Great Southern Energy Pty Ltd

(T/A Delta Coal)

Mannering & Chain Valley Collieries

Seagrass Survey of Chain Valley Bay, Summerland Point, Bardens Bay and Crangan Bay, Lake Macquarie, NSW

by Dr Emma Laxton

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Summary

From 2011, fourteen stations in Chain Valley Bay, ten off Summerland Point and four in Crangan Bay were surveyed for seagrass cover. In 2014 six stations in Bardens Bay were added to the sampling schedule, and by 2018, 50 seagrass transects were being surveyed.

The average length of transects in Chain Valley Bay, Summerland Point and Brightwaters were 56.9m, 59.9m and 55.1m respectively. The average length of transect in Bardens Bay was 26.6m. The transects with the greatest length were Transects E9 (152m), F2 (131m) and S4 (105m). The transects with the shortest lengths were Transects T2, C6 and A6, all approximately 14m in length.

At the time of the survey, water temperatures above seagrass beds ranged from 15.05^{o}C to 17.04^{o}C, with a mean water temperature of 15.92^{o}C. Conductivity ranged from 50.38 mS/cm to 50.53 mS/cm. Mean conductivity was 50.47 mS/cm. Salinity ranged from 33.02 ppt to 33.12 ppt. Mean salinity was 33.07 ppt. Turbidity ranged from 8.6 NTU to 9.2 NTU, with a mean of 8.84 NTU. pH ranged from 7.78 to 7.98. Mean pH was 7.93. Dissolved oxygen (% saturation) ranged from 97.8% to 128.2%. Mean dissolved oxygen was 104.9% saturation. Super saturation of dissolved oxygen was the result of oxygen production by the seagrass and epiphytic algae.

The growth form of *Zostera capricorni* in the Summerland Point, Frying Pan Bay and Sugar Bay region and the Crangan Bay region was predominantly short leaved. The growth form of *Z. capricorni* in Chain Valley Bay and Bardens Bay was long leaved.

Since 2008, seagrass coverage has been increasing throughout the study area, and percentage cover has been consistent since 2012. Initial seagrass coverage at transect E6 was 17.74% in 2008. In 2021, percent seagrass cover had risen to 99.78%. Initial seagrass cover at transect T3 was 46.2%. Coverage has now increased to 98%. In June 2022, seagrass cover ranged from 81 percent to 100 percent. The seagrasses were in good condition, with most seagrasses lightly fouled with epiphytic algae or with no fouling.

The increase in percent cover of seagrasses marks the decrease in bare ground in the study area:

- from 38.13 percent in 2011 to 6.36 percent in 2022 in the Summerland Point, Frying Pan Bay and Sugar Bay region
- from 13.32 percent in 2011 to 0.58 percent in 2022 in the Chain Valley Bay region
- a decrease of bare ground in the Crangan Bay region from 26.98 percent in 2011 to 2.50 percent in 2022
- Seagrass cover in Bardens Bay has been around 95 percent since 2011.

The brown seaweed *Cystophyllum onustum* was observed at many transects such as E2, E9, E10, T6, C1-C5 and L1. The alga *Codium fragile* was also observed near transect C1. Mats of green algae were present on the seabed at transect E6. The bivalve mollusc *Pinna menkei* was recorded within several transects such as E2, E4, E5, C3, S3, S5 and A1.

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1. Introduction

Lake Macquarie is the largest saline lake in New South Wales. It lies on the central coast between Sydney and Newcastle within the local government areas of Central Coast Council and Lake Macquarie Council. Lake Macquarie has a catchment of 700 square kilometers and a water surface area of 125 square kilometers (Bell & Edwards, 1980). The lake has a permanent entrance to coastal waters at Swansea and has an average depth of around 6 meters (Laxton, 2005).

The catchment of Lake Macquarie is largely rural with large areas of bushland and grazing land. The shoreline of Lake Macquarie is heavily urbanized, especially the eastern, western and northern shorelines. The region has a relatively long history of coal mining and power generation, with mining occurring since the late 1800s and the first power station at Lake Macquarie commencing operations in 1958.

Chain Valley Colliery is situated on the southern shores of Lake Macquarie near Mannering Park, NSW. The mine has been operating since 1963. Mining is continuing within the Chain Valley Coal Lease Area using the miniwall method. Prior to mining, there were three economically viable seams in the lease area, namely the Wallarah seam (not mined since 1997); the Great Northern seam, and the Fassifern seam. In 2018 Chain Valley Colliery went into voluntary receivership and was taken over by Great Southern Energy Pty Ltd (trading as Delta Coal) to provide coal for Vales Point Power Station.

Delta Coal is currently mining the Fassifern Seam beneath Lake Macquarie. As part of the protection of the lake foreshore, the mining leases require a protection zone. This zone, known as the High Water Mark (HWM) Subsidence Barrier, was calculated using a 35^{o} angle of draw from the depth of mining. The zone is approximately 130 meters wide. J.H. & E.S. Laxton – Environmental Consultants P/L was engaged by Mr. Keith Harris of Chain Valley Colliery in 2007 to assess the potential effects of pillar extraction mining beneath Lake Macquarie on seagrasses, benthic fauna and bathymetry. The studies were supervised by:

- Mr Chris Ellis of LDO Group from 2012 to 2015
- Mr Wade Covey from 2016 to 2018
- Mr Chris Armit from 2019 to 2020, and
- Mr Lachlan McWha in 2021 and 2022.

2. Factors affecting the depth of Water in Lake Macquarie

The bathymetric chart (**Figure 2.1**) of Lake Macquarie shows water depths relative to AHD. The actual depth of water above the lakebed varied greatly, between 0 and 1.3m above AHD over a year.

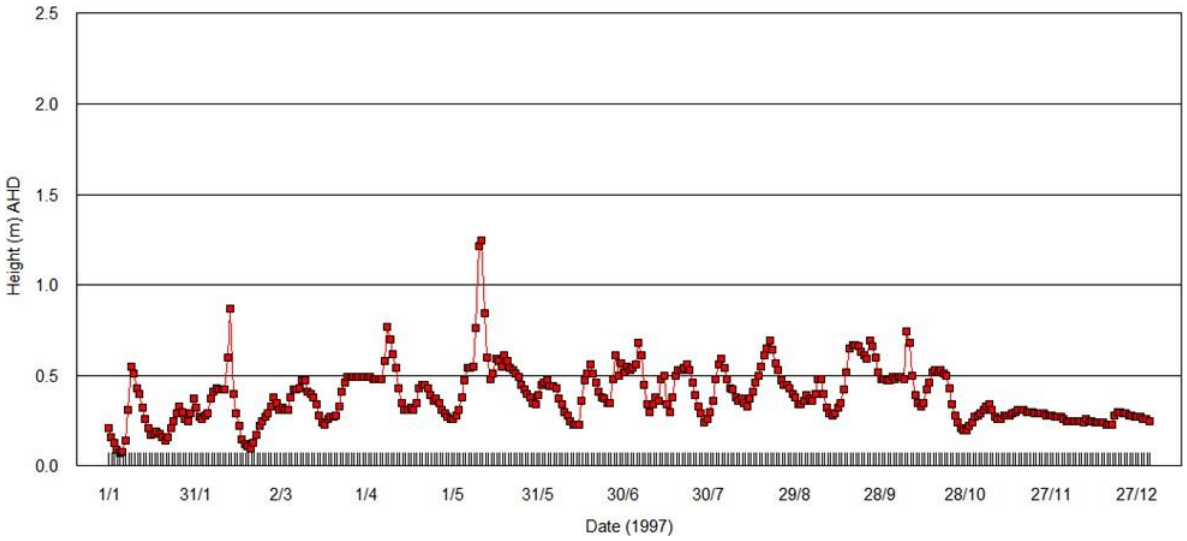

Figure 2.1 Water level changes in a coastal lagoon with an entrance open to coastal waters.

Water depths in coastal saline lakes with an open entrance to coastal waters vary due to combinations of the following factors:

- The body of Lake Macquarie is subject to tidal influence. The height of the tidal prism at Swansea Head may reach almost 2m (during spring tides) but by the time the body of the lake is reached, the tidal prism has been reduced to around 0.05m.

- The height of coastal waters and coastal lakes are influenced by changes in atmospheric pressure. The Tasman Sea acts as a huge barometer. When the atmospheric pressure is high the sea surface is depressed. This causes water to drain from Lake Macquarie causing the depth of water in the body of the lake to decrease. When the atmospheric pressure over the Tasman Sea is low, the surface of the sea bulges upwards. This raising of sea level causes water to flow into Lake Macquarie, increasing the water depth.

- Low pressure systems in the Tasman Sea almost always generate strong winds and coastal rainfall. The strong winds cause large swells to form that impact the coast. Wave setup at the entrance to Lake Macquarie causes the water level in the lake to rise as large volumes of seawater enter the system.

- Rainfall during a period of low atmospheric pressure causes runoff into catchment rivers and streams to increase. When this extra water reaches the body of Lake Macquarie, the water level rises in proportion to the runoff volume. This water is prevented from exiting the lake by wave setup at the entrance and the state of the tide. Under these circumstances, the level of the lake can rise to heights of a meter or more above AHD.

3. Seagrass survey Method

The seagrass survey was conducted on the 25th and 26th June 2022.

A Sony Handycam 6.1 megapixel video camera (DCR-SR300E) fitted with a wide conversion X0.7 lens (VCL-HG737C) was inserted into an underwater housing. The underwater housing was mounted vertically in the centre of a 1m long surfboard. This rig was towed alongside a work boat.

The water depth along most of the transect lines ranged from around 0.5 to 1.8m. Transect lines were photographed from the outer end to the inner end.

The video was examined by viewing still frames approximately every 1m along the transect. The following information was recorded:

1. The transect number and the date the video was taken.
2. The percentage areas occupied by the following plants and animals in each still photograph or quadrat:
   (a) % area occupied by long leaved seagrass *Zostera capricorni*;
   (b) % area occupied by short leaved seagrass *Zostera capricorni*;
   (c) % area occupied by the small seagrass *Halophila ovalis*;
   (d) degree of fouling of the seagrass leaves by algae 1=no fouling, 2=light fouling, 3=heavy fouling;
   (e) % area occupied by the large brown alga (*Sargassum* sp., *Hormosira banksii or Cystoseira trinodis*);
   (f) % area occupied by filamentous and thallous algae (green or brown algae);
   (g) Number of the large bivalve *Pinna menkei*;
   (h) % area of uncolonised ground (bare ground, no macroscopic epibenthos).

4. Locations of permanent seagrass transects

Figures 4.1, 4.2 and 4.3 show the location of seagrass transects in Chain Valley Bay, Summerland Point, Bardens Bay, Brightwaters and Crangan Bay. From 2018 to 2022, a total of 50 transects were photographed annually:

- Transects E1 to E16 are established experimental transects in Chain Valley Bay and Summerland Point (**Figure 4.1**)
- Transects T1 to T8 are established experimental transects along Summerland Point (**Figure 4.1**)
- Transects C1 to C4 are established control stations in Crangan Bay (**Figure 4.1**)
- Transect L1 was established in Chain Valley Bay in 2015 (**Figure 4.1**)
- Transects A1 to A6 are establised experimental stations in Bardens Bay. They were first surveyed in 2014 (**Figure 4.2**)
- Transects C5 to C6 were estabished in 2018 (**Figure 4.3**)
- Transects F1 to F7 in Brightwaters Bay were established in 2018 (**Figure 4.3**), and

- Transects S1 to S6 were established in Sugar Bay in 2018 (**Figure 4.3**).

Figure 4.1 Locations of Transects in Chain Valley Bay, Summerland Point and Crangan Bay, Lake Macquarie.

Figure 4.2 Locations of Transects A1 to A6 in Bardens Bay, Lake Macquarie established in 2014.

Figure 4.3 Location of transects C5-C6, F1-F7 and S1-S6 in Lake Macquarie established in 2018.

Transects in Crangan Bay were for biological purposes only and were surveyed by handheld GPS only.

Table 4.1 Coordinates of inner and outer ends of permanent seagrass transects in Chain Valley Bay

Transect No.	Easting	Northing	Transect No.	Easting	Northing
E1 Inner	56363985.56	6331796.12	**E1 Outer**	56364003.66	6331816.06
E2 Inner	56364035.74	6331701.21	**E2 Outer**	56364076.97	6331716.45
E3 Inner	56363953.19	6331404.63	**E3 Outer**	56364027.57	6331417.71
E4 Inner	56364220.41	6331078.04	**E4 Outer**	56364259.92	6331122.01
E5 Inner	56365005.52	6330163.60	**E5 Outer**	56365034.44	6330225.24
E6 Inner	56365118.34	6329788.72	**E6 Outer**	56365174.56	6329802.58
E7 Inner	56385350.74	6332350.32	**E7 Outer**	56365297.96	6332344.97
E8 Inner	56365128.31	6331795.44	**E8 Outer**	56365096.58	6331811.56
E9 Inner	56365040.02	6331607.80	**E9 Outer**	56364913.26	6331523.98
E10 Inner	56365422.82	6331427.70	**E10 Outer**	56365394.86	6331361.84
E11 Inner	56365554.10	6331410.24	**E11 Outer**	56365524.31	6331343.51
E12 Inner	56365749.60	6331328.35	**E12 Outer**	56365735.31	6331284.62
E13 Inner	56365990.71	6331278.46	**E13 Outer**	56365970.44	6331190.80
E14 Inner	56366447.51	6331046.57	**E14 Outer**	56366370.49	6330984.28
E15 Inner	56366657.26	6330098.71	**E15 Outer**	56366610.88	6330167.27
E16 Inner	56366310.52	6329644.48	**E16 Outer**	56366272.93	6329666.33
T1 inner	56365439.70	6333217.30	**T1 outer**	56365442.62	6333264.67
T2 inner	56365402.69	6333100.83	**T2 outer**	56365388.27	6333100.67
T3 inner	56365400.34	6332951.79	**T3 outer**	56365384.15	6332949.28
T4 inner	56365377.42	6332816.19	**T4 outer**	56365357.10	6332831.62
T5 inner	56365350.31	6332990.09	**T5 outer**	56365309.37	6332575.63
T6 inner	56365347.91	6332380.19	**T6 outer**	56365300.00	6332337.91
T7 inner	56365320.68	6332207.46	**T7 outer**	56365267.96	6332206.74
T8 inner	56365336.86	6332262.46	**T8 outer**	56365295.11	6332270.42
L1 inner	56364292.62	6330367.65	**L1 outer**	56364304.40	6330399.71

Table 4.2 Coordinates of inner and outer ends of permanent seagrass transects off Summerland Point

Transect No.	Easting	Northing	Transect No.	Easting	Northing
C5 inner	56365676.16	6333038.68	C5 outer	56365702.98	6333084.58
C6 inner	56366045.20	6332831.77	C6 outer	56366058.95	6332870.63
F1 inner	56366320.96	6333281.31	F1 outer	56366285.58	6333249.79
F2 inner	56366342.19	6333330.55	F2 outer	56366290.92	6333450.31
F3 inner	56366611.11	6333163.11	F3 outer	56366621.00	6333228.01
F4 inner	56366968.01	6333242.46	F4 outer	56366918.81	6333285.18
F5 inner	56367106.95	6333361.98	F5 outer	56367068.97	6333421.28

F6 inner	56367271.10	6333493.19	F6 outer	56367202.42	6333522.83
F7 inner	56367402.36	6333682.09	F7 outer	56367374.73	6333694.93

Table 4.3 Coordinates of inner and outer ends of permanent seagrass transects in Bardens Bay.

Transect No.	Easting	Northing	Transect No.	Easting	Northing
A1 inner	56364006.28	6333892.16	A1 outer	56364048.43	6333899.34
A2 inner	56363979.36	6334006.51	A2 outer	56364002.16	6334013.22
A3 inner	56363918.06	6334157.90	A3 outer	56363927.53	6334165.80
A4 inner	56363633.48	6334426.20	A4 outer	56363660.06	6334425.14
A5 inner	56363686.18	6335068.50	A5 outer	56363688.41	6335049.82
A6 inner	56364434.63	6334566.67	A6 outer	56364422.84	6334560.15

Table 4.4 Coordinates of inner and outer ends of permanent seagrass transects in Crangan Bay.

Transect No.	Easting	Northing	Transect No.	Easting	Northing
C1 Inner	56368596	6332235	C1 Outer	56368616	6332250
C2 Inner	56368619	6332147	C2 Outer	56368658	6332151
C3 Inner	56368524	6331811	C3 Outer	56368538	6331806
C4 Inner	56368467	6331435	C4 Outer	56368486	6331421

Table 4.5 Coordinates of inner and outer ends of permanent seagrass monitoring transects off Brightwaters.

Transect No.	Easting	Northing	Transect No.	Easting	Northing
S1 inner	56365009.02	6334470.41	S1 outer	56365077.72	6334481.77
S2 inner	5636642.29	6334943.57	S2 outer	56364673.53	6334939.82
S3 inner	56365017.76	6335008.93	S3 outer	56365041.97	6334932.70
S4 inner	56365235.10	6334992.86	S4 outer	56365217.43	6334889.31
S5 inner	56365575.20	6334709.08	S5 outer	36365569.66	6334693.44
S6 inner	56366144.58	6334765.21	S6 outer	56366172.04	6334761.92

5. Transect lengths

The length of each permanent transect is shown in **Table 5.1**.

Table 5.1 Transect lengths in Chain Valley Bay, Summerland Point, Bardens Bay and Brightwaters

Chain Valley Bay

Transect Number	Length (m)	Transect Number	Length (m)
Transect E1	26	**Transect E2**	44
Transect E3	75	**Transect E4**	59
Transect E5	67	**Transect E6**	57
Transect E7	52	**Transect E8**	35
Transect E9	152	**Transect E10**	71
Transect E11	73	**Transect E12**	46
Transect E13	89	**Transect E14**	98
Transect E15	82	**Transect E16**	44
Transect T1	47	**Transect T2**	14
Transect T3	16	**Transect T4**	25
Transect T5	49	**Transect T6**	63
Transect T7	52	**Transect T8**	42
Transect L1	20		

Summerland Point

Transect Number	Length (m)	Transect Number	Length (m)
Transect C5	41	**Transect C6**	13
Transect F1	47	**Transect F2**	130
Transect F3	65	**Transect F4**	65
Transect F5	70	**Transect F6**	74
Transect F7	30		

Bardens Bay

Transect Number	Length (m)	Transect Number	Length (m)
Transect A1	42	**Transect A2**	24
Transect A3	34	**Transect A4**	26
Transect A5	18	**Transect A6**	13

Brightwaters

Transect Number	Length (m)	Transect Number	Length (m)
Transect S1	69	**Transect S2**	31
Transect S3	79	**Transect S4**	105
Transect S5	16	**Transect S6**	27

The average length of transects in Chain Valley Bay, Summerland Point and Brightwaters was 56.9m, 59.9m and 55.1m respectively. The average length of transect in Bardens Bay was 26.6m. The transects with the greatest lengths were Transects E9 (152m), F2 (131m) and S4 (105m) (**Table 5.1**). The transects with the shortest lengths were Transects T2, C6 and A6, all approximately 14m in length (**Table 5.1**).

6. Physical characteristics of water in Lake Macquarie – June 2022

The physical characteristics of the waters above the seagrass beds in Lake Macquarie were measured on 26th June 2022 off Bardens Bay and Sugar Bay using a calibrated Yeo-Kal 618RU Analyser. Units of measurement were Temperature (TEMP) - degrees Celsius; Conductivity (COND) - mS/cm; Salinity (SAL) - parts per thousand; pH; Dissolved Oxygen - % saturation and mg/L; and Turbidity (TURB) - NTU.

The physical characteristics of the bottom water at each transect in Bardens Bay and Sugar Bay, Lake Macquarie are shown in **Table 6.1** and were as follows:

- Water Temperature ranged from 15.05ºC at Transect S3 to 17.04ºC at Transect A1. Mean water temperature was 15.92ºC.
- Conductivity ranged from 50.38 mS/cm at Transect A1 to 50.53 mS/cm at Transect E1. Mean conductivity was 50.47 mS/cm.
- Salinity ranged from 33.02 ppt at Transect A1 to 33.12 ppt at Transect A5. Mean salinity was 33.07 ppt.
- Turbidity ranged from 8.6 NTU at Transect S3 to 9.2 NTU at Transect A1. Mean turbidity was 8.84 NTU.
- pH ranged from 7.78 at Transect A1 to 7.98 at Transect S4. Mean pH was 7.93.
- Dissolved oxygen (% saturation) ranged from 97.8% at Transect S5 to 128.2% at Transect S3. Mean dissolved oxygen was 104.9% saturation. Super saturation of dissolved oxygen was the result of oxygen production by the seagrass and epiphytic algae.

Table 6.1 Physical characteristics of waters above seagrasss beds, Lake Macquarie - June 2022

Bardens Bay

Station	Temperature ºC	Conductivity mS/cm	Salinity ppt	Dissolved Oxygen % sat	Dissolved Oxygen mg/L	pH	Turbidity NTU
A1	17.04	50.38	33.02	98.2	7.60	7.78	9.2
A2	16.68	50.41	33.04	103.8	8.14	7.88	9.1
A3	16.29	50.52	33.11	103.3	7.73	7.92	8.7
A4	16.13	50.47	33.07	109.1	9.60	7.94	8.9
A5	15.75	50.53	33.12	113.1	12.24	7.96	8.9
A6	16.33	50.51	33.09	107.3	8.73	7.94	8.9

Sugar Bay Brightwaters

Station	Temperature ºC	Conductivity mS/cm	Salinity ppt	Dissolved Oxygen % sat	Dissolved Oxygen mg/L	pH	Turbidity NTU
S1	15.69	50.49	33.07	99.1	7.77	7.91	8.91
S2	15.30	50.52	33.10	101.5	8.43	7.97	8.67
S3	15.05	50.40	33.03	128.2	9.67	7.97	8.60
S4	15.39	50.45	33.05	98.4	8.33	7.98	8.80
S5	15.74	50.45	33.08	97.8	8.22	7.98	8.75
S6	15.70	50.46	33.10	99.4	8.35	7.95	8.68

7. Plant and animal species monitored in the study area

Plate 7.1 provides information about the plants monitored in the seagrass surveys of Lake Macquarie, NSW.

Plate 7.1 Plant species found in the study area of Lake Macquarie (2007 - 2022).

Kingdom: Plantae
Phylum: Magnoliophyta
Class: Liliopsida
Order: Potamogetonales
Family: Zosteraceae
Genus: *Zostera*
Species: *Z. capricorni*

Remarks: *Zostera capricorni* is a species of eelgrass native to the seacoasts of New Guinea, Queensland, New South Wales, Victoria, South Australia, Norfolk Island and the North Island of New Zealand. It was first discovered at Moreton Bay in Queensland in 1875.

Kingdom: Plantae
Phylum: Magnoliophyta
Class: Liliopsida
Order: Hydrocharitales
Family: Hydrocharitaceae
Genus: *Halophila*
Species: *H. ovalis*

Remarks: *Halophila ovalis* commonly known as paddle weed, spoon grass or dugong grass, is a seagrass in the family Hydrocharitaceae. It is a small herbaceous plant that occurs in seabeds and other saltwater environments in the Indo-Pacific. First seen at Transect E6 in Chain Valley Bay on 12th June 2010.

Kingdom: Plantae
Phylum: Phaeophyta
Class: Phaeophyceae
Order: Fucales
Family: Hormosiraceae
Genus: *Hormosira*
Species: *H. banksii*

Remarks: *Hormosira banksii*, also known as Neptune's necklace, Neptune's pearls, sea grapes, or bubbleweed is a species of brown alga native to Australia and New Zealand. It is abundant on low-energy rocky reefs at midtide levels, where it outcompetes other algal species due to its high tolerance to desiccation. First recorded at Transect C1 in Crangan Bay on 12th June 2010.

Kingdom: Plantae
Phylum: Phaeophyta
Class: Phaeophyceae
Order: Fucales
Family: Sargassaceae
Genus: *Sargassum*

Remarks: *Sargassum* is a genus of brown macroalgae in the order Fucales. Numerous species are distributed throughout the temperate and tropical oceans of the world, where they generally inhabit shallow water and coral reefs, and the genus is widely known for its planktonic species.

Kingdom: Plantae
Phylum: Phaeophyta
Class: Phaeophyceae
Order: Fucales
Family: Cystoseiraceae
Genus: *Cystoseira*
Species: *C. trinodis*
Synonym: *Cystophyllum onustum*

Remarks: A macroalgae widespread in Australia and the Indo-Pacific region. The plants vary considerably in size and form, with tall thin plants up to 1.5m high in very sheltered and estuarine waters, or more compact thicker-stemmed plants up to 30cm high in oceanic reef pools. Characterised by small peg-like projections on the lower parts of the main branches.

Kingdom: Plantae
Phylum: Chlorophyta
Class: Ulvophyceae
Order: Bryopsidales
Family: Codiaceae
Genus: *Codium*
Species: *C. fragile*

Remarks: The cylindrical, forked, dark green fronds of *C. fragile* grow to 30 cm long. When the plant is under water, fine hairs can be seen over the surface of the branches. This is a species of temperate regions, found subtidally and in intertidal pools often on rough coasts. Small red algae are often found growing on C. fragile, giving a pink colour to the fronds.

Kingdom: Plantae

Green filamentous algae

Remarks: Filamentous algae are colonies of microscopic plants that link together to form threads or mesh-like filaments. These primitive plants normally grow on the surface of hard objects or other substrates under the water but they can break loose and form floating mats.

8. Seagrass characteristics and fouling levels measured in surveys

The following plates show the various growth characteristics of the seagrass *Zostera capricorni* in regard to leaf length. In the study area, due to environmental factors, *Zostera capricorni* either had short leaf growth (**Plate 8.1**) or was long leaved (**Plate 8.4**). The plates also show the level of fouling of seagrass beds by filamentous algae and other algal species. In this study, fouling is described as No (Level 1), Low (Level 2) or Heavy (Level 3) (**Plates 8.1- 8.6**).

Plate 8.1 Short leaved sea grass with level 1 fouling (no fouling).

Plate 8.2 Short leaved seagrass with level 2 fouling (low fouling).

Plate 8.3 Short leaved seagrass with level 3 fouling (heavy fouling)

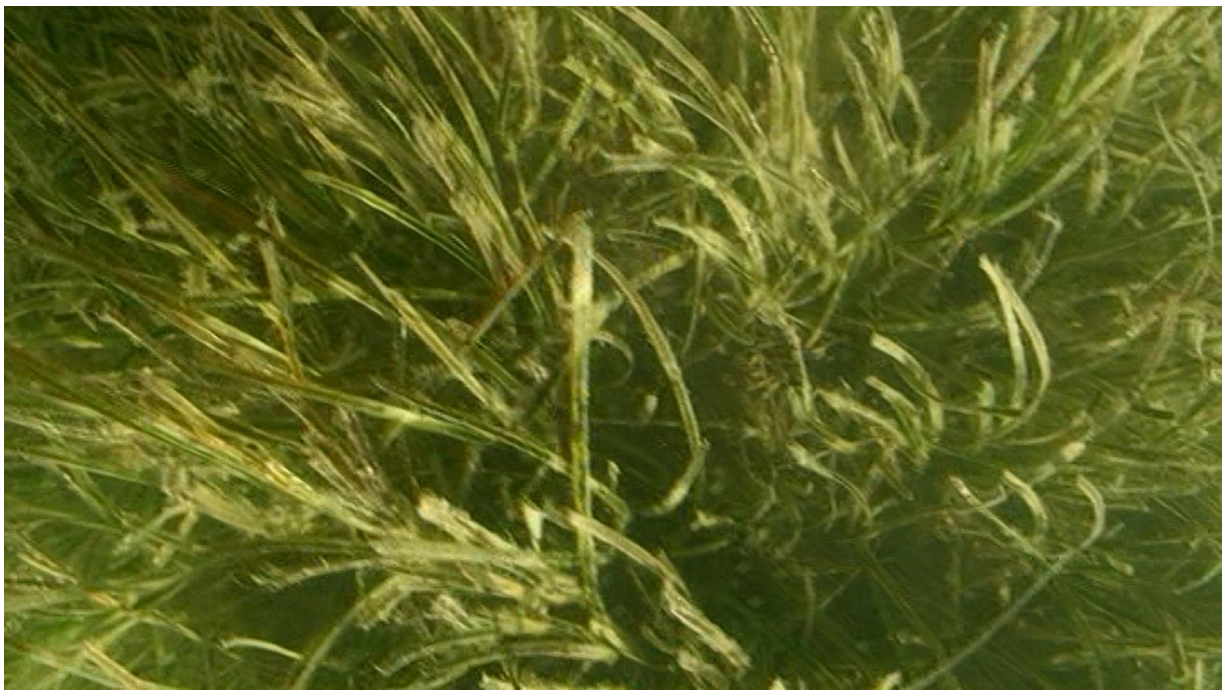

Plate 8.4 Long leaved seagrass with level 1 fouling (no fouling).

Plate 8.5 Long leaved seagrass with level 2 fouling (low fouling).

Plate 8.6 Long leaved seagrass with level 3 fouling (heavy fouling)

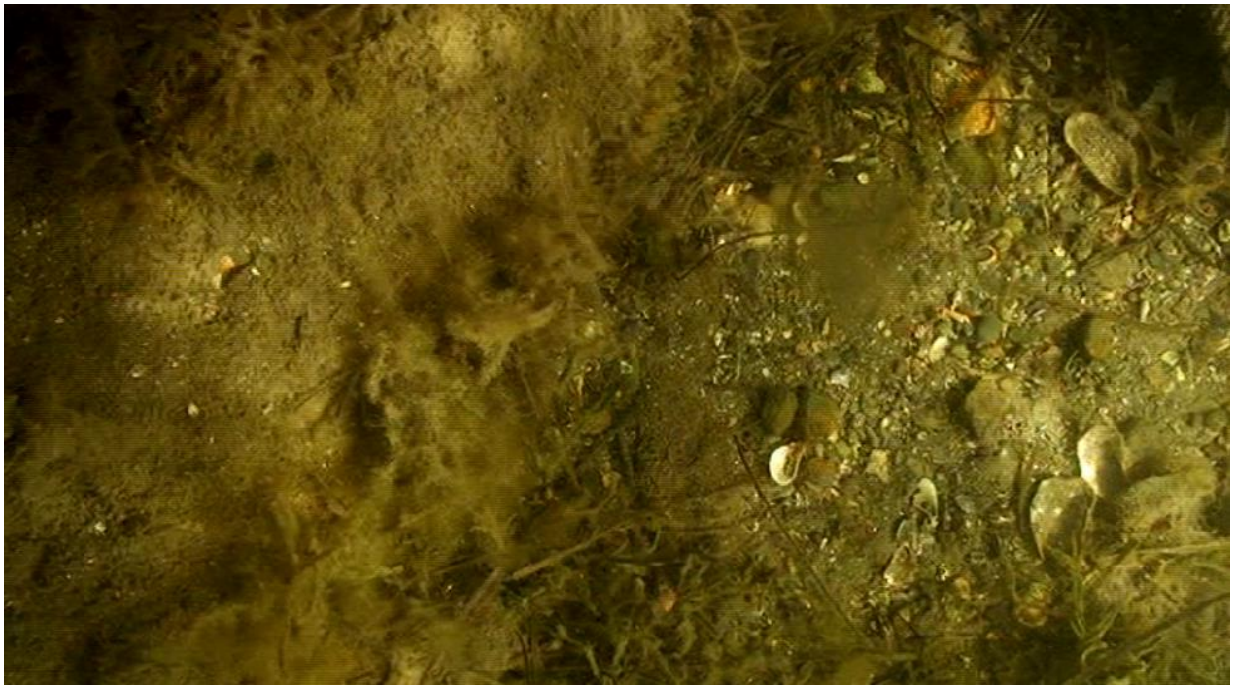

Plate 8.7 Algal mat and bareground.

9. Analysis of quadrats along permanent transects

Figures 9.1 to **9.6** show annual changes in the percentage cover of seagrass in the Chain Valley Bay, Summerland, Bardens Bay, Crangan Bay and Sugar Bay regions. In June 2019, seagrass cover at the transects ranged from 24.7 percent at transect S1 to 100 percent at transects C5 and F1 (**Table 9.1, Figures 9.6 and 9.3**). By June 2022, seagrass cover ranged from 81 percent at transect T6 to 100 percent at transects E3, E11, E12 and E13 (**Tables 9.1-9.6**).

In June 2022, the seagrasses were in good condition, with most seagrasses lightly fouled with epiphytic algae or with no fouling (**Appendix 1**). The presence of algae on the seagrass was a factor of water temperature and nutrient levels.

The brown seaweed *Cystophyllum onustum* (**Plate 7.1**) was observed at many transects such as E2, E9, E10, T6, C1-C5 and L1. The alga *Codium fragile* was also observed near transect C1 (**Plate 7.1**). Mats of green algae were present on the seabed at transect E6. The bivalve mollusc *Pinna menkei* (**Plate 7.2**) was recorded within several transects such as E2, E4, E5, C3, S3, S5 and A1.

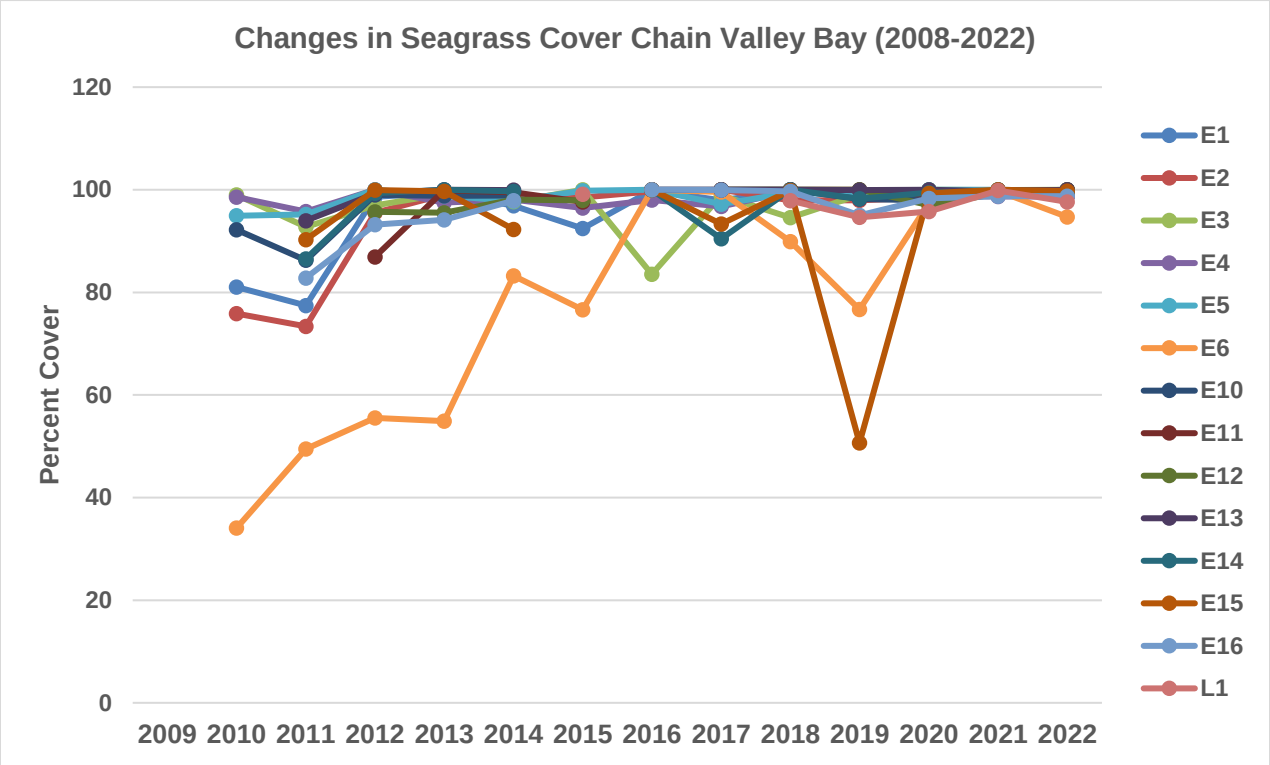

Figure 9.1 Changes in percent cover of seagrass in Chain Valley Bay (2008-2022)

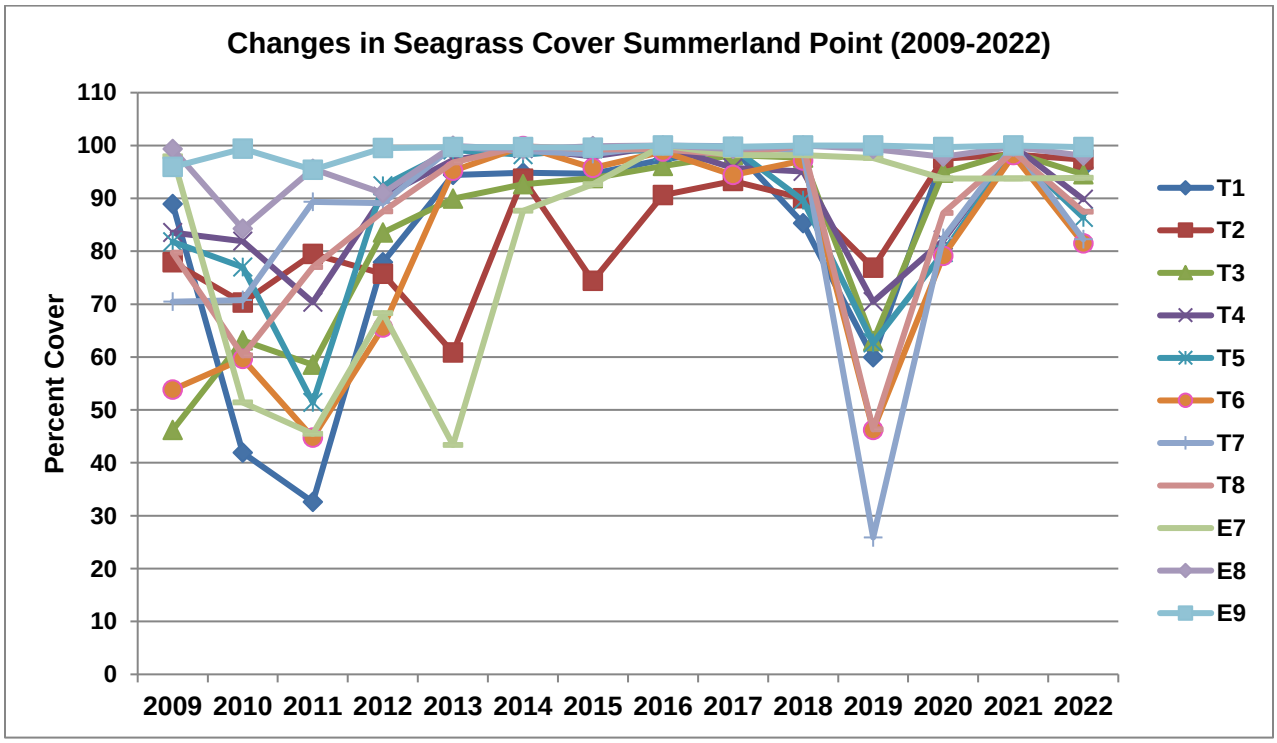

Figure 9.2 Changes in percent cover of seagrass along Summerland Point (2009-2022)

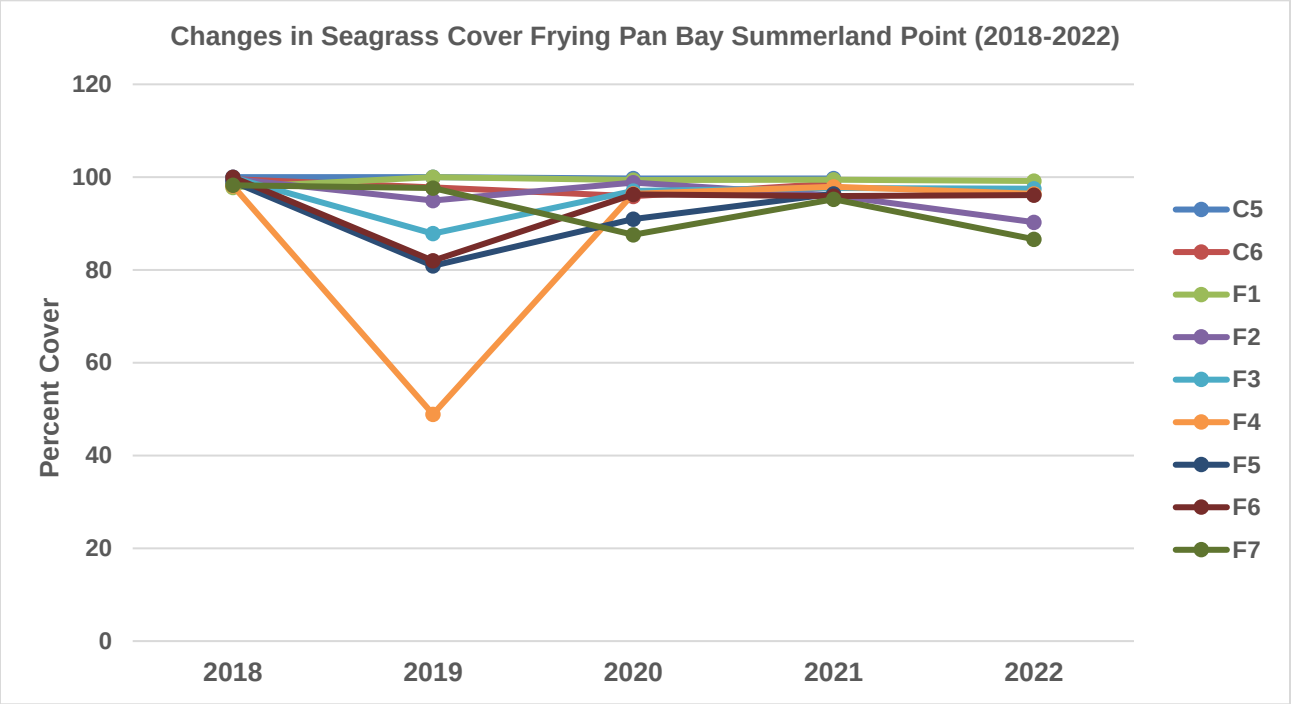

Figure 9.3 Changes in percent cover of seagrass along Frying Pan Bay Summerland Point (2018-2022)

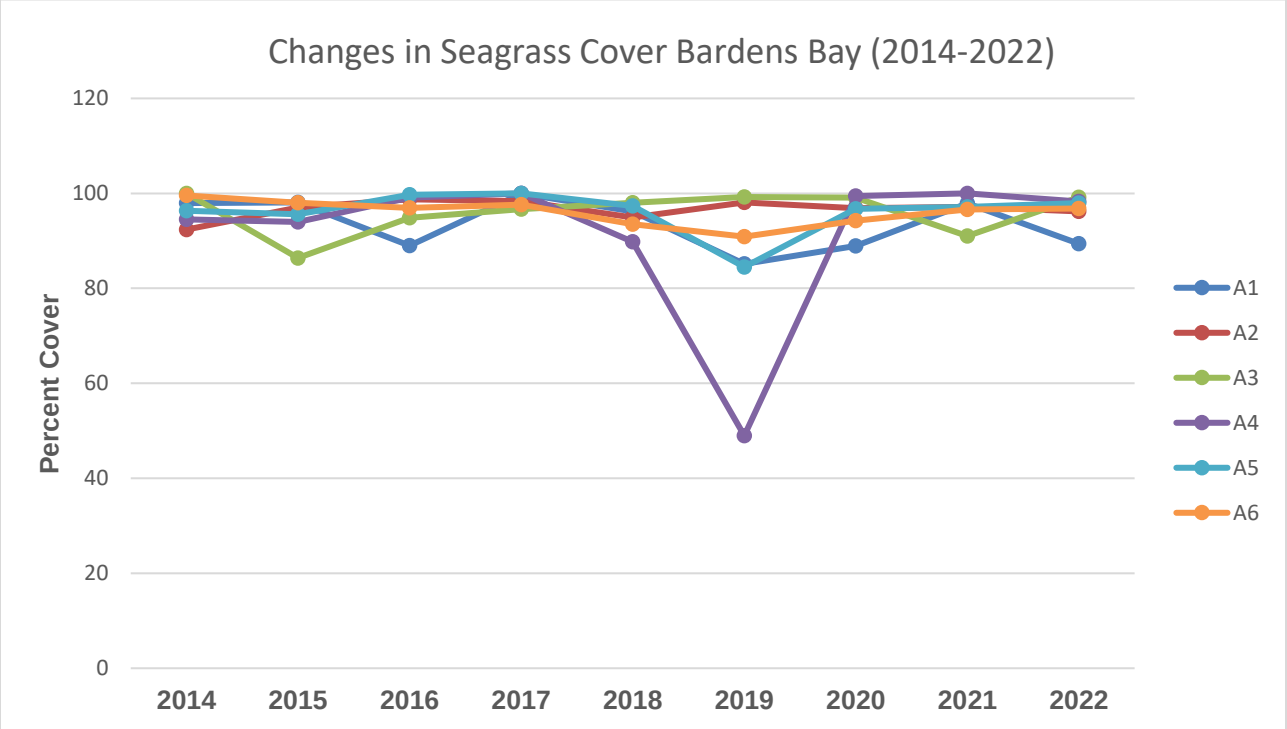

Figure 9.4 Changes in percent cover of seagrass in Bardens Bay (2014-2022)

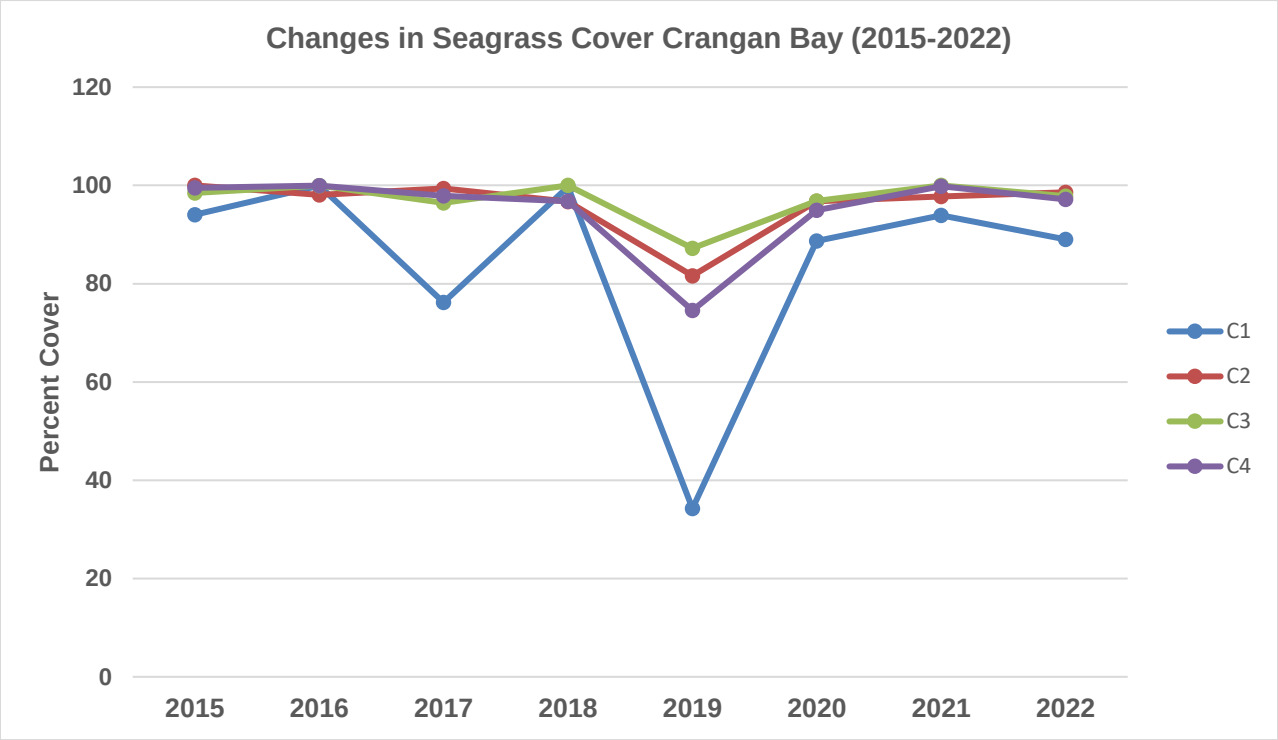

Figure 9.5 Changes in percent cover of seagrass in Crangan Bay (2015-2022)

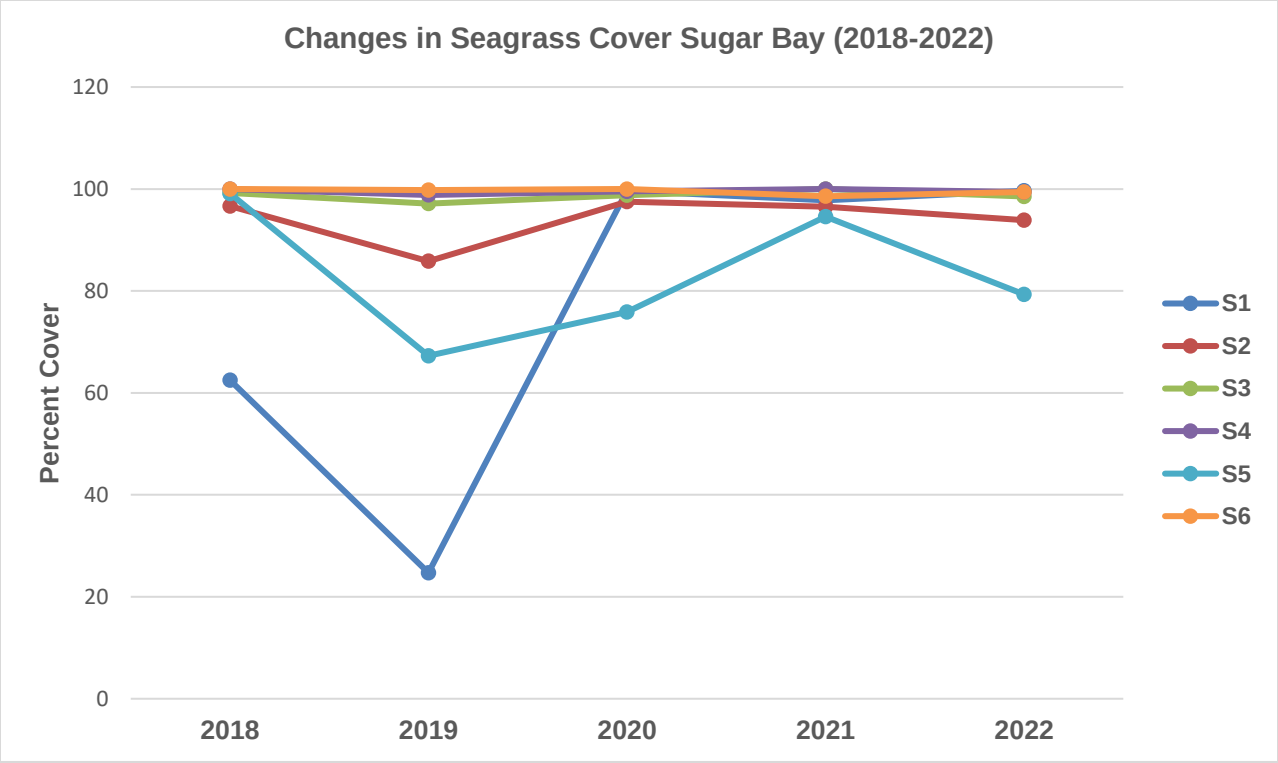

Figure 9.6 Changes in percent cover of seagrass in Sugar Bay (2018-2022)

Changes in the percentage area of the substratum covered by seagrasses in the study area in 2010 to 2022, compared with the 2008 values are shown in **Table 9.1**. The table shows that since 2008, seagrass coverage has been increasing throughout the study area, and percentage cover has been consistent since 2012. At transects where the percentage area of substratum covered was relatively low, such as Transects E6 (17.74%), T3 (46.20%) and T6 (53.82%), seagrass coverage has increased by about 82%, 52% and 44% respectively.

Table 9.1 Changes in percent cover of the substratum by seagrasses in Lake Macquarie (2008-2022)

Chain Valley Bay 2008 to 2021

Transect E1	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	84.15	81.01	77.75	98.62	99.44	92.44	99.88	97.96	97.87	99.12	99.04	99.34
% no seagrass	15.85	18.99	22.25	1.38	0.56	7.56	0.12	2.04	2.13	0.88	0.96	0.66
Transect E2	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	83.72	75.87	73.38	95.49	99.09	98.49	99.71	100.0	97.94	97.94	98.53	99.26
% no seagrass	16.28	24.13	26.62	4.49	0.91	1.51	0.29	0.00	2.06	2.06	1.47	0.37
Transect E3	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	98.29	98.97	92.76	96.97	99.16	100.0	83.53	98.90	94.56	98.97	100.0	99.93
% no seagrass	1.71	1.03	7.24	1.54	0.84	0.00	16.47	1.10	5.44	1.03	0.00	0.66
Transect E4	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	80.16	98.54	95.74	100.0	97.50	96.43	98.01	96.76	99.71	99.85	98.82	98.68
% no seagrass	19.84	1.46	4.26	0.00	2.50	3.57	1.99	3.24	0.29	0.15	1.18	0.88
Transect E5	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	95.88	94.93	95.19	100.0	98.82	99.82	100.0	97.22	99.41	98.97	100.0	100.0
% no seagrass	4.12	5.07	4.81	0.00	1.18	0.18	0.00	2.78	0.59	1.03	0.00	0.00
Transect E6	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	17.74	34.06	49.56	55.51	54.93	76.62	100.0	99.56	89.91	76.69	97.35	99.78
% no seagrass	82.16	65.94	50.44	44.49	45.07	23.38	0.00	0.44	10.09	23.31	2.65	0.00
Transect E7	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	97.93	51.40	45.47	68.31	43.38	92.65	100.0	98.16	98.16	97.65	93.75	93.75
% no seagrass	2.07	48.60	54.53	31.69	56.62	7.35	0.00	1.84	1.84	2.35	6.25	6.18
Transect E8	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	99.32	84.26	95.56	90.96	99.93	99.85	100.0	99.34	100.0	99.34	97.87	99.78
% no seagrass	0.68	15.74	4.44	9.04	0.07	0.15	0.00	0.66	0.00	0.66	2.13	0.00
Transect E9	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	95.94	99.39	95.51	99.49	99.71	99.56	100.0	99.78	100.0	100.0	99.71	100.0
% no seagrass	4.06	0.61	4.49	0.51	0.29	0.44	0.00	0.22	0.00	0.00	0.29	0.00
Transect E10	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	97.94	92.21	86.25	98.99	98.82	NS	100.0	100.0	100.0	98.21	97.94	100.0
% no seagrass	2.06	7.79	13.75	1.01	1.18		0.00	0.00	0.00	1.79	2.06	0.00
Transect E11	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass			86.93	99.85	99.49	NS	100.0	100.0	100.0	98.94	99.63	100.0
% no seagrass			13.07	0.15	0.51		0.00	0.00	0.00	1.06	0.37	0.00

Transect E12	2008	2010	2011	2012	2013	2015	2016	2017	2018	2019	2020	2021
% seagrass			95.68	95.53	98.09	NS	100.0	100.0	100.0	97.0	99.26	100.0
% no seagrass			7.32	4.47	1.91		0.00	0.00	0.00	3.0	0.74	0.00
Transect E13	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass			93.97	99.26	100.0	NS	100.0	100.0	100.0	99.95	100	99.71
% no seagrass			6.03	0.74	0.00		0.00	0.00	0.00	0.05	0.00	0.29
Transect E14	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass			86.54	99.34	100.0	NS	100.0	90.44	100.0	98.24	99.41	99.78
% no seagrass			13.46	0.56	0.00		0.00	9.56	0.00	1.76	0.59	0.22
Transect E15	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass			90.29	99.93	99.66	NS	100.0	93.31	99.85	50.66	99.34	100.0
% no seagrass			9.71	0.07	0.34		0.00	6.69	0.15	49.34	0.66	0.00
Transect E16	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass			82.79	93.22	94.12	NS	100.0	99.94	99.71	95.0	98.31	98.75
% no seagrass			17.21	6.78	5.88		0.00	0.06	0.29	5.0	1.69	1.25
Transect T1	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	88.94	41.90	32.60	77.91	94.41	94.65	97.35	99.47	85.29	59.92	97.87	90.96
% no seagrass	11.06	58.10	67.40	22.09	5.59	5.35	2.65	0.53	14.71	40.08	2.13	7.06
Transect T2	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	77.91	70.29	7.95	75.74	60.83	74.41	90.59	93.31	90.00	76.87	97.50	98.31
% no seagrass	22.09	29.71	92.05	24.26	39.17	25.59	9.41	6.69	10.00	23.13	2.5	1.32
Transect T3	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	46.20	63.16	58.53	83.53	89.93	93.82	96.10	98.19	97.57	63.01	94.85	98.68
% no seagrass	53.80	36.84	41.47	16.47	10.07	6.18	3.90	1.81	2.43	36.99	5.14	1.32
Transect T4	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	83.51	81.89	70.37	90.37	97.28	97.94	99.85	95.76	95.07	70.44	82.06	99.93
% no seagrass	16.49	18.01	29.63	9.63	2.72	2.06	0.15	4.24	4.93	29.56	17.94	0.07
Transect T5	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	81.78	77.00	51.40	92.35	99.12	99.41	98.82	99.56	89.63	62.65	79.71	98.97
% no seagrass	18.22	23.00	48.60	7.65	0.88	0.59	1.18	0.44	10.37	37.35	20.29	1.03
Transect T6	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	53.82	59.63	44.77	65.59	95.22	95.74	98.82	94.41	97.13	46.18	79.12	98.16
% no seagrass	46.18	40.37	53.23	34.41	4.78	4.26	1.18	5.59	2.87	53.82	20.88	1.84
Transect T7	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	97.93	70.79	89.34	89.09	99.78	98.38	100.0	99.85	98.97	25.88	82.50	100.0
% no seagrass	2.07	29.51	10.66	10.91	0.22	1.62	0.00	0.15	1.03	74.12	17.50	0.00
Transect T8	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	95.94	60.29	76.99	87.64	96.76	99.26	99.26	98.24	100.0	46.32	87.21	98.82
% no seagrass	4.06	39.71	23.01	13.26	3.24	0.74	0.74	1.76	0.00	53.68	12.79	1.18
Transect L1	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass						99.12	99.71	97.87	97.87	94.63	95.74	99.85
% no seagrass						0.88	0.29	2.13	2.13	5.37	4.26	0.15

Chain Valley Bay 2022

Transect E1	**2022**											
% seagrass	98.81											
% no seagrass	1.19											
Transect E2	**2022**											
% seagrass	98.74											
% no seagrass	1.26											
Transect E3	**2022**											
% seagrass	100.0											
% no seagrass	0.00											
Transect E4	**2022**											
% seagrass	98.68											
% no seagrass	1.32											
Transect E5	**2022**											
% seagrass	99.54											
% no seagrass	0.46											
Transect E6	**2022**											
% seagrass	94.71											
% no seagrass	5.29											
Transect E7	**2022**											
% seagrass	93.90											
% no seagrass	6.10											
Transect E8	**2022**											
% seagrass	98.09											
% no seagrass	1.91											
Transect E9	**2022**											
% seagrass	99.71											
% no seagrass	0.29											
Transect E10	**2022**											
% seagrass	99.72											
% no seagrass	0.28											
Transect E11	**2022**											
% seagrass	100											
% no seagrass	0.00											
Transect E12	**2022**											
% seagrass	100											
% no seagrass	0.00											
Transect E13	**2022**											
% seagrass	100											
% no seagrass	0.00											
Transect E14	**2022**											
% seagrass	99.63											
% no seagrass	0.37											

Transect E15	**2022**											
% seagrass	99.78											
% no seagrass	0.22											
Transect E16	**2022**											
% seagrass	98.75											
% no seagrass	1.25											
Transect T1	**2022**											
% seagrass	95.81											
% no seagrass	4.19											
Transect T2	**2022**											
% seagrass	97.35											
% no seagrass	2.65											
Transect T3	**2022**											
% seagrass	94.56											
% no seagrass	5.44											
Transect T4	**2022**											
% seagrass	89.85											
% no seagrass	10.15											
Transect T5	**2022**											
% seagrass	86.40											
% no seagrass	13.6											
Transect T6	**2022**											
% seagrass	81.47											
% no seagrass	18.53											
Transect T7	**2022**											
% seagrass	82.28											
% no seagrass	17.72											
Transect T8	**2022**											
% seagrass	87.50											
% no seagrass	12.50											
Transect L1	**2022**											
% seagrass	97.65											
% no seagrass	2.35											

Summerland Point 2018-2022

Transect C5	2018	2019	2020	2021	2022							
% seagrass	100.0	100.0	99.71	99.71	99.71							
% no seagrass	0.00	0.00	0.29	0.00	0.29							
Transect C6	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.56	97.76	95.88	98.60	98.09							
% no seagrass	0.44	2.24	4.11	1.25	1.91							
Transect F1	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	97.81	100.0	99.34	99.41	99.19							
% no seagrass	2.19	0.00	0.66	0.59	0.81							
Transect F2	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.63	94.93	98.82	96.03	90.29							
% no seagrass	0.37	5.07	1.18	2.13	9.71							
Transect F3	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.93	87.82	97.06	97.65	97.53							
% no seagrass	0.07	12.18	2.94	2.35	2.47							
Transect F4	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	98.16	48.90	96.40	97.94	96.40							
% no seagrass	1.84	51.1	3.60	2.06	3.60							
Transect F5	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.04	80.80	90.96	96.40	90.66							
% no seagrass	0.96	19.2	9.04	3.53	9.34							
Transect F6	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	100.0	81.99	96.25	95.96	96.10							
% no seagrass	0.00	18.01	3.75	3.97	3.90							
Transect F7	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	98.24	97.65	87.57	95.22	86.62							
% no seagrass	1.76	2.35	12.43	4.78	13.38							

Bardens Bay 2014 to 2022

Transect A1	2014	2015	2016	2017	2018	2019	2020	2021	2022			
% seagrass	97.97	98.09	88.97	99.85	96.18	85.15	88.88	97.87	89.41			
% no seagrass	2.03	1.91	11.03	0.15	3.82	14.85	11.10	1.91	10.59			
Transect A2	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**			
% seagrass	92.38	96.99	98.75	98.38	94.93	98.09	96.91	97.13	96.18			
% no seagrass	7.62	3.01	1.25	1.62	5.07	1.91	3.09	2.28	3.82			
Transect A3	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**			
% seagrass	100.0	86.40	94.85	96.69	98.01	99.26	99.12	91.03	99.19			
% no seagrass	0.00	13.60	5.15	3.31	1.99	0.74	0.88	8.97	0.81			
Transect A4	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**			
% seagrass	94.51	93.97	99.12	100.0	89.78	48.98	99.41	100.0	98.31			
% no seagrass	5.49	6.03	0.88	0.00	10.22	51.02	0.59	0.00	1.69			

Transect A5	2014	2015	2016	2017	2018	2019	2020	2021	2022			
% seagrass	96.37	95.59	99.71	100.0	97.35	84.50	96.76	97.13	97.96			
% no seagrass	3.63	4.41	0.29	0.00	2.65	15.50	3.24	2.87	2.04			
Transect A6	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**			
% seagrass	99.56	98.01	96.97	97.65	93.53	90.88	94.26	96.62	96.84			
% no seagrass	0.44	1.99	3.03	2.35	6.47	9.12	5.74	3.38	3.16			

Crangan Bay 2008 to 2022

Transect C1	2008	2010	2011	2012	2013	2015	2016	2017	2018	2019	2020	2021
% seagrass	48.60	80.53	68.71	85.38	99.31	94.04	99.94	76.18	99.68	34.26	88.68	93.90
% no seagrass	51.40	19.47	31.29	14.62	0.69	5.96	0.06	23.82	0.32	65.74	11.32	3.90
Transect C2	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	93.09	98.03	67.79	95.21	97.24	100.0	98.09	99.40	96.69	81.62	96.76	97.72
% no seagrass	6.91	1.97	32.21	4.79	2.76	0.00	1.91	0.60	3.31	18.38	3.24	1.25
Transect C3	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	95.59	88.75	94.41	97.16	99.93	98.46	99.90	96.47	100.0	87.21	96.84	100.0
% no seagrass	4.41	11.25	5.59	2.84	0.07	1.54	0.10	3.53	0.00	12.79	3.16	0.00
Transect C4	**2008**	**2010**	**2011**	**2012**	**2013**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
% seagrass	87.25	86.56	58.09	90.40	100.0	99.49	99.96	96.47	96.76	74.56	94.93	99.85
% no seagrass	12.75	13.44	41.91	9.60	0.00	0.51	0.04	3.53	3.24	25.44	5.07	0.15

Transect C1	2022											
% seagrass	89.04											
% no seagrass	10.96											
Transect C2	**2022**											
% seagrass	98.60											
% no seagrass	1.40											
Transect C3	**2022**											
% seagrass	97.81											
% no seagrass	2.19											
Transect C4	**2022**											
% seagrass	97.15											
% no seagrass	2.85											

Sugar Bay Brightwaters 2018 to 2022

Transect S1	2018	2019	2020	2021	2022							
% seagrass	62.50	24.71	99.63	97.79	99.63							
% no seagrass	37.50	75.29	0.37	0.74	0.37							
Transect S2	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	96.62	85.83	97.50	96.54	93.90							
% no seagrass	3.38	14.17	2.50	3.46	6.10							

Transect S3	2018	2019	2020	2021	2022							
% seagrass	99.19	97.13	98.75	100.0	98.53							
% no seagrass	0.81	2.87	1.25	0.00	1.47							
Transect S4	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.97	98.82	99.56	100.0	99.41							
% no seagrass	0.03	1.18	0.44	0.00	0.59							
Transect S5	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	99.12	67.08	75.88	94.56	79.34							
% no seagrass	0.88	32.92	24.11	5.37	20.66							
Transect S6	**2018**	**2019**	**2020**	**2021**	**2022**							
% seagrass	100.0	99.78	100.0	98.57	99.41							
% no seagrass	0.00	0.22	0.00	1.32	0.59							

Table 9.2 shows the average composition, percent cover and condition of seagrass beds in the four regions of Lake Macquarie under investigation for the years 2011 to 2022. It shows that the growth form of *Zostera capricorni* in the Summerland Point, Frying Pan Bay and Sugar Bay region and the Crangan Bay region is predominantly short leaved. The growth form of *Z. capricorni* in Chain Valley Bay and Bardens Bay, however, is long leaved.

Table 9.2 Average composition, % cover and condition of seagrass beds in the four regions of Lake Macquarie under investigation for the years 2011 to 2022.

Year	Total SG	% long	% short	% long 1	% long 2	% short 1	% short 2	algae	bare gr.
Summerland Point, Frying Pan Bay and Sugar Bay									
2011	61.74	9.88	51.86	9.98	0.00	51.86	0.00	0.27	38.13
2012	82.18	38.03	44.15	38.03	0.00	44.15	0.00	0.00	17.85
2013	90.92	25.19	65.88	25.03	0.32	64.92	0.80	0.82	8.26
2014	96.74	19.73	80.27	19.93	0.00	80.27	0.00	0.00	3.26
2015	95.06	17.31	69.33	17.31	0.00	77.75	0.00	0.00	4.93
2016	98.15	20.82	77.64	28.32	0.00	77.66	0.00	0.00	1.30
2017	97.92	17.05	80.63	14.61	2.50	65.14	15.63	0.24	1.35
2018	96.22	28.00	66.03	25.44	5.36	67.00	0.91	1.31	2.28
2019	77.37	32.99	40.16	36.46	0.00	44.00	0.00	2.11	20.51
2020	93.29	35.89	57.40	33.99	1.67	56.91	0.49	0.03	6.64
2021	97.76	48.55	48.14	17.35	26.98	11.33	33.43	0.52	2.00
2022	93.53	28.19	65.33	27.36	0.83	65.08	0.26	0.03	6.36
Chain Valley Bay									
2011	85.44	41.75	43.68	40.28	1.47	43.68	0.00	0.99	13.32
2012	95.26	89.97	5.28	89.97	0.00	5.28	0.00	2.89	1.92
2013	95.63	62.25	35.84	55.83	1.06	35.84	0.00	0.25	4.00
2014	96.57	34.15	65.85	34.14	0.64	65.85	0.00	0.69	2.74
2015	94.70	70.26	18.80	58.28	11.97	24.45	0.00	1.02	5.06
2016	98.65	74.52	27.13	71.30	0.00	27.13	0.00	1.20	0.15
2017	97.63	52.60	42.79	36.35	18.19	49.82	0.11	0.60	1.62
2018	98.46	72.25	25.48	66.32	5.88	23.48	1.79	0.83	0.71
2019	93.15	84.48	8.64	84.48	0.00	15.66	0.00	0.39	6.72
2020	98.82	94.53	4.29	91.70	2.84	4.29	0.00	0.21	0.92
2021	99.65	95.35	4.30	2.84	74.63	0.21	2.51	0.00	0.26
2022	99.00	95.27	4.11	92.18	1.67	4.11	0.00	0.31	0.58

Crangan Bay									
2011	72.52	28.47	44.05	28.47	0.00	43.31	0.74	0.87	26.98
2012	92.38	0.00	92.38	0.00	0.00	92.38	0.00	0.01	7.99
2013	98.82	13.79	85.52	10.84	2.96	85.52	0.00	0.02	1.02
2014	97.94	23.23	76.77	23.23	0.00	76.77	0.00	0.06	2.02
2015	98.00	23.53	74.47	23.53	0.00	74.47	0.00	0.00	2.01
2016	99.47	15.90	83.30	6.99	9.18	55.37	27.93	0.13	0.49
2017	92.48	16.73	75.75	15.99	3.20	74.71	1.05	0.02	7.57
2018	98.28	46.25	52.03	5.48	89.13	49.09	2.94	0.01	1.74
2019	69.39	39.56	29.95	39.56	0.00	29.95	0.00	0.00	30.40
2020	94.30	25.40	68.90	25.40	0.70	59.12	7.06	0.57	4.01
2021	97.87	67.28	30.59	16.54	50.74	20.66	9.93	0.00	1.32
2022	95.65	19.50	74.35	15.46	5.85	61.07	13.28	0.09	2.50
Bardens Bay									
2014	96.87	54.20	45.80	54.20	0.00	45.80	0.00	1.20	2.03
2015	94.84	68.18	26.67	68.18	0.00	26.67	0.00	0.00	2.92
2016	96.40	63.48	33.01	63.98	0.00	33.01	0.00	0.00	3.61
2017	98.78	76.02	22.75	51.51	24.51	20.59	3.78	0.03	1.23
2018	94.96	55.58	39.39	38.78	16.80	37.67	2.45	2.19	2.68
2019	84.48	73.08	6.40	73.03	11.40	11.40	0.00	0.00	15.52
2020	95.89	81.08	16.04	63.26	1.69	14.60	0.22	0.00	4.11
2021	96.63	96.63	0.00	12.41	78.48	0.00	0.00	3.79	3.24
2022	96.31	81.41	16.07	79.72	1.69	14.90	0.00	0.01	3.57

Table 9.2 also shows in greater detail the increase in percent cover of seagrasses, with bare ground decreasing from 38.13 percent in 2011 to 6.36 percent in 2022 in the Summerland Point, Frying Pan Bay and Sugar Bay region. In the Chain Valley Bay region, bare ground decreased from 13.32 percent in 2011 to 0.58 percent in 2022. In the Crangan Bay region, bare ground decreased from 26.98 percent in 2011 to 2.50 percent in 2022. Seagrass cover in Bardens Bay has mostly been around 95 percent since 2014.

Plate 9.1 shows sand deposited on seagrasses along Summerland Point after strong onshore winds in June 2011. This event demonstrated how climatic conditions can affect seagrass coverage. It also shows how the movement of sand from deeper waters due to strong winds can increase water depth in some areas whilst decreasing water depth closer to shore as sediment is deposited. Lake Macquarie experienced strong onshore winds prior to the June 2022 survey.

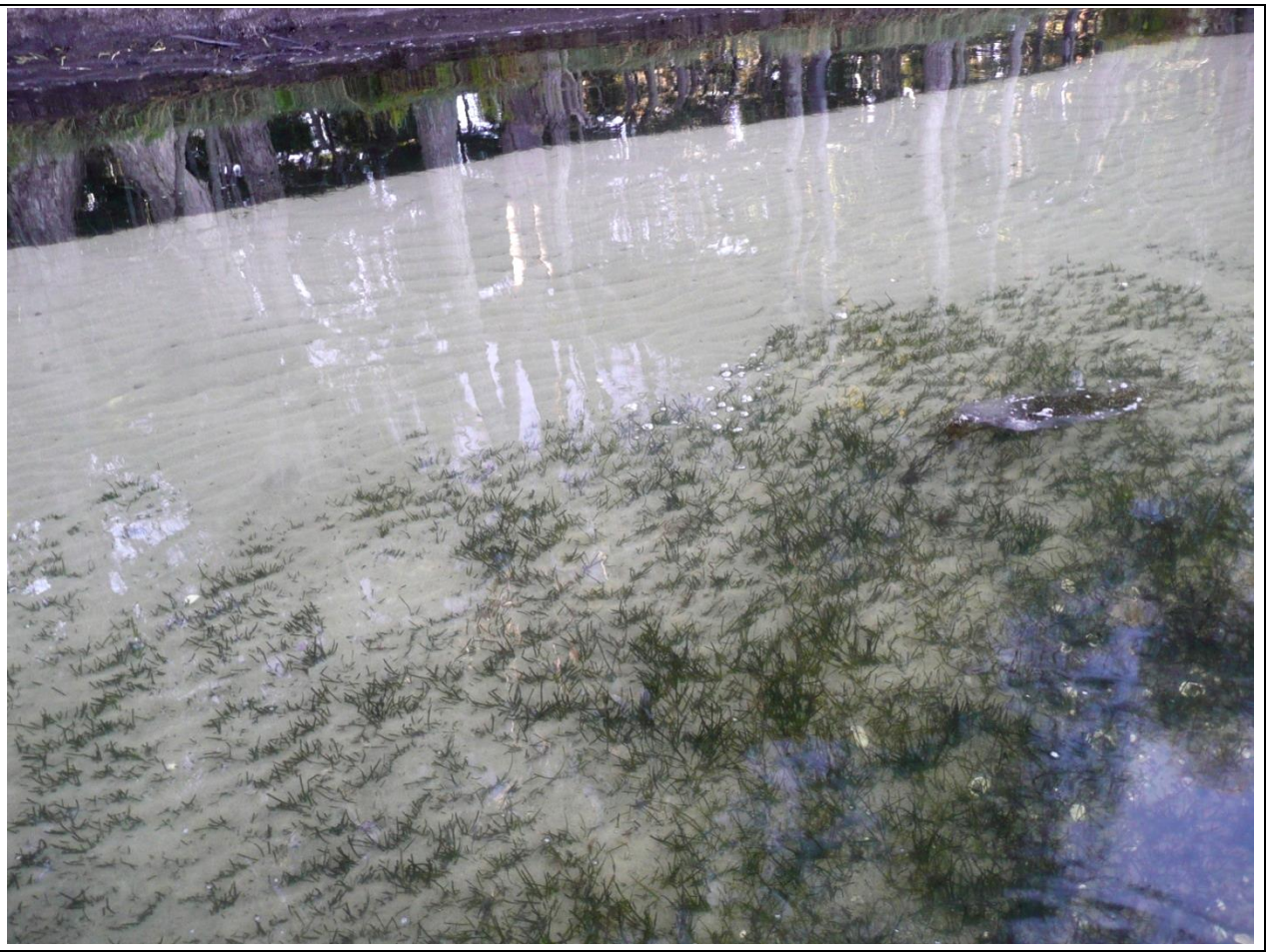

Plate 9.1 *Zostera capricorni* covered by sand along Summerland Point after strong southwesterly winds in 2011.

10. Extent of Coal Mining

Figure 10.1 shows the extent of mining up to 30 June 2022. Mining of the Fassifern seam is currently underway in the Brightwaters and Summerland Point regions. Mining ceased in the Chain Valley Bay region on 24 December 2017.

Figure 10.1 Extent of Fassifern Seam Workings from 1 July 2021 to 30 June 2022 (pink)

11. Seagrass Management Plan

The mine, in conjunction with the relevant stake holders, has developed a Seagrass Management Plan. While the colliery does not undertake secondary extraction which would cause subsidence, the purpose of the plan is to monitor any changes and identify if subsidence is the cause.

Elements of the plan require:

- That the July 2008 survey is to act as a baseline of seagrass distribution, density and condition. Since this time new seagrass transects have been added to the sampling schedule (now 50 transects in 2018-2022).
- Annual re-surveys of the permanent transect lines will be carried out.
- If, during the annual re-surveys, either:
    - Subsidence along the seagrass permanent transects greater than 150mm is detected, or
    - There are reductions in seagrass cover of 20% or more (compared to 2008 values),

then Mine Management will notify the relevant stakeholders of the event and convene a meeting to discuss the implications.

12. Discussion

In June 2022 the seagrasses in the study area were mostly not fouled with epiphytic algae or only lightly fouled. Factors affecting the levels of fouling included nutrient levels in the water and water temperature. Seagrass cover along the transects ranged from 79% to 100% of the substratum. Since 2011 seagrass cover has increased progressively. This annual increase in seagrass cover was treated with some suspicion until it was realized that almost all of the beaches in the study area were used by commercial fishermen as net landing grounds. Nets up to 3 km in length were drawn across the lake and hauled up on beaches to extract and sort the various fish species. This fishing effort caused minor damage to seagrass beds over the 150 years of commercial fishing in Lake Macquarie. Netting was stopped eventually and the minor damage to seagrass beds began to recover. This recovery process took place over the period of this study and is almost complete in most areas.

The results from the June 2022 seagrass monitoring programme show compliance to the Schedule 4 Environmental Conditions - underground mining of SSD5465 - Modification 4 in the Performance Measures table with respect to the Subsidence Impact Performance Measure for Natural Environment Biodiversity - Seagrass which display nil to minor environmental consequences due to underground mining.

The below summary of findings outline the historical basis for this compliance statement and the compliance is detailed in the table below.

Condition from SSD5465 - Mod 4	Compliance Status and Comments
Schedule 4 Environmental Conditions - underground mining Performance Measures - Natural Environment Biodiversity - Benthic Communities. Subsidence Impact Performance Measure - Minor environmental consequences, including minor changes composition and/or distribution.	Compliant - See section 16 - Conclusions
Measurements undertaken by generally accepted methods.	Compliant - See section 4 and 5
Measurements Methods fully described.	Compliant - See section 4 and 5

13. References

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Mr Stewart Ambridge	Delta Coal

Appendix 1 – Results of Analysis of Quadrat photographs comprising each Transect (Results for June 2022)

Chain Valley Bay

Transect E1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	98	2	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect E2

Long=1	**Fouling**	**Zostera**	**Cystophyllum**	**% algae**	**Pinna**	**% Bare**

Short=2	1,2,3	% cover	% cover	filamentous	Number	Ground
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E3

Long=1	**Fouling**	**Zostera %**	**Cystophyllum**	**% algae**	**Pinna**	**% Bare**
Short=2	**1,2,3**	**cover**	**% cover**	**filamentous**	**Number**	**Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
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1	1	100	0	0	0	0
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1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E4

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	10	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	1	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	20	0	0
1	1	100	0	0	0	0
1	1	90	0	10	0	0
1	1	95	0	5	0	0
1	1	90	0	10	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	10	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	5	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0

Transect E6

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	60	0	30	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	60	0	30	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	5	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	60	0	40	0	0
1	1	70	0	30	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	60	0	30	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	20	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	90	0	10	0	0
2	1	100	0	0	0	0
2	1	70	0	30	0	0

Transect E10

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	98	2	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E11

Long=1	**Fouling**	**Zostera %**	**Cystophyllum**	**% algae**	**Pinna**	**% Bare**
Short=2	**1,2,3**	**cover**	**% cover**	**filamentous**	**Number**	**Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	1	0	0	0
1	1	100	0	0	0	0
1	1	100	1	0	0	0
1	1	100	1	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	1	0	0	0
1	1	100	0	0	0	0
1	1	100	1	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E12

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E13

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E14

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect E15

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect E16

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	90	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0

1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	90	0	0	0	10
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0

Transect L1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	80	0	0	0	20
1	1	70	0	0	0	30
1	1	80	0	0	0	20
1	1	80	0	0	0	20
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	80	0	0	0	20
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Bardens Bay

Transect A1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	95	0	0	1	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	5	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	85	0	0	1	15
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	80	10	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	5	0	0	15
2	1	90	0	0	0	10
2	1	90	0	0	0	10

2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	5	0	0	0
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	90	0	0	1	10
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	85	0	0	1	15
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10

Transect A2

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	80	0	0	0	20
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	75	0	0	0	25
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	75	0	0	0	25
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect A3

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	85	0	0	0	15
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect A4

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	75	0	0	0	25
1	2	100	0	0	0	0
1	2	100	0	0	0	0

Transect A5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	98	0	0	0	2
1	1	100	0	0	1	0
1	1	98	0	0	0	2
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	75	0	0	0	25
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	60	0	0	0	40
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect A6

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	85	0	0	0	15
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	2	0	8
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	85	0	0	0	15
1	1	85	0	0	0	15
1	1	50	0	0	0	50
1	1	80	0	0	0	20

1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	2	0	0
1	2	100	0	0	0	0
1	2	90	0	0	0	10
1	2	100	0	0	0	0

Crangan Bay

Transect C1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	80	20	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	70	25	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	60	30	10	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	40	50	0	0	0
2	1	5	40	0	0	0
2	1	50	0	0	0	50
2	1	90	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	70	30	0	0	0
2	1	90	0	10	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	20	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	0
2	1	90	0	0	0	0
2	1	70	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	10
2	1	80	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0

Transect C2

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	1	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	1	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	90	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	2	100	0	0	0	0
2	2	90	0	0	0	10
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0

Transect C3

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	80	20	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	95	5	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	5	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	98	0	0	0	2
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	98	0	0	0	2
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	80	20	0	0	0
2	1	100	0	0	0	0
2	1	80	20	0	0	0
2	1	70	10	0	0	20
2	1	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	95	0	0	0	5
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	95	0	0	0	5
2	2	100	0	0	0	0

Transect C4

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	95	0	0	0	5
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	10	0	0	0
1	1	90	0	0	0	10
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	90	0	0	0	10

1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	80	20	0	0	0
2	2	100	0	0	0	0
2	2	98	0	2	0	0
2	2	100	0	0	2	0
2	2	100	0	0	0	0
2	2	100	0	0	1	0
2	2	100	0	0	0	0
2	2	90	10	0	0	0
2	2	95	0	0	0	5
2	2	95	0	0	0	5

2	2	95	0	0	1	5
2	2	95	0	0	0	5
2	2	100	0	0	0	0
2	2	98	0	2	0	0
2	2	90	0	0	0	10
2	2	95	0	0	0	5
2	2	100	0	0	0	0

Summerland Point, Frying Pan Bay, Sugar Bay

Transect T1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	80	0	0	0	20
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	60	0	0	0	40
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	1	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	80	0	0	3	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect T2

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0

Transect T3

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	95	0	0	0	5
1	1	95	0	0	0	5

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	60	0	0	0	40
2	1	40	0	0	0	60
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	60	0	0	0	40
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	2	100	0	0	0	0
2	2	100	0	0	0	0
2	2	95	0	0	0	5

Transect T4

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	60	0	0	0	30
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	60	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	90	0	0	0	10

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	100	0	0	0	0
2	1	40	0	0	0	60
2	1	50	0	0	0	50
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect T5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	90	0	0	0	10

2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	50	0	0	0	50
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20

2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect T6

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	70	0	0	0	30
1	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	1	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	40	0	0	0	60
2	1	60	0	0	0	40
2	1	50	0	0	0	50
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20

2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	50	0	0	0	50
2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20

Transect T7

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	1	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	60	0	0	0	40
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	60	0	0	0	40
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	1	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	60	0	0	0	40
2	1	60	0	0	0	40
2	1	60	0	0	0	40
2	1	10	0	0	0	90
2	1	20	0	0	0	80
2	1	40	0	0	0	60
2	1	50	0	0	0	50
2	1	40	0	0	0	60
2	1	50	0	0	0	50
2	1	60	0	0	0	40
2	1	10	0	0	0	90
2	1	20	0	0	0	80
2	1	20	0	0	0	80

Transect T8

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20

2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	1	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	70	0	0	0	30
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	20

2	1	60	0	0	0	40
2	1	70	0	0	0	30
2	1	60	0	0	0	40
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	2	80	0	0	0	20
2	2	80	0	0	0	20

Transect E8

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect E9

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect C5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	10	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	10	0	0	0
2	1	100	0	0	0	0

Transect C6

Long=1	Fouling	Zostera	Cystophyllum	% algae	Pinna	% Bare

Short=2	1,2,3	% cover	% cover	filamentous	Number	Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	5	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	5	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	1	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect F1

Long=1 Short=2	**Fouling 1,2,3**	**Zostera % cover**	**Cystophyllum % cover**	**% algae filamentous**	**Pinna Number**	**% Bare Ground**
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5

2	1	100	0	0	0	0
2	1	95	5	0	0	0
2	1	100	0	0	0	0
2	1	95	5	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect F2

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	95	0	0	0	5
2	1	80	10	0	0	10
2	1	90	0	0	0	10
2	1	80	20	0	0	0
2	1	80	10	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	10	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	70	0	0	0	30
2	1	70	0	0	0	30
2	1	50	0	0	0	50
2	1	50	0	0	0	50
2	1	60	0	0	0	40
2	1	60	0	0	0	40
2	1	65	0	0	0	35
2	1	75	0	0	0	25
2	1	70	0	0	0	30
2	1	75	0	0	0	25
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	80	0	0	0	15
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	75	0	0	0	25
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect F3

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	95	0	0	0	5
2	1	98	0	0	0	2
2	1	95	5	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	98	0	0	0	2
2	1	100	0	0	0	0
2	1	98	0	0	0	2
2	1	98	0	0	0	2
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	90	0	0	0	10

Transect F4

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	1	5
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	1	10

2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	70	20	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	80	0	0	0	20
2	1	85	0	0	0	15
2	1	85	0	0	0	15

Transect F5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	80	0	0	0	20

2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	85	10	0	0	5
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	10	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	70	0	0	0	30
2	1	65	0	0	0	35
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	85	0	0	0	15

2	1	95	0	0	0	5
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	85	0	0	0	15
2	1	85	0	0	1	15
2	1	80	15	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	85	0	0	0	15
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10

Transect F6

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0

2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	65	0	0	0	35
2	1	75	0	0	0	25
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5

Transect F7

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
2	1	75	0	0	0	25
2	1	70	0	0	0	30
2	1	85	10	0	0	5
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	75	0	0	0	25
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	85	0	0	0	15

2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	85	0	0	0	15
2	1	75	0	0	0	25
2	1	80	0	0	0	20
2	1	65	0	0	0	35
2	1	85	0	0	0	15
2	1	80	0	0	0	20
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	65	0	0	0	35
2	1	50	0	0	0	50
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5

2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	90	0	0	0	10
2	1	95	0	0	0	15
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect S1

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	10	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	10	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

Transect S2

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	75	0	0	0	25
1	1	80	0	0	0	20
1	1	80	0	0	0	20
1	1	90	0	0	0	10
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	50	0	0	0	50
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	0	0	10
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	2	100	0	0	0	0
1	2	90	0	0	0	10
1	2	50	0	0	0	50
1	2	60	0	0	0	40
1	2	85	0	0	0	15
1	2	100	0	0	0	0

Transect S3

Transect S3

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	1	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	90	0	10	0	10
1	1	90	0	10	0	10
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	70	0	0	0	30
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	80	0	0	0	20
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect S4

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	1	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

Transect S5

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	85	0	0	0	15
1	1	95	0	0	0	5
1	1	100	0	0	0	0
1	1	95	0	0	0	5
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	90	0	0	0	10
1	1	95	0	0	0	5
1	1	95	0	0	0	5
1	1	50	0	0	0	50
1	1	85	0	0	0	15
2	1	50	0	0	0	50
2	1	50	0	0	0	50
2	1	60	0	0	0	40
2	1	75	0	0	0	25
2	1	0	0	0	1	100
2	1	40	0	0	0	60
2	1	65	0	0	0	35
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0

2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	75	0	0	0	25
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	80	0	0	0	20
2	1	80	0	0	0	20
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	65	0	0	0	35
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	100	0	0	0	0
2	1	95	0	0	0	5
2	1	95	0	0	1	5
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	90	0	0	0	10
2	1	95	0	0	0	5
2	1	90	0	0	0	10
2	1	85	0	0	0	15
2	1	90	0	0	0	10
2	1	100	0	0	0	0
2	1	85	0	0	0	15
2	1	95	0	0	0	5
2	1	95	0	0	0	5
2	1	85	0	0	0	15
2	1	80	0	0	0	20
2	1	75	0	0	0	25
2	1	65	0	0	0	35
2	1	0	0	0	0	100
2	1	0	0	0	0	100

2	1	0	0	0	0	100
2	1	0	0	0	0	100
2	1	0	0	0	0	100

Transect S6

Long=1 Short=2	Fouling 1,2,3	Zostera % cover	Cystophyllum % cover	% algae filamentous	Pinna Number	% Bare Ground
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	95	5	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0

1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	100	0	0	0	0
1	1	80	0	0	0	20
1	1	90	0	0	0	10
1	2	100	0	0	0	0
1	2	100	0	0	0	0
1	2	100	0	0	0	0
2	1	100	0	0	0	0
2	1	95	5	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0
2	1	100	0	0	0	0