



PORT OF DEVONPORT POST-DREDGING MARINE MONITORING REPORT

Prepared for

TasPorts

90 - 110 Willis Street, Launceston,
TAS, 7250

12 October 2026

PROJECT REFERENCE: JN26785

Elgin Associates Pty Ltd

ABN 59123488639

DOCUMENT INFORMATION

DOCUMENT INFORMATION

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Authorised by: Dr Luke Finley
Date: 12 October 2026
Status: Final
Filename(s): JN26785_Devonport Marine Surveys_9Oct26_Draft
Project: Elgin JN26785
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Record of Report Distribution

N ^o copies	of	Status	Date	Prepared for:
1	Digital	RevA Draft	29 September 2026	TasPorts
1	Digital	RevB Draft	9 October 2026	TasPorts
1	Digital	RevB Final	12 October 2026	TasPorts

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EXECUTIVE SUMMARY

Elgin Associates Pty Ltd (Elgin) undertook surveys of sensitive marine receptors adjacent to the Port of Devonport (the Port) and the offshore Dredge Spoil Disposal Ground (DSDG) between July – August 2026. The surveys formed part of Tasmanian Ports Corporation's (TasPorts) post-dredging monitoring program specified in the Port of Devonport Maintenance Dredging Long-term Monitoring and Management Plan 2025-2035 (LTMMMP), which is implemented under Sea Dumping Permit SD2024-4066 (the Permit). The objective of the surveys was to identify any changes in the presence and condition of sensitive marine receptors adjacent to the Port and DSDG, in the context of the maintenance dredging program.

Key findings of the surveys are summarised below:

Offshore DSDG Benthic Substrate and Habitat: There was an observed shift in benthic substrate conditions within the DSDG from medium-coarse sand in 2024 to fine sand and silt in 2026 consistent with the disposal of dredge material from the Port. The extent of changes attributable to dredged material disposal was limited to within the DSDG footprint, with areas outside the footprint of the DSDG similar between pre- and post-surveys. No threatened species or marine pests were observed before or after the dredge spoil disposal. Of note, commercial scallops were observed both within and outside of the DSDG at low numbers after dredging.

Historical Scallop Bed: Densities of commercial scallops increased between the pre-dredging (2024) and post-dredging surveys, but density was generally low on all survey transects (excluding reference locations). Doughboy counts increased at reference locations between the 2023 and 2026 surveys. The main driver for scallop type was the substrate, with doughboy scallop densities higher on cobbly reef, which was the most common substrate at the reference locations, whereas commercial scallops were more common on sand. Queen scallops were not identified on any transects.

Giant Kelp: Giant kelp remained present as an isolated stand on the eastern side of the entrance to the Mersey River. The kelp forest appeared healthy, and the post-dredging survey in August 2026 recorded higher average holdfast density and canopy extent than 2023 (pre-dredging). Variability in indicators of kelp health between the five (5) separate surveys suggests that the kelp bed is ephemeral, which is consistent with statewide observations growth and die back of giant kelp in shallow water.

Seagrass Beds: Seagrass beds were surveyed with a moderate to high percentage of seagrass cover recorded in the post-dredging survey. It appeared healthy at all sites, with moderate epiphyte overgrowth. Seagrass cover in the post-survey was either within the range of seagrass cover reported in previous surveys (2015-23) or higher. The long-term variability between surveys is consistent with seagrass growth in Tasmania, which is known to display strong seasonality, driven by factors such as light availability, water quality, wave action and sedimentation.

Recommendations

Survey results from before and after the 2026 dredging program, do not indicate an adverse dredging or disposal-related change in the monitored habitats or receptors outside the expected physical alteration of the authorised DSDG.

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ABBREVIATIONS

LIST OF ABBREVIATIONS AND ACRONYMS

CEE	Consulting Environmental Engineers
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DSDG	Dredge Spoil Disposal Ground
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
LTMMMP	Long-term Monitoring and Management Plan
IMAS	Institute for Marine and Antarctic Studies
IMPs	Introduced Marine Pests
SE	Standard Error
TasPorts	Tasmanian Ports Corporation
m ²	Metres squared
/m ²	Per metre squared

1 INTRODUCTION

Elgin Associates were engaged by the Tasmanian Ports Corporation (TasPorts) to undertake surveys of sensitive marine receptors, the giant kelp bed adjacent to the Port of Devonport (the Port), and benthic habitats within and adjacent to the offshore Dredge Spoil Disposal Ground (DSDG). The surveys were undertaken in 2026 as part of TasPorts post-dredging monitoring program specified in the Port of Devonport Maintenance Dredging Long-term Monitoring and Management Plan 2025-2035 (LTMMP), which is implemented under Sea Dumping Permit SD2024-4066 (the Permit). The Permit was issued by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under *the Environment Protection (Sea Dumping) Act 1981*.

Visual surveys assessed the DSDG, scallop monitoring locations, giant kelp, and seagrass beds to document their condition in 2026 (post-dredging) and identify changes relative to the available baseline data (pre-dredging). The 2026 surveys followed monitoring conducted by Elgin in May 2023 (historical scallop beds, giant kelp, and seagrass beds) and March 2024 (scallops only).

1.1 Background

The Port is operated and maintained by TasPorts, facilitating the transit of commercial shipping, ferries, fishing vessels and private vessels to and from the port berths, a marina, and private moorings. The Port is on the Mersey River immediately upstream of the entrance, with maintenance dredging program(s) used to remove fluvial sediment and maintain access for small and large vessels.

TasPorts' environmental obligations and social licence to operate includes a commitment to assess and mitigate potential impacts on the local marine environment from dredge works and dredge spoil disposal. The LTMMP includes monitoring of benthic habitat within and adjacent to the DSDG, identified scallop monitoring locations, and seagrass as a sensitive receptor to assess potential effects from dredging and dredge-spoil disposal. The giant kelp bed at the mouth of the Mersey River is also surveyed to maintain continuity with TasPorts' historical marine monitoring program and provide additional context on receiving environment condition.

1.2 Objectives

The objective of the post-dredging surveys was to assess the condition of seagrass and scallop sensitive receptors, the historically monitored giant kelp bed, and benthic habitats within and adjacent to the DSDG following the 2026 maintenance dredging campaign. The results were compared with the available baseline data collected in 2023 and 2024.

1.3 Scope of Works

The following post-dredging underwater inspections and surveys were completed:

- Offshore surveys of the DSDG using towed-video camera, including 14 transects to the north of the Port to confirm benthic substrate and habitat types inside and outside of DSDG. The survey also included recording the presence of: introduced marine pests (IMPs); threatened species; and scallops.
- Tow video surveys within historical scallop beds, including 11 transects to the east of the Port, and three (3) reference sites east and west of the Port. Scallop densities and species type were recorded in conjunction with habitat and substrate characterisation.
- Survey three (3) seagrass beds east of the Mersey River to assess seagrass extent and health.

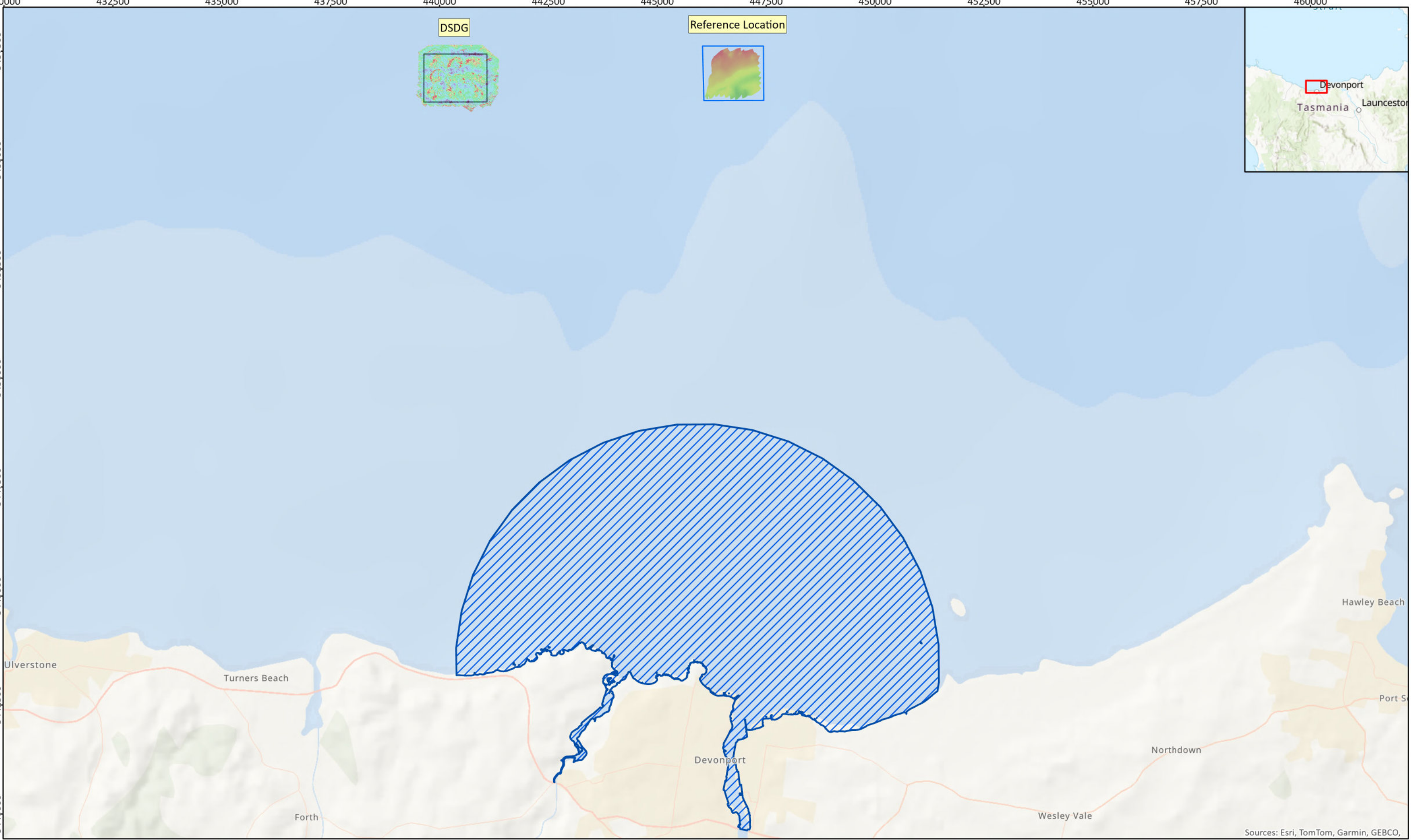
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- Survey a giant kelp bed at the mouth of the Mersey River.
- Data analysis and reporting, including an assessment of temporal change in condition/health of sensitive receptors between baseline surveys (Elgin 2023, 2024) and post-dredging works (2026 – this report).

1.4 Study Area

The surveys were conducted in the Bass Strait, offshore from the Port and the Mersey River mouth (**Figures 1 and 2**). The study area falls within the Boags marine bioregion of Bass Strait which includes the nearshore and offshore coastal waters of northern Tasmania. Survey locations were similar to those monitored in the baseline surveys (Elgin 2023, 2024).

Survey coordinates are provided in **Appendix A**.



Legend  Port Waters Bathymetry 2023  -44.109 -52.245 Bathymetry 2026  -38.513 -55.948	  0 700 1,400 2,800 Meters	Site: Devonport Port	Client: TasPorts	Title: Overview of Study Area	Figure 1 
		Spatial Reference: GDA2020 MGA Zone 55	Job Number: JN26785 Date: 2/09/2026 Size: A3	Prepared: BS Approved: CF Version: Rev B	

INTRODUCTION



Figure 2: Location of field survey sites for kelp, seagrass, and scallops. The scallop surveys included reference locations 1 – 3.

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1.5 Existing Information

All field surveys employed methods that were consistent with previous surveys. Field survey data from the 2026 surveys were analysed and reported in the context of previous survey results to assess temporal change to sensitive ecological receptors.

Findings from four (4) historical dredge monitoring surveys for the Port prior to Elgin commencing monitoring in 2023 is summarised below in **Table 1**.

Table 1: Summary of previous marine surveys conducted for TasPorts.

Survey	Scallops	Kelp	Seagrass
CEE 2014	High densities of juvenile commercial scallops present.	Not surveyed.	Not surveyed.
CEE 2015 (Post dredging)	Live commercial scallops patchily distributed at all sites. Highest densities recorded on eastern most transects.	Kelp bed present and healthy. Patchy canopy with between 8 and 14 holdfast 5/m ² .	Moderate percentage seagrass cover at all locations; highest at Northdown, lowest at Pardoe. Generally moderate epiphyte growth.
Marine Solutions 2016 (Post dredging and major flooding)	No commercial scallops were recorded, some doughboy scallops present on reference transects. Poor survey conditions noted.	No giant kelp present.	High percentage seagrass cover at all locations; highest at Horseshoe, lowest at Pardoe. Moderate epiphyte growth.
Marine Solutions 2021	Small numbers of commercial scallops on most transects. Doughboy scallops common, especially on reference transects.	Not surveyed.	Not surveyed.

2 FIELD SURVEYS

Field surveys of the offshore DSDG and inshore sensitive receptors were completed in July and August 2026. Historical scallop bed and the DSDG video transects were conducted between 7 – 9 July 2026; with giant kelp and seagrass bed surveys conducted on 25 and 26 August 2026. Field methods and results are summarised in **Sections 2.1 - 2.4**, with survey coordinates provided in **Appendix A**.

2.1 Offshore Surveys of DSDG

2.1.1 Introduction

The field survey included collection of video footage of benthic substrates to define habitat types within and adjacent to the DSDG. The dredging works were completed on 3 June 2026, so this report details any differences observed since the monitoring baseline survey by Elgin in 2024.

The objective of the survey was to (i) compare habitat composition and seabed characteristics at the DSDG and reference sites before and after disposal, and (ii) assess the nature and spatial extent of any changes associated with dredged material disposal (e.g. substrate type, sediment cover, habitat complexity, epifauna).

The survey also included observations for sensitive receptors (scallops & threatened species) and IMPs.

2.1.2 Survey Locations

The DSDG is approximately 15 km offshore from the Port and the Mersey River mouth (**Figure 1**). Survey locations monitored during the baseline survey (Elgin 2024) were revisited as close as practicable in 2026. There were four (4) locations within the DSDG, six (6) outside of the DSDG, and four (4) reference locations approximately 5 km to the east of the DSDG (**Figure 3**). Water depth ranged from 45-53m at sites inside/outside of the DSDG and 30-51m at the reference locations.

2.1.3 Approach and Methodology

The approach and methodology were based on previous surveys conducted for TasPorts by Elgin (2024), but the 2026 post-disposal surveys focused on visual habitat condition and physical seabed change. Video transects were used to assess substrate, habitat complexity and conspicuous epifauna.

TasPorts also collected high resolution hydrobathymetry data at the DSDG before and after the dredging program, with high resolution backscatter imagery of the seafloor, along with a heatmap of changes between the surveys to assess seabed elevation.

Survey Date and Conditions

Surveys were conducted on the 7th and 8th July 2026. Sea conditions were generally calm with a swell less than 0.5m and low winds. Visibility was 5m or greater, with good quality video footage collected on all transects.

Video Collection

Fourteen Remote Operated Video (ROV) video transects, ranging from 101 to 264m long, were surveyed within and adjacent to the DSDG and at offshore reference locations. The start and end coordinates of each transect were recorded using GPS. A live feed high-definition video camera was deployed via ROV that was maintained 20 to 50cm above the seafloor, with live video feed to the vessel, with tow/drift speeds maintained at approximately one (1) km/h. Diffuse filming lights and a pair of parallel laser scalars were deployed on the ROV, with the lasers set 375 mm apart to provide a scale within the field of view. Substrate

FIELD SURVEYS

and habitat characteristics were noted for each transect, along with general observations regarding any mobile or sessile fauna.

Video Analysis

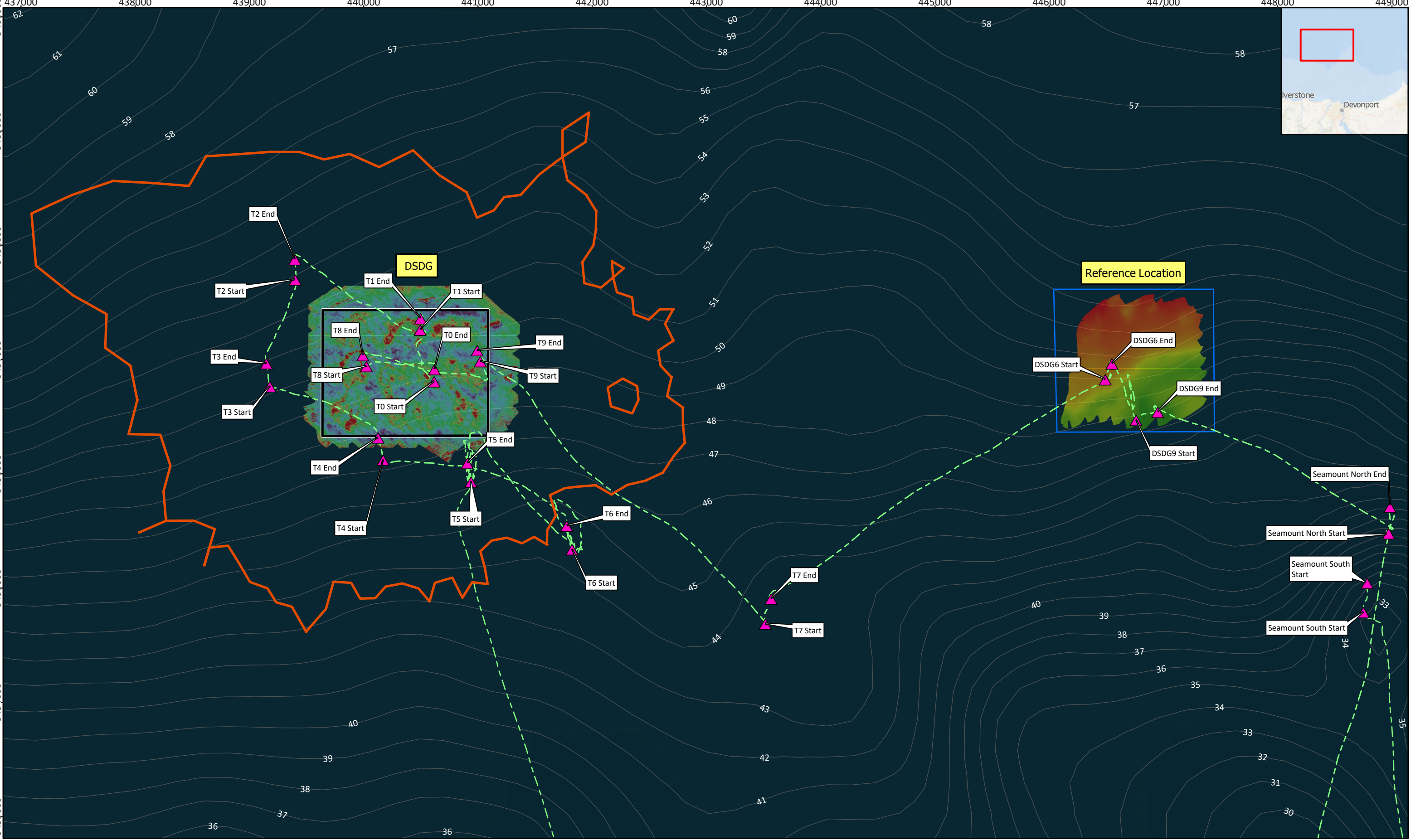
Video footage was analysed post-hoc. Post-fieldwork data processing included review of video footage noting substrate and habitat type, and presence of sensitive receptors and marine IMPs. Marine flora and fauna species were counted within a 0.75m wide belt transect that was defined using laser scalers on the ROV system. Transect descriptions and example photos from the DSDG survey are presented in **Appendix D**.

Assessing Benthic Substrate, Habitats, Sensitive Receptors and Marine IMPs

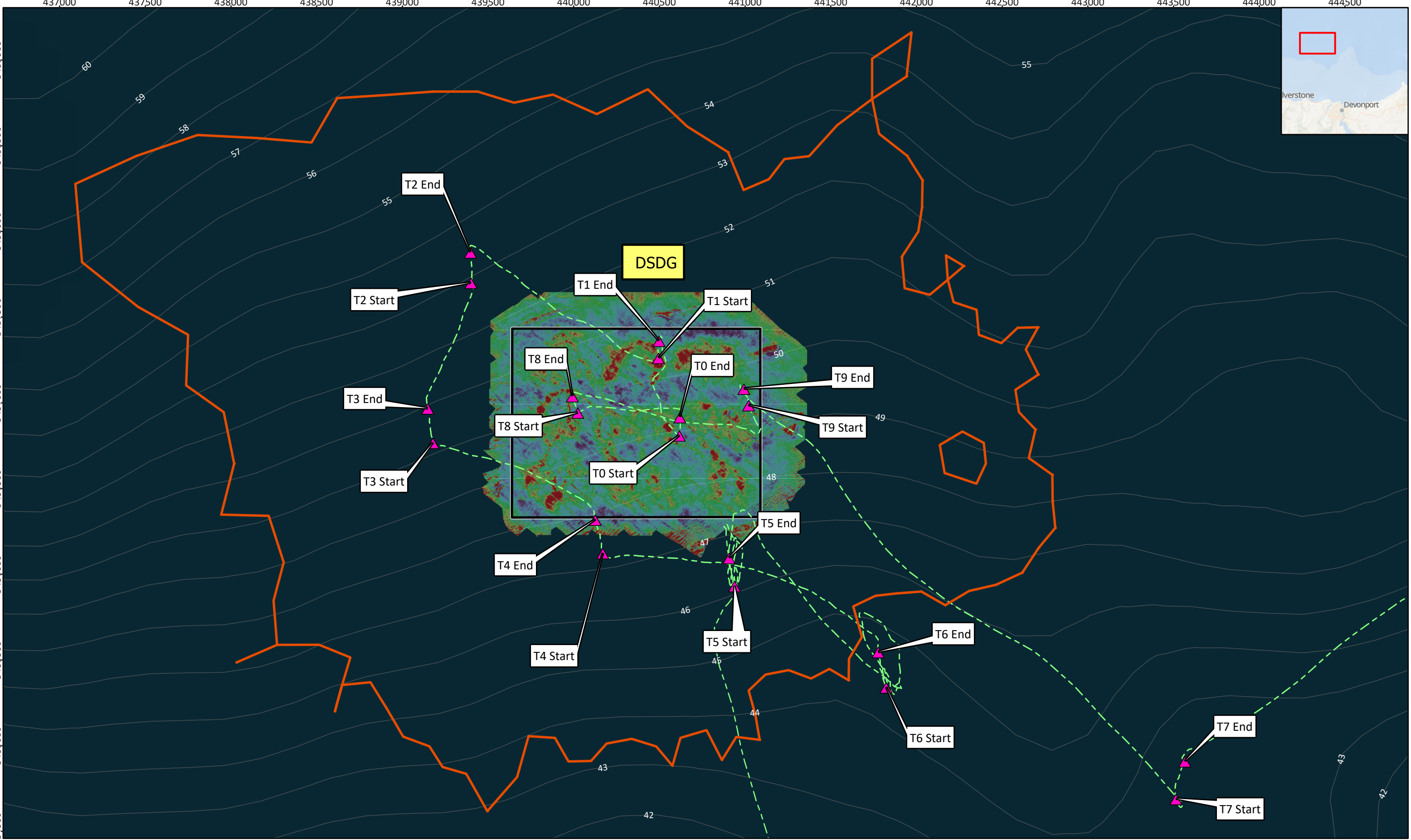
Benthic substrate and habitat types were described from the video footage, with analysis consistent with *Field Manuals for Marine Sampling to Monitor Australian Waters, Version 1* (Przeslawski & Foster 2018). Hydrobathymetric survey data (provided by TasPorts) that compared pre- and post-dredging bathymetry and seabed features (**Figure 5**) was reviewed prior to field survey to target seabed areas within the DSDG for inspection.

During the field survey, Elgin recorded the condition/presence of the following for each transect –

- Seabed Characteristics (benthic substrate types)
- Habitat Composition (consisting of macroalgae, sessile and mobile fauna observed)
- Sensitive Receptors (scallop and threatened species)
- IMPs (potential presence of four (4) species including the brown alga *Undaria pinnatifida*, gastropod *Maoricolpus roseus*, polychaete worm *Sabella spallanzanii* and seastar *Asterias amurensis*)



Legend Tow Video Survey Track Depth contour 1m DSDG Reference Location Bathymetry 2026 -38.5135 -56.0053 Bathymetry 2023 -44.109 -52.245 Zone of Influence	0215430860 Meters	Site: Devonport Port	Client: TasPorts	Title: Spoil Ground Hydrographic - DSDG and Reference Locations - Tow Videos	Figure 3
		Spatial Reference: GDA2020 MGA Zone 55 Scale: 1:30,000	Job Number: JN26785 Date: 12/10/2026 Size: A3	Prepared: NJ Approved: CF Version: Rev C	



Legend Tow Video Survey Track Depth contour 1m DSDG Bathymetry 2026 -38.5135 -56.0053 Zone of Influence		 0 140 280 560 Meters	Site: Devonport Port	Client: TasPorts	Title: Spoil Ground Hydrographic - DSDG - Tow Videos	Figure 4
			Spatial Reference: GDA2020 MGA Zone 55 Scale: 1:20,000	Job Number: JN26785 Date: 12/10/2026 Size: A3	Prepared: NJ Approved: CF Version: Rev C	

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2.1.4 Substrate and Habitat Type

A description of benthic substrates and habitat types inside/outside of the DSDG is provided below. Transect descriptions and example photos from the DSDG survey are presented in **Appendix D**.

Changes within the DSDG

The DSDG was characterised in the pre-survey by unconsolidated substrates that include fine to coarse grained sand, with variable proportions of shell grit, gravel and cobbles (Elgin 2024). These substrates were colonised by a sparse distribution of macroalgae that included the green alga *Caulerpa* sp. and occasional sessile invertebrates (sponges, ascidians). Based on tow-video transects, the topography of the DSDG was flat, with sand waves or ripples absent. This is consistent with weak sediment transport processes at these depths (Elgin 2024).

Following the 2026 dredging program, visual inspection identified that substrates within the DSDG were characterised by unconsolidated substrates that included fine-grained sand and silt, with dead shells frequently observed. Video footage showed that the seabed within the DSDG was flat, with no visible sand waves (Table 2). This interpretation was consistent with the backscatter imagery presented in Figure 5.

Table 2: Summary of substrate and habitat observed within the DSDG during the 2026 post-disposal video survey.

Transect	Depth (m)	Predominant Substrate	Habitat
T0	50	Fine sand and silt	Occasional sessile fauna.
T1	51	Fine sand and silt	Occasional patches of sessile fauna
T8	50	Fine sand and silt	Occasional sessile fauna.
T9	50	Fine sand and silt	Occasional patches of sessile fauna

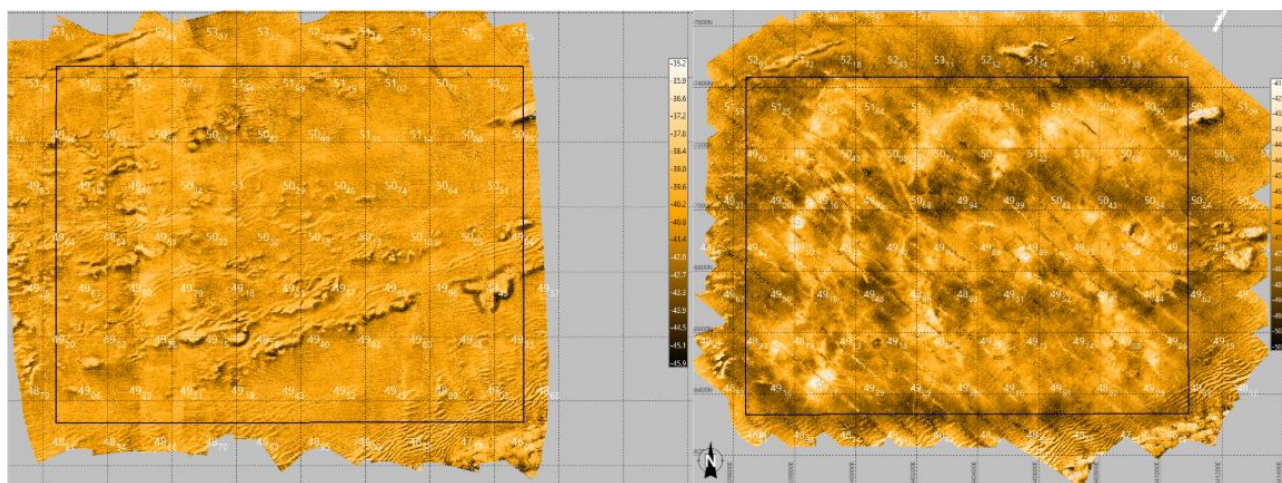


Figure 5: Before (left) and after (right) backscatter images from the multibeam sonar.

Detailed hydrobathymetry mapping by TasPorts pre- and post- disposal verified that seafloor levels had changed between the surveys with an increase in the bottom elevation of approximately 0.25m visible, particularly in the central area of the DSDG (Figure 6). In addition, bottom complexity reduced between the pre- and post- surveys (left vs right plots in Figure 6), with backscatter imagery from the pre- survey showing some complex structures within the DSDG box, whereas the post- survey image shows a lack of structure –

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noting that no distinct patches of reef structure was observed within the DSDG in the either pre- or post-visual surveys (Refer to ‘Substrate Type’ in **Table 5**).

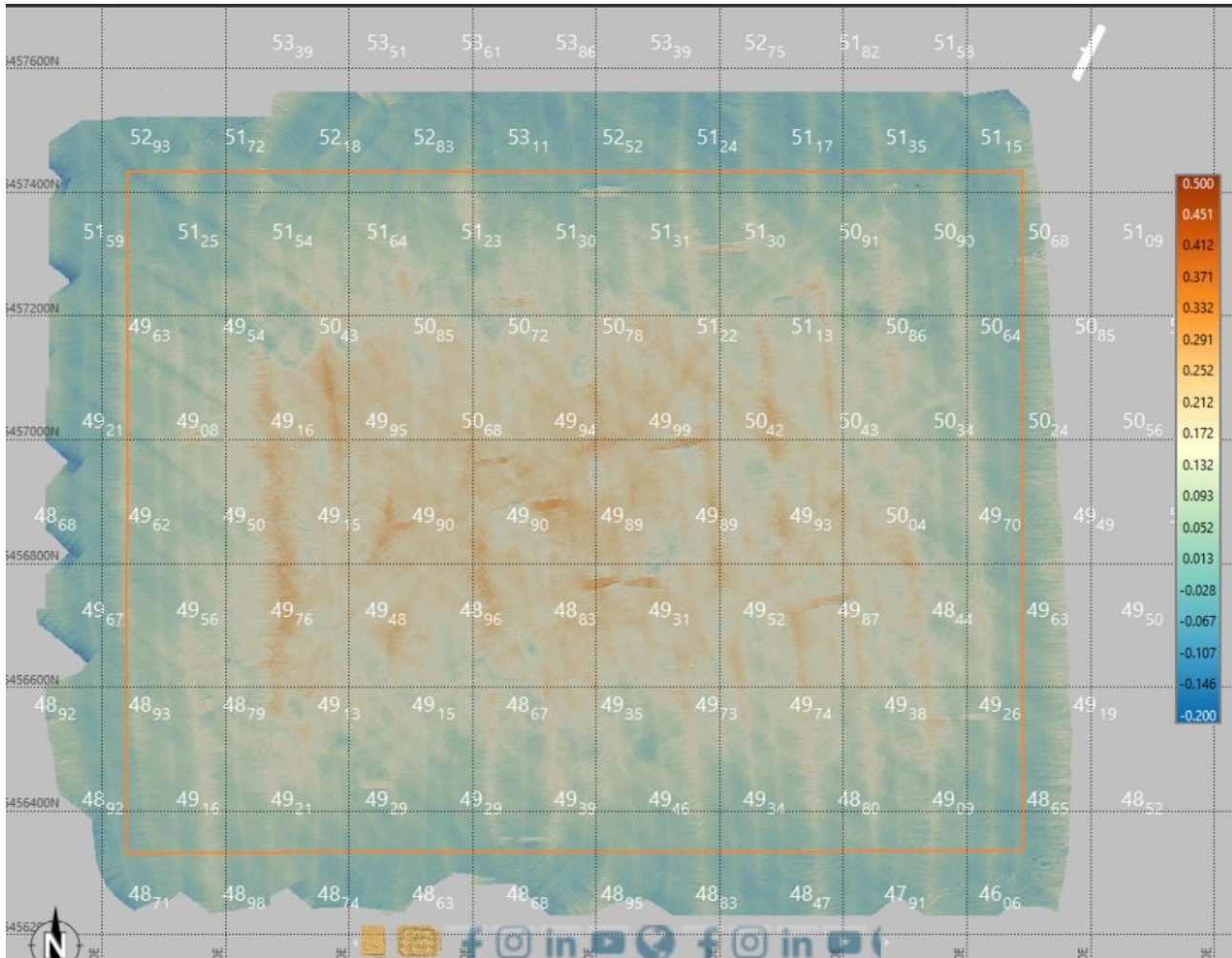


Figure 6: Heatmap of elevation change from pre- to post-disposal (supplied by TasPorts, 2026).

In summary, there was an observed shift in benthic substrate conditions from medium-coarse sand in 2024 to fine sand and silt in 2026, as expected from the disposal of dredge material. There was no obvious change in the species observed within the DSDG, which was characterised by occasional observations of sessile fauna in both surveys. Sensitive receptors (commercial scallops) were only observed after dredging activity (2026).

Changes outside the DSDG

Substrates outside of the DSDG were found to be predominantly unconsolidated sediment with discrete outcroppings of low-profile reef encountered to the northwest (T2), west (T3) and south-east (T6) of the DSDG. The sediment comprised of fine to coarse sand with silt and gravel occasionally observed. The outcroppings of reef were characterised by a sparse assemblage of benthic sessile invertebrates that included several large sponge morphologies, soft corals and ascidians (**Table 3**). Fish were occasionally observed in small numbers associated with this habitat, which included butterfly perch (*Caesioperca lepidoptera*) and gobies (Family *Gobiidae*).

Surrounding the DSDG, the backscatter imagery shows structure and features that were the same before and after dredge spoil disposal (**Table 3**). Video footage also showed that substrate and habitat characteristics

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along the surveyed transects were generally consistent with the 2024 baseline observations (**Table 3**). No visual or acoustic evidence of dredge spoil deposition was identified in the areas surveyed outside the DSDG.

Table 3: Summary of substrate and habitat observed in tow-video transects outside the DSDG.

Transect	Depth (m)	Predominant Substrate	Habitat
T2	53	Fine sand and silt, small patches of low-profile reef.	Occasional sessile fauna on sand/silt area. Abundant sessile fauna and macroalgae on low profile reef substrate.
T3	50	Small to large patches of low-profile reef interspersed with areas of fine sand and silt.	Occasional sessile fauna on sand/silt area. Abundant sessile fauna and macroalgae on low profile reef substrate.
T4	47	Medium to coarse sand.	Occasional sessile fauna and macroalgae.
T5	45	Fine sand and silt, with large patches of shell grit.	Occasional sessile fauna and macroalgae. Sponge gardens present on large patches of shell grit.
T6	47	Fine to medium grade sand and gravel with small patches of low-profile reef.	Occasional sessile fauna and macroalgae on sand area. Abundant sessile fauna and macroalgae on low profile reef substrate.
T7	46	Fine to medium grade sand and gravel.	Occasional sessile fauna and macroalgae.

Reference Locations

The reference locations closest to the DSDG (DSDG 6, DSDG 9) were characterised by unconsolidated substrate (fine to medium sand) with large patches of low-profile reef. Sessile fauna (sponges and ascidians) was occasionally observed on unconsolidated substrate (**Table 4**). There was no visual evidence of any impacts from the dredging program, with substrate and habitat conditions consistent with the 2024 baseline observations.

The Seamount locations (North and South) were comprised of consolidated and complex reefs, consisting of cobbles and boulders. The reefs were colonised by a diverse assemblage of sessile filter-feeding invertebrates comprising a variety of erect and encrusting sponges, ascidians, bryozoans, and soft corals (**Table 4**). This habitat supported a higher epifauna and fish diversity compared to adjacent sand habitats and is considered an example of high value reef habitat within the study area. This observation follows a well-established trend that rocky reef habitats, being more complex, typically support a more diverse fish assemblage compared to unconsolidated sand habitats.

Table 4: Summary of substrate and habitat observed in tow-video transects at the Reference and Seamount locations.

Transect	Depth (m)	Predominant Substrate	Habitat
DSDG6	51	Fine to medium grade sand.	Occasional sessile fauna.
DSDG9	47	Small to large patches of low-profile reef interspersed with areas of fine to medium sand, silt and shell grit.	Sessile fauna abundant on reef substrate.
Seamount North	35	Consolidated reef covered consisting of boulders and cobbles covered with sand and gravel.	Abundant sessile fauna and macroalgae on reef substrate.
Seamount South	30	Large patches of low-profile reef consisting of cobbles and occasional boulders interspersed with areas of medium to coarse sand.	Occasional sessile fauna and macroalgae on sand area. Abundant sessile fauna and macroalgae on reef substrate. The reef habitat supported a higher epifauna and fish diversity compared to adjacent sand habitats

2.1.5 Sensitive Receptors

Tow-video transects were also reviewed for the potential presence of threatened species or scallops. Commercial scallops were observed both within the DSDG (T8 and T9) and outside of the DSDG (T3 and T4) at low numbers (up to 12 scallops per transect). Doughboy scallops were observed frequently within and outside of the DSDG, either attached to sessile benthic fauna or free-living on unconsolidated sediment.

No threatened species were observed during review of tow-video transects within the DSDG.

2.1.6 Marine Pests

None of the four (4) marine pest species (brown alga *Undaria pinnatifida*, gastropod *Maoricolpus roseus*, polychaete worm *Sabella spallanzanii* and seastar *Asterias amurensis*) were detected in the tow video footage - either inside or outside the DSDG.

2.1.7 Discussion and Key Findings

A review of the hydrobathymetric survey data and seabed characteristics from video footage collected inside the DSDG, confirmed that dredged sediment was primarily deposited within the target area; including -

1. a higher bottom profile when comparing the pre- and post- dredging hydrobathymetry surveys (**Figure 4**),
2. unconsolidated sand bottom with fine sediments in the post- survey (video footage as described in **Table 5**), and
3. a lack of structure, with no sand waves following dredge spoil deposition (**Figure 5; Figure 6**).

Surrounding the DSDG, the backscatter imagery shows structure and features that were the same before and after the dredging program (**Figure 6**). No disposal-related change was identified along the surveyed transects outside the DSDG. Low-profile reef habitats adjacent to the DSDG remained present, colonised by a diverse assemblage of sessile filter-feeding invertebrates comprising a variety of erect and encrusting sponges, ascidians, bryozoans, and soft corals (**Table 5**), as recorded in the 2024 baseline survey.

Other findings from the survey include:

- Commercial scallops were recorded inside and outside the DSDG after dredging activity.
- No threatened species or IMPs were observed during review of tow-video transects either before or after dredging disposal.
- No evidence of impacts from sedimentation outside the DSDG area.

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Table 5: Summary of substrate type, habitat and sensitive receptors present within and outside DSDG during pre- (2024) and post- (2026) disposal surveys. Note: Marine IMPs were not observed in either the 2024 or 2026 survey.

	Transect	Substrate Type	Habitat	Sensitive Receptors
Pre-disposal (Elgin 2024)				
Inside DSDG	DSDG_9A	Medium sand	Occasional sessile fauna	None
	DSDG_12	Medium sand and shell grit	Occasional sessile fauna and macroalgae	None
	DSDG_3A	Medium to coarse sand	Occasional patches of sessile fauna and macroalgae. Abundant sessile fauna on reef substrate	None
	DSDG_7A	Fine sand	Occasional sessile fauna	None
Outside DSDG	T2	Medium sand, large patch of low-profile reef	Occasional patches of sessile fauna and macroalgae. Abundant sessile fauna on reef substrate	None
	T3	Medium to coarse sand	Occasional sessile fauna and macro algae	None
	T4	Medium to coarse sand	Occasional sessile fauna	None
	T5	Medium sand, areas of low-profile reef	Sessile fauna abundant on reef substrate	None
	T6	Coarse sand and gravel	Occasional sessile fauna	None
	T7	Coarse sand and gravel. Large patches of low-profile reef	Sessile fauna abundant on reef substrate.	None
Post-disposal (Elgin 2026)				
Inside DSDG	T0	Fine sand and silt	Occasional sessile fauna	None
	T1	Fine sand and silt	Occasional patches of sessile fauna	None
	T8	Fine sand and silt	Occasional sessile fauna.	10 commercial scallops present
	T9	Fine sand and silt	Occasional patches of sessile fauna	12 commercial scallops present
Outside DSDG	T2	Fine sand and silt, small patches of low-profile reef.	Occasional sessile fauna on sand/silt area. Abundant sessile fauna and macroalgae on low profile reef substrate.	None
	T3	Small to large patches of low-profile reef interspersed with areas of fine sand and silt.	Occasional sessile fauna on sand/silt area. Abundant sessile fauna and macroalgae on low profile reef substrate.	2 commercial scallops present
	T4	Fine to coarse sand.	Occasional sessile fauna and macroalgae.	3 commercial scallops present
	T5	Fine sand and silt, with large patches of shell grit.	Occasional sessile fauna and macroalgae. Sponge gardens are present on large patches of shell grit.	None
	T6	Fine to medium grade sand and gravel with small patches of low-profile reef.	Occasional sessile fauna and macroalgae on sand area. Abundant sessile fauna and macroalgae on low profile reef substrate.	None
	T7	Fine to medium grade sand and gravel.	Occasional sessile fauna and macroalgae.	None

Note: Post-disposal transects were located as close as practicable to the pre-disposal transects but do not directly coincide. Accordingly, some differences between the 2024 and 2026 survey results may reflect natural spatial variability between transect locations rather than temporal change.

2.2 Historical Scallop Beds

2.2.1 Introduction

Surveys of historical scallop beds (to the east of the Mersey River entrance) have been completed as part of dredging monitoring programs since 2014 (**Table 1**). These scallop beds have been highlighted previously by commercial fishing sector stakeholder groups as an area of concern in relation to the maintenance dredging program and disposal of dredge spoil.

Three (3) scallop species occur naturally in Tasmanian waters, of which only the commercial scallop (*P. fumatus*) is targeted by a commercial fishery. Commercial scallops form large beds on unconsolidated sediments and propagate new beds by releasing larvae into the water column. Scallop larvae can remain in the water column for a month and settle to form new scallop beds tens of kms from the parent bed. Longevity of new beds varies and is generally dependant on multiple seeding events to create multiple age cohorts. If external recruitment is low, beds may only last for a single life cycle of 2 to 7 years (Semmens *et al.* 2021).

Within the study area, three (3) scallop species are reported to occur including the commercial scallop (*Pecten fumatus*), doughboy scallop (*Mimachlamys asperrimus*) and queen scallop (*Aequipecten opercularis*). Commercial scallops were the target species of these surveys; however, observations of doughboy and queen scallop have been included to provide an indication of the composition of scallop assemblages within the area.

2.2.2 Survey Locations

The historical scallop beds surveyed as part of the dredging monitoring program are approximately nine (9) kms to the northeast of the Mersey River mouth in 35-40 meters (m) of water (**Figure 7**). One hundred (100) m long transects were positioned at approximately one (1) km intervals along an east-west alignment through the surveyed area of the historical scallop beds.

Additionally, there are three (3) reference locations east and west of the Mersey River entrance in 23-25m depth that have been previously monitored (**Figure 7**). Each reference location was surveyed in one (1) continuous 500 m long transect, with data observations recorded in five (5) 100m blocks to provide five (5) replicate counts. These include:

- Reference location 1 – five (5) kms northeast of the river mouth
- Reference location 2 - seven (7) kms northeast of the river mouth
- Reference location 3 - six (6) kms northwest of the Mersey River mouth

A summary of scallop survey transects is provided in **Table 6** with location coordinates for each survey transect provided in **Appendix A**.

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Table 6: Summary of scallop survey transects – 8-9 July 2026.

Transect	Length	Area	Direction	Depth	Substrate
Units	m	m ²		m	
Historic scallop beds					
East 07	115	86	SW	35	Fine sand and silt
East 08	144	108	W	38	Fine sand and silt
East 09	162	121	NW	38	Fine sand and silt
East 10	111	84	NW	40	Fine sand and silt
East 11	209	157	W	40	Fine sand and silt
East 12	111	83	NW	40	Fine sand and silt
Scallop 11	120	90	SW	35	Fine sand
West Edge	125	93	W	35	Fine sand
Reference sites					
Reference 1	546	409	W	23	Cobble and sand
Block A		82			Cobble and sand
Block B		82			Cobble and sand
Block C		82			Cobble and sand
Block D		82			Cobble and sand
Block E		82			Cobble and sand
Reference 2	601	450	E	25	Fine sand
Block A		90			Fine sand
Block B		90			Fine sand
Block C		90			Fine sand
Block D		90			Fine sand
Block E		90			Fine sand
Reference 3	597	447	SW	24	Cobble
Block A		106			Cobble
Block B		79			Cobble
Block C		80			Cobble
Block D		75			Cobble
Block E		107			Cobble

2.2.3 Approach and Methodology

The approach and methodology was based on previous surveys conducted for TasPorts by Elgin (2023 and 2024), using protocols consistent with the Institute for Marine and Antarctic Studies (IMAS) scallop surveys (Ewing *et al.* 2022).

Survey Date and Conditions

Scallop surveys were conducted on the 8th and 9th July 2026. Sea conditions were generally calm with a swell less than 0.5m and low winds. Visibility was 5m or greater, with good quality video footage collected on all transects.

Video Collection

The scallop assemblage was surveyed at each location using tow-video transects of approximately 100m long with the start and end points recorded using GPS. A live feed high-definition ROV was deployed on a tether and maintained approximately 20 to 50cm above the seafloor, with tow/drift speeds maintained at approximately one (1) km/h.

The ROV had diffuse filming lights allowed the collection of high-quality imagery, and a pair of parallel laser scalers approximately 375mm apart, which provided a field of view reference. Substrate and habitat characteristics were noted for each transect, along with general observations regarding any mobile or sessile fauna.

Video Analysis

Video footage was analysed post-hoc, with the abundance of commercial scallops (*Pecten fumatus*), doughboy scallops (*Mimachlamys asperrimus*) and queen scallops (*Equichlamys bifrons*) recorded on each transect. Scallops were counted within a 0.75m wide belt transect that was defined using laser scalers on the ROV video system. Density estimates for each scallop species were calculated based on total counts and the overall width and length of the transect.

Transect descriptions and example photos from the scallop survey are presented in **Appendix B**.



Earthstar Geographics, Sources: Esri, TomTom, Garmin, GEBCO, National Geographic, NOAA,

Legend Scallop tow video Depth contour 1m	N 05001,0002,000 Meters	Site: Devonport Port	Client: TasPorts	Title: Historical Scallop Survey Locations	Figure 7
		Spatial Reference: WGS 1984 Web Mercator Auxiliary Scale: 1:70,000	Job Number: JN26785 Date: 12/10/2026 Size: A3	Prepared: BS Approved: CF Version: Rev A	elgin ASSOCIATES

2.2.4 Results

Scallop counts and density for each transect in the historical scallop ground and reference locations are provided in **Table 7** and described below.

Historical Scallop Beds

The total combined survey area of the eight transects was 822m². A total of 718 scallops were recorded comprising 498 doughboy scallops and 220 commercial scallops. No queen scallops were recorded within the survey area. Mean scallop density for each transect ranged from 0.3 scallops per m² at East 07 to 1.8 scallops per m² at East 12. Based on pooled data, the mean scallop density for the historical scallop beds was 0.9 (±0.2) scallops per m² (**Table 7**).

Reference Locations

The total combined survey area of the three (3) reference transects was 1,307 m². A total of 2,468 scallops were recorded comprising 2,466 doughboy scallops and only two (2) commercial scallops. No queen scallops were observed at reference locations. Mean scallop density at reference locations ranged from zero (0) at reference location 2, to 1.2 scallops per m² at reference location 3, and 4.7 and scallops per m² at reference location 1 (**Table 7**).

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Table 7: Total scallop count and density for historical scallop beds and reference location transects (8-9 July 2026). SE – Standard Error.

Transect	Scallop species – Individuals Count			Total Scallop Count	Area	Total Scallop Density
	Doughboy	Commercial	Queen			
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	m ²	Scallops m ²
Historical Scallop Beds						
T9 - East 07	19	7	0	26	86	0.30
T7 - East 08	72	39	0	111	108	1.03
T6 - East 09	61	16	0	77	121	0.64
T5 - East 10	70	20	0	90	84	1.08
T4 - East 11	86	62	0	148	157	0.94
T3 - East 12	104	47	0	151	83	1.81
T8 - Scallop 11	58	21	0	79	90	0.88
T10 - West Edge	28	8	0	36	93	0.39
TOTAL	498	220	0	718	822	-
Mean (±SE)	62 (±10)	28 (±7)	0	90 (±16)	-	0.88 (±0.2)
T1 - Reference 1						
Block A	427	0	0	427	81.8	5.22
Block B	282	1	0	283	81.8	3.46
Block C	408	0	0	408	81.8	4.99
Block D	421	0	0	421	81.8	5.14
Block E	376	0	0	376	81.8	4.60
T1 TOTAL	1914	1	0	1915	409	-
T1 Mean (±SE)	383 (±27)	0.2 (±0.2)	0	383 (±27)	-	4.68 (±0.3)
T2 - Reference 2						
Block A	1	1	0	2	90	0.02
Block B	1	0	0	1	90	0.01
Block C	0	0	0	0	90	0.00
Block D	0	0	0	0	90	0.00
Block E	2	0	0	2	90	0.02
T2 TOTAL	4	1	0	5	450	-
T2 Mean (±SE)	0.8 (±0.4)	0.2 (±0.2)	0	1 (±0.4)	-	0.01 (±0.005)
T11 - Reference 3						
Block A	158	0	0	158	106	1.49
Block B	51	0	0	51	79	0.65
Block C	86	0	0	86	80	1.07
Block D	107	0	0	107	75	1.42
Block E	146	0	0	146	107	1.37
T3 TOTAL	548	0	0	548	447	-
T3 Mean (±SE)	110 (±20)	0	0	110 (±20)	-	1.2 (±0.2)

2.2.5 Temporal Change

Scallop counts and density data from July 2026 surveys were compared to results from previous surveys at the historical scallop ground and reference locations (Marine Solutions 2021, Elgin 2023 & 2024) (**Appendix C**).

Historical Scallop Ground

Commercial scallops

Commercial scallops (*P. fumatus*) were reported in all surveys from 2021 to 2026. The density of commercial scallops was calculated at 0.1 (± 0.05) scallops per m² in 2021, decreasing to 0.02 (± 0.01) scallops per m² in 2023 and 0.004 (± 0.003) scallops per m² in 2024 before increasing to 0.26 (± 0.06) scallops per m² in 2026 (**Figure 8**).

Doughboy scallops

Doughboy scallops (*M. asperimus*) were reported in all surveys from 2023 to 2026. The total count of doughboy scallops increased from 160 individuals in 2023 to 253 individuals in 2024, followed by an increased to 498 individuals in 2026 (**Appendix C**). The density of doughboy scallops was estimated at 0.3 (± 0.1) scallops per m² in 2023, increasing to 0.6 (± 0.1) scallops per m² in 2026 (**Figure 8**).

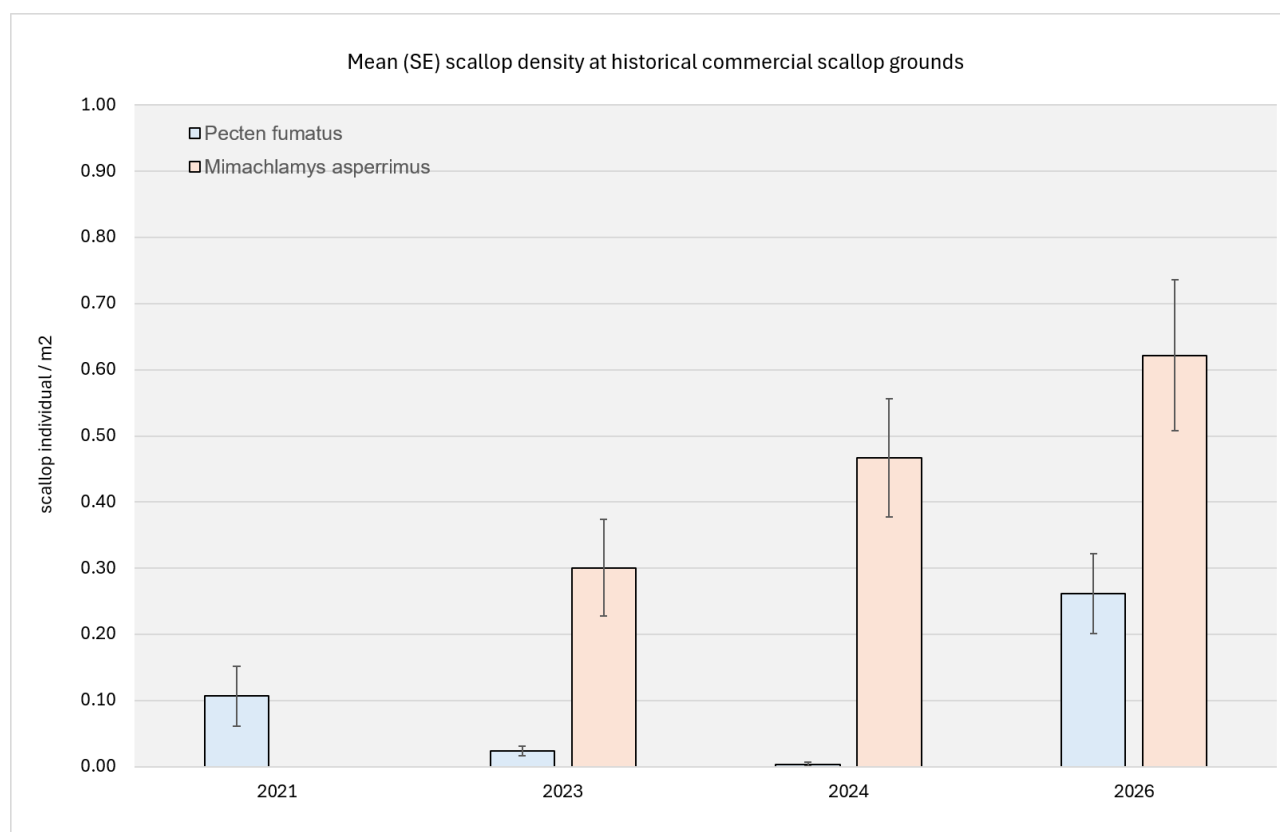


Figure 8: Mean ($\pm$ SE) scallop density (scallop individuals per m²) within the historical scallop ground between 2021 and 2026.

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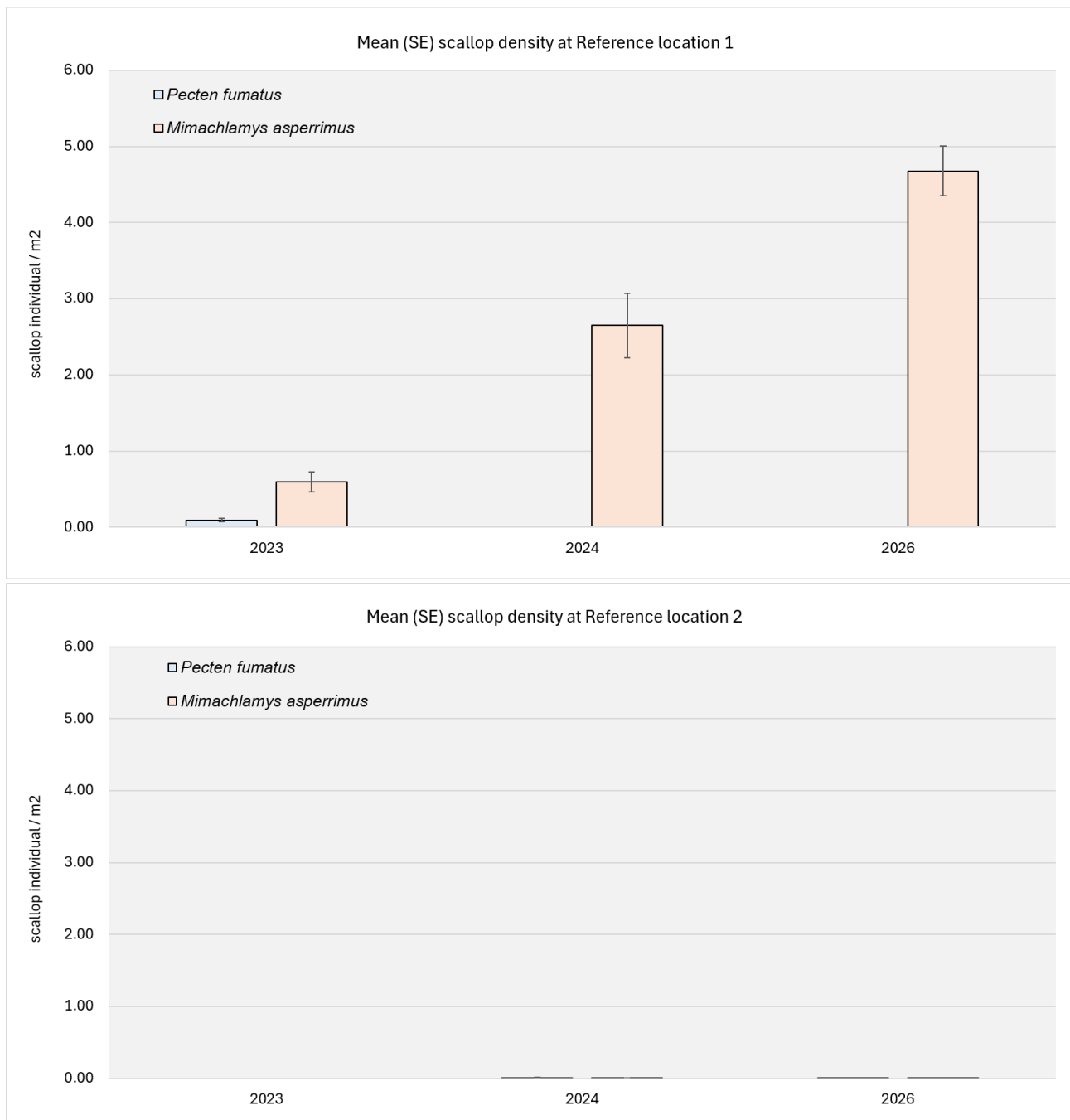
Reference Locations

Commercial scallops

Very few commercial scallops were observed at the reference locations between 2023 and 2026 (between 2-27 individuals in >1500m of footage analysed), which is reflected in the very low densities (**Appendix C, Figure 9**).

Doughboy scallops

Doughboy scallop counts and densities varied depending on survey year and reference site (**Appendix C, Figure 9**). Density increased at reference location 1 from 0.6 (± 0.1) in 2023 to 4.7 (± 0.3) in 2026. In contrast, at reference location 3 doughboy scallop density dropped from a peak of 3.7 per m² in 2023 to 1.2 per m² in 2026. Densities were similar at Reference Location 2 between surveys (**Figure 9**).



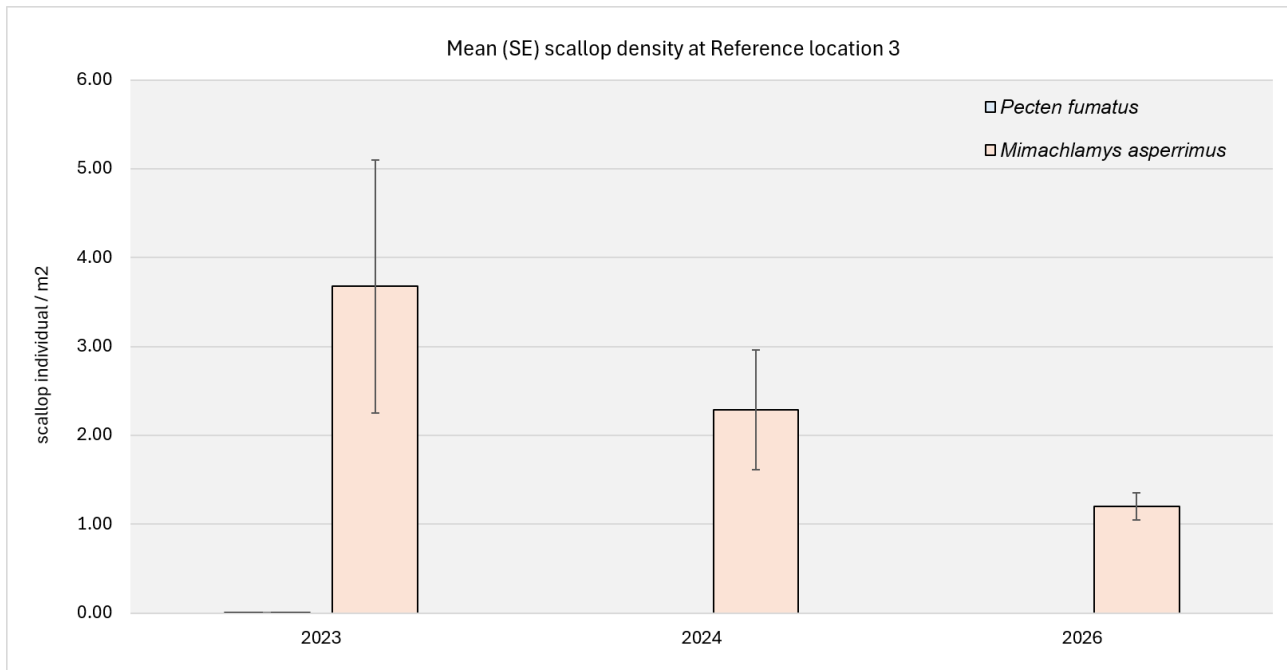


Figure 9: Mean ($\pm$ SE) scallop density (scallop individuals m^{-2}) at reference locations 1 to 3 between 2023 and 2026.

2.2.6 Discussion and Key Findings

Scallops were observed at both the historical scallop bed and reference locations in the 2026 survey, however the scallop assemblage varied among locations. The doughboy scallop (*M. asperrimus*) was present at all locations and observed in 100% of transects, the commercial scallop (*P. fumatus*) was observed in 82% of transects, and the queen scallop (*E. bifrons*) was not observed in any transects.

When comparing the 2026 survey with previous survey counts [Marine Solutions (2021) and Elgin (2023, 2024)] there was high variability in the scallop populations within the study area, but numbers generally increased in 2026.

Doughboy scallops were observed on all transects in the 2026 survey, including relatively high densities on reference sites 1 and 3 where there was low-profile cobble reef. Doughboy scallops were mostly observed attached to reef or cobble habitat, so lower densities on sand areas are expected.

The commercial scallop (*P. fumatus*) counts were higher in 2026 than previous survey years. Variables that could explain differences in counts between surveys were not included as part of this marine survey. Commercial scallops prefer sandy substrate, so again it is not surprising that there were less common on reference transects which had a higher proportion of doughboy scallops attached to reef and cobbles.

Key findings from the survey events include:

- Doughboy scallops represented 69% of all scallops observed during the 2026 survey, with commercial scallops the remaining 31%. There was an increase in overall scallop counts and density in 2026 compared to the last 3 surveys, particularly for commercial scallops.
- Overall, doughboy scallop counts increased at reference locations between the 2023 and 2026 surveys. The main driver for scallop type was the substrate, with doughboy scallop densities higher on cobbly reef, which was the most common substrate at the reference locations, whereas commercial scallops were most common on sand.

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- In contrast, commercial scallop density was very low at reference locations in 2023, 2024 and 2026 and similarly low at the historical scallop beds (2023 and 2024). Density increased in 2026 but remained low overall.
- The queen scallop (*E. bifrons*) was not observed in any transects in 2026.

2.3 Giant Kelp

2.3.1 Introduction

Surveys of an inshore giant kelp bed (*Macrocystis pyrifera*) at the mouth of the Mersey River have been completed as part of dredging monitoring programs since 2014 (**Table 1**). Giant kelp forests in southeastern Australia are protected as an 'endangered ecological community' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The giant kelp bed at the Mersey River entrance does not meet the depth criterion for inclusion in the listed community. Its presence provides an important indication of environmental conditions at the mouth of the Mersey River (Department of the Environment 2026).

The LTMMP does not identify the shallow giant kelp bed at the Mersey River entrance as a sensitive receptor for management purposes because of its small size, ephemeral condition and occurrence in shallow water. The location was nevertheless resurveyed in 2026 to maintain continuity with TasPorts' historical marine monitoring program and provide broader receiving-environment context.

2.3.2 Survey Location

The field survey replicated the previous visual surveys of giant kelp (*Macrocystis pyrifera*) at the mouth of the Mersey River (**Figure 10**), following the completion of the dredging program.



Figure 10: Location of the giant kelp transect at the Mersey River mouth.

2.3.3 Approach and Methodology

The approach and methodology were based on previous surveys conducted for TasPorts by CEE (2015), Marine Solutions (2016) and Elgin (2023).

Survey Date and Conditions

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The kelp survey was conducted on the 26th August 2026. Sea conditions were generally calm with swell less than 0.5m and low winds. Visibility was 5m or greater, with good quality video footage collected on the transect.

Transect Survey

Weighted shot-lines were deployed at each end of the previously surveyed 50m transect. Divers reeled out a transect tape between the shot lines and surveyed giant kelp plants in alternating 1m wide by 5m long blocks on both sides of the tape (west and east). The number of holdfasts, and the number of individual stipes per holdfast were counted in five blocks starting 0m, 10m, 20m, 30m, and 40m. Canopy extent and epiphyte overgrowth were scored from zero (no epiphyte growth) to five (heavy epiphyte growth) in five blocks starting at 5m, 15m, 25m, 35m, and 45m. Additional video footage was collected of the transect and surround kelp forest to provide an indication of bed extent and canopy health post-dredging (2026).

2.3.4 Results

General Observations

A giant kelp bed was present in the 2026 survey, growing as a dense area on the sub-tidal continuation of the eastern break wall of the Mersey River mouth. The inshore end of the bed consisted of small plants growing in less than 1 m of water at low tide, with the bed extending offshore to the north along the submerged break wall into 5-6m depth, where larger plants were observed. The bed was confined to the basalt boulders within the submerged break wall and did not extend onto cobble substrate in deeper water.

Transect Counts

Holdfast density was relatively uniform across the transect, ranging from 29 – 40 holdfasts per 5 m². Stipe count was variable across the transect, ranging from 4.9 – 7.1 mean stipes per holdfast. Canopy coverage was patchy throughout the transect but generally higher at the inshore side of the kelp bed (score 3 out of 5) compared to the offshore end (score 1 out of 5). Epiphyte growth on the kelp forest was very low and limited to one transect block (40-50m). Results from the August 2026 survey are presented in **Table 8**.

Table 8: Giant kelp holdfast density, stipe counts per holdfast, canopy extent scores, and epiphyte growth scores within 5 m² transect blocks starting from the southern (inshore) end of the 50 m transect in August 2026.

Transect Distance (m)	0-10		10-20		20-30		30-40		40-50	
Transect Side	West	East	West	East	West	East	West	East	West	East
Holdfasts / 5 m ²	40	42	38	31	31	51	31	40	29	35
Stipe Count	5.7	7.1	6.1	6.1	5.5	4.9	5.5	6.0	5.5	6.8
Canopy Extent (0-5)	3	3	2	3	3	2	3	2	1	1
Epiphyte Growth (0-5)	0	0	0	0	0	0	0	0	1	0

2.3.5 Temporal Change

Between 2023 and 2026, mean holdfast density doubled from 17 to 36.8 holdfast. Mean stipe count was generally consistent between the two surveys, ranging from 5.9 – 7 mean stipes per holdfast (**Figure 11**). Long term trends over the last 10 years show that holdfast density has increased four-fold whilst stipe counts have remained relatively consistent (**Figure 11**).

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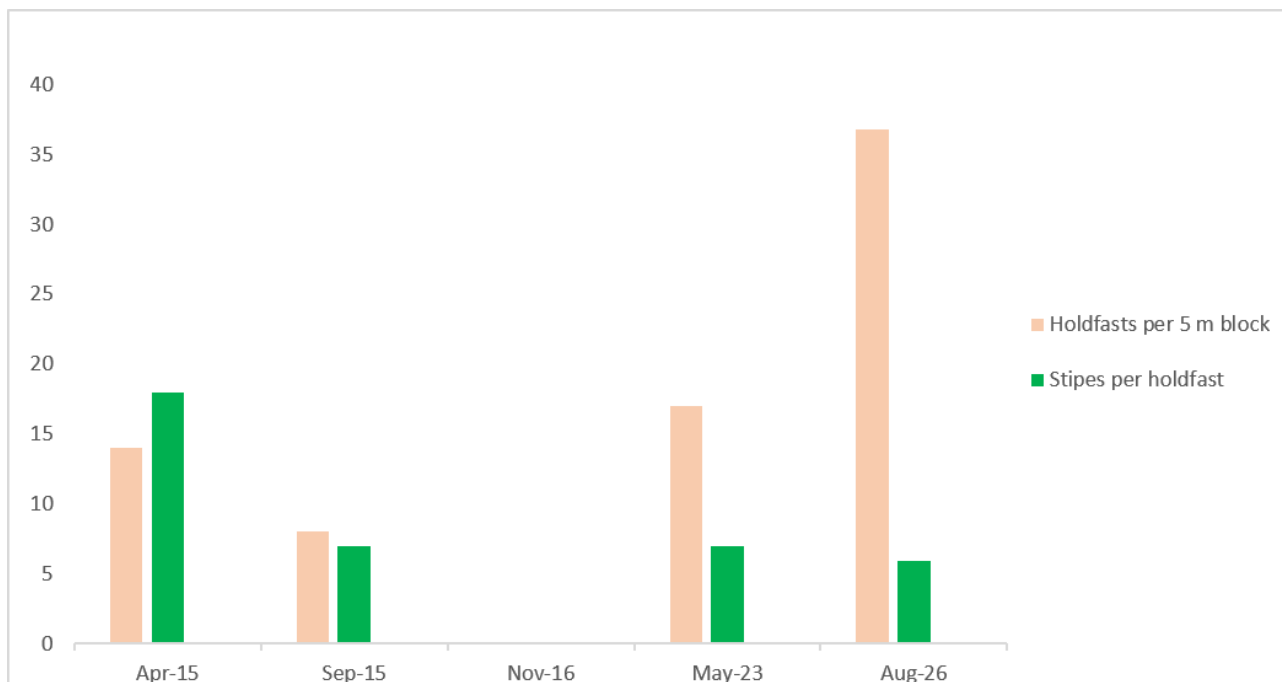


Figure 11: Holdfast density and stipe counts per holdfast averaged over a 50m transect from the five (5) surveys conducted between 2015 and 2026.

Mean canopy extent scores increased slightly between the 2023 and 2026 surveys (1.5 to 2.3) and the mean epiphyte scores remained low, ranging from 0.1 – 0.8 (**Figure 12**).

Long-term canopy extent has shown variability, ranging between 0 – 3 scores depending on the survey year. Epiphyte score has trended downwards over the past 10 years, with substantially higher levels in the Apr-15 survey (score 4 out of 5) when compared to Aug-26 (score 0.8 out of 5) (**Figure 12**).

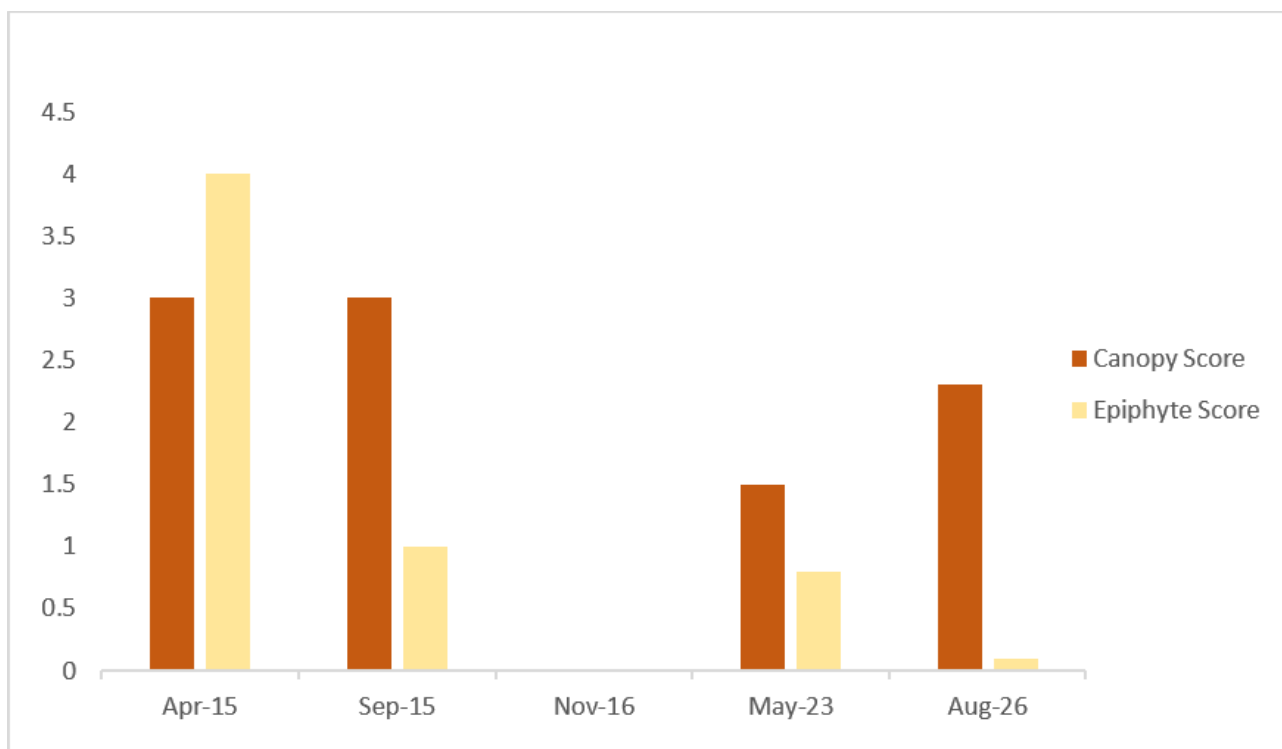


Figure 12: Scores (0-5) for canopy extent and epiphyte growth averaged over a 50 m transect from the five (5) surveys conducted between 2015 and 2026.

2.3.6 Discussion and Key Findings

In August 2026, giant kelp was present in an isolated stand on the eastern side of the entrance to the Mersey River. The kelp forest appeared to be healthy, with a higher average holdfast density and canopy extent than recorded during the June 2023 survey (Elgin 2023), while stipe counts and epiphyte scores were similar.

The giant kelp bed contained mostly small plants, forming a patchy subsurface canopy, with plants increasing in size at the northern end of the transect and on the edges of the submerged breakwater (**Plates 1 and 2**).

When comparing data from the five (5) separate surveys, it appears the kelp bed is ephemeral, which is consistent with statewide observations of rapid growth and die back of giant kelp in shallow water, with variability in growth known to be driven by wave action, seasonal variation in temperature, and fluctuating nutrient levels from river output, sewage outfalls or runoff (Johnson *et al.* 2011, Mabin *et al.* 2019).



Plate 1: Dense kelp forest growth at the deeper offshore end of transect (left). Patchy sections of canopy were observed in the middle shallower section of the transect (right).



Plate 2: Dividing growth of kelp fronds with no epiphytic growth visible (left) and kelp holdfasts attached to boulder of the eastern break wall (right).

2.4 Seagrass Beds

2.4.1 Introduction

Surveys of known seagrass *Amphibolis antarctica* beds (to the east of the Mersey River entrance) have been completed as part of dredging monitoring programs since 2014 (**Table 1**). The LTMMMP identifies seagrass as a sensitive receptor because elevated turbidity and sediment deposition associated with dredging have the potential to affect seagrass condition.

2.4.2 Survey Location

Three (3) seagrass beds sites east of the Mersey River mouth were surveyed in August 2026 - Northdown, Horseshoe and Pardoe (**Figure 13**).



Figure 13: Location of seagrass survey sites east of the Port.

2.4.3 Approach and Methodology

Methods and transect locations were consistent with previous surveys conducted by CEE (2015), Marine Solutions (2016) and Elgin (2023), to allow for temporal comparison in seagrass bed extent and health.

Survey Date and Conditions

The seagrass survey was conducted on the 25th August 2026. Sea conditions were generally calm with a swell less than 0.5m and low winds. Visibility was 5m or greater, with good quality video footage collected on the transect.

Transect Survey

At each site, a 100m transect tape was deployed from the dive vessel between weighted shot lines and endpoint coordinates recorded. Two (2) divers then swam the length of the tape placing a one (1) m square quadrat at 20 pre-generated random distances along the transect. Quadrats were analysed in situ and scored for percentage cover of seagrass, percentage cover of macroalgae, epiphyte overgrowth (zero (0): no

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epiphyte growth to five (5): heavy epiphyte growth), and epiphyte percentage composition. Each quadrat was photographed for reference and data cross-checking. Plant material was not collected as part of this survey.

2.4.4 Results

General Observations

Dense beds of the seagrass *A. antarctica* were present at all survey locations, growing on mixed sand and cobble substrate. All sites appeared to have healthy beds, combined with a mix of macroalgae and epiphytes. Results from the August 2026 survey are presented in **Table 9** and **Table 10**, with example photos provided in **Plates 3-6**.

Quadrat Counts

Seagrass cover was variable, both within and between the survey locations, with the substantially higher seagrass cover recorded at the Northdown and Horseshoe sites (46.5 – 53.8 %) compared to Pardoe (27.5%). Macroalgal cover was generally lower than seagrass cover, ranging from 26.5 – 28.5 % across the survey locations. Epiphytic overgrowth was observed on seagrass beds at all survey locations. The Horseshoe site had the highest mean epiphyte score (3.7) followed by Northdown (2.9) and Pardoe (2.2) (**Table 9**).

Table 9: Seagrass % cover, macroalgae % algae, and epiphyte overgrowth (1-5) averaged over a 100 m transect at the three survey sites in August 2026.

Site	Seagrass % Cover	Macroalgae % Cover	Epiphyte Score (1-5)
Northdown	53.8	26.5	2.9
Horseshoe	46.5	28.3	3.7
Pardoe	27.5	28.5	2.2

Encrusting coralline algae was the predominate epiphyte at all survey locations, ranging from 50-64.1% of the total epiphyte composition. Erect coralline algae species were observed at Northdown (30%) and Horseshoe (38.5%) but not at Pardoe (0%). Other epiphytical algal species coverage was low across the survey locations, ranging from 0.5 -5% epiphyte composition (**Table 10, Plate 3**).

Table 10: Epiphyte composition (%) averaged over a 100 m transect at the three survey sites in August 2026.

Site	Encrusting Coralline	Erect Coralline	Other
Northdown	50	30	5
Horseshoe	61	38.5	0.5
Pardoe	64.1	0	0.5

FIELD SURVEYS



Plate 3: Erect coralline algae (*Corallina officinalis*) growing epiphytically on *A. antarctica* stems (left) and other non-coralline red algae species can be seen growing epiphytically on the leaves of *A. antarctica* (right). Encrusting coralline algae (as white scale) can be seen in both photos.

Northdown

Northdown had the highest mean seagrass cover of the survey locations. The site was characterised by cobble and sand substrate, densely covered in seagrass which transitioned into low-profile reef covered in macroalgae (predominantly *Caulerpa flexilis*). Epiphytic growth at this location was moderate, dominated by encrusting coralline algae on seagrass blades. Erect coralline algae and other epiphytic algal species were also observed growing on the stems of *A. antarctica*.

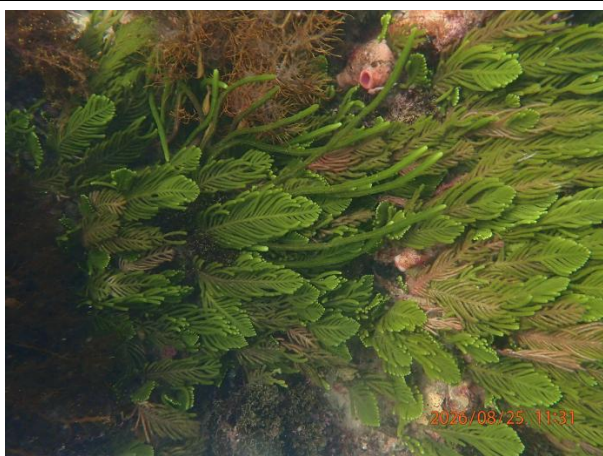


Plate 4: A typical Northdown quadrat with dense seagrass cover (left), and dense macroalgae (*Caulerpa flexilis*) cover (right).

Horseshoe

Horseshoe had the second highest mean seagrass cover of the survey locations, with *A. antarctica* densely covering the boulder and cobble substrate. Epiphytic over-growth at this site was moderate to heavy, including erect coralline algae growing on the stems of *A. antarctica*, and heavy epiphytic growth from encrusting coralline algae on most blades.

FIELD SURVEYS

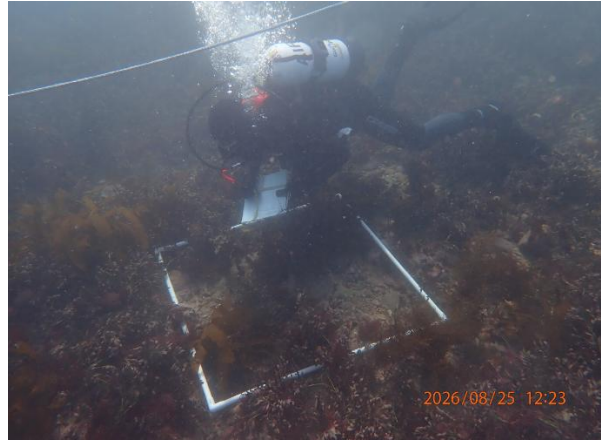


Plate 5: Typical Horseshoe quadrats featuring dense *A. antarctica* cover and *Ecklonia radiata* macroalgae (left) with patchy sections of sand and cobbles (right).

Pardoe

Pardoe displayed substantially less seagrass cover compared to the other survey locations and the highest proportion of bare substrate (sand and cobble), with patchy seagrass and macroalgae cover. Pardoe had the lowest mean epiphyte score of the survey locations, which was dominated by encrusting coralline algae on *A. antarctica* blades.

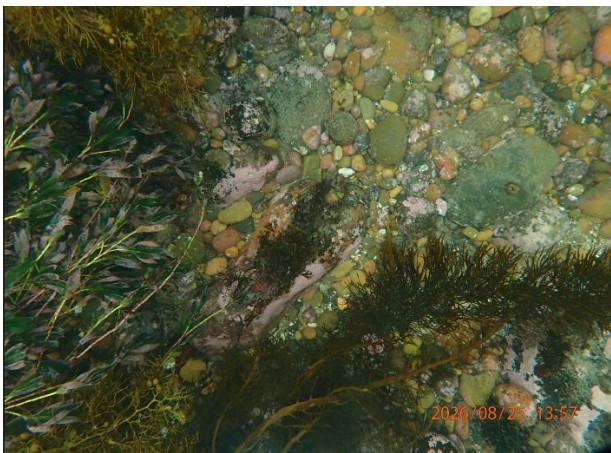


Plate 6: Typical Pardoe quadrats consisting of patchy coverage of both *A. antarctica* (left), and macroalgae (left and right)

2.4.5 Temporal Change

Seagrass cover at the three monitoring locations has been variable when all surveys are compiled; represented by data from three surveys conducted between 2015 and 2016, the pre-dredging survey (May-23), and the post-dredging survey (Aug-26). The combined results for seagrass percentage cover across the 2015 – 2026 surveys are compiled in **Figure 14** and summarised below.

Horseshoe: *A. antarctica* cover increased substantially from Aug-15 and Sept-15 (8-22%) to Nov-16 (95%) followed by a downward trend in May-23 (80%) and Aug-26 (47%) (**Figure 14**).

Northdown: *A. antarctica* cover decreased between 2015 (50%) and 2016 (30%), followed by an increase in 2023 (44%) and 2026 (54%) (**Figure 14**).

FIELD SURVEYS

Pardoe: *A. antarctica* cover was highly variable between 2015 to 2026. Coverage was relatively low between 2015 and 2016 (14-25%), followed by coverage doubling to 43% in 2023 and then decreasing to 28% in 2026 (**Figure 14**).

Epiphyte Cover

Trends in epiphyte extent between the survey locations were generally consistent across the pre-dredging (2023) and post-dredging survey (2026), with encrusting coralline algae being the dominant epiphyte, followed by erect coralline algae and other epiphytic algal species observed growing on the stems of *A. antarctica*.

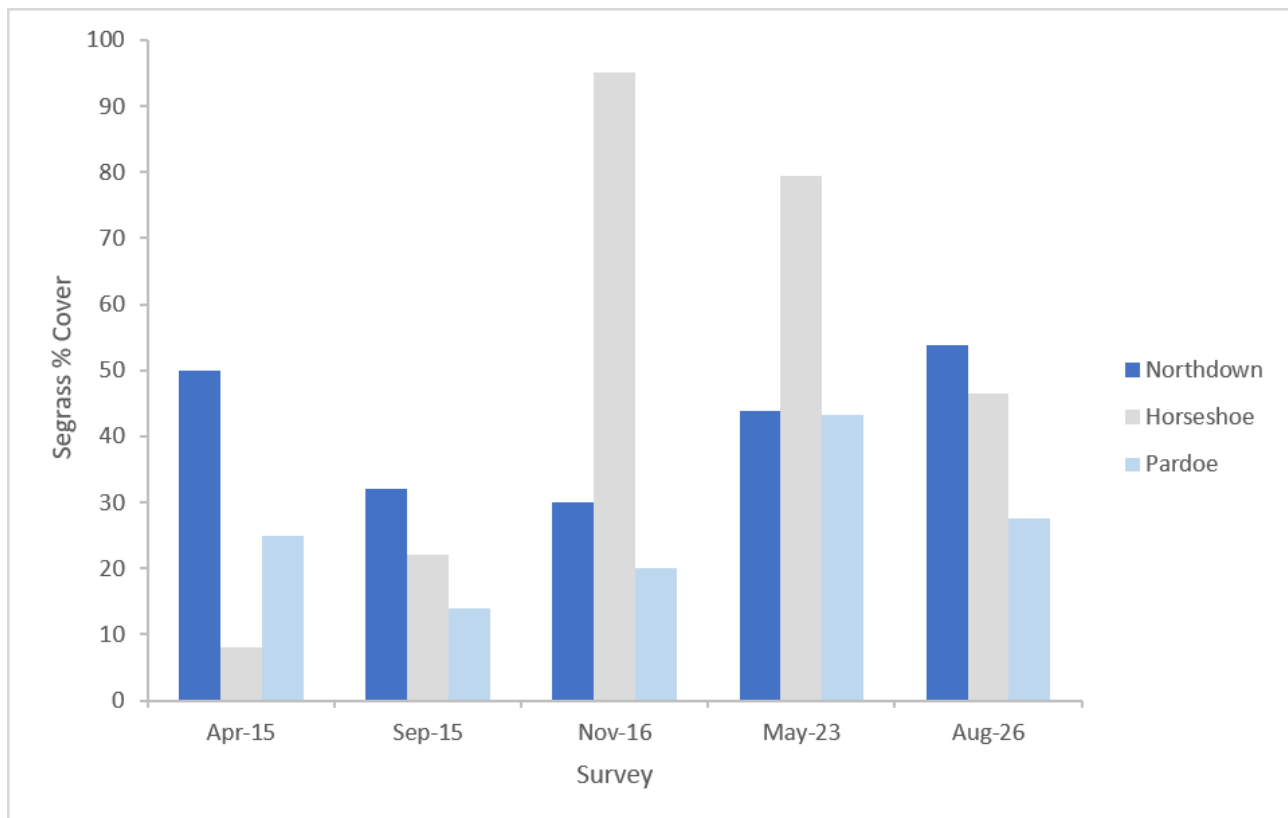


Figure 14: Seagrass % cover averaged over a 100 m transect at the three (3) survey sites from four surveys conducted between 2015 and 2026.

2.4.6 Discussion and Key Findings

Overall, Seagrass cover in August 2026 was either within the range of seagrass cover reported previously (2015-23) or higher, noting that Horseshoe has shown more long-term variability compared to Northdown and Pardoe. This variability is consistent with seagrass growth in Tasmania - displaying strong seasonality, driven by factors such as light availability, water quality, wave action and sedimentation rates (Cabaco *et al.* 2008).

No visual evidence of a dredging-related change in seagrass condition was identified in 2026. Whilst we have presented data back to the 2015 and 2016 surveys for comparison (**Figure 14**), without regular surveys at the same time of year, it is impossible to draw conclusions on which factors are driving changes in seagrass cover from year to year, or season to season, at these three sites.

3 CONCLUSIONS

Surveys of seagrass and scallop sensitive receptors adjacent to the Port of Devonport, the historically monitored giant kelp bed, and benthic habitats within and adjacent to the DSDG were conducted between July – August 2026 as part of TasPorts post-dredging monitoring program, to meet the requirements of the LTMMMP.

Key findings are summarised below:

Historical Scallop Bed: Commercial and doughboy scallops remained present across the established monitoring area. Densities of commercial scallops were generally low on all transects but there was an increase from 2024 (pre-dredging) to 2026 (post-dredging), although differences in survey timing limit direct quantitative comparison among years. Queen scallops were not identified on any transects. Live scallops were recorded on most transects in low densities, with doughboy scallops the only species consistently observed. Doughboy scallops were present in high densities on several transects that had abundant cobble substrate.

Offshore DSDG Benthic Substrate and Habitat: There was an observed shift in benthic substrate conditions within the DSDG from sand in 2024 to sand and silt in 2026, consistent with the disposal of dredge material from the Port. The extent of changes attributable to dredged material disposal appears limited to within the DSDG footprint, with areas outside the footprint of the DSDG similar between pre- and post- surveys. No threatened species or marine pests were observed before or after dredge spoil disposal. Of note, commercial scallops were observed both within and outside of the DSDG at low numbers after dredging.

Giant Kelp: Giant kelp remained present on the eastern side of the entrance to the Mersey River, noting that the LTMMMP does not identify this bed as a sensitive receptor for management purposes. The kelp forest appeared healthy, and the post-dredging survey in August 2026 recorded higher average holdfast density and canopy extent than the pre-dredging survey in June 2023 (Elgin 2023), as indicated by similar stipe counts and epiphyte scores. Variability in indicators of kelp health between the five (5) separate surveys suggests that the kelp bed is ephemeral, which is consistent with statewide observations growth and die back of giant kelp in shallow water.

Seagrass Beds: The seagrass beds had moderate to high percentage of seagrass cover in the post-dredging survey and appeared healthy, with moderate epiphyte overgrowth. Seagrass cover in the post-dredging survey was either within the range of seagrass cover reported in the previous surveys (2015-23) or higher. The long-term variability between surveys is consistent with seagrass growth in Tasmania displaying strong seasonality, driven by factors such as light availability, water quality, wave action and sedimentation.

Survey results from before and after the 2026 dredging program, do not indicate an adverse dredging or disposal-related change in the monitored habitats or receptors outside the expected physical alteration of the authorised DSDG.

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5 LIMITATIONS

Elgin Associates Pty Ltd has prepared this Post-Dredging Marine Monitoring Report for the sole use of TasPorts in accordance with the usual care and thoroughness of the consulting profession. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to professional advice included in this report. The methodology adopted and sources of information used by Elgin Associates are outlined in this report.

Elgin Associates has made no independent verification of this information beyond the agreed scope of works and Elgin Associates assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to Elgin Associates was false.

This document was prepared between July and October 2026 and is based on information provided by TasPorts. Elgin Associates disclaims responsibility for any changes that may have occurred after this time. This report is to be read in full together with all other reports referenced by this report. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

APPENDIX A – FIELD SURVEY COORDINATES

Inshore Scallop Survey

Transect	Start Waypoint		End Waypoint		Direction
	Lat	Long	Lat	Long	
Reference 1	-41.1321992	146.411928	-41.13174682	146.4057567	W
Reference 2	-41.13255099	146.4367697	-41.13171062	146.4433033	E
Reference 3	-41.13217698	146.3177702	-41.13557216	146.3127478	SW
East 7	-41.1108675	146.4549941	-41.11151828	146.4537772	SW
East 8	-41.10966118	146.4678043	-41.11006871	146.466463	W
East 9	-41.10853977	146.4788582	-41.10804808	146.4777325	NW
East 10	-41.10698802	146.4905151	-41.10614472	146.4896508	NW
East 11	-41.10518357	146.5033654	-41.10475819	146.5018905	W
East 12	-41.10261854	146.5143696	-41.10191354	146.5131979	NW
West Edge	-41.10973159	146.4441797	-41.11003577	146.4427847	W
Scallop 11	-41.11348408	146.4586836	-41.11413645	146.4574697	SW

Offshore Survey

Transect	Start Waypoint		End Waypoint		Direction
	Lat	Long	Lat	Long	
T0	-41.0378	146.2935	-41.03679369	146.2935	N
T1	-41.0337	146.2921	-41.03277323	146.2921	N
T2	-41.0296	146.2791	-41.02804324	146.2791	N
T3	-41.0380	146.2764	-41.03622439	146.2761	N
T4	-41.0439	146.2881	-41.04214445	146.2876	N
T5	-41.0457	146.2973	-41.0442121	146.2969	N
T6	-41.0511	146.3077	-41.04921928	146.3072	NW
T7	-41.0571	146.3278	-41.05509013	146.3284	N
T8	-41.0365	146.2865	-41.03564546	146.2861	N
T9	-41.0362	146.2983	-41.03532678	146.2980	N
DSDG6	-41.0380	146.3634	-41.05107629	146.3641	NE
DSDG9	-41.0412	146.3666	-41.04060151	146.3688	E
Seamount North	-41.0565	146.3901	-41.05420215	146.3905	N
Seamount South					

APPENDIX B – INSHORE SCALLOP SURVEY TRANSECT DESCRIPTIONS

Historical Scallop Beds

East 7

The East 7 transect was recorded at 115m in 35m depth over a bottom of fine sand and silt substrate (**Plate 1**). Twenty-six scallops (19 doughboy and 7 commercials) were counted with a total scallop density of 0.3 scallops m² over an area of approximately 86 m². Numerous collections of dead shells were noted, along with one observation of a Sand Flathead (*Platycephalus bassensis*).



Plate 1. Doughboy scallops and typical fine sand and silt substrate on the East 7 transect.

East 8

The East 8 transect was recorded at 144m in 38m depth, over a bottom of fine sand and silt (**Plate 2**). A total of 111 scallops (72 doughboy and 39 commercials) were counted at a density of 1.03 scallops per m² over an area of approximately 108 m². Collections of dead shells were noted in this transect, along with one observation of a Sand Flathead (*Platycephalus bassensis*).



Plate 2. Typical bare sediment substrate, flathead (left) and doughboy scallops attached to sessile fauna (right) on East 8.

East 9

Transect East 9 was recorded at 162m in 38m depth over a substrate of fine sand and silt (**Plate 3**). A total of 77 scallops (61 doughboy and 16 commercials) were counted, at density of 0.6 scallops per m², over an area of approximately 121 m².

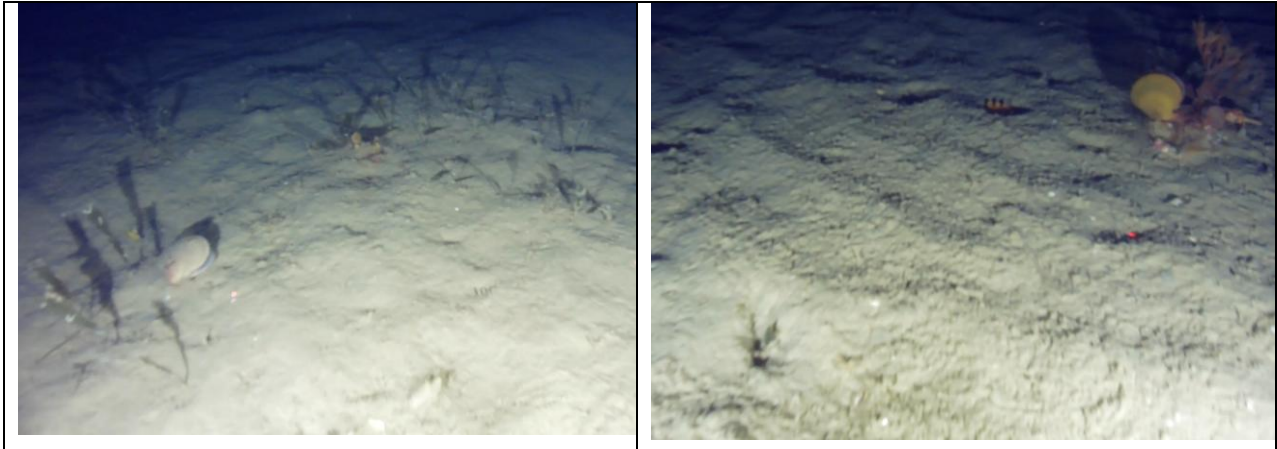


Plate 3. Fine sand and silt substrate on transect East 9 and doughboy scallops free-living (left) and attached to sessile fauna, showing typical orange colouration (right).

East 10

Transect East 10 was recorded at 111m in 40m depth over a bottom of fine sand and silt (**Plate 4**). A total of 90 scallops (70 doughboy and 20 commercial) were counted, at density of 1.1 scallops per m² over an area of approximately 84 m². Occasional clumps of sessile fauna, as well as mobile invertebrates including cuttlefish and an unidentified ray species were observed on this transect.

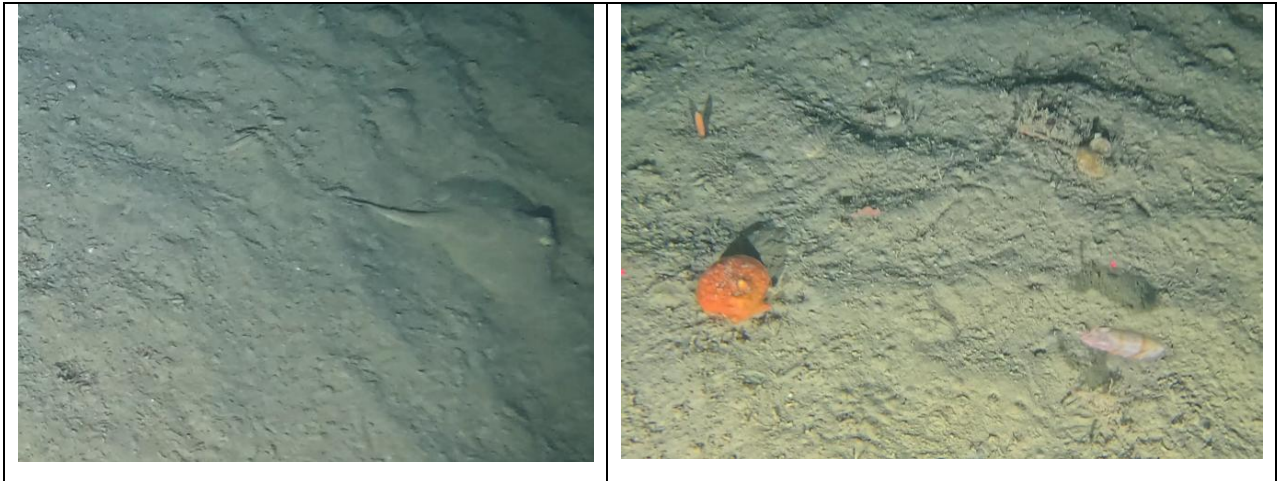


Plate 4. Typical fine sand and silt substrate with mobile invertebrates identified - stingaree (left) and cuttlefish (right) on East 10.

East 11

Transect East 11 was recorded at 209m in 40 m depth. Substrate on this transect was fine sand and silt, with occasional patches of sessile invertebrate fauna (**Plate 5**). A total of 148 scallops (86 doughboy and 62 commercials) were counted, at a density of 0.9 scallops per m² over an area of approximately 157 m². Numerous collections of dead shells were noted, along with one observation of a Sand Flathead (*Platycephalus bassensis*).

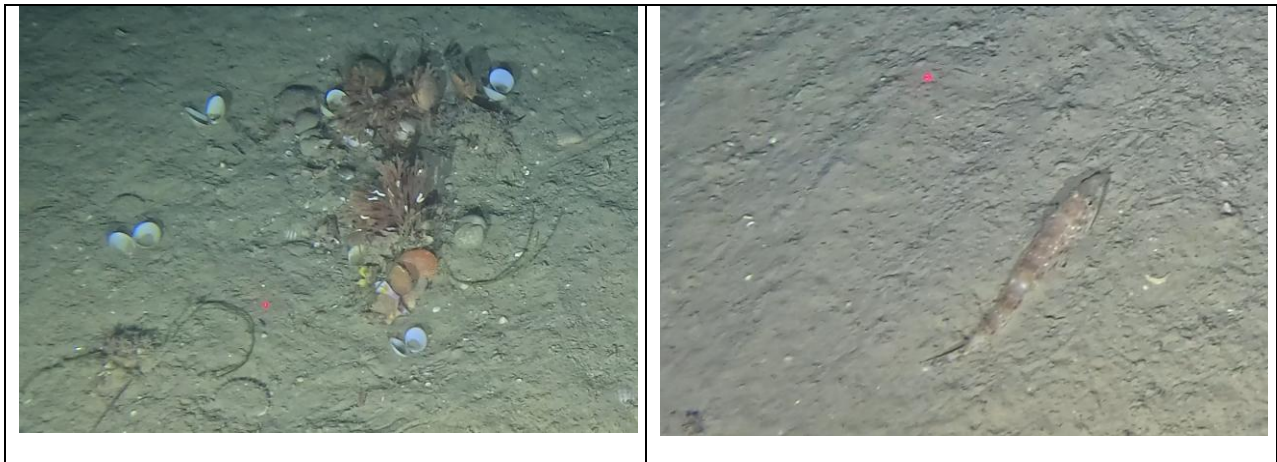


Plate 5. Doughboy scallops attached to habitat structure and dead shells (left) and Sand Flathead (right) on transect East 11.

East 12

Transect East 12 was recorded as 111m in 40m depth at the eastern-most of the historical scallop bed transects surveyed. Substrate on this transect was fine sand and silt with sporadic clusters of ascidians and dead shells (**Plate 6**). A total of 151 scallops (104 doughboy and 47 commercial) were counted, at a density of 1.8 scallops per m² over an area of approximately 83 m².

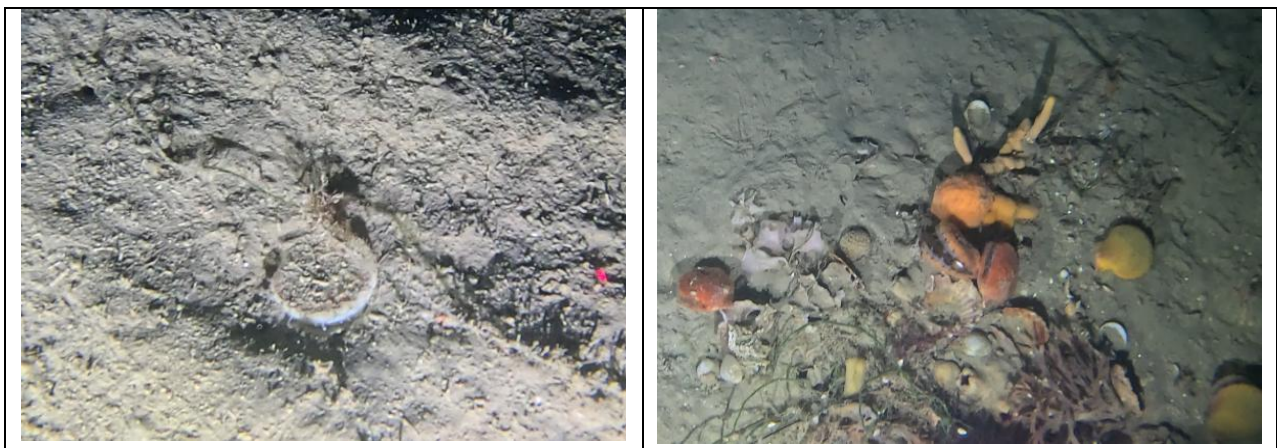


Plate 6. Commercial Scallop (left) and patches of sponge clumps, dead shells and doughboy scallops (left) on transect East 12.

West Edge

Transect West Edge was recorded at 125 m in 35 m of water over fine sand substrate. Small patches of sessile fauna were also observed. 36 (28 doughboy and 8 commercials) were counted with a total scallop density of 0.4 scallops m² over an area of approximately 93 m². Collections of dead shells were noted, along with one observation of an unidentified Octopus species (**Plate 7**).



Plate 7. Unidentified octopus species (left) and typical bare sediment substrate on the West Edge transect (right).

Reference Locations

Reference 1

Reference location 1 was located to the north-east of the Mersey River mouth. This was the shallowest transect surveyed, running for 546m in 23m depth. Cobble patches were the dominant substrate, sparsely colonised by encrusting sponges and macroalgae (**Plate 8**). Cobble substrate was interspersed with areas of fine sand, with occasional erect sponges. Doughboy scallops were present in large numbers, attached to cobbles or sponges, with a mean density of 4.7 (± 0.3) per m².

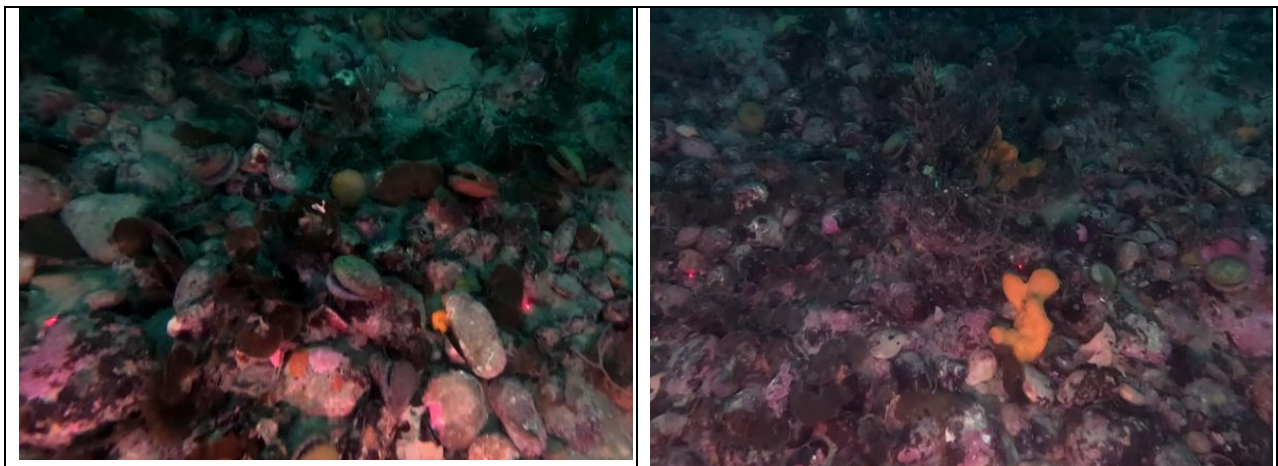


Plate 8. Doughboy scallops and encrusting sponges on cobble patches at Reference 1.

Reference 2

The Reference 2 transect was recorded for 601m in 25m depth. Substrate was comprised almost entirely of fine sand and shell grit with limited cobbles or hard substrate (**Plate 9**). Large waves of coarse sand became predominant as the transect progressed. Marina fauna observations included Sand Flathead (*Platycephalus bassensis*), Smooth stingray (*Bathytoshia brevicaudata*), and Southern Sand Star (*Luidia australiae*). In total, one (1) commercial scallop and four (4) doughboy scallops were recorded on this transect.

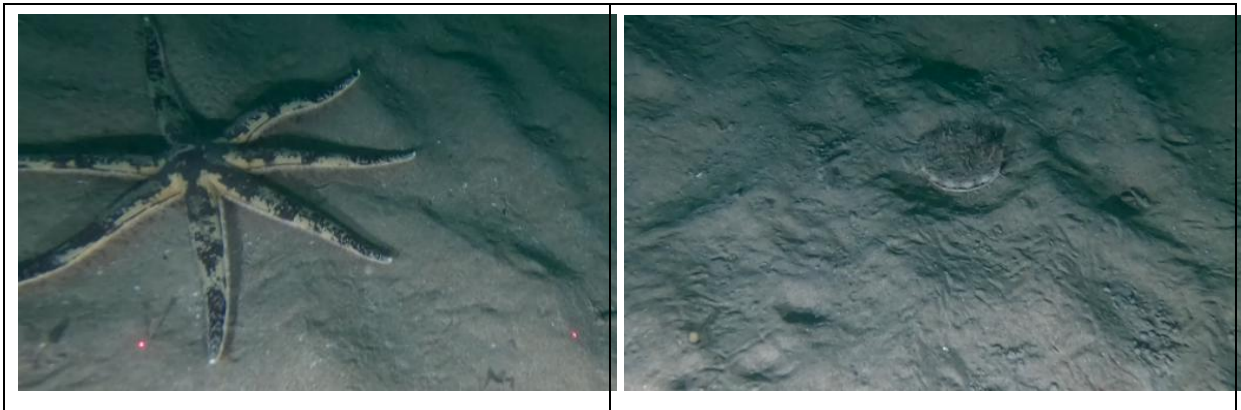


Plate 9. Fine sand sediment at Reference 2, including southern sand star (left) and commercial scallop (right).

Reference 3

Reference location 3 is located approximately five (5) kms west of the Mersey River mouth, and the video transect was 597 m long in 24 m depth. Cobble patches and boulders were the dominant substrate, colonised red alga *Sonderopelta coriacea*, encrusting coralline algae, macroalgae and sponges. The cobble substrate on this transect supported large numbers of doughboy scallops attached to habitat structure (**Plate 10**), with a mean density of 1.2 (± 0.2) doughboy scallops per m².

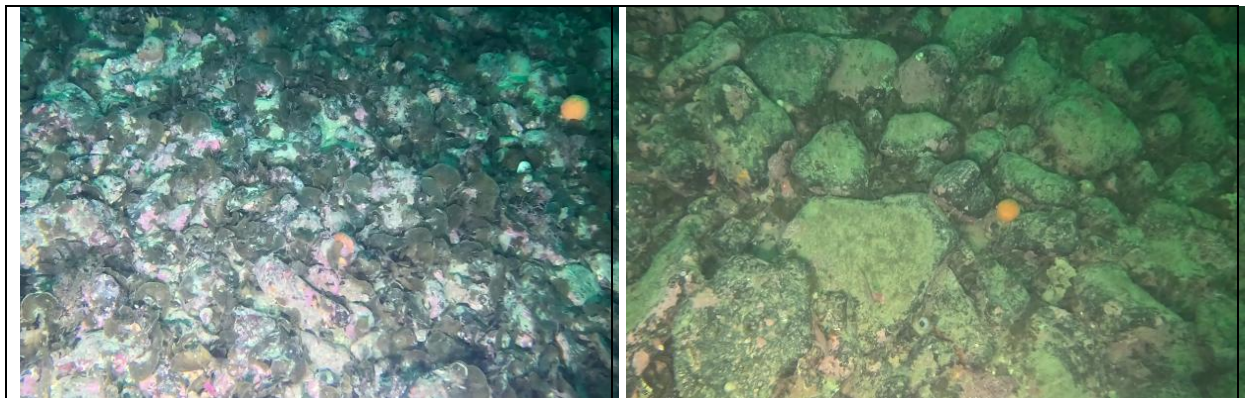


Plate 10. Cobble beds and boulders where the dominant substrate on transect Reference 3.

APPENDIX C – Inshore Scallop Survey Data Tables

Historical Scallop Beds

Table C1: Commercial scallops (*P. fumatus*) counts and density at Historical Scallop Beds, 2021 to 2026.

	2021 ¹		2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density	Count	Density
East 7	2	0.02	1	0.01	0	0.00	7	0.1
East 8	12	0.09	0	0.00	0	0.00	39	0.4
East 9	25	0.22	2	0.03	0	0.00	16	0.1
East 10	2	0.02	3	0.05	1	0.02	20	0.2
East 11	45	0.38	3	0.05	0	0.00	62	0.4
East 12	6	0.08	2	0.03	0	0.00	47	0.6
Scallop 11	1	0.01	1	0.02	0	0.00	21	0.2
West Edge	5	0.04	0	0.00	1	0.01	8	0.1
TOTAL	98	-	12	-	2	-	220	-
Mean	12.3	0.11	1.5	0.02	0.3	0.004	28	0.26
n	8	8	8	8	8	8	8	8
SD	15.4	0.13	1.2	0.02	0.46	0.01	20	0.17
SE	5.5	0.05	0.42	0.01	0.2	0.003	7	0.06

Table C2: Doughboy scallop (*M. asperimus*) counts and density at Historical Scallop Beds, 2021 to 2026

	2021 ¹		2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density	Count	Density
East 7	nr	nr	21	0.27	50	0.75	19	0.2
East8	nr	nr	4	0.05	51	0.76	72	0.7
East9	nr	nr	21	0.30	47	0.65	61	0.5
East10	nr	nr	20	0.33	22	0.36	70	0.8
East11	nr	nr	14	0.23	19	0.28	86	0.5
East12	nr	nr	15	0.26	10	0.14	104	1.3
Scallop 11	nr	nr	50	0.77	12	0.18	58	0.6
West edge	nr	nr	15	0.20	42	0.61	28	0.3
TOTAL	-	-	160	-	253	-	498	-
Mean	-	-	20	0.3	32	0.5	62	0.6
n	-	-	8	8	8	8	8	8
SD	-	-	13	0.2	18	0.3	28	0.3
SE	-	-	5	0.1	6	0.1	9.9	0.1

Note

nr – not recorded

¹ Marine Solutions (2021), survey conducted in May 2021, scallop counts considered under-estimate due to poor water clarity conditions

² Elgin Associates (2023), survey conducted in May 2023 during good water clarity conditions

³ Elgin Associates (2024), survey conducted in March 2024 during good water clarity conditions

⁴ Elgin Associates (2026), survey conducted in July 2026 during good water clarity conditions

Reference Location 1

Table C3: Commercial scallops (*P. fumatus*) counts and density at Reference Location 1, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	4	0.07	0	0.00	0	0.00
Block B	4	0.07	0	0.00	1	0.01
Block C	8	0.14	0	0.00	0	0.00
Block D	7	0.15	0	0.00	0	0.00
Block E	3	0.05	0	0.00	0	0.00
Total	26	-	0	-	1	-
Mean	5.2	0.09	0.00	0.00	0.20	0.002
n	5	5	5	5	5	5
SD	2.2	0.05	0.00	0.00	0.45	0.01
SE	0.97	0.02	0.00	0.00	0.20	0.00

Table C4: Doughboy scallop (*M. asperimus*) counts and density at Reference Location 1, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	17	0.29	210	4.0	427	5.22
Block B	18	0.30	140	2.8	282	3.45
Block C	46	0.81	180	2.9	408	4.99
Block D	45	0.95	140	2.3	421	5.14
Block E	40	0.63	93	1.3	376	4.60
Total	166	-	763	-	1914	-
Mean	33.2	0.60	152.60	2.6	382.80	4.68
n	5	5	5	5	5	5
SD	14.5	0.30	44.48	0.95	59.70	0.73
SE	6.49	0.13	19.89	0.43	26.70	0.33

Reference Location 2

Table C5: Commercial scallops (*P. fumatus*) counts and density at Reference Location 2, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	0	0.00	2	0.04	1	0.01
Block B	0	0.00	0	0.00	0	0.00
Block C	0	0.00	0	0.00	0	0.00
Block D	0	0.00	0	0.00	0	0.00
Block E	0	0.00	0	0.00	0	0.00
Total	0	-	2	-	1	-
Mean	0.0	0.00	0.40	0.01	0.20	0.00
n	5	5	5	5	5	5
SD	0.0	0.00	0.89	0.02	0.45	0.00
SE	0.00	0.00	0.40	0.01	0.20	0.00

Table C6: Doughboy scallop (*M. asperimus*) counts and density at Reference Location 2, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	0	0.00	0	0.00	1	0.01
Block B	0	0.00	1	0.02	1	0.01
Block C	0	0.00	0	0.00	0	0.00
Block D	0	0.00	0	0.00	0	0.00
Block E	0	0.00	0	0.00	2	0.02
Total	0	-	1	-	4	-
Mean	0.0	0.00	0.20	0.00	0.80	0.01
n	5	5	5	5	5	5
SD	0.0	0.00	0.45	0.01	0.84	0.01
SE	0.00	0.00	0.20	0.00	0.37	0.00

Reference Location 3

Table C7: Commercial scallops (*P. fumatus*) counts and density at Reference Location 3, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	0	0.00	0	0.00	0	0.00
Block B	0	0.00	0	0.00	0	0.00
Block C	1	0.02	0	0.00	0	0.00
Block D	0	0.00	0	0.00	0	0.00
Block E	0	0.00	0	0.00	0	0.00
Total	1	-	0	-	0	-
Mean	0.2	0.00	0.00	0.00	0.00	0.00
n	5	5	5	5	5	5
SD	0.4	0.01	0.00	0.00	0.00	0.00
SE	0.20	0.00	0.00	0.00	0.00	0.00

Table C8: Doughboy scallop (*M. asperimus*) counts and density at Reference Location 3, 2023 to 2026.

	2023 ²		2024 ³		2026 ⁴	
	Count	Density	Count	Density	Count	Density
Block A	134	2.58	180	3.46	158	1.49
Block B	2	0.05	180	4.14	51	0.65
Block C	284	5.62	80	1.39	86	1.07
Block D	369	8.11	100	1.96	107	1.42
Block E	68	2.03	25	0.48	146	1.37
Total	857		565		548	
Mean	171.4	3.68	113.00	2.29	109.60	1.20
n	5	5	5	5	5	5
SD	152.1	3.18	67.04	1.50	43.78	0.35
SE	68.01	1.42	29.98	0.67	19.58	0.16

Note

nr – not recorded

¹ Marine Solutions (2021), survey conducted in May 2021, scallop counts considered under-estimate due to poor water clarity conditions

² Elgin Associates (2023), survey conducted in May 2023 during good water clarity conditions

³ Elgin Associates (2024), survey conducted in March 2024 during good water clarity conditions

⁴ Elgin Associates (2026), survey conducted in July 2026 during good water clarity conditions

APPENDIX D – DSDG Transect Descriptions

Inside DSDG

T0

Fine sand and silt. Small discrete patches sessile benthic fauna included soft corals and ascidians. Numerous dead shells were present. Epifauna observed included the Eleven-armed sea star (*Coscinasterias muricata*) (**Plate 1**).



Plate 1. T0 – Examples of unconsolidated substrate comprising of fine sand and silt and patch of soft coral within the DSDG.

T1

Fine sand and silt. Occasional sessile benthic fauna included erect sponges, ascidians and soft corals. Epifauna observed included Polychaete worms, Eleven-armed sea star (*Coscinasterias muricata*) and Southern Sand Star (*Luidia australiae*). Doughboy scallops were observed in low numbers (less than five individuals per transect) attached to clumps of sponges on unconsolidated sediment (**Plate 2**).



Plate 2. T1 – Examples of unconsolidated substrate comprising of fine sand and silt within the DSDG. Doughboy scallops and the Southern Sand Star were present.

T8

Fine sand and silt. Occasional sessile benthic fauna included erect sponges, ascidians and soft corals. Numerous dead shells were present. Free-living doughboys were frequently observed on unconsolidated sediment, and ten (10) commercial scallops were observed on the transect. Epifauna observed included the Eleven-armed sea star (*Coscinasterias muricata*) and Ocellate seastar (*Nectria ocellata*) (Plate 3).



Plate 3. T8 – Examples of unconsolidated substrate comprising of fine sand and silt and presence of Commercial Scallops and Ocellate seastar within the DSDG.

T9

Fine sand and silt. Occasional sessile benthic fauna included erect sponges, ascidians and Polychaete worms. Numerous dead shells were present. Free-living doughboys were frequently observed on unconsolidated sediment, and twelve (12) commercial scallops were observed on the transect. Epifauna observed included the Eleven-armed sea star (*Coscinasterias muricata*) and Magnificent biscuit star (*Tosia magnifica*). Two (2) Sand Flathead (*Platycephalus bassensis*) individuals were also observed on this transect (Plate 4).



Plate 4. T9 – Examples of unconsolidated substrate comprising of sand and silt and presence of erected sponges (with doughboy attached) and Polychaete worms within the DSDG.

Outside the DSDG

T2

Fine sand and silt with small patches of low-profile reef with small clumps of macroalgae. Occasional sessile benthic fauna included erect sponges, ascidians and soft corals. Numerous dead shells were present. Mobile epifauna was limited to one (1) observation of the Southern Sand Star (*Luidia australiae*) and numerous free-living doughboys, frequently observed on unconsolidated sediment and attached to sponges (**Plate 5**).



Plate 5. T2 – Examples of unconsolidated substrate comprising of sand and silt and low-profile reef (left) and presence of erected sponges (right) outside of the DSDG.

T3

Small to large patches of low-profile reef interspersed with areas of fine sand and silt. The reefs were colonised by a variation of large sponges, small clumps of macroalgae, ascidians, soft corals, polychaete worms and seapens. Mobile epifauna was limited to two (2) observations of the Mosaic Seastar (*Plectaster decanus*) and commercial scallop each. Doughboy scallops were also frequently observed attached to sessile fauna. A school of butterfly perch (*Caesioperca lepidoptera*) was also observed close to the reef (**Plate 6**).



Plate 6. T3 – Examples of low-profile reef within interspersed with areas of fine sand and silt outside of the DSDG3.

T4

Fine sand and silt. Small clumps of macroalgae and doughboy scallops were frequently observed attached to sessile benthic fauna, which included erect sponges and ascidians. Three (3) commercial scallops were observed on the transect. Other epifauna included the three (3) eleven-armed sea star (*Coscinasterias muricata*) individuals, two (2) gobies (Family Gobiidae) and an unidentified cuttlefish (**Plate 7**).



Plate 7. T4 – Examples of sessile benthic fauna patches, eleven-armed sea star and doughboy scallop on fine sand and silt outside of the DSDG.

T5

Fine sand and silt. Clumps of macroalgae and sessile benthic fauna were frequently observed, including erect sponges and soft corals. Two (2) distinct sponge gardens were situated in areas of accumulated shell grit (**Plate 8**).

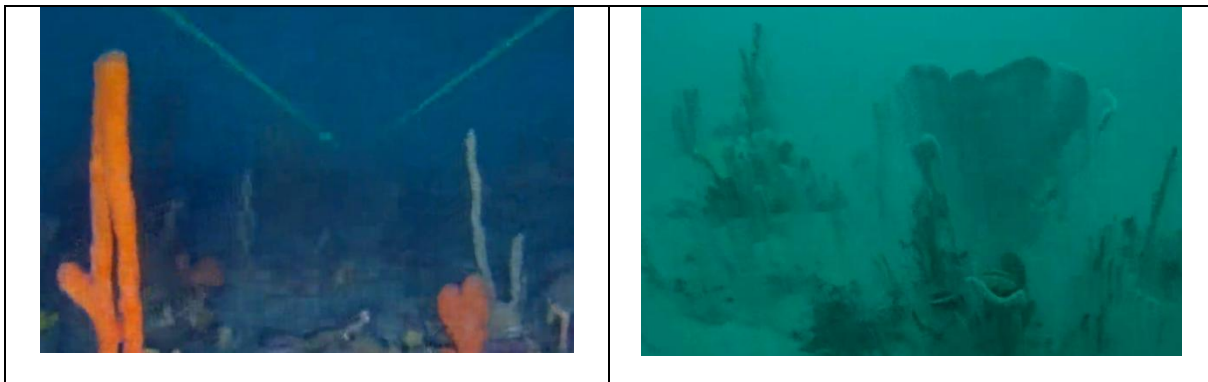


Plate 8. T5 – Examples of sponge gardens growing on sand and silt with shell grit outside of DSDG.

T6

Fine to medium grade sand and gravel with small patches of low-profile reef. Clumps of macroalgae and free-living doughboy scallops were frequently observed around clusters of dead shells. Occasional sessile fauna included polychaete worms, sponge clumps, soft corals and ascidians (**Plate 9**).

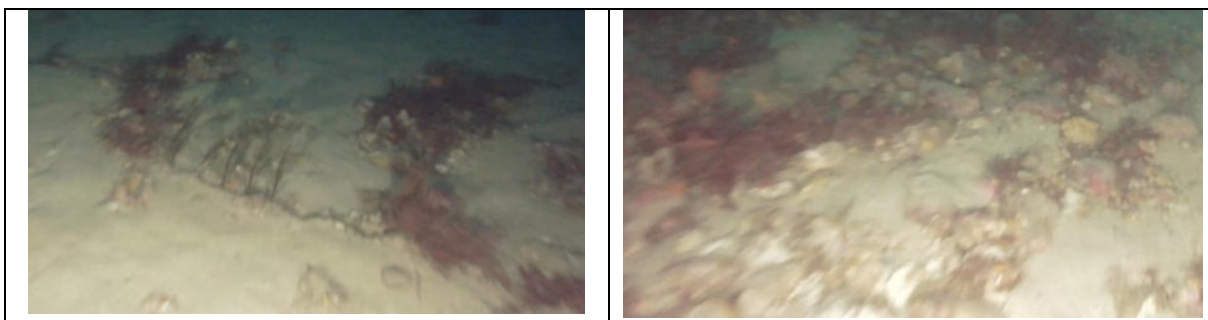


Plate 9. T6 – Examples of macroalgae growing on fine to medium grade sand and patches of low-profile reef outside of the DSDG.

T7

Fine to medium grade sand and gravel with. Clumps of macroalgae and free-living doughboy scallops were frequently observed around clusters of dead shells. Occasional sessile fauna included a variety of sponges, soft corals and ascidians. Three (3) gobies (Family Gobiidae) were also observed on the transect (**Plate 10**).



Plate 10. T7 – Examples of macroalgae and sponge clumps growing on fine to medium grade sand and gravel outside of the DSDG.

Reference Locations

DSGD 6

Fine to medium grade sand. Doughboy scallops were frequently observed attached to clusters of dead shells. Occasional sessile fauna included a variety of sponges and ascidians (**Plate 11**).



Plate 11. DSDG 6 – Examples of fine to medium sand substrate with doughboy scallops growing on shell grit and sponge clumps outside of the DSDG.

DSGD 9

Small to large patches of low-profile reef interspersed with areas of fine to medium sand and silt with shell grit. The reefs were colonised by a variation of large sponges, ascidians, soft corals and macroalgae. Mobile species were frequently observed inhabiting the reef, which included gobies (Family Gobiidae), an unidentified stingaree, Red Gurnard (*Chelidonichthys kumu*), school of butterfly perch (*Caesioperca lepidoptera*), and Sergeant Baker (*Latropiscis purpurissatus*) (**Plate 12**).



Plate 12. DSDG 9 –Examples of low-profile reef interspersed with areas of fine to medium sand and silt outside of the DSDG.

Seamount North

Seamount North included consolidated reef, (mainly low-profile, with high-profile sections) consisting of boulders and cobbles covered with sand and gravel. The hard substrate was colonised by macroalgae and a diverse assemblage of sessile benthic fauna including encrusting and erect sponges, ascidians, bryozoans, and soft corals. This habitat supported a higher epifauna and fish diversity compared to

adjacent sand habitats, which included the following species - butterfly perch (*Caesioperca lepidoptera*), Barber perch (*Caesioperca razor*), Banded Seaperch (*Hypoplectrodes nigroruber*), Common Gurnard Perch (*Neosebastes scorpaenoides*), Silver Sweep (*Scorpiis lineolata*), Sergeant Baker (*Latropiscis purpurissatus*), Southern goatfish (*Upeneichthys vlamingii*), Old Wife (*Enoplosus armatus*) and the Eleven-armed sea star (*Coscinasterias muricata*) (**Plate 13**).

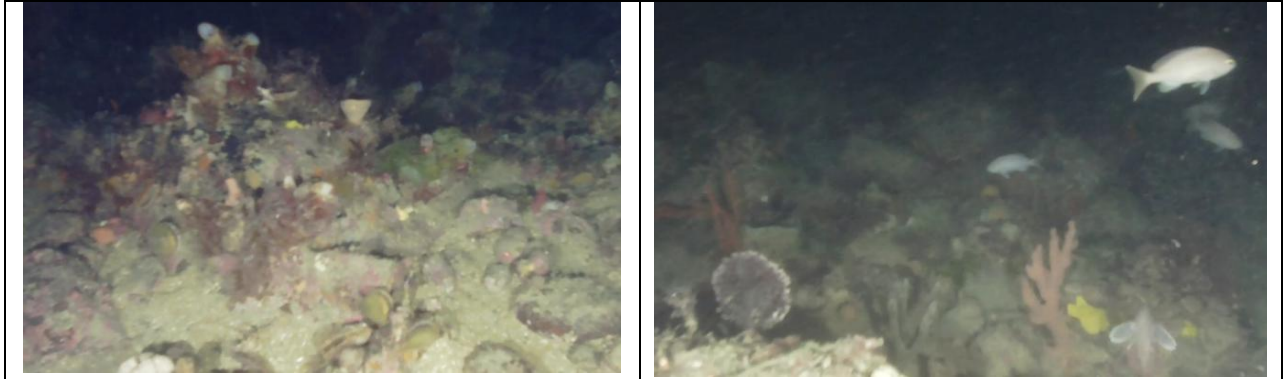


Plate 13. Seamount North – Examples of consolidated reef covered consisting of boulders and cobbles outside of the DSDG.

Seamount South

Seamount South included consolidated low-profile reef consisting of cobbles and occasional boulders interspersed with areas of medium to coarse sand. The reef's hard substrate was colonised by macroalgae and a diverse assemblage of sessile benthic fauna including encrusting and erect sponges, ascidians, bryozoans, and soft corals. Epifauna included numerous doughboy scallops and the Fire-brick star (*Pentagonaster dubeni*). Fish species included the Southern goatfish (*Upeneichthys vlamingii*), Barber Perch (*Caesioperca razor*) and Butterfly Perch (*Caesioperca lepidoptera*) (**Plate 14**).

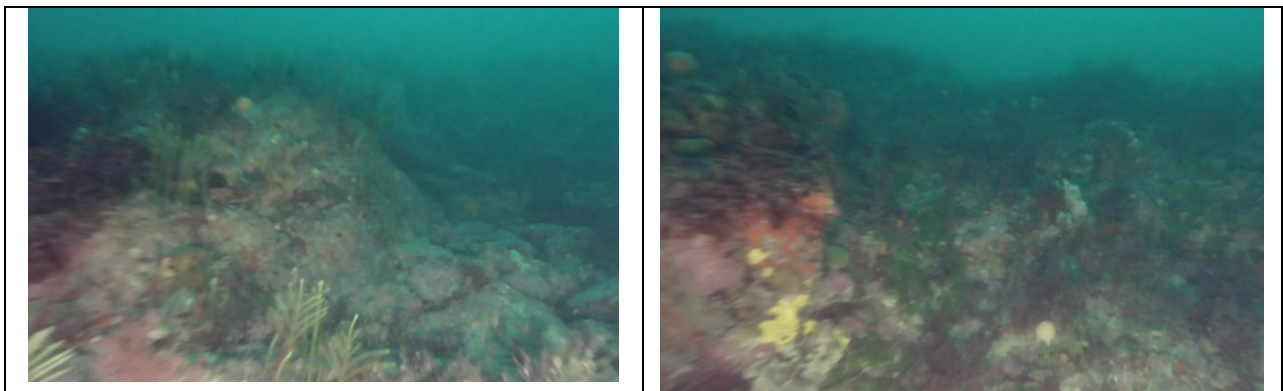


Plate 14. Seamount South –Examples of consolidated reef covered consisting of boulders and cobbles outside of the DSDG.