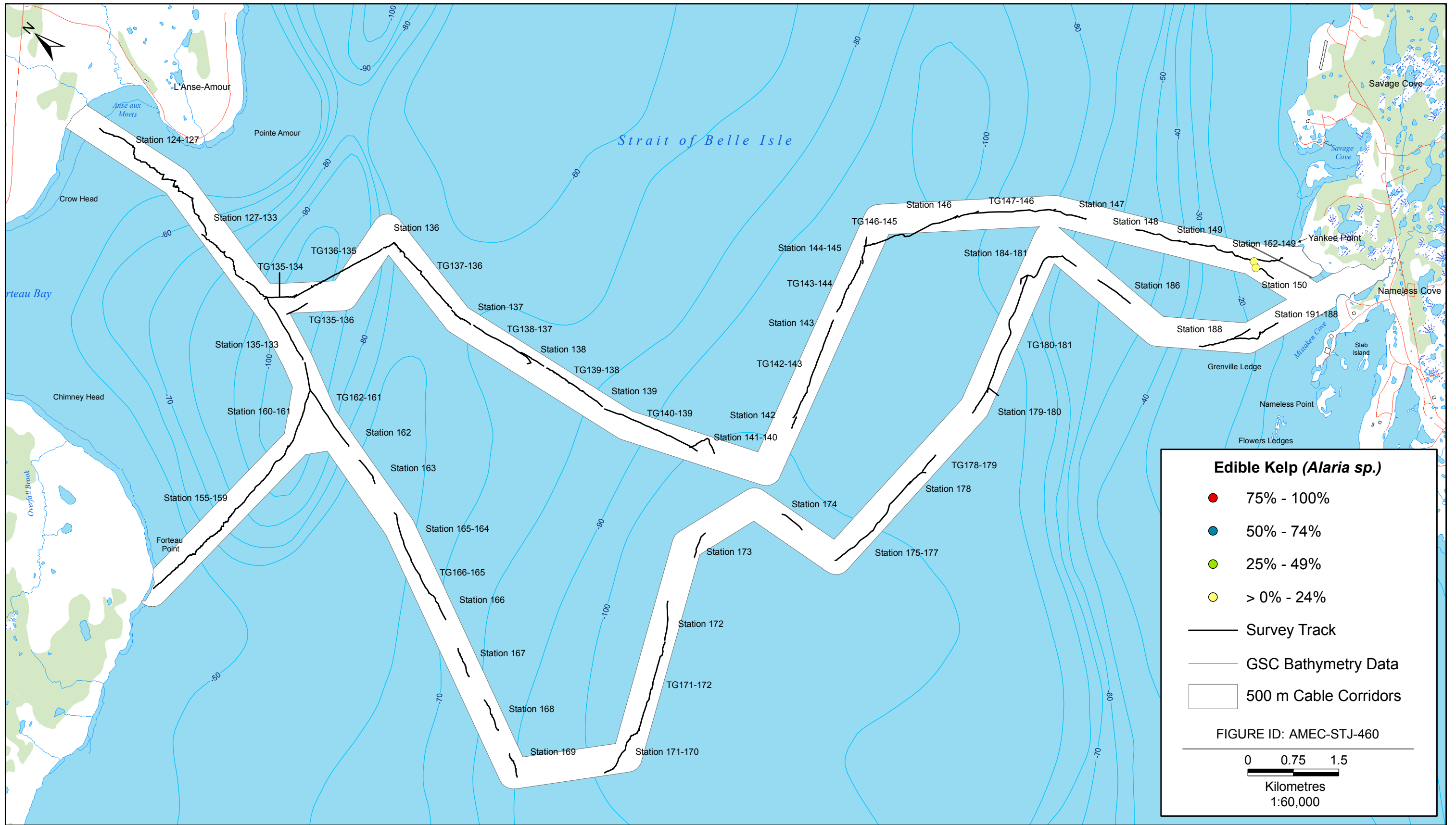


Figure H-8

Edible Kelp (*Alaria sp.*) - 2008 Survey

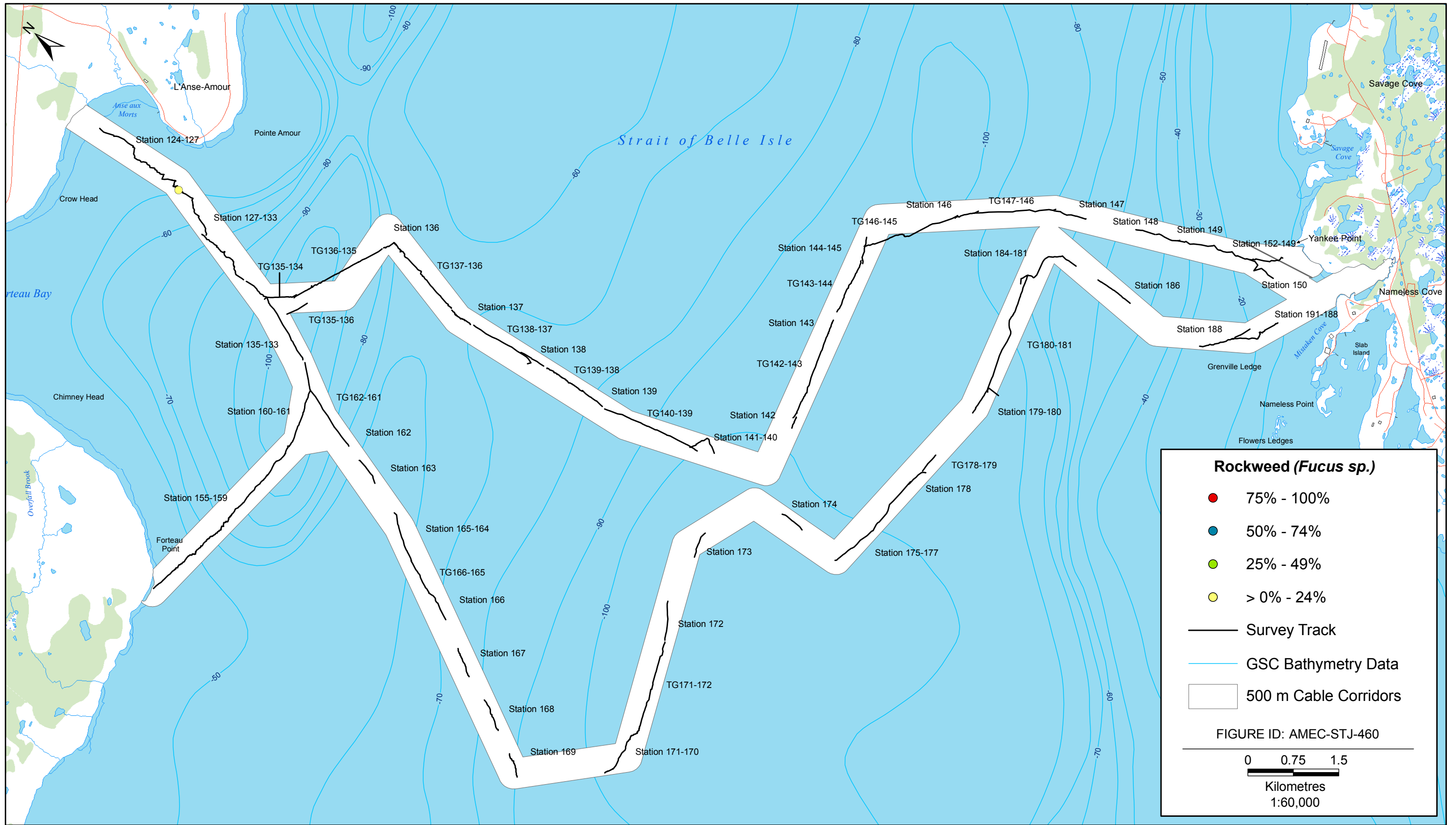


Figure H-9

Rockweed (*Fucus sp.*) - 2008 Survey



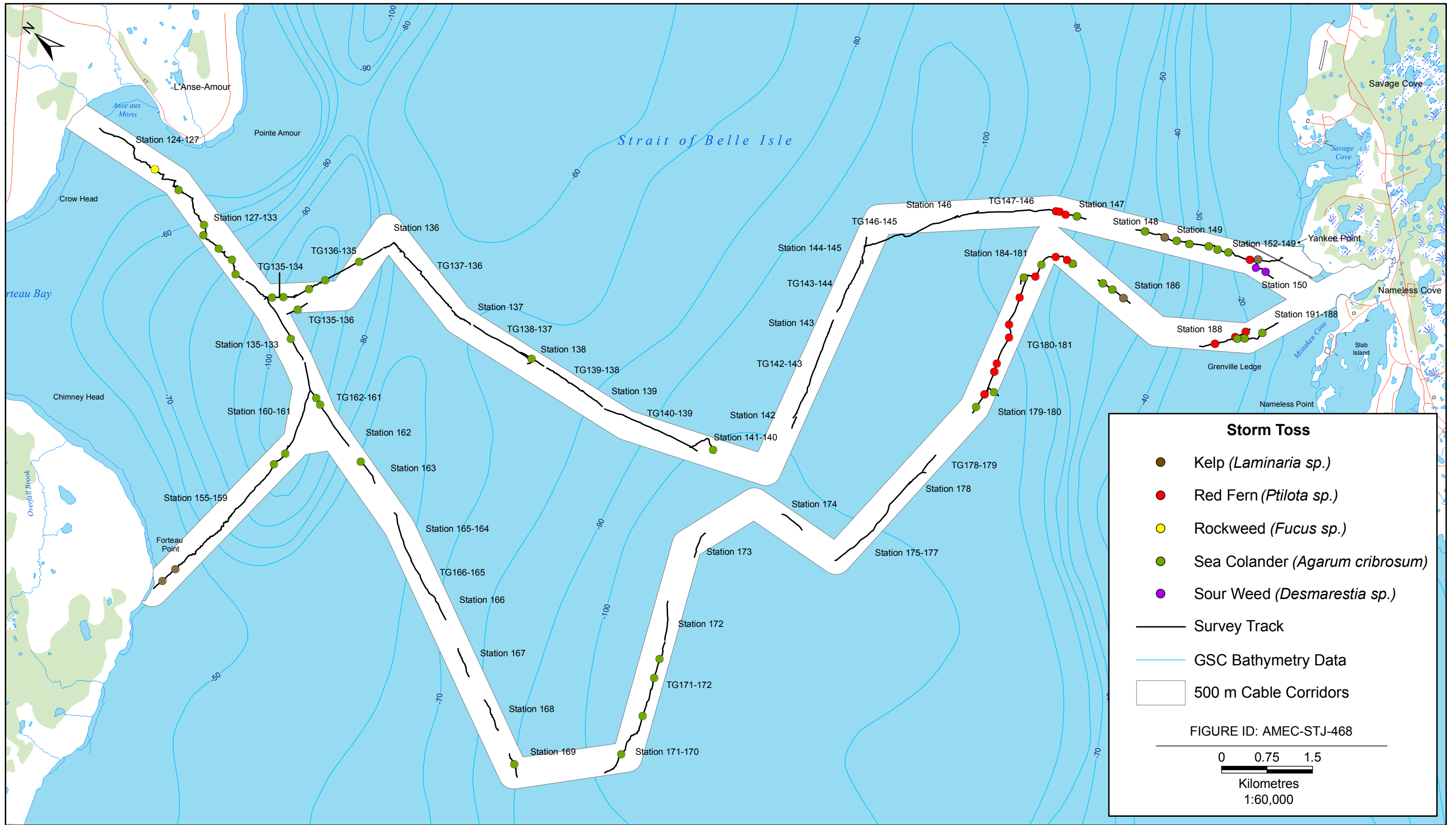


Figure H-10

Storm Toss - 2008 Survey



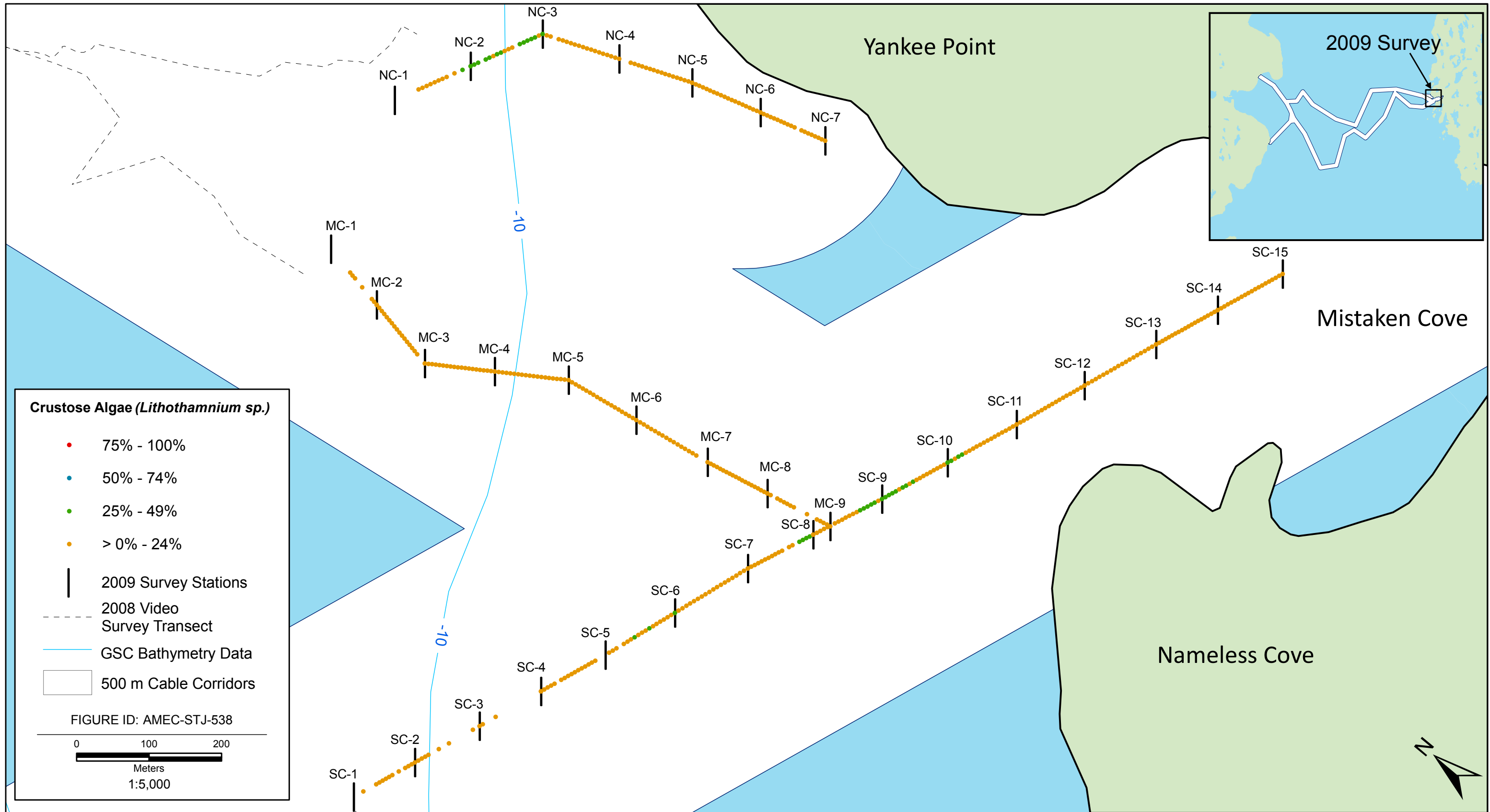


Figure H-11

Crustose Algae (*Lithothamnium sp.*)- 2009 Survey

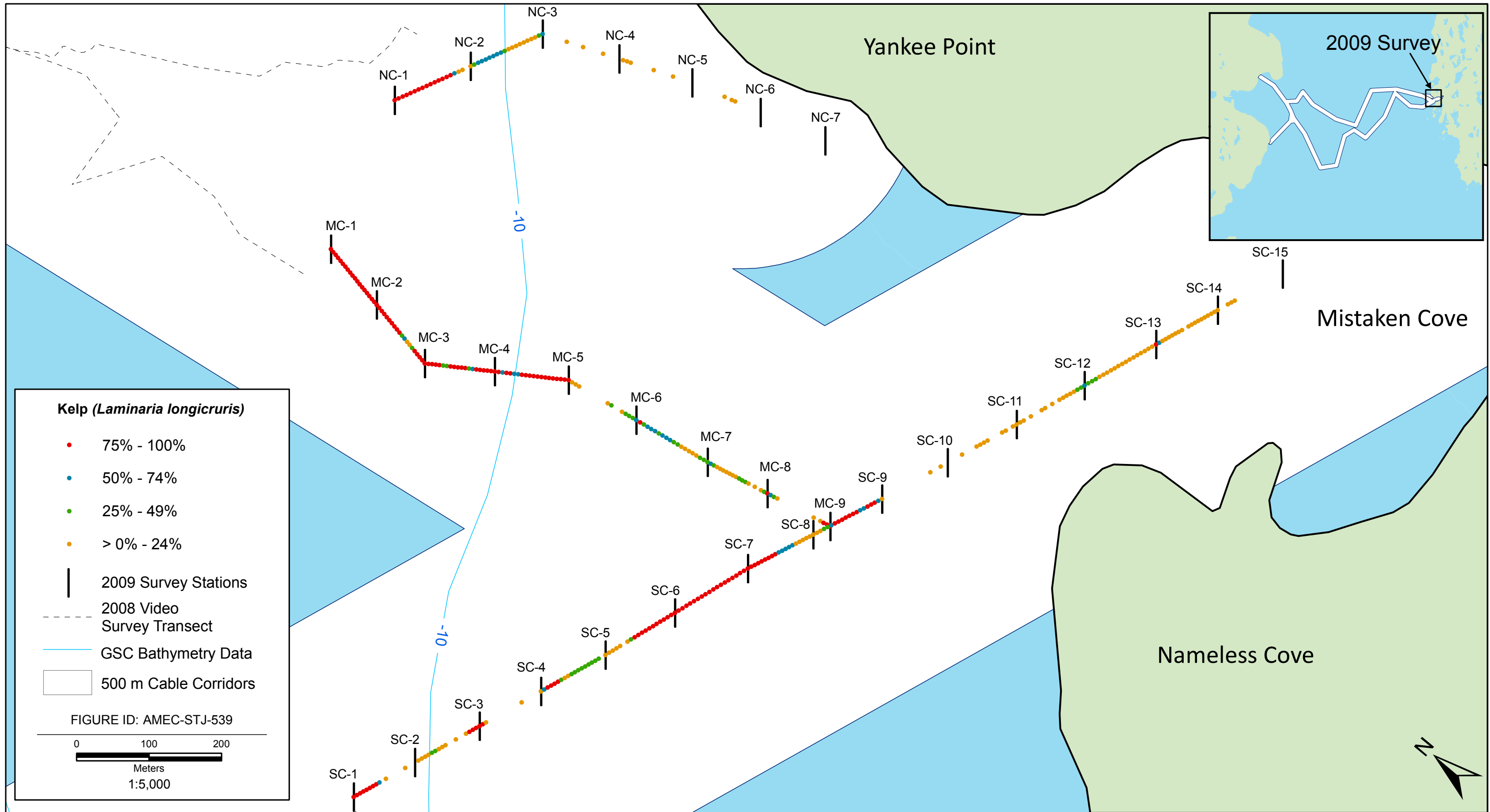


Figure H-12

Kelp (*Laminaria longicruris*) - 2009 Survey

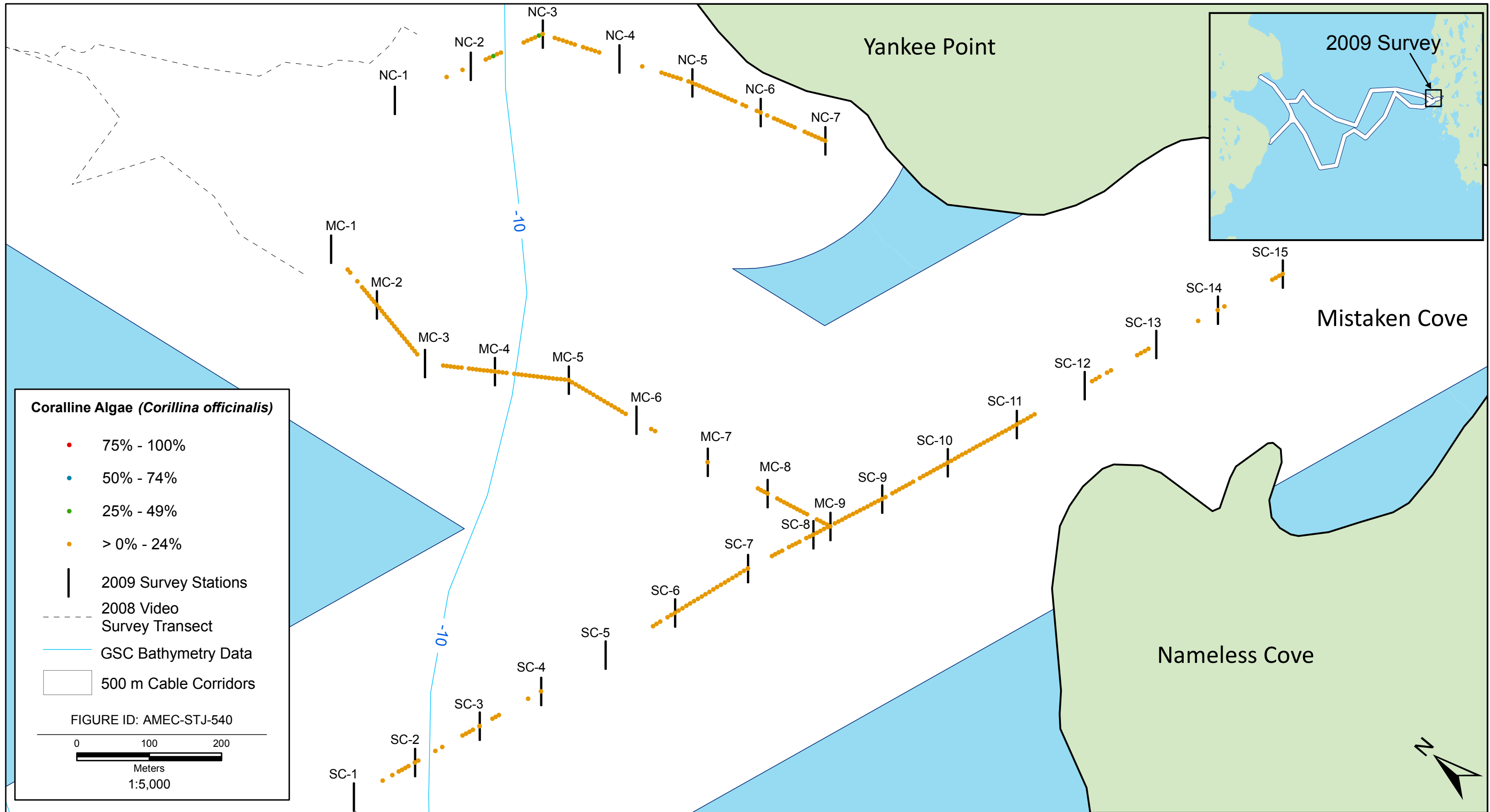


Figure H-13

Coralline Algae (*Corallina officinalis*) - 2009 Survey

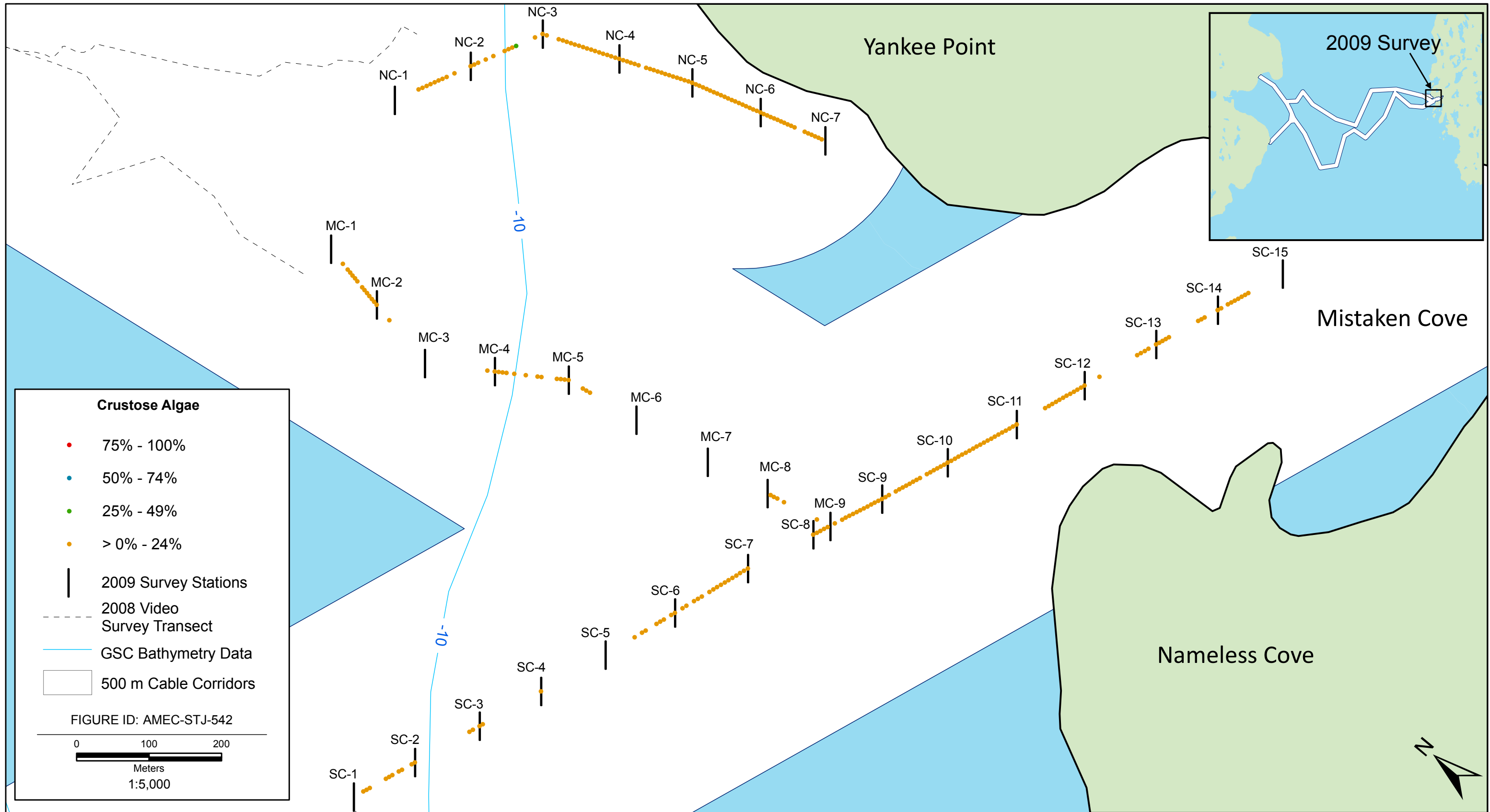


Figure H-14

Crustose Algae (Non Lithothamnium) - 2009 Survey

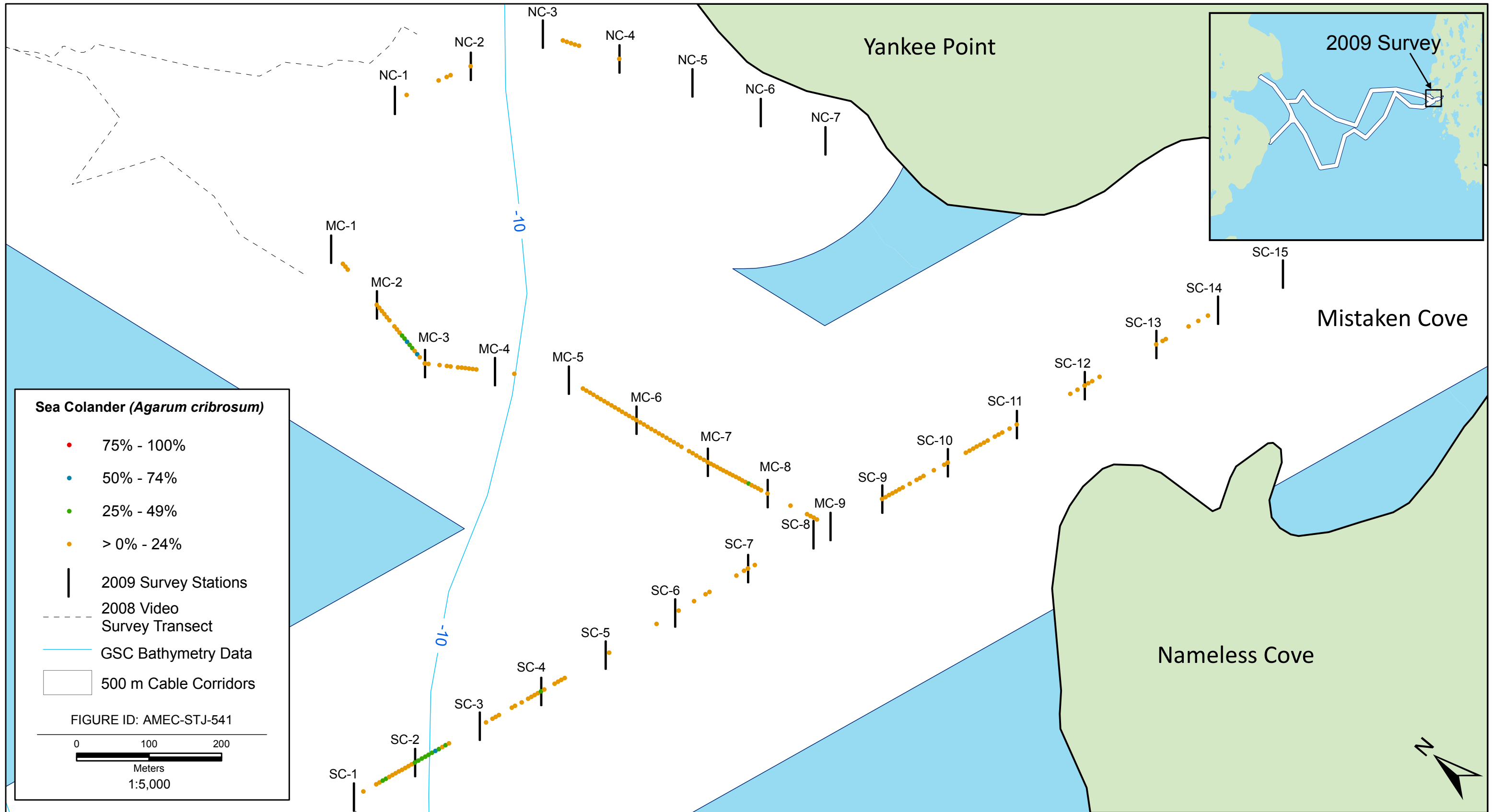


Figure H-15

Sea Colander (*Agarum cribrosum*) - 2009 Survey

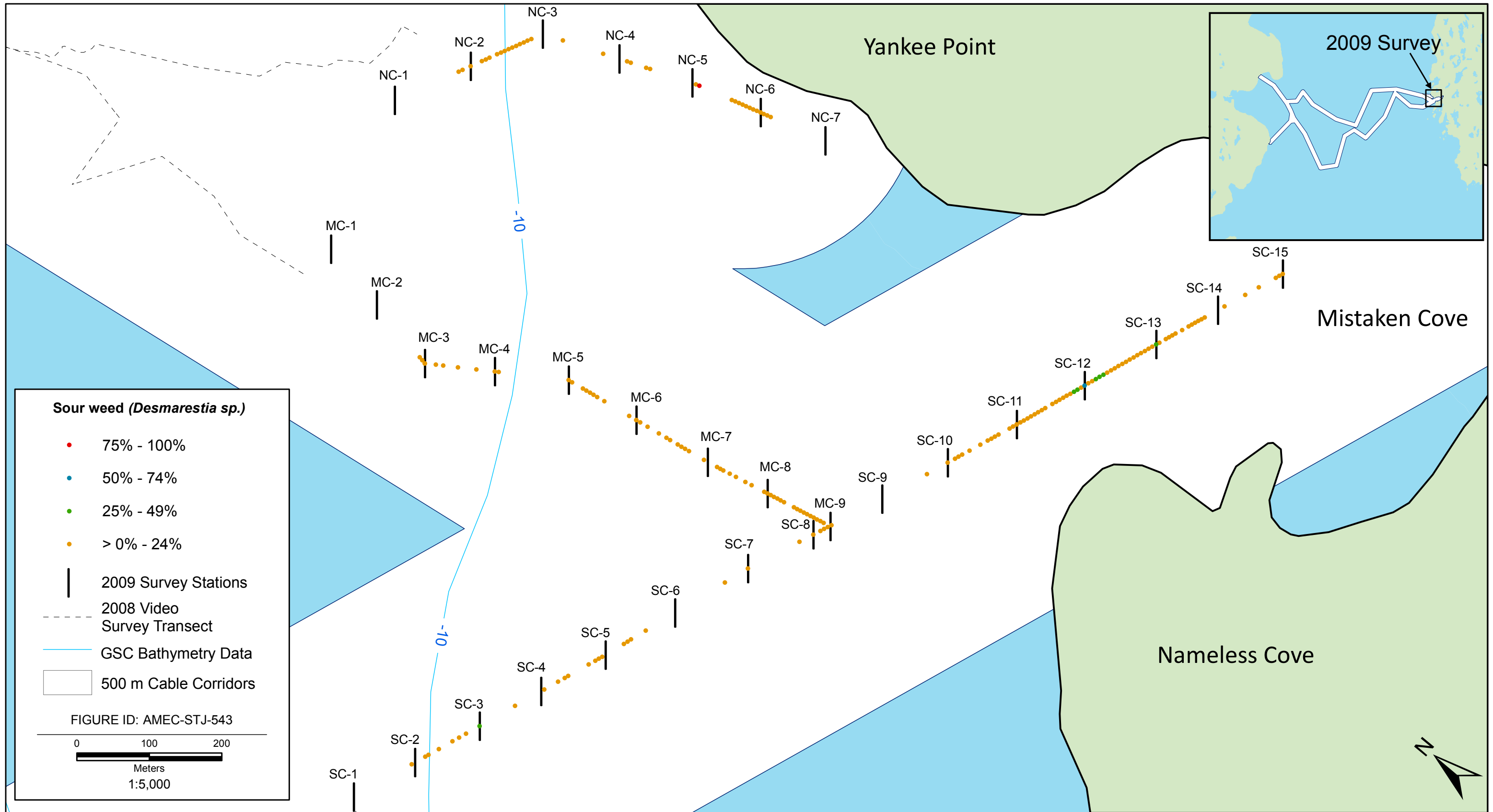


Figure H-16

Sour Weed (*Desmarestia sp.*) - 2009 Survey

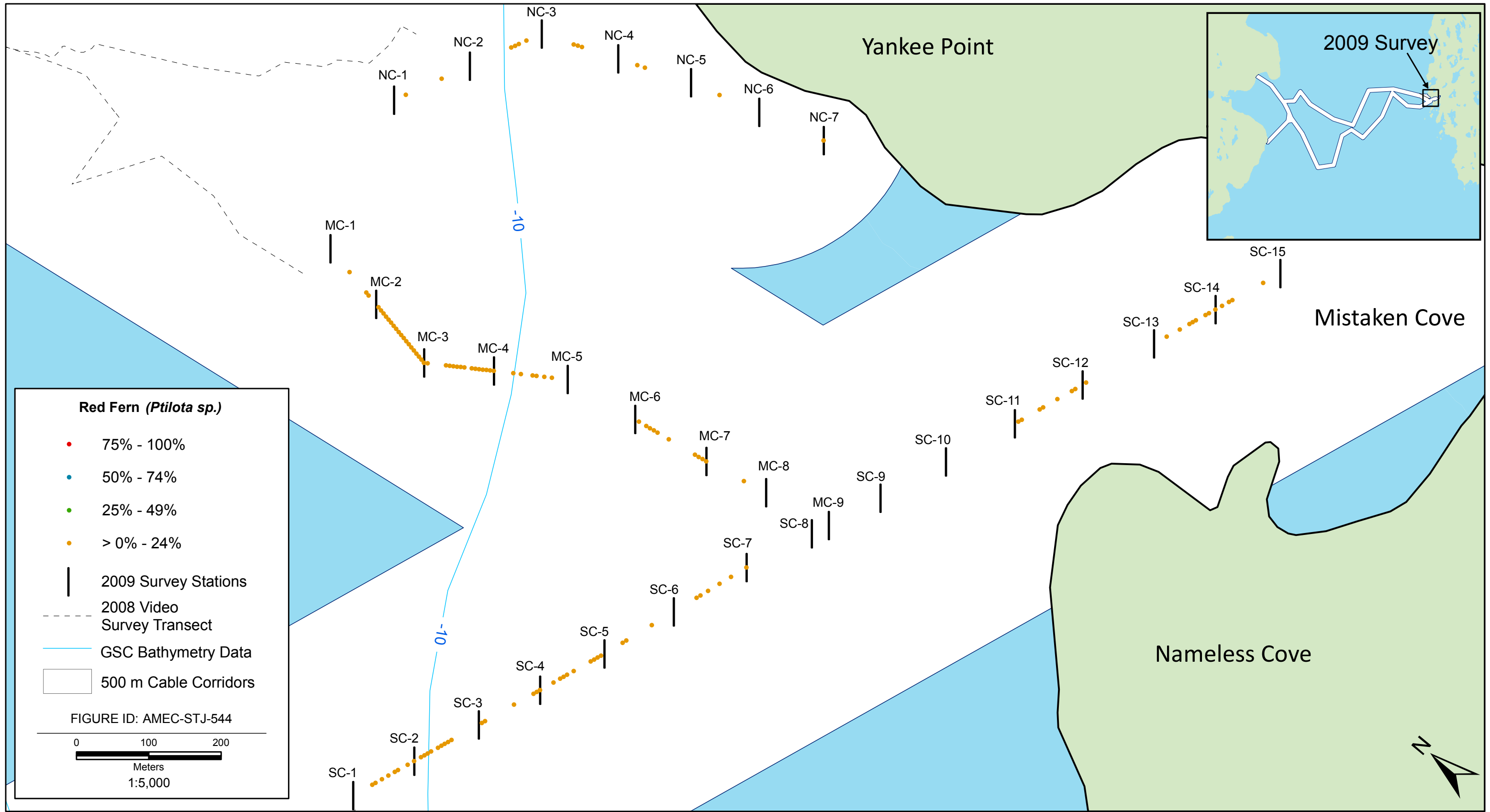


Figure H-17

Red Fern (*Ptilota sp.*) - 2009 Survey



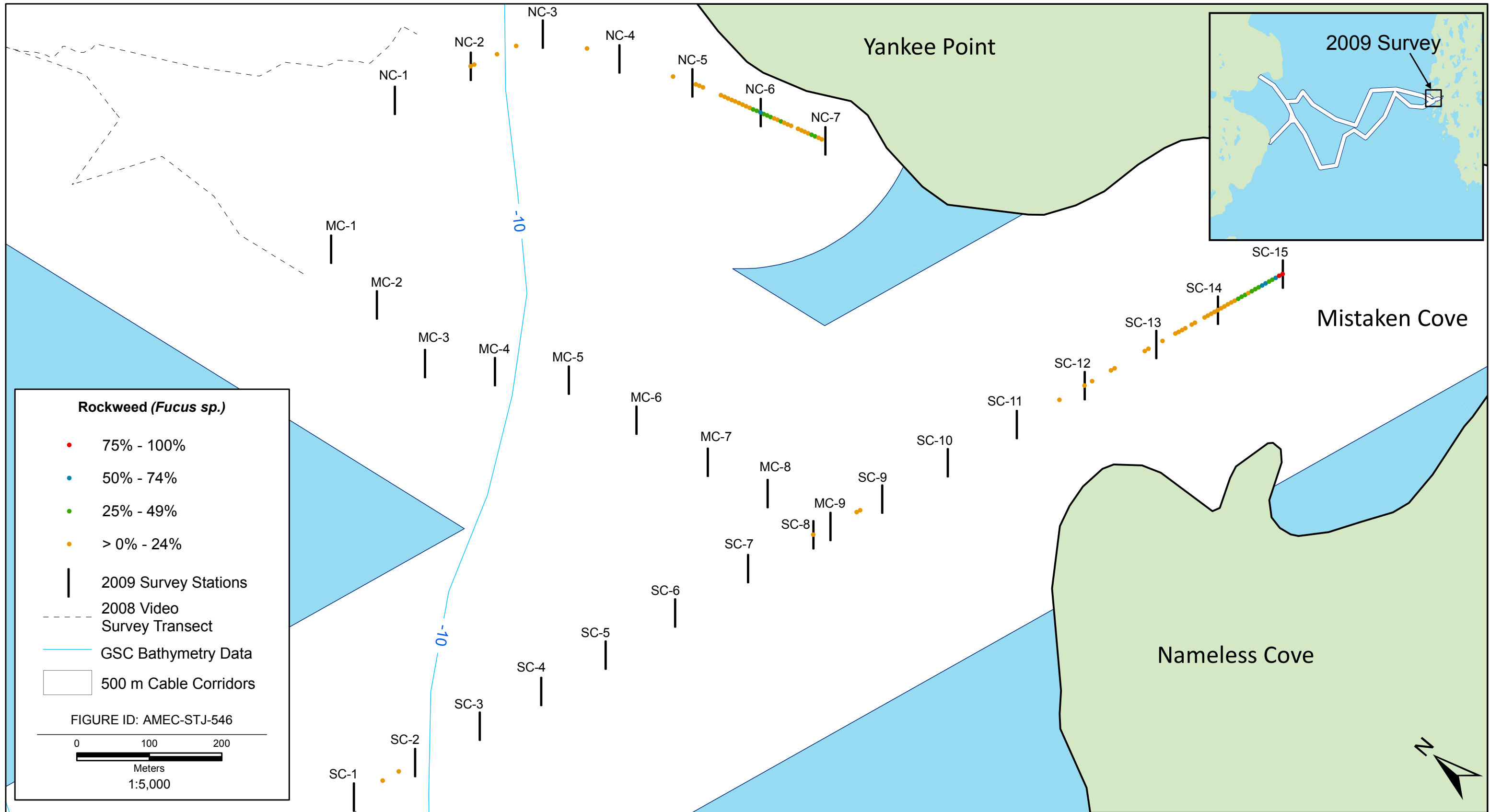


Figure H-18

Rockweed (*Fucus sp.*) - 2009 Survey

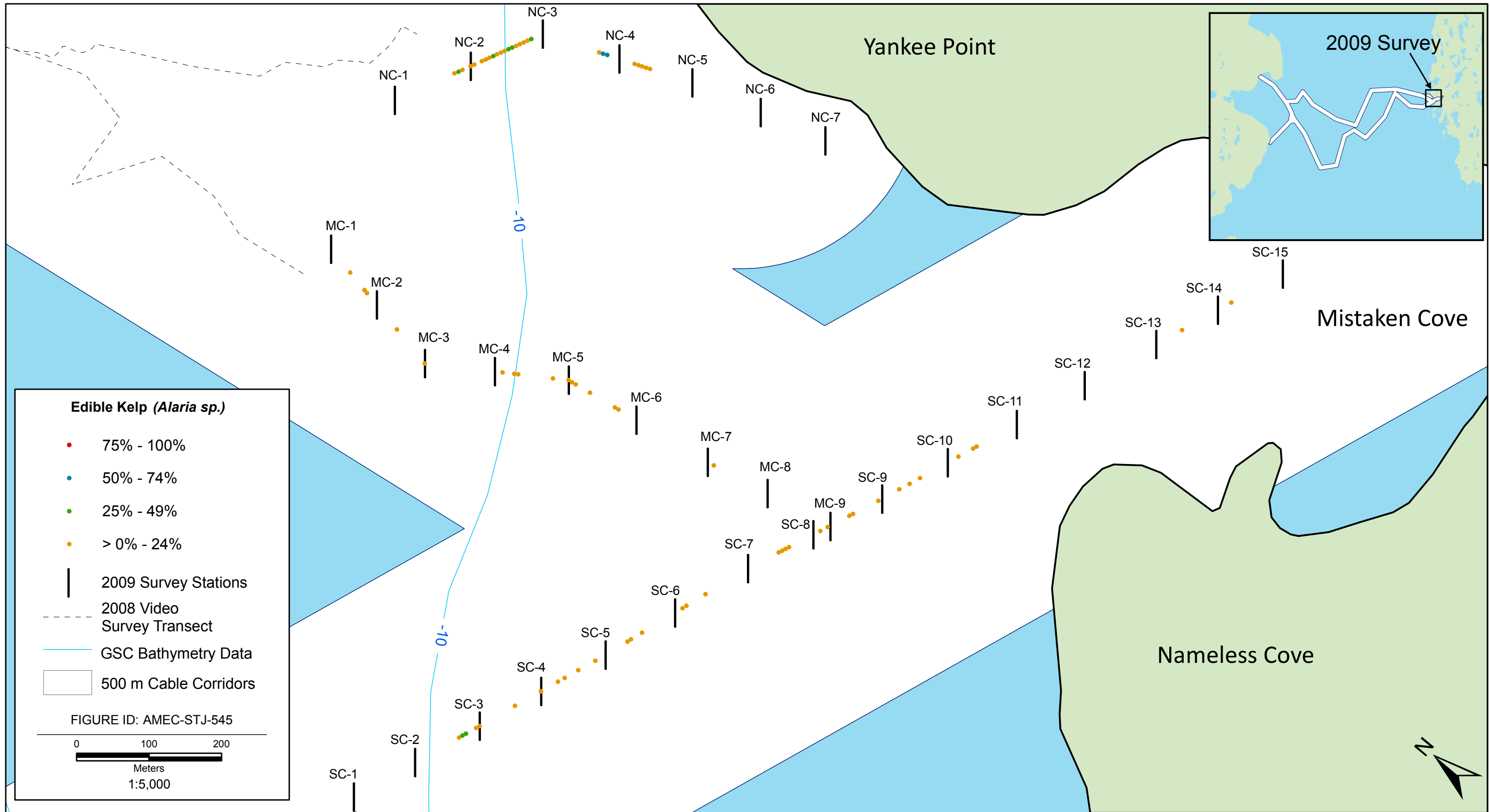


Figure H-19

Edible Kelp (*Alaria sp.*) - 2009 Survey

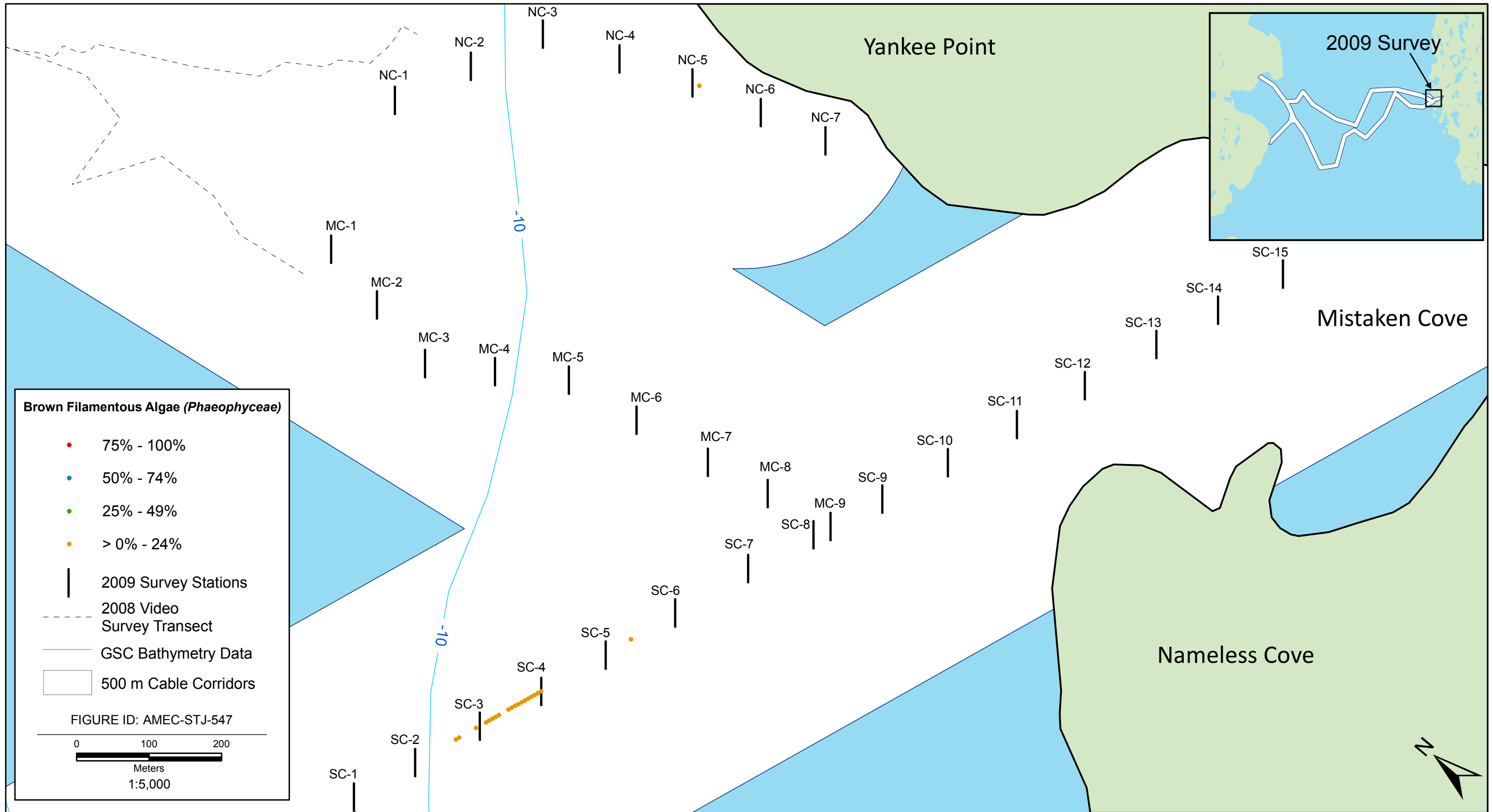


Figure H-20

Brown Filamentous Algae (*Phaeophyceae*) - 2009 Survey

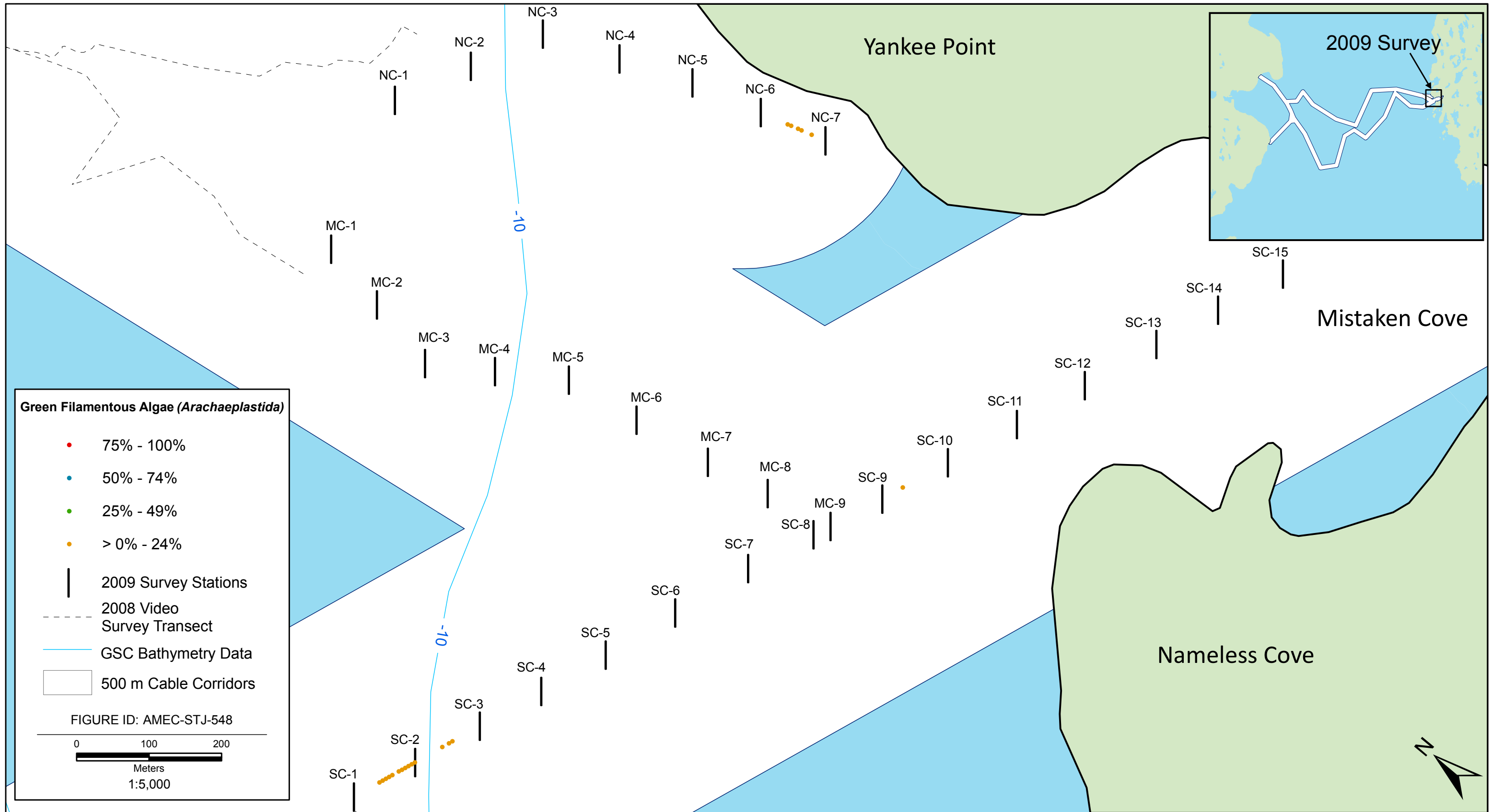


Figure H-21

Green Filamentous Algae (*Arachaeplastida*) - 2009 Survey

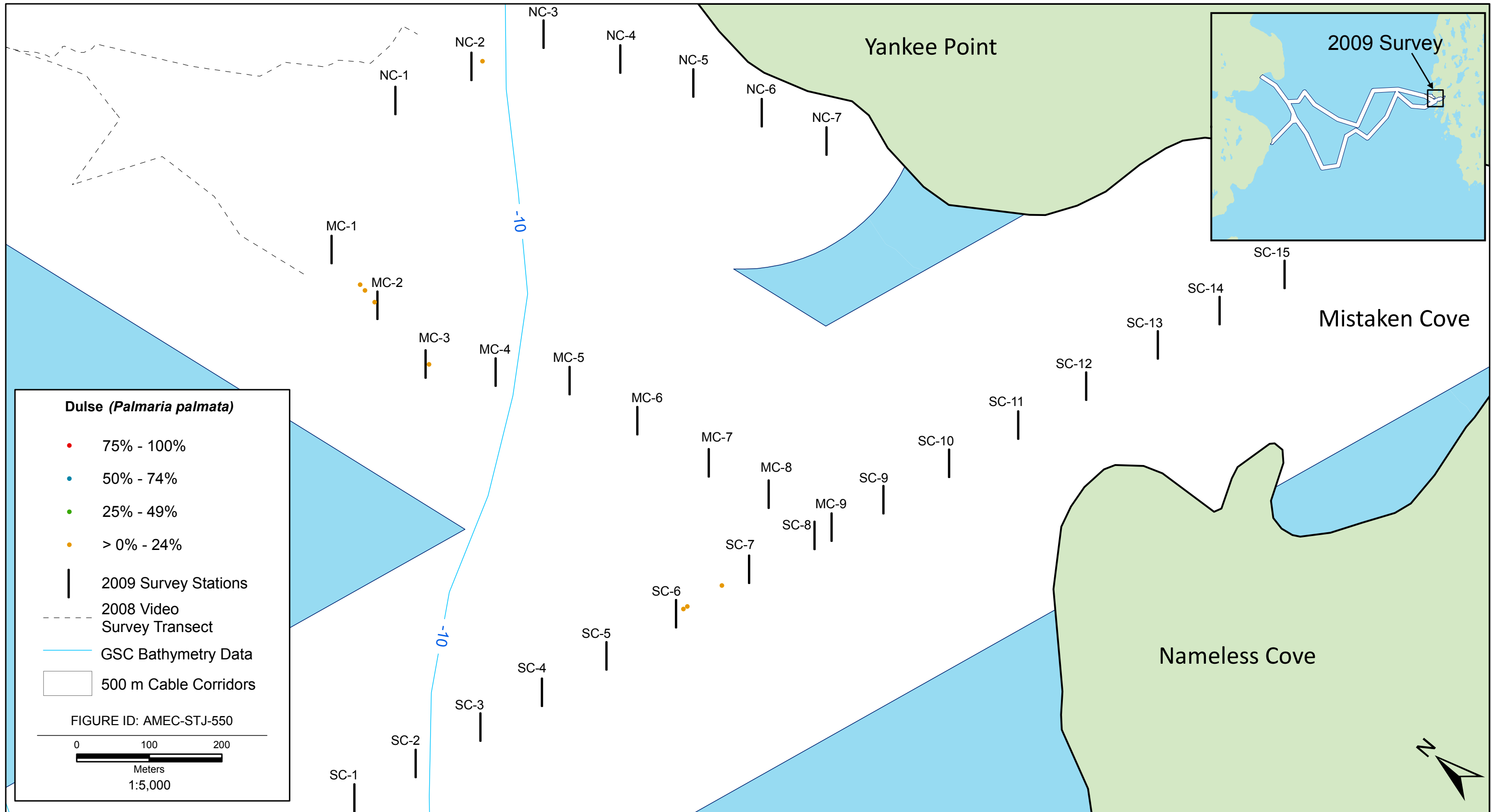


Figure H-22

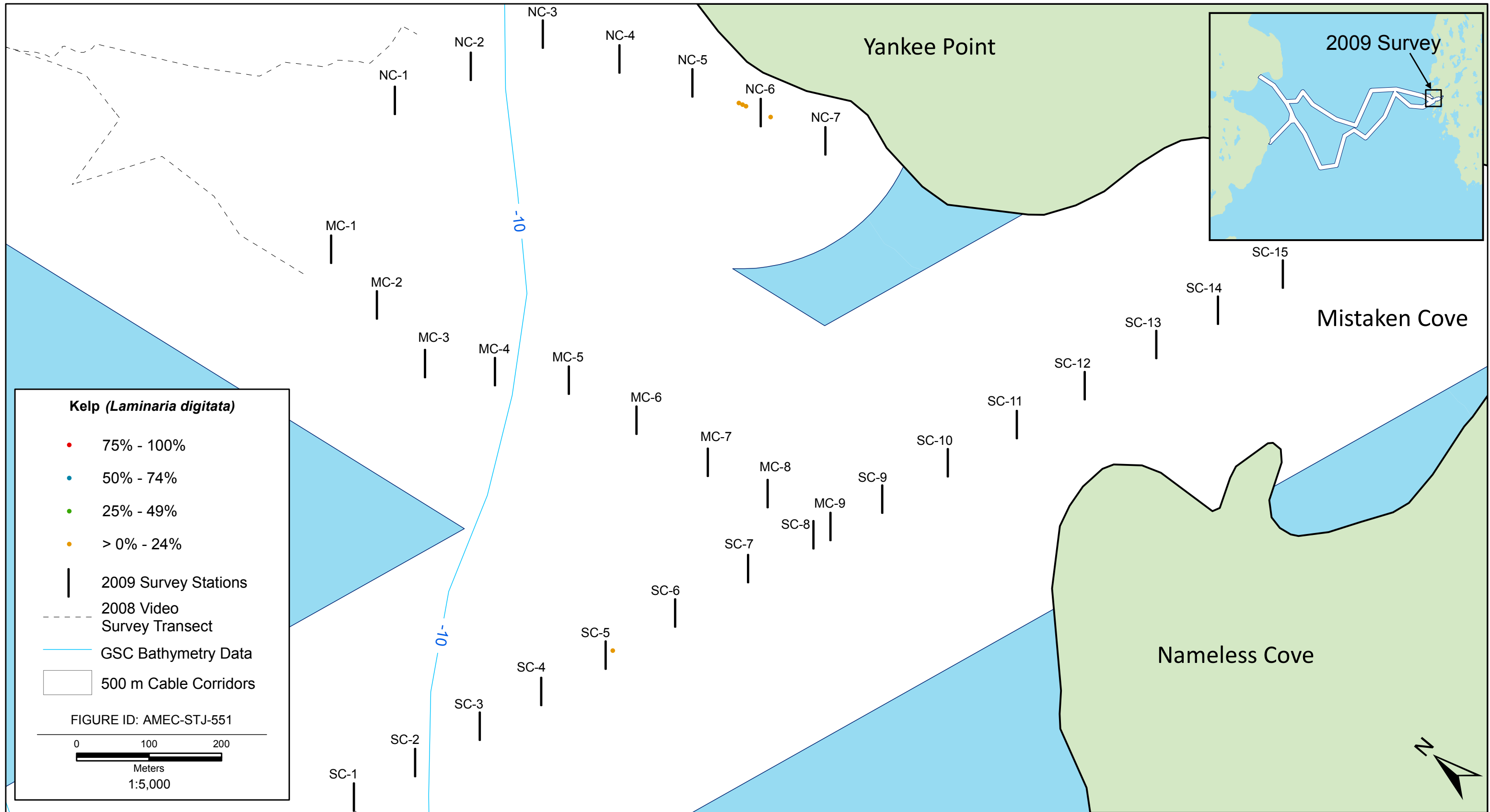


Figure H-23

Kelp (*Laminaria digitata*) - 2009 Survey

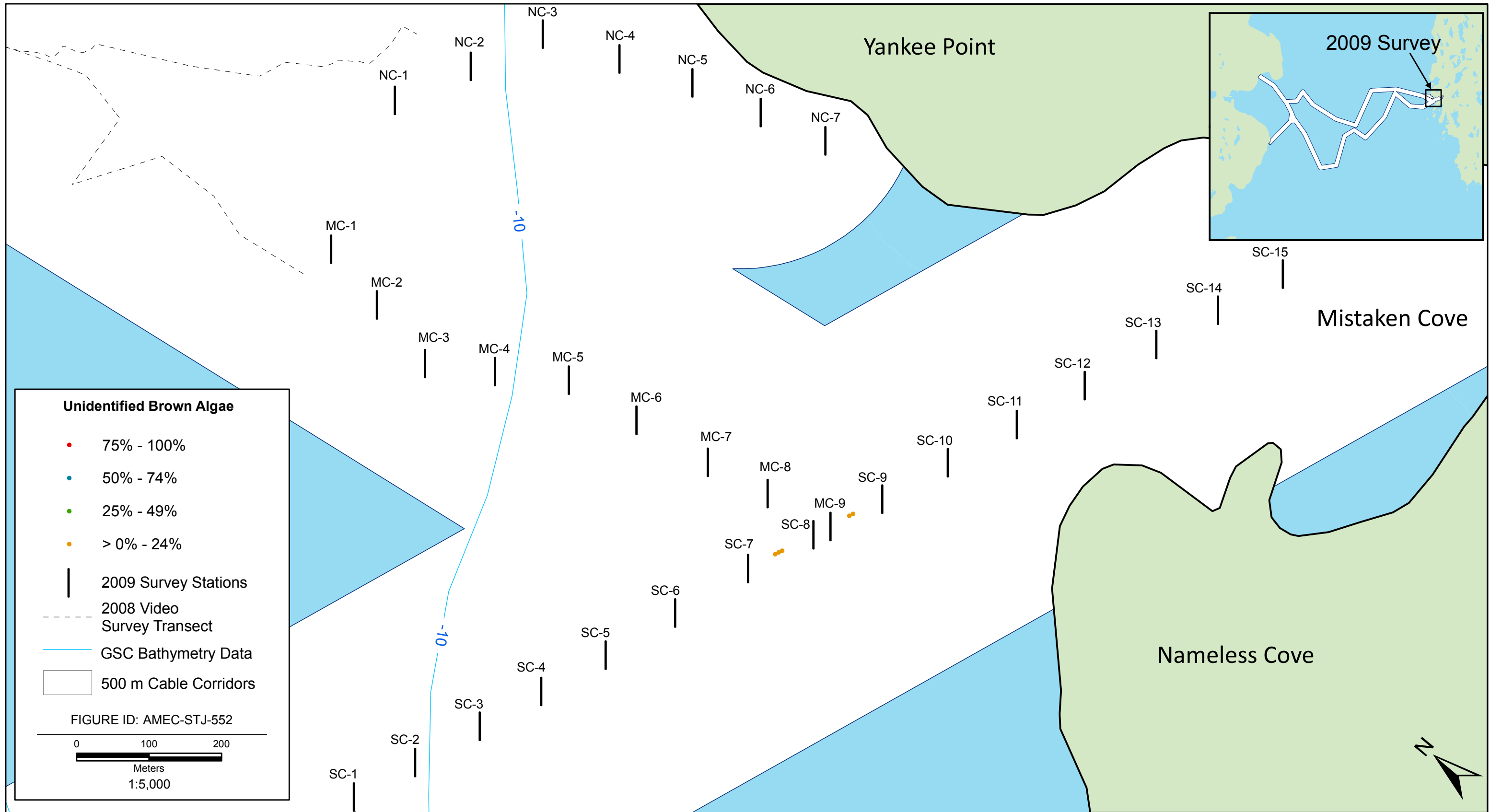


Figure H-24

Unidentified Brown Algae - 2009 Survey

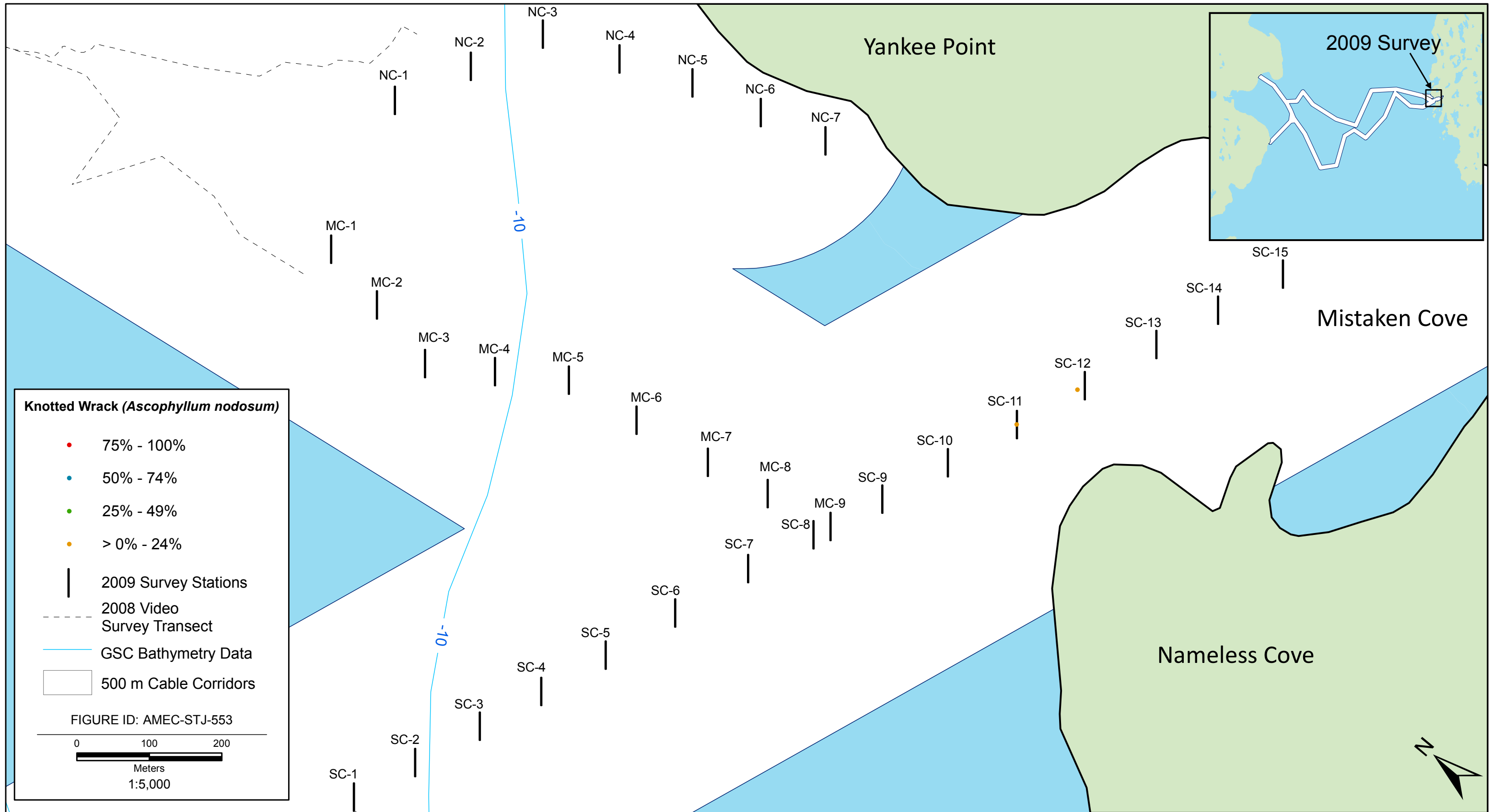


Figure H-25

Knotted Wrack (*Ascophyllum nodosum*)- 2009 Survey

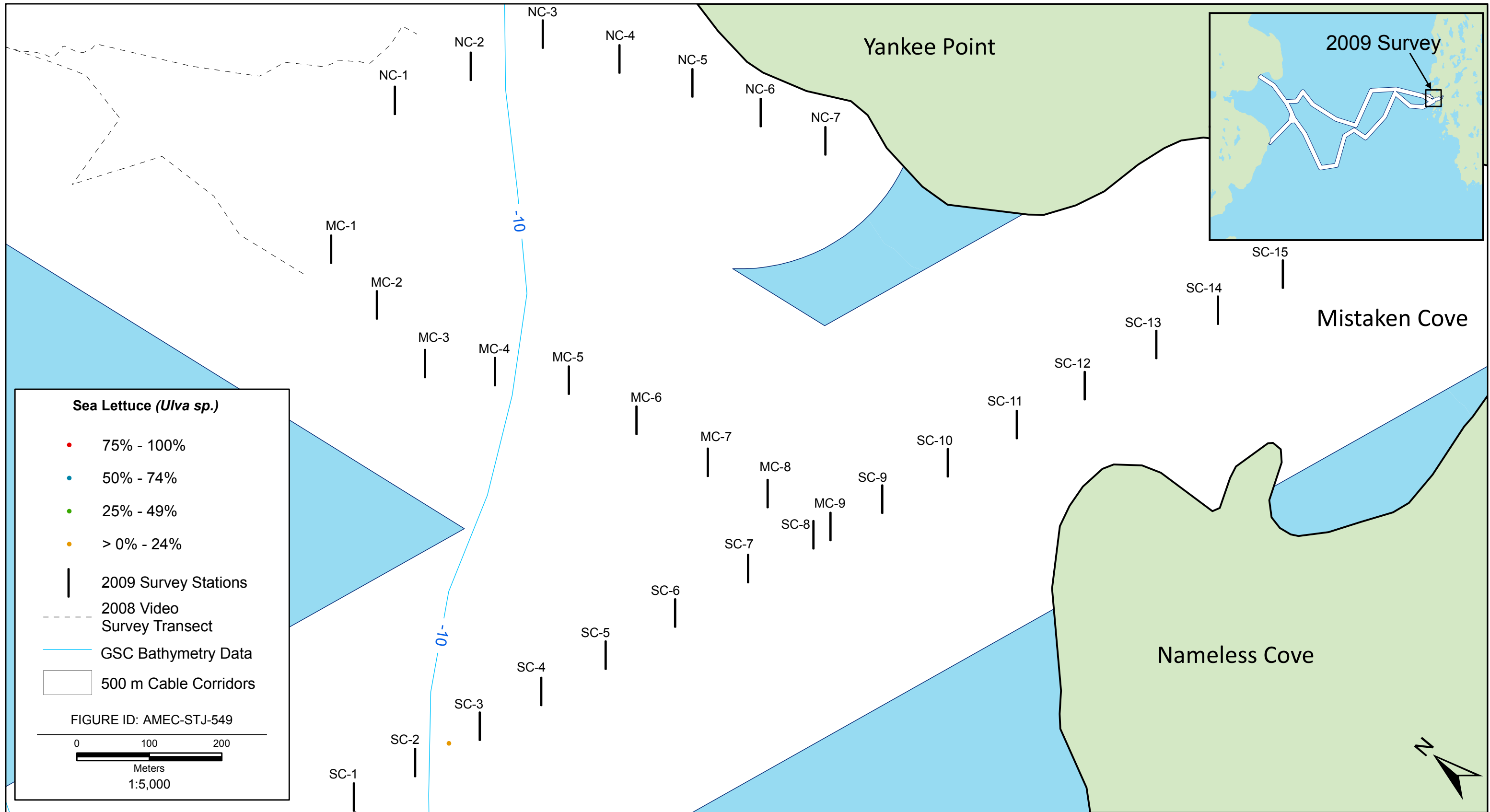


Figure H-26

Sea Lettuce (*Ulva sp.*) - 2009 Survey

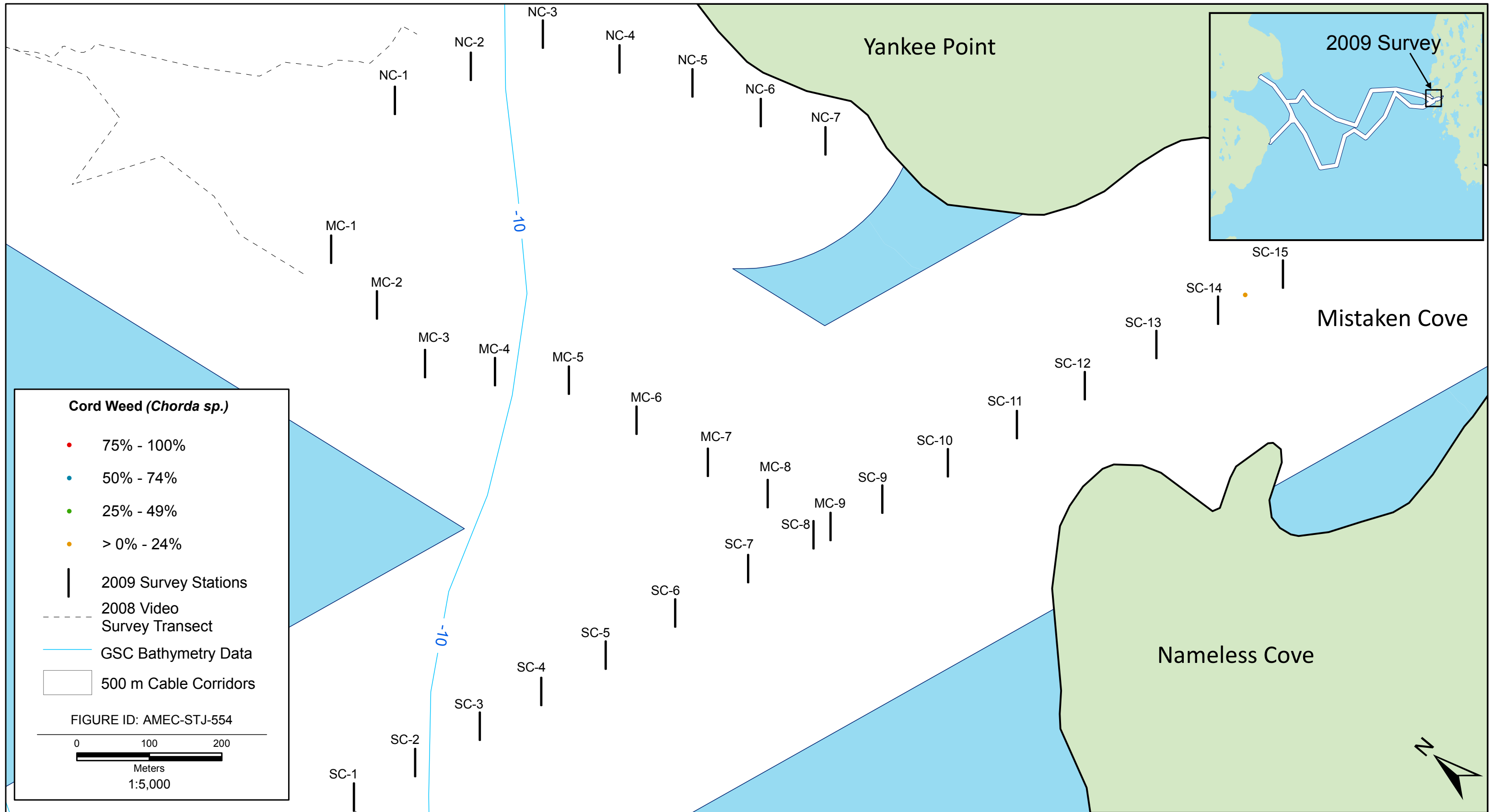


Figure H-27

Cord Weed (*Chorda sp.*) - 2009 Survey

APPENDIX I

Shoreline Tables and Figures

APPENDIX I

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Table I-1: Key for Field Description Habitat Forms

<p style="text-align: center;">5 Zone</p> <p>Bac = backshore Int = Intertidal Ss = shallow subtidal Sd = deep subtidal</p>	<p style="text-align: center;">6 Substrate</p> <p>B = Beach C = cliff (>20° slope) D = delta Du = dune S = seawall Sl = slipway T = tidal flat W = wharf Ba = bank Bf = boulder field Br = Bedrock</p>	<p style="text-align: center;">7 Material</p> <p>an = anthropogenic</p> <p style="text-align: center;">COARSE</p> <p>br = bedrock bl = large boulder (>1000 mm) bs = small boulder (256 - 1000 mm)</p> <p style="text-align: center;">MEDIUM</p> <p>c = cobble (64-256 mm) p = pebble (2-64 mm) g = granules (2-4mm)</p> <p style="text-align: center;">FINES</p> <p>cs = coarse sand (0.5-2mm) ms = medium sand (0.25 to 0.5 mm) fs = fine sand (0.0625 to 0.25 mm) s = silt (0.0039-0.0625 mm) c = clay (<0.0039mm) m = mud (silt, clay combination) sh = shells</p>	<p style="text-align: center;">11 Process</p> <p>Wi = wind F = fluvial M = mass movement T = tides Wa = waves IS= ice scour IL = landfast ice An = anthropogenic (dredging, infill)</p>	<p style="text-align: center;">12 Flora</p> <p>ra = red algae ba = brown algae ga = green algae eg = eelgrass sm = saltmarsh da = diatoms</p> <p>tr = tree gr = grass sh = shrub li= lichens m=moss tu=tuckamore Ot = other not defined</p>
<p style="text-align: center;">14 Floral Abundance</p> <p>actual counts or categories</p> <p><25% = sparse 26-50% = moderately sparse 51-75% = moderately dense</p>	<p style="text-align: center;">15 & 19 Microhabitat</p> <p>rc = rock crevice tp = tide pools ur = under rock wc = water column mb = mussel bed gs = general substrate</p>	<p style="text-align: center;">16 Fauna</p> <p>ba = barnacle mu = mussels cl = clams am = Amphipoda per = periwinkle ur = sea urchin cr = crab cu = sea cucumber an = anemone st = sea star brst = brittle star sc = scallop mm = marine mammal mb = marine bird pf = pelagic fish bf = benthic fish</p>	<p style="text-align: center;">18 Faunal abundance</p> <p>actual counts or categories</p> <p>a = abundant c = common o = occasional u = uncommon</p>	

<p style="text-align: center;">Box 1 Project Description</p> <p>Project Name: NL Hydro HVDC Marine Location: Forteau Point (Forteau Bay – South) Datum: NAD84 Zone: 21 UTM: 50810 E / 5702953 N DFO Division/Subdistrict: Labrador Date (Y, M, D): 08 10 04 Time: 1330 Weather: mixed clouds 10°C, gale-force winds Crew: E. Lee, D. Kenny, M. Teasdale</p>	<p style="text-align: center;">Box 2 Data Sources</p> <p>NTS Maps: 12p-07 Charts: Marine 4020 Aerial Photos: 91021-17(1991) Other: Google Earth, Map Source</p>
<p style="text-align: center;">Box 3 Ecosystem</p> <p><input checked="" type="checkbox"/> Marine <input type="checkbox"/>_archipelago/island <input type="checkbox"/>_fjord <input type="checkbox"/>_bay <input checked="" type="checkbox"/>_open coast <input type="checkbox"/>_channel <input type="checkbox"/> Estuarine <input type="checkbox"/>_lower/marine <input type="checkbox"/>_middle <input type="checkbox"/>_upper/fluvial</p>	<p style="text-align: center;">Box 5</p> <p style="text-align: center;">Sketch site and determine shore units (See Part B of Form)</p> <hr/> <p style="text-align: center;">Box 6</p> <p style="text-align: center;">Complete fish habitat description (See Part B of Form)</p>
<p style="text-align: center;">Box 4 Oceanographic Environment</p> <p>1. Ice Classification <input checked="" type="checkbox"/> Land Fast <input type="checkbox"/> Ice Foot <input checked="" type="checkbox"/> Pack Ice <input type="checkbox"/> Ice Scour</p> <p>2. Tides: (from Forteau Bay) Range (m): mean maximum Elevation (m): low 0.3 low 0 high 1.4 high 1.7</p> <p>3. Wave Environment (km) Maximum Fetch 752 Effective Fetch 213 North 0 South 41 West 0 East 38</p> <p>4. Exposure: <input type="checkbox"/>_very protected <input type="checkbox"/>_semi-exposed <input type="checkbox"/>_protected <input checked="" type="checkbox"/>_exposed <input type="checkbox"/>_semi-protected</p> <p>5. Sediment Transport (shoreline change): Coastal Stability <input checked="" type="checkbox"/>_none (stable) <input type="checkbox"/>_erosion <input type="checkbox"/>_accretion</p> <p>Alongshore sediment transport: n/a Dominant direction</p>	<p style="text-align: center;">Box 7 Site summary</p> <p>1. Coastal Type (5): Mixture</p> <p>2. Shore Unit (1-26): (11) Sand beach on narrow rock platform</p> <p>3. Zone Characteristics:</p> <p>Backshore: Grasslands with moss and lichens butting up against rock cliff with tuckamore</p> <p>Intertidal: Laminar layers of bedrock, bedrock with sand deposits, and a boulder field</p> <p>Shallow subtidal (0-10m) boat survey</p> <p>Deep subtidal (10-20m) boat survey</p>

Figure I-1: Field Data Sheet for Forteau Point Shoreline Survey

Table I-2: Field Habitat Description Form for Forteau Point

Shore Unit				Zone	Components														
1 No.	2 Distance (m)	3 GPS wp name	4 GPS coordinate		Physical							Biological							21 Elevation (m)
				5 Zone	6 Substrate	7 Material	8 Map symbol	9 Width (m)	10 Slope (°)	11 Process	12 Flora	13 Flora species	14 Floral abundance	15 Floral micro habitat	16 Fauna	17 Faunal species	18 Faunal abundance		
1	0	385	502526E	Bac	C	br			>20	Wi	tr,gr,sh		md						8
			5696996N	Bac	Br	br		34.0	2	Wi	gr, li		md						0.5
				Bac	Du	m		21.0	-5	Wa	gr, li		md						-0.5
				Int	B	br,bl, cs		15.0	15	Wa			s		mb	ducks, gannets	o		1
				Int	Br	br		21.1	10	Wa			s						3
2	102	386	502631E	Bac	C	br			>20	Wi	tr, sh		s						5
			5697019N	Bac	Du	cs		22.0	21	Wi, Wa	gr		s						0.5
				Bac	Bo	m		19.5	-7	Wi, Wa	gr, li		s						2
				Int	B	cs		18.0	6	Wa			s						2
				Int	Br	br		40.0	1	Wa			s		mb	ducks, gannets	o		0.5
3	307	387	502819E	Bac	Ba	fs				Wi	gr								6
			5697076N	Int	B	fs		32.0	14	Wa	gr		s		mb	ducks, gannets	o		5
				Int	Br	br		10.0	30	Wa			s						2
4	367	388	502873E	Bac	Ba	fs				Wi	gr		md						6
			5697093N	Int	Du	fs		34.0	10	Wa			s						4
				Int	Br	br		5.0	-1	Wa			s		mb	ducks, gannets	o		3
5	456	389	502932 E	Bac	Ba	fs		10.4	40	Wi	gr, li		md						10
			5697164 N	Int	Bf	bl		10.0	30	Wa			s		mb	ducks, gannets	o		5
6	500	390	502974E	Bac	Ba	fs		48.6	10	Wi	li, m		md						
			5697198 N	Int	Bf	bl, br		10.0	15	Wa			s		mb	ducks, gannets	o		4

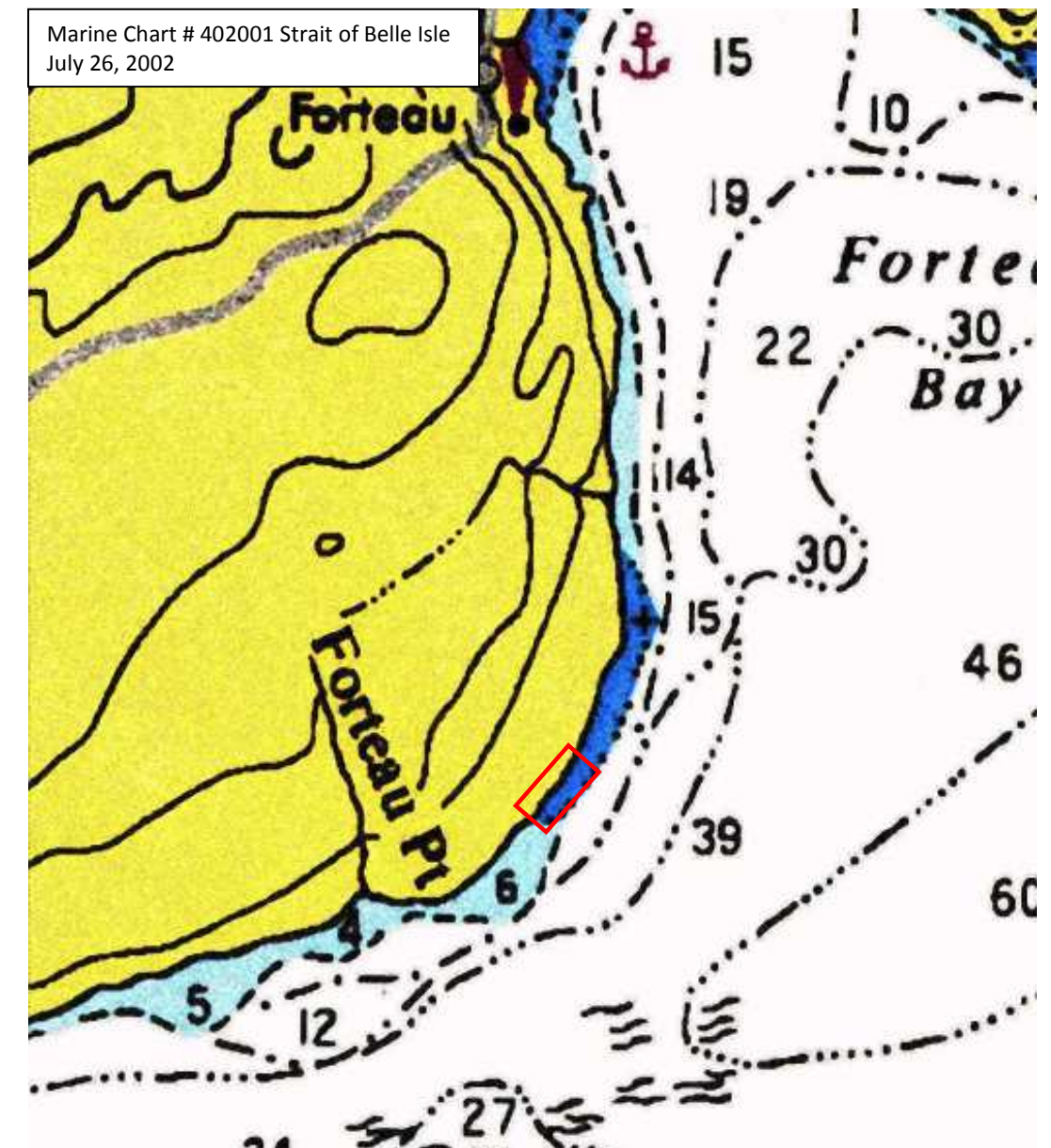
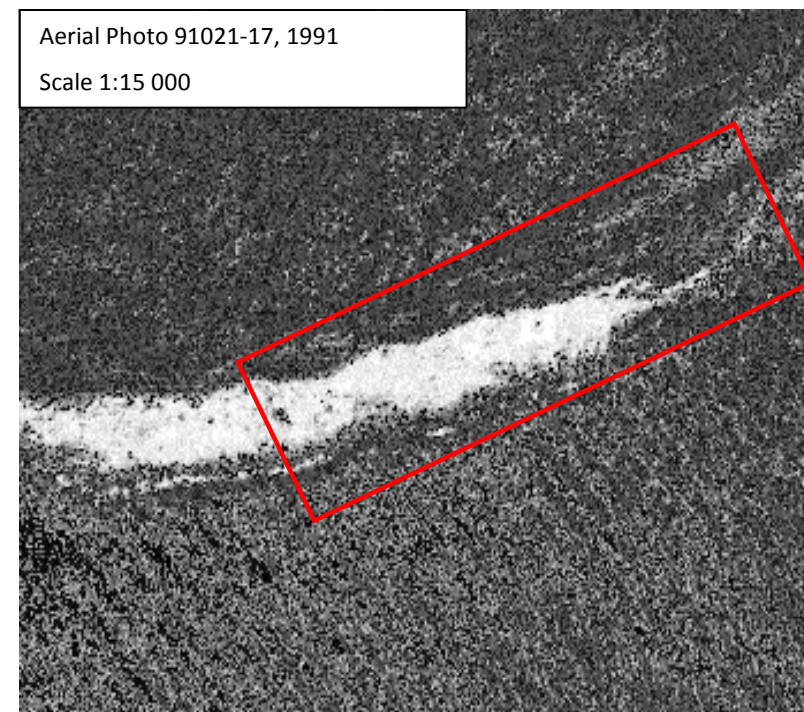
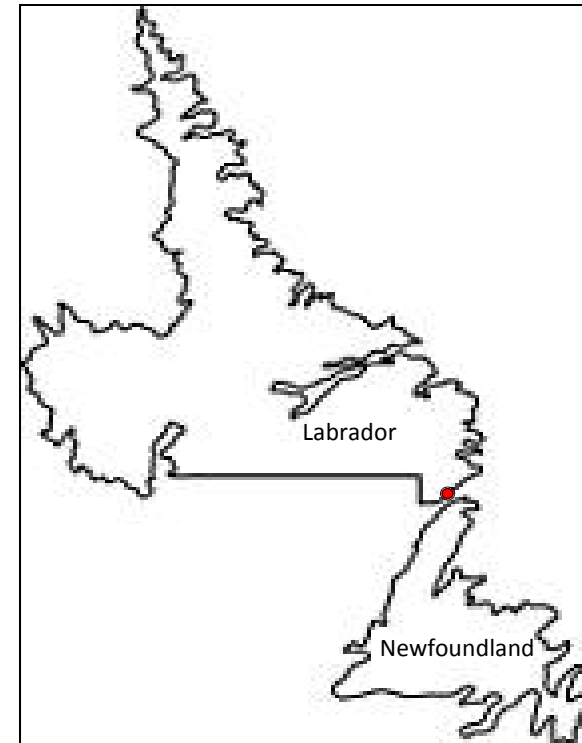
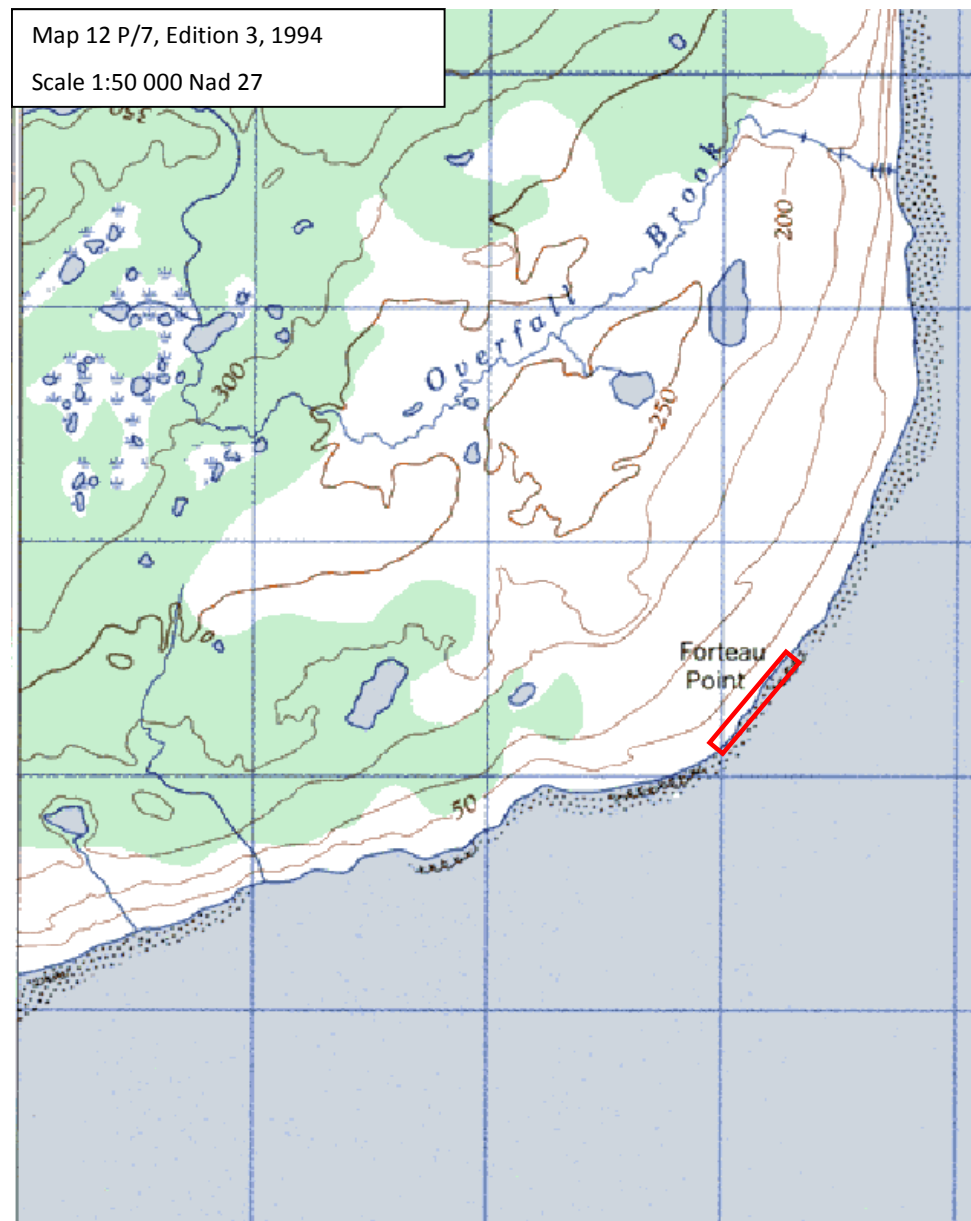


Figure I-2: Forteau Point Maps. Topographic map, aerial photo, and marine chart of Forteau Point.

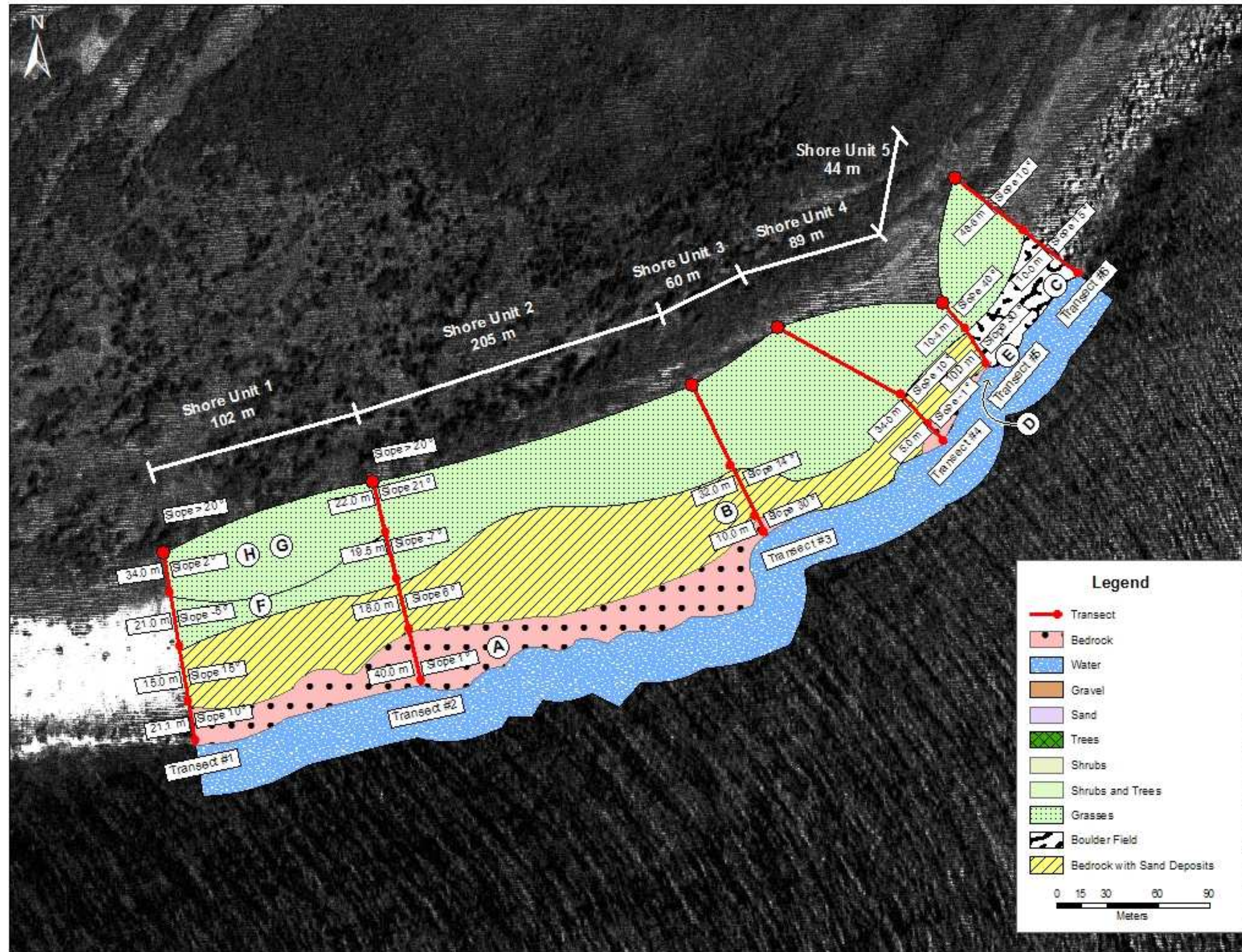


Figure I-3: Forteau Point Shoreline Interpretation- Results of Marine Habitat Classification Shoreline Surveys of Forteau Point.








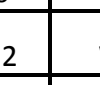







Figure I-4: Forteau Point Pictures: Example photographs of the areas encountered on the Forteau Point Shoreline Survey (a) Bedrock area (b) Bedrock with sand deposits (c) Boulder field (d) Grassy mound (e) Boulder field (f) Grass area in foreground (g) Grass and moss and lichen area, and (h) Grass and shrub area with cliff in background.

<p style="text-align: center;">Box 1 Project Description</p> <p>Project Name: NL Hydro HVDC Marine Location: L'Anse Amour (Forteau Bay – North) Datum: NAD84 Zone: 21 UTM: 508174E / 5702940N DFO Division/Subdistrict: Western Area Date (Y, M, D): 08 10 04 Time: 1330 Weather: mixed clouds 10°C, gale-force winds Crew: E. Lee, D. Kenny, M. Teasdale</p>	<p style="text-align: center;">Box 2 Data Sources</p> <p>NTS Maps: 12p-07 Charts: Marine 4020 Aerial Photos: 91021-17(1991) Other: Google Earth, Map Source</p>
<p style="text-align: center;">Box 3 Ecosystem</p> <p><input checked="" type="checkbox"/> Marine <input type="checkbox"/>_archipelago/island <input type="checkbox"/>_fjord <input checked="" type="checkbox"/>_bay <input type="checkbox"/>_open coast <input type="checkbox"/>_channel <input type="checkbox"/> Estuarine <input type="checkbox"/>_lower/marine <input type="checkbox"/>_middle <input type="checkbox"/>_upper/fluvial</p>	<p style="text-align: center;">Box 5</p> <p style="text-align: center;">Sketch site and determine shore units (See Part B of Form)</p> <hr/> <p style="text-align: center;">Box 6</p> <p style="text-align: center;">Complete fish habitat description (See Part B of Form)</p>
<p style="text-align: center;">Box 4 Oceanographic Environment</p> <p>1. Ice Classification <input checked="" type="checkbox"/> Land Fast <input type="checkbox"/> Ice Foot <input checked="" type="checkbox"/> Pack Ice <input type="checkbox"/> Ice Scour</p> <p>2. Tides: (from Forteau Bay) Range (m): mean maximum Elevation (m): low 0.3 low 0 high 1.4 high 1.7</p> <p>3. Wave Environment (km) Maximum Fetch 708 Effective Fetch 372 North 0 South 46 West 0 East 0</p> <p>4. Exposure: <input type="checkbox"/>_very protected <input type="checkbox"/>_semi-exposed <input type="checkbox"/>_protected <input checked="" type="checkbox"/>_exposed <input type="checkbox"/>_semi-protected</p> <p>5. Sediment Transport (shoreline change): Coastal Stability <input type="checkbox"/>_none (stable) <input checked="" type="checkbox"/>_erosion <input type="checkbox"/>_accretion</p> <p>Alongshore sediment transport: n/a Dominant direction</p>	<p style="text-align: center;">Box 7 Site summary</p> <p>1. Coastal Type (5): Sediment</p> <p>2. Shore Unit (1-26): (19) Wide sand flat</p> <p>3. Zone Characteristics:</p> <p>Backshore: Grasslands with occasional dunes butting up to the bottom of a steep cliff</p> <p>Intertidal: Sandy beach with more larger substrate cobble as you move from north to south - occasional brown algae washed up on beach - several marine bird sightings (~40 sanderlings, ~10 eider ducks)</p> <p>Shallow subtidal (0-10m) boat survey</p> <p>Deep subtidal (10-20m) boat survey</p>

Figure I-5: Field Data Sheet for L'Anse Amour Shoreline Survey

Table I-3: Field Habitat Description Form for L'Anse Amour

Shore Unit				Zone	Components														
1 No.	2 Length (m)	3 GPS wp name	4 GPS coordinate		Physical							Biological							
				5 Zone	6 Substrate	7 Material	8 Map symbol	9 Width (m)	10 Slope (°)	11 Process	12 Flora	13 Flora species	14 Floral abundance	15 Floral micro habitat	16 Fauna	17 Faunal species	18 Faunal abundance	21 Elevation (m)	
1	71	383	508174 E	Bac	C	fs			25	Wa	sh, tr, gr,m		md					2.5	
			5702940N	Bac	Ba	fs		22	5	Wa	gr, shr		md		mb	*	*	1	
				Int	Du	fs		25	5	Wa	ba		s		mb	*	*	0.5	
2	109	200E	508035 E	Bac	Du	fs		20.1	1	Wa	gr, shr,tr	tuckamore	md					2.5	
			5702984 N	Bac	Du	fs		16.5	0	Wa	gr, shr		md					2	
				Bac	B	fs		6.3	12	Wa	gr		md					1.5	
				Int	B	fs		6.8	18	Wa	ba		s		mb	*	*	1	
3	169	centerline	507937 E	Bac	Du	fs		19.7	9.1	Wa	gr		md					3	
			5702974 N	Bac	Du	fs		16	10	Wa	gr		md					1	
				Int	B	c		6.6	8	Wa	ba		s		mb	*	*	1	
				Int	B	fs		7.2	15	Wa	-		s		mb	*	*	1	
4	289	384 (beach edge)	507770 E	Bac	B	fs		5.1	20	Wa	gr		md					2.5	
			5702965 N	Int	B	c		4.2	15	Wa	-		s		mb	*	*	1.5	
5	!!	500W	507680 E 5702881 N																

!! No field measurements were taken at this waypoint due to the hazards associated with the cliff edges and proximity to water; aerial photo interpretation will be used instead

* ~40 Sanderlings
~10 ducks (eiders)

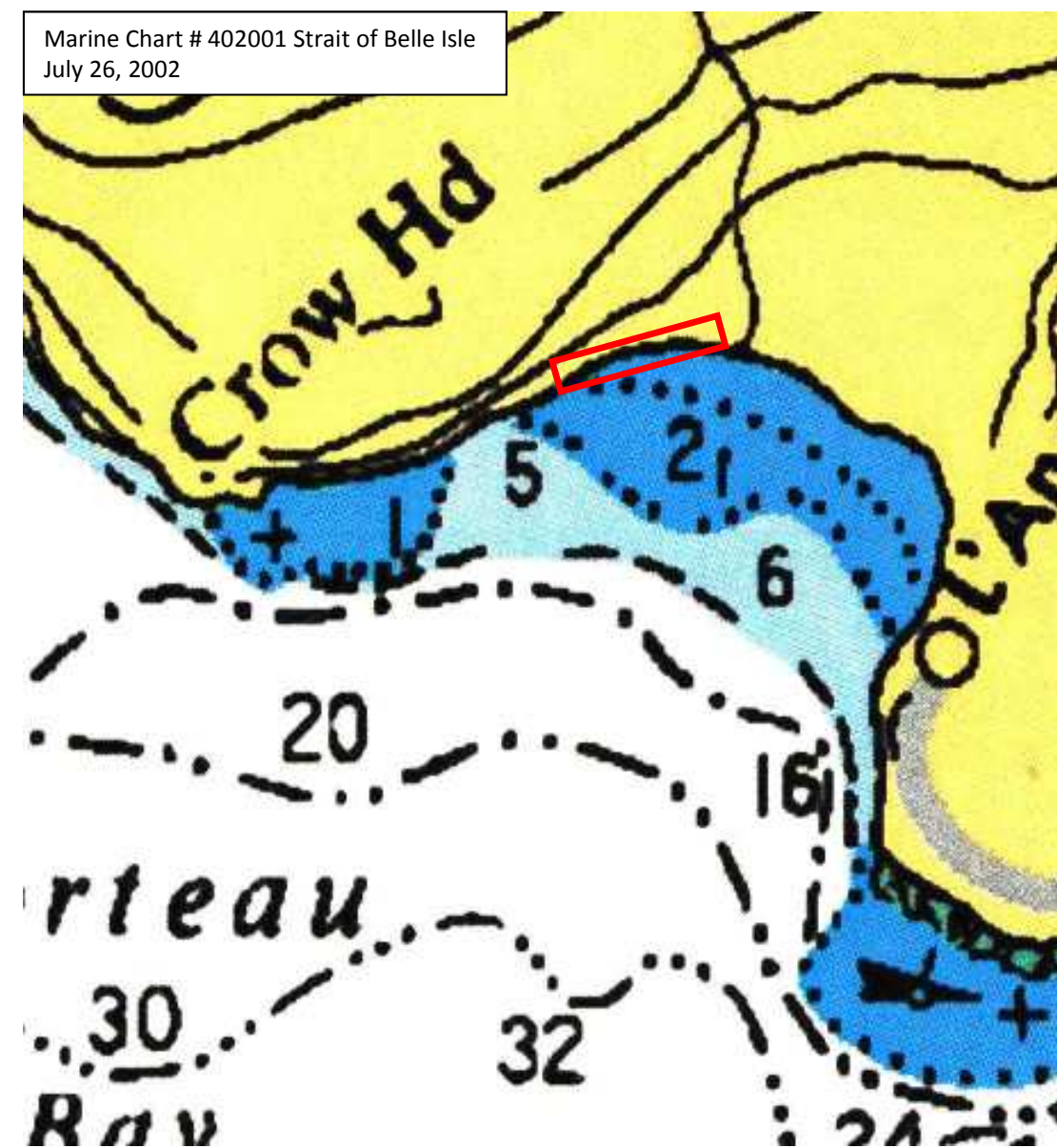
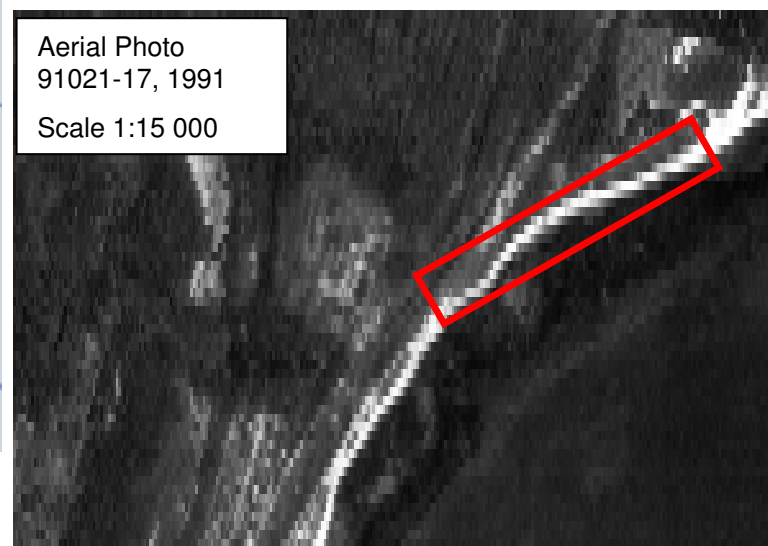
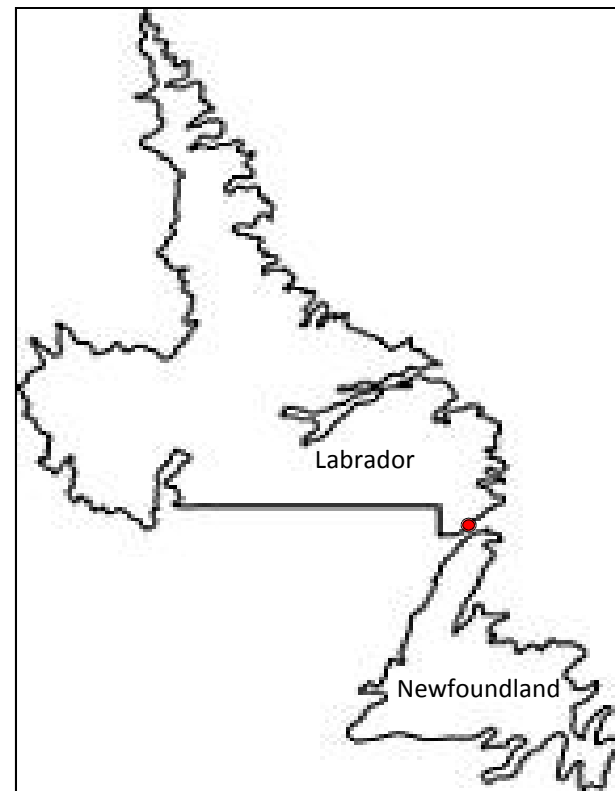
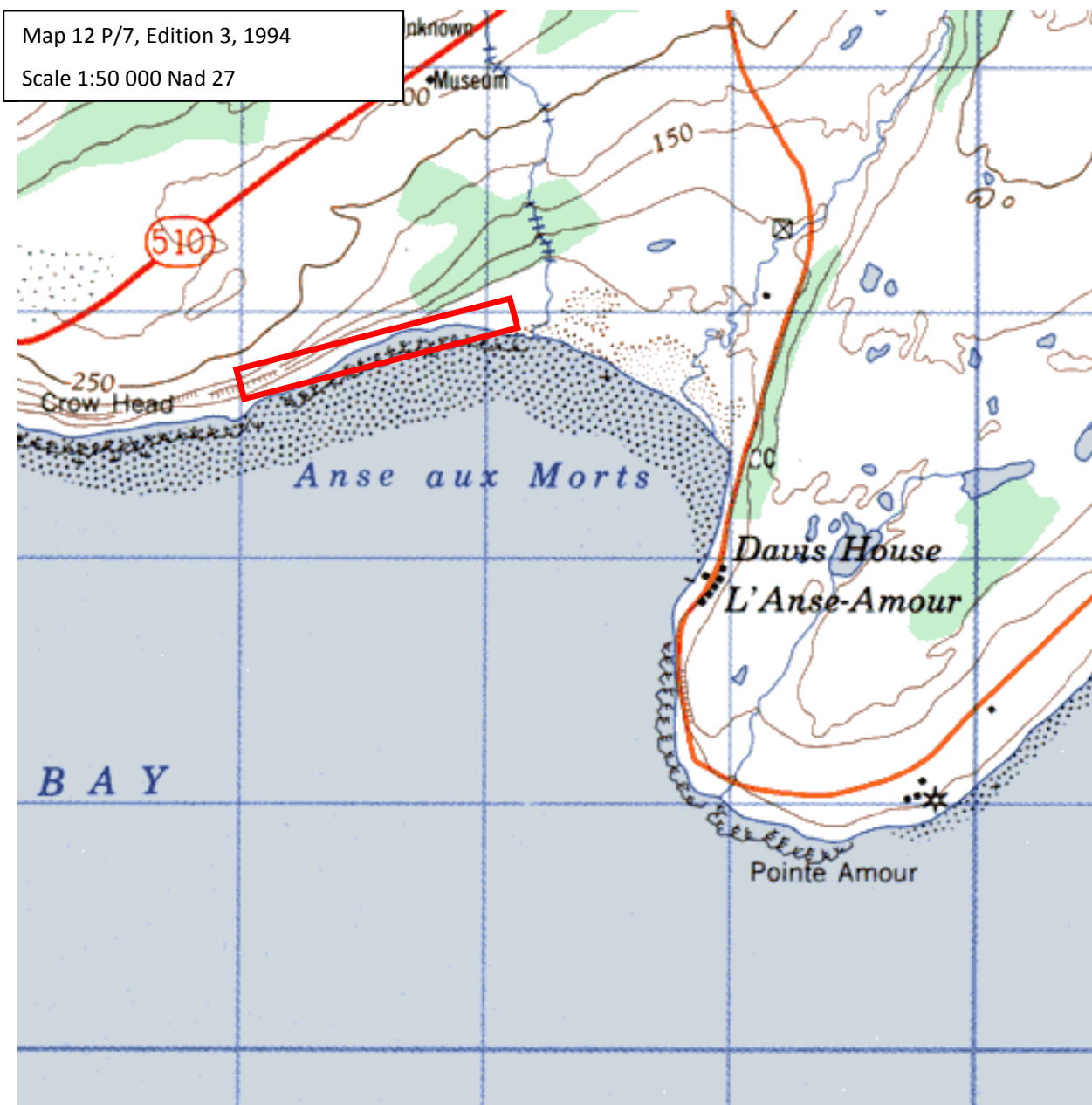


Figure I-6: L'Anse Amour Maps. Topographic map, aerial photo, and marine chart of L'Anse Amour

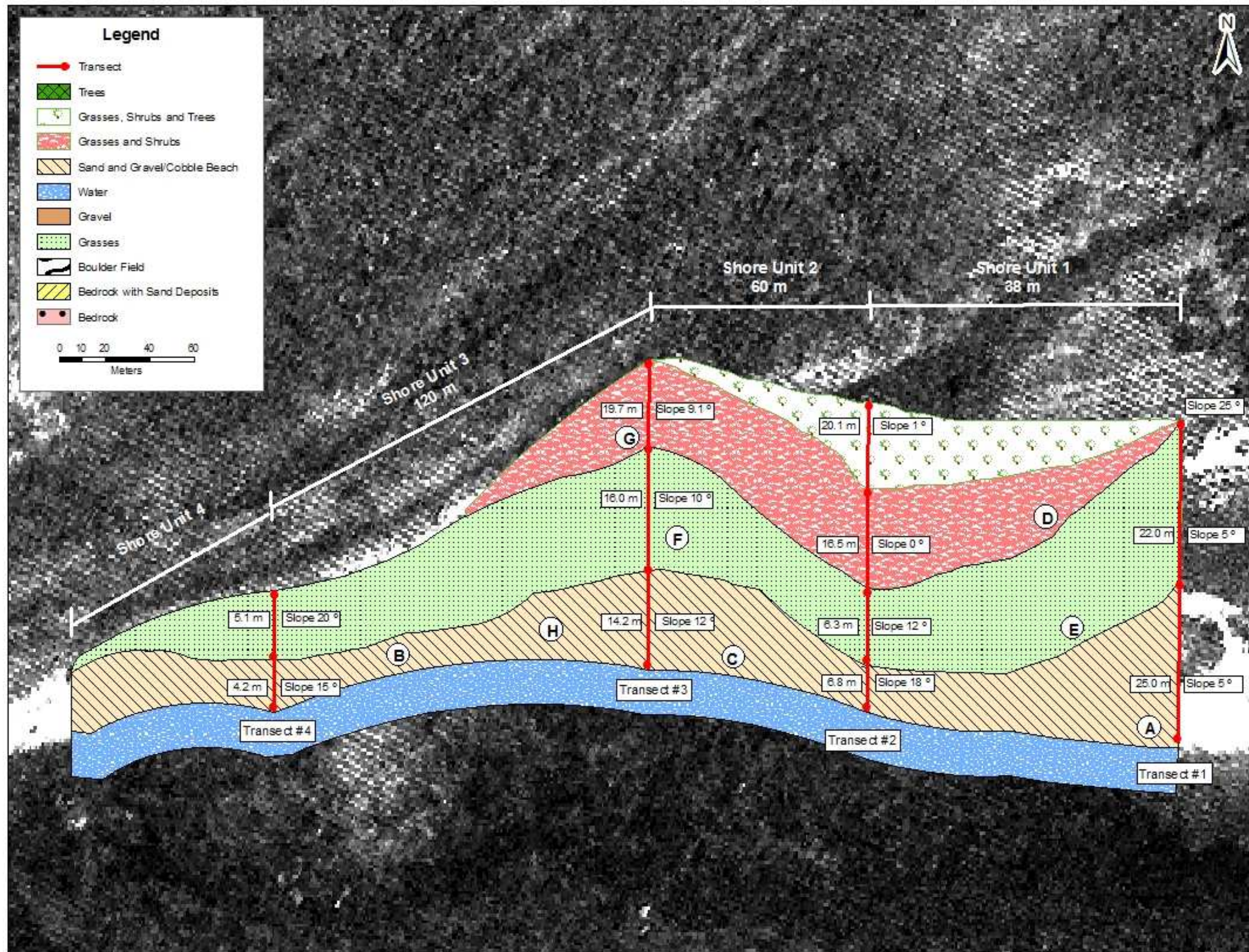


Figure I-7: L'Anse Amour Shoreline Interpretation. Results of Marine Habitat Classification Shoreline Surveys of L'Anse Amour

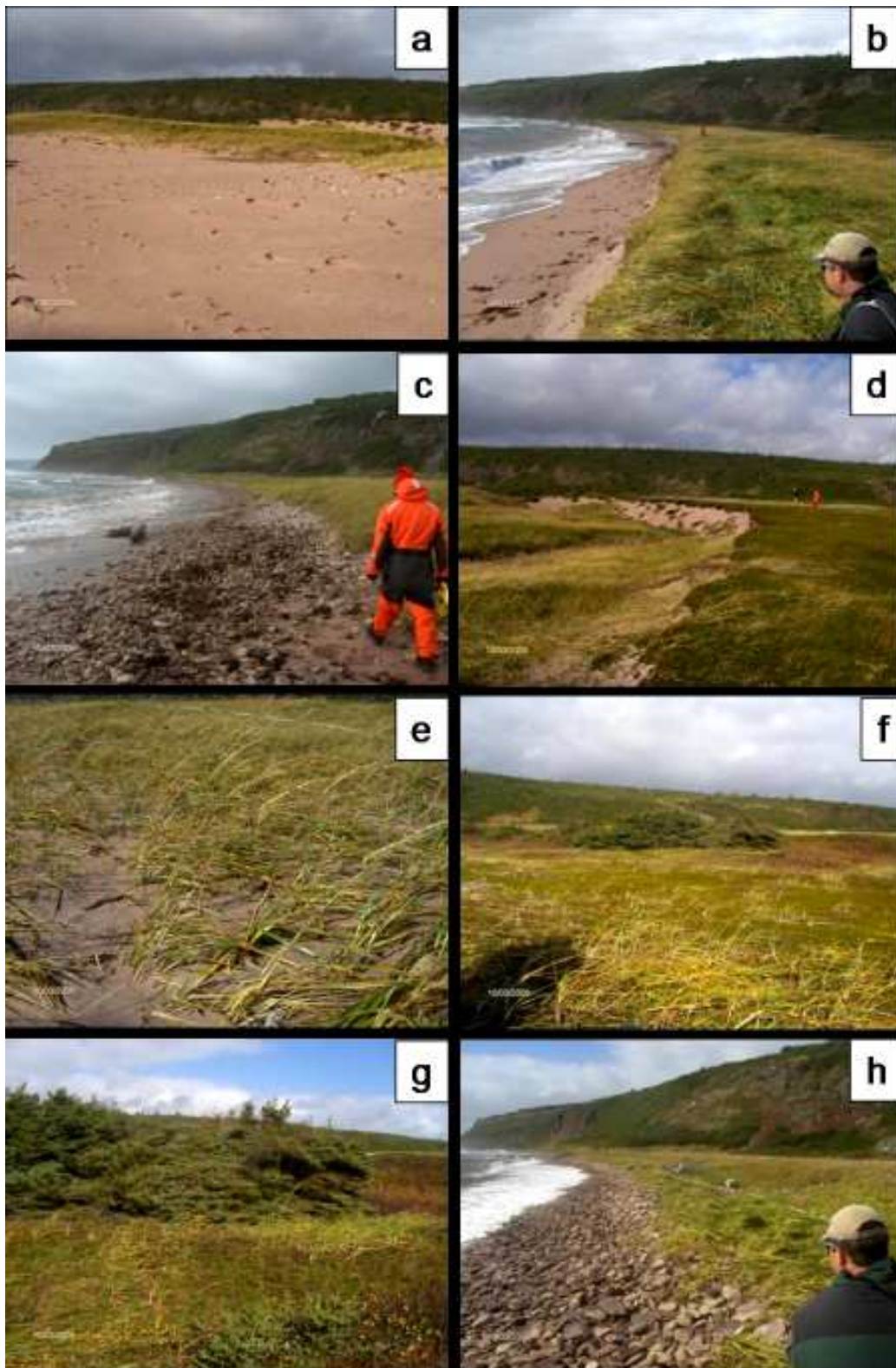


Figure I-8: L'Anse Amour Photos. Example photographs of the areas encountered on the L'Anse Amour Shoreline Survey (a) (b) Sand beach area (c) Gravel/Cobble beach area (d) Sand dune (e) Grass area (f) Grass and shrub area (g) Grass, shrubs, and trees, and (h) East end of beach showing cliff.

<p style="text-align: center;">Box 1 Project Description</p> <p>Project Name: NL Hydro HVDC Marine Location: Mistaken Cove Datum: NAD84 Zone: 21 UTM: 519233E / 5686102N DFO Division/Subdistrict: Western Area Date (Y, M, D): 08 10 13 Time: 1230 Weather: overcast, winds 10kn from NE, 2°C Crew: E. Lee, D. Kenny, M. Teasdale</p>	<p style="text-align: center;">Box 2 Data Sources</p> <p>NTS Maps: 12p-07 Charts: Marine 4020 Aerial Photos: 95014-66(1995) Other: Google Earth, Map Source</p>
<p style="text-align: center;">Box 3 Ecosystem</p> <p><input checked="" type="checkbox"/> Marine <input type="checkbox"/> _archipelago/island <input type="checkbox"/> _ fjord <input type="checkbox"/> _bay <input checked="" type="checkbox"/> _open coast <input type="checkbox"/> _ channel <input type="checkbox"/> Estuarine <input type="checkbox"/> _ lower/marine <input type="checkbox"/> _ middle <input type="checkbox"/> _upper/fluvial</p>	<p style="text-align: center;">Box 5</p> <p style="text-align: center;">Sketch site and determine shore units (See Part B of Form)</p> <hr/> <p style="text-align: center;">Box 6</p> <p style="text-align: center;">Complete fish habitat description (See Part B of Form)</p>
<p style="text-align: center;">Box 4 Oceanographic Environment</p> <p>1. Ice Classification <input checked="" type="checkbox"/> Land Fast <input type="checkbox"/> Ice Foot <input checked="" type="checkbox"/> Pack Ice <input type="checkbox"/> Ice Scour</p> <p>2. Tides: (from Forteau Bay) Range (m): mean maximum Elevation (m): low 0.3 low 0.7 high 1.4 high 1.7</p> <p>3. Wave Environment (km) Maximum Fetch 720 Effective Fetch 602 North 28 South 0.9 West 91 East 0</p> <p>4. Exposure: <input type="checkbox"/> very protected <input type="checkbox"/> semi-exposed <input type="checkbox"/> protected <input checked="" type="checkbox"/> exposed <input type="checkbox"/> semi-protected</p> <p>5. Sediment Transport (shoreline change): Coastal Stability <input checked="" type="checkbox"/> none (stable) <input type="checkbox"/> erosion <input type="checkbox"/> accretion</p> <p>Alongshore sediment transport: n/a Dominant direction</p>	<p style="text-align: center;">Box 7 Site summary</p> <p>1. Coastal Type (5): Sediment</p> <p>2. Shore Unit (1-26): (4) Gravel beach on wide rock platform</p> <p>3. Zone Characteristics:</p> <p>Backshore: Grasslands with occasional dunes butting up to the bottom of a steep cliff</p> <p>Intertidal: Bedrock, gravel, and boulder beach with some kelps, coral washed up onshore - Some green, brown, and red algae with occasional tidal pools with amphipods present</p> <p>Shallow subtidal (0-10m) boat survey</p> <p>Deep subtidal (10-20m) boat survey</p>

Figure I-9: Field Data Sheet for Mistaken Cove (North and South)

Table I-4: Field Habitat Description Form for Mistaken Cove (North and South)

Shore unit				Zone	Components															
1 No.	2 Length (m)	3 GPS wp name	4 GPS coordinate		Physical							Biological								
				6 Substrate	7 Material	8 Map symbol	9 Width (m)	10 Slope (°)	11 Process	12 Flora	13 Flora species	14 Floral abundance	15 Floral micro habitat	16 Fauna	17 Faunal species	18 Faunal abundance	19 Faunal micro habitat	20 Cover (%)	21 Elevation (m)	
1		197	519352 E	Bac	Ba	m		10.7			Wi	gr, m		md						2.5
			5685222 N	Int	B	br, bl		10	22	Wa	ga,ba		md	tp		Am	o			0.5
				Int	B	g		7.4	0	Wa				tp						0.3
2	360	203	519490 E	Bac	Ba	m		9.6	5		Wi	gr, tr, sh	tuckamore	md						1.5
			5685096 N	Int	B	g, c		11.3	20	Wa										1
				Int	B	br		8.3	0	Wa	ga,ba		md	tp	Am		o			0.3
3	120	204	519680 E	Bac	Ba	m		8.9	18			gr, tr, sh, tu		md						1.2
			5685013 N	Int	B	gr, ms		10	15	Wa										0.5
				Int	B	br		3.6	0	Wa	ga,ba		s	tp	ba, mu, cl		o			0.2
4	134	205	519733 E	Bac	Ba	m		3	5			gr, m		md						1
			5684899 N	Int	B	gr		6.1	25	Wa										1
				Int	B	br		10.7	0	Wa	ga,ba		ms	tp						0.5
5	60	206	519828 E	Bac	Ba	m		3				gr, m		ms						0.5
			5684875 N	Int	B	g		12.4	15				ga,ba		ms	tp	ba, mu, cl			
6	60	207	519915 E	Bac	B			12				gr,sh		ms						0.5
			5684866 N	Int	B	br, gr		8					ga		s	tp	ba		o	
7	60	208	520000 E	Bac				4.5	12			gr								1
			5684879 N	Int	B	gr		4	0											1
				Int	B	br		16.1	0				Ba		s	tp	ba		o	
8	pic	209	520111 E	Bac	Ba	g,m		2.1				gr, tr, tu		ms					2	2
			5684830 N	Int	B	p, br		5					ga, ba		ms					4
9	pic	210	520154 E	Bac	Ba	m		4			Wi	gr		ms					3	1.5
			5684734 N	Int	B	p,c,br		>50				Wa	da		s	tp				37
10	pic	211	520044 E	Bac	Ba	m		2			Wi	gr		s					1	1.5
			5684666 N	Int	B	g,c		50				Wa	da		ms	tp				37
11	pic	212	519734 E	Bac	Ba	m		4			Wa	gr		ms					3	1
			5684643N	Int	B	g, c, bl		20				Wa	ba		s					15

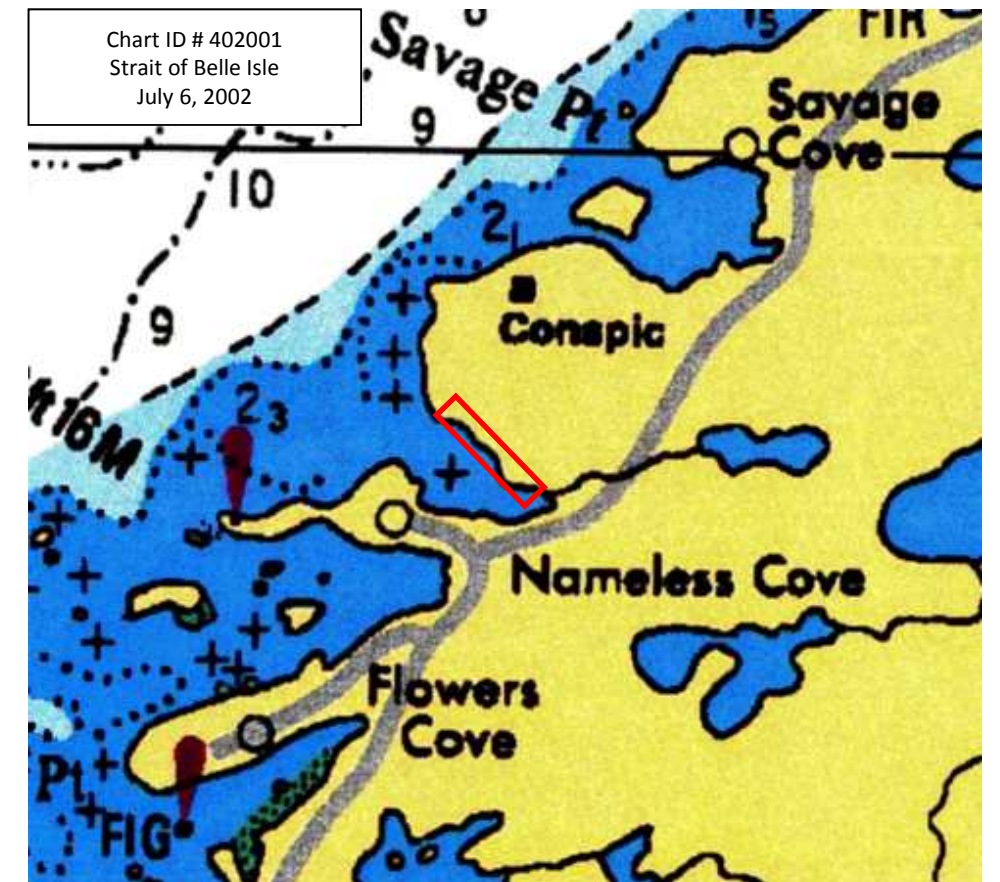
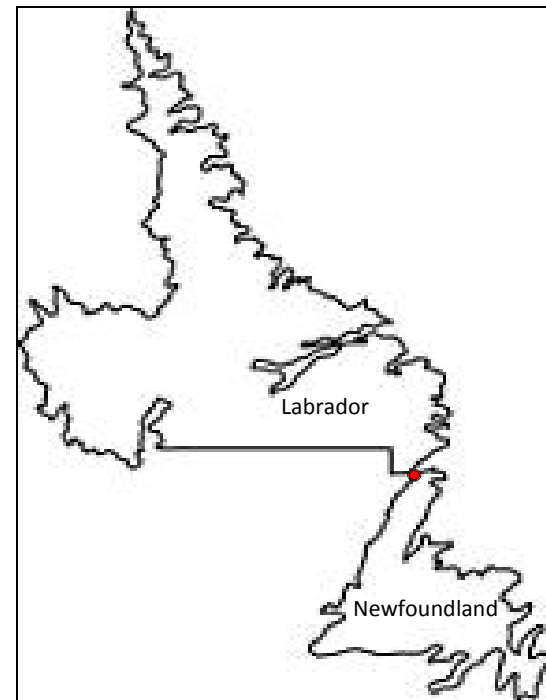
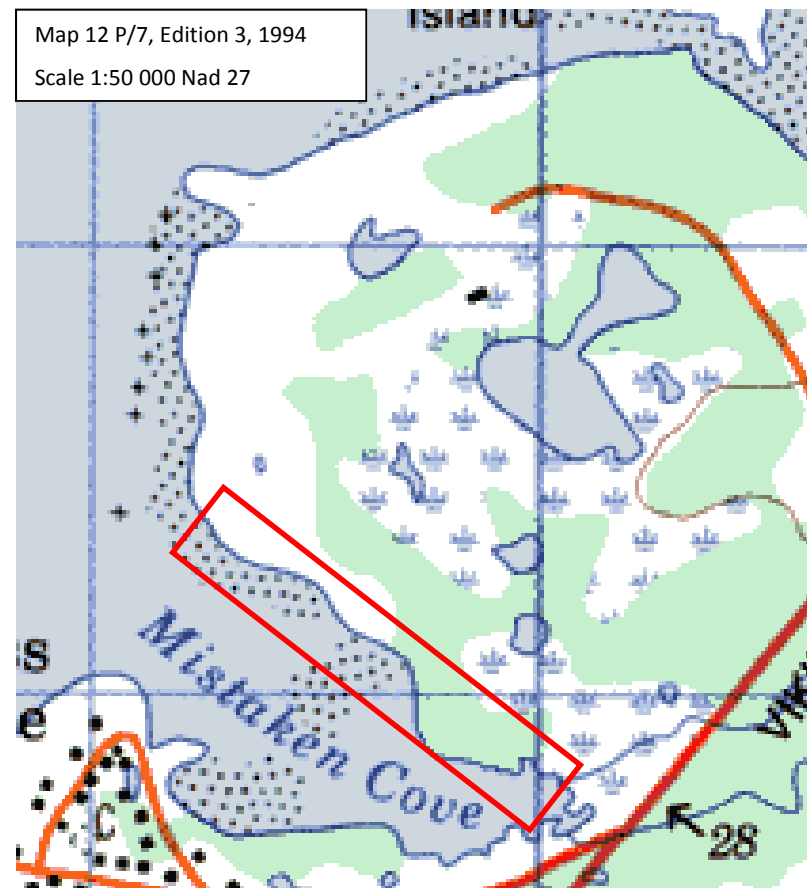


Figure I-10: Mistaken Cove Maps-North. Topographic map, aerial photo, and marine chart of the southern section of Mistaken Cove



Figure I-11: Mistaken Cove North Shoreline Interpretation. Results of Marine Habitat Classification Shoreline Surveys of the northern section of Mistaken Cove

Map 12 P/7, Edition 3, 1994
Scale 1:50 000 Nad 27

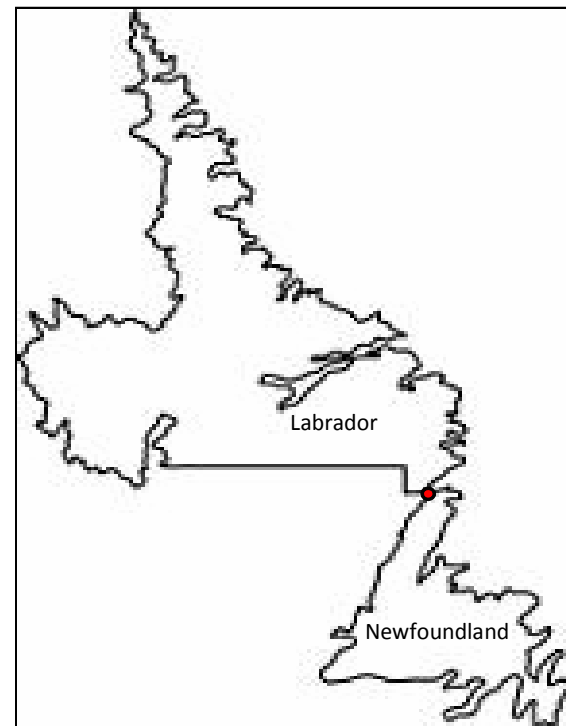
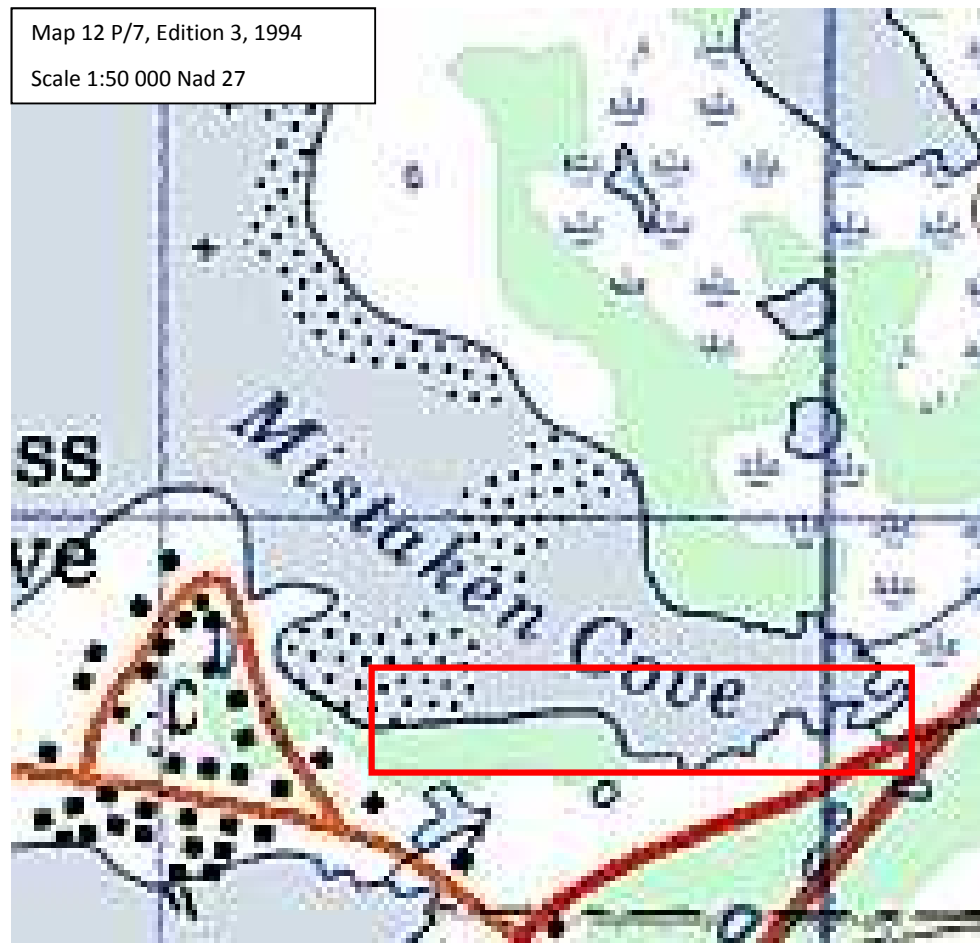
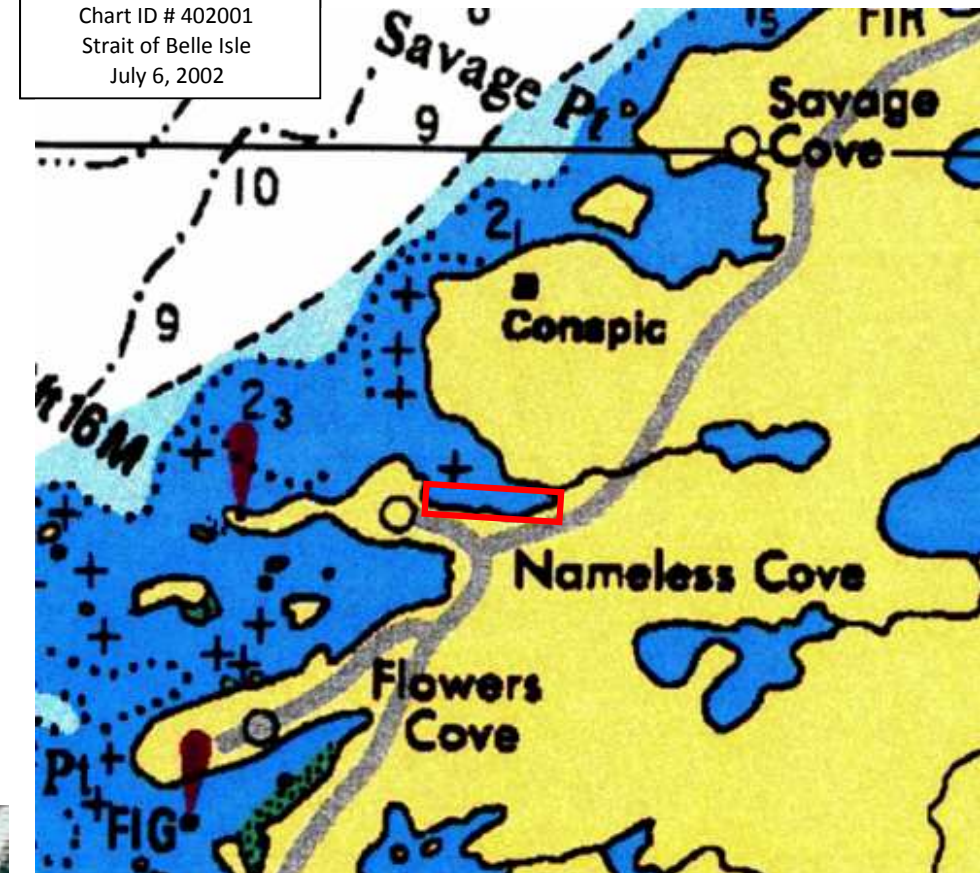


Chart ID # 402001
Strait of Belle Isle
July 6, 2002



Aerial Photo 95014 - 66
Scale 1:12 500

Figure I-12: Mistaken Cove Maps-South. Topographic map, aerial photo, and marine chart of Mistaken Cove

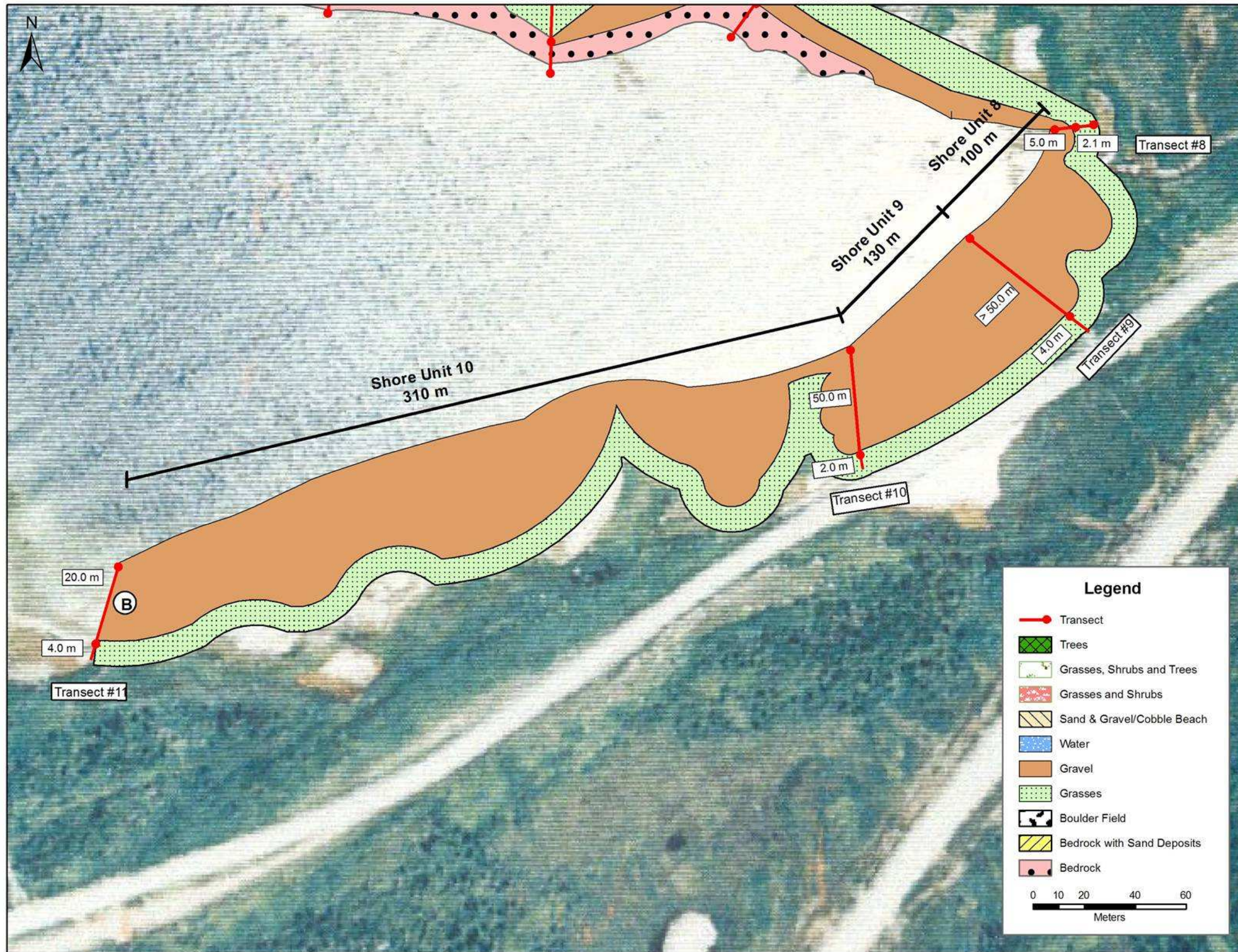


Figure I-13: Mistaken Cove South Shoreline Interpretation. Results of Marine Habitat Classification Shoreline Surveys of the southern section of Mistaken Cove



Figure I-14 Mistaken Cove Photos (North and South). Example photographs of the areas encountered on the Mistaken Cove Shoreline Survey. Letters correspond to locations in figure of shoreline survey (a) Bedrock (b) Bedrock with sand deposits (c) Gravel (d) Green algae (e) Brown algae (f) Grassy areas with tuckamore in the background.

<p align="center">Box 1 Project Description</p> <p>Project Name: NL Hydro HVDC Marine Location: Yankee Point Datum: NAD84 Zone: 21 UTM: 519358E / 5685207N DFO Division/Subdistrict: Western Area Date (Y, M, D): 08 10 13 Time: 1130 Weather: overcast, winds 20kn from NE, 2°C Crew: E. Lee, D. Kenny, M. Teasdale</p>	<p align="center">Box 2 Data Sources</p> <p>NTS Maps: 12p-07 Charts: Marine 4020 Aerial Photos: 95014-66(1995) Other: Google Earth, Map Source</p>
<p align="center">Box 3 Ecosystem</p> <p><input checked="" type="checkbox"/> Marine <input type="checkbox"/> archipelago/island <input type="checkbox"/> fjord <input checked="" type="checkbox"/> bay <input type="checkbox"/> open coast <input type="checkbox"/> channel <input type="checkbox"/> Estuarine <input type="checkbox"/> lower/marine <input type="checkbox"/> middle <input type="checkbox"/> upper/fluvial</p>	<p align="center">Box 5</p> <p align="center">Sketch site and determine shore units (See Part B of Form)</p> <hr/> <p align="center">Box 6</p> <p align="center">Complete fish habitat description (See Part B of Form)</p>
<p align="center">Box 4 Oceanographic Environment</p> <p>1. Ice Classification <input checked="" type="checkbox"/> Land Fast <input type="checkbox"/> Ice Foot <input checked="" type="checkbox"/> Pack Ice <input type="checkbox"/> Ice Scour</p> <p>2. Tides: (closest station Forteau Bay) Range (m): mean maximum Elevation (m): low 0.3 low 0.7 high 1.4 high 1.7</p> <p>3. Wave Environment (km) Maximum Fetch 41 Effective Fetch 0.94 North 0 South 41 West 0 East 38</p> <p>4. Exposure: <input type="checkbox"/> very protected <input type="checkbox"/> semi-exposed <input type="checkbox"/> protected <input type="checkbox"/> exposed <input checked="" type="checkbox"/> semi-protected</p> <p>5. Sediment Transport (shoreline change): Coastal Stability <input checked="" type="checkbox"/> none (stable) <input type="checkbox"/> erosion <input type="checkbox"/> accretion</p> <p>Alongshore sediment transport: n/a Dominant direction</p>	<p align="center">Box 7 Site summary</p> <p>1. Coastal Type (5): Mixture</p> <p>2. Shore Unit (1-26): (13) Sand Gravel Beach on wide rock platform</p> <p>3. Zone Characteristics: Backshore: Grasslands with tuckamore with shallow slope Intertidal: Bedrock, gravel, and boulder present and very shallow in some areas (tidal rock flat) with occasional tidal pools - occasional brown algae, diatoms in stagnant pools, and some fauna (mostly barnacles, few clams) Coral remains were washed up on beach</p> <p>Shallow subtidal (0-10m) boat survey Deep subtidal (10-20m) boat survey</p>

Figure I-15: Field Data Sheet for Yankee Point

Table I-5: Field Habitat Description Form for Yankee Point.

Shore Unit				Zone	Components																
1 No.	2 Length (m)	3 GPS wp name	4 GPS coordinate		Physical							Biological									
				5 Zone	6 Substrate	7 Material	8 Map symbol	9 Width (m)	10 Slope (°)	11 Process	12 Flora	13 Flora species	14 Floral abundance	15 Floral micro habitat	16 Fauna	17 Faunal species	18 Faunal abundance	19 Faunal micro habitat	20 Cover (%)	21 Elevation (m)	
1	17		519233 E	Bac	Ba	m		53	5		gr									2	
			5686102 N	Bac	B	c,bl, g		10	15	Wa	ba		s	tp						0.5	
				Bac	B	m		106	2	Wa	gr, li,m		md							3	
				Int	B	g		31	15	Wa										1	
				Int	B	br		35	15	Wa											
2	start		519357 E	Bac	Ba	m		69.8	2		gr		md							5	
			5686013 N	Int	Ba	g		16.9	14											2	
				Int	B	br, p		2.5	3	Wa	ba, ra		s	tp						1	
3	mid	200	519286 E	bac	Ba	m		117	8		tr, gr,sh	tuckamore	md							3	
			5685936 N	bac	Ba	m		24.5	5		gr, m, li		md							1	
				int	B	g		23.3	10	Wi, Wa										0.5	
				int	Br	br, g, p		23.5	2	Wa	ba, ra		ms	tp	am		o			0	
4	345	202	519281 E	bac	Grass berm	m		47.5	15		gr		md							1	
			5685679 N	int	B	g		11.2	10	WI	g		md							0.5	
				int	Br	br,bl		27.4	0	Wa	ba, ra		s	tp						0.3	
5	500	196	519196 E	bac	Ba	m		28.9	10		gr		md							1.5	
			5685481 N	int	B	g		6.2	30	Wa										1	
				int	Br	br		33.8	0	Wa	ba, ra		md	tp	ba, mu, cl, mb			tp		0.2	

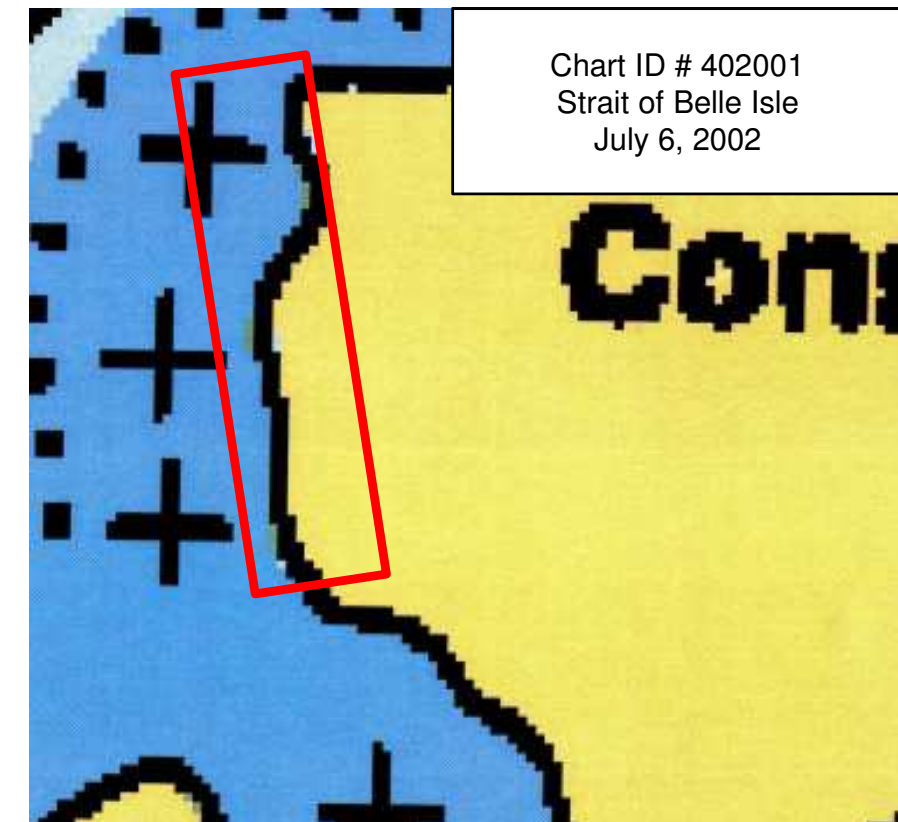
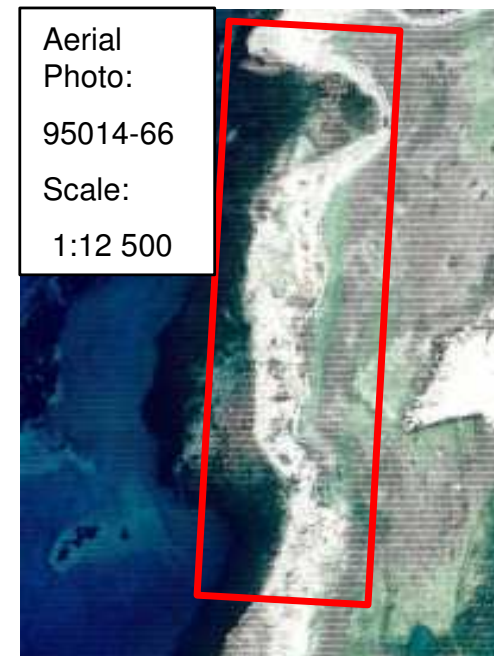
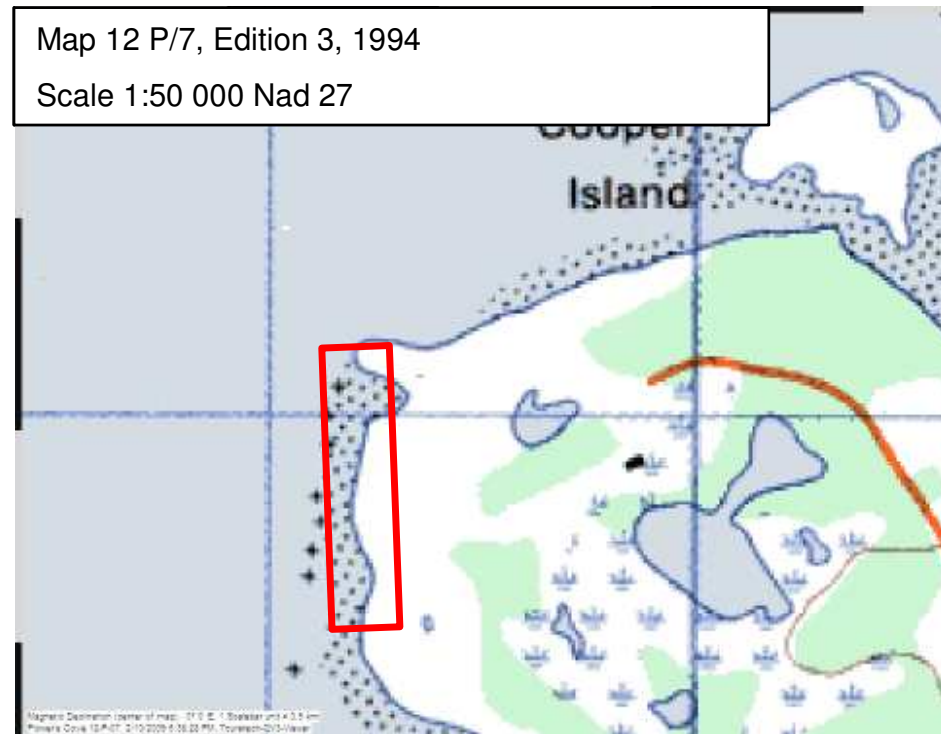


Figure I-16: Yankee Point Maps. Topographic map, aerial photo, and marine chart of Yankee Point

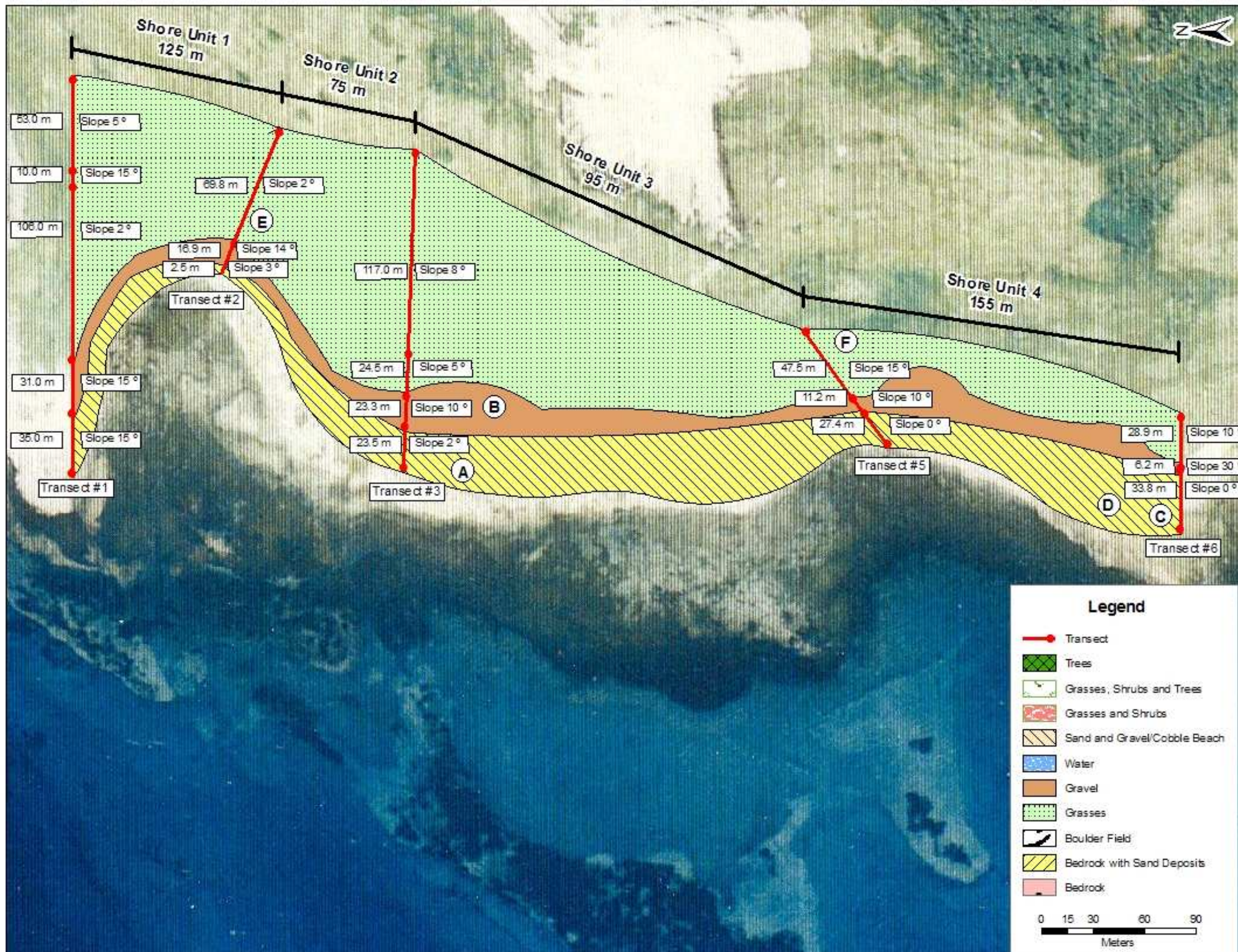


Figure I-17: Yankee Point Shoreline Interpretation. Results of Marine Habitat Classification Shoreline Surveys of Yankee Point

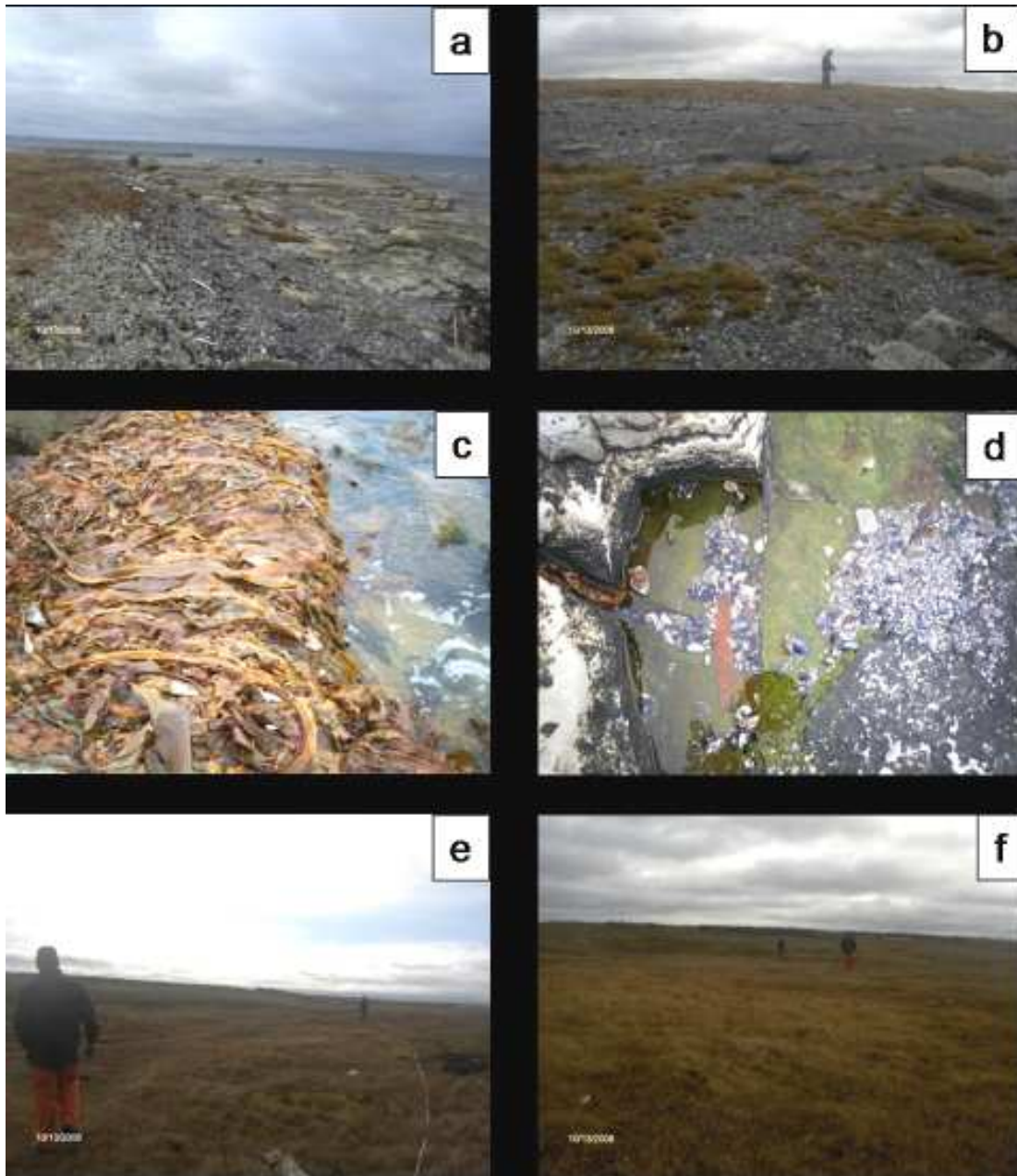


Figure I-18: Yankee Point Photos. Example photographs of the areas encountered on the Yankee Point Shoreline Survey (a) Bedrock with gravel and pebbles (b) Gravel (c) Brown and Red Algae (d) Amphipods and mussel shells in tide pool (e), Grass area and (f) Grass with trees/tuckamore in background.