NIWA
Taihoro Nukurangi

Community survey of cockles (*Austrovenus stutchburyi*) in Pauatahanui Inlet, Wellington, December 2016

Prepared for the Guardians of Pauatahanui Inlet

7 April 2017

Authors/Contributors:
Keith Michael
John Wells

For any information regarding this report, please contact:

Keith Michael
Fisheries Scientist
Coastal
+64-4-386 0586
k.michael@niwa.co.nz

National Institute of Water & Atmospheric Research Ltd
301 Evans Bay Parade, Greta Point
Wellington 6021
Private Bag 14901, Kilbirnie
Wellington 6241
New Zealand

Phone +64-4-386 0300
Fax +64-4-386 0574

NIWA Client Report No:	2017077WN
Report date:	7 April 2017
NIWA Project:	VSJ17302/K.Michael_GOPI

Pauatahanui Inlet from the Paremata Bridge. Downloaded from http://www.livingwatersdoco.co.nz/images/support_hills.jpg, courtesy of the Pauatahanui Inlet Community Trust.

Contents

Tables

Figures

Quality Assurance Statement		
	Reviewed by:	Reyn Naylor
	Formatting checked by:	P Allen
	Approved for release by:	Dr Rosemary Hurst

Executive summary

The Guardians of Pauatahanui Inlet and community volunteers have carried out nine triennial surveys of cockles in Pauatahanui Inlet (Porirua Harbour) since 1992. These surveys provide an important time-series of data to monitor trends in the abundance and the size structure of cockles in the intertidal zone. These data also provide a way of monitoring the long-term health of environmental factors in the Inlet that may affect the sustainability of cockle populations.

These surveys use the same design and methods, allowing site, transect, and tide level comparisons between surveys. This report summarises the results of the ninth survey undertaken in December 2016 and updates the 2013 survey report that provided an in-depth context and discussion of previous surveys.

A number of factors may affect the comparability of the 2016 population estimates to previous surveys. The levels of sediment deposition observed in the intertidal areas of the inlet from the November 2016 floods are likely to have caused high cockle mortality and ongoing physiological effects. These events probably reduced cockle density and therefore population size. Moreover, they also resulted in the postponement of the survey, and fewer experienced volunteers and transect leaders then were available to maintain sampling standards. Because of these issues two transects were not able to be completed.

The survey data showed the first downward trend in the cockle population size since 2001. Total population size increased 87% between 1995 (180 million cockles) and 2013 (336 million cockles). However, the population size of cockles declined 14% between 2013 and 2016 (288 million cockles). In 2016, cockle counts per quadrat ranged from zero to a maximum of 176 per 0.1 m^2 (higher than in any of the previous surveys), but were mostly lower than in 2013.

Adult (greater than 10 mm in length) cockle densities have remained relatively high at Mana, Brown's Bay, Pauatahanui, Motukaraka West and Kakaho since 1998. Trends in adult densities over that time show increases at Mana and Motukaraka West. They remained similar fluctuating slightly without trend at Brown's Bay, Duck Creek, Bromley, Pauatahanui, Motukaraka, Kakaho and Camborne, and decreased at Seaview Road. Juvenile cockle densities show broadly similar trends, increasing over time. Juveniles (10 mm and less in length) cockles have been consistently high at Bromley and Pauatahanui. Trends in juvenile densities have increased since 1998 at Mana, Bromley, Pauatahanui, Motukaraka, and Motukaraka West, but remained similar, fluctuating slightly without trend at Brown's Bay, Duck Creek, Kakaho, and Camborne, and decreased at Seaview Road.

The distributions of median cockle densities were broadly similar at high to lower-mid tide between 2013 and 2016, and densities were lower at low tide in 2016. The biggest difference at all tidal heights was the reduction in the numbers of high counts. The most significant declines at the high tide level were at Pauatahanui; at lower-mid tide at Pauatahanui, Motukaraka West, and Kakaho; and at the low tide level at Brown's Bay, Duck Creek, Pauatahanui, Motukaraka, and Motukaraka West.

The proportion of juvenile cockles in the total population has increased since 1992 when it was 1%, to 16.2% in 2010, declined to 12% in 2013, and increased markedly to the highest of any survey (17.4%) in 2016. Fifty one percent of the cockles at transect 19 (Motukaraka) were juveniles.

The size structure of cockles at Motukaraka, Pauatahanui and Bromley showed relatively high numbers of small sized cockles suggesting heightened recent recruitment (the settlement and survival of juvenile cockles). The largest numbers of juvenile cockles were at the same sites as adults, suggesting conspecific settlement. Cockle size frequencies between 1998 and 2016 generally show increasing proportions of large cockles with increasing distance from high tide to low tide marks.

The negative trend in the cockle population size in 2016 probably reflects changes in the environmental conditions in Pauatahanui Inlet, and the large flood events produced conditions that are less favourable for cockles.

Figure 1-1: Flooding around Pauatahanui Inlet, November 2016 (Image courtesy of Jack Scott, New Zealand Drones Aerial Photography (http://www.nzdrones.nz).

1 Introduction

Estuaries provide a high level of ecosystem services and are highly vulnerable to anthropogenic (man-made) effects. Porirua Harbour, encompassing Pauatahanui Inlet and the Onepoto Arm of Porirua Harbour, is the largest estuary in the Wellington region. More information on the importance of estuaries and Pauatahanui Inlet is given in the 2010 cockle survey report (Michael 2011).

A community group recognised the ecological significance of Pauatahanui Inlet and founded the Guardians of Pauatahanui Inlet (GOPI) in 1991. Stakeholders including the Porirua City Council, the Greater Wellington Regional Council, the Wellington City Council, Ngāti Toa, and community groups such as GOPI and Forest and Bird formed a group to facilitate the conservation and restoration of Porirua Harbour. Pauatahanui Inlet is ranked second for conservation importance in the Wellington region after the Manawatu River (Todd et al. In prep.).

Concerns about ecosystem health, environmental threats, and sustainable development have led to increased efforts to monitor and assess the status of estuarine ecosystem health. Determining estuarine health is difficult, as it requires knowledge of the complex ecosystem interactions, and good time-series data. Increasingly, ecological indicators or indicator species provide simple measures of changes in ecological processes or components of ecosystems. The GOPI surveys of intertidal cockles undertaken by community volunteers provide an important time-series of information for monitoring the health of Pauatahanui Inlet. Significant, long-term decrease in the abundance and size structure of cockles, a keystone species in this intertidal habitat, is likely to represent changes to the ecological structure and probable loss of ecosystem function.

The biology of cockles (*Austrovenus stutchburyi*) was summarised in the 2010 cockle survey report (Michael 2011), and further information is available from the Ministry for Primary Industries website http://www.fish.govt.nz/en-nz/Search/default.htm?l=all&q=cockles and fisheries plenary http://fs.fish.govt.nz/Doc/23554/14_COCintro_2014%20FINAL.pdf.ashx. Further, an overview of some of the early surveys of Pauatahanui Inlet (1971 and 1976–1980) are retained within this report

1.1 The Guardians of Pauatahanui Inlet cockle surveys

The Guardians of Pauatahanui Inlet and community volunteers have completed nine surveys of the cockle population in the Inlet. NIWA has assisted by analysing the survey data and updating reports containing the summaries of results. All survey reports are available, as downloadable PDFs, on the GOPI website http://www.gopi.org.nz/cockle-survey-2.

The first GOPI intertidal cockle survey was undertaken in 1992 (Figure 1–2), sampling most of the survey sites sampled in 1976 (Figure 1–3) by Richardson et al. (1979), this time with the assistance of community volunteers, and overseen by NIWA (Grange 1993). That survey found a decrease in the numbers of cockles in the Inlet since 1976, and indicated that there were fewer adults (larger than 10 mm shell length) in the population. The most pronounced decreases were around the south-eastern shores of the Inlet at Brown's Bay adjacent to the early residential development of Whitby (Estcourt & Grange 1976). Differences in population size and cockle density may also have been due to other factors such as heightened natural mortality and differences in the two survey designs.

A second GOPI survey, undertaken in November 1995, sampled the same sites using the same methodology as the 1992 survey, and aimed to document any changes in the population. Those results indicated that the population decline had continued (Grange et al. 1996). Subsequent surveys, in November 1998 (Grange & Crocker 1999), November 2001 (Grange & Tovey 2002), November 2004 (Horn et al. 2005), November 2007 (Michael 2008) used the same sites and methods as the 1992 and 1995 surveys.

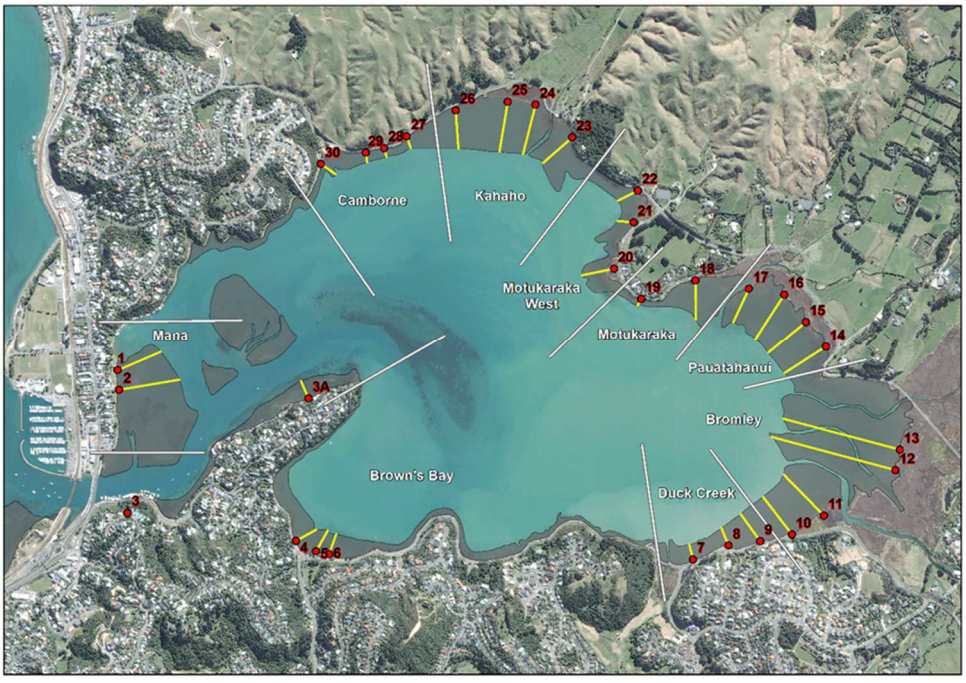


Figure 1-1: Location of the 31 transects in Pauatahanui Inlet sampled for intertidal cockle densities and population size structure by the Guardians of Pauatahanui Inlet (GOPI), 1992–2016.

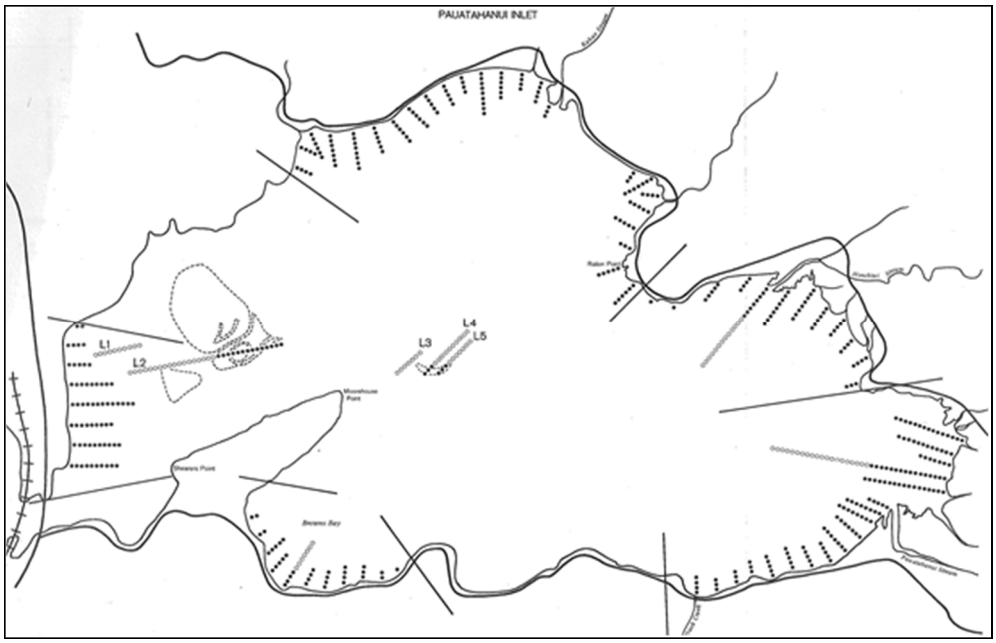


Figure 1-2: 1976 survey stratification of Pauatahanui Environmental Programme (Healy 1980). Pauatahanui Inlet was divided into seven sectors, and intertidal and subtidal zones were sampled in five sectors. Straight lines delineate sectors, filled circles show the location of intertidal transects, and open circle the location of subtidal transects. Figure reproduced from Richardson et al. (1979).

The total population of cockles in Pauatahanui Inlet was estimated to be between 438 and 608 million individuals in 1976, but declined to between 187 and 257 million in 1992, and then to between 146 and 214 million in 1995 (Grange et al. 1996). More recent estimates in 1998 (215–299 million, Grange & Crocker 1999), 2001 (182–238 million, Grange & Tovey 2002), 2004 (194–246 million, Horn et al. 2005), and in 2007 (185–281, Michael 2008) were similar to previous surveys and suggested that the population had stabilised. The 2010 estimate of the cockle population (200–354 million cockles, Michael 2011) was slightly higher than for previous surveys, and higher again in 2013 (271–401 million cockles, Michael & Wells 2014) than in 2010.

The 1998 and 2001 surveys recorded a greater overall abundance of juveniles (10 mm in length and smaller) compared with the 1992 and 1995 surveys. The 2004 estimate was twice that in 1998 and 2001. The 2007 survey found similar numbers of juvenile cockles to 2004. The numbers of juvenile cockles increased further in 2010. Assuming recruitment and mortality remained near long-term mean (average) levels, there was negligible net migration of juveniles to subtidal areas, and growth rates were typically fast, the higher recruitment of juveniles observed in 2010 probably led to the increase in the cockle population observed in 2013. The numbers of juvenile cockles declined slightly in 2013.

Since 2008, cockle survey reports (Michael 2008, 2011; Michael & Wells 2014) represent a living document that is a depository for information on cockles in Pauatahanui Inlet. This report updates the 2013 cockle survey report (Michael & Wells 2014) with the results of the ninth GOPI cockle survey, completed in December 2016. This survey used the same survey design, sites, and methods as previous surveys.

2 Methods

Community volunteers have undertaken intertidal surveys of the cockle population in Pauatahanui Inlet since 1992, and most recently in 2016. These surveys sampled the same transects (Figure 1–2) and used similar methods. Because these are triennial surveys, briefing for the 2016 team leaders included survey and sampling methods, and highlighted potential sampling issues. Each transect was sampled by 4-5 people, one of whom was an experienced team leader. Team leaders guided volunteers, and monitored sampling and the recording of data. Volunteers were each provided with sheets that explained the sampling methods and were shown the location of sites (Appendices A and B for instruction and sampling sheets), the team leader's check list (Appendix C), and tally sheets to record cockle lengths (Appendix D).

The survey comprised 31 fixed transects (see Figure 1–2). Transect 30 was not sampled in 2010, 2013 or 2016 because this area is now a launching place for jet skis and the beach shows relatively high degradation because of the vehicle traffic so would not be comparable to previous years. Transects were located using numbered stakes deployed before the survey and transects were orientated towards landmarks on the opposite shore of the Inlet (see Appendix B for details). The details used to locate each of these transect markers are given in Appendix E. Transects were grouped by site (Table 2–1). Each transect was sampled at four tidal heights (high (HT), upper-mid (UMT), lower-mid (LMT), and low (LT) tides), determined by the number of adult paces from the location marker (see Appendix E) and marked with a stake to provide a reference for sampling. Samples were taken from three haphazardly placed quadrats (0.1 m^2), on or about 5 m either side of transects (recorded as A, B, and C), at each tide height.

Table 2-1: The grouping of transects sampled within each site in Pauatahanui Inlet.

Site	Transects	Site	Transects
Mana	1–3	Pauatahanui	14–17
Seaview Road	3a	Motukaraka	18–19
Brown's Bay	4–6	Motukaraka West	20–22
Duck Creek	7–9	Kakaho	23–26
Bromley	10–13	Camborne	27–30

These replicate quadrats were sampled to a depth of about 7 cm and the entire sample was sieved. In 2016, the survey used sieves loaned from Ngāti Toa (5 mm mesh size) to standardise sampling methods between the Onepoto Arm of Porirua Harbour and Pauatahanui Inlet. Previous surveys used kitchen colanders with mesh sizes of 3–5 mm (John Wells and Neil Bellingham, GOPI, pers. comm.). Volunteers flushed sediments and fines through the sieves using seawater. Previous surveys sampled cockles down to 2 mm in length.

Volunteers sorted all live cockles into containers, measured them for length (along the anterior posterior axis) to the nearest millimetre using rulers, and returned them to the intertidal seabed. They used sampling sheets (Appendix C) to record tallies of lengths from each sample. For images of these activities see the 2010 cockle survey report (Michael 2011).

2.1 Density and population estimates

We use counts of cockles from quadrats and tallies from multiple quadrats to estimate cockle densities at each site, transect, and tidal height. We compare density estimates with those from the previous eight GOPI surveys (1992–2013). The fixed sampling locations have been consistent over space and time, and changes in cockle density are be compared at the spatial scales of transect, site and tidal height, as well as by year.

Previous estimates of the cockle population size in Pauatahanui Inlet used the mean density calculated from the counts of 0.1 m^2 quadrats (up to 372 samples) scaled to the size of the intertidal area (as if a single stratum) which was assumed to be about 1 km^2 (Richardson et al. 1979) to remain consistent with previous surveys (Method 1). We used a NIWA built program SurvCalc (Francis and Fu 2012) to estimate population size for Method 1. This method is likely to overestimate the variance in the estimate of population size. Method 2 is sensitive to transect length and changes in the distribution of cockle density over time. We estimated mean cockle density from the three quadrats at each tidal height and from the means of each of the four tidal heights to give the mean cockle density for each transect. The transect mean is adjusted (weighted) for transect length (Figure 2–1) using the proportion of the total transect length (length of all transects combined) as a proxy for proportion of survey area. The estimate of mean population size is the sum of the weighted averages from all 31 transects (31 transects, but 30 in 2010 and 2013 and 28 in 2016). The coefficients of variation (CVs) were estimated as the standard deviation of the unweighted means of all transects (in any one year) divided by the square root of the number of transects.

Because of the differences in the numbers of quadrats sampled in recent surveys, we ran one-way analysis of variance (ANOVA) on means, standard deviations, and sample sizes to test for differences between population estimates among years as the 28–31 transects constitute a relatively large sample. Multiple comparisons amongst survey estimates used the Holm-Sidak test, considered to have high power to detect differences amongst paired comparisons. We discuss the methods used to estimate population size and to compare survey estimates in section 4.1.2.

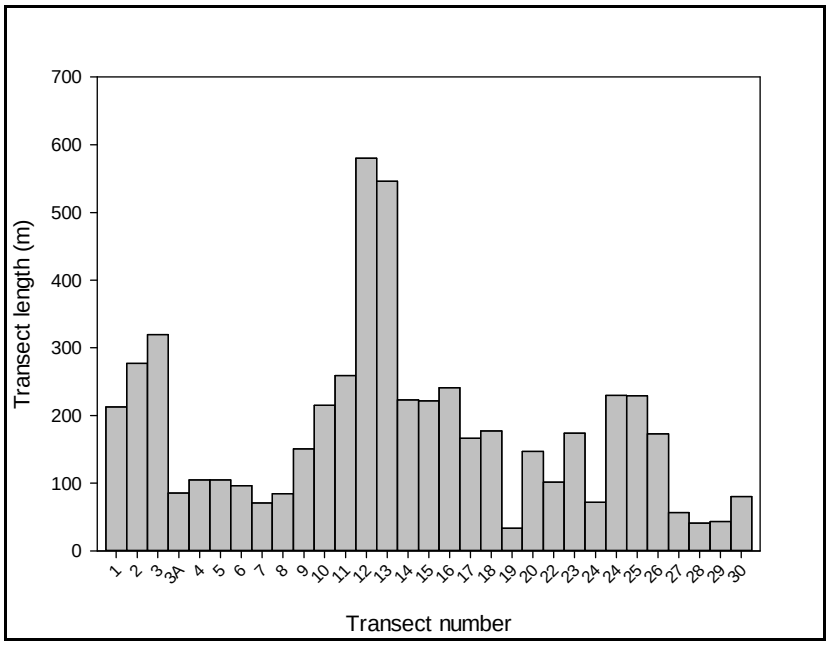


Figure 2-1: Approximate transect lengths estimated from distances between high and low water from a map of the intertidal zone.

2.2 Size structure of cockle populations

Shell length of cockles is defined as the longest distance along the anterior–posterior axis (Figure 2–1), and recorded as the lower whole millimetre. We aggregated lengths recorded from each quadrat to provide estimates of population size structure by tidal heights, transects, and sites. These data were summarised as histograms and cumulative percentage frequency curves so that they could be compared visually for spatial and temporal differences (e.g. differences between sites for each tidal height).

The size structure of populations was further divided into juveniles (defined as individuals 10 mm or smaller in length), based on Larcombe (1971) and Richardson et al. (1979) and adults.

We compare cockle size structures amongst surveys.

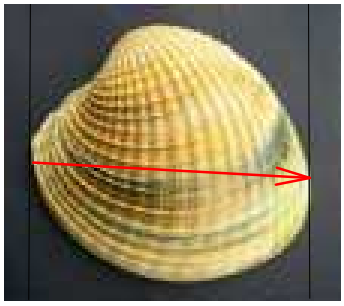


Figure 2-2: Cockle showing the length measurement along the anterior–posterior axis.

3 Results

GOPI postponed the 2016 survey from 27 November to 11 December because of the 13 November earthquake and the heavy rain on November 14–15. Because of this postponement, fewer volunteers and transect leaders were available on the day of the survey than in previous years. Seventeen of the thirty one transects were completed on the first day (Table 3–1). Transect 30 was dropped from the survey in 2010 because the site has been degraded and not comparable to previous years. All remaining thirty transects except transects 3a and 18 were sampled between the 14th and 30th of December 2016 (Table 3–1). Transect 18 was abandoned because of excessive silt, and transects 3a was not sampled due to lack of time.

Table 3-1: Transects completed on the day, and completion dates for remaining transects.

Completion date	Station
11/12/2017	2, 4, 7, 8, 9, 10, 11, 12, 14, 15, 17, 20, 21, 22, 23, 24, 26
14/12/2017	25, 27, 28, 29
15/12/2017	1, 3
17/12/2017	5, 6
18/12/2017	16
19/12/2017	19
30/12/2017	13
Not sampled	3a, 18, 30

Fewer quadrats (336) and transects (28) were sampled in 2016, compared with 2013 (360 and 30 respectively). The November 2016 flood putatively increased mud deposition on the northern shore and reduced the intertidal distance on the shore at Transects 27–29.

The lack of experienced transect leaders at several sites (transects 8, 9, 10, 15, 19, 21 and 26) increased the likelihood that some of the shellfish in the 0–10 mm range identified as cockles may have been misidentified nutshells (*Nucula hartvigiana*). Significant misidentification of nutshells as cockles could bias the numbers of juvenile cockles upwards. At the other transects that could reasonably be predicted to have a considerable population of nutshells samples were taken by experienced volunteers who could be relied on to know the difference.

Appendix F gives the numbers of cockles sampled in each quadrat in 2016. Total survey counts of cockles increased 70.5% between 2001 and 2013, and decreased 20.8% between 2013 and 2016. The total numbers of cockles sampled at each transect between 1998 and 2016 showed temporal variation, with total counts generally increasing over successive surveys until 2013 (Figure 3–1). In 2016, total survey counts were much more variable with some transects recording relatively high total counts while others near historical lows (see red stars representing the 2016 counts against all survey means and 95% confidence intervals in blue, Figure 3–1). Most transects had markedly lower total counts in 2016 than in 2013 (Figure 3–2).

Total cockle counts over surveys from 1998 to 2016 show marked spatial trends (Figure 3–1). Consistently high counts were recorded from Mana and Bromley to Motukaraka West. Consistently low counts were recorded from Brown's Bay and Camborne sites.

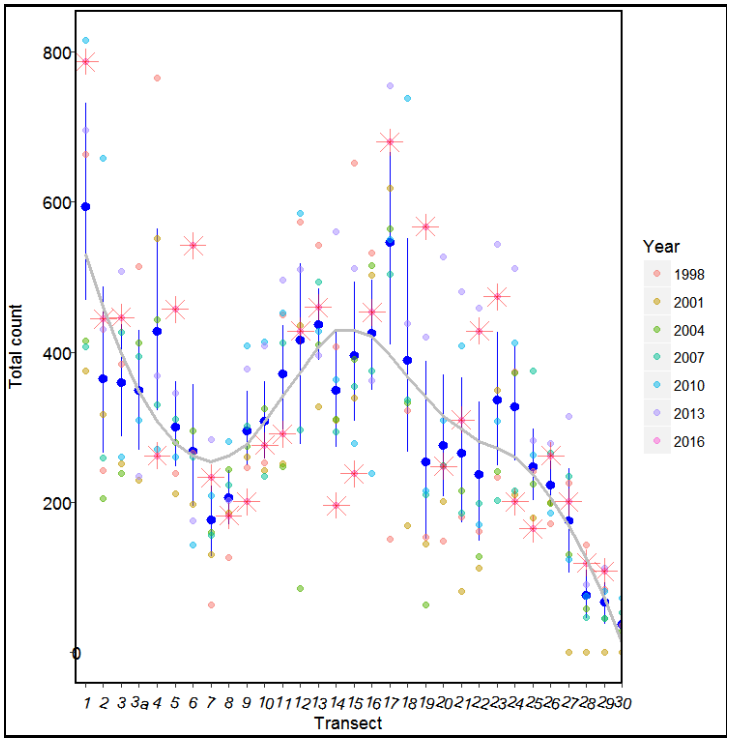


Figure 3-1: The total numbers of cockles (adults and juveniles combined) sampled from each transect in surveys between 1998 and 2016. Counts shown as coloured filled circles, 2016 counts shown as red stars, means for all years (dark blue filled circles) and 95% confidence intervals as blue lines. Smoothed grey line shows a spatial trend across Pauatahanui Inlet (along transects averaged across all years). Transects 3a, 18, and 30 were not sampled in 2016.

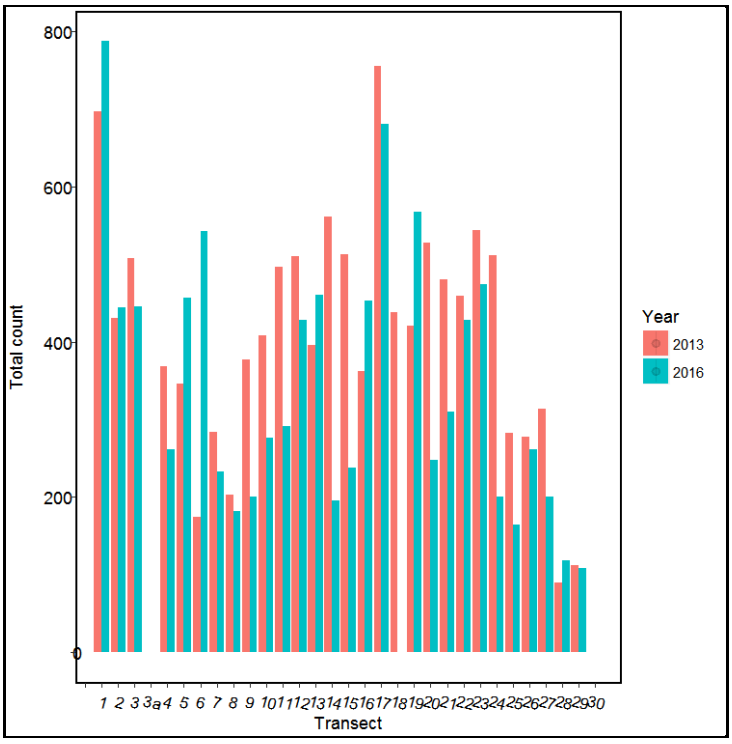


Figure 3-2: The total numbers of cockles (adults and juveniles combined) sampled from each transect in the 2013 and 2016 surveys. Transects 3a, 18, and 30 were not sampled in 2016.

3.1 Cockle densities and population size

In 2016, cockle counts per quadrat ranged from zero to 176 per 0.1 m^2 (at transect 17, low tide, Pauatahanui). The maximum count was higher than for 2013, 153 per 0.1 m^2 (at transect 17, lower-mid tide). The maximum count was also higher than for previous maximum densities recorded in 2010 (150 per 0.1 m^2 at transect 1, upper-mid tide, Mana), in 2007 (112 per 0.1 m^2 at transect 1, low-mid tide Mana), and in 2004 (95 per 0.1 m^2 at transect 1, upper-mid tide, Mana). No cockles were recorded from less than 2% of quadrats sampled in 2016, similar to 2013, and fewer than in 2010 (6%) and 2007 (5%). Mean cockle density in 2016 (28.8 per 0.1 m^2, 99% CI 25.9–31.6) was lower than in 2013, but higher than for previous GOPI surveys since in 1992, see Table 3–2.

Figure 3.1 shows total counts of all sized cockles 1998–2016 by transect, and a smoothed trend (grey line showing a spatial trend across Pauatahanui Inlet, i.e., counts are averaged by transects across all years in sequence along the Inlet coastline) showing whether on average each transect has recorded relatively high or low counts. In 2016, counts from some transects (shown in red stars) were below their long-tern average (transects 4, 8–11, 14, 15, 24, and 25) while others were higher.

Table 3-2: Densities of cockles in Pauatahanui Inlet and population estimates between 1976 and 2013.

Cockles	1976	1992	1995	1998	2001	2004	2007	2010	2013	2016
Method 1										
No. transects	75	30	30	31	31	31	31	31	30	28
Max number per quadrat	280	168	191	273	118	95	112	150	153	176
Total counted	15 633	7 976	6 484	9 264	7 807	8 124	8 653	10 290	12 080	9 569
Mean number per quadrat	52.3	22.2	18	25.7	19.9	21.8	23.3	28.6	33.6	28.8
99% CI on mean	43.8-60.8	18.7-25.7	14.6-21.4	22.7-28.7	17.6-22.1	19.8-23.86	21.4-25.2	25.9-31.3	30.9-36.2	25.9–31.6
Mean population (millions)	523	222	180	257	199	218	233	286	336	288
C.V.	NA	NA	NA	0.06	0.06	0.05	0.04	0.05	0.04	0.05
Population range (millions)	438-608	187-257	146-214	227-287	177-221	198-238	214-252	259-313	309-362	259–316
Method 2										
Mean population (millions)	NA	NA	NA	316	240	236	270	335	369	309
C.V.	NA	NA	NA	0.04	0.03	0.03	0.03	0.03	0.03	0.03
Population range (millions)	NA	NA	NA	310-321	236-244	233-239	266-274	329-340	364-374	304-314

Differences in population estimates between surveys were significant ($p<0.001$). Survey estimates of the cockle population size from Method 1 show an upward trend from 2007 to 2013, and a decrease between 2013 and 2016 (Table 3–1, Figure 3–3). A second estimate of the cockle population size using Method 2 where the mean density of cockles at each transect is scaled (weighted) by transect length (Figure 3–4) showed a similar trend to Method 1 (Table 3–1, Figure 3–3); however, the decline between 2013 and 2016 was slightly greater. The coefficients of variation (CVs) of the survey estimates consistently declined from 0.06 in 1998 to 0.04 in 2013, but increased to 0.05 in 2016 using Method 1. Estimates using Method 2 also declined from 0.04 to 0.03 until 2013, and similar (0.03) in 2016 (Table 3–1).

Pairwise multiple comparisons for significant differences among population estimates between years (Holm-Sidak method) undertaken at a significance level of 0.05 are given in Table 3–3. The estimates of cockle population size were significantly higher in 2013 than in 2001, 2004, and 2007 using method 1, and the population size in 2013 was significantly higher than in all other years 1998–2010 using Method 2. Cockle population size was significantly lower in 2016 than in 2013, similar to that in 2010 using method 1 and lower using method 2 (Table 3–3).

Population estimates increased between 55% and 87% (Methods 2 and 1 respectively) between the population low in 1995 and 2013. However, the population size of cockles declined between 14% and 16% (Methods 2 and 1 respectively) from 2013 to 2016. We expect the precision of the estimates shown by the 99% confidence intervals (Figure 3–3) to vary between surveys, and is typical of time-series of survey data from populations with relatively patchy distributions.

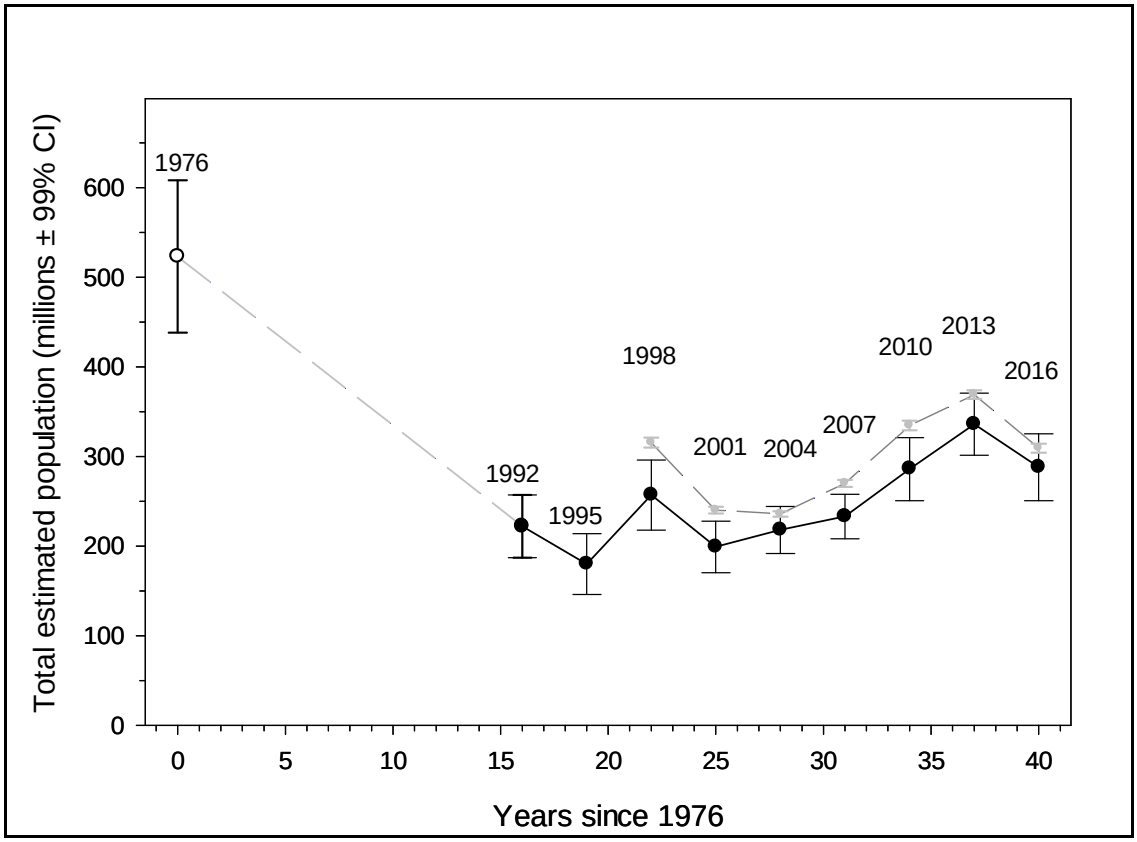


Figure 3-3: Estimates of total cockle population size and 99% confidence intervals for Pauatahanui Inlet, 1976–2013. The initial survey in 1976 (Richardson et al. 1979) used a different survey design, surveys since 1992 carried out by the Guardians of Pauatahanui Inlet have used the same survey design and methods. Estimates using previous method (Method 1) shown in black and estimates using weighting factors for transect length (Method 2) are shown in grey.

Table 3-3: The results from all pairwise multiple comparison procedures (Holm-Sidak method) undertaken for survey estimates 1998 to 2016 using Methods 1 and 2 at a significance level of 0.05. Significant differences shown in bold

Method 1					Method 2				
Years	Diff of means	t	P	P<0.050	Years	Diff of means	t	P	P<0.050
2004 vs. 2007	**19.22**	**5.024**	**<0.001**	**Yes**	**2013 vs. 2004**	**9.942**	**10.298**	**<0.001**	**Yes**
2004 vs. 2001	**19.691**	**4.966**	**<0.001**	**Yes**	**2013 vs. 2001**	**9.24**	**9.241**	**<0.001**	**Yes**
2004 vs. 1998	**16.828**	**4.398**	**<0.001**	**Yes**	**2013 vs. 2007**	**7.426**	**7.693**	**<0.001**	**Yes**
2004 vs. 2010	**14.82**	**3.873**	**0.002**	**Yes**	**2013 vs. 2016**	**7.593**	**7.666**	**<0.001**	**Yes**
2004 vs. 2016	**13.681**	**3.484**	**0.009**	**Yes**	**2010 vs. 2004**	**6.809**	**7.111**	**<0.001**	**Yes**
2013 vs. 2001	10.765	2.694	0.108	No	**1998 vs. 2004**	**5.899**	**6.161**	**<0.001**	**Yes**
2013 vs. 2007	10.295	2.669	0.109	No	**2010 vs. 2001**	**6.107**	**6.155**	**<0.001**	**Yes**
2004 vs. 2013	8.926	2.314	0.255	No	**1998 vs. 2001**	**5.198**	**5.238**	**<0.001**	**Yes**
2013 vs. 1998	7.902	2.048	0.417	No	**2010 vs. 2016**	**4.46**	**4.538**	**<0.001**	**Yes**
2013 vs. 2010	5.894	1.528	0.803	No	**2010 vs. 2007**	**4.294**	**4.484**	**<0.001**	**Yes**
2016 vs. 2001	6.01	1.479	0.808	No	**2013 vs. 1998**	**4.043**	**4.188**	**<0.001**	**Yes**
2016 vs. 2007	5.539	1.41	0.822	No	**1998 vs. 2016**	**3.55**	**3.613**	**0.003**	**Yes**
2010 vs. 2001	4.871	1.228	0.892	No	**1998 vs. 2007**	**3.384**	**3.534**	**0.004**	**Yes**
2013 vs. 2016	4.756	1.201	0.876	No	**2013 vs. 2010**	**3.133**	**3.245**	**0.009**	**Yes**
2010 vs. 2007	4.401	1.15	0.867	No	2007 vs. 2004	2.515	2.627	0.059	No
2016 vs. 1998	3.147	0.801	0.963	No	2016 vs. 2004	2.349	2.39	0.097	No
1998 vs. 2001	2.863	0.722	0.958	No	2007 vs. 2001	1.814	1.828	0.296	No
1998 vs. 2007	2.392	0.625	0.952	No	2016 vs. 2001	1.647	1.62	0.359	No
2010 vs. 1998	2.008	0.525	0.936	No	2010 vs. 1998	0.91	0.95	0.715	No
2016 vs. 2010	1.139	0.29	0.948	No	2001 vs. 2004	0.701	0.707	0.729	No
2007 vs. 2001	0.471	0.119	0.906	No	2007 vs. 2016	0.166	0.169	0.866	No

3.1.1 Cockle densities by site

Figure 3–4 shows the numbers of cockles per quadrat and median numbers of cockles recorded at each site in 2013 and 2016. Median densities were broadly similar: however, Mana, Brown's Bay and Motukaraka had higher median densities and Pauatahanui and Motukaraka West were lower. The ranges of cockle numbers per quadrat (shown by the coloured boxes) at each site were generally similar, as were the numbers and ranges of high counts.

Boxplots the cockle numbers per quadrat by site and year show similar trends to the population estimates with medians generally increasing until 2013 and declining thereafter. The large numbers of outliers (represented by filled black circles) shows high variation in quadrat densities at each transect and year reflecting high small-spatial scale variation in the distribution of cockle densities.

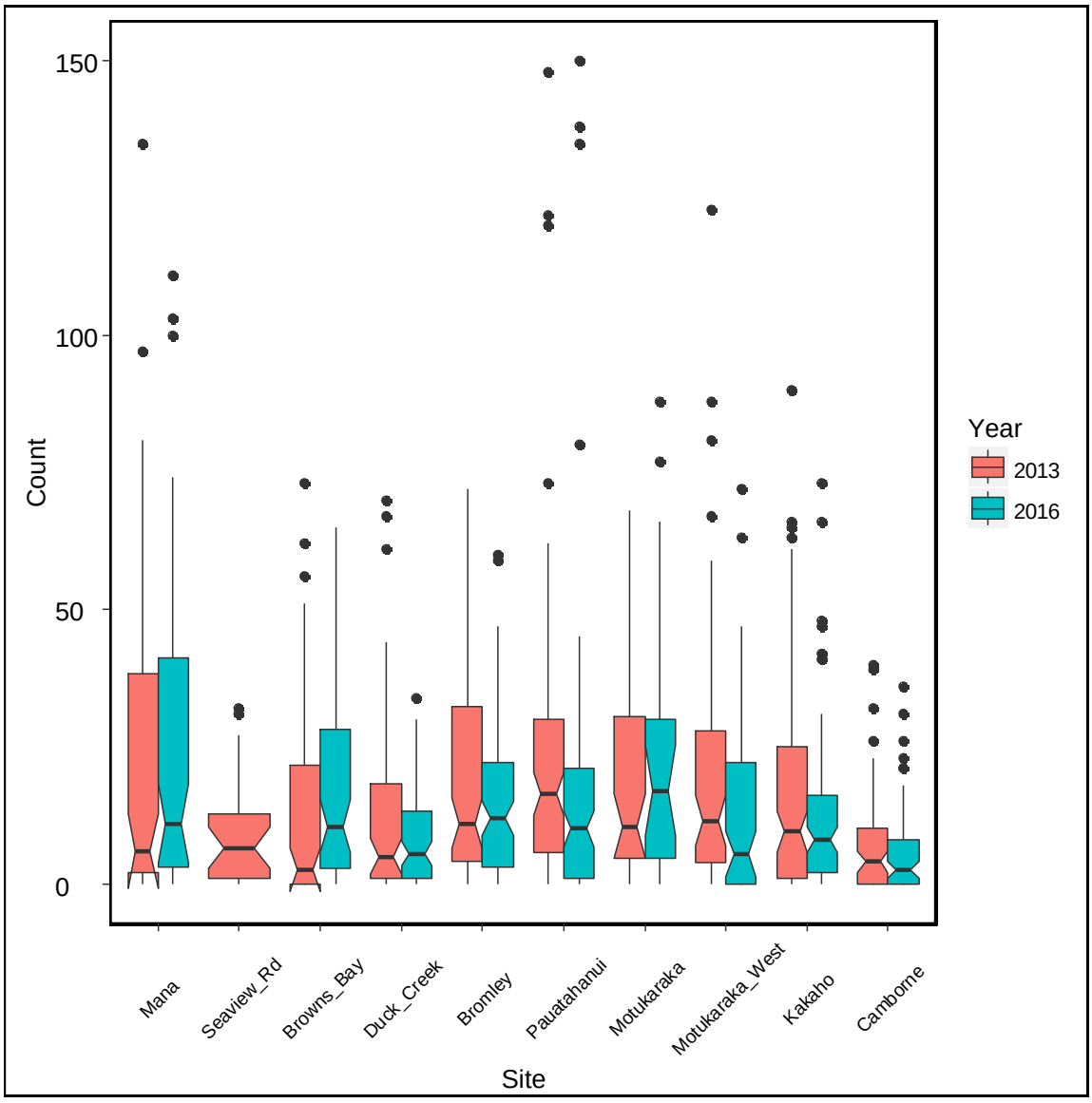


Figure 3-4: Box plots of the total numbers of cockles per quadrat (0.1 m2) by site in 2013 and 2016. Notch and black line in boxes shows median, boxes are 50 percentiles, whiskers (lines) 75th percentiles, and filled black circles outliers greater than 75 percentiles. Transects 3A (Seaview Road) 18 (Motukaraka) were not sampled in 2016, and transect 30 not sampled in 2010 and 2016.

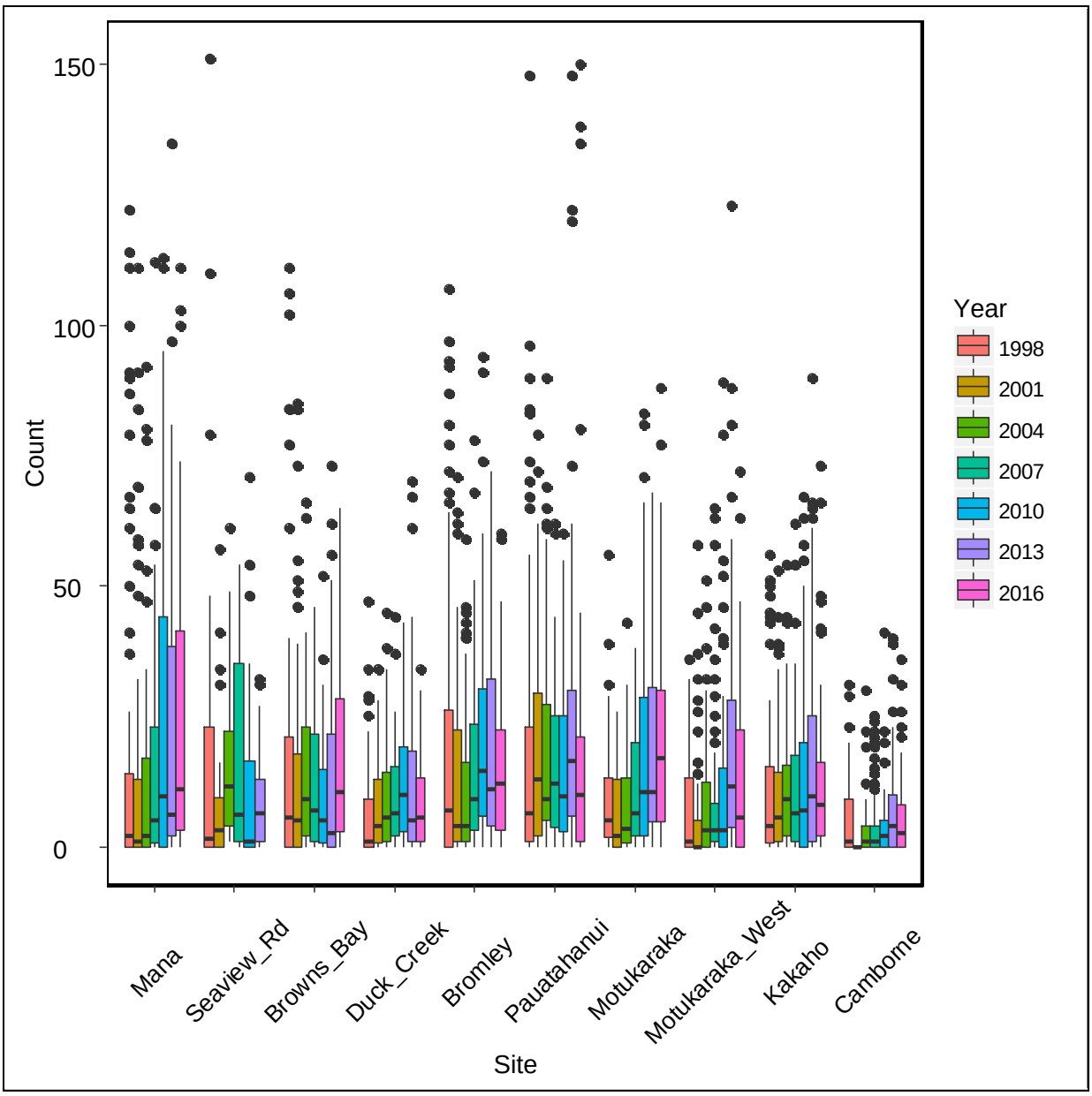


Figure 3-5: Box plots of the total numbers of cockles per quadrat (0.1 m2) by site between 1998 and 2016. Black line in boxes shows median, boxes are 50 percentiles, whiskers (lines) 75th percentiles, and filled black circles outliers greater than 75 percentiles. Transects 3A (Seaview Road) 18 (Motukaraka) were not sampled in 2016, and transect 30 not sampled in 2010 and 2016.

Figure 3–6 shows bubble plots of the distributions of densities by site for juvenile and adult cockles since 1998. Adult (greater than 10 mm in length) cockle densities have remained relatively high at Mana, Brown's Bay, Pauatahanui, Motukaraka West and Kakaho since 1998. Trends in adult densities over that time show increases at Mana and Motukaraka West, while densities remained similar, fluctuating slightly without trend at Brown's Bay, Duck Creek, Bromley, Pauatahanui, Motukaraka, Kakaho and Camborne, and density decreased at Seaview Road.

Juvenile cockle densities show broadly similar trends, increasing over time. Juveniles (10 mm and less in length) cockles have been consistently high at Bromley and Pauatahanui. Trends in juvenile densities have increased since 1998 at Mana, Bromley, Pauatahanui, Motukaraka, and Motukaraka West; remained similar, fluctuating slightly without trend at Brown's Bay, Duck Creek, Kakaho, and Camborne, and density decreased at Seaview Road.

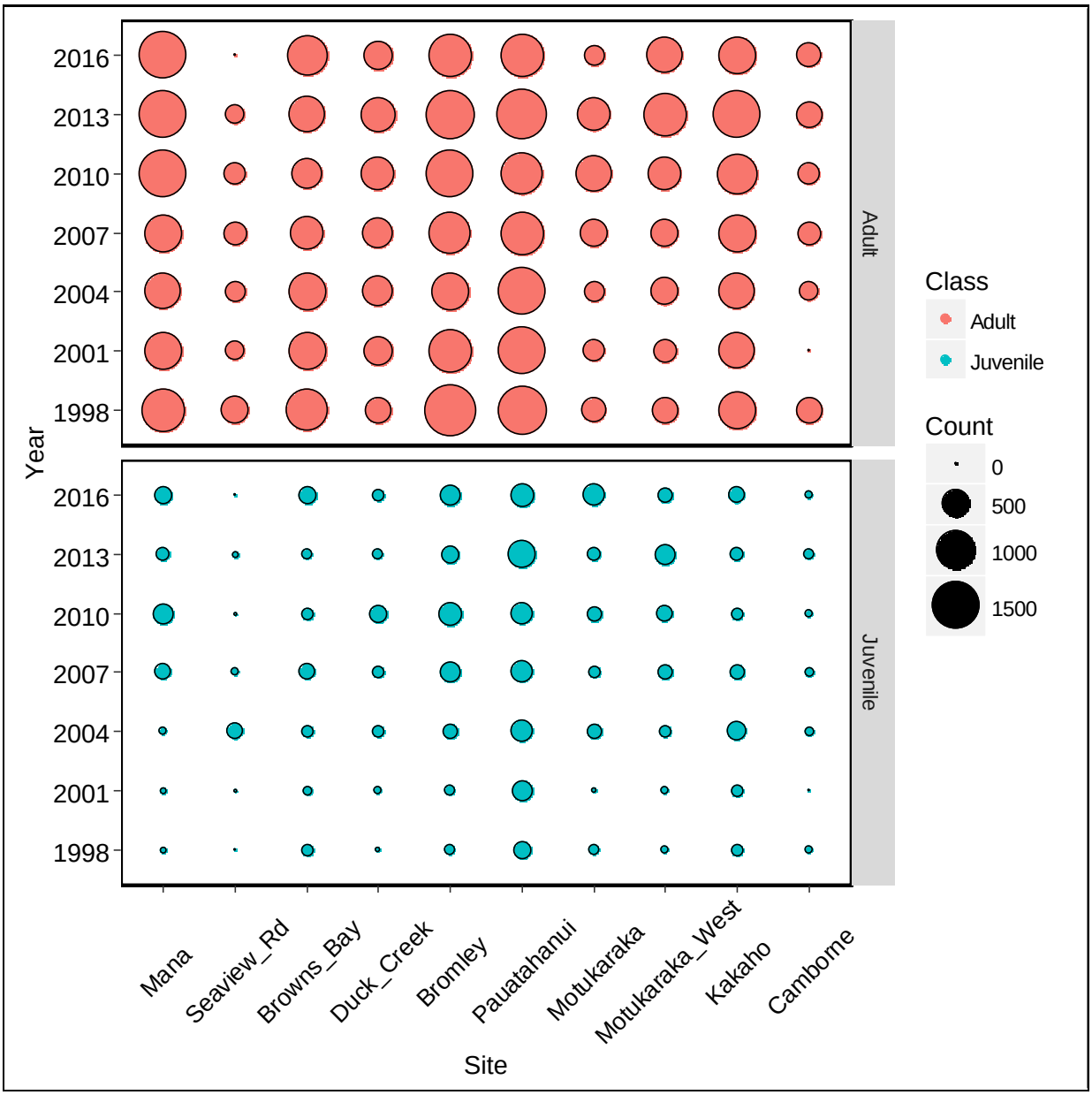


Figure 3-6: Bubble plot representing the changes in the counts of adult cockles (greater than 10 mm in length) and Juveniles (10 mm and smaller in length) at each site between 1998 and 2013. The size of the bubbles scaled to total count per site. Transects 3A (Seaview Road) 18 (Motukaraka) were not sampled in 2016, and transect 30 was not sampled in 2010 and 2016.

3.1.2 Cockle densities by tidal height

The distributions of median cockle densities were broadly similar from high to lower-mid tide between 2013 and 2016, and lower at low tide in 2016 (Figure 3–7). The biggest difference at all tidal heights was the reduction in the numbers of high counts (Figure 3–7). There was variation at tidal height and site level (Figure 3–8). The most significant declines at the high tide level were at Pauatahanui; at lower-mid tide at Pauatahanui, Motukaraka West, and Kakaho; and the low tide level at Brown's Bay, Duck Creek, Pauatahanui, Motukaraka, and Motukaraka West (Figure 3–8).

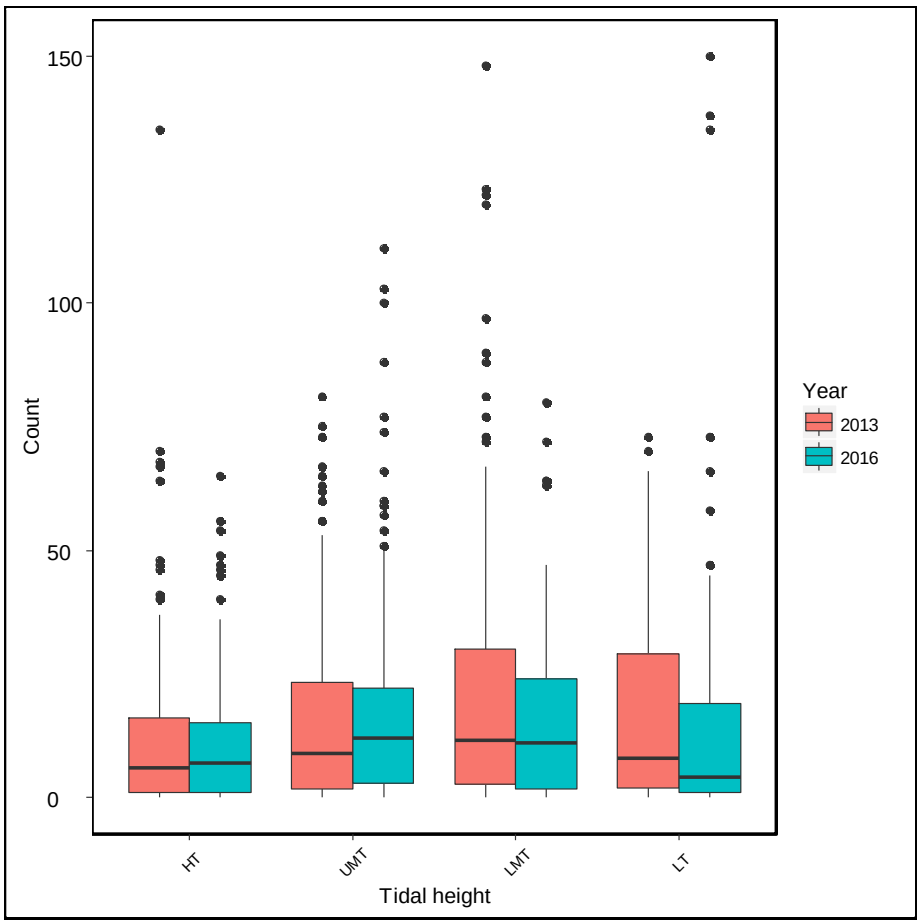


Figure 3-7: Boxplots of the numbers of cockles in 0.1 m2 quadrats by tidal height for years 2013 and 2016. High tide (HT), upper-mid tide (UMT), lower-mid tide (LMT), and low tide (LT). Boxplots show medians (solid horizontal black lines) and means (solid horizontal blue lines), filled boxes represent 25th to 75th percentiles, whiskers the 10th and 90th percentiles, and outliers are shown as filled black circles.

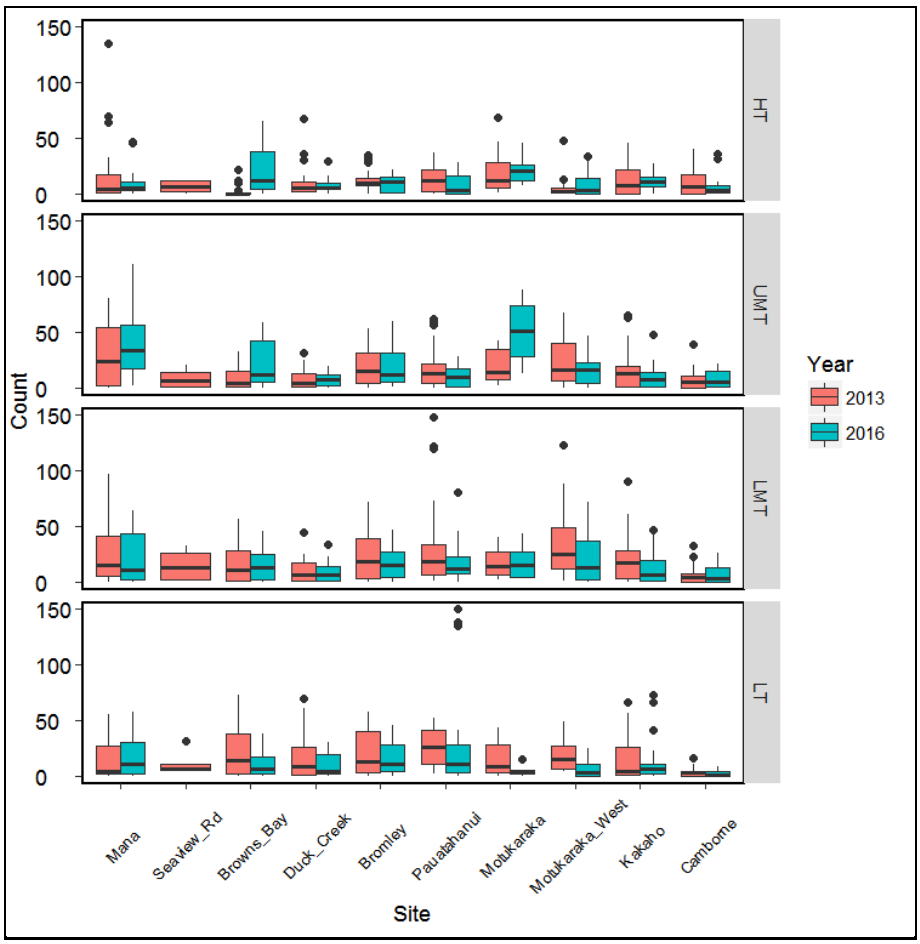


Figure 3-8: Boxplots of the numbers of cockles in 0.1 m2 quadrats by tidal height and site for years 2013 and 2016. High tide (HT), upper-mid tide (UMT), lower-mid tide (LMT), and low tide (LT). Boxplots show medians (solid horizontal black lines) and means (solid horizontal blue lines), filled boxes represent 25th to 75th percentiles, whiskers are 10th and 90th percentiles, and outliers are shown as filled black circles.

The distribution of cockle densities by tidal height and transect, between 1998 and 2016 (Figure 3–9) show some spatial variation in distribution that has changed through time. The distribution of cockle density has generally been more consistent at the high tide level since 2004, except at transects 20 and 21 (Motukaraka West) where they have remained low. Distributions at mid tide levels have remained consistent since 2004. Cockles are widespread across all transects. There is greater patchiness in the distribution of cockles at low tide level, particularly before 2007.

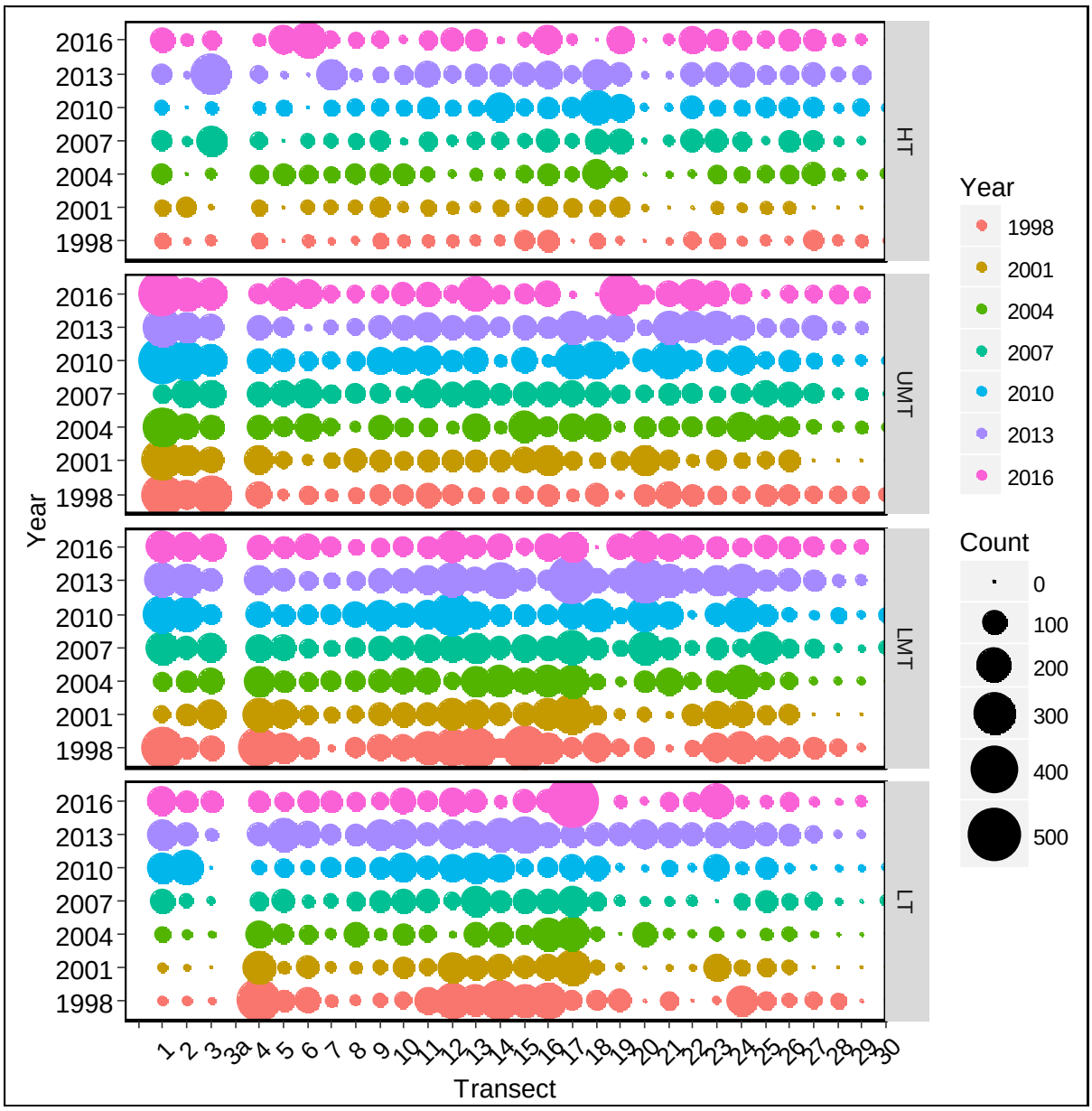


Figure 3-9: Bubble plots representing the changes in counts of cockles at each site between 1998 and 2016 by tidal height. High tide (HT), upper-mid tide (UMT), lower-mid tide (LMT), and low tide (LT). The size of the bubbles is scaled to total count per transect. Transects 3a (Seaview Road) 18 (Motukaraka) were not sampled in 2016, and transect 30 was not sampled in 2010 and 2016.

3.2 Cockle size frequencies

Cockles sampled in the intertidal zone of Pauatahanui Inlet between 2010 and 2016 generally ranged in length from 3 mm to 40 mm (Figure 3–10). In 2016, the largest cockle was 52 mm in length, slightly smaller than in 2013 (58 mm in length). The distributions of percentage frequencies (Figure 3–10) do not show clearly separated modes or cohorts to identify the progression of different cockle settlements and age classes. Size composition has remained similar since 2010 (Figure 3–10). Histograms of the size (length) frequency of cockles for all sites combined since 1998 are shown in Appendix G. The cumulative percentage length frequencies 1998–2016 show the size structure of the cockle population in Pauatahanui Inlet has remained similar from 2004. Cumulative percentage frequencies in 1998 and 2001 were characterised by lower proportions of juvenile cockles.

The percentage of juvenile cockles in the Pauatahanui Inlet population increased markedly between the 1992 and 2004 surveys (Figure 3–12) from around 1% in 1992, to almost 7% in 1998 (Grange & Crocker, 1999). There was little apparent change between the 1998 and 2001 surveys. However, between 2001 and 2010, the percentage of juvenile cockles in the total population more than doubled to 16%, then declined to 12% in 2013. The 2016 survey recorded the highest proportion of juvenile cockles (17.4%).

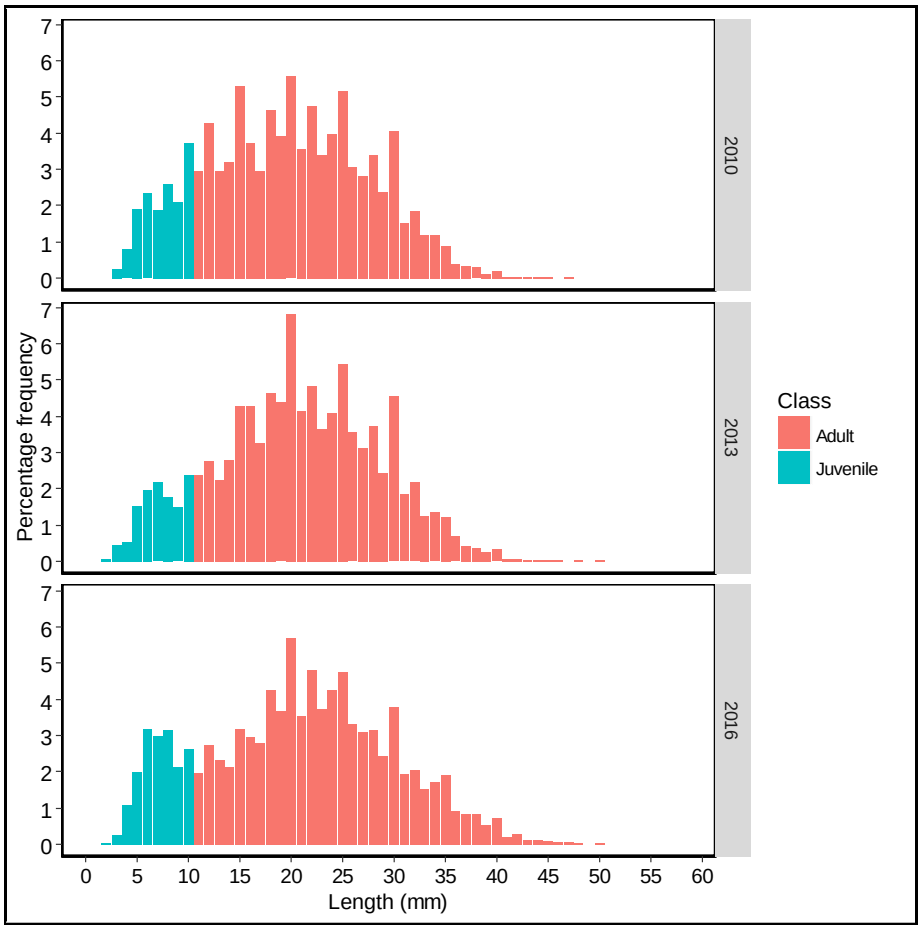


Figure 3-10: Percentage length frequencies of cockles sampled in the intertidal zone of Pauatahanui Inlet in 2007, 2010, and 2013. Juvenile cockles classified as those 10 mm in length and smaller shown in blue and adults greater than 10 mm in length shown in red.

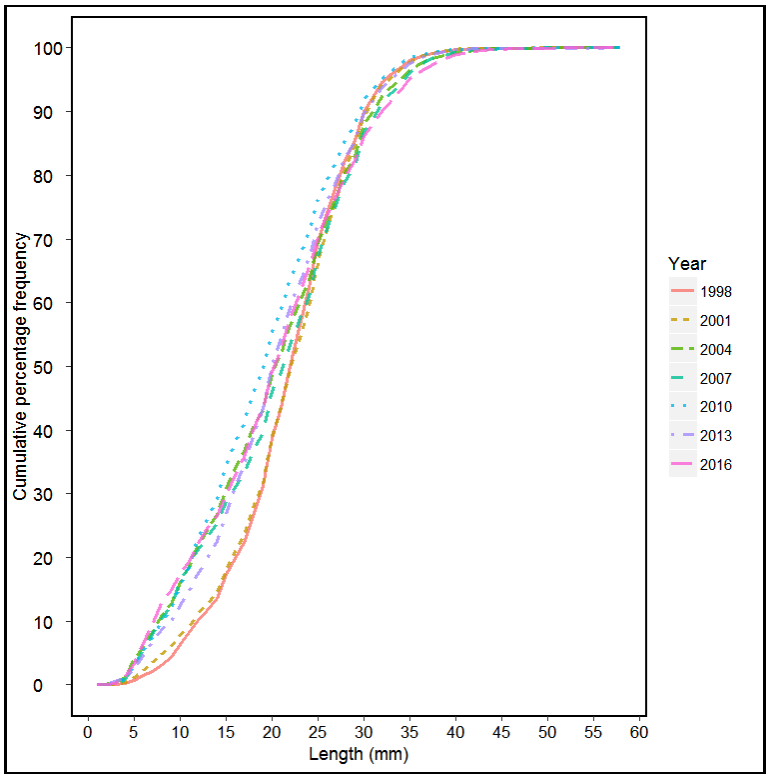


Figure 3-11: The cumulative percentage length frequencies of cockles sampled in the intertidal zone of Pauatahanui between 1998 and 2016. 2013 shown as a dash dot purple line and 2016 as a solid red line.

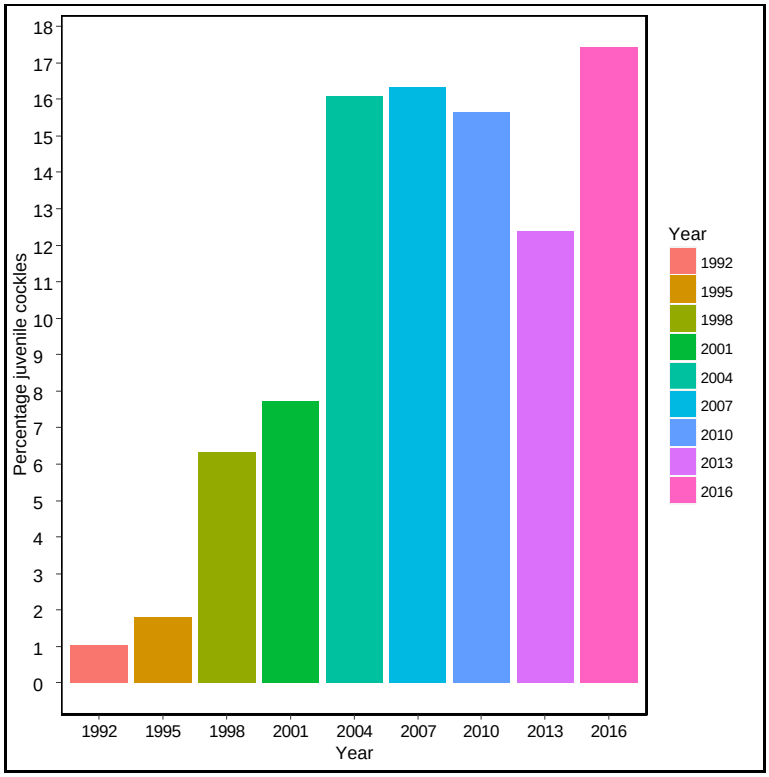


Figure 3-12: Juveniles (10 mm and smaller in length) as a percentage of total cockle population, 1992–2016.

3.2.1 Cockle size frequencies by site

The size structure of cockles varied among sites (Figures 3–13 & 14). Size distributions ranged from predominantly flat (unimodal, a single, broad size group with no definitive modal structure) as at Kakaho, to distributions with a number of distinct modes (polymodal) such as at Motukaraka. A number of sites showed strong modal structure that represents high settlement cohorts. Adjacent sites, Pauatahanui and Bromley also showed relatively high numbers of small sized cockles suggesting heightened recent recruitment (the settlement and survival of juvenile cockles).

Differences in these cockle size distributions between sites in 2016 are shown as cumulative percentage frequencies in Figure 3–14. The proportions of different sizes were broadly similar amongst sites except at Motukaraka where juveniles (10 mm or smaller) presented 15% of the population and Camborne where 50% of the cockles were greater than 28 mm in length.

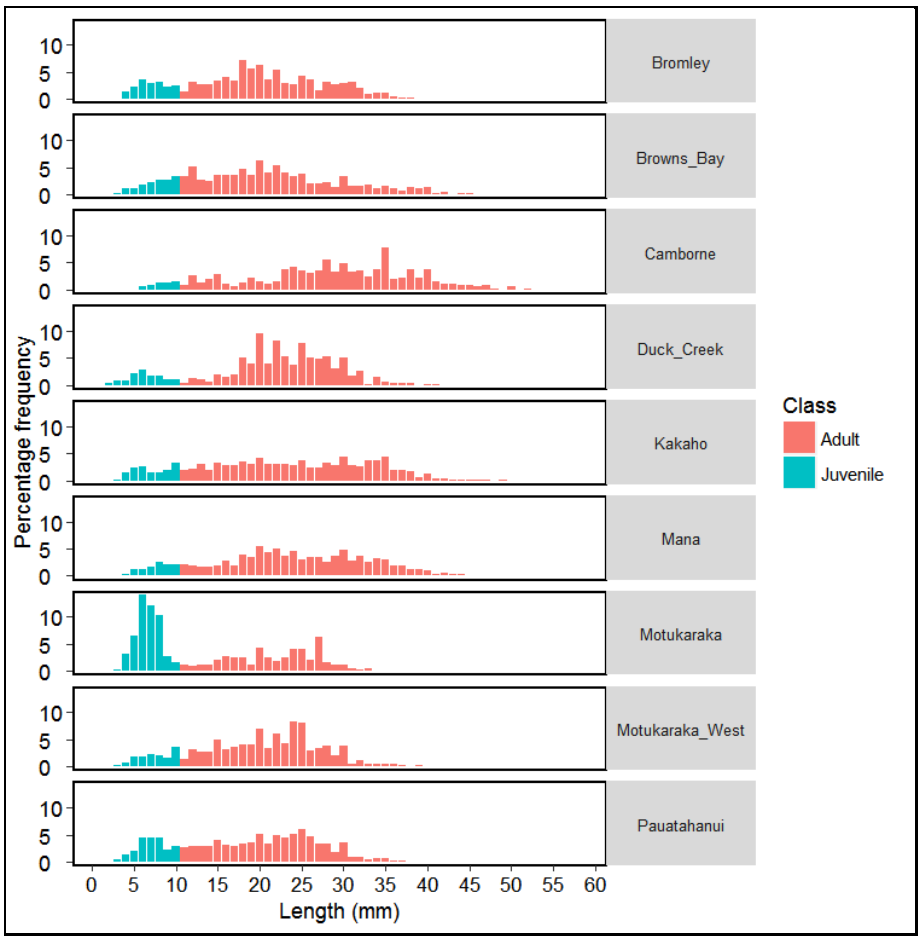


Figure 3-13: Histograms of the size (length) frequency of cockle by sites from the 2016 survey. Juvenile cockles classified as those 10 mm in length and smaller shown in blue and adults greater than 10 mm in length shown in red.

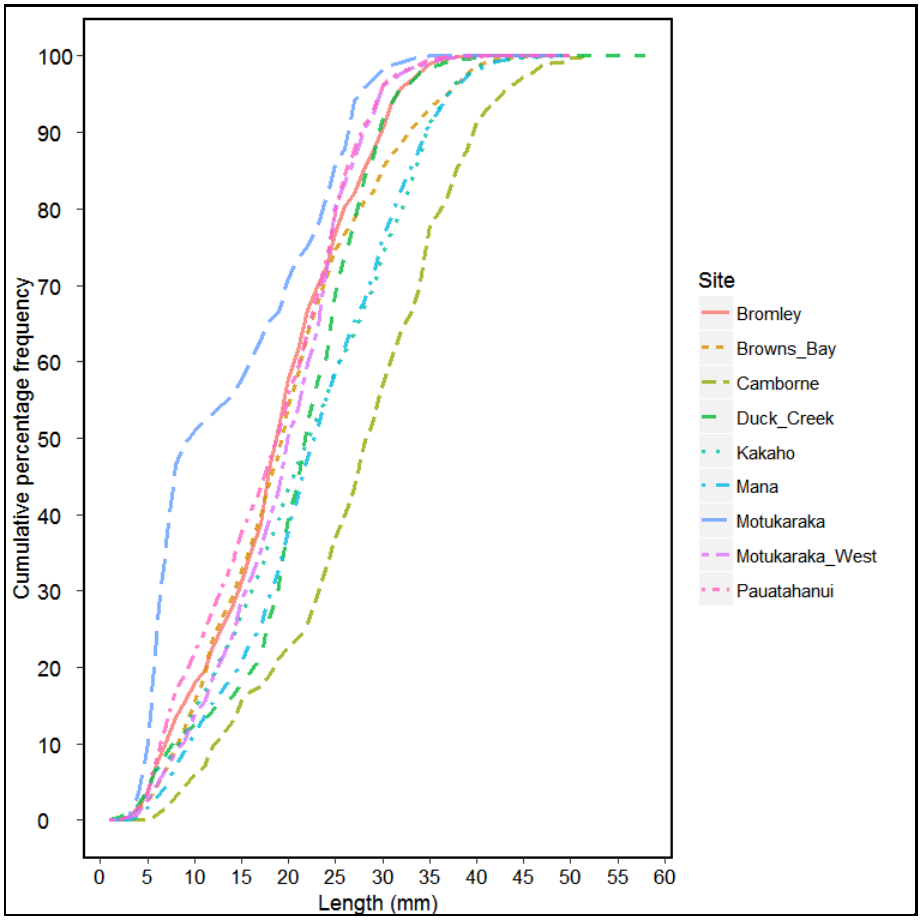


Figure 3-14: Cumulative percentage frequencies of cockle lengths by site sampled in December 2016.

Cumulative percentage frequencies 1998–2016, by tidal height (Figure 3–15) generally show increases in the proportions of larger cockles with increasing tidal level. High tide (HT) and upper mid-tide (UMT) levels contained fewer small cockles in 1998 and 2001 than in later surveys. The size structures of cockle lower mid-tide (LMT) and low tide (LT) quadrats were broadly similar.

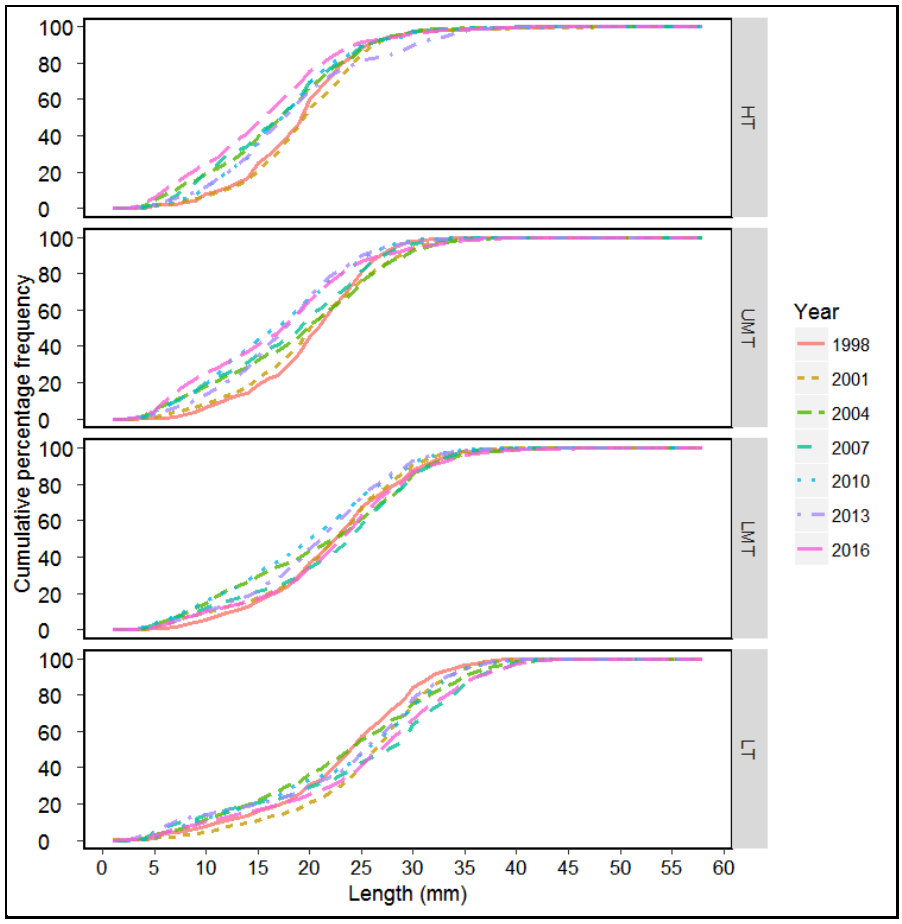


Figure 3-15: Cumulative percentage frequencies of cockle lengths by tidal height for surveys between 1998 and 2016.

4 Discussion

4.1 Survey comparability

4.1.1 Sampling issues in 2016 and likely effects on data quality

Maintaining sampling methods and sampling intensities is important to determining trends from time-series data. Several sampling issues in 2016 may have reduced the consistency of sampling and therefore the comparability of survey data and population estimates with previous surveys. GOPI postponed the original survey because of the November earthquake and flood. Fewer volunteers than expected turned up for the deferred survey, consequently 11 transects could not be completed and two were not sampled at all. Most of these transects were completed while the tides were suitable up to 30 December 2016. Time ran out to sample transects 3A and transect 18 was abandoned primarily because the depth of surface mud had increased to a point where it could not be sampled. Transect 30 has not been sampled since 2010 because of its relatively high degradation and lack of comparability to previous surveys. Transect 18 had higher than average densities in 2013 and transect 3a had about average densities. Missing data from these transects may have biased population estimates downwards.

The high muddiness of samples may have affected sampling. The fewer experienced volunteers and especially fewer trained transect leaders may have resulted in the misidentification of small bivalve shellfish, especially two visibly similar species (cockles and nutshells). Where nutshells have been counted as cockles, these data will show higher than actual cockle densities. Any significant increase in cockle density from the misidentification of nutshell may mask the magnitude of decline in cockle densities caused by the floods. Stations possibly affected include 8, 9, 10, 15, 19, 21 and 26, but only station 19 shows clearly higher counts in 2016 than in 2013 (see Figure 3–2).

The comparability of the survey data is unlikely to be affected by the 20 days it took to complete the survey. Likewise, the change of the survey sieves and mesh size is also unlikely to have affected the size selectivity of sampling.

4.1.2 Survey analysis

In previous surveys, the cockle population size was estimated using the density estimated from individual quadrats (0.1 m^2) as independent (random) samples (as if from a single stratum) and scaled to the size of the intertidal area, assumed to be about 1 km^2 (Richardson et al. 1979) (Method 1).

Cockle density can vary considerably over tidal height with the highest cockle densities at mid and lower tide levels, i.e. stratified by tidal height. Therefore the samples taken from each transect cannot be assumed to be a truly random sample from a single area of similar cockle density.

It is more appropriate to average the density for each tidal height, then average all the tidal heights to get a transect mean (Method 2). As the width of the intertidal areas varies around the Inlet, transect length reflects the size of the intertidal area. Transect means therefore need to be adjusted (weighted) for these differences. Transect means are then averaged to get a mean cockle density for the whole inlet that is then scaled up to the estimated area of the intertidal zone in the Inlet. There are no direct measurements of transect length available and best estimates are used. The weighting of transect mean cockle densities has made little difference to the trends in population estimates as weighting represents a constant scalar.

Both Methods 1 and 2 showed a similar trends and similar relative cockle densities. The similarity of these results also suggests that there was little variation in the distribution of cockle densities over space and between surveys (over time).

Estimates from Method 1 used 336 survey samples, and this relatively large number of samples was theoretically likely to result in lower estimates of variance and CVs than estimates from transect mean densities. However, Method 2 produced lower CVs (Table 3–1).

We do not know if the error associated with the estimated size of the intertidal area in Pauatahanui Inlet has changed over the sequence of surveys, or whether transect lengths have changed. Because mean cockle density is multiplied by the size of the intertidal area, any error in the estimate of the survey area will be proportionally represented in the estimate of cockle population size. All previous estimates of population size use the same estimate of the size of the intertidal area (1 km^2). This estimate differs from the size of the intertidal area of Pauatahanui Inlet estimated from the interpolation of depth soundings from a report to the Porirua City Council (Anon 2009) and from a map of the Pauatahanui Inlet bathymetry (Irwin 1978), which suggests that the intertidal area is about 2.13 km^2. Using a larger survey area in the calculation of population size will increase the absolute population size of cockles for each survey, but it will not change the relative trend between surveys.

A one-way ANOVA was used to test for differences between population estimates as the 28–31 transects constitute a relatively large sample and this parametric test is likely to be more sensitive than non-parametric tests such as the Kruskal-Wallis one way analysis of variance on ranks. Multiple comparisons amongst survey estimates used the Holm-Sidak test, as this test is considered to have high power to detect differences amongst paired comparisons. The precision of survey estimates (expressed as a coefficient of variation or C.V. of the population estimate) since 1998 have been relatively low (see Table 3–1).

GOPI surveys have used the same methods. Errors associated with the misidentification of species and from sampling error generally, are thought to be relatively small and reasonably constant from survey to survey. However, the levels of misidentification may have been higher in 2016 (see above).

The actual low water mark may vary from survey to survey depending on the wind direction and strength that may hold water in the Inlet, the weather (barometric pressure), and the magnitude of spring low tides. Higher numbers of cockles are generally sampled in the mid-tide zones (UMT and LMT) and the level of the low tide may have a relatively small effect on the estimate of population size. Larger sized cockles are generally sampled at the low water level, and a low water level higher (further up the beach) than in previous surveys may slightly under estimate the numbers of large cockles, and vice versa.

4.2 Effects of the 2016 floods

Significant floods on 13 August 2016, 16 September 2016 and the especially large flood on 15 November significantly increased the fine sediment over the intertidal survey area. The heavy rain preceding the 7.8 (Mw) Kaikoura earthquake and the quake on 14 November 2016 caused a number of slips that further exacerbated runoff and sediment loads. Wriggle Coastal Management (WCM), Nelson, monitor Intertidal sediment deposition at eight intertidal sites (Stevens & Robertson 2016). WCM at the request of Greater Wellington Regional Council undertook a quick survey of intertidal sediment plates in Porirua Harbour on 1 December 2016.

Extensive subtidal deposition was evident in Pauatahanui Inlet, with fine muds readily disturbed when wading. The widespread mud deposition was quickly remobilised from most intertidal areas and deposited primarily in the subtidal, and in some saltmarsh areas (Figure 4–1 & 2). Kakaho was the most affected site with mud blanketing the whole area, and was the only site where intertidal surface muds were evident on sediment plates (mean deposition of 13.5mm since January 2016). Two other areas showed fresh muds: the lower estuary boatsheds site between Mana and Camborne (intertidal mean deposition of 2.5mm since Jan 2016, and terrestrial muds evident subtidally), and the upper estuary northwest of the fine scale site near Horokiri (5 mm of fresh mud over the intertidal).

Figure 4-1: Terrestrial muds deposited over the intertidal area November 2016 between Camborne and Kakaho still present in January 2017. Image courtesy of Leigh Stevens (Wriggle Coastal Management, Nelson).

At Horokiri, the intertidal flats were clear, but the saltmarsh showed fresh mud deposition along the seaward margins Figure 4 2.).

Figure 4-2: Mud deposition along the seaward margins of the Horokiri saltmarsh in January 2017. Image courtesy of Leigh Stevens (Wriggle Coastal Management, Nelson).

The muds are unconsolidated and easily remobilised by wind driven waves and tide action. Intertidal sediments transported into the shallow subtidal areas of Pauatahanui Inlet will persist in the inlet longer because of the lower ability for sediments to be transported in the subtidal areas. Sediment deposition affected the entire intertidal area between mid-November and late-December 2016 (observations, John Wells). By January 2017, the main area still affected was from Camborne to Pauatahanui. Kakaho was the only area with widespread intertidal mud deposits remaining. Leigh Stevens (WCM) did not detect mass die offs of shellfish in January 2016.

The deposition of terrestrial muds over estuarine macrobenthic communities such as those in the intertidal areas of Pauatahanui has highly deleterious effects (Norkko et al. 2002). Their experiments showed that irrespective of mud thickness, the numbers of taxa declined by 93% and abundance by 97% after 10 days. Very few cockles were found alive. After 408 days, recovery was slow and incomplete; there were 80% fewer individuals than prior to disturbance and juvenile cockles were

found in low numbers (Norkko et al 2002). The increased muddiness of estuaries also has a significant negative impact on cockle physiology and subsequently population dynamics (Norkko et al 2006).

4.3 Trends in population estimates

4.3.1 Cockle recruitment

The proportion of juvenile cockles (10 mm in length and smaller) in the total population has increased since 1992 when it was 1%, to 16.2% in 2010, declined to 12% in 2013, and increased markedly to 17.4% in 2016. The 2016 estimate of juvenile cockle population size is inconsistent with the expectation of relative high mortality (compared to the adult cockle population) from the mud deposition and suspended sediment from the 2016 floods. If this increase is correct, the increasing population size of adults up to 2013 and probably through to the summer of 2015; and favourable climatic conditions may have produced a large recruitment (cockle spat settlement) event over the summer of 2015/2016. Despite the relatively high mortality of juveniles, a large number have survived. However, this increase may be an artefact of large numbers of nutshells being counted as cockles (e.g., as suspected for transect 19 where 51% of the cockles are juveniles).

The increasing trend in the percentage of juveniles in the increasing cockle population size suggests regular recruitment and good survival over their first winter. Generally, this increasing trend is unlikely to be due to high levels of misidentification in recent surveys nor in an improvement in the detection of juvenile cockles.

There are many factors that may drive the recruitment strength of cockles in Pauatahanui Inlet; some that may be associated with the health of the Inlet such as levels of fine suspended silt, some that are likely to be driven by climate, and others associated with the ecology of Pauatahanui Inlet such as predation pressure. There are also a number of other unknowns:

1. What proportion of the total Inlet-wide population occurs subtidally, and what contribution the subtidal population makes to the recruitment of juveniles in the intertidal zone.

2. Whether there is any movement of juvenile cockles from the intertidal to the subtidal areas, and vice versa. Hooker (1995) found evidence of movement in pipi (*Paphies australis*) in the Whangateau Harbour, suggesting that pipis (both juveniles and adults) can move long distances from unsuitable habitats using mucus parachutes. Cummings & Thrush (2004) also considered juvenile pipis and wedge shells (*Macomona liliana*) to be mobile and found that both species were less likely to establish themselves in areas that had elevated levels of terrestrial (land derived) sediments.

3. Whether cockles still occur on the intertidal areas of the large offshore sand banks in the western half of the Inlet. The sand banks were partially sampled in 1976, but not in the GOPI surveys (for safety reasons with volunteers). The area of these sand banks has increased significantly in the last decade or so,

4.3.2 Trend in cockle population size

Both methods 1 and 2 used to estimate population size show a decline in the cockle population since 2013. The mean estimates show that the population size is similar to 2010 (Method 1) and 2007 (Method 2). The lowest 99% confidence interval shows the most pessimistic estimate at 2010 levels. Differences between Method 1 and Method 2 are dependent on the relative changes in the distribution of cockles between long and short transects. Between 1998 and 2013, Method 2 estimates were on average 8–23% higher. However, in 2016, Method 2 estimates were 7% higher. The decreased difference in 2016 may be due to the mortality of cockles being higher in the longer transects covered in mud and exposed to air for longer periods.

The coefficients of variation (CVs) increased slightly (0.04 to 0.05 for Model 1) or were the same (Model 2) in 2016, probably the result of differential recruitment and mortality increasing the variance in cockle densities. CVs are all well below the target of 20% set for other shellfish surveys by the Ministry for Primary Industries.

4.4 Status of the cockle population in Pauatahanui Inlet

Although the survey design and sampling methods have been consistent since 1992, a number of factors probably reduced the comparability of the 2016 population estimates. The earthquake and floods probably reduced cockle density and therefore population size. These events also resulted in the postponement of the survey, fewer experienced volunteers and transect leaders were available to maintain sampling standards. Moreover, some transects were not sampled.

The survey data show the first downward trend in cockle population size since 2001. Population size increased between 55% and 87% (Methods 2 and 1 respectively) between the population low in 1995 (180 million cockles) and 2013 (336 million cockles). However, the population size of cockles declined between 14% and 16% (Methods 2 and 1 respectively) from 2013 to 2016.

The largest numbers of juvenile cockles were at the same sites as adults, suggesting conspecific settlement. If the high proportions of juveniles recorded in 2016 are real, they may heighten recruitment to the spawning sized population and help rebuild cockle densities.

The negative trend in the cockle population size in 2016 probably reflects changes in the environmental conditions in Pauatahanui Inlet that were less favourable for cockles.

5 Acknowledgements

We thank the volunteers who sampled Pauatahanui Inlet in 2016, ensuring the value of this time-series of data. We thanks Leigh Stevens (Wriggle Coastal Management, Nelson) and Megan Oliver for information on the changes in sediments and mud deposition in 2016. We also thank Reyn Naylor who reviewed this report. We also thank Ken Grange and Peter Horn whose reports provided the foundation for this report series.

The Guardians of Pauatahanui Inlet acknowledge the assistance given to the survey by Greater Wellington Council, both in the field and in the production of this report.

6 References

Anon (2009). Porirua Harbour Survey. Report prepared for Porirua City Council (Contract No. P31657).

Cummings, V.J.; Thrush, S.F. (2004). Behavioural response of juvenile bivalves to terrestrial sediment deposits: implications for post-disturbance recolonisation. Marine Ecology Progress Series 278: 179-191. <http://dx.doi.org/10.3354/meps278179>

Estcourt, I.N.; Grange, K.R. (1976). Biology of subtidal and intertidal zones of Pauatahnui Inlet. Pauatahanui Environmental Programme Newslettler 4:1-3.

Francis, R.I.C.C., Fu, D. (2012) SurvCalc user manual v.1.2-2011-09-28. NIWA, Wellington [N.Z.].

Grange, K.R. (1993). Distribution, abundance, and population structure of cockles (Austrovenus stutchburyi) in Pauatahanui Inlet. NIWA contract report 1993/1, prepared for Guardians of the Inlet, Pauatahanui. 14 p.

Grange, K.R.; Cole, R.G.; Parker, N.R. (1996). Distribution, abundance, and population size structure of cockles (Austrovenus stutchburyi) in Pauatahanui Inlet. NIWA contract report NEL60416, prepared for Guardians of the Inlet, Pauatahanui. 18 p.

Grange, K.R.; Crocker, T. (1999). Cockles in Pauatahanui Inlet: results of the 1998 sampling programme. NIWA contract report NEL90401/3, prepared for Guardians of the Inlet, Pauatahanui. 20 p.

Grange, K.R.; Tovey, A. (2002). Cockles in Pauatahanui Inlet: results of the 2001 sampling programme. NIWA contract report NEL02401/2, prepared for Guardians of the Inlet, Pauatahanui. 13 p.

Hooker, S.H. (1995). Preliminary evidence for post-settlement movement of juvenile and adult pipi, Paphies australis (Gmelin, 1790) (Bivalvia: Mesodesmatidae). Marine and Freshwater Behaviour and Physiology 27(1): 37-47.

Horn, P.; Grange, K.R.; Cairney, D. (2005). Cockles in Pauatahanui Inlet: results of the 2004 sampling programme. NIWA Client Report (NEL2005-019) prepared for the Guardians of Pauatahanui Inlet under project NEL05401. 53 p.

Irwin, J. (1978). Pauatahanui Inlet Bathymetry (1:5000). Miscellaneous series, NO. 47. NZOI, New Zealand Oceanographic Institute, DSIR.

Larcombe, M.F. (1971). The ecology, population dynamics, and energetics of some soft-shore molluscs. University of Auckland.

Michael, K.P. (2008). Community survey of cockles (Austrovenus stutchburyi) in Pauatahanui Inlet, Wellington, November 2007. NIWA Client Report: WLG2008-39 (Project GOPI08301). 107 p.

Michael, K.P. (2011). Community survey of cockles (Austrovenus stutchburyi) in Pauatahanui Inlet, Wellington, November 2010. NIWA Client Report WLG2011-6 prepared for the Guardians of Pauatahanui Inlet (NIWA Project VSJ11302). 120 p.

Michael, K.P.; Wells, J. (2014). Community survey of cockles (Austrovenus stutchburyi) in Pauatahanui Inlet, Wellington, December 2013. NIWA Client Report WLG2014-13 prepared for the Guardians of Pauatahanui Inlet (NIWA Project VSJ14301/GOPI COCKLE SURVEY). 95 p.

Norkko, A.; Thrush, S.F.; Hewitt, J.E.; Cummings, V.J.; Norkko, J.; Ellis, J.I.; Funnell, G.A.; Schultz, D.; MacDonald, I. (2002). Smothering of estuarine sandflats by terrigenous clay: the role of wind-wave disturbance and bioturbation in site-dependent macrofaunal recovery. Marine Ecology Progress Series 234: 23-41.

Norkko, J.; Hewitt, J.E.; Thrush, S.F. (2006). Effects of increased sedimentation on the physiology of two estuarine soft-sediment bivalves, Austrovenus stutchburyi and Paphies australis. Journal of Experimental Marine Biology and Ecology 333(1): 12-26. Richardson, J.R.; Aldridge, A.E.; Main, W.d. (1979). Distribution of the New Zealand cockle, Chione stutchburyi, at Pauatahanui Inlet. NZOI Oceanographic Field Report No. 14. 10 p.

Richardson, J.R.; Aldridge, A.E.; Main, W.D. (1979). Distribution of the New Zealand cockle, Chione stutchburyi, at Pauatahanui Inlet. NZOI Oceanographic Field Report No. 14. 10 p.

Stevens, L.; Robertson, B. (2016). Porirua Harbour Sediment Plate Monitoring 2015/16. Report prepared for Greater Wellington Regional Council March 2016. 16 p.

Todd, M.; Graeme, C.; Kettles, H.; Sawyer, J. (In prep.). Estuaries in Wellington Hawke's Bay Conservancy (excluding Hawke's Bay and Chatham Islands Areas): Current status and future management. Department of Conservation draft report, WGNCO-347992. 275 p.

Appendix A 2016 Sampling instructions hand-out.

2016 Pāuatahanui Inlet Cockle Survey

First recognise your cockle!

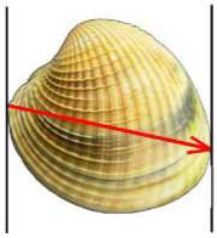
Cockle

Cockle shells have a distinctive pattern of ridges and a prominent recurved 'beak'

Nutshell

Nutshells are much smaller than adult cockles and can be confused with juvenile cockles

INSTRUCTIONS FOR DIGGING, MEASURING, TALLYING



Length (anterior-posterior axis)

- Assign one person as recorder. Recorder must try to keep hands dry and clean.
- The transect is sampled by 3 quadrats at 4 tidal levels (see your transect sheet).
- Your first task is to mark the High Tide sample site with a stake.
- **Begin sampling at Low Tide site, if it is exposed, and work up beach to High Tide site. If Low Tide site is not exposed begin sampling at Lower Mid Tide site, and sample the Low Tide site if and when you can.**
- At each site quadrat B should be on the transect line and quadrats A and C should be about 5 paces to the right and left of the line.
- For each quadrat:
  - Drop the quadrat frame randomly (don't choose good places).
  - Dig out the mud and animals inside the frame to a depth of about 7 cm and place in your sieve. Take care not to excavate an area larger or smaller than the quadrat.
  - The best way to sieve is to lower it into water and jig it up and down.
  - Pick out stones and empty shells to make it easier to find live cockles (especially juveniles).
  - Take out each live cockle and put it into an ice cream carton.
  - **Be careful not to count nutshells as small cockles — see photos above**.
  - Measure length (see illustration above) of each cockle to the nearest mm and call out the measurement to the recorder.
  - Recorder puts a single tally dash (/) for each cockle beside the correct mm size.
  - Tallies are marked in groups of 5 like this: "~~////~~ //" = 7.

PLEASE COLLECT ALL GEAR AND RETURN TO STOUT COTTAGE
Thank you, your help is much appreciated

Appendix B 2016 Transect data sheet

2016 Pauatahanui Inlet Cockle Survey

Transect number 1

Mana beach; access by lane beside 34 Mana Esplanade.	Turn left and walk to a large taupata bush, a clump of Agapanthus and a blue rubbish bin about 65 paces north of access lane (pink spot on taupata).
Aim transect towards → **(see photo on back of this sheet)**	Kakaho Stream mouth.
Number of **ADULT** paces from —	
location marker to **high tide** site	**20**
high tide site to **upper mid tide** site	**70**
upper mid tide site to **lower mid tide** site	**70**
lower mid tide site to **low tide** site	**80-90**
Estimated time of low tide	**3:00 pm**

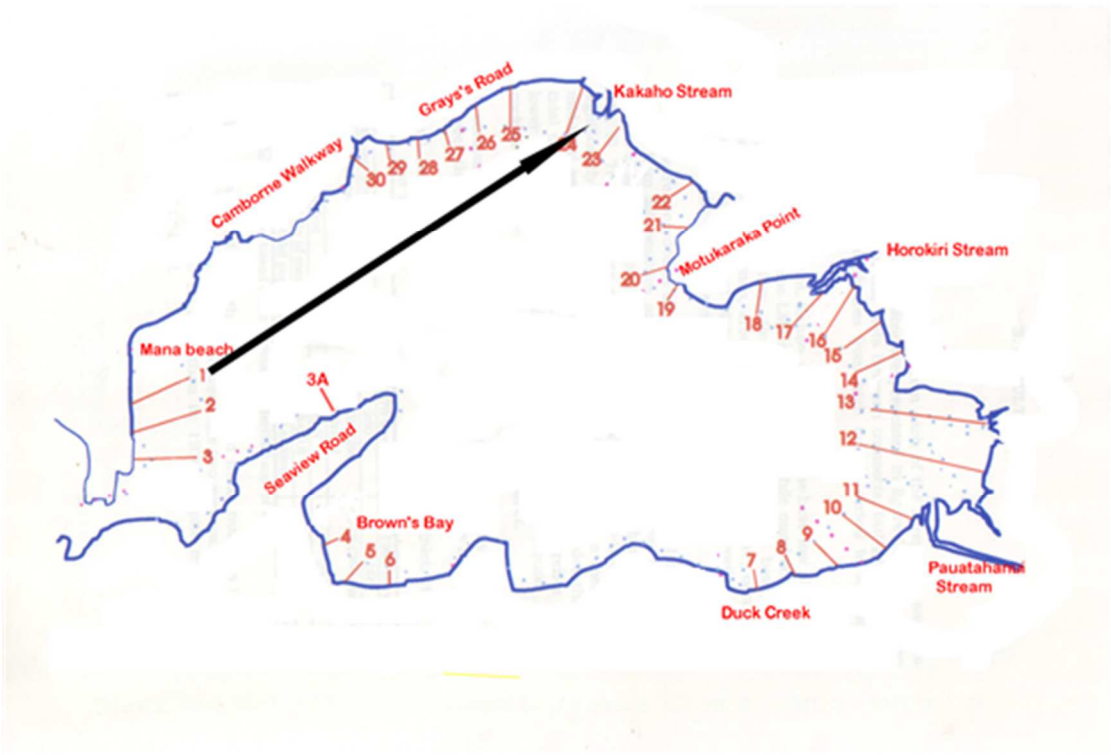
RECORD OF COMPLETED QUADRATS

	Date	Tick	Tick	Tick
High tide quadrats		A	B	C
Upper mid tide quadrats		A	B	C
Lower mid tide quadrats		A	B	C
Low tide quadrats		A	B	C

INSTRUCTIONS

- Use pink topped stakes to mark position of each sampling site.
- **Begin sampling at the Low Tide site, if it is exposed, and work up beach to High Tide site. If LT site is not exposed begin sampling at the Lower Mid Tide site, and sample the LT site if and when you can.**
- Do not attempt to sample if standing water at the site is deeper than about 3 cm.
- If sampling area is covered by stones or large green seaweed, lift off gently before digging.
- Follow instructions for sieving out, measuring and recording cockles.
- **Take care not to confuse nutshells and cockles (see photos).**
- Write any comments about this transect at the bottom or on back of this sheet.
- When finished check you have all your gear – especially the quadrat.
- Return all equipment and this sheet to Stout Cottage.

Thank you for your help. We hope you enjoy your day.


Grays's Road
Kakaho Stream
Camborne Walkway
30
29
28
27
26
25
24
23
22
21
Motukaraka Point
Horokiri Stream
20
19
18
17
16
15
14
13
12
11
10
9
8
7
Mana beach
1
2
3
3A
Seaview Road
Brown's Bay
4
5
6
Pauatahanui Stream
Duck Creek

Appendix C 2016 team leader check list.

GUARDIANS OF PAUATAHANUI INLET COCKLE SURVEY 2016

Checklist for Team Leaders

Before you meet and brief your team --

1. **Read and understand the Sampling Instructions sheet – especially the order in which to do the sampling stations.**

2. **Read and understand the Health & Safety guidelines on safety issues.**

3. **Check that you have the correct gear for your allotted transect – 1 bucket labeled with your transect number, 1 sieve, 1 quadrat, 4 stakes, 4 ice cream cartons, 1 rag, 1 zippable plastic bag, 1 ruler, 1 pen, 1 pencil and at least 1 bottle of drinking water.**

4. **Check that you have a spade or other suitable digging tool.**

5. **Check that you have data sheets SPECIFIC TO YOUR ALLOTTED TRANSECT –**
   1 transect location sheet (location map is on back of this sheet)
   4 transect data sheets (for recording counts at HT, UMT, LMT and LT)

6. **Check that you are fully familiar with the transect location and its direction.**

7. **Check that you are fully familiar with any instructions on car parking and access to the shore – this is a health and safety issue.**

Before you head off with your team --

Check that your team know where to park and how to get there safely (instructions are on transect sheet). If possible use one vehicle only as parking space may be limited.

Make sure that your team understands the Health & Safety guidelines.

On site brief your team –

That they will find cockles as small as 5-7mm size. So examine the debris in the sieve carefully.

You will have to cross Kakaho Stream on way to site of transect. Walk across at a shallow point.

Also, be aware of soft mud patches along the shore.

Appendix D 2016 survey tally sheet.

2016 Survey Pauatahanui Inlet Cockle

Transect Number 1
High Tide sample

Tally marks (### //)

Size (mm)	Quadrat A	Size (mm)	Quadrat B	Size (mm)	Quadrat C
1		1		1	
2		2		2	
3		3		3	
4		4		4	
5		5		5	
6		6		6	
7		7		7	
8		8		8	
9		9		9	
10		10		10	
11		11		11	
12		12		12	
13		13		13	
14		14		14	
15		15		15	
16		16		16	
17		17		17	
18		18		18	
19		19		19	
20		20		20	
21		21		21	
22		22		22	
23		23		23	
24		24		24	
25		25		25	
26		26		26	
27		27		27	
28		28		28	
29		29		29	
30		30		30	
31		31		31	
32		32		32	
33		33		33	
34		34		34	
35		35		35	
36		36		36	
37		37		37	
38		38		38	
39		39		39	
40		40		40	
41		41		41	
42		42		42	
43		43		43	
44		44		44	
45		45		45	
46		46		46	
47		47		47	
48		48		48	
49		49		49	
50		50		50	

Appendix E 2016 Pauatahanui Inlet cockle count transect location details.

No.	Locality	Start marker description	Start Lat/long	Start NZ-map grid	Aim towards	Paces to high tide site	Paces from high tide to upper midtide site	Paces from upper to lower midtide site	Paces from lower midtide to low tide site
1	Mana	**Mana beach; access by lane beside 34 Mana Esplanade.** Large taupata bush and a clump of Agapanthus about 65 paces north of access lane.	S:41 05 911 E:174 52 252	E2667 131 N6010 344	Kakaho Stream mouth	20	65	65	70-90
2	Mana	**Mana beach; access by lane beside 34 Mana Esplanade.** Pin '2' on rock by long line of bushes just south of access lane. Below two pohutakawa trees.	S:41 05 955 E:174 52 258	E2667 135 N6010 250	Southern edge of Motukaraka Point	30	65	65	65-80
3	Mana	**Mana beach car park just over Paremata Bridge.** Walk north from toilet block to end of sloping wooden retaining wall in front of very large macrocarpa tree.	S:41 06 258 E:174 52 295	E2667 151 N6010 090	2 storey house with 2 green roofs on Golden Gate at beach level	30	110	110	90-110

3A	Mana (Golden Gate) (Seaview Road)	**Park at Ivey Bay car park. CROSS ROAD VIA UNDERPASS TO KINDERGARTEN.** Front left corner of boatshed with ramp by house number 37A.			Most easterly boatshed on Camborne walkway at Camborne	0	25	25	30-50
4	Browns Bay	Seawall opposite large brown house at foot of Postgate Drive. A half buried pole about 25 paces west of large storm drain	S:41 06 320 E:174 52841	E2667 847 N6009 562	Houses at Motukaraka Point	10	40	4o	40-50
5	Browns Bay	Foot of western steps from car park to beach.	S:41 06 344 E:174 52 910	E2668 038 N6009 515	Kakaho Stream mouth	22	38	38	35-40
6	Browns Bay	Foot of eastern steps from car park to beach	S:41 06 347 E:174 52 947	E2668 099 N6009 502	Moorhouse Point (end of Golden Gate peninsula)	30	27	27	27-30
7	Duck Creek	**Park in space by waterside traffic lane of SH 58, about 100 metres east of James Cook Drive Approach via Joseph Banks Drive route (see map).** Walk <u>westward</u> along beach **(do not walk alongside road)** to pink '7' on concrete sea wall 50 metres east of junction of James Cook Drive and SH58 identifies location.	S:41 06340 E:174 54 123	E2669 738 N6009 474	Large white house at right block of trees on Motukaraka Point	15	25	25	30-40

8	Duck Creek	**Park in space by waterside traffic lane of SH 58, about 100 metres east of James Cook Drive Approach via Joseph Banks Drive route (see map).** Walk <u>westward</u> along beach **(do not walk alongside road)** to rip rap rock wall about 30 metres west of twin palm trees. Pink '8' on rocks identifies location.	S:41 06 304 E:174 54 240	E2669 908 N6009 535	Long group of pine trees behind houses at Motukaraka Point	25	33	33	30-40
9	Duck Creek	**Park in space by waterside traffic lane of SH 58, about 100 metres east of James Cook Drive Approach via Joseph Banks Drive route (see map).** Walk <u>westward</u> along beach **(do not walk alongside road)** to 2 water culverts in rip rap rock sea wall below house entrance with 2 red brisk pillars.	S: 41 06 294 E: 174 54 341	E2670 045 N6009 571	Large white house at Motukaraka Point	20	55	55	50-70

10	Bromley	**Park in space by waterside traffic lane of SH 58, about 100 metres east of James Cook Drive Approach via Joseph Banks Drive route (see map).** Walk eastward along beach **(do not walk alongside road)** to Wildlife Reserve sign on SH58.	S:41 06 274 E:174 54 442	E2670 193 N6009 602	Gap between two groups of pine trees on Motukaraka Point	48	58	58	50-70
11	Bromley	**Park in space by waterside traffic lane of SH 58, about 100 metres east of James Cook Drive Approach via Joseph Banks Drive route (see map).** Walk eastward along beach **(do not walk alongside road)** to Wildlife Reserve sign on SH58 and on about 160 paces to pink '11' on plant stump.	S:41 06 227 E:174 54 543	E2670 322 N6009 702	Waterski Club at east end of Camborne Walkway	20	57	57	50-70
12	Pauatahanui Wildlife Reserve	Orange ribbon on stake about 85 paces south of transect 13 stake	S: E:	E2670 654 N6009884	Moorhouse Point	20	150	150	140-160
13	Pauatahanui Wildlife Reserve	Pink painted stake immediately to left of entry point to beach	S: E:	E2670 674 N6009 976	Camborne	20	130	130	100-150

14	Pauatahanui (Ration Point)	**Park either side of Horokiri bridge (sign "Horokiri Estuary Restoration Project") and walk back to Ration Point.** Enter shore at this point Turn right and go to pink stake numbered 14 (about 70 paces).	S:41 05 814 E:174 54 539	E2670 339 N6010 440	Long red roofed house just to right of apex of hill above Bradey's Point	10	30	30	30-50
15	Pauatahanui (Ration Point)	**Park either side of Horokiri bridge (sign "Horokiri Estuary Restoration Project") and walk back to Ration Point.** Enter shore at this point and go west to pink topped stake numbered 15 (about 200 paces from beach entry point). **Keep to edge of shell banks where you can to avoid mud patches. Take care crossing the drainage channel just past pink stake 14**	S:41 05 755 E:174 54 475	E2670 251 N6010 555	Yellow cliffs at mouth of Duck Creek. Right of large white house on the cliff.	10	23	23	20-30

16	Pauatahanui (Horikiri Stream)	**Park either side of Horokiri bridge (sign "Horokiri Estuary Restoration Project") and walk back to Ration Point.** Enter shore at this point. Turn right and go past location markers for stations 14 and 15 to pink topped stake numbered 16 (about 400 paces from beach entry point). **Keep to edge of shell banks where you can to avoid mud patches. Take care crossing the drainage channel just past pink stake 14.**	S:41 05 690 E:174 54 400	E2670 166 N6010 673	Bradey's Point	20	33	33	30-50

17	Motukaraka (Horikiri Stream)	**Park either side of Horokiri bridge (sign "Horokiri Estuary Restoration Project") and walk back to Ration.** Enter shore at this point. Turn right and walk along the shell banks on the upper shore – **DO NOT WALK LANDWARD OF SHELL BANK AS THE MUD IS DEEP** – until you reach the Horokiri stream by some large flax bushes (see photo). Location marker is a pink topped stake numbered 17. **Take care crossing the drainage channel just past pink stake 14.**	S:41 05 673 E:174 54 287	E2669 993 N6010 712	Yellow cliffs at mouth of Duck Creek	15	35	35	30-50
18	Motukaraka Point	Rush clumps below blue seat under a very large tree at vehicle turnaround area at east Motukaraka Point.	S:41 05 655 E:174 54 113	E2669 745 N6010 742	2 red roofed houses behind mouth of Duck Creek	30	28	28	25-40
19	Motukaraka Point	Park cars by blue seat next to a tarmac path to beach at east Motukaraka Point. Walk west along beach about 50 metres to a pink spot on remnants of a brick fireplace.	S:41 05 705 E:174 53 941	E2669 505 N6010 669	Brandon subdivision (prominent yellowish house).	10	20	20	15-25

20	Motukaraka Point	At seaward edge of grass bank opposite entrance to house number 7 a pink stake marks a path to beach. Location marker a pink spot on shell bank at end of path.	S:41 05 631 E:174 53 850	E2669 389 N6010 805	Moorhouse Point (tip of Golden Gate peninsula – house with several ball-topped turrets)	20	25	25	25-30
21	Motukaraka Point	**Park at car park by public toilets.** Find culvert outlet from grass bank in front of toilet block.	S:41 05 519 E:174 53 911	E2669 479 N6011 003	Waterski Club at eastern end of Camborne walkway	15	33	33	30-40
22	Motukaraka Point	**Park at car park by public toilets.** Walk westwards across mud flats to a large bush on shell bank on beach opposite garage at entrance to "Barrowside" 325 Grays Road and the yellow/black 55 chevron sign. **TAKE CARE TO AVOID WALKING ON SALT MARSH PLANTS.**	S:41 05 442 E:174 53 922	E2669 493 N6011 145	Moorhouse Point (tip of Golden Gate peninsula – house with several ball-topped turrets)	1525	35	25	20-30

23	Kakahao	**Park at Kakaho Bridge.** Walk eastward along path through grass alongside stream to beach. Turn left and go round to sea wall. Location marker is a pink spot on rock wall opposite 283 Grays Road (about 30 metres east of car park)	S:41 05 315 E:174 53 705	E266 9207 N6011 392	Paremata Bridge; Paremata Boating Club buildings; mouth of Inlet. **Note**: this transect crosses the Kakaho stream outfall. Find a shallow place to cross it. **Adjust sample sites to miss it.**..	15	30	30	30
24	Kakahao	**Park at Kakaho bridge and cross bridge WITH GREAT CARE. Leave road about 20 metres from bridge and walk through mud flat to shell bank below salt marsh. DO NOT WALK ON SALT MARSH PLANTS.** Walk west along shore to pink topped stake numbered 24 on the shell bank.	S: 41 05 240 E: 174 53 586	E2669 027 N6009 540	Browns Bay	20	50	50	50-60

25	Kakaho	**Park at Kakaho bridge and cross bridge WITH GREAT CARE.** Leave road at 2nd black on yellow **>** road sign and walk through mud flat to shell bank below salt marsh. **DO NOT WALK ON SALT MARSH PLANTS.** Walk west to pink topped stake number 25 on the shell bank; about 100 paces beyond stake number 24, in line with blue house.	S: 41 05 233 E: 174 53 493	E2668 896 N6011 565	Prominent hill (Mercury Hill) in foreground just east of Browns Bay	20	65	65	65-75
26	Kakaho (Camborne)	**Park at Wellington Jet Sport Club at east end of Camborne walkway.** Walk east along beach to drain opposite wooden gate; about 25 metres before you get to a 'wiggly road' sign; dab of pink paint on wall by drain.	S: 41 05 254 E: 174 53 327	E2668 664 N6011 535	Bradey Bay (bush filled gully to right of prominent yellowish house).	25	60	60	50-65

27	Camborne	**Park at Wellington Jet Sport Club at east end of Camborne walkway.** Walk east along beach to a memorial cross by a drain just west of fallen large macrocarpa trees.	S: 41 05 324 E: 174 53 172	E 2668 450 N 6011 397	Bradey Bay (bush filled gully to right of prominent yellowish house).	20	25	25	25-30
28	Camborne	**Park at Wellington Jet Sport Club at east end of Camborne walkway.** Walk east along beach to set of steps to beach from Grays Road (about 100 paces east of black/white striped poles).	S: 41 05 349 E: 174 53 097	E 2668 342 N 6011 345	Prominent hill (Mercury Hill) in foreground just east of Browns Bay.	15	10	10	10-15
29	Camborne	**Park at Wellington Jet Sport Club at east end of Camborne walkway.** Walk east along beach to black/white striped pole on beach below similar pole on roadside	S: 41 05 361 E: 174 53 037	E2668 255 N6011 331	Prominent hill (Mercury Hill) in foreground just east of Browns Bay.	15	7	7	5-10

Appendix F Total numbers of cockles sampled from each of the three quadrats (A–C), tidal heights (HT, high tide; UMT, upper mid-tide; LMT, lower mid-tide; and LT, low tide) by size on the and the December 2016 survey

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	4	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
1	5	0	0	0	0	4	4	5	13	0	0	0	0	0	0	0	0	13
1	6	2	0	0	2	2	4	4	10	0	0	0	0	0	0	0	0	12
1	7	1	1	2	4	5	1	3	9	0	1	0	1	1	1	1	3	17
1	8	2	0	3	5	4	4	5	13	0	0	0	0	0	0	1	1	19
1	9	1	2	2	5	4	6	1	11	1	0	0	1	0	0	0	0	17
1	10	0	0	3	3	5	2	2	9	1	0	0	1	1	0	2	3	16
1	11	0	0	2	2	1	2	1	4	0	1	0	1	1	1	2	4	11
1	12	0	1	0	1	4	4	2	10	0	1	0	1	0	1	2	3	15
1	13	0	1	1	2	3	6	3	12	0	1	0	1	0	0	1	1	16
1	14	0	0	2	2	1	5	1	7	1	2	0	3	0	1	1	2	14

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
1	15	2	0	1	3	6	5	2	13	0	0	0	0	0	1	1	2	18
1	16	2	0	2	4	4	8	7	19	2	0	1	3	2	1	1	4	30
1	17	0	0	3	3	2	9	5	16	0	2	1	3	0	0	1	1	23
1	18	1	1	1	3	10	6	9	25	1	0	0	1	0	0	2	2	31
1	19	2	2	3	7	8	6	5	19	0	1	2	3	0	1	0	1	30
1	20	2	2	7	11	14	14	15	43	0	0	2	2	0	2	2	4	60
1	21	4	1	5	10	9	7	12	28	1	1	1	3	1	0	1	2	43
1	22	2	0	7	9	16	16	11	43	1	2	0	3	0	0	3	3	58
1	23	0	0	4	4	12	9	7	28	0	4	3	7	0	0	1	1	40
1	24	2	0	5	7	3	8	11	22	3	3	3	9	0	0	0	0	38
1	25	1	1	4	6	4	4	5	13	2	2	7	11	0	1	0	1	31
1	26	0	1	0	1	2	1	3	6	1	13	8	22	2	0	1	3	32
1	27	0	1	0	1	3	1	1	5	7	9	8	24	1	0	2	3	33
1	28	0	0	0	0	0	0	0	0	1	3	5	9	1	0	0	1	10
1	29	0	0	0	0	0	0	0	0	9	5	7	21	1	1	3	5	26
1	30	0	0	0	0	1	0	0	1	5	9	8	22	0	0	3	3	26

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
1	31	0	0	0	0	0	0	0	0	0	2	2	4	3	3	1	7	11
1	32	0	0	0	0	0	0	0	0	3	1	2	6	4	3	4	11	17
1	33	0	0	0	0	0	0	0	0	1	0	1	2	1	0	2	3	5
1	34	0	0	0	0	0	0	0	0	2	1	0	3	2	5	3	10	13
1	35	0	0	0	0	0	0	0	0	0	0	2	2	5	7	4	16	18
1	36	0	0	0	0	0	0	0	0	0	0	0	0	4	7	7	18	18
1	37	0	0	0	0	0	0	0	0	0	1	0	1	2	2	3	7	8
1	38	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	6	6
1	39	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
1	40	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	3
1	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	42	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
1	43	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
1	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
1	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	4	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
2	5	0	1	0	1	2	1	0	3	0	0	0	0	0	0	1	1	5
2	6	1	0	0	1	1	3	0	4	0	1	0	1	1	1	0	2	8
2	7	0	0	0	0	1	1	0	2	0	1	1	2	1	0	0	1	5
2	8	0	0	0	0	5	7	5	17	1	0	0	1	1	0	0	1	19
2	9	0	0	0	0	4	4	2	10	0	5	1	6	1	1	0	2	18
2	10	0	1	0	1	3	3	3	9	0	0	0	0	0	2	0	2	12
2	11	0	0	0	0	5	8	7	20	0	0	1	1	0	1	0	1	22
2	12	0	1	0	1	1	3	5	9	1	2	0	3	0	0	0	0	13

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
2	13	0	0	0	0	2	2	3	7	1	1	0	2	0	0	0	0	9
2	14	0	0	0	0	0	3	0	3	1	1	0	2	0	1	0	1	6
2	15	1	0	1	2	1	2	2	5	1		1	2	0	0	0	0	9
2	16	0	0	0	0	4	2	2	8	1		0	1	0	2	0	2	11
2	17	1	1	2	4	1	3	1	5	0		0	0	0	0	0	0	9
2	18	1	1	0	2	6	3	6	15	2	4	1	7	0	0	0	0	24
2	19	0	0	0	0	7	7	4	18	2	3	0	5	0	0	0	0	23
2	20	0	1	0	1	7	6	2	15	3	5	2	10	0	0	0	0	26
2	21	0	3	1	4	7	7	2	16	6	1	0	7	0	1	0	1	28
2	22	0	2	0	2	4	4	6	14	2	2	1	5	0	0	0	0	21
2	23	1	0	1	2	4	2	1	7	4	0	2	6	0	0	0	0	15
2	24	1	2	0	3	3	2	0	5	10	6	1	17	1	1	1	3	28
2	25	0	0	0	0	0	0	0	0	2	5	1	8	1	0	1	2	10
2	26	0	0	0	0	1	1	0	2	5	3	1	9	1	1	0	2	13
2	27	0	0	0	0	0	2	0	2	7	0	5	12	1	1	0	2	16
2	28	0	0	0	0	0	0	0	0	6	2	4	12	4	3	0	7	19

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
2	29	0	0	0	0	0	0	0	0	4	4	1	9	2	1	2	5	14
2	30	0	0	0	0	1	0	1	2	2	1	0	3	5	5	4	14	19
2	31	0	0	0	0	0	0	0	0	3	1	0	4	3	4	4	11	15
2	32	0	0	0	0	0	0	0	0	0	1	0	1	2	1	2	5	6
2	33	0	0	0	0	0	0	0	0	0	1	1	2	1	3	1	5	7
2	34	0	0	0	0	0	0	0	0	0	1	1	2	2	5	1	8	10
2	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	36	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
2	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
2	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	3	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
3	4	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
3	5	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
3	6	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
3	7	0	0	0	0	0	2	1	3	0	0	1	1	0	0	0	0	4
3	8	0	2	0	2	0	1	0	1	0	1	1	2	0	0	0	0	5
3	9	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
3	10	0	1	0	1	2	2	1	5	1	1	1	3	0	0	0	0	9

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3	11	0	2	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
3	12	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	1	3
3	13	0	0	0	0	1	0	2	3	0	0	0	0	0	0	0	0	3
3	14	0	0	0	0	3	0	3	6	0	0	1	1	0	0	0	0	7
3	15	0	1	1	2	1	1	0	2	2	0	0	2	0	0	0	0	6
3	16	0	2	0	2	1	2	0	3	0	0	0	0	0	0	0	0	5
3	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	18	0	1	0	1	1	0	2	3	5	0	0	5	0	1	0	1	10
3	19	0	0	0	0	2	0	1	3	2	0	0	2	1	0	0	1	6
3	20	0	0	0	0	4	0	0	4	1	0	0	1	0	0	0	0	5
3	21	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	2
3	22	0	0	0	0	1	0	1	2	0	0	1	1	0	0	0	0	3
3	23	0	2	0	2	0	2	0	2	1	0	0	1	0	0	1	1	6
3	24	0	0	0	0	6	0	0	6	1	0	2	3	0	0	0	0	9
3	25	0	0	0	0	2	0	2	4	4	0	1	5	0	0	0	0	9
3	26	0	1	0	1	2	1	4	7	3	0	1	4	0	0	0	0	12

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3	27	0	1	0	1	3	1	1	5	1	0	0	1	0	1	0	1	8
3	28	0	3	0	3	2	3	3	8	1	0	0	1	0	1	0	1	13
3	29	0	3	0	3	5	3	4	12	3	1	1	5	0	0	0	0	20
3	30	0	5	0	5	7	5	6	18	6	3	4	13	0	0	0	0	36
3	31	0	1	0	1	3	1	4	8	5	2	3	10	0	0	1	1	20
3	32	0	7	0	7	6	7	4	17	5	4	4	13	1	0	0	1	38
3	33	0	6	1	7	4	6	2	12	3	0	8	11	0	1	0	1	31
3	34	0	4	0	4	6	4	4	14	8	0	3	11	1	1	0	2	31
3	35	0	3	1	4	6	3	2	11	2	2	5	9	2	5	0	7	31
3	36	0	0	0	0	1	0	1	2	1	1	4	6	0	0	2	2	10
3	37	2	3	1	6	2	3	1	6	4	0	0	4	1	5	0	6	22
3	38	0	0	0	0	2	0	1	3	1	0	1	2	1	7	2	10	15
3	39	0	0	0	0	0	0	1	1	2	1	0	3	2	5	5	12	16
3	40	0	0	0	0	1	0	0	1	1	0	0	1	5	7	1	13	15
3	41	0	0	0	0	0	0	1	1	0	0	0	0	0	2	1	3	4
3	42	0	0	0	0	1	0	0	1	0	0	0	0	1	6	1	8	9

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3	43	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
3	44	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	4	4
3	45	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
3	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
3	47	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3A	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3A	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3A	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
3A	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3A	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
4	5	0	0	0	0	1	0	1	2	0	0	0	0	1	1	0	2	4
4	6	0	0	0	0	0	0	4	4	1	0	0	1	2	3	1	6	11

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
4	7	0	0	0	0	0	0	1	1	4	4	0	8	0	1	2	3	12
4	8	0	1	0	1	1	0	4	5	0	4	1	5	1	0	0	1	12
4	9	0	0	0	0	1	0	1	2	0	0	1	1	0	0	0	0	3
4	10	1	1	0	2	1	0	2	3	0	5	0	5	0	0	1	1	11
4	11	1	1	0	2	2	0	5	7	0	2	0	2	0	0	0	0	11
4	12	1	0	0	1	1	0	1	2	1	1	0	2	1	0	0	1	6
4	13	0	0	0	0	1	0	4	5	0	1	0	1	0	0	0	0	6
4	14	1	1	0	2	1	0	2	3	1	2	1	4	0	0	0	0	9
4	15	0	0	0	0	2	0	1	3	0	3	0	3	0	0	1	1	7
4	16	0	2	1	3	2	0	1	3	1	2	0	3	0	2	0	2	11
4	17	2	0	1	3	3	0	2	5	1	4	0	5	0	0	1	1	14
4	18	2	2	0	4	2	0	2	4	6	3	0	9	1	1	0	2	19
4	19	0	0	0	0	2	0	0	2	1	1	2	4	1	0	0	1	7
4	20	1	2	0	3	3	0	4	7	3	4	3	10	0	5	0	5	25
4	21	0	1	0	1	1	0	5	6	0	3	1	4	0	0	0	0	11
4	22	1	0	0	1	0	0	1	1	1	3	1	5	0	1	0	1	8

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
4	23	0	0	0	0	1	0	0	1	0	4	0	4	0	0	0	0	5
4	24	0	0	0	0	1	0	0	1	1	5	2	8	0	0	0	0	9
4	25	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	1	4
4	26	0	0	0	0	0	0	0	0	0	3	2	5	1	1	0	2	7
4	27	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
4	28	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	3
4	29	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
4	30	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	3	4
4	31	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
4	32	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	3
4	33	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4	4
4	34	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4	4
4	35	0	0	0	0	0	0	0	0	0	0	0	0	1	6	2	9	9
4	36	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
4	37	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
4	38	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3	3

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
4	39	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4	40	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
4	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	42	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	3	0	3	0	3	1	0	0	1	0	0	0	0	0	0	0	0	4
5	4	0	5	0	5	1	2	2	5	0	0	0	0	0	0	0	0	10

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
5	5	0	1	1	2	2	1	1	4	0	1	0	1	0	0	0	0	7
5	6	0	1	1	2	1	1	1	3	0	0	0	0	0	0	0	0	5
5	7	1	1	0	2	1	1	0	2	0	0	0	0	0	0	0	0	4
5	8	2	3	0	5	2	1	1	4	0	0	0	0	0	1	0	1	10
5	9	4	1	0	5	2	2	0	4	0	1	0	1	1	0	0	1	11
5	10	2	1	4	7	0	1	0	1	0	0	0	0	0	1	0	1	9
5	11	6	4	1	11	2	1	0	3	1	0	0	1	0	0	0	0	15
5	12	11	5	2	18	3	5	0	8	2	1	0	3	0	1	0	1	30
5	13	4	2	1	7	0	1	1	2	1	1	0	2	0	0	0	0	11
5	14	5	3	0	8	1	0	1	2	0	0	0	0	0	0	0	0	10
5	15	5	7	2	14	2	2	1	5	0	1	2	3	0	0	0	0	22
5	16	3	6	0	9	1	2	2	5	0	0	0	0	0	0	0	0	14
5	17	3	2	0	5	2	4	6	12	1	0	1	2	0	0	0	0	19
5	18	3	1	1	5	1	5	3	9	1	1	0	2	0	0	0	0	16
5	19	3	0	2	5	1	3	4	8	1	0	0	1	1	0	0	1	15
5	20	7	5	4	16	3	2	7	12	1	0	1	2	0	0	0	0	30

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
5	21	0	0	3	3	7	0	6	13	0	0	1	1	0	0	0	0	17
5	22	2	0	0	2	5	9	5	19	0	0	0	0	0	0	0	0	21
5	23	2	0	1	3	9	3	1	13	1	0	1	2	0	0	0	0	18
5	24	0	0	0	0	2	5	8	15	0	1	0	1	0	0	0	0	16
5	25	1	3	1	5	1	4	5	10	0	4	1	5	1	0	0	1	21
5	26	0	0	0	0	2	0	2	4	3	2	0	5	0	0	0	0	9
5	27	0	0	0	0	2	0	2	4	0	4	0	4	0	1	0	1	9
5	28	0	0	0	0	2	0	3	5	3	2	1	6	0	1	0	1	12
5	29	0	0	0	0	0	0	0	0	3	0	1	4	1	0	0	1	5
5	30	0	2	0	2	0	1	1	2	3	3	6	12	1	1	0	2	18
5	31	0	0	0	0	1	0	1	2	1	1	1	3	0	5	0	5	10
5	32	0	0	0	0	0	0	0	0	1	0	2	3	1	4	1	6	9
5	33	0	0	0	0	0	0	0	0	4	1	0	5	1	6	0	7	12
5	34	0	0	0	0	0	0	0	0	1	0	4	5	1	1	0	2	7
5	35	0	0	0	0	0	0	0	0	1	0	1	2	0	2	2	4	6
5	36	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	2	3

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
5	37	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
5	38	0	0	0	0	0	0	0	0	1	0	1	2	1	4	0	5	7
5	39	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
5	40	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	4
5	41	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5	42	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
5	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	44	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	4	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
6	5	0	0	2	2	0	0	1	1	0	0	0	0	0	0	1	1	4
6	6	0	0	3	3	0	0	1	1	0	0	1	1	0	0	1	1	6
6	7	1	1	6	8	0	2	2	4	0	0	0	0	0	0	1	1	13
6	8	3	0	4	7	1	2	2	5	1	0	0	1	0	0	0	0	13
6	9	4	0	8	12	5	1	1	7	0	1	0	1	0	0	0	0	20
6	10	6	2	10	18	0	0	3	3	0	0	0	0	0	0	0	0	21
6	11	3	3	5	11	4	1	0	5	1	0	0	1	0	0	0	0	17
6	12	4	4	8	16	3	1	5	9	1	1	0	2	0	0	1	1	28
6	13	3	5	1	9	4	2	1	7	1	0	0	1	0	0	0	0	17
6	14	2	2	5	9	1	2	0	3	0	0	0	0	0	0	0	0	12
6	15	2	4	3	9	1	1	4	6	0	0	0	0	0	0	0	0	15
6	16	5	1	5	11	1	1	5	7	1	0	0	1	0	0	0	0	19
6	17	2	1	6	9	1	1	1	3	0	0	0	0	0	0	0	0	12
6	18	6	4	5	15	2	2	1	5	2	0	0	2	1	1	0	2	24

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
6	19	3	4	4	11	1	3	2	6	1	2	3	6	0	0	0	0	23
6	20	5	4	4	13	3	2	3	8	1	0	2	3	0	1	0	1	25
6	21	2	6	5	13	0	1	5	6	1	1	3	5	0	0	0	0	24
6	22	10	2	4	16	7	4	3	14	3	2	4	9	0	0	0	0	39
6	23	5	5	5	15	4	0	3	7	1	1	3	5	0	0	0	0	27
6	24	1	2	3	6	4	0	2	6	1	2	2	5	0	0	0	0	17
6	25	0	0	1	1	6	0	6	12	1	2	5	8	0	1	0	1	22
6	26	0	0	1	1	0	1	1	2	0	3	3	6	0	0	0	0	9
6	27	1	2	0	3	3	0	1	4	3	3	0	6	2	0	0	2	15
6	28	0	0	0	0	2	0	2	4	4	0	3	7	1	0	0	1	12
6	29	0	0	0	0	1	2	1	4	1	1	1	3	0	1	0	1	8
6	30	0	0	0	0	1	0	1	2	10	3	2	15	0	1	1	2	19
6	31	0	0	0	0	1	0	0	1	3	2	0	5	0	1	0	1	7
6	32	0	0	0	0	0	0	0	0	5	0	0	5	0	1	2	3	8
6	33	0	0	0	0	0	0	0	0	2	0	0	2	2	3	0	5	7
6	34	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	3	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
6	35	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	5	5
6	36	0	0	0	0	0	0	0	0	1	0	1	2	0	3	2	5	7
6	37	0	0	0	0	0	0	0	0	1	0	0	1	1	1	2	4	5
6	38	0	0	0	0	0	0	0	0	1	1	0	2	1	1	4	6	8
6	39	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	10	10
6	40	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	10	10
6	41	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
6	42	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
6	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
6	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
6	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	48	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
6	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	5	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
7	6	0	0	0	0	0	1	0	1	0	0	0	0	2	0	1	3	4
7	7	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
7	8	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	2	3
7	9	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2
7	10	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
7	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	12	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
7	13	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
7	14	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
7	15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
7	16	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	1	3

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
7	17	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7	18	1	1	0	2	0	0	0	0	0	1	0	1	0	0	2	2	5
7	19	1	2	1	4	0	0	0	0	0	0	1	1	0	3	0	3	8
7	20	0	1	2	3	2	0	0	2	2	2	0	4	0	0	0	0	9
7	21	0	0	1	1	0	0	1	1	0	0	2	2	1	2	2	5	9
7	22	1	0	0	1	1	3	0	4	1	0	1	2	1	1	0	2	9
7	23	0	1	0	1	2	2	1	5	2	0	2	4	0	0	2	2	12
7	24	1	0	0	1	5	2	2	9	0	2	0	2	0	0	2	2	14
7	25	0	1	1	2	2	2	2	6	2	0	5	7	1	0	1	2	17
7	26	1	1	0	2	2	1	1	4	2	1	4	7	2	2	2	6	19
7	27	0	1	0	1	3	0	0	3	2	0	4	6	3	1	1	5	15
7	28	1	2	1	4	0	0	0	0	1	0	2	3	1	4	4	9	16
7	29	1	2	0	3	1	0	0	1	0	3	3	6	1	2	1	4	14
7	30	0	1	1	2	0	0	1	1	0	3	5	8	2	3	4	9	20
7	31	0	2	0	2	0	0	0	0	0	0	2	2	2	1	2	5	9
7	32	0	2	0	2	0	0	1	1	0	2	1	3	4	1	2	7	13

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
7	33	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7	34	0	3	0	3	0	0	0	0	0	1	0	1	1	0	1	2	6
7	35	0	2	0	2	0	0	0	0	0	0	1	1	0	0	0	0	3
7	36	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
7	37	0	2	0	2	0	0	0	0	0	0	0	0	1	0	0	1	3
7	38	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
7	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	40	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7	41	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
7	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
8	3	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	2	3
8	4	0	1	0	1	0	2	0	2	0	0	1	1	0	0	0	0	4
8	5	0	2	2	4	0	2	0	2	0	0	0	0	0	0	0	0	6
8	6	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0	1	3
8	7	0	0	0	0	0	2	1	3	0	0	0	0	0	1	0	1	4
8	8	0	0	1	1	0	1	0	1	0	0	0	0	1	0	0	1	3
8	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	10	0	1	1	2	0	0	0	0	0	0	1	1	0	0	0	0	3
8	11	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8	12	0	1	0	2	1	0	0	1	0	0	0	0	0	0	0	0	3
8	13	0	0	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
8	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
8	15	1	0	0	3	3	0	0	3	0	0	0	0	1	0	0	1	7
8	16	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8	17	2	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8	18	2	2	2	4	0	3	1	4	1	0	0	1	0	2	1	3	12
8	19	0	0	0	0	0	0	0	0	1	1	2	4	0	0	0	0	4
8	20	5	3	2	8	3	5	0	8	3	1	2	6	1	5	2	8	30
8	21	2	1	0	2	1	0	0	1	0	2	0	2	0	0	1	1	6
8	22	2	3	0	5	2	3	4	9	3	5	4	12	3	1	2	6	32
8	23	0	0	0	0	0	2	1	3	2	0	0	2	0	0	2	2	7
8	24	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
8	25	1	0	0	0	0	2	0	2	1	2	1	4	8	1	4	13	19
8	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
8	27	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	2
8	28	0	0	0	0	0	0	0	0	0	0	0	0	6	3	1	10	10
8	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	5	5

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
8	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	32	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	34	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
8	**47**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	3	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
9	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
9	5	2	1	0	3	1	0	0	1	1	0	0	1	0	1	0	1	6
9	6	0	2	1	3	2	4	0	6	0	0	0	0	0	0	1	1	10
9	7	1	2	1	4	1	0	0	1	0	0	1	1	0	0	0	0	6
9	8	2	1	1	4	0	0	0	0	0	0	0	0	0	1	0	1	5
9	9	1	0	2	3	0	0	1	1	0	0	0	0	0	0	0	0	4
9	10	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
9	11	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
9	12	0	0	0	0	0	1	0	1	0	0	0	0	0	2	1	3	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
9	13	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
9	14	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
9	15	3	1	2	6	0	0	0	0	0	0	0	0	0	0	0	0	6
9	16	1	0	1	2	0	2	0	2	0	1	0	1	0	0	0	0	5
9	17	0	0	4	4	1	0	2	3	0	0	0	0	0	0	0	0	7
9	18	1	0	3	4	3	4	1	8	0	0	0	0	0	0	0	0	12
9	19	1	0	1	2	1	5	2	8	0	2	0	2	0	0	0	0	12
9	20	3	0	1	4	1	3	2	6	4	0	2	6	0	1	0	1	17
9	21	0	0	0	0	1	2	1	4	1	2	1	4	0	0	0	0	8
9	22	0	0	0	0	0	0	1	1	3	2	4	9	0	0	0	0	10
9	23	0	1	0	1	1	0	1	2	1	2	6	9	0	0	1	1	13
9	24	0	0	0	0	0	0	0	0	0	2	2	4	0	1	2	3	7
9	25	0	0	0	0	0	1	1	2	1	3	1	5	0	3	1	4	11
9	26	0	0	0	0	0	0	0	0	1	0	4	5	0	5	0	5	10
9	27	0	0	0	0	0	0	1	1	1	2	1	4	0	5	3	8	13
9	28	0	0	0	0	0	0	0	0	2	0	0	2	0	3	1	4	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
9	29	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5	5
9	30	0	0	0	0	0	0	0	0	0	0	1	1	0	4	1	5	6
9	31	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
9	32	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
9	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	34	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2
9	35	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
9	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
9	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
10	4	0	0	0	0	2	0	0	2	0	0	1	1	0	2	1	3	6
10	5	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
10	6	0	0	0	0	1	0	3	4	0	0	0	0	0	2	3	5	9
10	7	0	0	0	0	2	3	1	6	0	0	0	0	0	1	0	1	7
10	8	1	0	0	1	1	0	0	1	0	0	1	1	0	1	0	1	4
10	9	0	0	0	0	4	2	0	6	0	0	2	2	0	0	0	0	8
10	10	1	1	0	2	0	0	0	0	0	1	0	1	0	1	0	1	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
10	11	0	0	0	0	2	0	1	3	0	0	0	0	0	1	0	1	4
10	12	2	0	0	2	0	0	1	1	0	0	0	0	0	3	0	3	6
10	13	2	0	1	3	2	2	0	4	0	0	0	0	0	0	0	0	7
10	14	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	2	3
10	15	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	1	5
10	16	1	0	0	1	4	1	3	8	0	1	3	4	0	1	1	2	15
10	17	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	3
10	18	0	0	0	0	8	4	2	14	0	1	0	1	0	1	0	1	16
10	19	0	0	0	0	6	3	8	17	1	0	3	4	1	0	2	3	24
10	20	1	0	0	1	3	0	0	3	5	0	1	6	1	0	0	1	11
10	21	0	0	0	0	2	2	1	5	5	2	3	10	1	2	1	4	19
10	22	0	0	0	0	0	0	0	0	4	0	5	9	0	0	0	0	9
10	23	0	0	0	0	0	0	1	1	2	1	1	4	0	2	0	2	7
10	24	0	0	0	0	0	0	0	0	4	0	2	6	0	2	0	2	8
10	25	0	0	0	0	0	0	1	1	5	0	2	7	2	1	1	4	12
10	26	0	0	0	0	0	1	1	2	2	1	2	5	2	6	5	13	20

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
10	27	0	0	0	0	0	0	0	0	1	0	1	2	0	0	2	2	4
10	28	0	0	0	0	0	0	0	0	1	0	0	1	1	1	3	5	6
10	29	0	0	0	0	0	0	0	0	0	0	0	0	1	5	9	15	15
10	30	0	0	0	0	0	0	0	0	0	0	0	0	3	4	1	8	8
10	31	0	0	0	0	0	0	0	0	1	0	0	1	5	2	8	15	16
10	32	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	6	6
10	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
10	34	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	7	7
10	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
10	36	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
10	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
10	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
11	8	0	0	0	0	2	0	0	2	0	0	0	0	2	2	0	4	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
11	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	10	0	0	0	0	0	1	1	2	2	0	0	2	1	3	0	4	8
11	11	2	0	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
11	12	0	0	1	1	1	1	1	3	1	0	0	1	0	0	0	0	5
11	13	2	2	4	8	1	0	1	2	0	0	1	1	0	0	0	0	11
11	14	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
11	15	2	3	1	6	1	0	5	6	0	0	0	0	0	1	0	1	13
11	16	0	2	2	4	0	1	0	1	0	0	1	1	0	0	0	0	6
11	17	3	2	2	7	2	2	4	8	0	0	0	0	0	0	0	0	15
11	18	5	8	2	15	7	2	3	12	2	0	2	4	1	0	0	1	32
11	19	2	0	1	3	1	3	1	5	1	1	0	2	0	0	0	0	10
11	20	0	0	0	0	6	9	7	22	2	2	1	5	0	0	0	0	27
11	21	1	1	0	2	2	2	0	4	1	1	1	3	0	1	0	1	10
11	22	1	1	0	2	9	1	7	17	1	2	6	9	0	2	2	4	32
11	23	0	0	0	0	1	4	0	5	1	1	5	7	0	0	0	0	12
11	24	0	0	0	0	0	1	0	1	2	3	0	5	0	0	0	0	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
11	25	1	0	0	1	0	3	0	3	5	11	3	19	0	2	0	2	25
11	26	0	0	0	0	0	0	1	1	0	2	1	3	2	2	1	5	9
11	27	0	0	0	0	0	1	0	1	2	1	0	3	3	3	1	7	11
11	28	0	0	0	0	0	0	0	0	2	2	3	7	3	4	4	11	18
11	29	0	0	0	0	0	0	0	0	1	1	1	3	0	2	1	3	6
11	30	1	0	0	1	0	0	0	0	0	1	0	1	0	4	0	4	6
11	31	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
11	32	0	0	0	0	0	1	0	1	0	0	0	0	1	1	2	4	5
11	33	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
11	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	35	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	3	4
11	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	40	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
11	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	4	2	5	0	7	0	0	0	0	1	0	0	1	0	1	0	1	9
12	5	5	4	0	9	1	1	0	2	2	2	0	4	2	3	0	5	20
12	6	3	2	3	8	1	0	1	2	3	2	1	6	3	4	2	9	25

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
12	7	1	4	1	6	1	1	1	3	1	0	2	3	1	0	1	2	14
12	8	2	0	2	4	1	0	0	1	3	3	5	11	0	1	0	1	17
12	9	0	1	1	2	0	0	0	0	2	2	3	7	1	0	0	1	10
12	10	0	0	1	1	1	1	1	3	4	3	1	8	2	0	0	2	14
12	11	0	0	0	0	0	0	0	0	2	2	1	5	0	0	1	1	6
12	12	4	3	0	7	1	0	1	2	2	2	2	6	2	1	0	3	18
12	13	0	1	0	1	0	0	0	0	1	1	1	3	1	0	0	1	5
12	14	3	2	5	10	3	2	0	5	1	1	1	3	0	1	2	3	21
12	15	4	0	1	5	0	0	2	2	3	0	0	3	0	1	1	2	12
12	16	3	1	2	6	3	3	2	8	1	1	2	4	0	1	0	1	19
12	17	1	3	0	4	0	1	2	3	4	3	1	8	0	1	0	1	16
12	18	0	1	1	2	4	0	3	7	5	5	3	13	0	3	0	3	25
12	19	2	2	0	4	0	0	3	3	2	2	1	5	0	0	0	0	12
12	20	1	0	1	2	0	1	1	2	5	5	13	23	1	1	0	2	29
12	21	1	0	0	1	0	0	0	0	3	3	3	9	1	0	1	2	12
12	22	0	1	0	1	0	0	2	2	6	6	8	20	0	0	2	2	25

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
12	23	1	0	0	1	0	0	1	1	5	5	4	14	1	0	1	2	18
12	24	2	0	0	2	0	0	1	1	4	4	3	11	3	2	1	6	20
12	25	0	0	1	1	0	0	1	1	2	2	1	5	3	4	4	11	18
12	26	0	0	0	0	0	0	0	0	0	0	0	0	5	5	7	17	17
12	27	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	3	4
12	28	0	0	0	0	0	0	1	1	1	0	0	1	9	6	1	16	18
12	29	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
12	30	0	0	0	0	0	0	0	0	0	0	0	0	3	6	3	12	12
12	31	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	4
12	32	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	4	4
12	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	34	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
12	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
12	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	4	0	1	1	2	0	2	2	4	0	0	0	0	0	0	0	0	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
13	5	0	1	2	3	0	5	2	7	0	1	0	1	0	0	0	0	11
13	6	0	2	3	5	1	3	7	11	0	1	0	1	0	0	0	0	17
13	7	1	3	4	8	0	0	3	3	7	2	0	9	0	0	0	0	20
13	8	0	3	1	4	4	0	4	8	5	0	1	6	0	0	1	1	19
13	9	1	3	2	6	5	0	2	7	1	0	0	1	0	0	0	0	14
13	10	0	2	1	3	2	0	3	5	0	0	0	0	1	0	0	1	9
13	11	1	0	2	3	1	0	0	1	1	1	0	2	0	1	0	1	7
13	12	1	3	3	7	4	1	3	8	0	1	2	3	0	0	0	0	18
13	13	0	4	3	7	0	3	3	6	0	1	1	2	0	0	0	0	15
13	14	1	1	1	3	2	2	2	6	0	1	1	2	0	1	0	1	12
13	15	1	3	2	6	3	6	1	10	0	0	0	0	0	1	1	2	18
13	16	1	3	2	6	5	2	4	11	1	0	0	1	0	1	0	1	19
13	17	1	0	1	2	7	1	3	11	1	0	0	1	1	0	1	2	16
13	18	1	3	1	5	11	5	10	26	0	0	0	0	0	1	0	1	32
13	19	3	1	4	8	10	2	12	24	0	0	1	1	0	0	2	2	35
13	20	0	1	1	2	5	8	6	19	1	0	0	1	0	2	1	3	25

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
13	21	0	0	0	0	0	2	9	11	1	0	0	1	0	0	1	1	13
13	22	1	0	0	1	5	1	4	10	0	0	0	0	0	0	0	0	11
13	23	0	0	0	0	3	1	2	6	0	0	0	0	0	0	1	1	7
13	24	0	0	0	0	2	2	0	4	0	1	0	1	0	0	0	0	5
13	25	0	0	0	0	1	0	0	1	2	2	1	5	0	0	1	1	7
13	26	0	0	0	0	1	0	0	1	1	1	1	3	0	1	1	2	6
13	27	0	0	0	0	0	0	0	0	3	1	0	4	1	0	0	1	5
13	28	0	0	0	0	0	0	0	0	1	1	1	3	0	0	0	0	3
13	29	0	0	0	0	0	0	0	0	2	4	2	8	1	3	2	6	14
13	30	0	0	0	0	0	1	0	1	2	4	4	10	3	1	1	5	16
13	31	0	0	0	0	0	0	0	0	3	3	2	8	4	7	5	16	24
13	32	0	0	0	0	0	0	0	0	2	2	1	5	5	1	3	9	14
13	33	0	0	0	0	0	0	0	0	1	1	2	4	1	3	2	6	10
13	34	0	0	0	0	0	0	0	0	0	1	1	2	1	3	2	6	8
13	35	0	0	0	0	0	0	0	0	0	3	1	4	0	2	5	7	11
13	36	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	6	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
13	37	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	3
13	38	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
13	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	40	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
13	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	6	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2
14	7	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
14	8	0	0	0	0	1	0	0	1	0	5	5	10	1	0	0	1	12
14	9	0	0	0	0	0	0	0	0	0	3	4	7	0	0	0	0	7
14	10	0	0	0	0	3	1	0	4	0	3	1	4	0	1	0	1	9
14	11	0	0	0	0	1	1	0	2	1	1	1	3	0	0	0	0	5
14	12	0	0	0	0	0	1	0	1	0	3	1	4	0	1	0	1	6
14	13	0	0	2	2	1	0	0	1	0		0	0	1	0	0	1	4
14	14	0	0	0	0	1	0	1	2	0		4	4	0	1	0	1	7
14	15	0	0	0	0	2	0	1	3	0	6	3	9	0	0	0	0	12
14	16	0	1	1	2	1	0	0	1	1	4	0	5	0	0	0	0	8
14	17	0	0	0	0	1	0	1	2	0	4	1	5	0	0	0	0	7
14	18	0	1	0	1	0	2	0	2	2	2	3	7	1	0	0	1	11

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
14	19	0	0	0	0	1	0	0	1	0	2	3	5	0	1	1	2	8
14	20	0	0	0	0	4	1	1	6	2	4	2	8	0	0	0	0	14
14	21	0	0	0	0	4	1	0	5	3	2	2	7	0	1	0	1	13
14	22	0	0	0	0	1	0	1	2	5	6	2	13	1	0	0	1	16
14	23	0	0	0	0	3	1	1	5	1	3	0	4	0	1	0	1	10
14	24	0	0	0	0	1	1	0	2	0	1	0	1	0	0	0	0	3
14	25	0	1	1	2	0	4	6	10	4	3	0	7	0	1	1	2	21
14	26	0	0	0	0	0	0	1	1	0	0	3	3	0	0	0	0	4
14	27	0	0	0	0	0	0	1	1	0	0	1	1	0	0	2	2	4
14	28	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4
14	29	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
14	30	0	0	0	0	0	1	2	3	0	0	0	0	1	0	0	1	4
14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	33	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
14	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
14	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	3	0	0	0	0	0	0	4	4	0	0	0	0	1	0	1	2	6
15	4	0	0	0	0	1	2	4	7	0	0	0	0	0	0	1	1	8
15	5	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	3
15	6	0	0	1	1	1	0	4	5	0	0	1	1	0	0	0	0	7
15	7	0	0	0	0	0	1	4	5	0	0	1	1	0	0	0	0	6
15	8	0	0	0	0	0	0	2	2	0	1	0	1	0	0	0	0	3
15	9	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
15	10	1	0	0	1	0	2	0	2	0	1	0	1	2	0	1	3	7
15	11	1	0	0	1	1	0	2	3	1	0	1	2	0	0	0	0	6
15	12	0	1	1	2	0	2	1	3	1	1	1	3	0	0	0	0	8
15	13	1	0	1	2	0	1	1	2	0	0	0	0	0	0	0	0	4
15	14	1	0	0	1	0	0	1	1	0	0	1	1	1	0	0	1	4
15	15	1	0	1	2	1	0	2	3	0	0	0	0	1	0	0	1	6
15	16	1	0	0	1	0	0	2	2	3	1	0	4	0	1	0	1	8

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
15	17	0	1	0	1	0	2	1	3	0	2	2	4	1	1	0	2	10
15	18	1	1	1	3	0	0	1	1	0	0	1	1	0	0	0	0	5
15	19	1	0	2	3	1	1	2	4	0	0	0	0	0	1	0	1	8
15	20	0	0	1	1	1	3	6	10	0	1	3	4	0	4	1	5	20
15	21	0	0	2	2	0	1	0	1	0	1	0	1	0	2	1	3	7
15	22	0	1	2	3	0	0	0	0	1	3	3	7	1	2	1	4	14
15	23	2	0	0	2	0	1	0	1	1	0	1	2	1	0	0	1	6
15	24	0	0	1	1	0	0	2	2	3	2	0	5	1	0	1	2	10
15	25	0	0	0	0	0	1	0	1	1	1	1	3	2	2	2	6	10
15	26	0	0	0	0	0	0	0	0	1	0	4	5	1	1	4	6	11
15	27	0	1	0	1	0	0	0	0	0	1	3	4	1	0	1	2	7
15	28	0	0	0	0	0	0	0	0	0	0	0	0	6	2	2	10	10
15	29	0	0	0	0	0	0	0	0	0	0	1	1	3	2	4	9	10
15	30	0	0	0	0	0	0	0	0	0	0	0	0	3	5	8	16	16
15	31	0	0	0	0	0	0	0	0	0	0	0	0	2	1	5	8	8
15	32	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
15	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
15	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
15	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	37	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
15	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
15	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	4	0	0	0	0	0	0	1	1	1	1	0	2	0	0	0	0	3
16	5	1	2	1	4	2	2	4	8	0	4	3	7	0	0	0	0	19
16	6	2	4	7	13	2	4	7	13	3	0	6	9	0	0	0	0	35
16	7	5	5	7	17	12	5	4	21	2	0	3	5	0	0	0	0	43
16	8	7	6	3	16	7	4	3	14	4	2	0	6	0	1	0	1	37
16	9	6	4	0	10	3	4	0	7	0	0	0	0	0	0	0	0	17
16	10	5	1	1	7	2	3	0	5	1	1	0	2	1	0	0	1	15
16	11	3	2	0	5	2	0	1	3	1	1	0	2	1	1	1	3	13
16	12	6	3	3	12	2	2	2	6	0	0	0	0	0	2	0	2	20
16	13	4	5	2	11	2	5	1	8	0	0	2	2	2	1	1	4	25
16	14	5	4	4	13	1	0	2	3	1	0	0	1	0	1	0	1	18

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
16	15	2	4	5	11	3	1	2	6	3	2	1	6	1	0	0	1	24
16	16	2	5	0	7	2	2	0	4	0	1	2	3	0	0	0	0	14
16	17	2	2	2	6	0	0	0	0	1	0	2	3	0	0	0	0	9
16	18	0	2	1	3	1	1	0	2	4	1	2	7	0	0	0	0	12
16	19	0	1	0	1	0	0	1	1	4	0	1	5	0	0	1	1	8
16	20	0	0	0	0	3	2	2	7	3	3	2	8	0	2	0	2	17
16	21	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
16	22	0	0	0	0	0	0	1	1	4	1	0	5	0	0	0	0	6
16	23	0	0	0	0	0	0	0	0	2	3	2	7	0	0	1	1	8
16	24	0	0	0	0	0	0	0	0	3	0	2	5	0	0	1	1	6
16	25	0	0	1	1	0	0	1	1	5	4	6	15	1	0	0	1	18
16	26	0	0	0	0	0	0	0	0	2	3	3	8	1	1	3	5	13
16	27	0	0	0	0	0	0	0	0	2	0	2	4	0	1	1	2	6
16	28	0	0	0	0	0	0	0	0	1	0	1	2	2	4	1	7	9
16	29	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	2	3
16	30	0	0	0	0	1	0	1	2	2	1	1	4	3	12	3	18	24

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
16	31	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	5	5
16	32	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
16	33	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
16	34	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	7	7
16	35	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	9	9
16	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	37	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
16	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
16	41	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
16	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
16	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	4	0	0	0	0	0	0	0	0	0	0	3	3	1	2	2	5	8
17	5	0	0	0	0	0	0	0	0	1	0	1	2	0	2	6	8	10
17	6	0	0	0	0	0	0	0	0	5	0	3	8	5	4	8	17	25
17	7	0	0	0	0	0	0	0	0	0	0	1	1	6	4	7	17	18
17	8	0	0	0	0	0	0	0	0	1	1	3	5	4	3	5	12	17
17	9	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4	10	10
17	10	0	0	0	0	0	0	0	0	2	0	0	2	3	3	6	12	14
17	11	0	0	0	0	0	0	0	0	1	0	3	4	4	2	8	14	18
17	12	0	0	0	0	0	0	0	0	1	1	1	3	2	2	3	7	10

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
17	13	0	1	0	1	0	0	1	1	1	0	3	4	1	2	5	8	14
17	14	0	0	0	0	0	0	0	0	2	0	2	4	5	2	5	12	16
17	15	0	0	0	0	0	0	1	1	7	0	4	11	1	3	6	10	22
17	16	0	0	0	0	0	1	1	2	3	0	5	8	5	1	2	8	18
17	17	0	0	0	0	0	0	1	1	4	0	4	8	3	3	6	12	21
17	18	0	0	0	0	0	0	0	0	5	1	4	10	7	4	5	16	26
17	19	1	0	0	1	0	0	1	1	6	1	8	15	5	5	5	15	32
17	20	0	0	0	0	0	0	0	0	4	0	11	15	6	5	5	16	31
17	21	3	0	0	3	0	0	0	0	2	0	10	12	4	7	3	14	29
17	22	6	1	0	7	1	0	0	1	2	0	4	6	7	13	7	27	41
17	23	1	0	0	1	0	0	0	0	4	1	3	8	10	11	16	37	46
17	24	1	0	0	1	0	0	0	0	3	0	8	11	11	18	19	48	60
17	25	1	0	0	1	0	0	0	0	0	0	5	5	18	12	9	39	45
17	26	0	0	0	0	0	0	0	0	0	0	2	2	19	13	13	45	47
17	27	1	0	0	1	0	0	0	0	0	0	3	3	12	13	6	31	35
17	28	1	0	0	1	0	0	0	0	0	0	0	0	12	9	8	29	30

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
17	29	0	0	0	0	0	0	0	0	0	1	0	1	7	4	1	12	13
17	30	0	0	0	0	0	0	0	0	0	0	0	0	6	2	3	11	11
17	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	32	1	0	0	1	0	0	0	0	0	0	0	0	1	3	3	7	8
17	33	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	35	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
17	36	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
17	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
17	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
18	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
18	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
18	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	3	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
19	4	1	1	4	6	3	5	4	12	0	0	0	0	0	0	0	0	18
19	5	4	5	2	11	6	13	6	25	0	0	0	0	0	1	0	1	37
19	6	2	1	1	4	27	29	20	76	0	0	0	0	0	0	0	0	80
19	7	0	11	0	11	22	15	19	56	1	0	0	1	0	0	0	0	68
19	8	0	8	1	9	17	12	15	44	2	1	1	4	0	1	1	2	59

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
19	9	0	0	1	1	11	1	1	13	0	1	1	2	0	0	0	0	16
19	10	0	1	0	1	2	1	0	3	1	3	1	5	0	0	0	0	9
19	11	1	1	0	2	0	1	0	1	0	3	0	3	0	1	0	1	7
19	12	0	0	1	1	0	3	0	3	0	0	0	0	0	1	0	1	5
19	13	0	3	1	4	0	1	1	2	0	1	0	1	0	0	0	0	7
19	14	2	0	3	5	0	1	0	1	0	1	0	1	0	0	0	0	7
19	15	6	1	0	7	1	1	0	2	1	0	2	3	0	0	0	0	12
19	16	3	4	2	9	0	1	0	1	2	2	1	5	0	0	0	0	15
19	17	5	0	1	6	1	1	2	4	1	2	0	3	0	1	0	1	14
19	18	5	0	3	8	0	3	0	3	0	0	2	2	0	1	0	1	14
19	19	1	0	0	1	1	1	0	2	2	0	1	3	1	0	0	1	7
19	20	5	6	1	12	3	5	1	9	1	2	1	4	0	0	0	0	25
19	21	3	2	1	6	1	0	0	1	2	1	4	7	0	0	0	0	14
19	22	1	1	1	3	0	0	4	4	1	1	1	3	0	0	0	0	10
19	23	4	0	2	6	1	1	2	4	0	2	1	3	0	0	1	1	14
19	24	6	2	1	9	6	4	1	11	2	0	0	2	1	0	0	1	23

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
19	25	1	1	2	4	3	6	1	10	0	3	3	6	0	0	3	3	23
19	26	1	0	0	1	2	0	0	2	1	2	3	6	1	0	2	3	12
19	27	1	0	0	1	0	2	0	2	27	3	1	31	0	1	1	2	36
19	28	0	0	0	0	1	2	0	3	0	2	2	4	0	0	2	2	9
19	29	0	0	0	0	2	1	0	3	1	2	0	3	0	0	1	1	7
19	30	0	0	0	0	2	1	0	3	1	0	1	2	1	0	1	2	7
19	31	0	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	3
19	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
19	33	0	0	0	0	0	0	0	0	1	0	1	2	0	0	1	1	3
19	34	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
19	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
19	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
19	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
20	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	8	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
20	9	0	0	0	0	0	0	2	2	2	0	0	2	0	0	0	0	4
20	10	0	0	0	0	0	0	1	1	2	0	0	2	0	0	0	0	3
20	11	0	0	0	0	0	0	3	3	1	0	0	1	0	0	0	0	4
20	12	0	0	0	0	1	1	3	5	0	0	0	0	0	0	0	0	5
20	13	0	0	0	0	0	1	5	6	0	0	0	0	0	0	0	0	6
20	14	0	0	0	0	4	0	5	9	1	1	1	3	0	1	0	1	13
20	15	0	0	0	0	1	0	7	8	0	1	1	2	0	0	0	0	10
20	16	0	0	0	0	1	0	3	4	0	3	5	8	0	0	0	0	12
20	17	0	0	0	0	0	0	3	3	0	2	0	2	1	0	0	1	6
20	18	0	0	1	1	0	0	2	2	3	1	1	5	0	0	0	0	8
20	19	0	0	0	0	0	1	0	1	5	0	5	10	0	0	0	0	11
20	20	0	0	0	0	1	0	1	2	7	0	4	11	0	0	0	0	13
20	21	0	0	0	0	0	0	0	0	1	2	3	6	1	0	1	2	8
20	22	0	0	0	0	2	1	1	4	4	2	10	16	0	1	0	1	21

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
20	23	0	0	0	0	0	0	0	0	5	0	7	12	0	0	0	0	12
20	24	0	0	0	0	2	0	2	4	9	4	12	25	0	0	0	0	29
20	25	0	0	0	0	0	0	2	2	13	4	8	25	0	0	1	1	28
20	26	0	0	0	0	0	0	3	3	4	0	4	8	0	0	0	0	11
20	27	0	0	0	0	0	0	1	1	5	4	1	10	0	0	0	0	11
20	28	0	0	0	0	0	0	0	0	4	7	0	11	1	0	0	1	12
20	29	0	0	0	0	0	0	0	0	6	0	1	7	0	0	0	0	7
20	30	0	0	0	0	0	0	0	0	3	4	0	7	0	0	0	0	7
20	31	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
20	32	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
20	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	34	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
20	35	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
20	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	37	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
20	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
20	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
21	5	0	0	0	0	2	5	0	7	0	3	0	3	0	0	0	0	10
21	6	0	0	0	0	2	4	0	6	0	2	0	2	0	0	0	0	8
21	7	0	0	0	0	8	3	0	11	1	2	0	3	0	0	0	0	14
21	8	0	0	0	0	4	3	3	10	0	0	0	0	0	0	0	0	10
21	9	0	0	0	0	1	4	0	5	0	0	0	0	0	0	0	0	5
21	10	0	0	0	0	6	3	3	12	0	1	0	1	0	0	0	0	13
21	11	1	0	0	1	0	2	2	4	0	0	0	0	0	0	0	0	5
21	12	0	1	0	1	5	3	2	10	0	0	0	0	0	0	0	0	11
21	13	0	0	1	1	1	3	2	6	1	1	0	2	0	0	0	0	9
21	14	0	0	0	0	0	2	0	2	0	0	1	1	0	0	0	0	3
21	15	1	0	0	1	3	6	1	10	0	1	1	2	0	0	2	2	15
21	16	1	0	0	1	1	0	0	1	0	2	0	2	0	0	0	0	4
21	17	0	0	2	2	1	2	2	5	1	2	0	3	1	1	2	4	14
21	18	0	0	1	1	2	0	0	2	3	3	3	9	0	0	0	0	12
21	19	1	0	0	1	0	1	0	1	4	0	2	6	0	0	0	0	8
21	20	1	0	1	2	3	2	5	10	3	6	2	11	0	1	0	1	24

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
21	21	1	0	0	1	1	0	0	1	1	1	1	3	1	0	0	1	6
21	22	1	0	0	1	1	2	3	6	2	1	4	7	0	1	0	1	15
21	23	0	2	0	2	1	0	2	3	0	3	2	5	1	0	1	2	12
21	24	2	0	0	2	1	0	0	1	2	11	6	19	0	0	2	2	24
21	25	1	1	0	2	1	0	0	1	4	5	5	14	2	2	4	8	25
21	26	0	0	0	0	0	0	0	0	2	1	2	5	0	0	1	1	6
21	27	0	0	0	0	0	0	0	0	5	3	1	9	2	0	2	4	13
21	28	0	0	0	0	0	0	0	0	1	3	3	7	1	1	2	4	11
21	29	0	0	0	0	0	0	0	0	2	1	0	3	2	1	1	4	7
21	30	0	0	0	0	0	0	0	0	1	2	1	4	4	0	5	9	13
21	31	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
21	32	1	0	0	1	0	0	0	0	0	0	1	1	1	0	1	2	4
21	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
21	34	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
21	35	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2
21	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
21	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
21	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	39	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
21	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
22	3	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	3
22	4	1	2	2	5	0	1	0	1	0	0	0	0	0	0	0	0	6
22	5	0	1	2	3	1	2	1	4	0	0	0	0	0	0	1	1	8
22	6	0	3	1	4	0	1	1	2	1	0	2	3	0	0	0	0	9
22	7	2	3	3	8	0	0	0	0	1	0	0	1	0	0	0	0	9
22	8	2	2	3	7	0	1	0	1	0	0	0	0	1	0	0	1	9
22	9	2	0	1	3	1	0	1	2	0	1	0	1	1	0	0	1	7
22	10	4	2	2	8	2	2	4	8	0	0	1	1	0	1	2	3	20
22	11	1	0	0	1	2	0	0	2	0	0	0	0	0	0	1	1	4
22	12	2	4	4	10	4	0	0	4	0	0	0	0	0	0	1	1	15
22	13	0	5	1	6	0	2	1	3	0	0	1	1	0	0	1	1	11
22	14	2	2	2	6	2	2	1	5	0	0	0	0	0	0	0	0	11
22	15	6	4	3	13	5	0	2	7	2	0	0	2	1	0	0	1	23
22	16	3	4	4	11	1	0	1	2	0	0	0	0	1	0	0	1	14
22	17	3	2	1	6	6	1	1	8	0	0	0	0	1	0	0	1	15
22	18	3	3	3	9	7	1	0	8	0	0	1	1	0	0	1	1	19

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
22	19	3	1	4	8	8	3	0	11	0	1	0	1	0	1	0	1	21
22	20	5	1	3	9	4	5	5	14	6	1	0	7	1	1	0	2	32
22	21	0	1	3	4	2	5	7	14	0	0	1	1	0	0	0	0	19
22	22	1	0	1	2	3	2	6	11	1	1	5	7	1	1	1	3	23
22	23	1	0	1	2	0	3	3	6	2	1	2	5	1	1	2	4	17
22	24	2	1	0	3	0	11	6	17	0	1	5	6	1	1	1	3	29
22	25	2	0	0	2	0	2	4	6	7	2	4	13	3	1	2	6	27
22	26	0	0	0	0	0	3	3	6	0	0	3	3	0	3	0	3	12
22	27	0	0	0	0	0	2	3	5	0	2	2	4	0	0	0	0	9
22	28	0	0	0	0	0	1	3	4	0	0	5	5	0	2	3	5	14
22	29	0	0	0	0	0	0	0	0	0	4	1	5	0	1	0	1	6
22	30	0	0	0	0	0	0	1	1	4	4	7	15	0	1	1	2	18
22	31	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	2
22	32	0	0	0	0	0	0	0	0	1	0	3	4	1	0	1	2	6
22	33	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	2	4
22	34	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
22	35	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
22	36	0	0	0	0	0	0	0	0	0	0	1	1	0	1	2	3	4
22	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	4	2	0	0	2	0	1	0	1	0	0	0	0	0	2	1	3	6
23	5	5	1	2	8	0	0	0	0	0	0	0	0	1	0	0	1	9
23	6	2	1	1	4	1	0	0	1	0	2	1	3	0	2	1	3	11
23	7	2	1	2	5	1	1	0	2	0	0	0	0	0	1	0	1	8
23	8	0	0	1	1	2	3	0	5	1	0	0	1	0	0	0	0	7
23	9	0	1	0	1	3	1	2	6	0	2	0	2	1	3	2	6	15
23	10	0	0	0	0	4	4	11	19	1	4	0	5	1	1	4	6	30
23	11	2	0	0	2	2	2	6	10	1	2	0	3	1	1	0	2	17
23	12	0	0	1	1	2	3	3	8	0	0	0	0	1	0	2	3	12
23	13	0	0	3	3	2	4	12	18	0	1	0	1	3	0	2	5	27
23	14	0	0	1	1	0	0	7	7	0	0	0	0	1	0	2	3	11
23	15	0	1	0	1	1	3	8	12	0	0	0	0	0	2	1	3	16
23	16	2	4	3	9	2	0	3	5	1	1	0	2	1	0	0	1	17

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
23	17	3	0	5	8	2	0	2	4	0	2	0	2	0	2	0	2	16
23	18	7	0	2	9	2	0	6	8	0	2	0	2	0	3	2	5	24
23	19	2	1	3	6	1	0	0	1	2	2	0	4	1	1	2	4	15
23	20	8	0	6	14	0	0	0	0	2	2	0	4	0	1	0	1	19
23	21	1	0	1	2	1	0	1	2	4	2	0	6	0	2	0	2	12
23	22	0	1	0	1	2	0	0	2	2	5	1	8	0	0	0	0	11
23	23	1	0	0	1	0	0	0	0	0	4	0	4	0	0	2	2	7
23	24	1	0	0	1	0	0	0	0	1	5	0	6	3	0	2	5	12
23	25	0	0	0	0	1	0	0	1	5	10	0	15	0	0	0	0	16
23	26	0	0	0	0	0	0	0	0	2	3	0	5	1	1	1	3	8
23	27	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	1	4
23	28	0	0	0	0	0	0	0	0	0	2	1	3	1	2	1	4	7
23	29	0	0	0	0	0	0	0	0	0	1	0	1	1	3	3	7	8
23	30	0	0	0	0	2	0	0	2	0	0	0	0	0	4	5	9	11
23	31	0	0	0	0	0	0	0	0	0	0	0	0	1	6	12	19	19
23	32	0	0	0	0	0	0	0	0	0	0	0	0	2	3	4	9	9

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
23	33	0	0	0	0	0	0	0	0	0	0	0	0	7	7	8	22	22
23	34	0	0	0	0	0	0	0	0	0	0	0	0	7	5	5	17	17
23	35	0	0	0	0	0	0	0	0	0	0	0	0	4	11	10	25	25
23	36	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	8	8
23	37	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	6	6
23	38	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	7	7
23	39	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23	40	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
23	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	42	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23	43	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
23	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
23	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
24	4	3	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	4
24	5	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
24	6	1	0	1	2	0	0	0	0	0	0	0	0	1	0	0	1	3
24	7	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2
24	8	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
24	9	0	2	1	3	1	0	0	1	0	0	0	0	0	0	0	0	4
24	10	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
24	11	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
24	12	2	1	1	4	0	0	2	2	0	0	0	0	0	0	0	0	6
24	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	14	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
24	15	1	1	1	3	0	0	1	1	1	0	0	1	0	0	0	0	5
24	16	3	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	6
24	17	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
24	18	0	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	3
24	19	1	4	2	7	0	1	0	1	0	0	1	1	1	0	0	1	10
24	20	1	1	1	3	1	0	1	2	0	0	0	0	0	1	0	1	6
24	21	0	1	0	1	0	0	3	3	0	0	0	0	1	0	0	1	5
24	22	1	2	3	6	1	0	1	2	1	0	0	1	1	0	0	1	10
24	23	0	0	1	1	0	1	1	2	1	0	1	2	0	0	1	1	6
24	24	0	0	0	0	2	1	1	4	0	0	1	1	1	0	0	1	6
24	25	0	0	0	0	5	0	1	6	0	0	0	0	0	0	0	0	6
24	26	0	0	0	0	3	1	0	4	0	0	0	0	0	0	0	0	4
24	27	0	0	0	0	2	2	3	7	0	0	0	0	0	0	0	0	7
24	28	0	0	0	0	3	2	1	6	3	1	0	4	0	0	0	0	10
24	29	0	0	0	0	0	2	3	5	1	0	3	4	0	0	0	0	9
24	30	0	0	0	0	2	1	2	5	2	3	0	5	0	0	0	0	10

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
24	31	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
24	32	0	0	0	0	2	0	2	4	1	1	1	3	1	0	1	2	9
24	33	0	0	0	0	0	0	1	1	0	1	2	3	0	0	1	1	5
24	34	0	0	0	0	1	1	1	3	1	1	1	3	0	0	0	0	6
24	35	0	0	0	0	0	0	0	0	1	2	5	8	0	1	0	1	9
24	36	0	0	0	0	0	0	0	0	2	0	1	3	0	0	0	0	3
24	37	0	0	0	0	0	1	0	1	2	2	2	6	0	0	1	1	8
24	38	0	0	0	0	0	1	0	1	1	1	1	3	1	0	1	2	6
24	39	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
24	40	0	0	0	0	0	0	0	0	1	1	0	2	1	0	2	3	5
24	41	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
24	42	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	3	4
24	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	46	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
24	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	10	2	0	1	3	0	0	0	0	1	0	0	1	0	0	0	0	4
25	11	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
25	12	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
25	13	0	1	2	3	0	0	0	0	0	0	1	1	0	0	0	0	4
25	14	0	0	2	2	0	0	0	0	0	0	0	0	0	1	0	1	3
25	15	2	3	1	6	1	1	0	2	0	0	0	0	0	1	0	1	9
25	16	2	0	2	4	1	1	0	2	1	0	1	2	0	0	0	0	8
25	17	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
25	18	2	0	1	3	1	0	0	1	0	0	0	0	1	0	0	1	5
25	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	20	0	0	4	4	0	0	0	0	0	0	0	0	1	0	0	1	5
25	21	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
25	22	0	2	0	2	2	0	0	2	1	0	0	1	0	0	0	0	5
25	23	0	0	0	0	0	1	0	1	0	0	10	10	1	0	0	1	12
25	24	0	0	1	1	0	0	0	0	1	2	1	4	1	0	0	1	6
25	25	2	1	0	3	0	0	0	0	1	1	0	2	0	0	0	0	5
25	26	0	1	0	1	0	0	0	0	1	0	2	3	0	0	1	1	5
25	27	0	1	0	1	0	0	0	0	0	3	2	5	1	0	0	1	7
25	28	0	0	2	2	0	0	0	0	1	4	4	9	0	0	0	0	11

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
25	29	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	3
25	30	1	0	0	1	0	0	0	0	5	3	5	13	0	0	0	0	14
25	31	0	0	0	0	0	0	0	0	1	0	2	3	0	0	0	0	3
25	32	0	0	0	0	0	0	0	0	3	0	4	7	0	0	0	0	7
25	33	0	0	0	0	0	0	0	0	4	0	5	9	0	0	0	0	9
25	34	0	0	0	0	0	0	0	0	1	0	3	4	0	0	1	1	5
25	35	0	0	0	0	0	0	0	0	4	0	2	6	0	1	0	1	7
25	36	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	1	3
25	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
25	38	0	0	0	0	0	0	0	0	1	0	0	1	2	1	0	3	4
25	39	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	2	3
25	40	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	3
25	41	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
25	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	44	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
25	45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
25	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
25	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	49	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
25	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	4	1	1	1	3	0	0	2	2	0	0	0	0	0	0	0	0	5
26	5	2	3	3	8	0	0	0	0	1	2	2	5	0	0	0	0	13
26	6	1	7	2	10	1	1	0	2	0	0	2	2	0	0	1	1	15
26	7	2	1	0	3	0	1	0	1	0	0	0	0	1	0	0	1	5
26	8	2	0	1	3	0	0	0	0	1	1	1	3	1	0	1	2	8
26	9	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	1	3
26	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
26	11	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2
26	12	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
26	13	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
26	14	0	0	2	2	0	1	1	2	0	2	0	2	0	0	0	0	6
26	15	1	1	3	5	0	0	0	0	0	0	0	0	0	0	1	1	6
26	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	17	0	2	4	6	0	0	1	1	0	0	1	1	0	0	0	0	8
26	18	0	2	1	3	0	2	0	2	0	0	0	0	0	1	1	2	7
26	19	1	3	1	5	2	0	1	3	1	0	0	1	0	0	0	0	9
26	20	7	4	0	11	2	0	1	3	1	0	1	2	0	0	0	0	16
26	21	2	4	5	11	2	2	1	5	0	0	0	0	0	0	0	0	16
26	22	1	1	2	4	1	1	1	3	0	0	1	1	0	0	0	0	8
26	23	0	0	1	1	1	2	2	5	0	0	1	1	0	1	0	1	8
26	24	0	0	0	0	2	1	1	4	1	0	1	2	0	0	0	0	6
26	25	0	0	1	1	1	2	3	6	1	2	3	6	0	0	0	0	13
26	26	0	0	0	0	1	1	0	2	0	4	0	4	1	0	2	3	9

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
26	27	0	0	0	0	0	1	2	3	0	0	5	5	0	0	0	0	8
26	28	0	0	0	0	0	1	0	1	0	2	2	4	0	0	2	2	7
26	29	0	0	0	0	0	0	0	0	3	4	3	10	1	1	0	2	12
26	30	1	0	0	1	0	0	0	0	0	6	3	9	0	1	3	4	14
26	31	0	0	0	0	0	0	0	0	1	1	1	3	0	1	3	4	7
26	32	0	0	0	0	0	0	0	0	0	1	2	3	0	0	1	1	4
26	33	0	0	0	0	0	0	0	0	0	1	1	2	2	0	1	3	5
26	34	0	0	0	0	0	0	0	0	1	4	3	8	1	1	2	4	12
26	35	0	0	0	0	0	0	0	0	1	1	0	2	1	2	1	4	6
26	36	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	5	6
26	37	0	0	0	0	0	0	0	0	0	0	2	2	1	3	1	5	7
26	38	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
26	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
26	40	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4	4
26	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
26	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	6	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
27	7	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
27	8	1	0	1	2	0	1	0	1	0	1	0	1	0	0	0	0	4

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
27	9	2	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
27	10	0	1	1	2	0	2	0	2	0	0	0	0	0	0	0	0	4
27	11	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
27	12	1	0	0	1	2	0	0	2	0	0	0	0	0	0	0	0	3
27	13	1	0	0	1	0	0	0	0	0	1	1	2	0	0	0	0	3
27	14	0	0	1	1	0	0	2	2	0	1	0	1	0	0	0	0	4
27	15	0	0	0	0	0	0	1	1	0	0	1	1	1	0	0	1	3
27	16	2	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
27	17	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
27	18	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
27	19	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
27	20	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
27	21	1	2	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
27	22	2	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	3
27	23	3	5	0	8	1	0	0	1	1	0	0	1	2	0	0	2	12
27	24	4	6	0	10	1	0	1	2	0	0	0	0	1	0	0	1	13

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
27	25	2	4	0	6	0	0	1	1	0	0	0	0	0	0	0	0	7
27	26	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
27	27	4	3	0	7	0	0	0	0	0	1	0	1	1	0	0	1	9
27	28	2	3	0	5	1	0	1	2	0	2	0	2	0	0	0	0	9
27	29	1	0	0	1	1	2	1	4	0	1	0	1	0	0	0	0	6
27	30	2	3	0	5	0	0	1	1	0	0	0	0	0	0	0	0	6
27	31	1	0	0	1	1	0	2	3	0	0	0	0	0	0	0	0	4
27	32	1	1	0	2	1	2	1	4	1	0	1	2	0	0	0	0	8
27	33	0	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	3
27	34	0	0	0	0	1	1	1	3	2	2	1	5	0	0	1	1	9
27	35	0	0	0	0	1	1	2	4	2	0	1	3	1	0	0	1	8
27	36	0	0	0	0	0	0	1	1	2	1	1	4	0	0	0	0	5
27	37	0	0	0	0	0	0	0	0	1	1	2	4	0	0	0	0	4
27	38	0	0	0	0	1	0	1	2	1	1	0	2	0	0	0	0	4
27	39	0	0	0	0	0	0	2	2	1	0	2	3	0	0	1	1	6
27	40	0	0	0	0	0	0	0	0	1	5	0	6	0	0	0	0	6

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
27	41	0	0	0	0	0	0	0	0	2	2	1	5	1	0	0	1	6
27	42	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	3
27	43	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	1	3
27	44	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
27	45	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
27	46	0	0	0	0	0	0	0	0	0	0	2	2	0	0	1	1	3
27	47	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
27	48	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
27	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	50	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
27	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	52	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
28	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	6	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
28	7	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
28	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	9	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
28	10	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
28	11	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
28	12	1	0	0	1	2	0	0	2	0	1	0	1	0	0	0	0	4
28	13	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	3
28	14	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2
28	15	0	0	0	0	1	1	1	3	0	2	0	2	0	0	0	0	5
28	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	17	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
28	18	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
28	19	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
28	20	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	1	3

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
28	21	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
28	22	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
28	23	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
28	24	0	1	0	1	0	0	2	2	0	0	0	0	0	0	0	0	3
28	25	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
28	26	1	0	0	1	1	1	0	2	0	3	0	3	1	0	0	1	7
28	27	0	1	0	1	0	1	0	1	1	1	1	3	1	0	0	1	6
28	28	0	1	0	1	2	3	1	6	0	1	0	1	0	0	0	0	8
28	29	1	2	1	4	0	0	0	0	0	1	0	1	0	1	0	1	6
28	30	2	0	0	2	2	1	3	6	0	0	0	0	0	0	0	0	8
28	31	2	0	1	3	1	2	2	5	0	0	0	0	0	0	0	0	8
28	32	0	0	0	0	1	3	0	4	0	1	0	1	0	0	0	0	5
28	33	1	0	0	1	0	1	2	3	1	1	0	2	0	0	1	1	7
28	34	0	0	2	2	2	0	0	2	0	0	1	1	0	0	0	0	5
28	35	0	0	0	0	4	0	1	5	0	1	1	2	0	0	0	0	7
28	36	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	2

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
28	37	0	0	1	1	0	1	0	1	0	0	1	1	0	0	0	0	3
28	38	0	0	0	0	1	0	1	2	0	0	0	0	1	0	0	1	3
28	39	1	0	0	1	1	1	0	2	0	0	0	0	0	0	0	0	3
28	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	41	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
28	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	44	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
28	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
29	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
29	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
29	9	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
29	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
29	11	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
29	12	0	0	0	0	1	0	0	1	1	0	2	3	0	0	0	0	4
29	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	14	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	2
29	15	1	0	0	1	0	0	1	1	0	0	1	1	1	0	0	1	4
29	16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
29	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	18	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	2

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
29	19	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
29	20	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2
29	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	22	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
29	23	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	2
29	24	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
29	25	1	2	0	3	1	0	0	1	0	1	1	2	0	0	0	0	6
29	26	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
29	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	28	1	3	1	5	1	0	0	1	0	1	0	1	0	0	0	0	7
29	29	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
29	30	1	1	1	3	0	1	1	2	0	1	1	2	0	0	0	0	7
29	31	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
29	32	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
29	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	34	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
29	35	0	0	0	0	4	2	5	11	5	1	1	7	0	0	0	0	18
29	36	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
29	37	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	2
29	38	0	0	0	0	1	1	2	4	0	0	2	2	0	0	3	3	9
29	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	40	0	0	1	1	2	0	0	2	3	2	2	7	0	0	0	0	10
29	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	42	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
29	43	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
29	44	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
29	45	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
29	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	47	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
29	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	50	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
30	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
30	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Transect	Length (mm)	HTA	HTB	HTC	HT total	UMTA	UMTB	UMTC	UMT total	LMTA	LMTB	LMTC	LMT total	LTA	LTB	LTC	LT total	Total number
30	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix G Histograms of the size (length) frequency of cockles for all sites combined since 1998. Juvenile cockles classified as those 10 mm in length and smaller shown in blue and adults greater than 10 mm in length shown in red.