EXXONMOBIL CANADA LTD.

EL 1167 GALE N-66 PRE-DRILLING SEABED INVESTIGATION SURVEY

2023 REPORT

MARCH 17, 2023

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EXXONMOBIL CANADA LTD.

FINAL

PROJECT NO.: TE22752004.3000
DATE: MARCH 17, 2023

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ABBREVIATIONS

C-NLOPB	Canada-Newfoundland & Labrador Offshore Petroleum Board
DFO	Fisheries and Oceans Canada
EIS	Environmental impact statement
EL	Exploration license
EMCL	ExxonMobil Canada Limited
ESRI	Environmental Systems Research Institute
GIS	Geographic Information System
HD	High definition
HiPAP	High Precision Acoustic Positioning System
IAAC	Impact Assessment Agency of Canada
MODU	Mobile offshore drilling unit
NAD 83	North American Datum 1983
NAFO	Northwest Atlantic Fisheries Organization
ROV	Remotely operated vehicle

SBM	Synthetic-based mud
sp.	Species
Stdev.	Standard deviation
UTM	Universal Transverse Mercator
WBM	Water-based mud

Units

%	percent
cm	centimeters
ind.	individual
km	kilometers
m	meters
mm	millimeters
n	number

1 INTRODUCTION

WSP E & I Canada Limited (WSP), was contracted by ExxonMobil Canada Limited (EMCL) to conduct a pre-drilling benthic survey at the Gale N-66 wellsite within Exploration Licence (EL) 1167 (formerly EL 1151A) (Figure 1-1). EL 1167 was formed in November 2022 when EL 1151A and EL 1163 were consolidated. This pre-drilling seabed survey for fish and fish habitat is in accordance with the Jeanne D'Arc Exploration Drilling Project Decision Statement (IAAC 2020). Activities associated with this seabed survey are covered under the ExxonMobil Canada Eastern NL Geophysical Program 2015-2024.

1.1 PROJECT LOCATION

The Project Area is located 366 km east of St. Johns on the Eastern Grand Banks of Newfoundland in approximately 170 m of water depth.

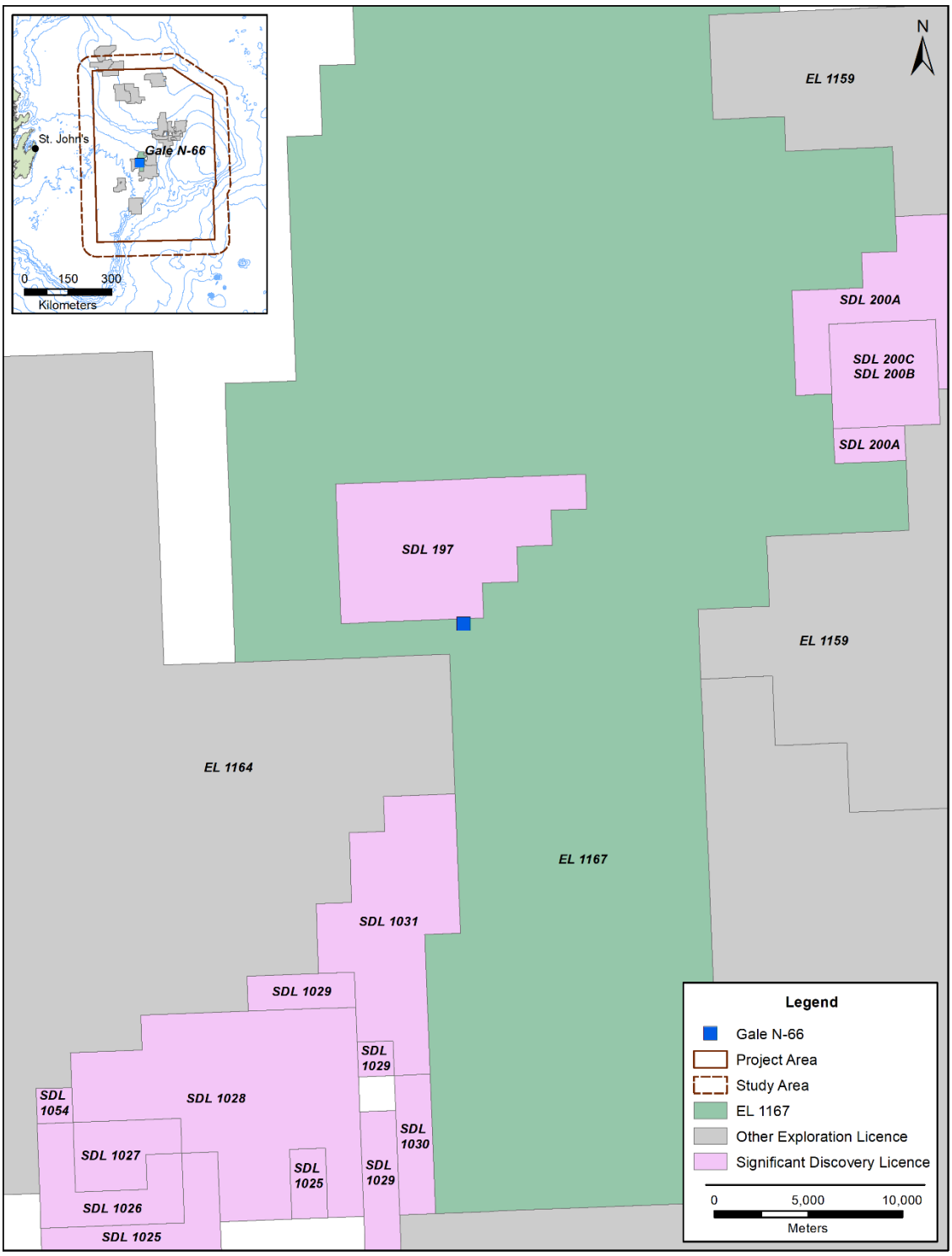

Figure 1-1 Location of EL 1167 Gale N-66 well.

1.2 PRE-DRILLING SEABED SURVEY SCOPE

The objective of the 2022 pre-drilling seabed survey was to confirm the presence or absence of any aggregations of habitat-forming corals or sponges and identify any other environmentally sensitive habitats within the predicted drill cuttings deposition footprint. The survey followed the approved plan (CAEL-EF-DPZZZ-03-500-0024; EMCL 2022) which was developed in consultations with both Fisheries and Oceans Canada (DFO) and the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB). The survey design also included an anchor pattern but was not surveyed in 2022. The results from the 500 m x 500 m grid survey are discussed in this report. An addendum will be added for the anchor pattern survey report once completed.

1.3 REGULATORY GUIDANCE

To mitigate potential effects on cold-water corals from normal drilling activities, the C-NLOPB applies the following coral guidance prior to operation authorization.
The C-NLOPB guidance indicates that drilling activities shall not occur within 100 m of coral colonies defined as either:

— The presence of *Desmophyllum pertusum* reef complex and/or,
— The presence of five or more large corals (above 30 cm in height or width) within 100 m^2 area.

1.4 DRILL CUTTINGS MODELLING

The seabed survey design was developed around using the predicted drill cuttings dispersion model described in the *Husky Exploration Drilling Project: Environmental Impact Statement* (Section 2.6.1 in Stantec 2018). Discharging cuttings into the local environment may increase the sedimentation in the vicinity of the well location. The drill cuttings dispersion model predicts the distribution of accumulations of released water-based muds (WBM) and synthetic-based muds (SBM) during normal drilling activities. WBM mixed cuttings have a medium grain class size (2 mm to 130 mm) and are released at the seabed and while cuttings mixed with SBM are finer (< 0.06 mm) and released near the surface. Studies investigating the effects of sedimentation on benthic invertebrates at well locations have found the effects to be generally localized to the cuttings pile (Neff et al. 2000, Gates and Jones 2012). In areas outside of the drill centre cuttings pile, a predicted-no-effect threshold (PNET) for non-toxic sedimentation accumulation has been estimated to be 6.5 mm based on averaged burial tolerances of benthic invertebrates (Kjeilen-Eilertsen et al. 2004, Smit et al. 2006). An accumulation threshold of 1.5 mm has been proposed as a lower limit for sensitive taxa (Kjeilen-Eilertsen et al. 2004). A PNET range between 1.5 mm and 6.5 mm (combined discharges) was considered in the survey design.

To account for variable environmental conditions, four seasonal models were run for conditions observed at eight wells at similar depths to Gale N-66 well. The total cuttings discharged material (WBM and SBM) was modelled (Stantec 2018). The seasonal models predict that the majority of released cuttings would accumulate within 200 m from the wellhead (Figure 1-2).

Table 1-1 Summary table of predicted drill cuttings dispersion extent and deposition.

Distance from Drill Centre	Cuttings Deposition Description
< 100 m to <300 m	Cuttings patches of 1 to 10 mm with portions as high as 25 to 50 mm thick.
>300 m to 500 m	Thin cuttings patch up to 0.1 mm thick
500 m to 12 km	Thin cuttings patch up to 0.2 mm thick

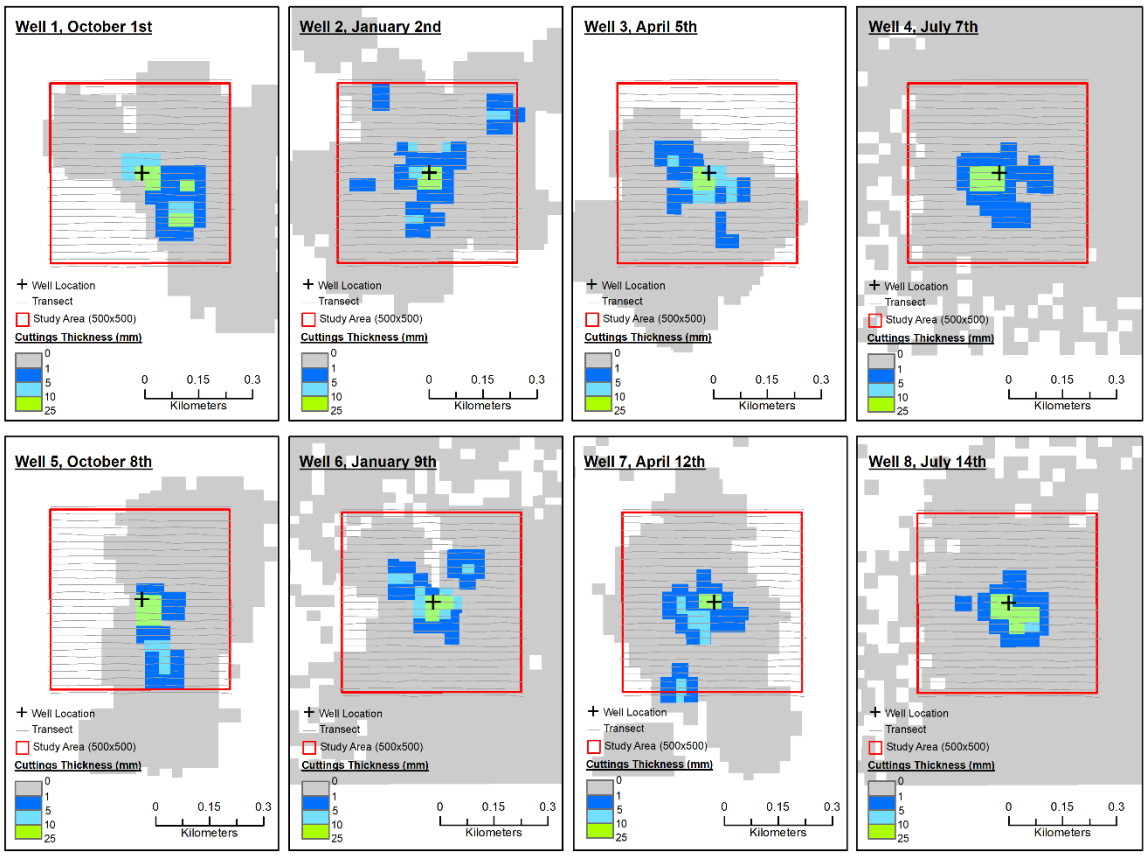

Figure 1-2 Predicted drill cutting footprint (WBMs and SBMs) all four seasonal models at 8 wells with actual survey transects overlaid.

1.5 PRE-DRILLING SEABED SURVEY DESIGN

The pre-drilling survey design included areas predicted to experience cutting accumulations exceeding the 1.5 mm PNET. The survey consisted of a 500 m by 500 m grid centred on the proposed drill center with 27 horizontal transect lines (spaced 20 m apart) (Figure 1-3).

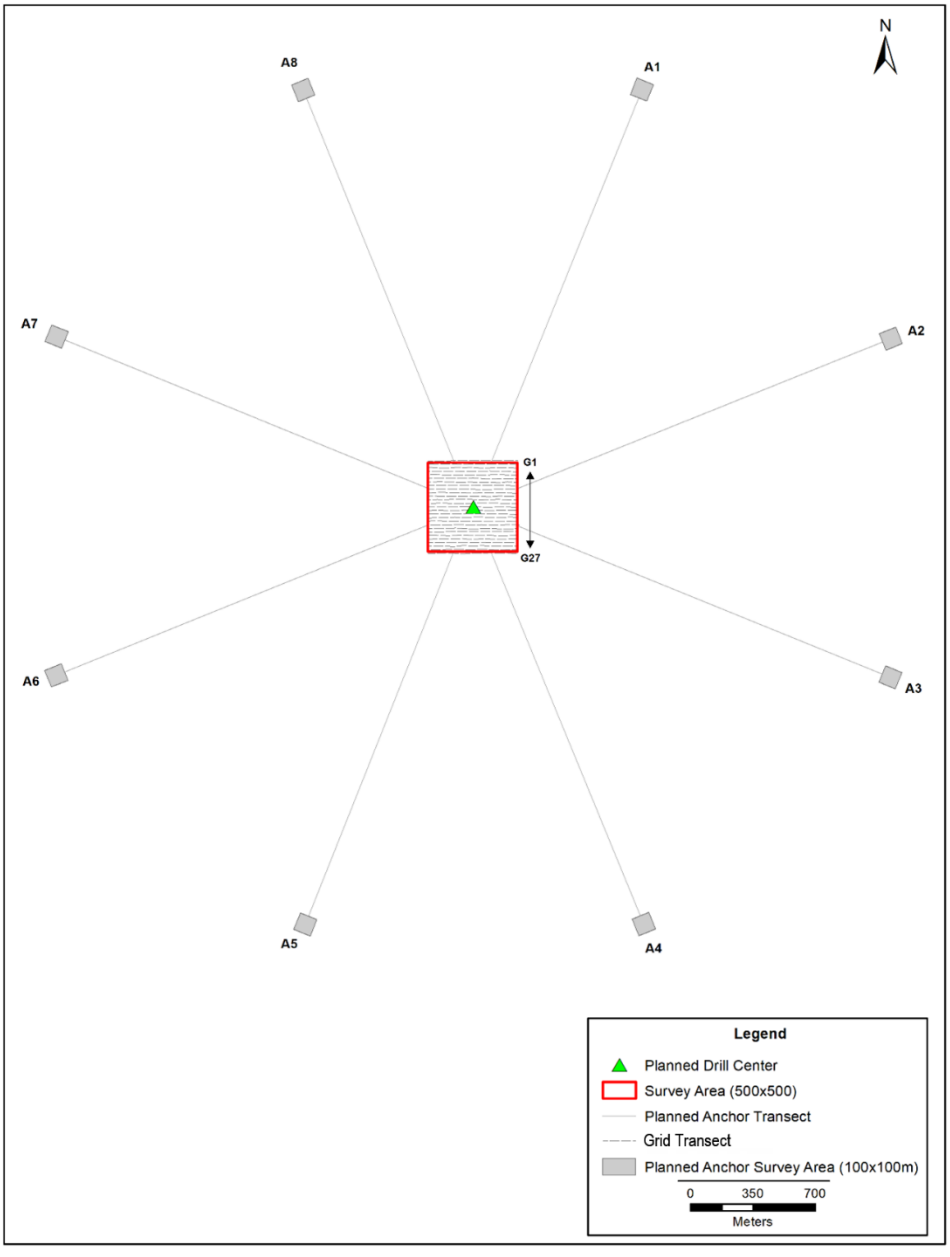

Figure 1-3 Pre-drilling seabed survey design (2022) for Gale N-66 including planned grid survey and anchor pattern.

2 METHODOLOGY

2.1 SEABED SURVEY

The pre-drilling seabed survey activities were conducted from October 31st to November 4th, 2022, onboard the *MV Paul A. Sacuta* using a Millennium 191 remotely operated vehicle (ROV) (Figure 2-1). The ROV was equipped with a forward-facing pan/tilt/zoom high-definition (HD) camera which was used to collect high-definition video during the duration of the survey. Still images of fauna were taken opportunistically. Video and still imagery were used to identify the benthic fauna (including corals and sponges).

EMCL was responsible for chartering the vessel and ROV support services required to conduct the 2022 survey. The onboard WSP biologist was responsible for the execution of the survey plan and providing direction to the ROV operators to ensure the collection of video and images appropriate for characterizing cold-water corals and sponge groups and general characterization of fish and other invertebrates.

The survey video and still imagery were geo-referenced using the ship's HiPAP system. The HD video was encoded with a digital overlay that displayed depth (m), coordinates (UTM and NAD83), heading, date and time (Newfoundland Standard Time), and altitude above the seafloor. Still images were encoded with a date/time stamp and numbered sequentially. During the survey, fixes were taken for the start and end of each transect. The ROV travelled at an altitude <2 m above the seafloor and an estimated field of view of 2.03 m. Scaling line lasers were spaced 20.32 cm apart.

Table 2-1 Survey parameters.

Survey	Pre-drilling 2022
Area	Grid
Water Depth (m)	170
No. of Transects	27
No. of Transect Sections	270
Distance Covered (m)	13,500
Field of View (m)	2.03
Section Length (m)	50
Laser Distance (cm)	20.32
Notes: Field of view was determined from 20 randomly selected images from throughout the survey area.	

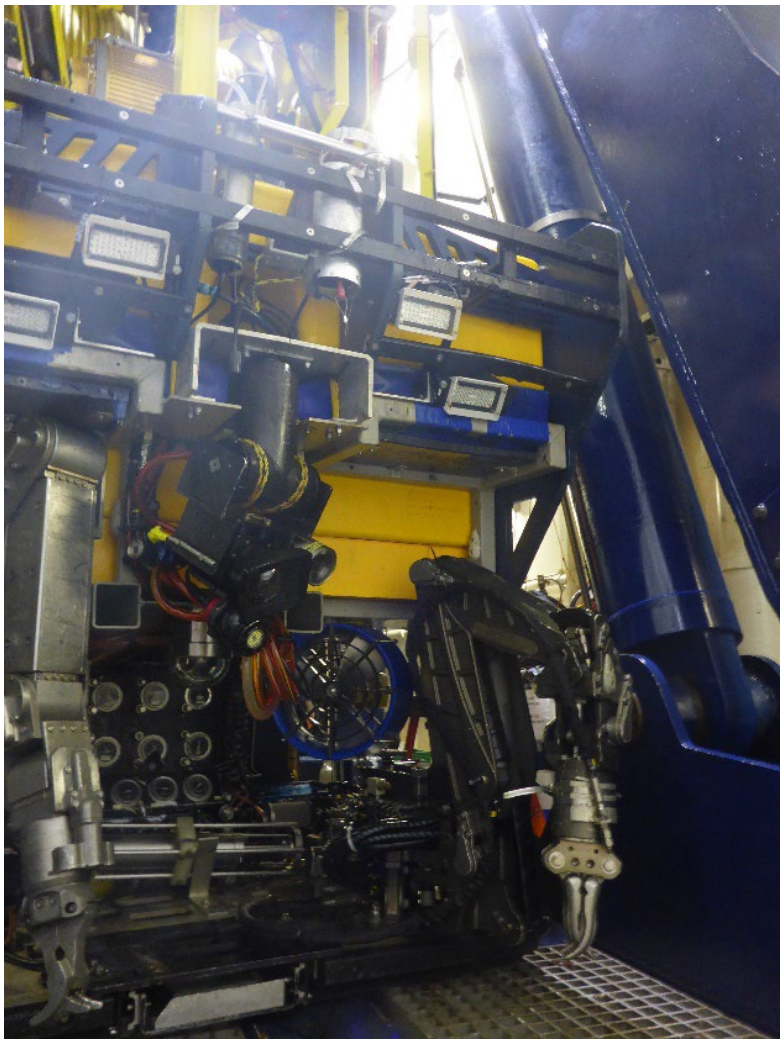

Figure 2-1 Millennium 191 ROV used for the 2022 EL 1167 pre-drilling survey.

2.2 VISUAL ANALYSIS

The benthic video was analyzed for surficial geology, coral and sponge abundance, density, and condition, as well as invertebrate and fish taxa abundance and density. Survey transects were sectioned into 50 m bins (linear distance) for analysis.

2.2.1 SURFICIAL SUBSTRATE

The surficial substrate was characterized as percent coverage of the seafloor for each substrate type present along the 50 m (linear distance) transect sections. Substrate type was determined using the Udden-Wentworth Scale and categorized into a substrate class (Table 2-2) (Wentworth 1922).

Table 2-2 Surficial substrate categories used to categorize benthic environment.

Substrate Class	Substrate Type	Definition
Bedrock		Continuous solid bedrock
Coarse	Boulder	Rocks greater than 250 mm
	Rubble	Rocks ranging from 130 mm to 250 mm
Medium	Cobble	Rocks ranging from 30 mm to 130 mm
	Gravel	Granule size or coarser, 2 mm to 30 mm
Fine	Sand	Fine deposits ranging from 0.06 mm to 2 mm
	Mud	Material encompassing both silt and clay < 0.06 mm
Organic/Detritus		A soft material containing 85 percent or more organic materials
Shells		Calcareous remains of shellfish or invertebrates containing shells

2.2.2 CORAL AND SPONGES

Corals and sponges were identified visually using a Northwest Atlantic Fisheries Organization (NAFO) area guide (Kenchington et al. 2015) (Table 2-3) and put into functional groups based on DFO guidance . Corals and sponges were enumerated and densities per transect section were geo-referenced and mapped.

Pre-drilling coral and sponge condition was also visually assessed. Coral condition is characterized by an individual's physical appearance and consists of three categories: Good, Damaged and Dead. It can be difficult to visually determine if a sponge is dead thus, sponge condition is based on the amount of visible sedimentation on an individual and consists of three categories: Good, Sediment Veneer, and Covered. Descriptions of the condition codes used for corals and sponges are presented in Table 2-4.

Table 2-3 Summary table of coral and sponges functional groups (based on Annex A of DFO 2022.

Functional Groups	Example Taxa
Corals	
Black	*Stauropathes* sp.
Branching, Small Gorgonians	*Acanella* sp.
Branching, Large Gorgonians	*Paragorgia* sp.
Sea Pens	*Anthoptilum* sp.
Other (Soft corals, Hard Corals)	*Duva* sp., *Desmophyllum dianthus*
Sponges	
Solid/Massive	*Geodia* sp.
Thin-walled	*Asconema* sp.
Other Sponge (Leave/Vase-Shaped, Round with Projections, Stalked, Other) [1]	*Polymastiidae* sp.

Note: Species identifications based on Kenchington et al. 2015
[1] this excludes encrusting sponges

Table 2-4 Coral and sponge condition categories with descriptions.

Coral Condition		Sponge Condition	
Condition	Description	Condition	Description
Good (G)	Coral is oriented upright (or expected orientation for species) with polyps extended and no visible sedimentation.	Good (G)	No signs of dislodgement, unusually clean surface (i.e., no visual signs of sedimentation) and tight shape
Damaged (Dm)	The coral appears in one of the following states: bent over or lying flat on the seafloor, covered by accumulated sediment, a percentage of polyps are missing, or the polyps are withdrawn and appear closed.	Sediment Veneer Present (SV)	Surface of a sponge has a veneer of sedimentation.
Dead (D)	Coral has no visible live polyps or skeleton is completely bare	Covered (C)	The base of the sponge or a portion of the body is obscured by accumulated sediment.

2.2.3 OTHER TAXA

All other invertebrate taxa were identified to phylum, and fish were identified to functional groups as described in Table 7 of Ollerhead et al. (2017). Taxa abundances were enumerated in each 50 m transect section and reported as densities. Representative photos of all taxa groups were taken opportunistically.

Table 2-5 Summary table of fish functional groups.

Functional Groups	Example Taxa
Benthivore	Wolffish, grenadiers
Piscivore	Greenland halibut
Planktivore	Lanternfish
Plank-piscivore	Redfish
Unknown Fish	Fish unable to be identified to a particular functional group
Note: Functional groups are based on Ollerhead et al. 2017	

2.3 MAPPING

All datasets (ROV transects, and survey observations) were plotted using GIS software ArcGIS 10.8.1 (ESRI 2020) in NAD83 UTM datum zone 23. Fine-grained substrates are the primary substrate for most of the seafloor in the Newfoundland Offshore thus, to depict the distribution of any hard substrates present, the largest substrate observed with the highest percent coverage for each transect section was mapped. Faunal densities were mapped per each 50 m transect bin. Coral and sponge condition were mapped by percent “Good” present for each transect bin.

3 RESULTS

The following are the results for the 2022 seabed grid survey. The faunal observation datasets per transect section are presented in Appendix A. Visibility of the seafloor was good throughout the survey with little turbidity in the water column and the ROV remained < 2 m from the seafloor.

3.1 ASSESSMENT OF REGULATORY GUIDANCE

This survey used the C-NLOPB guidance as outlined in Section 1.3. There were no *Desmophyllum pertusum* reef complexes present in the survey area. Figure 3-1 depicts an examples of sponge observations and Figure 3-2 shows the spatial distribution of measured individuals within the survey area. Soft corals were observed in the survey area, and none measured were more than 30 cm in height. Of the sponges measured, only one was 30 cm in width and it was solitary. A concentration of smaller sponges was observed along transect G19-9 to the southeast of the drill centre (Figure 3-1 B). The concentration was confined to a small area of less than a couple of metres.

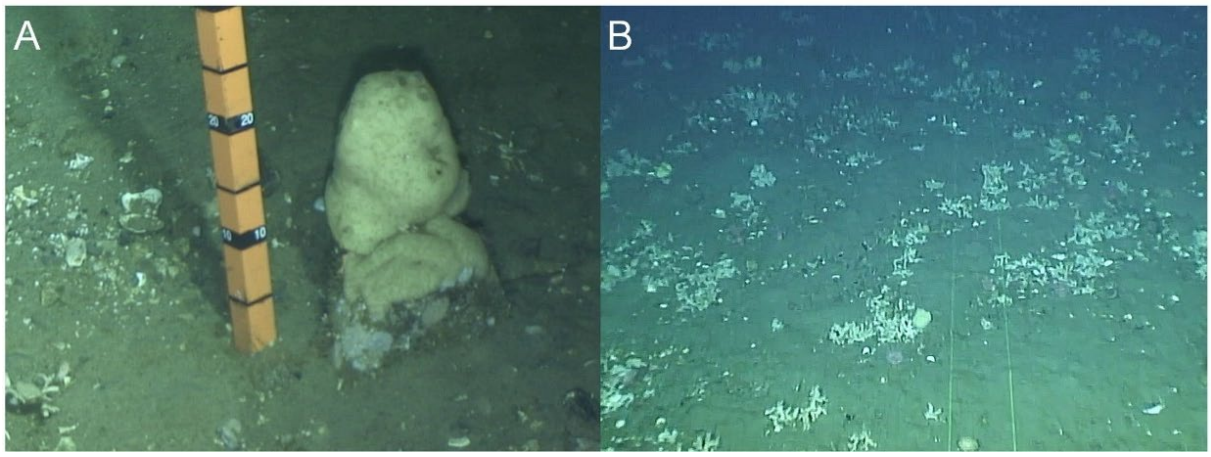

Figure 3-1 Example images of A) a measurement (sponge), B) concentration of small sponges. Green scaling-lasers are 20.23 cm apart.

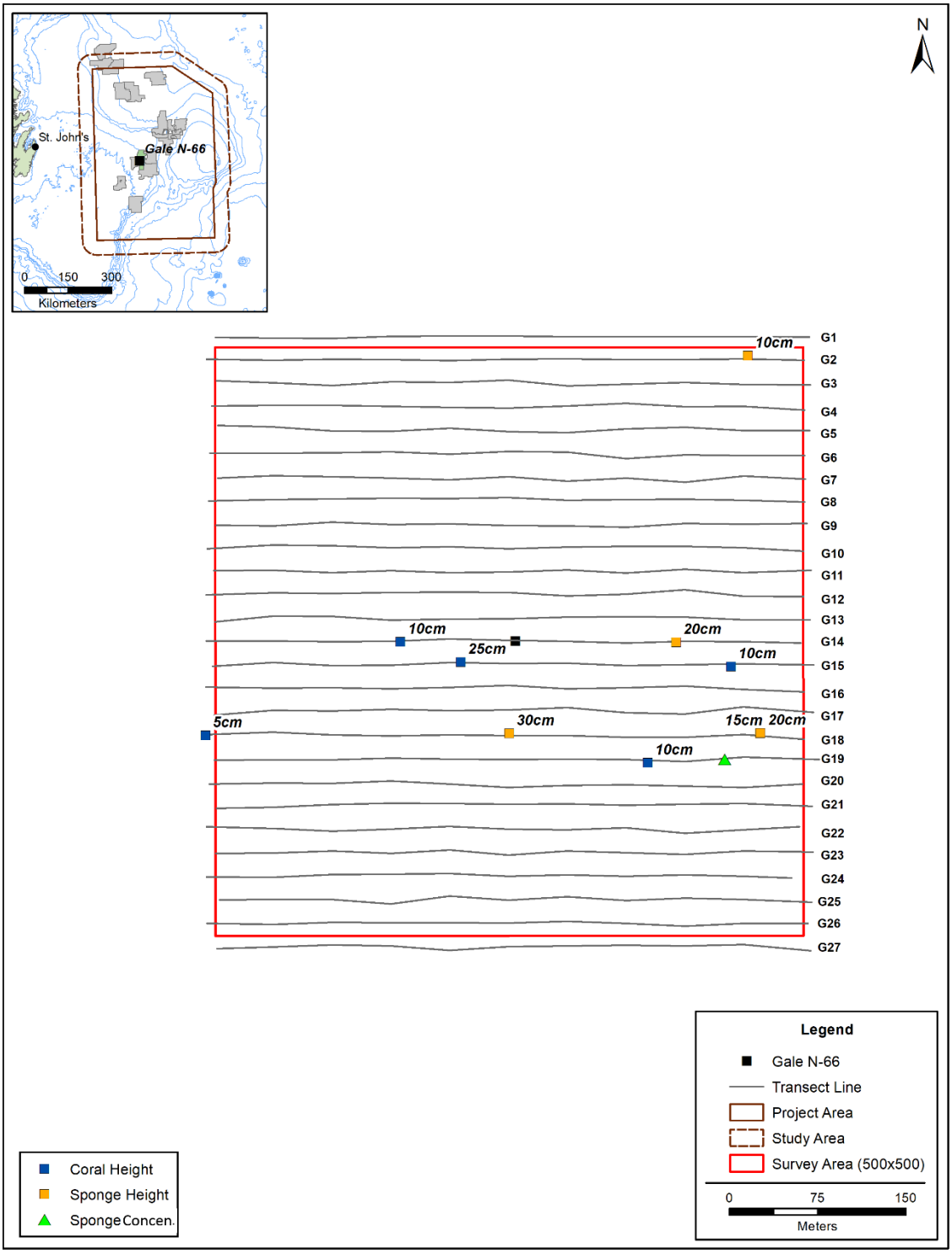

Figure 3-2 Regulatory assessment measurement locations (coral and sponges) and concentration of sponges.

3.2 SURFICIAL SUBSTRATE

The seafloor consisted of primarily of fine-grained substrates matrix with secondary substrates consisting of shell hash and sporadic coarse (boulders and rubble) and medium (cobble and gravel) substrates (Figure 3-3). Shells were observed throughout the survey area and were composed mainly of bivalve and gastropod shells. Figure 3-4 displays the spatial distribution of the largest secondary substrate observed in each transect bin.

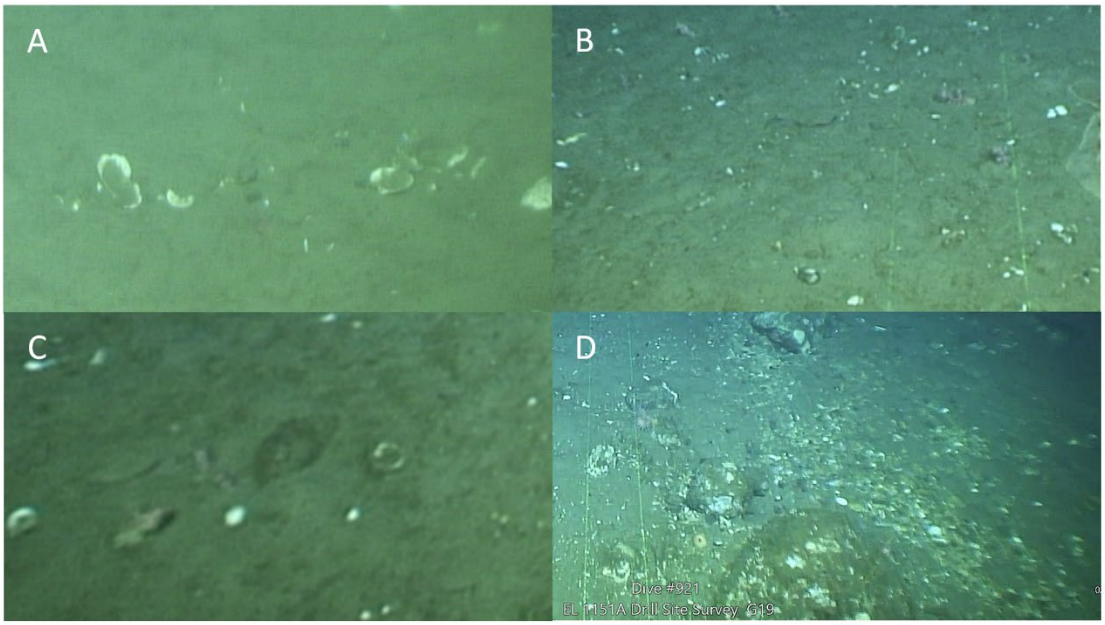

Figure 3-3 Examples of surficial substrate categories observed at Gale N-66. A) shells, B) fines, C) medium, D) coarse. Green scaling-lasers are 20.23 cm apart.

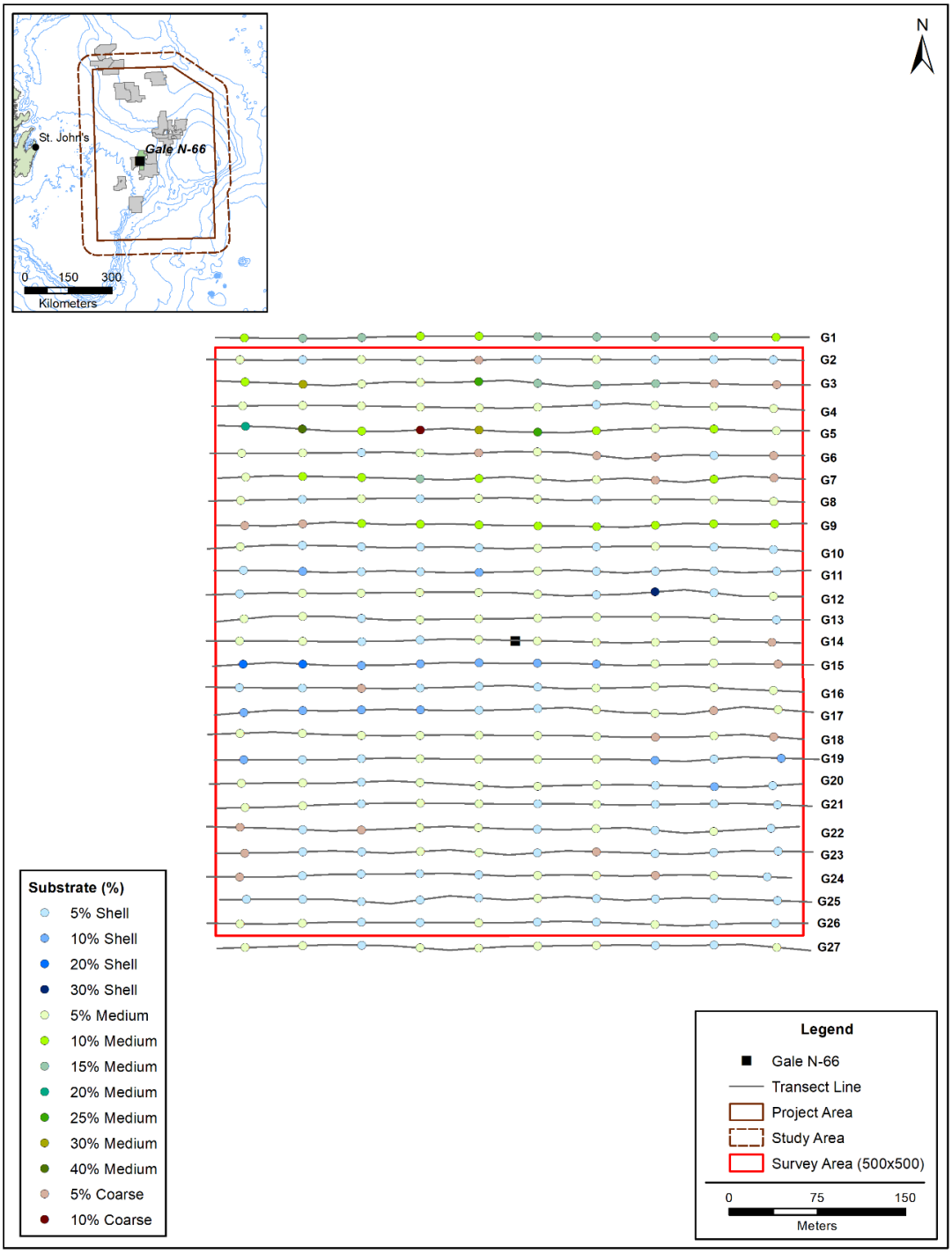

Figure 3-4 Distribution of largest secondary surficial substrate class present observed in the Gale N-66 pre-drilling seabed survey (2022). Primary substrate throughout area is Fine.

3.3 CORALS AND SPONGES

3.3.1 CORAL FUNCTIONAL GROUPS

Soft corals ("Other" coral functional group) were the only corals observed within the survey area (Figure 3-5, Figure 3-6). Individuals were mainly small (<10 cm). A total of 27,702 individual corals were observed with densities ranging between 0.148 ind./m^2 (excluding zero) and 5.813 ind./m^2 (Table 3-1). Soft coral abundance appeared to be lower in areas with high sand dollar abundance.

Coral condition was assessed visually and categorized into one of 3 classifications. Of the total corals observed, 99.7% were in an upright position with all polyps intact and classified as 'Good' (Table 3-2). No corals were observed as 'Dead,' and 0.3% were classified as 'Damaged.' The coral condition distribution of percent 'Good' is presented in Figure 3-7. Larger corals were more likely to be observed in a horizontal orientation on the seafloor.

Table 3-1 Summary statistics for coral functional groups within the dispersion area survey.

Taxa Group	Area	Mean	St. dev.	Median	Min[1]	Max
Other Coral (Soft Corals)	Grid	1.011	0.524	0.966	0.148	5.813
Notes: Total number of survey sections: Grid (n=270). Sections were 50 m linear distance with an average field of view width of 2.03 m. [1]Minimum density is the lowest non-zero value. Other Corals (Soft Coral) n= 27,702 ind.						

Table 3-2 Summary of coral conditions percent observed within the grid seabed survey.

Taxa Group	Year	Good	Damaged	Dead
Other Coral (Soft Corals)	2022	99.7%	0.3%	0%
Notes: Total number of survey sections: 2022 (n=270). Totals: Good n=27,626, Damaged n=76, Dead n=0. Sections were 50 m linear distance with an average field of view width of 2.03 m.				

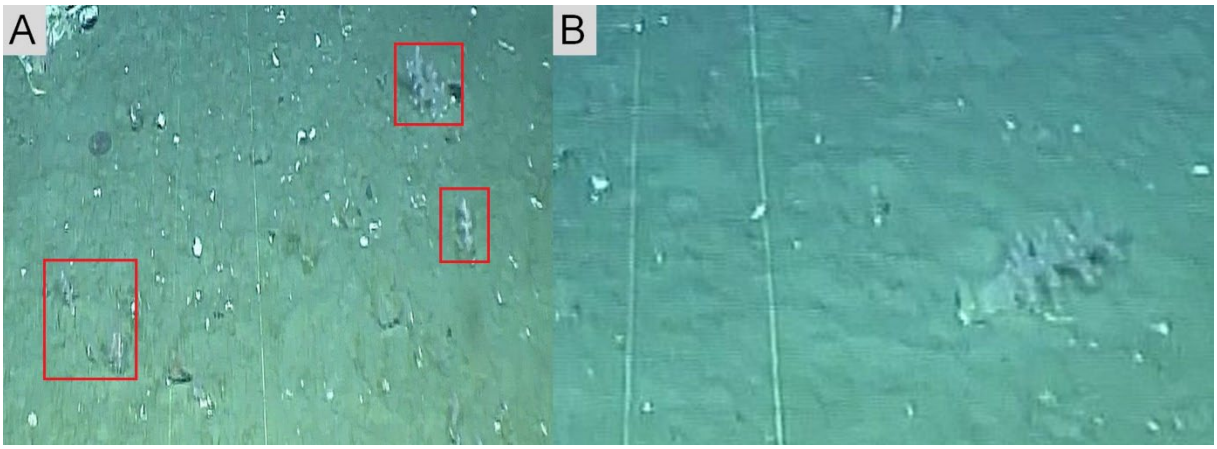

Figure 3-5 Representative photos of the coral functional group 'other': A) Soft corals, B) An example of a bent over coral (condition 'Damaged'). Green scaling-lasers are 20.23 cm apart.

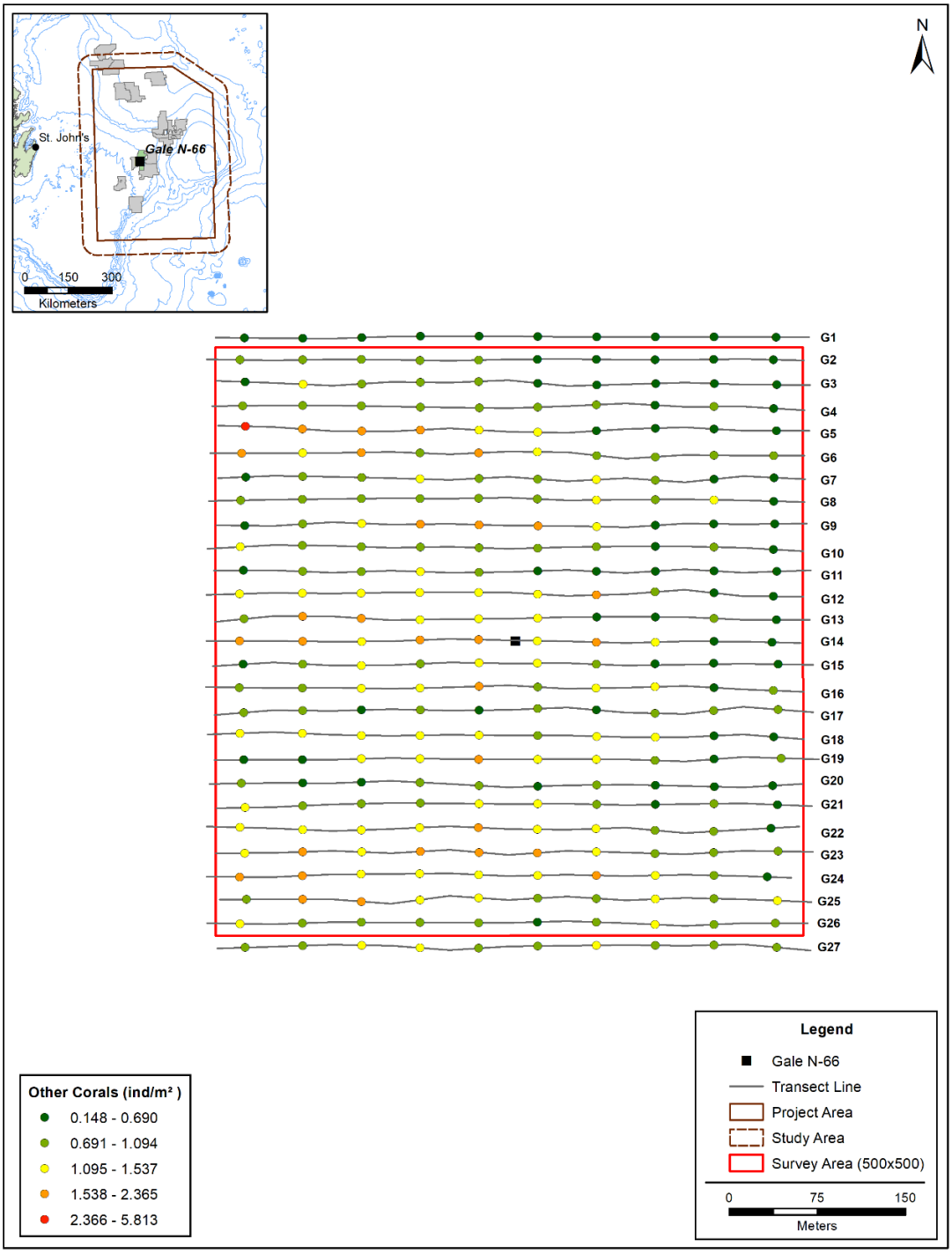

Figure 3-6 Distribution of soft coral densities (ind./m²) observed in the Gale N-66 pre-drilling seabed survey (2022).

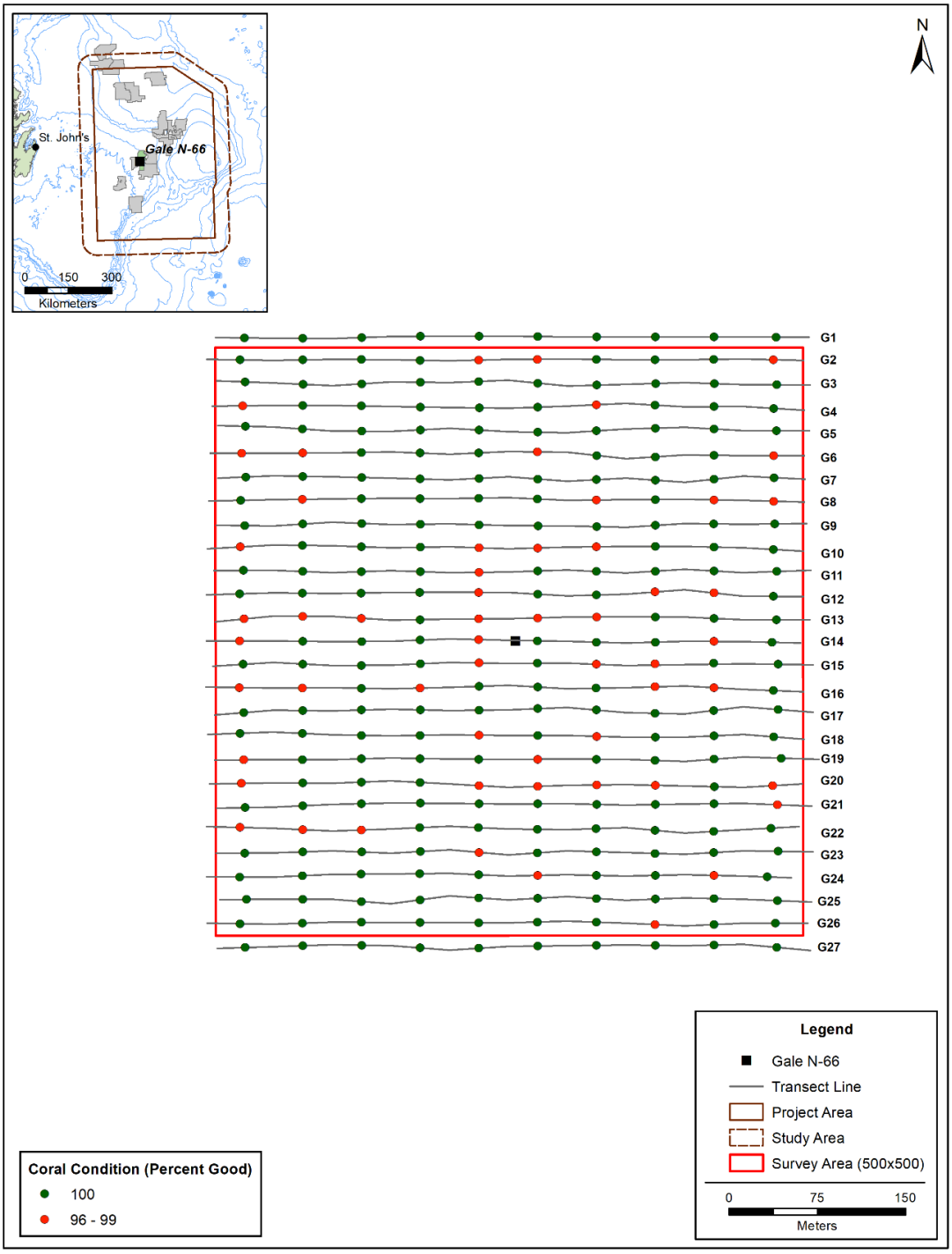

Figure 3-7 Distribution of percent good condition for corals observed in the Gale N-66 pre-drilling survey (2022).

3.3.2 SPONGE MORPHOLOGICAL GROUPS

Sponges from the three morphological groups were observed within the survey area (Table 3-3, Figure 3-8 to Figure 3-11). A total of 3,468 individuals were observed. The most observed sponge morphological groups were solid/massive (n=1,662) and other sponges (n= 1,471). Thin-walled sponges were also observed in small numbers. The highest density of sponges occurred in section G19-9 to the southeast of the drill centre in an area with predicted drill cuttings accumulations below 1.0 mm.

Solid/massive sponges densities ranged from 0.010 ind./m^2 to 0.246 ind./m^2 (Table 3-3) with the highest densities occurring mainly to the east of the well centre (Figure 3-9). The average density was 0.061 ind./m^2. Densities for other sponges ranged between 0.010 ind./m^2 to 1.103 ind./m^2. The highest densities of other sponges occurred mainly to the southeast of the drill centre.

Sponge condition was assessed visually based on the amount of sedimentation on the sponge surface and categorized into one of three classifications (Table 3-4). Sediment veneers occur naturally and do not necessarily indicate the overall health of a sponge. Over 98% of the sponges observed did not have a visible sediment veneer on their surface and were classified as 'Good.' Of the sponges observed in the survey, 1% had a sediment veneer and, only one sponge was deemed covered. The distribution of sponges with the 'Good' condition category is presented in Figure 3-12.

Table 3-3 Summary statistics for sponge morphological groups within the survey area.

Taxa Group	Area	Mean	St. dev.	Median	Min[1]	Max
Solid / Massive	Grid	0.061	0.040	0.059	0.010	0.246
Thin-walled	Grid	0.006	0.019	0.000	0.010	0.148
Other Sponges	Grid	0.060	0.084	0.039	0.010	1.103

Notes: Total number of survey sections: 2022 (n=270).
Sections were 50 m linear distance with an average field of view width of 2.03 m.
[1]Minimum density is the lowest non-zero value.

Table 3-4 Summary statistics for sponge condition within the survey area.

Taxa Group	Area	Good	Sediment Veneer	Covered
Total Sponge	Grid	98%	1%	<1%

Notes: Total number of survey sections: 2022 (n=270).
Totals, Good n=3,425, Sediment Veneer n=42, Covered n=1.
Sections were 50 m linear distance with an average field of view of 2.03 m.
[1]Minimum density is the lowest non-zero value.

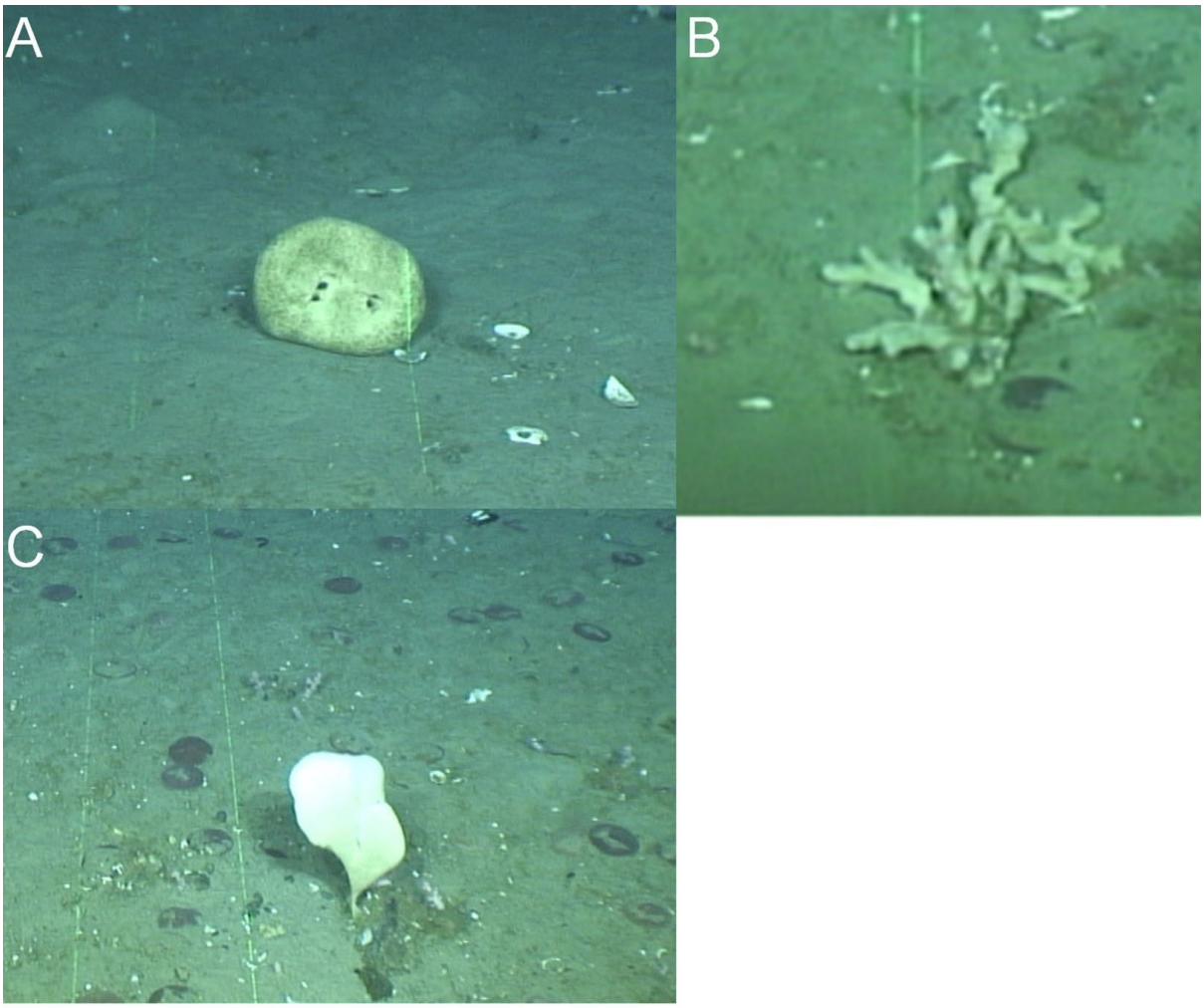

Figure 3-8 **Representative photos from each sponge morphological group and sponge conditions: A) solid/massive sponge with a sediment veneer, B) other sponge with a sediment veneer, C) other sponge (fan-shaped) in good condition. Green scaling-lasers are 20.23 cm apart.**

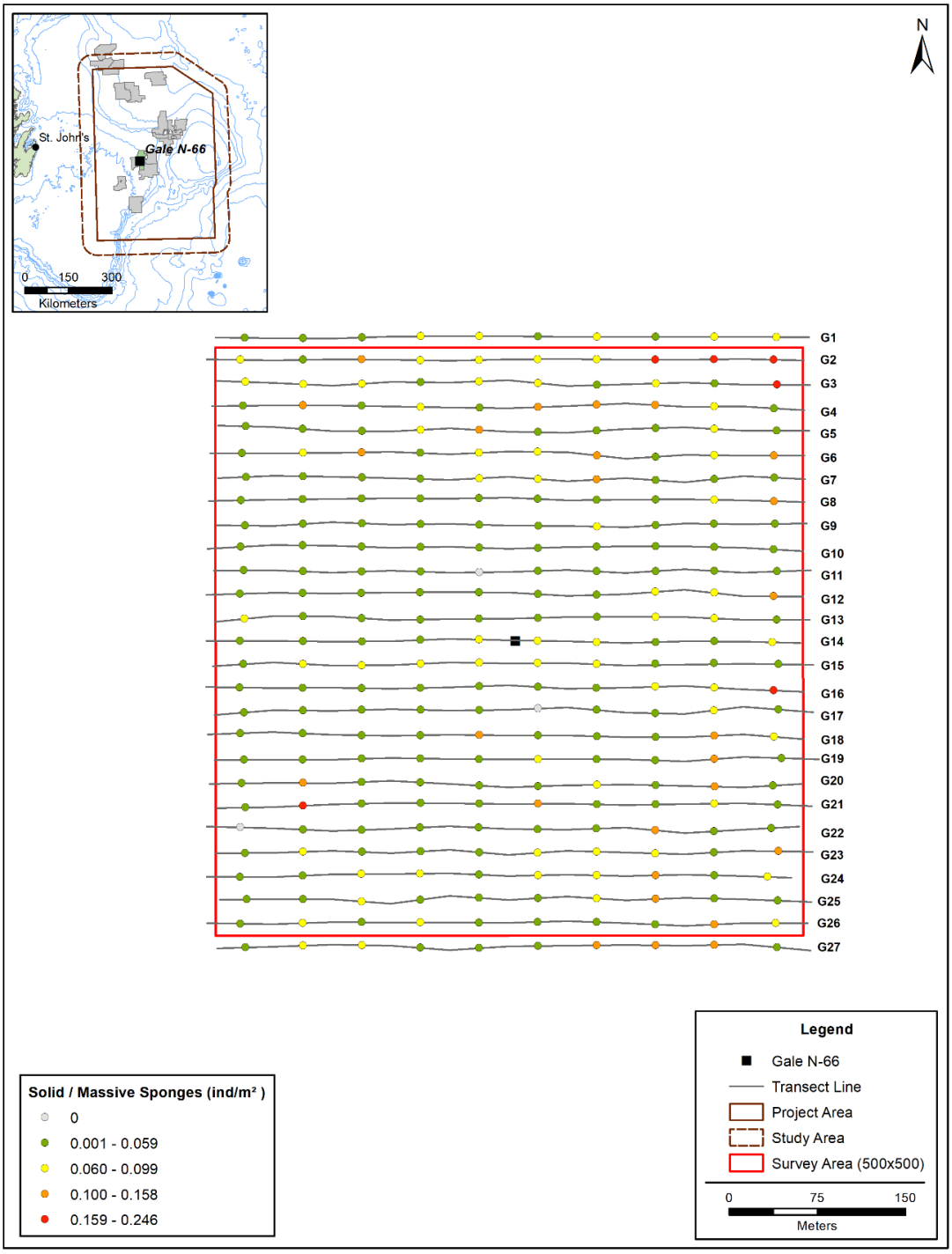

Figure 3-9 Distribution of solid/massive sponge densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

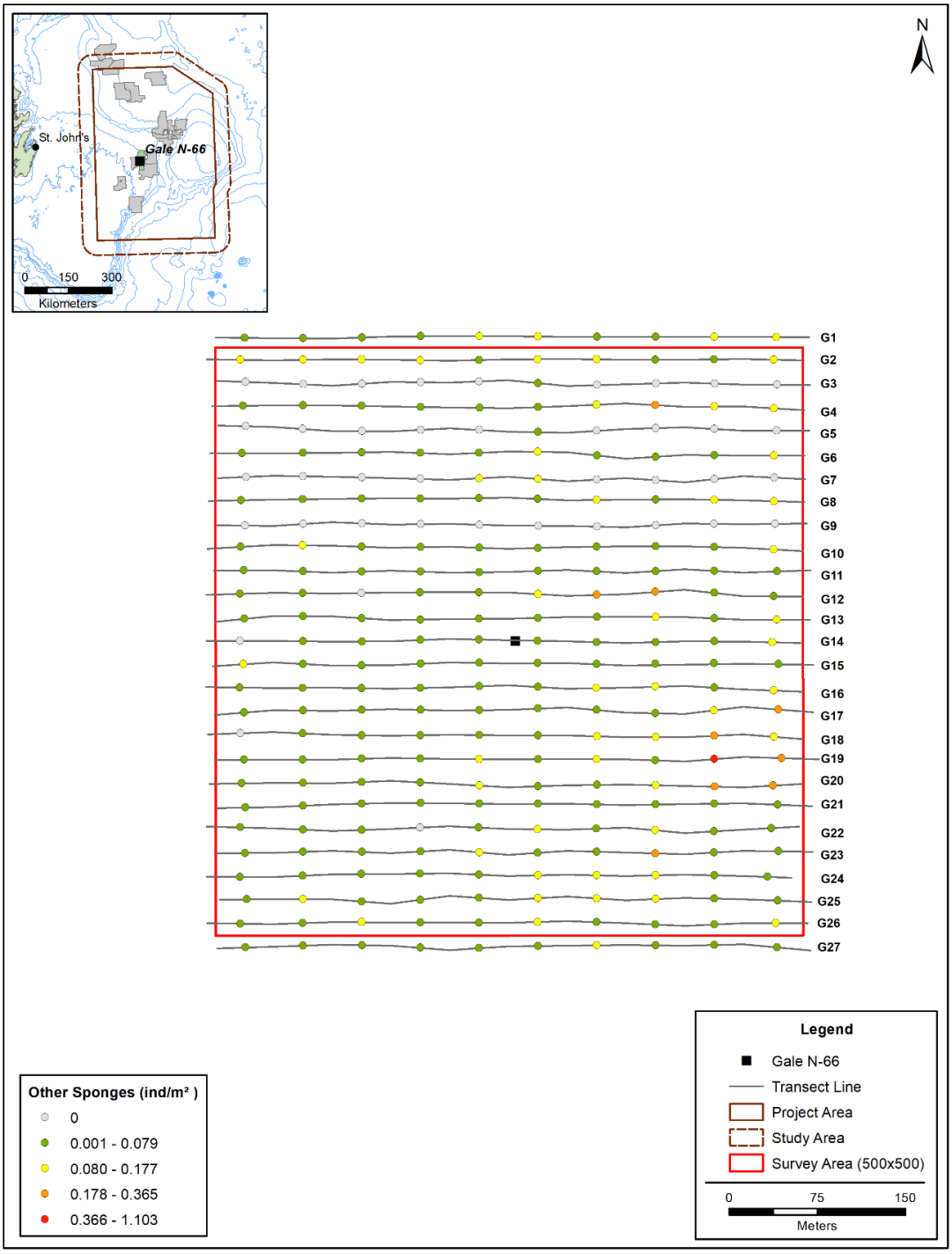

Figure 3-10 Distribution of other sponge densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

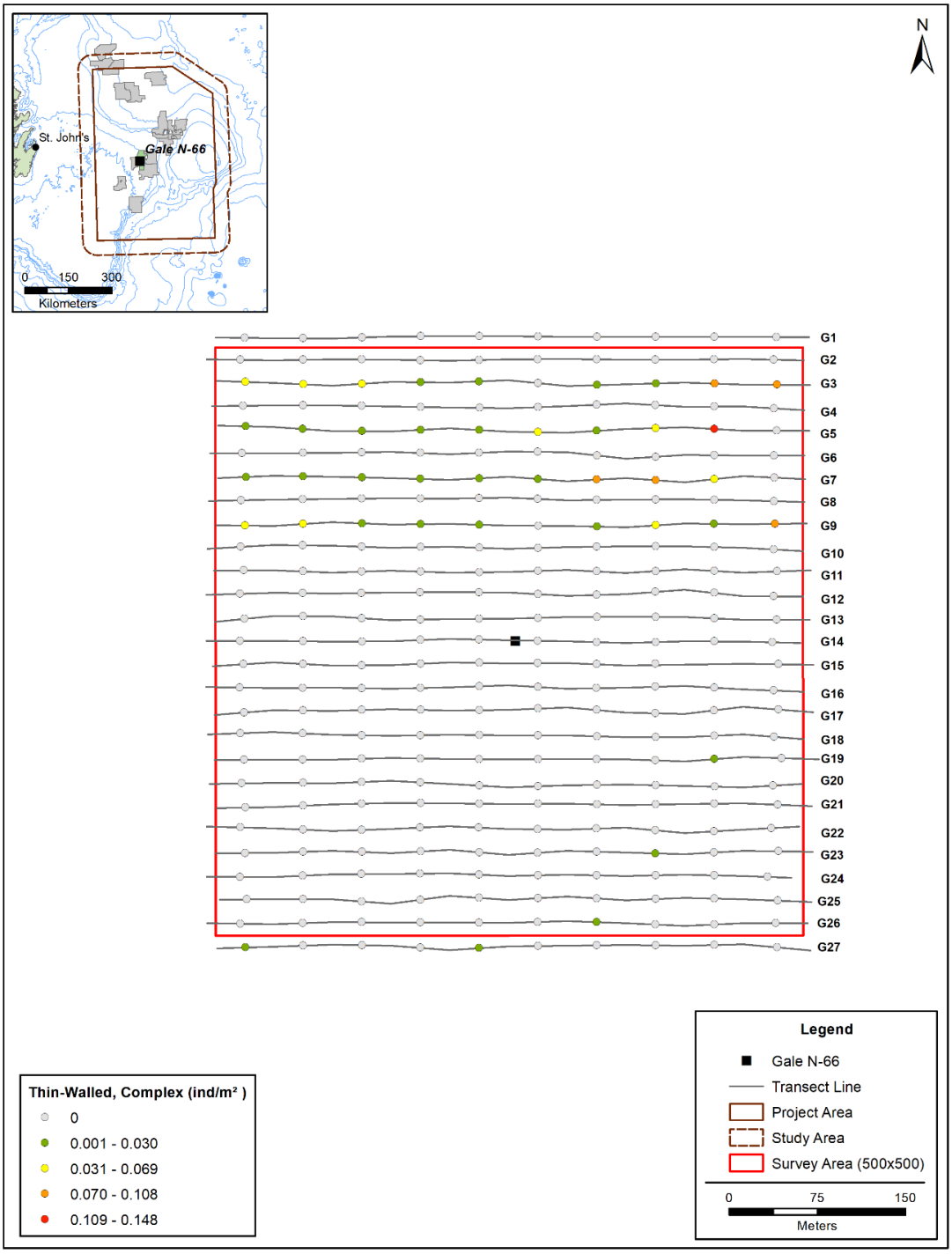

Figure 3-11 Distribution of thin-walled/complex sponge densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

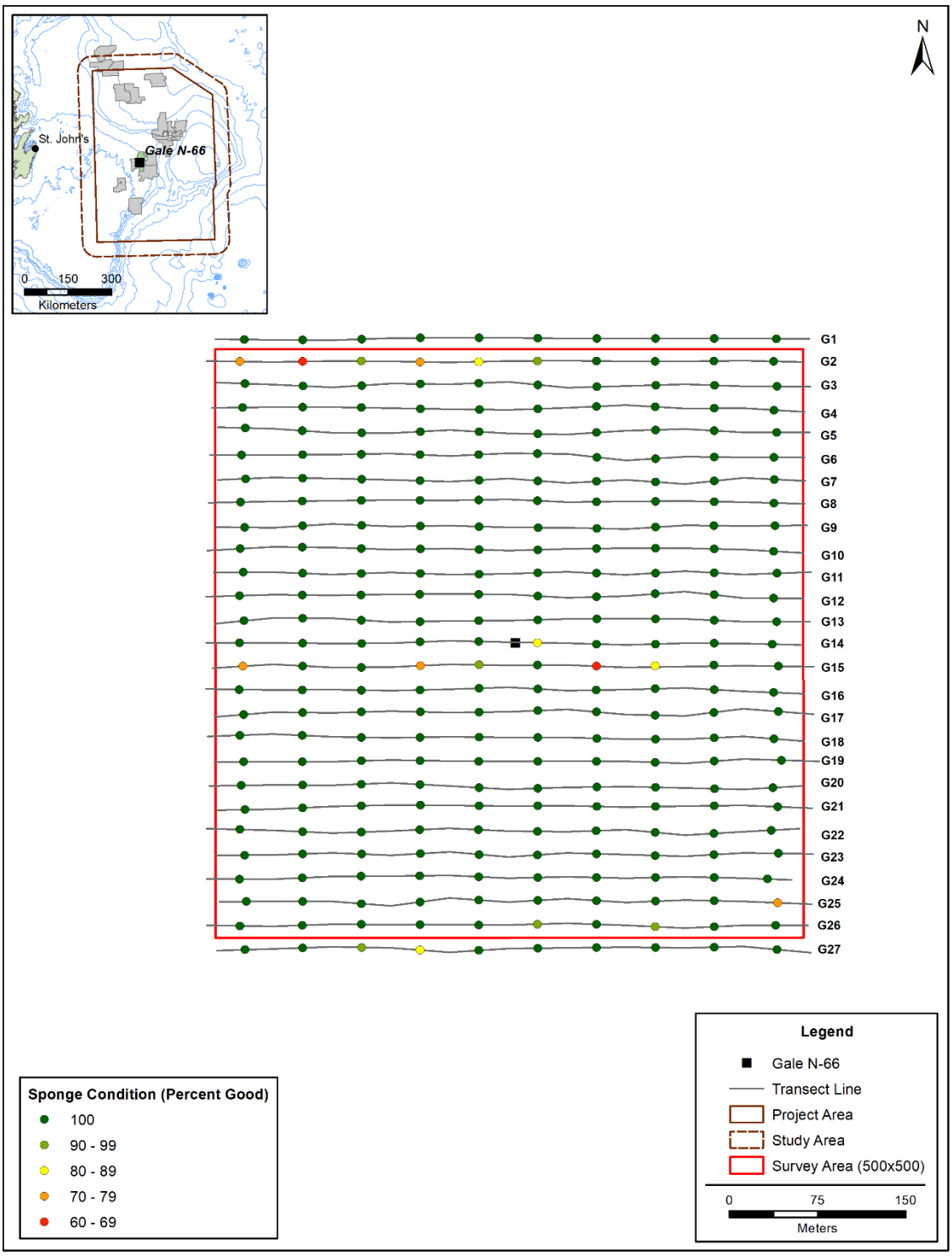

Figure 3-12 Distribution of percent sponges observed in 'Good' condition in the Gale N-66 pre-drilling survey (2022).

3.4 OTHER TAXA

3.4.1 FISH FUNCTIONAL GROUPS

Three fish functional groups were observed throughout the survey area (Table 3-5, density maps are presented in Appendix B). Benthivores were the most commonly observed group and consisted mainly of flatfish (Table 3-5, Figure 3-13 A, B, C). Benthivore density ranged between 0.010 ind./m^2 to 0.266 ind./m^2 with an average density of 0.015 ind./m^2. Fish unable to be assigned to a functional group, such as poorly seen fish or small juveniles, were classified as "Unknown fish" and were the second most common group overall (Figure 3-13 D). Unknown fish density ranged between 0.010 ind./m^2 to 0.049 ind./$m^2$and with a mean density of 0.006 ind./m^2. Small numbers of piscivores were also observed. Two wolffish were observed in the survey area (an Atlantic wolffish along G1-7 and a spotted wolffish along G20-2).

Table 3-5 Summary statistics for fish functional groups within the dispersion area survey.

Taxa Group	Year	Mean	St. dev.	Median	Min[1]	Max
Benthivores	2022	0.015	0.021	0.010	0.010	0.266
Piscivores	2022	<0.001	0.001	<0.001	0.010	0.010
Unknown	2022	0.006	0.009	<0.001	0.010	0.049

Notes: Total number of survey sections: 2022 (n=270).
Sections were 50 m linear distance with an average field of view of 2.03 m.
[1]Minimum density is the lowest non-zero value.
Unknown fish includes juveniles and unidentified fish.

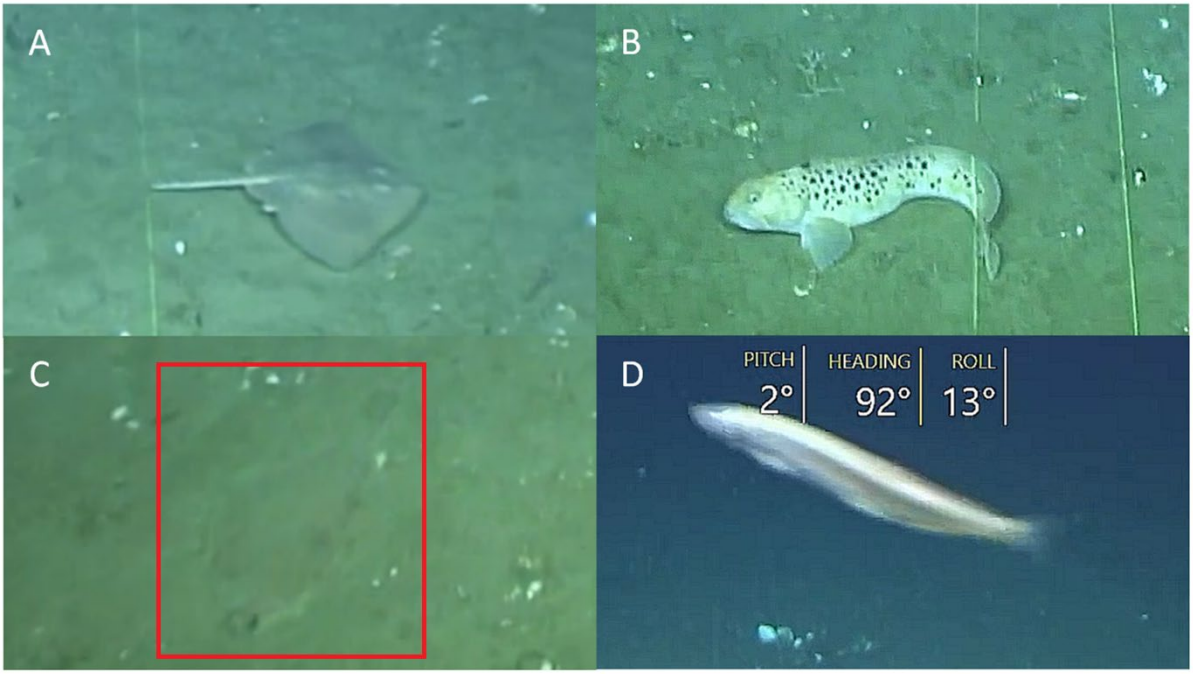

Figure 3-13 Representative fish species from the benthivore and unknown functional groups: A) benthivore (skate), B) benthivore (spotted wolffish), C) benthivore (flatfish), and D) unknown fish. Green scaling-lasers are 20.23 cm apart.

3.4.2 INVERTEBRATES (NON-CORAL AND SPONGE)

Invertebrate taxa (other than corals and sponges) were observed throughout the transect lines (Figure 3-14, Table 3-6, density maps presented in Appendix B). Echinoderms were the most commonly observed invertebrate group (mean density of 0.858 ind./m^2) of which sand dollars were found in relatively high abundance (Table 3-6, Figure 3-14 A). High densities of sand dollars often corresponded to relatively low densities of soft corals (Figure 3-15). Cnidarians (other than corals) were the second most common group (mean density of 0.367 ind./m^2), with sea anemones as the most abundant taxa (Figure 3-14 B). Crabs and shrimp (arthropods) were observed throughout the survey area with densities ranging between 0.010 ind./m^2 to 0.640 ind./m^2 (Figure 3-14 C). While empty shells were observed throughout the survey, live molluscs such as snails and scallops were observed at relatively low densities (mean density of 0.011 ind./m^2).

Table 3-6 Summary statistics for invertebrate groups (excluding corals and sponges) within the dispersion area survey.

Taxa Group	Year	Mean	St. dev.	Median	Min[1]	Max
Echinoderms	2022	0.858	1.655	0.355	0.010	12.079
Cnidarians	2022	0.367	0.154	0.365	0.020	0.768
Molluscs	2022	0.011	0.014	0.010	0.010	0.079
Arthropods	2022	0.166	0.121	0.128	0.010	0.640

Notes: Total number of survey sections: 2022 (n=270).
Sections were 50 m linear distance with an average field of view of 2.03 m.
[1]Minimum density is the lowest non-zero value.

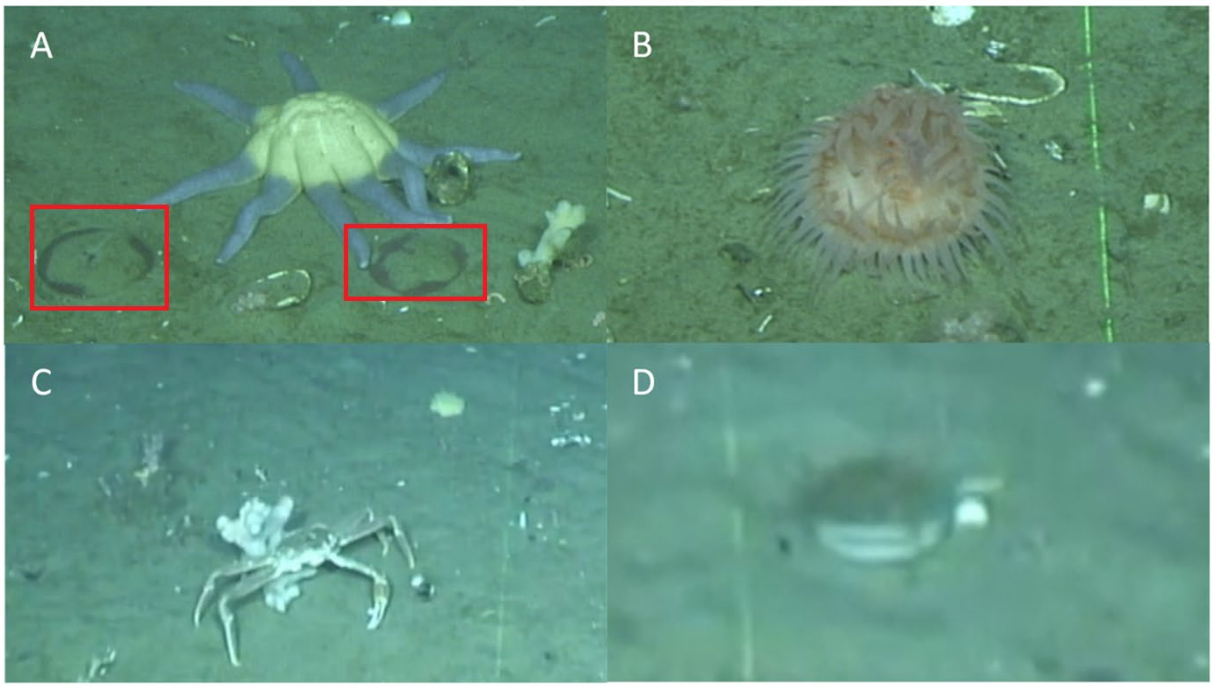

Figure 3-14 Representative images of invertebrate groups: A) echinoderms (sea star and sand dollars (red boxes)), B) cnidarian (anemone), C arthropod (snow crab), and D) mollusc (scallop). Green scaling-lasers are 20.23 cm apart.

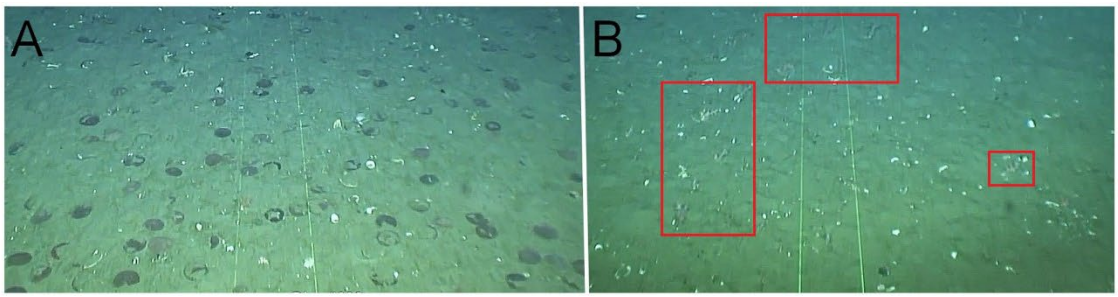

Figure 3-15 Examples of echinoderm and soft coral presence along transect 14. A) high sand dollar abundance and low soft coral abundance, B) an example of typical soft coral abundances.

4 SUMMARY AND CONCLUSIONS

The C-NLOPB guidance (presented in Section 1.3) indicates that drilling activities shall not occur within 100 m of coral colonies defined as either:

— The presence of *Desmophyllum pertusum* reef complex and/or,
— The presence of five or more large corals (above 30 cm in height or width) within 100 m^2 area.

No reef-forming hard corals (*Desmophyllum pertusum*) or aggregations of corals or sponges (5 or more individuals over 30 cm in measurements within 100 m^2 area) were observed in the Gale N-66 survey area.

Corals from the "other" functional group (soft corals) were the only corals observed in the study area. There were three sponge morphological groups observed in the area including solid/massive, thin-walled, and "Other." Over 98 percent of corals and sponges observed were considered to be in "Good" condition.

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APPENDIX

A PRE-DRILLING VIDEO OBSERVATION DATA

APPENDIX

Table A-1 Observations for transects G1 to G9 (all sections)

Line	Section	Time Start (UTC)	Time End (UTC)	Start Easting	Start Northing	End Easting	End Northing	Depth (M)	Section Area m2	Coarse (%)	Medium (%)	Fine (%)	Shell (%)	Coral Good	Coral Damaged	Coral Dead	Sponge Good	Sponge Veneer	Sponge Covered	Echinoderms	Cnidarians	Molluscs	Arthropods	Other Coral	Solid / Massive Sponge	Thin-walled Sponge	Other sponges	Benthivores	Piscivores	Unknown Fish
G1	G1-1	6:30:08 PM	6:32:57 PM	733997.7	5220867.2	734047.1	5220866.7	164.1	101.5	0	10	80	10	15	0	0	7	0	0	14	23	2	27	15	3	0	4	1	0	4
G1	G1-2	6:32:57 PM	6:35:27 PM	734047.1	5220866.7	734097.4	5220866.4	163.4	101.5	5	15	70	10	53	0	0	6	0	0	17	36	2	3	53	3	0	3	1	0	1
G1	G1-3	6:35:27 PM	6:37:56 PM	734097.4	5220866.4	734147.2	5220868.1	163.6	101.5	5	15	70	10	49	0	0	6	0	0	67	37	5	2	49	4	0	2	0	0	0
G1	G1-4	6:37:56 PM	6:40:15 PM	734147.2	5220868.1	734197.2	5220868.5	164	101.5	5	10	75	10	53	0	0	11	0	0	17	36	1	6	53	7	0	4	0	0	0
G1	G1-5	6:40:15 PM	6:42:26 PM	734197.2	5220868.5	734247.2	5220868.4	164	101.5	5	10	80	5	63	0	0	16	0	0	17	40	3	9	63	7	0	9	2	0	2
G1	G1-6	6:42:26 PM	6:44:49 PM	734247.2	5220868.4	734297.1	5220867.8	164.7	101.5	5	15	75	5	67	0	0	16	0	0	43	46	0	16	67	6	0	10	2	0	1
G1	G1-7	6:44:49 PM	6:47:00 PM	734297.1	5220867.8	734347.3	5220867.8	164.7	101.5	5	15	75	5	39	0	0	14	0	0	54	44	2	10	39	9	0	5	1	0	1
G1	G1-8	6:47:00 PM	6:49:14 PM	734347.3	5220867.8	734397	5220867.7	164.9	101.5	5	15	75	5	55	0	0	8	0	0	71	40	1	5	55	4	0	4	4	0	0
G1	G1-9	6:49:14 PM	6:51:22 PM	734397	5220867.7	734447.3	5220867.8	164.6	101.5	5	15	75	5	45	0	0	18	0	0	21	37	4	6	45	7	0	11	2	0	0
G1	G1-10	6:51:22 PM	6:54:04 PM	734447.3	5220867.8	734502.7	5220867.4	164.8	101.5	0	10	80	10	37	0	0	19	0	0	96	50	0	7	37	7	0	12	0	0	1
G2	G2-1	6:58:32 PM	7:01:07 PM	734498.30	5220847.80	734447	5220848.9	164.3	101.5	0	0	95	5	28	1	0	41	0	0	132	64	1	25	29	23	0	18	0	0	0
G2	G2-2	7:01:07 PM	7:03:24 PM	734447.00	5220848.90	734396.9	5220848.4	164.7	101.5	0	0	95	5	29	0	0	29	0	0	131	56	0	43	29	22	0	7	1	0	3
G2	G2-3	7:03:24 PM	7:05:31 PM	734396.90	5220848.40	734347.1	5220848.5	164.8	101.5	0	0	95	5	70	0	0	27	0	0	227	63	3	20	70	21	0	6	0	0	1
G2	G2-4	7:05:31 PM	7:07:40 PM	734347.10	5220848.50	734297.00	5220848.90	165.1	101.5	0	5	90	5	57	0	0	19	0	0	77	73	3	36	57	8	0	11	2	0	0
G2	G2-5	7:07:40 PM	7:09:46 PM	734297.00	5220848.90	734246.9	5220848.6	164.6	101.5	0	0	95	5	65	1	0	24	1	0	79	72	3	24	66	9	0	16	1	0	1
G2	G2-6	7:09:46 PM	7:11:55 PM	734246.90	5220848.60	734197	5220847.4	164.5	101.5	5	5	85	5	82	3	0	14	3	0	37	62	6	46	85	10	0	7	1	0	0
G2	G2-7	7:11:55 PM	7:14:00 PM	734197.00	5220847.40	734147	5220848.3	163.8	101.5	0	5	90	5	91	0	0	18	5	0	87	55	2	36	91	9	0	14	0	0	5
G2	G2-8	7:14:00 PM	7:16:08 PM	734147.00	5220848.30	734097	5220848.8	163.9	101.5	0	5	90	5	105	0	0	21	2	0	123	74	1	21	105	11	0	12	0	0	1
G2	G2-9	7:16:08 PM	7:18:08 PM	734097.00	5220848.80	734047.10	5220847.90	163.3	101.5	0	0	95	5	95	0	0	9	6	0	21	67	1	32	95	5	0	10	0	0	1
G2	G2-10	7:18:08 PM	7:20:48 PM	734047.10	5220847.90	733990.4	5220848.6	163.8	101.5	0	5	90	5	83	0	0	12	4	0	105	58	0	35	83	7	0	9	1	0	2
G3	G3-1	7:36:07 AM	7:40:27 AM	733998.80	5220830.30	734047.1	5220828.7	162.5	101.5	0	10	85	5	48	0	0	16	0	0	36	15	0	23	48	9	7	0	5	0	0
G3	G3-2	7:40:27 AM	7:43:03 AM	734047.10	5220828.70	734097.5	5220826.3	163.2	101.5	0	30	70	0	120	0	0	14	0	0	14	16	0	25	120	8	6	0	0	0	0
G3	G3-3	7:43:03 AM	7:45:15 AM	734097.50	5220826.30	734147.2	5220829.4	163.4	101.5	0	5	95	0	87	0	0	14	0	0	14	15	0	15	87	10	4	0	1	0	0
G3	G3-4	7:45:15 AM	7:47:28 AM	734147.20	5220829.40	734197.10	5220828.90	162.8	101.5	5	5	90	0	80	0	0	6	0	0	13	2	0	45	80	5	1	0	27	0	0
G3	G3-5	7:47:28 AM	7:49:18 AM	734197.1	5220828.9	734246.9	5220830.9	163	101.5	5	25	70	0	80	0	0	8	0	0	0	17	0	31	80	7	1	0	1	0	0
G3	G3-6	7:49:18 AM	7:51:04 AM	734246.9	5220830.9	734297.4	5220826	163.5	101.5	5	15	80	0	69	0	0	10	0	0	0	10	0	19	69	9	0	1	0	0	0
G3	G3-7	7:51:04 AM	7:52:44 AM	734297.4	5220826	734347.4	5220827.6	163.2	101.5	0	15	85	0	30	0	0	7	0	0	2	3	0	13	30	5	2	0	0	0	0
G3	G3-8	7:52:44 AM	7:54:23 AM	734347.4	5220827.6	734397.4	5220828.8	163.7	101.5	0	15	85	0	22	0	0	9	0	0	139	0	0	12	22	7	2	0	2	0	4
G3	G3-9	7:54:23 AM	7:55:59 AM	734397.40	5220828.80	734447.3	5220827.2	163	101.5	5	5	90	0	28	0	0	15	0	0	81	3	0	18	28	5	10	0	0	0	0
G3	G3-10	7:55:59 AM	7:58:09 AM	734447.30	5220827.20	734503.6	5220827	163.6	101.5	5	5	90	0	65	0	0	28	0	0	120	12	0	5	65	20	8	0	3	0	0
G4	G4-1	10:32:00 AM	10:36:55 AM	734498.7	5220805.3	734447	5220808.7	164.3	101.5	0	5	90	5	51	0	0	18	0	0	282	65	0	24	51	6	0	12	1	0	0
G4	G4-2	10:36:55 AM	10:39:39 AM	734447	5220808.7	734397.1	5220808.3	164.4	101.5	0	5	90	5	83	0	0	18	0	0	137	57	3	45	83	9	0	9	0	0	1
G4	G4-3	10:39:39 AM	10:42:20 AM	734397.1	5220808.3	734347	5220811.3	164.5	101.5	0	5	90	5	43	0	0	31	0	0	257	58	1	18	43	11	0	20	0	0	0
G4	G4-4	10:42:20 AM	10:44:41 AM	734347	5220811.3	734296.9	5220808.8	163.8	101.5	0	0	95	5	76	1	0	22	0	0	77	64	5	28	77	11	0	11	1	0	0
G4	G4-5	10:44:41 AM	10:47:02 AM	734296.9	5220808.8	734247.5	5220807.3	164.3	101.5	0	5	90	5	96	0	0	18	0	0	74	63	2	31	96	12	0	6	0	0	0
G4	G4-6	10:47:02 AM	10:49:27 AM	734247.5	5220807.3	734197.5	5220807.7	164	101.5	0	5	90	5	80	0	0	8	0	0	79	41	5	49	80	5	0	3	1	0	3
G4	G4-7	10:49:27 AM	10:51:54 AM	734197.5	5220807.7	734147.2	5220808.6	163.7	101.5	0	5	90	5	85	0	0	11	0	0	41	49	3	21	85	7	0	4	1	0	0
G4	G4-8	10:51:54 AM	10:54:05 AM	734147.2	5220808.6	734097.1	5220809.5	163.1	101.5	0	5	90	5	78	0	0	13	0	0	58	52	0	27	78	6	0	7	0	0	2
G4	G4-9	10:54:05 AM	10:56:15 AM	734097.1	5220809.5	734047	5220809.6	163.5	101.5	0	5	90	5	95	0	0	18	0	0	76	42	4	22	95	12	0	6	1	0	0
G4	G4-10	10:56:15 AM	10:58:47 AM	734047	5220809.6	733995	5220808.8	163.3	101.5	0	5	90	5	91	1	0	10	0	0	160	46	0	22	92	6	0	4	4	0	3
G5	G5-1	8:40:35 AM	8:42:58 AM	733999.90	5220792.50	734046.6	5220791.3	163.5	101.5	10	20	70	0	590	0	0	7	0	0	46	30	0	29	590	6	1	0	6	0	0
G5	G5-2	8:42:58 AM	8:45:03 AM	734046.60	5220791.30	734097.2	5220787.7	163.6	101.5	5	40	50	5	221	0	0	5	0	0	10	42	0	22	221	4	1	0	7	0	0
G5	G5-3	8:45:03 AM	8:47:34 AM	734097.20	5220787.70	734147.20	5220787.50	163.9	101.5	5	10	80	5	235	0	0	3	0	0	5	39	0	34	235	2	1	0	8	0	0
G5	G5-4	8:47:34 AM	8:49:50 AM	734147.20	5220787.50	734197.1	5220789.9	163.8	101.5	10	10	75	5	163	0	0	11	0	0	11	13	0	41	163	10	1	0	0	0	0
G5	G5-5	8:49:50 AM	8:51:46 AM	734197.10	5220789.90	734247.4	5220787.1	163.5	101.5	0	30	65	5	127	0	0	14	0	0	16	30	0	20	127	13	1	0	0	0	0
G5	G5-6	8:51:46 AM	8:53:59 AM	734247.40	5220787.10	734296.7	5220786.4	163.9	101.5	5	25	65	5	141	0	0	9	0	0	9	22	0	41	141	3	5	1	0	0	0
G5	G5-7	8:53:59 AM	8:55:53 AM	734296.70	5220786.40	734347.1	5220789.4	164	101.5	5	10	80	5	59	0	0	5	0	0	37	25	0	24	59	2	3	0	0	0	0
G5	G5-8	8:55:53 AM	8:57:49 AM	734347.10	5220789.40	734397.10	5220790.80	163.9	101.5	0	5	90	5	25	0	0	8	0	0	140	3	0	29	25	2	6	0	0	0	0
G5	G5-9	8:57:49 AM	8:59:37 AM	734397.10	5220790.80	734447.3	5220787.9	163.5	101.5	0	10	85	5	50	0	0	23	0	0	7	37	0	12	50	8	15	0	0	0	0
G5	G5-10	8:59:37 AM	9:01:52 AM	734447.30	5220787.90	734503	5220787.9	164.5	101.5	0	5	90	5	37	0	0	1	0	0	20	17	0	10	37	1	0	0	0	0	0
G6	G6-1	11:36:00 AM	11:38:33 AM	734498.8	5220766.8	734447.3	5220766.7	164	101.5	5	0	90	5	78	1	0	25	0	0	53	47	2	23	79	11	0	14	1	0	3
G6	G6-2	11:38:33 AM	11:40:52 AM	734447.3	5220766.7	734397.2	5220767.3	164.9	101.5	0	0	95	5	111	0	0	11	0	0	53	58	2	39	111	9	0	2	0	0	2
G6	G6-3	11:40:52 AM	11:43:00 AM	734397.2	5220767.3	734347.4	5220764.1	164.6	101.5	5	0	90	5	89	0	0	8	0	0	123	41	0	33	89	4	0	4	1	0	1
G6	G6-4	11:43:00 AM	11:45:22 AM	734347.4	5220764.1	734297.1	5220769.7	164.3	101.5	5	5	85	5	106	0	0	23	0	0	187	56	1	28	106	16	0	7	1	0	2
G6	G6-5	11:45:22 AM	11:47:49 AM	734297.1	5220769.7	734246.8	5220770.2	164.4	101.5	0	5	90	5	127	1	0	19	0	0	46	69	1	23	128	9	0	10	4	0	0
G6	G6-6	11:47:49 AM	11:49:54 AM	734246.8	5220770.2	734197.1	5220768.1	164.2	101.5	5	0	90	5	162	0	0	12	0	0	50	42	2	45	162	9	0	3	2	0	0
G6	G6-7	11:49:54 AM	11:52:13 AM	734197.1	5220768.1	734146.9	5220769.9	164	101.5	0	5	90	5	98	0	0	9	0	0	55	37	3	55	98	2	0	7	1	0	1
G6	G6-8	11:52:13 AM	11:54:47 AM	734146.9	5220769.9	734097.1	5220769.2	163.3	101.5	0	0	95	5	196	0	0	23	0	0	28	51	1	56	196	16	0	7	2	0	0
G6	G6-9	11:54:47 AM	11:56:57 AM	734097.1	5220769.2	734047.1	5220768.8	164	101.5	0	5	90	5	114	1	0	12	0	0	39	34	2	56	115	7	0	5	0	0	1
G6	G6-10	11:56:57 AM	12:00:13 PM	734047.1	5220768.8	733993.3	5220768.9	163.5	101.5	0	5	90	5	186	1	0	11	0	0	26	67	2	49	187	6	0	5	1	0	3
G7	G7-1	9:34:51 AM	9:36:50 AM	734000.00	5220747.70	734047.2	5220749.6	163.5	101.5	0	5	90	5	26	0	0	2	0	0	8	21	0	12	26	1	1	0	0	0	0
G7	G7-2	9:36:50 AM	9:38:52 AM	734047.20	5220749.60	734097.30	5220748.90	163.5	101.5	0	10	85	5	103	0	0	5	0	0	10	21	0	14	103	3	2	0	0	0	0
G7	G7-3	9:38:52 AM	9:41:01 AM	734097.30	5220748.90	734147.1	5220747.8	163.7	101.5	5	10	80	5	86	0	0	5	0	0	24	22	0	8	86	2	3	0	0	0	0
G7	G7-4	9:41:01 AM	9:43:05 AM	734147.10	5220747.80	734197	5220746.3	163.8	101.5	5	15	75	5	125	0	0	4	0	0	8	13	0	16	125	1	3	0	1	0	0
G7	G7-5	9:43:05 AM	9:45:36 AM	734197.00	5220746.30	734247.1	5220748.7	163.6	101.5	5	10	80	5	109	0	0	26	0	0	14	15	0	38	109	8	2	16	0	0	0
G7	G7-6	9:45:36 AM	9:47:45 AM	734247.10	5220748.70	734297.1	5220745.1	163.8	101.5	0	5	90	5	96	0	0	28	0	0	11	22	0	10	96	9	1	18	1	0	0
G7	G7-7	9:47:45 AM	9:50:12 AM	734297.10	5220745.10	734347.20	5220747.80	164	101.5	0	5	90	5	125	0	0	22	0	0	36	41	0	14	125	12	10	0	0	0	0
G7	G7-8	9:50:12 AM	9:52:43 AM	734347.2	5220747.80	734397.1	5220744.2	164	101.5	5	5	85	5	89	0	0	13	0	0	19	29	0	24	89	2	11	0	2	0	0
G7	G7-9	9:52:43 AM	9:55:10 AM	734397.1	5220744.20	734447.2	5220749.5	164.3	101.5	5	10	80	5	17	0	0	9	0	0	5	2	0	22	17	4	5	0	2	0	0
G7	G7-10	9:55:10 AM	9:57:20 AM	734447.2	5220749.50	734499.4	5220746.7	164.2	101.5	5	5	85	5	69	0	0	6	0	0	4	23	0	13	69	6	0	0	2	0	0
G8	G8-1	12:31:00 PM	12:34:01 PM	734498.8	5220727.4	734447	5220728.7	163.1	101.5	0	5	90	5	56	1	0	22	0	0	121	42	1	27	57	11	0	11	2	0	0
G8	G8-2	12:34:01 PM	12:36:28 PM	734447	5220728.7	734397.1	5220729.6	164.8	101.5	0	5	90	5	145	1	0	18	0	0	55	50	1	49	146	8	0	10	1	0	4
G8	G8-3	12:36:28 PM	12:38:51 PM	734397.1	5220729.6	734347.1	5220729.4	164.5	101.5	0	5	90	5	110	0	0	10	0	0	284	38	0	33	110	5	0	5	3	0	3
G8	G8-4	12:38:51 PM	12:41:14 PM	734347.1	5220729.4	734297.2	5220728.9	164.2	101.5	0	0	95	5	129	1	0	12	0	0	119	47	0	49	130	3	0	9	0	0	1
G8	G8-5	12:41:14 PM	12:43:33 PM	734297.2	5220728.9	734246.6	5220731	163.8	101.5	0	5	90	5	101	0	0	10	0	0	65	33	4	33	101	4	0	6	2	0	0
G8	G8-6	12:43:33 PM	12:45:34 PM	734246.6	5220731	734197	5220730.2	163.6	101.5	0	5	90	5	105	0	0	8	0	0	28	38	0	31	105	2	0	6	0	0	0
G8	G8-7	12:45:34 PM	12:47:37 PM	734197	5220730.2	734147	5220730.4	163.8	101.5	0	0	95	5	93	0	0	9	0	0	23	39	1	45	93	2	0	7	2	0	1
G8	G8-8	12:47:37 PM	12:49:35 PM	734147	5220730.4	734097	5220729.9	163.2	101.5	0	5	90	5	89	0	0	10	0	0	39	31	0	37	89	5	0	5	1	0	0
G8	G8-9	12:49:35 PM	12:51:31 PM	734097	5220729.9	734046.8	5220729.5	163.4	101.5	0	0	95	5	77	1	0	13	0	0	17	28	1	15	78	6	0	7	1	0	0
G8	G8-10	12:51:31 PM	12:53:50 PM	734046.8	5220729.5	733992	5220728.1	163.3	101.5	0	5	90	5	110	0	0	10	0	0	16	43	4	29	110	6	0	4	0	0	1
G9	G9-1	10:27:44 AM	10:29:56 AM	733998.4	5220707.60	734047.3	5220707.10	162.6	101.5	5	5	85	5	17	0	0	6	0	0	5	0	0	12	17	2	4	0	0	0	0
G9	G9-2	10:29:56 AM	10:31:55 AM	734047.3	5220707.10	734097.1	5220710.2	162.5	101.5	5	5	85	5	98	0	0	11	0	0	15	17	0	7	98	5	6	0	0	0	0
G9	G9-3	10:31:55 AM	10:33:49 AM	734097.1	5220710.20	734147.3	5220708.1	163.2	101.5	5	10	80	5	117	0	0	4	0	0	6	14	0	6	117	3	1	0	3	0	0
G9	G9-4	10:33:49 AM	10:35:48 AM	734147.3	5220708.10	734197.2	5220708.7	163.3	101.5	5	10	80	5	184	0	0	8	0	0	9	34	0	13	184	5	3	0	1	0	0
G9	G9-5	10:35:48 AM	10:37:50 AM	734197.2	5220708.70	734247.3	5220707.3	163.8	101.5	5	10	80	5	167	0	0	4	0	0	5	19	0	18	167	2	2	0	0	0	0
G9	G9-6	10:37:50 AM	10:40:05 AM	734247.3	5220707.30	734297.2	5220706.90	163.9	101.5	5	10	80	5	207	0	0	2	0	0	5	27	0	16	207	2	0	0	2	0	0
G9	G9-7	10:40:05 AM	10:42:03 AM	734297.2	5220706.90	734347.2	5220706	163.9	101.5	5	10	80	5	126	0	0	10	0	0	22	20	0	16	126	7	3	0	1	0	0
G9	G9-8	10:42:03 AM	10:44:07 AM	734347.2	5220706.00	734397	5220709.1	163.9	101.5	5	10	80	5	60	0	0	5	0	0	268	8	0	14	60	1	4	0	1	0	0
G9	G9-9	10:44:07 AM	10:46:05 AM	734397.0	5220709.10	734447	5220708.6	163.8	101.5	5	10	80	5	52	0	0	4	0	0	17	11	0	10	52	3	1	0	4	0	0
G9	G9-10	10:46:05 AM	10:48:23 AM	734447.0	5220708.60	734500.9	5220709	164.2	101.5	5	10	80	5	45	0	0	14	0	0	278	8	0	9	45	3	11	0	3	0	0

APPENDIX

Table A-2 Observations for transects G10 to G19 (all sections)

Line	Section	Time Start (UTC)	Time End (UTC)	Start Easting	Start Northing	End Easting	End Northing	Depth (M)	Section Area m2	Coarse (%)	Medium (%)	Fine (%)	Shell (%)	Coral Good	Coral Damaged	Coral Dead	Sponge Good	Sponge Veneer	Sponge Covered	Echinoderms	Cnidarians	Molluscs	Arthropods	Other Coral	Solid / Massive Sponge	Thin-walled Sponge	Other sponges	Benthivores	Piscivores	Unknown Fish
G10	G10-1	1:21:00 PM	1:23:52 PM	734498	5220685.5	734447.2	5220688.6	162.4	101.5	0	0	95	5	29	0	0	13	0	0	197	28	0	12	29	3	0	10	1	0	1
G10	G10-2	1:23:52 PM	1:25:47 PM	734447.2	5220688.6	734397.1	5220689.7	164.2	101.5	0	0	95	5	98	0	0	11	0	0	42	29	0	24	98	5	0	6	3	0	1
G10	G10-3	1:25:47 PM	1:27:34 PM	734397.1	5220689.7	734347.1	5220689.5	164	101.5	0	5	90	5	66	0	0	5	0	0	148	28	0	20	66	1	0	4	1	0	0
G10	G10-4	1:27:34 PM	1:29:24 PM	734347.1	5220689.5	734297.1	5220689	164.3	101.5	0	0	95	5	87	2	0	8	0	0	12	36	0	34	89	2	0	6	0	0	0
G10	G10-5	1:29:24 PM	1:31:10 PM	734297.1	5220689	734247.2	5220687.5	163.7	101.5	0	5	90	5	79	1	0	7	0	0	193	24	0	18	80	4	0	3	1	0	1
G10	G10-6	1:31:10 PM	1:32:58 PM	734247.2	5220687.5	734197.1	5220689.4	163.7	101.5	0	0	95	5	77	1	0	9	0	0	91	37	1	16	78	4	0	5	3	0	0
G10	G10-7	1:32:58 PM	1:34:47 PM	734197.1	5220689.4	734147.2	5220688.4	163.8	101.5	0	0	95	5	108	0	0	10	0	0	55	41	2	22	108	5	0	5	1	0	1
G10	G10-8	1:34:47 PM	1:36:38 PM	734147.2	5220688.4	734096.9	5220690.1	163.8	101.5	0	0	95	5	107	0	0	9	0	0	27	30	1	23	107	4	0	5	1	0	2
G10	G10-9	1:36:38 PM	1:38:36 PM	734096.9	5220690.1	734047	5220690.7	163.2	101.5	0	0	95	5	85	0	0	16	0	0	29	40	2	29	85	5	0	11	1	0	0
G10	G10-10	1:38:36 PM	1:40:42 PM	734047	5220690.7	733990.9	5220687.7	163.8	101.5	0	5	90	5	130	1	0	10	0	0	78	21	2	65	131	5	0	5	4	0	1
G11	G11-1	1:45:00 PM	1:47:26 PM	733996.4	5220669.10	734047.1	5220669.30	162	101.5	0	0	95	5	30	0	0	7	0	0	14	8	0	8	30	6	0	1	0	0	0
G11	G11-2	1:47:26 PM	1:49:15 PM	734047.1	5220669.30	734097	5220667.4	162.5	101.5	0	0	90	10	78	0	0	7	0	0	66	35	5	15	78	5	0	2	1	0	0
G11	G11-3	1:49:15 PM	1:51:05 PM	734097.0	5220667.40	734147.1	5220668.9	163.4	101.5	0	0	95	5	109	0	0	5	0	0	17	21	3	8	109	3	0	2	0	0	0
G11	G11-4	1:51:05 PM	1:52:51 PM	734147.1	5220668.90	734197.2	5220667.2	163.5	101.5	0	0	95	5	113	0	0	3	0	0	36	28	6	10	113	1	0	2	2	0	0
G11	G11-5	1:52:51 PM	1:54:40 PM	734197.2	5220667.20	734247	5220667.9	163.6	101.5	0	0	90	10	99	1	0	8	0	0	50	31	2	7	100	0	0	8	0	0	0
G11	G11-6	1:54:40 PM	1:56:39 PM	734247.0	5220667.90	734297.0	5220669.70	163.3	101.5	0	5	90	5	52	0	0	5	0	0	266	38	4	6	52	1	0	4	1	0	0
G11	G11-7	1:56:39 PM	1:58:27 PM	734297.0	5220669.70	734347.1	5220666.9	162.4	101.5	0	0	95	5	50	0	0	12	0	0	2	32	0	7	50	6	0	6	0	0	1
G11	G11-8	1:58:27 PM	2:00:15 PM	734347.1	5220666.90	734397.2	5220670.2	164.1	101.5	0	0	95	5	30	0	0	10	0	0	14	34	1	2	30	5	0	5	3	0	0
G11	G11-9	2:00:15 PM	2:02:01 PM	734397.2	5220670.20	734446.9	5220667.4	164	101.5	0	0	95	5	66	0	0	9	0	0	58	35	1	7	66	1	0	8	1	0	0
G11	G11-10	2:02:01 PM	2:04:07 PM	734446.9	5220667.40	734504.3	5220669.4	164.1	101.5	0	0	95	5	25	0	0	5	0	0	43	13	0	1	25	4	0	1	0	0	0
G12	G12-1	2:28:00 PM	2:30:32 PM	734497.9	5220647.10	734447.2	5220647.30	163	101.5	0	5	90	5	54	0	0	19	0	0	127	44	1	31	54	11	0	8	0	0	0
G12	G12-2	2:30:32 PM	2:32:09 PM	734447.2	5220647.30	734396.9	5220652.8	163.2	101.5	0	0	95	5	58	1	0	12	0	0	48	12	1	23	59	8	0	4	0	0	4
G12	G12-3	2:32:09 PM	2:33:52 PM	734396.9	5220652.80	734346.9	5220649	164.6	101.5	0	0	70	30	98	1	0	47	0	0	15	55	0	23	99	10	0	37	1	1	2
G12	G12-4	2:33:52 PM	2:35:40 PM	734346.9	5220649.00	734297.3	5220647.6	166.1	101.5	0	0	95	5	199	1	0	39	0	0	306	78	1	13	200	6	0	33	3	0	1
G12	G12-5	2:35:40 PM	2:37:21 PM	734297.3	5220647.60	734247	5220650.4	162.6	101.5	0	5	90	5	113	0	0	12	0	0	76	43	0	16	113	3	0	9	3	0	2
G12	G12-6	2:37:21 PM	2:38:59 PM	734247.0	5220650.40	734196.7	5220650.60	163.6	101.5	0	5	90	5	129	1	0	13	0	0	17	52	0	26	130	6	0	7	2	0	0
G12	G12-7	2:38:59 PM	2:40:35 PM	734196.7	5220650.60	734146.9	5220650.3	163.8	101.5	0	5	90	5	119	0	0	7	0	0	9	42	0	28	119	4	0	3	3	0	2
G12	G12-8	2:40:35 PM	2:42:09 PM	734146.9	5220650.30	734096.8	5220649.6	163.3	101.5	0	5	90	5	114	0	0	5	0	0	16	40	1	44	114	5	0	0	1	0	1
G12	G12-9	2:42:09 PM	2:43:42 PM	734096.8	5220649.60	734047.1	5220650.1	163.7	101.5	0	5	90	5	120	0	0	8	0	0	60	42	2	35	120	4	0	4	3	0	1
G12	G12-10	2:43:42 PM	2:45:37 PM	734047.1	5220650.10	733989.9	5220648.5	163.6	101.5	0	0	95	5	119	0	0	10	0	0	11	16	0	29	119	6	0	4	0	0	2
G13	G13-1	2:50:00 PM	2:52:12 PM	733997.5	5220625.60	734047.1	5220630.50	163.1	101.5	0	5	90	5	108	2	0	9	0	0	7	22	1	13	110	7	0	2	2	0	1
G13	G13-2	2:52:12 PM	2:54:02 PM	734047.1	5220630.50	734097	5220630	163.5	101.5	0	5	90	5	174	1	0	9	0	0	7	43	1	16	175	5	0	4	1	0	1
G13	G13-3	2:54:02 PM	2:55:49 PM	734097.0	5220630.00	734146.9	5220626.8	163.7	101.5	0	0	95	5	160	1	0	7	0	0	15	29	3	14	161	2	0	5	4	0	0
G13	G13-4	2:55:49 PM	2:57:37 PM	734146.9	5220626.80	734196.9	5220627.8	163	101.5	0	5	90	5	153	0	0	10	0	0	6	37	2	19	153	5	0	5	4	0	0
G13	G13-5	2:57:37 PM	2:59:26 PM	734196.9	5220627.80	734247	5220628.2	163.4	101.5	0	5	90	5	120	1	0	7	0	0	11	36	1	25	121	3	0	4	2	0	0
G13	G13-6	2:59:26 PM	3:01:19 PM	734247.0	5220628.20	734297.2	5220629.40	163.9	101.5	0	5	90	5	128	1	0	4	0	0	80	34	1	10	129	2	0	2	3	0	0
G13	G13-7	3:01:19 PM	3:03:12 PM	734297.2	5220629.40	734347.2	5220629.9	162.5	101.5	0	5	90	5	58	1	0	13	0	0	161	21	0	3	59	6	0	7	2	0	1
G13	G13-8	3:03:12 PM	3:05:05 PM	734347.2	5220629.90	734397.1	5220629.4	164.1	101.5	0	5	90	5	41	0	0	19	0	0	251	48	0	13	41	8	0	11	2	0	0
G13	G13-9	3:05:05 PM	3:06:55 PM	734397.1	5220629.40	734447	5220627.2	164.6	101.5	0	5	90	5	108	0	0	11	0	0	256	52	2	7	108	9	0	2	2	0	0
G13	G13-10	3:06:55 PM	3:09:04 PM	734447.0	5220627.20	734503.3	5220627.2	163.6	101.5	0	0	95	5	63	0	0	15	0	0	38	38	3	11	63	6	0	9	1	0	0
G14	G14-1	3:14:25 PM	3:16:22 PM	734495.6	5220607.50	734447.1	5220608.70	163.7	101.5	5	0	90	5	66	0	0	22	0	0	63	38	1	4	66	8	0	14	1	0	0
G14	G14-2	3:16:22 PM	3:18:02 PM	734447.1	5220608.70	734397.1	5220608.9	163.9	101.5	0	5	90	5	52	1	0	6	0	0	631	33	2	5	53	3	0	3	0	0	0
G14	G14-3	3:18:02 PM	3:19:56 PM	734397.1	5220608.90	734347.2	5220607.4	164.3	101.5	0	5	90	5	132	0	0	3	0	0	327	22	0	6	132	2	0	1	0	0	0
G14	G14-4	3:19:56 PM	3:21:46 PM	734347.2	5220607.40	734296.9	5220609	163.9	101.5	0	5	90	5	240	0	0	10	0	0	43	25	2	28	240	8	0	2	2	0	1
G14	G14-5	3:21:46 PM	3:23:24 PM	734296.9	5220609.00	734246.8	5220609.7	163.4	101.5	0	5	90	5	126	0	0	12	2	0	156	22	2	14	126	9	0	5	0	0	0
G14	G14-6	3:23:24 PM	3:25:02 PM	734246.8	5220609.70	734196.7	5220611.00	163.7	101.5	0	5	90	5	167	1	0	15	0	0	19	23	4	25	168	10	0	5	1	0	0
G14	G14-7	3:25:02 PM	3:26:39 PM	734196.7	5220611.00	734147.3	5220609	163.8	101.5	0	0	95	5	218	1	0	4	0	0	11	36	2	36	219	1	0	3	0	0	0
G14	G14-8	3:26:39 PM	3:28:15 PM	734147.3	5220609.00	734097.4	5220608.5	163.6	101.5	0	0	95	5	136	0	0	6	0	0	14	40	1	34	136	4	0	2	0	0	0
G14	G14-9	3:28:15 PM	3:29:50 PM	734097.4	5220608.50	734047	5220609.2	163.5	101.5	0	5	95	5	227	0	0	8	0	0	5	31	0	33	227	6	0	2	1	0	0
G14	G14-10	3:29:50 PM	3:31:43 PM	734047.0	5220609.20	733990	5220609.2	164	101.5	0	5	90	5	184	4	0	2	0	0	0	29	1	42	188	2	0	0	4	0	0
G15	G15-1	4:21:52 PM	4:24:11 PM	733995.6	5220587.80	734047.0	5220590.90	161.7	101.5	5	5	70	20	65	0	0	14	4	1	8	8	3	4	65	5	0	14	1	0	0
G15	G15-2	4:24:11 PM	4:25:55 PM	734047.0	5220590.90	734097.2	5220588.3	163.5	101.5	0	5	75	20	106	0	0	13	0	0	48	29	2	8	106	9	0	4	1	0	0
G15	G15-3	4:25:55 PM	4:27:34 PM	734097.2	5220588.30	734147	5220588.6	163.2	101.5	0	5	85	10	124	0	0	11	0	0	14	33	1	8	124	9	0	2	1	0	0
G15	G15-4	4:27:34 PM	4:29:22 PM	734147.0	5220588.60	734197.4	5220591	163.4	101.5	0	0	90	10	105	0	0	11	3	0	5	26	1	3	105	10	0	4	0	0	0
G15	G15-5	4:29:22 PM	4:31:00 PM	734197.4	5220591.00	734246.8	5220590.2	163.5	101.5	0	5	85	10	130	1	0	13	1	0	5	33	0	4	131	8	0	6	0	0	0
G15	G15-6	4:31:00 PM	4:32:42 PM	734246.8	5220590.20	734297.1	5220590.40	164	101.5	0	5	85	10	113	0	0	18	0	0	82	23	4	4	113	10	0	8	0	0	0
G15	G15-7	4:32:42 PM	4:34:27 PM	734297.1	5220590.40	734347	5220588.3	163.4	101.5	0	5	85	10	105	1	0	11	5	0	8	23	1	3	106	9	0	7	0	0	0
G15	G15-8	4:34:27 PM	4:36:21 PM	734347.0	5220588.30	734397	5220591.1	163.6	101.5	0	5	90	5	60	2	0	7	1	0	3	17	4	7	62	4	0	4	1	0	0
G15	G15-9	4:36:21 PM	4:38:03 PM	734397.0	5220591.10	734447	5220589.9	163.9	101.5	0	5	90	5	62	0	0	11	0	0	42	36	3	4	62	4	0	7	0	0	0
G15	G15-10	4:38:03 PM	4:40:17 PM	734447.0	5220589.90	734506.4	5220589	164.2	101.5	5	0	90	5	54	0	0	9	0	0	27	35	1	1	54	6	0	3	1	0	0
G16	G16-1	4:44:00 AM	4:46:52 AM	734498.3	5220565.90	734447.1	5220568.10	164	101.5	0	5	90	5	97	0	0	34	0	0	255	59	0	17	97	25	0	9	1	0	0
G16	G16-2	4:46:52 AM	4:48:34 AM	734447.1	5220568.10	734397.1	5220571	164	101.5	0	5	95	0	58	1	0	15	0	0	18	60	0	22	59	10	0	5	2	0	0
G16	G16-3	4:48:34 AM	4:50:17 AM	734397.1	5220571.00	734346.9	5220569.4	164.6	101.5	0	5	90	5	117	1	0	18	0	0	24	70	1	21	118	8	0	10	2	0	0
G16	G16-4	4:50:17 AM	4:52:06 AM	734346.9	5220569.40	734296.8	5220568.7	164.8	101.5	0	5	90	5	156	0	0	11	0	0	14	36	0	16	156	2	0	9	6	0	0
G16	G16-5	4:52:06 AM	4:53:51 AM	734296.8	5220568.70	734247.2	5220571.4	163.7	101.5	0	0	95	5	110	0	0	8	0	0	146	35	0	11	110	3	0	5	0	0	0
G16	G16-6	4:53:51 AM	4:55:37 AM	734247.2	5220571.40	734196.9	5220569.70	164.2	101.5	0	0	95	5	166	0	0	7	0	0	7	42	0	33	166	4	0	3	1	0	0
G16	G16-7	4:55:37 AM	4:57:21 AM	734196.9	5220569.70	734147.2	5220568.6	163.8	101.5	0	0	95	5	111	1	0	10	0	0	20	35	1	9	112	5	0	5	1	0	0
G16	G16-8	4:57:21 AM	4:59:08 AM	734147.2	5220568.60	734097	5220569.4	163.2	101.5	5	0	90	5	138	0	0	5	0	0	25	34	0	8	138	1	0	4	2	0	1
G16	G16-9	4:59:08 AM	5:00:51 AM	734097.0	5220569.40	734046.9	5220569.2	163.2	101.5	0	0	95	5	72	2	0	6	0	0	121	18	0	5	74	5	0	1	1	0	0
G16	G16-10	5:00:51 AM	5:02:55 AM	734046.9	5220569.20	733989.6	5220569.9	163.4	101.5	0	0	95	5	95	1	0	2	0	0	8	27	0	7	96	1	0	1	3	0	0
G17	G17-1	5:07:00 AM	5:09:49 AM	733997.1	5220546.30	734047.0	5220550.40	162.6	101.5	0	5	85	10	78	0	0	6	0	0	4	30	2	8	78	4	0	2	0	0	0
G17	G17-2	5:09:49 AM	5:11:34 AM	734047.0	5220550.40	734097.1	5220549.8	163.1	101.5	0	5	85	10	106	0	0	6	0	0	44	19	3	9	106	4	0	2	0	0	1
G17	G17-3	5:11:34 AM	5:13:17 AM	734097.1	5220549.80	734147.2	5220551.2	162.5	101.5	0	5	85	10	62	0	0	6	0	0	38	23	0	8	62	2	0	4	1	0	1
G17	G17-4	5:13:17 AM	5:14:57 AM	734147.2	5220551.20	734197.2	5220550	162.8	101.5	0	0	90	10	86	0	0	8	0	0	50	29	3	8	86	1	0	7	1	0	0
G17	G17-5	5:14:57 AM	5:16:35 AM	734197.2	5220550.00	734247.2	5220550.6	162.7	101.5	0	0	95	5	68	0	0	3	0	0	3	46	3	13	68	1	0	2	1	0	0
G17	G17-6	5:16:35 AM	5:18:13 AM	734247.2	5220550.60	734297.2	5220552.70	164.2	101.5	0	0	95	5	76	0	0	3	0	0	214	28	0	9	76	0	0	3	0	0	1
G17	G17-7	5:18:13 AM	5:19:51 AM	734297.2	5220552.70	734347.1	5220548.4	163.2	101.5	0	5	90	5	66	0	0	10	0	0	68	37	0	2	66	5	0	5	1	0	2
G17	G17-8	5:19:51 AM	5:21:42 AM	734347.1	5220548.40	734397	5220547.2	164.4	101.5	0	5	90	5	98	0	0	8	0	0	36	36	0	6	98	3	0	5	1	0	1
G17	G17-9	5:21:42 AM	5:23:21 AM	734397.0	5220547.20	734446.8	5220553.1	164.8	101.5	5	0	90	5	93	0	0	21	0	0	52	55	0	8	93	9	0	12	3	0	0
G17	G17-10	5:23:21 AM	5:25:35 AM	734446.8	5220553.10	734506.4	5220548.70	164.2	101.5	0	5	90	5	101	0	0	29	0	0	814	60	0	2	101	6	0	23	1	0	0
G18	G18-1	5:30:00 AM	5:38:13 AM	734498.5	5220525.50	734447.2	5220529.8	163.5	101.5	5	0	90	5	40	0	0	24	0	0	611	39	0	9	40	10	0	14	6	0	0
G18	G18-2	5:38:13 AM	5:40:15 AM	734447.2	5220529.80	734397.2	5220527.3	164.5	101.5	0	5	90	5	43	0	0	33	0	0	2	67	0	10	43	12	0	21	1	0	3
G18	G18-3	5:40:15 AM	5:42:20 AM	734397.2	5220527.30	734347.3	5220527.3	164.8	101.5	5	0	90	5	133	0	0	20	0	0	321	52	0	9	133	6	0	14	3	0	0
G18	G18-4	5:42:20 AM	5:44:17 AM	734347.3	5220527.30	734297.1	5220528.7	164.2	101.5	0	5	90	5	130	2	0	15	0	0	35	49	1	18	132	6	0	9	1	0	1
G18	G18-5	5:44:17 AM	5:46:06 AM	734297.1	5220528.70	734247.1	5220528.80	163.8	101.5	0	5	90	5	79	0	0	7	0	0	91	46	0	20	79	2	0	5	2	0	2
G18	G18-6	5:46:06 AM	5:48:02 AM	734247.1	5220528.80	734197.2	5220529.3	164.6	101.5	0	5	90	5	112	3	0	16	0	0	5	38	0	9	115	12	0	4	2	0	1
G18	G18-7	5:48:02 AM	5:49:49 AM	734197.2	5220529.30	734146.9	5220528.5	163.7	101.5	0	5	90	5	151	0	0	4	0	0	43	38	0	8	151	1	0	3	4	0	0
G18	G18-8	5:49:49 AM	5:51:35 AM	734146.9	5220528.50	734097.1	5220529.4	163.3	101.5	0	5	90	5	119	0	0	12	0	0	43	44	2	18	119	6	0	6	3	0	0
G18	G18-9	5:51:35 AM	5:53:24 AM	734097.1	5220529.40	734046.5	5220531.8	163.6	101.5	0	5	90	5	122	0	0	5	0	0	23	39	1	21	122	2	0	3	3	0	2
G18	G18-10	5:53:24 AM	5:55:44 AM	734046.5	5220531.80	733991.2	5220529.60	163.8	101.5	0	5	90	5	140	0	0	3	0	0	16	39	2	13	140	3	0	0	4	0	0
G19	G19-1	6:00:00 AM	6:02:57 AM	733997.1	5220508.00	734046.9	5220508.2	162.8	101.5	0	5	85	10	61	1	0	10	0	0	5	27	1	6	62	6	0	4	2	0	0
G19	G19-2	6:02:57 AM	6:04:38 AM	734046.9	5220508.20	734096.9	5220508.3	162.9	101.5	0	0	95	5	51	0	0	6	0	0	29	28	0	6	51	4	0	2	2	0	0
G19	G19-3	6:04:38 AM	6:06:14 AM	734096.9	5220508.30	734147	5220509.6	163.1	101.5	0	0	95	5	128	0	0	2	0	0	23	25	3	4	128	1	0	1	1	0	0
G19	G19-4	6:06:14 AM	6:07:43 AM	734147.0	5220509.60	734196.8	5220508.8	163.4	101.5	0	5	90	5	115	0	0	6	0	0	17	41	1	6	115	3	0	3	1	0	2
G19	G19-5	6:07:43 AM	6:09:18 AM	734196.8	5220508.80	734247.2	5220508.50	163.7	101.5	0	5	90	5	167	0	0	14	0	0	29	46	2	5	167	4	0	10	3	0	0
G19	G19-6	6:09:18 AM	6:11:00 AM	734247.2	5220508.50	734297	5220508.8	164.2	101.5	0	5	90	5	153	1	0	11	0	0	76	44	4	8	154	7	0	4	0	0	0
G19	G19-7	6:11:00 AM	6:12:39 AM	734297.0	5220508.80	734346.8	5220508.4	164.1	101.5	0	5	90	5	143	0	0	14	0	0	34	45	1	15	143	2	0	12	2	0	3
G19	G19-8	6:12:39 AM	6:14:11 AM	734346.8	5220508.40	734397.2	5220506.8	164.3	101.5	0	0	90	10	86	0	0	8	0	0	1100	44	1	4	86	1	0	7	1	0	0
G19	G19-9	6:14:11 AM	6:15:47 AM	734397.2	5220506.80	734447.3	5220510.6	163.6	101.5	0	0	95	5	49	0	0	129	0	0	1	62	0	3	49	16	1	112	0	0	0
G19	G19-10	6:15:47 AM	6:18:04 AM	734447.3	5220510.60	734511.3	5220508.40	166.2	101.5	5	5	80	10	107	0	0	26	0	0	877	66	0	4	107	5	0	21	0	0	0

APPENDIX

Table A-3 Observations for transects G20 to G27 (all sections)

Wellsite	Date	Line	Section	Time Start	Time End	Start Easting	Start Northing	End Easting	End Northing	Depth	Section Area	Coarse	Medium	Fine	Shell	Coral Good	Coral Damaged	Coral Dead	Sponge Good	Sponge Veneer	Sponge Covered	Echinoderms	Cnidarians	Molluscs	Arthropods	Other Coral	Solid / Massive Sponge	Thin-walled Sponge	Other sponges	Benthivores	Piscivores	Unknown Fish
Gale N66	02-Nov-22	G20	G20-1	6:22:00 AM	6:24:51 AM	734496.9	5220487.60	734447.4	5220484.6	164	101.5	0	0	95	5	33	1	0	24	0	0	212	18	0	2	34	4	0	20	1	0	0
Gale N66	02-Nov-22	G20	G20-2	6:24:51 AM	6:26:54 AM	734447.4	5220484.60	734397.4	5220485.8	163.8	101.5	5	5	80	10	62	0	0	42	0	0	84	49	0	4	62	16	0	26	6	0	0
Gale N66	02-Nov-22	G20	G20-3	6:26:54 AM	6:28:51 AM	734397.4	5220485.80	734347.2	5220486.9	163.7	101.5	0	0	95	5	55	1	0	20	0	0	1226	37	2	6	56	6	0	14	0	0	0
Gale N66	02-Nov-22	G20	G20-4	6:28:51 AM	6:30:41 AM	734347.2	5220486.90	734297.2	5220486.5	164.2	101.5	0	5	90	5	103	1	0	14	0	0	23	45	0	4	104	7	0	7	0	0	0
Gale N66	02-Nov-22	G20	G20-5	6:30:41 AM	6:32:28 AM	734297.2	5220486.50	734247.2	5220484.60	163.9	101.5	0	5	90	5	58	1	0	7	0	0	80	26	0	11	59	4	0	3	1	0	1
Gale N66	02-Nov-22	G20	G20-6	6:32:28 AM	6:34:18 AM	734247.2	5220484.60	734197	5220487.5	163.4	101.5	0	5	90	5	71	1	0	14	0	0	28	37	1	4	72	4	0	10	0	0	1
Gale N66	02-Nov-22	G20	G20-7	6:34:18 AM	6:36:08 AM	734197.0	5220487.50	734147	5220490.1	163.5	101.5	0	5	90	5	107	0	0	5	0	0	32	38	1	9	107	3	0	2	0	0	0
Gale N66	02-Nov-22	G20	G20-8	6:36:08 AM	6:38:00 AM	734147.0	5220490.10	734097	5220488.3	163.2	101.5	0	0	95	5	65	0	0	5	0	0	44	27	0	2	65	2	0	3	0	0	1
Gale N66	02-Nov-22	G20	G20-9	6:38:00 AM	6:39:48 AM	734097.0	5220488.30	734047.2	5220488.5	163.7	101.5	0	5	90	5	52	0	0	15	0	0	37	42	0	9	52	12	0	3	0	0	0
Gale N66	02-Nov-22	G20	G20-10	6:39:48 AM	6:42:07 AM	734047.2	5220488.50	733992.5	5220487.70	163	101.5	0	5	90	5	99	3	0	4	0	0	14	34	0	9	102	2	0	2	2	0	2
Gale N66	02-Nov-22	G21	G21-1	6:44:00 AM	6:46:09 AM	733998.7	5220466.90	734047.2	5220468	163.2	101.5	0	5	90	5	122	0	0	4	0	0	26	32	0	8	122	3	0	1	1	0	0
Gale N66	02-Nov-22	G21	G21-2	6:46:09 AM	6:47:44 AM	734047.2	5220468.00	734096.8	5220470.3	162.4	101.5	0	5	90	5	96	0	0	23	0	0	57	21	0	9	96	22	0	1	0	0	0
Gale N66	02-Nov-22	G21	G21-3	6:47:44 AM	6:49:15 AM	734096.8	5220470.30	734147.1	5220471.5	162.7	101.5	0	0	95	5	99	0	0	7	0	0	43	28	1	9	99	6	0	1	1	0	0
Gale N66	02-Nov-22	G21	G21-4	6:49:15 AM	6:50:42 AM	734147.1	5220471.50	734197.3	5220471.2	163.1	101.5	0	5	90	5	109	0	0	7	0	0	27	29	2	11	109	6	0	1	3	0	0
Gale N66	02-Nov-22	G21	G21-5	6:50:42 AM	6:52:11 AM	734197.3	5220471.20	734247.1	5220470.50	163.4	101.5	0	5	90	5	117	0	0	8	0	0	37	50	1	13	117	6	0	2	3	0	1
Gale N66	2022-11-02	G21	G21-6	6:52:11 AM	6:53:40 AM	734247.1	5220470.5	734297.2	5220470.9	163.5	101.5	0	0	95	5	116	0	0	14	0	0	128	33	3	12	116	11	0	3	1	0	0
Gale N66	2022-11-02	G21	G21-7	6:53:40 AM	6:55:09 AM	734297.2	5220470.9	734347.3	5220469.7	163.2	101.5	0	5	90	5	107	0	0	13	0	0	3	35	0	5	107	5	0	8	4	0	1
Gale N66	2022-11-02	G21	G21-8	6:55:09 AM	6:56:47 AM	734347.3	5220469.7	734397.4	5220470.5	163.6	101.5	0	0	95	5	28	0	0	13	0	0	1187	25	0	5	28	6	0	7	0	0	0
Gale N66	2022-11-02	G21	G21-9	6:56:47 AM	6:58:20 AM	734397.4	5220470.5	734447.1	5220471.1	162.5	101.5	0	0	95	5	93	0	0	14	0	0	406	21	1	1	93	8	0	6	0	0	0
Gale N66	2022-11-02	G21	G21-10	6:58:20 AM	7:00:09 AM	734447.1	5220471.1	734505.1	5220468.8	164	101.5	0	0	95	5	42	1	0	4	0	0	167	17	0	2	43	3	0	1	2	0	0
Gale N66	2022-11-02	G22	G22-1	7:02:00 AM	7:04:58 AM	734494.5	5220451.2	734446.8	5220448.7	161.3	101.5	0	0	95	5	21	0	0	7	0	0	401	41	0	2	21	2	0	5	0	0	0
Gale N66	2022-11-02	G22	G22-2	7:04:58 AM	7:06:47 AM	734446.8	5220448.7	734397.1	5220445.9	163.1	101.5	0	5	90	5	95	0	0	7	0	0	936	40	0	3	95	6	0	1	2	0	0
Gale N66	2022-11-02	G22	G22-3	7:06:47 AM	7:08:33 AM	734397.1	5220445.9	734346.9	5220450.5	163.4	101.5	0	0	95	5	94	0	0	29	0	0	12	52	0	6	94	14	0	15	3	0	0
Gale N66	2022-11-02	G22	G22-4	7:08:33 AM	7:10:21 AM	734346.9	5220450.5	734296.8	5220448.7	164.5	101.5	0	5	90	5	112	0	0	11	0	0	56	47	0	13	112	4	0	7	2	0	1
Gale N66	2022-11-02	G22	G22-5	7:10:21 AM	7:12:07 AM	734296.8	5220448.7	734246.7	5220449.3	163.7	101.5	0	0	95	5	144	0	0	15	0	0	26	41	2	13	144	6	0	9	3	0	2
Gale N66	2022-11-02	G22	G22-6	7:12:07 AM	7:13:59 AM	734246.7	5220449.3	734196.6	5220451.6	163.9	101.5	0	5	90	5	163	0	0	7	0	0	19	64	1	12	163	4	0	3	1	0	2
Gale N66	2022-11-02	G22	G22-7	7:13:59 AM	7:15:46 AM	734196.6	5220451.6	734146.9	5220449.4	163.6	101.5	0	5	90	5	123	0	0	5	0	0	43	29	1	14	123	5	0	0	2	0	0
Gale N66	2022-11-02	G22	G22-8	7:15:46 AM	7:17:32 AM	734146.9	5220449.4	734097.3	5220447.7	163.1	101.5	5	5	85	5	126	3	0	8	0	0	35	62	0	6	129	4	0	4	4	0	1
Gale N66	2022-11-02	G22	G22-9	7:17:32 AM	7:19:22 AM	734097.3	5220447.7	734046.9	5220450	163.6	101.5	0	0	95	5	151	2	0	9	0	0	18	44	2	9	153	2	0	7	2	0	0
Gale N66	2022-11-02	G22	G22-10	7:19:22 AM	7:21:26 AM	734046.9	5220450	733990.3	5220451.3	163.4	101.5	5	0	90	5	118	1	0	8	0	0	44	63	1	14	119	0	0	8	2	0	0
Gale N66	2022-11-02	G23	G23-1	7:23:00 AM	7:25:30 AM	733998.2	5220428.6	734047.1	5220429	162.2	101.5	5	5	85	5	138	0	0	11	0	0	26	33	0	7	138	6	0	5	2	0	0
Gale N66	2022-11-02	G23	G23-2	7:25:30 AM	7:27:06 AM	734047.1	5220429	734097.3	5220430.8	163	101.5	0	0	95	5	178	0	0	10	0	0	15	37	3	7	178	9	0	1	1	0	0
Gale N66	2022-11-02	G23	G23-3	7:27:06 AM	7:28:36 AM	734097.3	5220430.8	734147.3	5220428.7	163.4	101.5	0	0	95	5	144	0	0	5	0	0	23	34	0	8	144	3	0	2	1	0	0
Gale N66	2022-11-02	G23	G23-4	7:28:36 AM	7:30:06 AM	734147.3	5220428.7	734197.3	5220431.6	163.5	101.5	0	5	90	5	192	0	0	3	0	0	21	28	3	11	192	2	0	1	0	0	2
Gale N66	2022-11-02	G23	G23-5	7:30:06 AM	7:31:44 AM	734197.3	5220431.6	734247.1	5220427.2	163.8	101.5	0	5	90	5	163	1	0	13	0	0	23	35	0	8	164	4	0	9	1	0	0
Gale N66	2022-11-02	G23	G23-6	7:31:44 AM	7:33:36 AM	734247.1	5220427.2	734296.8	5220430.6	164.2	101.5	0	0	95	5	175	0	0	13	0	0	20	45	0	19	175	7	0	6	2	0	2
Gale N66	2022-11-02	G23	G23-7	7:33:36 AM	7:35:22 AM	734296.8	5220430.6	734347.1	5220429.2	163.8	101.5	5	0	90	5	133	0	0	12	0	0	38	49	0	11	133	8	0	4	2	0	1
Gale N66	2022-11-02	G23	G23-8	7:35:22 AM	7:36:49 AM	734347.1	5220429.2	734396.8	5220427.7	163.8	101.5	0	0	95	5	102	0	0	35	0	0	8	50	1	6	102	8	1	26	1	0	0
Gale N66	2022-11-02	G23	G23-9	7:36:49 AM	7:38:22 AM	734396.8	5220427.7	734447.2	5220430.8	163.6	101.5	0	0	95	5	90	0	0	7	0	0	317	43	0	7	90	6	0	1	1	0	2
Gale N66	2022-11-02	G23	G23-10	7:38:22 AM	7:40:12 AM	734447.2	5220430.8	734506.1	5220429.8	163.3	101.5	0	0	95	5	108	0	0	18	0	0	56	44	0	8	108	11	0	7	2	0	1
Gale N66	2022-11-02	G24	G24-1	8:00:00 AM	8:01:59 AM	734487.6	5220407.7	734447	5220409.4	163.8	101.5	0	0	95	5	68	0	0	12	0	0	170	38	1	6	68	7	0	5	4	0	0
Gale N66	2022-11-02	G24	G24-2	8:01:59 AM	8:04:02 AM	734447	5220409.4	734397.1	5220410.4	163.9	101.5	0	5	90	5	97	1	0	12	0	0	141	61	2	17	98	4	0	8	4	0	2
Gale N66	2022-11-02	G24	G24-3	8:04:02 AM	8:06:03 AM	734397.1	5220410.4	734347.1	5220409.4	164.3	101.5	5	0	90	5	131	0	0	30	0	0	53	66	1	12	131	12	0	18	1	0	1
Gale N66	2022-11-02	G24	G24-4	8:06:03 AM	8:08:00 AM	734347.1	5220409.4	734297.1	5220410.5	163.9	101.5	0	5	90	5	167	0	0	21	0	0	132	75	3	18	167	10	0	11	2	0	4
Gale N66	2022-11-02	G24	G24-5	8:08:00 AM	8:09:59 AM	734297.1	5220410.5	734246.9	5220409.2	164.1	101.5	0	5	90	5	129	1	0	19	0	0	54	69	0	18	130	8	0	11	2	0	1
Gale N66	2022-11-02	G24	G24-6	8:09:59 AM	8:12:00 AM	734246.9	5220409.2	734196.8	5220411.5	164.3	101.5	0	0	95	5	130	0	0	10	0	0	24	53	2	16	130	5	0	5	2	0	2
Gale N66	2022-11-02	G24	G24-7	8:12:00 AM	8:13:58 AM	734196.8	5220411.5	734146.8	5220411.1	163.8	101.5	0	0	95	5	147	0	0	12	0	0	46	57	1	7	147	9	0	3	3	0	0
Gale N66	2022-11-02	G24	G24-8	8:13:58 AM	8:15:54 AM	734146.8	5220411.1	734097	5220410.8	163.5	101.5	0	0	95	5	141	0	0	11	0	0	26	42	1	15	141	9	0	2	1	0	1
Gale N66	2022-11-02	G24	G24-9	8:15:54 AM	8:18:01 AM	734097	5220410.8	734046.9	5220408.4	164.2	101.5	0	0	95	5	188	0	0	8	0	0	6	58	1	20	188	4	0	4	2	0	0
Gale N66	2022-11-02	G24	G24-10	8:18:01 AM	8:20:20 AM	734046.9	5220408.4	733990.2	5220408.6	163.8	101.5	5	0	90	5	182	0	0	10	0	0	5	47	0	20	182	6	0	4	6	0	0
Gale N66	2022-11-02	G25	G25-1	8:22:00 AM	8:24:25 AM	734001.3	5220389.3	734047.1	5220389.5	162.3	101.5	0	0	95	5	97	0	0	7	0	0	5	28	3	7	97	5	0	2	0	0	0
Gale N66	2022-11-02	G25	G25-2	8:24:25 AM	8:25:54 AM	734047.1	5220389.5	734096.9	5220389.5	163.6	101.5	0	0	95	5	195	0	0	15	0	0	4	51	3	23	195	3	0	12	1	0	1
Gale N66	2022-11-02	G25	G25-3	8:25:54 AM	8:27:44 AM	734096.9	5220389.5	734147.1	5220385.7	164.2	101.5	0	0	95	5	176	0	0	15	0	0	23	27	1	13	176	7	0	8	1	0	1
Gale N66	2022-11-02	G25	G25-4	8:27:44 AM	8:29:16 AM	734147.1	5220385.7	734196.9	5220392.3	163.5	101.5	0	0	95	5	146	0	0	7	0	0	24	32	2	13	146	4	0	3	1	0	1
Gale N66	2022-11-02	G25	G25-5	8:29:16 AM	8:30:40 AM	734196.9	5220392.3	734247.1	5220388.8	163.5	101.5	0	0	95	5	126	0	0	9	0	0	18	42	0	18	126	5	0	4	2	0	1
Gale N66	2022-11-02	G25	G25-6	8:30:40 AM	8:32:08 AM	734247.1	5220388.8	734297	5220391.7	163.6	101.5	0	5	90	5	96	0	0	14	0	0	54	29	3	16	96	5	0	9	2	0	0
Gale N66	2022-11-02	G25	G25-7	8:32:08 AM	8:33:37 AM	734297	5220391.7	734347.2	5220388.7	163.7	101.5	0	0	95	5	83	0	0	20	0	0	136	48	0	14	83	7	0	13	1	0	0
Gale N66	2022-11-02	G25	G25-8	8:33:37 AM	8:35:07 AM	734347.2	5220388.7	734397.2	5220390.7	162.8	101.5	0	0	95	5	138	0	0	22	0	0	112	51	0	8	138	11	0	11	0	0	0
Gale N66	2022-11-02	G25	G25-9	8:35:07 AM	8:37:04 AM	734397.2	5220390.7	734447	5220389.4	164.5	101.5	0	0	95	5	106	0	0	4	0	0	42	42	0	11	106	2	0	2	3	0	0
Gale N66	2022-11-02	G25	G25-10	8:37:04 AM	8:39:41 AM	734447	5220389.4	734505	5220387.3	164.5	101.5	0	0	95	5	145	0	0	3	1	0	175	46	3	19	145	2	0	2	1	0	1
Gale N66	2022-11-02	G26	G26-1	8:42:00 AM	8:44:22 AM	734501.6	5220369.3	734447.2	5220369.1	165	101.5	0	0	95	5	80	0	0	19	0	0	95	49	0	12	80	8	0	11	0	0	1
Gale N66	2022-11-02	G26	G26-2	8:44:22 AM	8:47:12 AM	734447.2	5220369.1	734397.2	5220367	165	101.5	0	0	95	5	95	0	0	19	0	0	29	58	0	18	95	12	0	7	7	0	0
Gale N66	2022-11-02	G26	G26-3	8:47:12 AM	8:49:44 AM	734397.2	5220367	734346.9	5220369.1	165	101.5	0	5	90	5	119	2	0	12	1	0	25	65	1	18	121	6	0	7	2	0	1
Gale N66	2022-11-02	G26	G26-4	8:49:44 AM	8:51:43 AM	734346.9	5220369.1	734297.1	5220371	163.3	101.5	0	0	95	5	93	0	0	7	0	0	98	43	0	11	93	2	1	4	2	0	1
Gale N66	2022-11-02	G26	G26-5	8:51:43 AM	8:53:47 AM	734297.1	5220371	734246.8	5220369.4	163.7	101.5	0	0	95	5	68	0	0	13	1	0	30	42	4	7	68	4	0	10	1	0	1
Gale N66	2022-11-02	G26	G26-6	8:53:47 AM	8:55:43 AM	734246.8	5220369.4	734196.9	5220369.7	163.5	101.5	0	5	90	5	82	0	0	11	0	0	36	33	1	8	82	6	0	5	1	1	1
Gale N66	2022-11-02	G26	G26-7	8:55:43 AM	8:57:46 AM	734196.9	5220369.7	734146.9	5220369.8	163.3	101.5	0	0	95	5	92	0	0	16	0	0	66	44	2	12	92	9	0	7	2	0	0
Gale N66	2022-11-02	G26	G26-8	8:57:46 AM	8:59:42 AM	734146.9	5220369.8	734097	5220370.1	163.4	101.5	0	0	95	5	98	0	0	17	0	0	86	34	2	7	98	6	0	11	3	0	1
Gale N66	2022-11-02	G26	G26-9	8:59:42 AM	9:01:41 AM	734097	5220370.1	734046.9	5220368.4	163.7	101.5	0	5	90	5	99	0	0	11	0	0	15	44	4	18	99	7	0	4	2	0	0
Gale N66	2022-11-02	G26	G26-10	9:01:41 AM	9:03:47 AM	734046.9	5220368.4	733990.7	5220369.1	163.4	101.5	0	5	90	5	127	0	0	7	0	0	24	44	3	28	127	3	0	4	3	0	0
Gale N66	2022-11-02	G27	G27-1	9:06:00 AM	9:08:18 AM	733999.2	5220347.8	734046.9	5220349.3	163.6	101.5	0	5	90	5	76	0	0	8	0	0	28	31	0	16	76	3	1	4	4	0	0
Gale N66	2022-11-02	G27	G27-2	9:08:18 AM	9:09:48 AM	734046.9	5220349.3	734097.4	5220350.8	163.1	101.5	0	5	90	5	93	0	0	13	0	0	35	31	3	12	93	9	0	4	2	0	0
Gale N66	2022-11-02	G27	G27-3	9:09:48 AM	9:11:17 AM	734097.4	5220350.8	734147.2	5220350.1	163.4	101.5	0	0	95	5	129	0	0	15	1	0	35	24	8	31	129	8	0	8	3	0	0
Gale N66	2022-11-02	G27	G27-4	9:11:17 AM	9:12:40 AM	734147.2	5220350.1	734197	5220346.3	163.1	101.5	0	5	90	5	130	0	0	6	1	0	54	25	3	22	130	6	0	1	3	0	0
Gale N66	2022-11-02	G27	G27-5	9:12:40 AM	9:14:08 AM	734197	5220346.3	734247	5220349.6	162.8	101.5	0	5	90	5	92	0	0	8	0	0	20	32	3	15	92	4	1	3	1	0	0
Gale N66	2022-11-02	G27	G27-6	9:14:08 AM	9:15:38 AM	734247	5220349.6	734297	5220350	163.5	101.5	0	5	90	5	96	0	0	12	0	0	24	37	7	12	96	5	0	7	1	0	0
Gale N66	2022-11-02	G27	G27-7	9:15:38 AM	9:17:07 AM	734297	5220350	734347.1	5220350.7	163.7	101.5	0	5	90	5	137	0	0	27	0	0	70	42	0	13	137	14	0	13	0	0	2
Gale N66	2022-11-02	G27	G27-8	9:17:07 AM	9:18:35 AM	734347.1	5220350.7	734397.1	5220350.1	163.4	101.5	0	0	95	5	101	0	0	15	0	0	3	28	0	16	101	14	0	1	3	0	0
Gale N66	2022-11-02	G27	G27-9	9:18:35 AM	9:20:03 AM	734397.1	5220350.1	734447	5220351.1	164.9	101.5	0	0	95	5	76	0	0	18	0	0	25	37	1	7	76	12	0	6	2	0	0
Gale N66	2022-11-02	G27	G27-10	9:20:03 AM	9:21:53 AM	734447	5220351.1	734504.1	5220345.9	165.1	101.5	0	5	90	5	106	0	0	10	0	0	65	56	3	13	106	6	0	4	2	0	2

APPENDIX

B INVERTEBRATE AND FISH DENSITY MAPS

APPENDIX

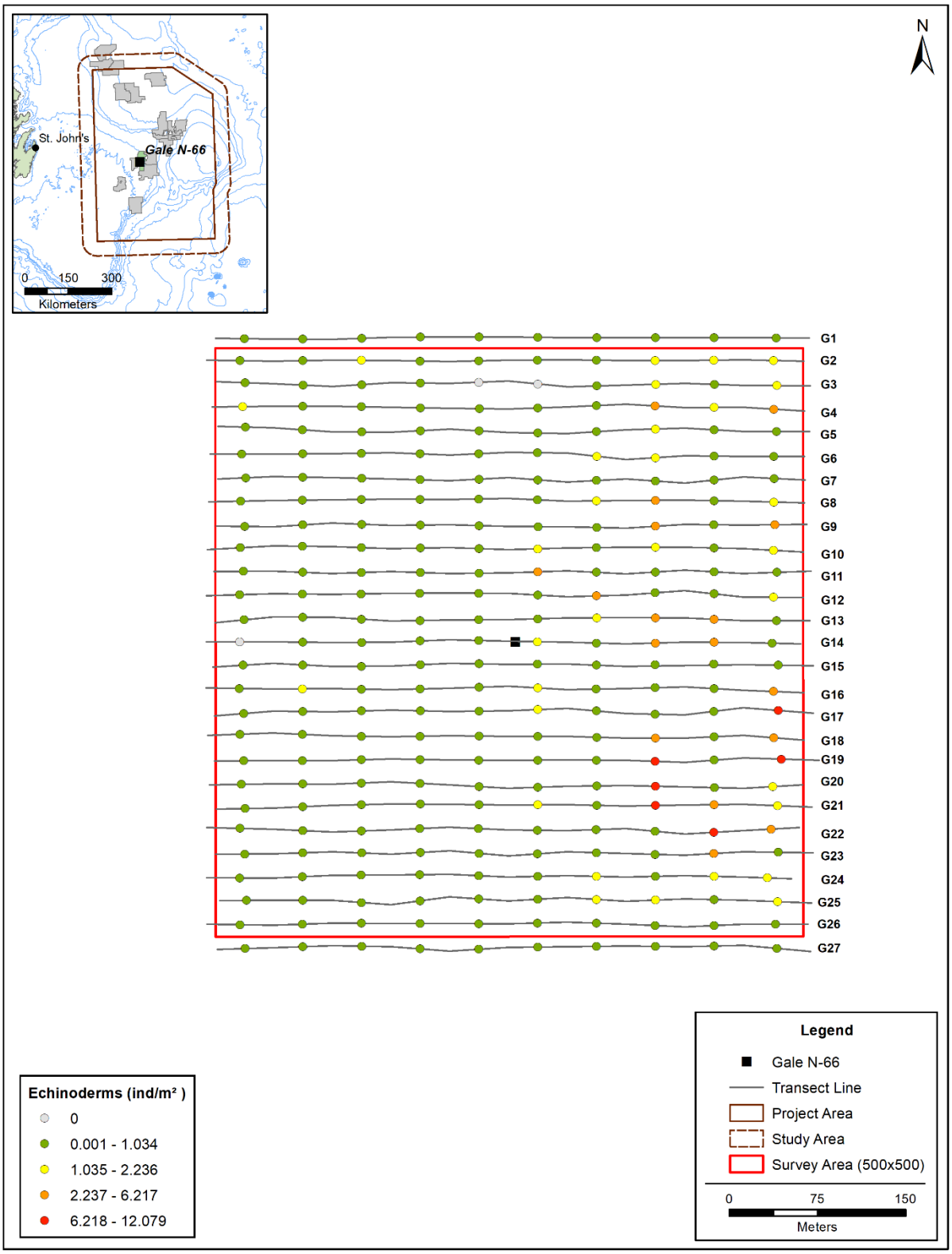

Figure B-1 Distribution of echinoderm densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

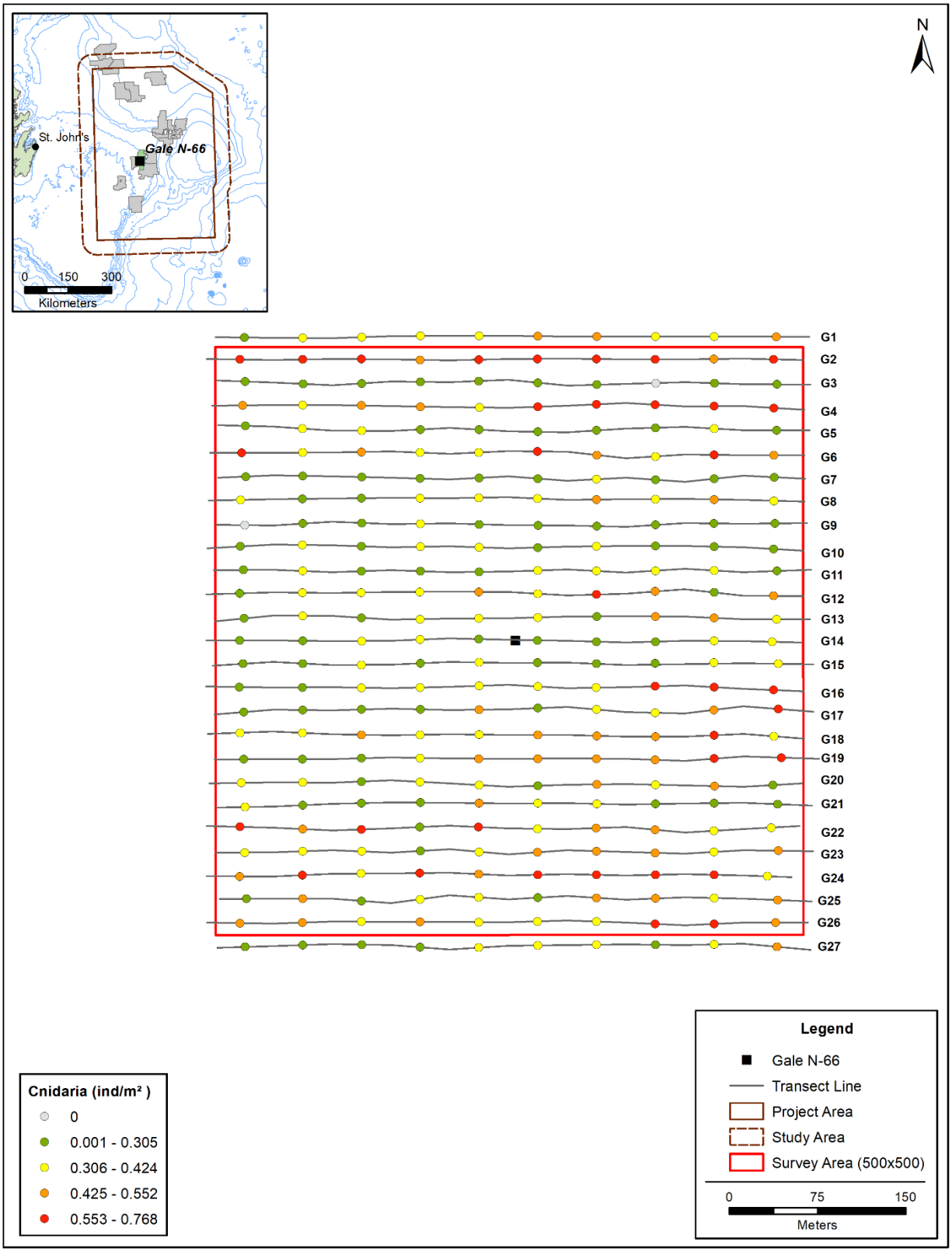

Figure B-2 Distribution of cnidarians (other than corals) densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

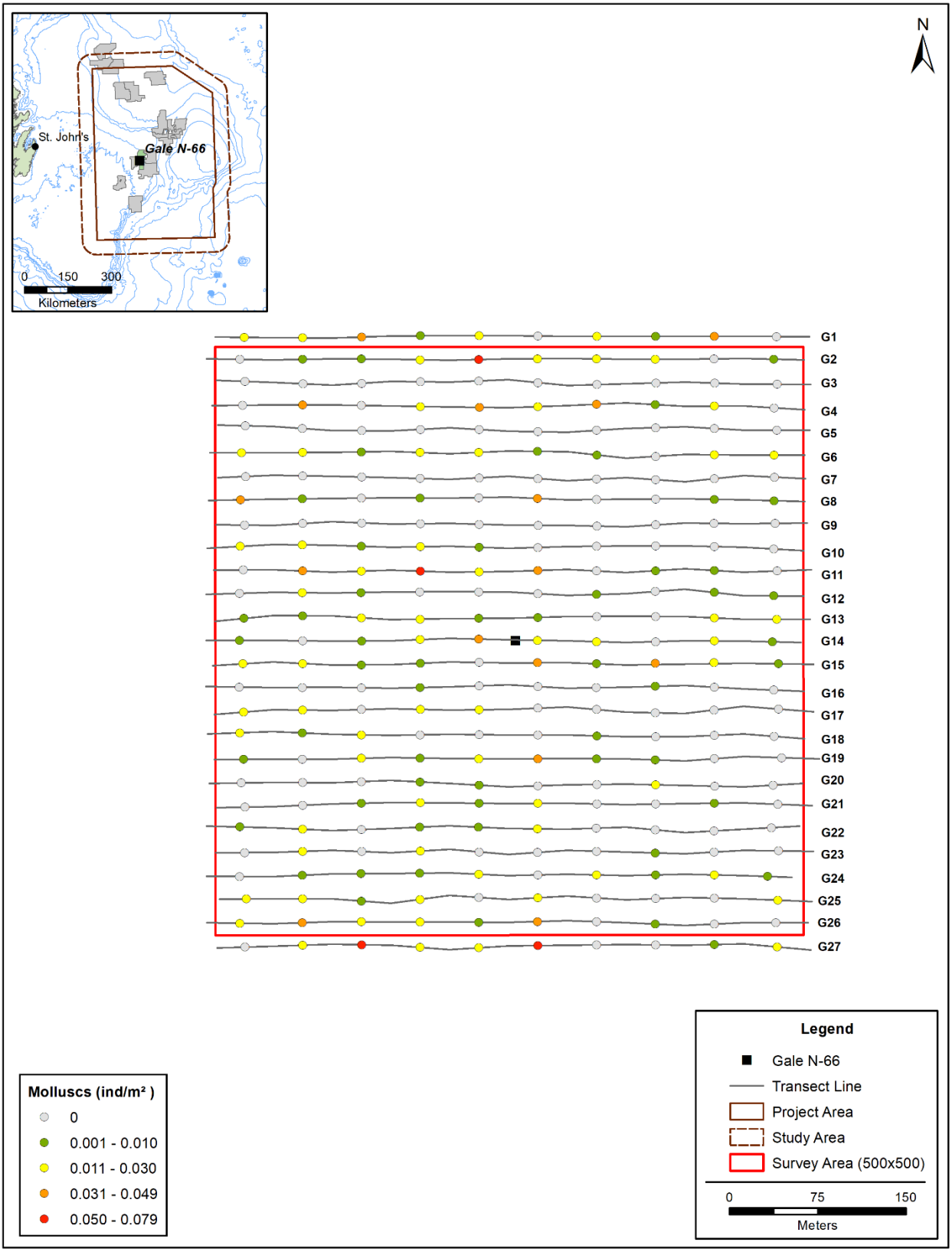

Figure B-3 Distribution of mollusc densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

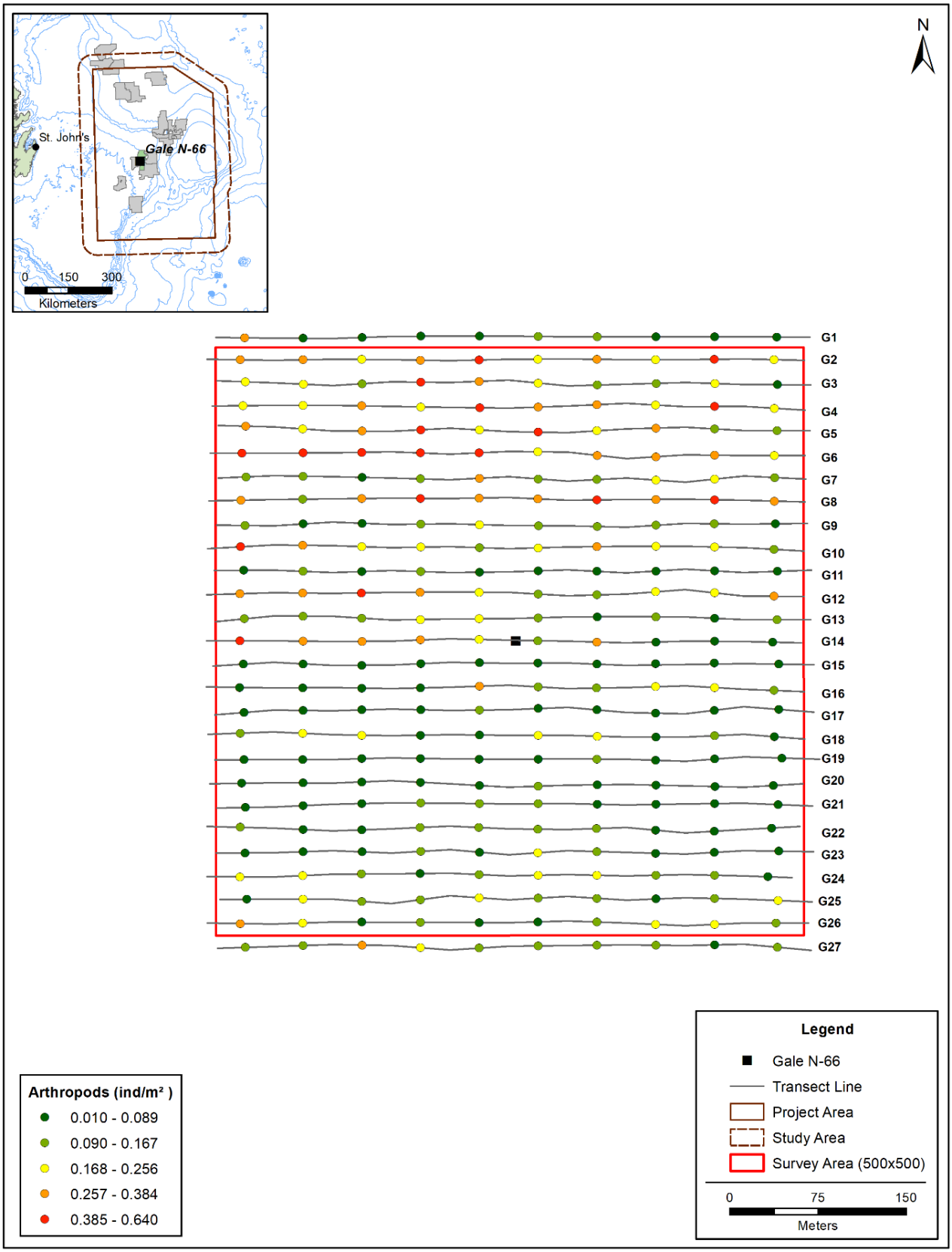

Figure B-4 Distribution of arthropod densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

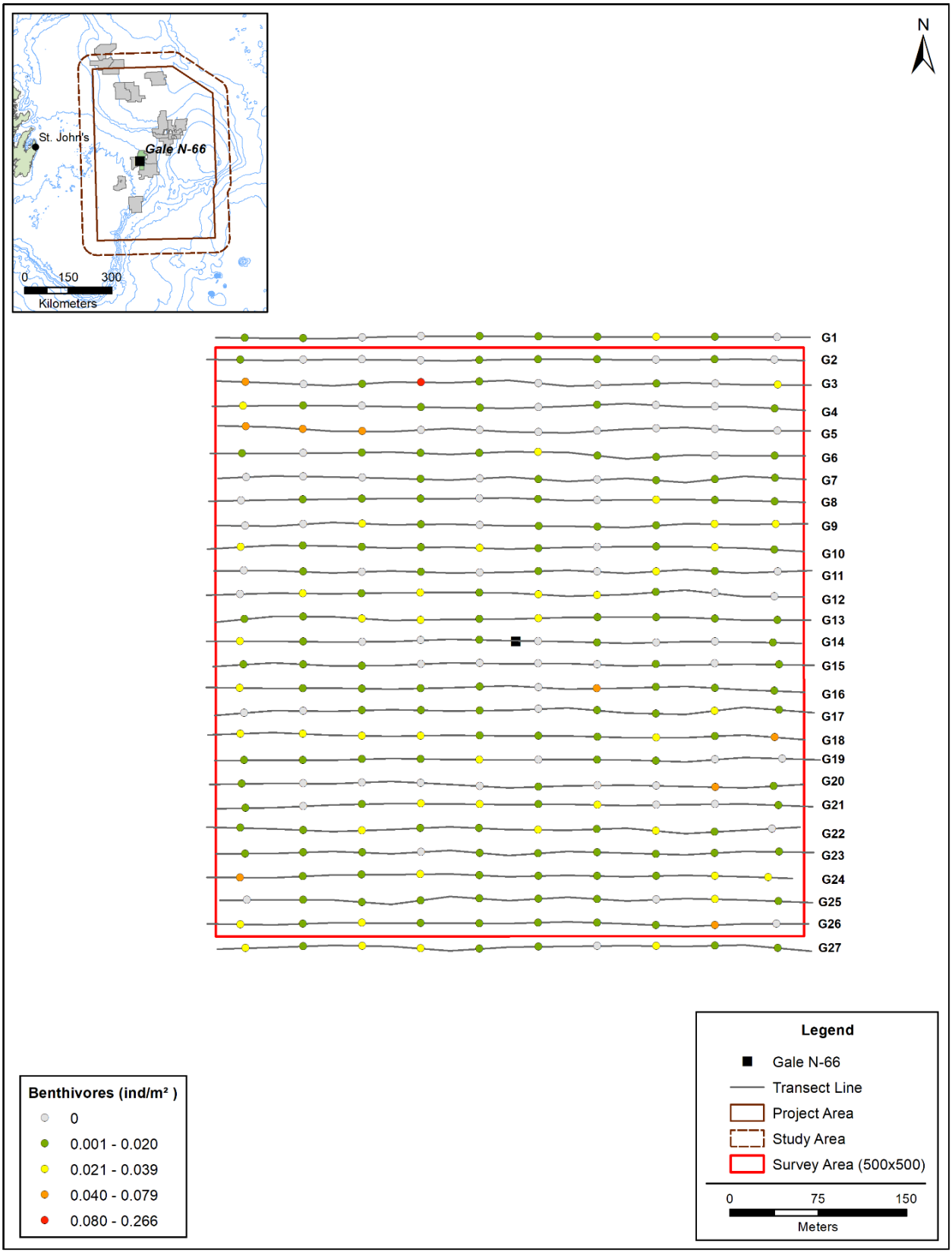

Figure B-5 Distribution of benthivore densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

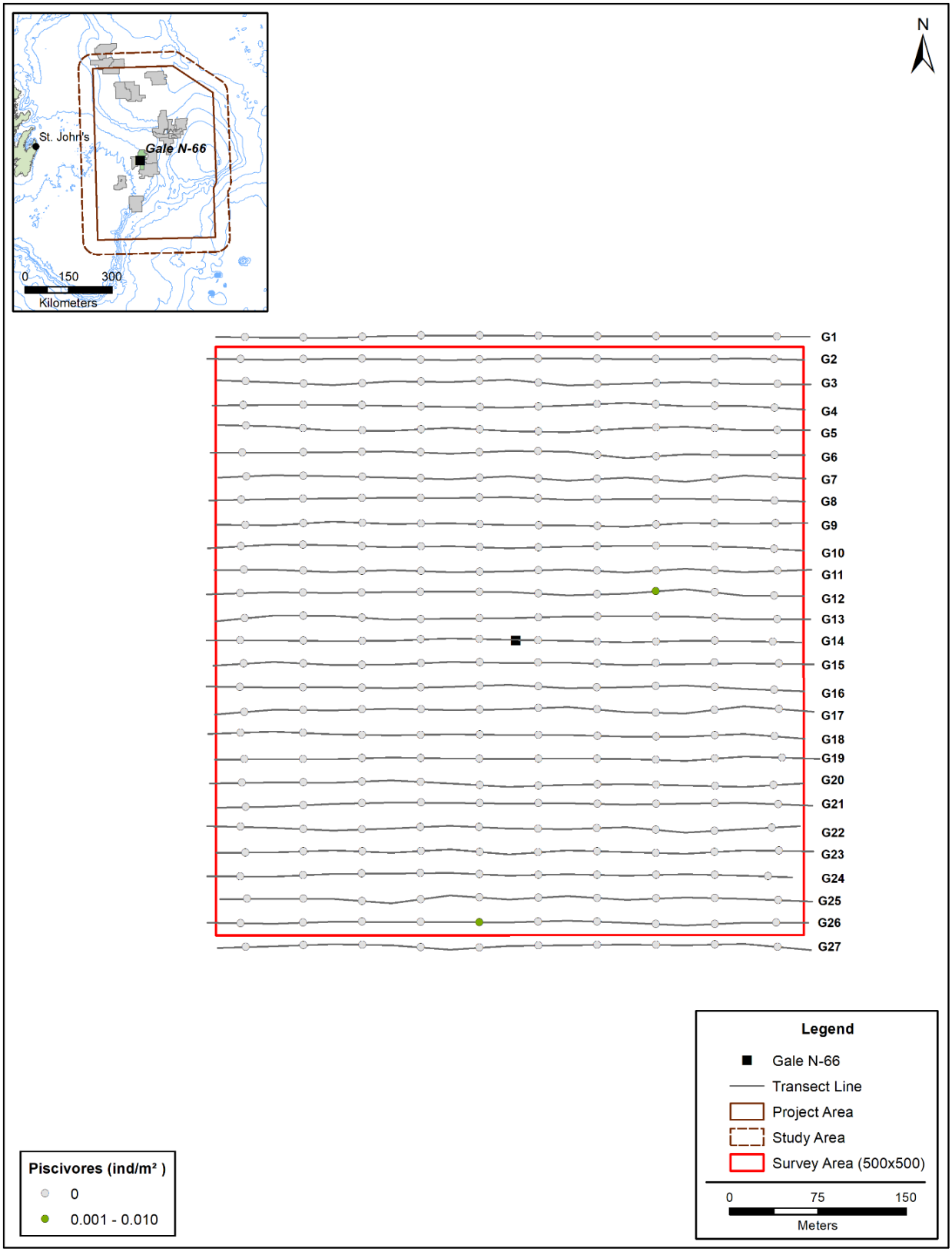

Figure B-6 Distribution of piscivores densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).

APPENDIX

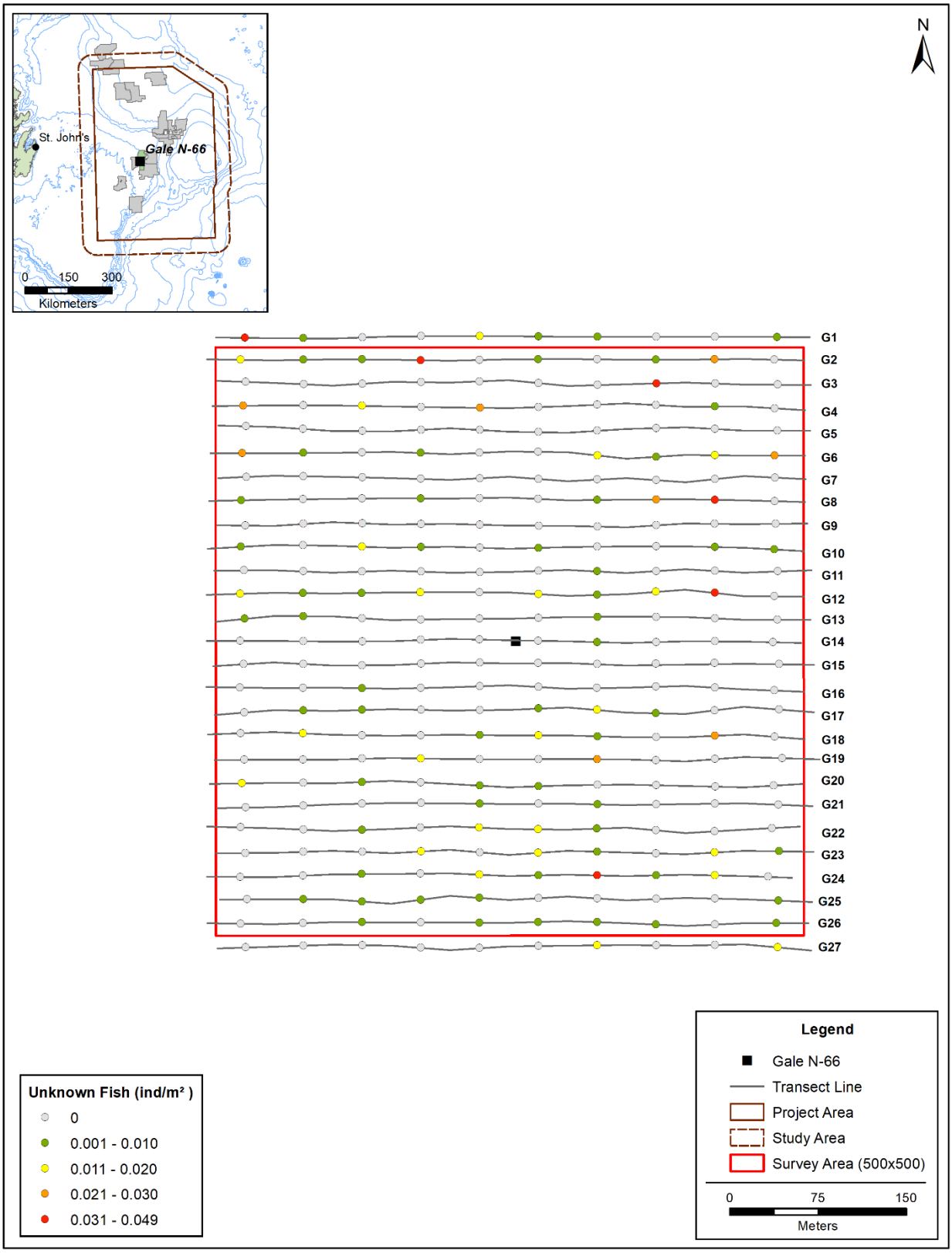

Figure B-7 Distribution of unknown fish densities (ind./m²) observed in the Gale N-66 pre-drilling survey (2022).