Figure 5-10 Mangrove root assemblages at site C2 in 2005

Figure 5-11 Mangrove root assemblages at site C3 in 2003

Figure 5-12 Mangrove root assemblages at site C3 in 2005

Figure 5-13 Mangrove root assemblages at site C7 in 2005

5.3 Benthic faunal analysis

Summary

Benthic infaunal analysis found no detectable impacts of farming activity on benthic communities at Port Hurd. Analysis of faunal similarities detected habitat-related variation, with intertidal communities distinct from the subtidal communities. Within both the intertidal and subtidal groupings, differentiation was also observed between the Port Hurd farm and Gullala Creek control sites. However, this differentiation was present in both the 2003 baseline and 2005 monitoring surveys, indicating that it primarily reflects natural variation rather than farming impacts. K-dominance curves revealed that faunal dominance had declined since the 2003 baseline survey at the majority of the subtidal and intertidal farm and control sites. Similarly, increases in species richness and diversity index values were documented for most control and farm sites, suggesting that farming activity had not impacted on these parameters. Animal numbers increased at most control sites whilst remaining constant or declining at most farm sites. It seems unlikely that the latter declines in animal abundance reflect farming impact, since the general response of communities to organic inputs is a decline in species numbers coupled with increased faunal abundance, the reverse of the findings above. This conclusion is supported by the results of repeated measures Analyses of Variance (ANOVAs), which found that temporal variation in species richness and abundance between 2003 and 2005 did not differ significantly between the farm and control sites. Hence, based on the survey design implemented, farming at Port Hurd had no detectable impact on benthic infauna species richness or abundance.

Methods

Benthic infauna data were analysed using a range of univariate and multivariate statistical methods to assess patterns of spatial and temporal variation. In particular, comparisons were made between the 2003 baseline and 2005 monitoring data to determine if there was a detectable impact of farming activity at Port Hurd.

Benthic infauna data were analysed using multidimensional scaling (MDS), as run by SYSTAT (Wilkinson 1989) and PRIMER (Carr 1996) programs, in order to produce the best graphical depiction of faunal similarities among samples. For this analysis, the data matrix showing total abundance of species in each sample was double square root transformed and converted to a symmetric matrix of biotic similarity between pairs of samples using the Bray-Curtis similarity index. These procedures follow the recommendations of Faith *et al*. (1987) and Clarke (1993) for data matrices with numerous zero records. The usefulness of the two dimensional MDS display of relationships among samples is indicated by the stress statistic, which if <0.1 indicates that the depiction of relationships is good, and if >0.2 that the depiction is poor (Clarke 1993).

Several indices were calculated to provide information on macrobenthic diversity at sites sampled:

Species number, S
Where S equals the number of species or equivalent taxonomic unit collected in a sample.
Individuals, N
Where N equals then number of individuals of all species collected in a sample.
Diversity (Shannon-Wiener), $H' = -\sum_i \rho_i(\log \rho_i)$
Where ρ_i is the proportion of the total count arising from the $_i$th species.

Evenness (Pielou's), J' = H'(observed)/H'$_{max}$
Where H'$_{max}$ is the maximum possible Shannon diversity which could be achieved if all species contained the same number of individuals (=log S).
Richness (Margalef's), d = (S-1)/log N
Where d is a measure of the number of species present for a given number of individuals.

K-dominance curves were calculated for each site sampled, based on pooled replicate data. K-dominance curves rank the families collected at each site from most abundant to least abundant and allow easy determination of levels of faunal dominance. K-dominance curves provide a useful indicator of benthic infauna community health, with large y-intercept values and steep curves indicative of high levels of faunal dominance and hence low levels of community health. The K-dominance curves, in addition to the MDS analyses and diversity indices calculations described above, were performed using the software package Primer® Version 5.2.2.

In addition to the above analyses, repeated measures Analyses of Variance (ANOVAs) were performed to compare changes observed at control and farm sites between the 2003 baseline and 2005 monitoring surveys. These analyses were performed to test whether changes observed between the two surveys differed statistically between control and farm sites, and hence to assess whether a significant impact was detectable at the farm sites. Two benthic infaunal parameters were analysed: abundance and species richness. Since replicate samples were unlikely to have been collected from identical locations on the seabed during the 2003 and 2005 surveys, the repeated measures analysis was performed at the level of site. In accordance with this, data were aggregated across sites by calculating total abundance and species richness for each replicate, and then taking averages of the three replicate values to calculate site values. This process was repeated for each control and farm site.

The repeated measures ANOVAs were performed using Systat® Version 11, and prior to these analyses, the Shapiro-Wilk test for normality and the Bartlett's and Levene's tests for equality of variances were applied to datasets using the same program. These tests indicated that variances were not heterogenous for either abundance or species richness data, and hence the data were not transformed prior to performing the ANOVAs.

Results

Macrobenthic species collected during the monitoring survey are shown in Table 7.6-3 and Table 7.6-4 and consisted of 173 species represented by a total of 2712 individuals, compared with 148 species and 2399 individuals in the 2003 baseline survey (Table 7.6-1 and Table 7.6-2). Samples from farm sites contained 119 species and 989 individuals, compared with 133 species and 1723 individuals at the Gullala Creek control sites. The higher numbers of species and individuals at Gullala Creek are consistent with patterns of variation observed during the 2003 baseline survey. The decapod crustacean *Macrophthalmus* sp. 2 (205 individuals) was the most common species at the Port Hurd farm sites, and was also the most common species at those sites during the 2003 survey (355 individuals). Other common species at farm sites during the current monitoring survey included the capitellid polychaete *Scyphoproctus* sp. (143 individuals) and the tanaid crustacean *Apseudes* sp. 2 (143 individuals), the latter being found primarily at site F4. At Gullala Creek, the capitellid polychaete *Scyphoproctus* sp. (333 individuals) was the most common species observed, while the tanaid *Kalliapseudes* sp. (160) was also relatively common.

The percentage composition of different animal taxa in the faunal community can be indicative of changes in sediment quality associated with farming activities. A typical change resulting from organic loading can be a significant increase in polychaetes, coupled with a decrease in crustaceans, at the farm sites compared with the control sites. In the current survey, increases in the proportions of polychaetes were evident in terms of both abundance and species richness. However, these changes were observed at most control sites in addition to the farm sites and hence are likely to reflect natural changes in environmental conditions, rather than impacts resulting from farming.

The results of MDS analysis using all 2005 macrobenthic samples are displayed in Figure 5-14. The MDS plot reveals differences between intertidal and subtidal samples, since the former are grouped primarily on the left side of the plot, with the latter on the right side. This can be seen more clearly in Figure 5-15, an MDS plot for aggregated samples at each site. In the case of the subtidal sites, farm and control sites did not form separate groupings, indicating overlap in assemblages between Port Hurd and Gullala Creek. However, in the case of intertidal sites, the farm sites formed a grouping in the top half of the plot while the control sites formed a grouping in the lower half (Figure 5-15). Closer examination of replicate data shows that one sample from F2 was similar to the control site samples, while all other farm samples were distinct. Samples from F1 and F3 formed a sub-grouping that was relatively similar to some of the subtidal sites, while samples from F2 showed a high level of intra-site variation and were distinct from other farm samples (Figure 5-14 and Figure 5-15).

Differences in assemblages between intertidal and subtidal sites were again the dominant feature of the MDS plot when aggregated site data was included for both 2003 baseline and 2005 monitoring datasets (Figure 5-16). This plot indicates that differences between the two habitats were present in 2003 and have been maintained over time, as reflected by 2005 data. It also reveals differences between control and farm sites, with controls grouped in the top half of the plot and farm sites in the bottom half. The only exception was F5 in 2005 which was a clear outlier, but was most similar to the subtidal control sites. This site was also an outlier in 2003, while site F2 was similarly an outlier in both years. In contrast to the 2005 plots (Figure 5-14 and Figure 5-15), differentiation between control and farm sites was evident for both subtidal and intertidal sites. It is also important to note that this differentiation was present in the baseline 2003 samples, as well as in the 2005 samples, and therefore primarily reflects natural variation between Port Hurd and Gullala Creek.

The question of how much temporal variation occurred at farm sites compared with the control sites is explored more in Figure 5-17. This MDS plot illustrates the relative changes in faunal communities at all sites between the 2003 and 2005 surveys. Changes across the control and farm sites were generally similar in magnitude, with the primary exception of F5, which displayed a major shift between 2003 and 2005. Comparable levels of change at the control and farm sites indicate that natural variation is likely to have played a major role in temporal variation observed. However, it is interesting to note that changes at impact sites were generally in the same direction, with site similarity therefore increasing over time, while changes at control sites were in variable directions and there was no overall increase in site similarity. This suggests that a component of the temporal variation observed was unique to the Port Hurd sites. Figure 5-18 includes only the farm sites and therefore allows a closer inspection of changes recorded at Port Hurd. As mentioned above, sites F2 and F5, while showing large temporal shifts, were outliers in both survey years. Shifts at all other sites were in a similar direction, with the exception of the small shift at F6.

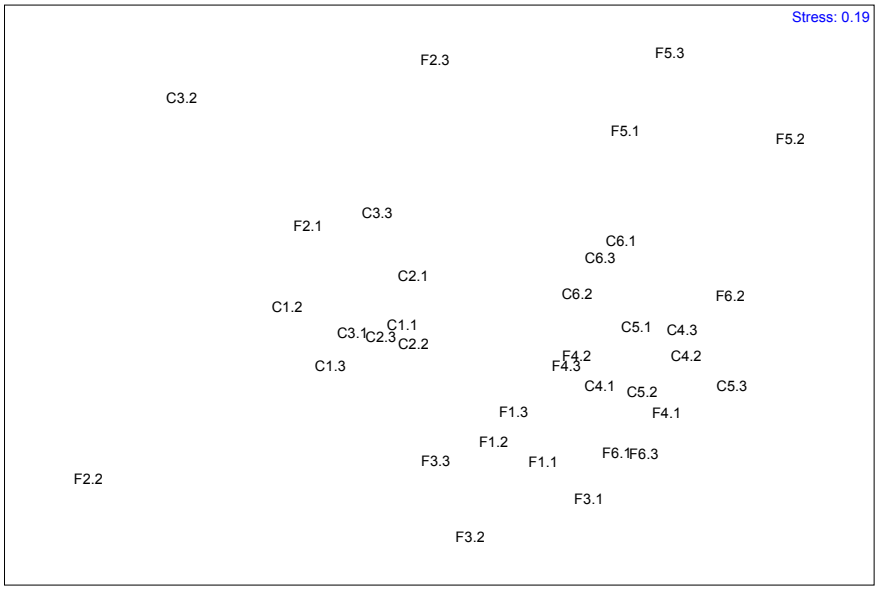

Figure 5-14 Results of MDS analysis using 2005 macrobenthic data from triplicate samples at each site.

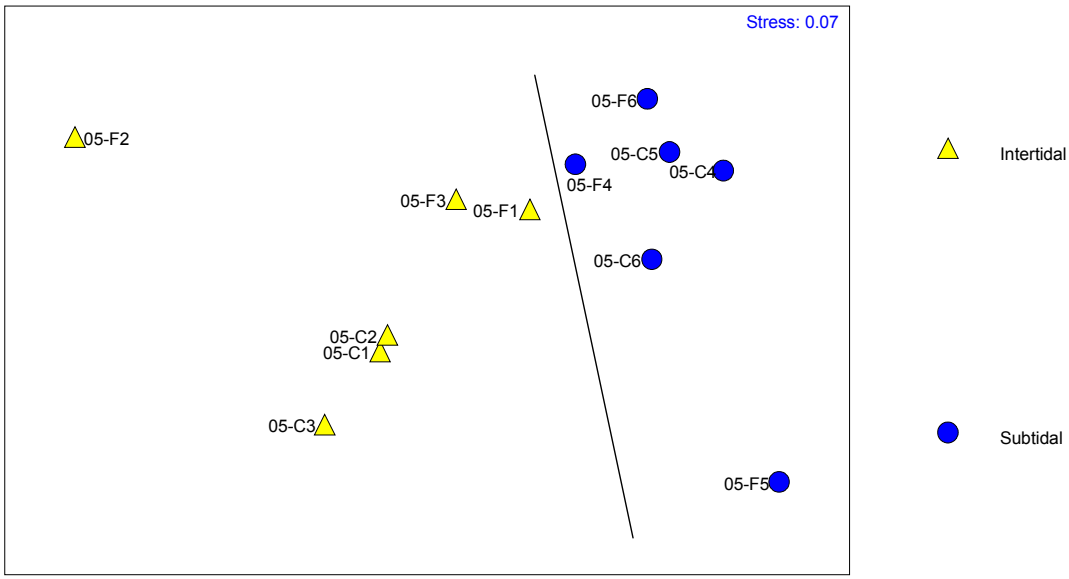

Figure 5-15 Results of MDS analysis using 2005 macrobenthic data from aggregated samples at each site.

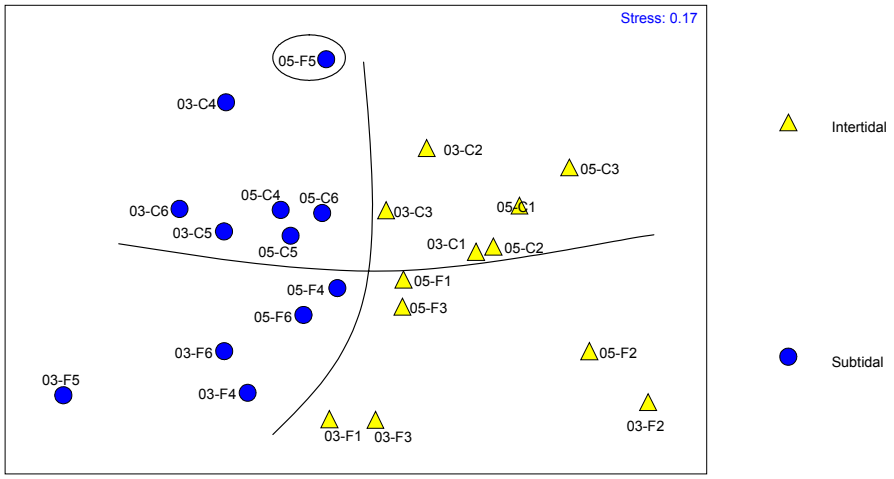

Figure 5-16 Results of MDS analysis using 2003 and 2005 macrobenthic data from aggregated samples at each site.

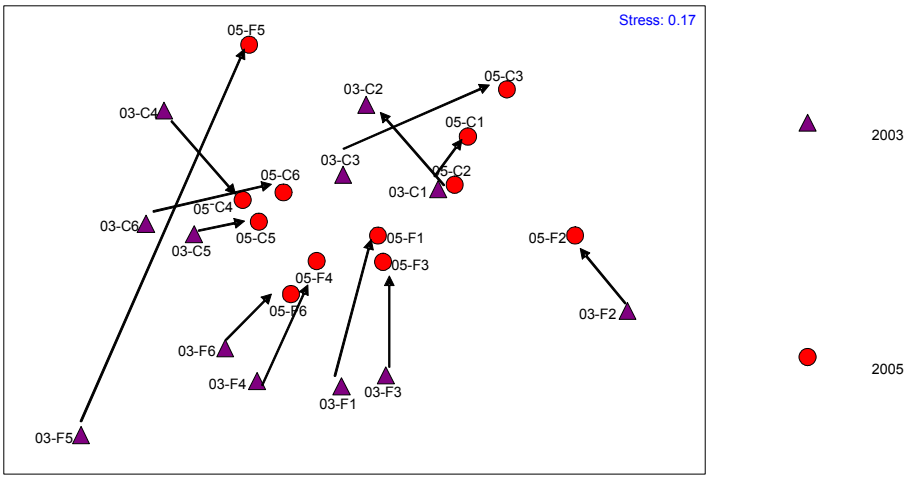

Figure 5-17 Results of MDS analysis using macrobenthic data from aggregated samples at each site, showing direction and magnitude of change at each site between 2003 and 2005.

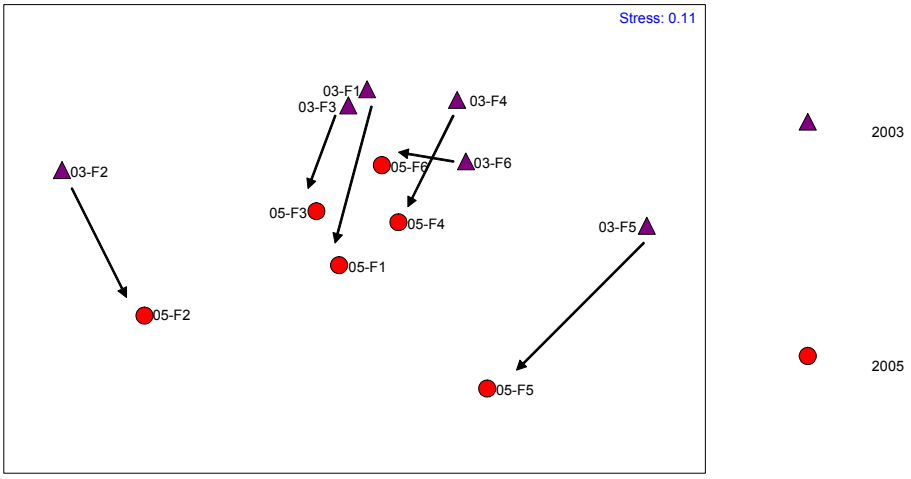

Figure 5-18 Results of MDS analysis using macrobenthic data from aggregated samples at each farm site, showing direction and magnitude of change between 2003 and 2005.

It is important to note that while there was some variation in temporal shifts between Port Hurd and Gullala Creek, changes at the former location are only indicative of impact where they reflect reduced community health. Changes at the control and farm sites were therefore assessed in terms of faunal community health by comparing K-dominance plots for 2003 and 2005. Plots for subtidal and intertidal sites in 2005 are illustrated in Figure 5-19 and Figure 5-20 respectively, while plots for the same sites in 2003 are illustrated in Figure 5-21 and Figure 5-22 respectively. In 2005, subtidal sites recorded y-intercept values in the range of ~ 20-40% (Figure 5-19), which represent the percentage contribution of the most dominant species, compared with ~ 25-60% in 2003 (Figure 5-21). Across the subtidal sites monitored, the dominance of the most common species had declined at all sites except C5. Similarly, the slopes of the K-dominance curves reflected a larger number of low abundance species than recorded in 2003. This indicates that changes over time at both control and farm subtidal sites do not reflect reductions in community health.

A similar pattern was observed at intertidal sites, where y-intercept values ranged from ~ 10-60% in 2006 compared with ~ 10-70% in 2003. Reductions in the dominance of the most common species were recorded at sites C2, F1 and F2, while increases in dominance were recorded at the remaining three intertidal sites. Since declines in dominance were observed at more farm sites than control sites, there is no evidence of a reduction in community health at the farm sites. Site F3 recorded consistently high dominance levels in both surveys, a finding that either reflects natural variables or a pre-farming disturbance that continues to affect the community at this site. The finding of very high faunal dominance at F1 in the 2003 baseline survey, due to 70% of animals being contributed by one species, was not repeated in the 2005 survey. The dominant animal in 2003, the decapod *Macrophthalmus* sp.2, continued to be present in reasonable numbers in 2005 but was exceeded in abundance by the polychaete *Scyphoproctus* sp. and supplemented by increased numbers of other less common species.

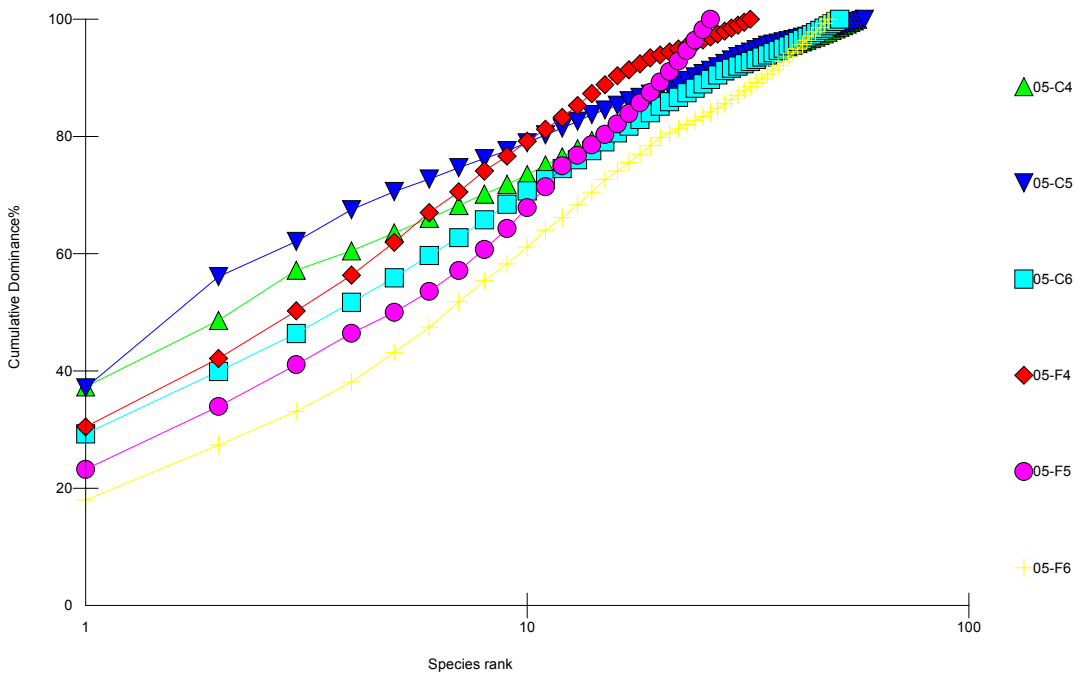

Figure 5-19 K-dominance curves for 2005 pooled replicate macrobenthic samples at subtidal sites.

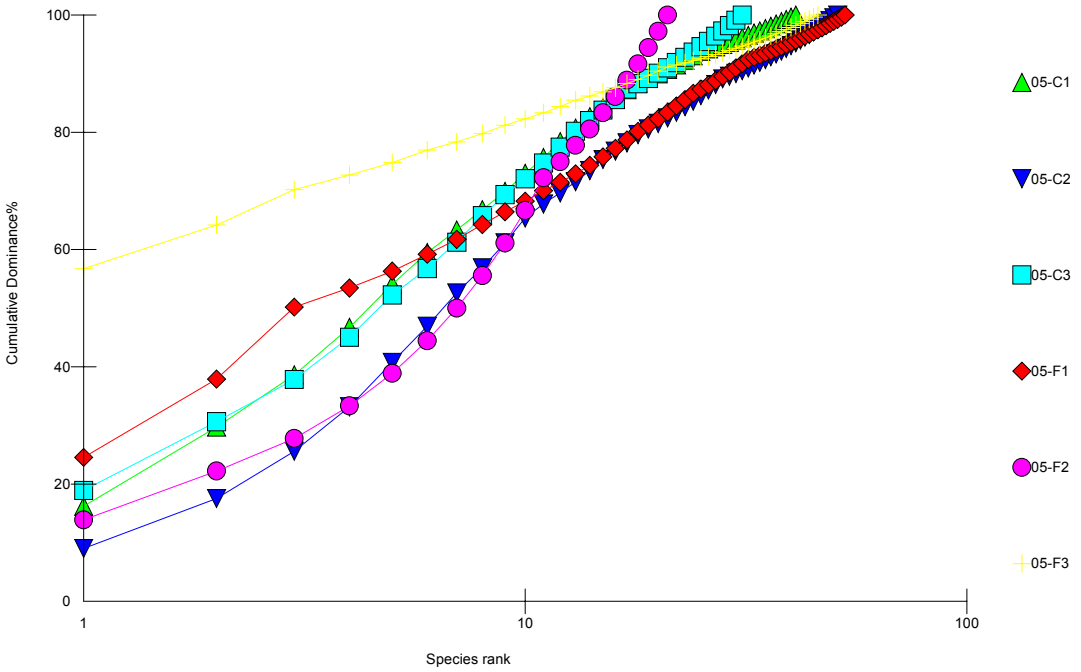

Figure 5-20 K-dominance curves for 2005 pooled replicate macrobenthic samples at intertidal sites.

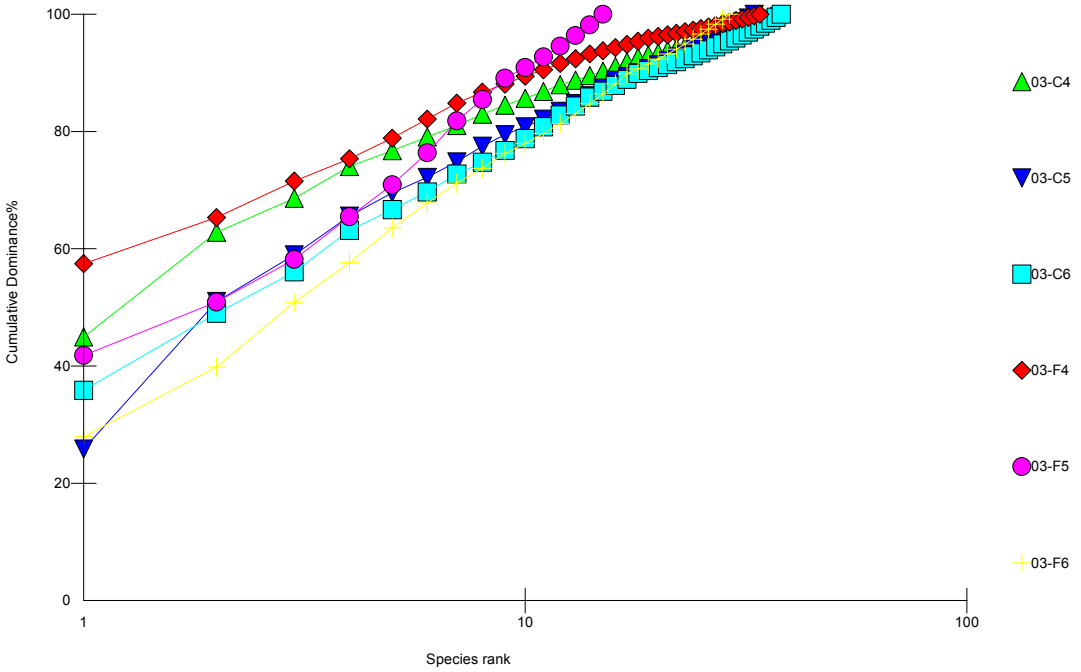

Figure 5-21 K-dominance curves for 2003 pooled replicate macrobenthic samples at subtidal sites.

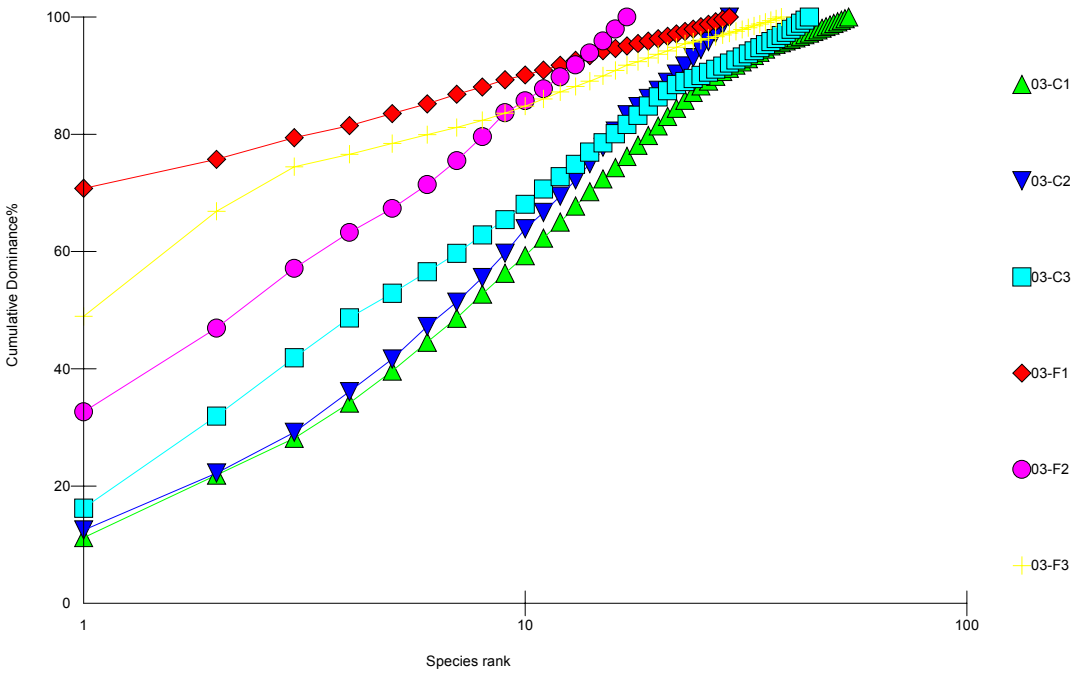

Figure 5-22 K-dominance curves for 2003 pooled replicate macrobenthic samples at intertidal sites.

The results of diversity indices calculations are provided in Figure 5-23 and allow for comparisons between the 2003 and 2005 surveys. Increases in species richness over time were observed at the majority of the control and farm sites, with largest increases observed at C2, C4-C6, F1 and F6. Different patterns of temporal variation were observed for faunal abundance, since numbers increased at most control sites whilst remaining constant or declining at most farm sites. The largest increases in animal numbers were observed at the intertidal control site C2 and the subtidal control sites C4 and C5. Declines were observed at two of the intertidal control sites, while small declines at farm sites were spread across intertidal and subtidal sites. It seems unlikely that reductions in animal abundance at several farm sites reflect farming impact, since the general response of communities to organic inputs is a decline in species numbers coupled with increased faunal abundance.

The increases in species richness noted above for most farm and control sites were also reflected in Shannon–Wiener diversity values and Margalef's richness values. In fact, results for the Shannon–Wiener diversity index suggested that increases in diversity were greater at the farm sites than at control sites. Consistently large increases in diversity were recorded at all farm sites except F3, where a small increase was observed, compared with small increases or reductions in diversity at the control sites (Figure 5-23). Margalef's richness values were more consistent with the species richness (S) results, reflecting large increases in richness across the majority of the control and farm sites. Pielou's evenness index (J'), which reflects how evenly the numbers of individuals are distributed amongst species, recorded increases at most farm sites and small increases or declines at control sites. This is consistent with the K-dominance plots in suggesting that faunal dominance had decreased at most farm sites since the 2003 baseline survey. The results presented in Figure 5-23 do not suggest any evidence of reduced diversity at the farm sites compared with the control sites, and hence suggest no detectable impact of farming on benthic infaunal diversity.

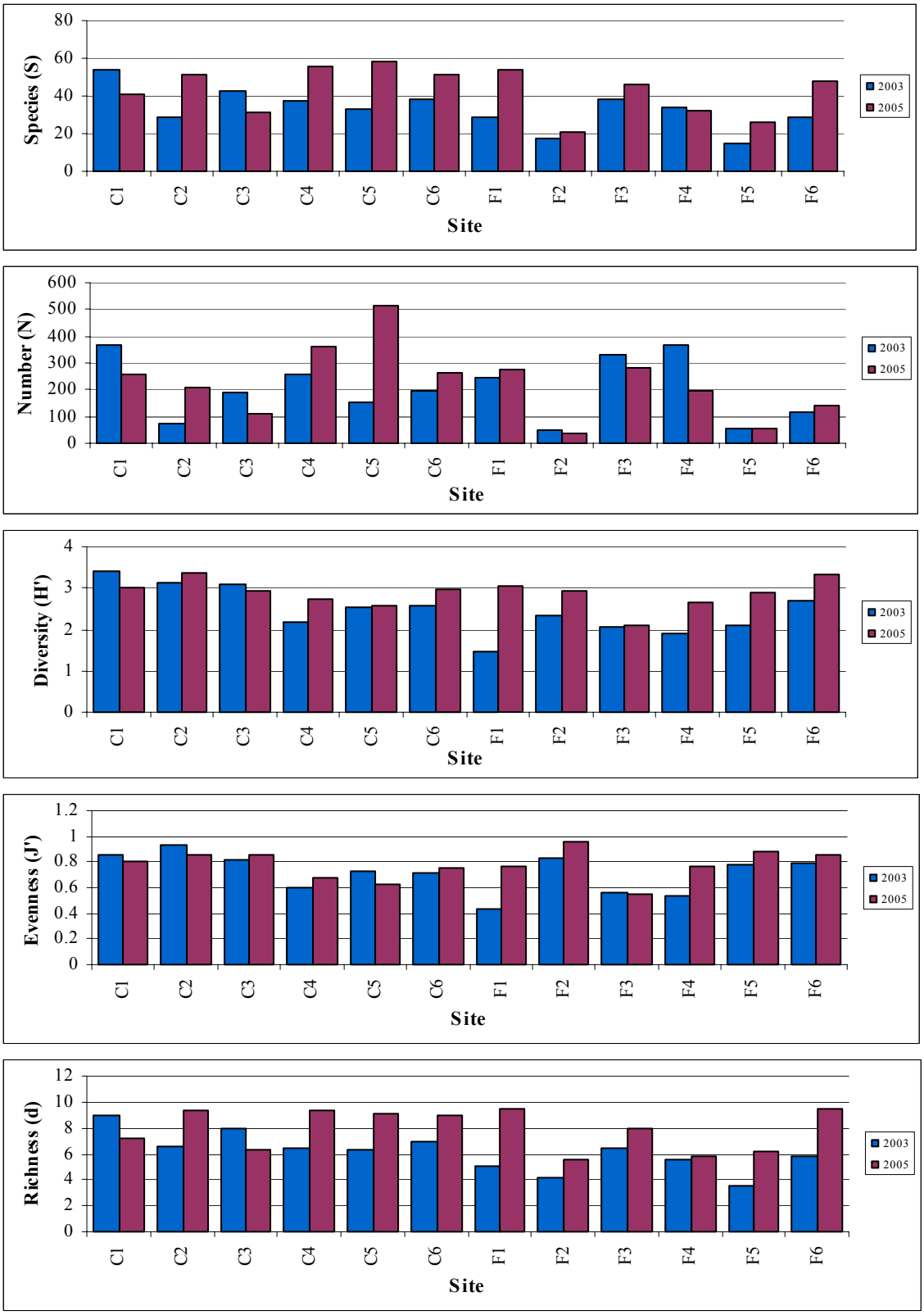

Figure 5-23 Macrobenthic diversity indices for farm and control sites in the 2003 and 2005 surveys; S = number of species, N = number of individuals, H' = Shannon-Wiener diversity index, J' = Pielou's evenness index, d = Margalef's richness index.

The results of repeated measures Analyses of Variance (ANOVAs) are presented in Table 5-5.3-1, with 'Treatment' referring to the comparison of farm versus control sites. The 'within subject' tables in each case include the effect of 'time' and are therefore of primary interest in assessing temporal variation. The most important component of the

repeated measures ANOVAs is the Time*Treatment term, as this term indicates whether or not temporal variation differed significantly between farm and control sites.

The results for species richness indicate that across the combined 2003/2005 dataset, there was a significant difference between the control and farm sites (P=0.036, Table 5-5.3-1). However, this includes both 'before' and 'after' variation between Port Hurd and Gullala Creek and is not informative about farming impact. For the combined farm and control sites, there was no significant difference between 2003 and 2005 (P=0.113), and similarly the interaction between time and the farm/control treatment was non-significant (P=0.984). The latter finding indicates that temporal variation between 2003 and 2005 did not differ significantly between the farm and control sites, and hence there was no detectable impact of farming at Port Hurd.

Benthic infaunal abundance did not differ between farm and control sites for the combined 2003/2005 dataset (P=0.284, Table 5-5.3-1). Other results were similar to those for species richness, with abundance not varying significantly over time (P=0.512). The interaction between time and the farm/control treatment was also non-significant (P=0.179) indicating that temporal variation in abundance did not vary significantly between the farm and control sites. Based on the survey design and its associated statistical power, the repeated measures ANOVAs therefore indicate that there was no detectable impact of farming activity on benthic infaunal species richness or abundance at Port Hurd. This result is supported by the findings of the MDS, K-dominance and diversity indices analyses.

Table 5-5.3-1 Results of repeated measures ANOVAs for comparisons of temporal variation in benthic infauna species richness and abundance between farm and control sites.

Source	Sum of Squares	df	Mean Square	F-ratio	P
Species Richness					
'Between Subjects'					
Treatment	262.241	1	262.241	5.895	0.036
Residual	444.870	10	44.487		
'Within Subjects'					
Time	130.667	1	130.667	3.009	0.113
Time*Treatment	0.019	1	0.019	0.000	0.984
Residual	434.204	10	43.420		
Abundance					
'Between Subjects'					
Treatment	3022.519	1	3022.519	1.279	0.284
Residual	23631.241	10	2363.124		
'Within Subjects'					
Time	450.667	1	450.667	0.463	0.512
Time*Treatment	2028.907	1	2028.907	2.085	0.179
Residual	9731.315	10	973.131		

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http://www.aims.gov.au/pages/research/darwin/dhwqmp/dhwq-000.html

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7 Appendices – Data tables

7.1 Survey coordinates

Table 7.1-1 Sample site coordinates (UTM Australian Geod ’84)

Site No.	Grid	Easting	Northing	Location
F1	52 L	632323	8713684	Port Hurd
F2	52 L	634531	8712089	Port Hurd
F3	52 L	637225	8709113	Port Hurd
F4	52 L	636814	8709081	Port Hurd
F5	52 L	634132	8710763	Port Hurd
F6	52 L	632106	8712365	Port Hurd
C1	52 L	634395	8728989	Gullala Creek
C2	52 L	635180	8727225	Gullala Creek
C3	52 L	636673	8724802	Gullala Creek
C4	52 L	636711	8724897	Gullala Creek
C5	52 L	634474	8726745	Gullala Creek
C6	52 L	632431	8727349	Gullala Creek
C7	52 L	631590	8707106	Port Hurd
C8	52 L	631485	8707149	Port Hurd
F1M	52 L	632130	8713458	Port Hurd Mangroves
F2M	52 L	634386	8711930	Port Hurd Mangroves
F3M	52 L	637098	8708950	Port Hurd Mangroves
C1M	52 L	634395	8728989	Gullala Creek Mangroves
C2M	52 L	634923	8727022	Gullala Creek Mangroves

7.2 Redox potential

Table 7.2-1 Uncorrected redox potential readings in millivolts at specified depths in sediment cores in 2003 and 2005

	Depth (cm)						
Site	0		1		4		
No	2003	2005	2003	2005	2003	2005	Comments
F1-1	0	-158	0	-159	0	-171	
F1-2	152	-64	-136	-139	-166	-162	
F1-3	187	-52	-103	-102	-156	-127	
F2-1	0	-96	0	-130	0	-151	
F2-2	-93	-142	-145	-145	-156	-155	
F2-3	-36	-124	-153	-130	-158	-138	
F3-1	0	-77	0	-89	0	-127	
F3-2	-106	-89	-137	-127	-172	-152	
F3-3	-98	-142	-150	-164	-172	-178	
F4-1	0	-89	0	-158	0	-170	
F4-2	-100	-77	-136	-136	-168	-241	
F4-3	-103	-99	-135	-180	-151	-194	
F5-1	0	-130	0	-142	0	-154	
F5-2	-34	-127	-108	-139	-175	-149	
F5-3	-128	-121	-163	-133	-174	-141	
F6-1	0	-71	0	-89	0	-120	
F6-2	0	-2	0	-127	0	-143	
F6-3	0	-124	0	-152	0	-168	
C1-1	-114	-95	-149	-114	-156	-120	
C1-2	-124	-124	-150	-124	-154	-122	
C1-3	0	-84	0	-134	0	-147	
C2-1	-24	-114	-75	-130	-146	-142	
C2-2	-89	-124	-124	-155	-172	-170	
C2-3	0	-105	0	-138	0	-180	
C3-1	-119	-71	-155	-100	-165	-139	
C3-2	-125	-115	-147	-142	-154	-144	
C3-3	0	-94	0	-131	0	-280	
C4-1	153	-71	43	-126		-149	
C4-2	238	-96	97	-127	-126	-151	
C4-3	0	-55	0	-83	0	-113	
C5-1	11	-71	-58	-82	-108	-90	
C5-2	183	-74	147	-99	-104	-139	
C5-3	0	171	0	11	0	-74	Not included in analysis
C6-1	-104	-111	-154	-139	-182	-156	
C6-2	-116	-102	-160	-173	-181	-176	
C6-3	0	-111	0	-127	0	-149	

7.3 Particle size analysis

Table 7.3-1 Particle size analysis in percent of top 100 mm of sediment cores from the intertidal farm and control sites in 2003 and 2005

	Sieve mesh size (mm)															
	4 %		2 %		1 %		0.5 %		0.25 %		0.125 %		0.063 %		<0.063 %	
Sample	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
F1-1	1.0	9.7	1.0	9.7	4.0	5.2	4.0	5.2	6.0	7.8	10.0	16.9	6.0	2.6	68.0	42.9
F1-2	5.6	5.8	4.2	1.9	5.6	2.6	6.9	3.9	8.3	10.4	15.3	16.2	4.2	1.9	50.0	57.1
F1-3	6.9	12.3	4.2	3.2	6.9	3.9	9.7	4.5	4.2	9.1	16.7	16.2	2.8	3.9	48.6	46.8
Mean	4.5	9.3	3.1	5.0	5.5	3.9	6.9	4.5	6.2	9.1	14.0	16.5	4.3	2.8	55.5	48.9
Std Dev	3.1	3.3	1.8	4.2	1.5	1.3	2.9	0.6	2.1	1.3	3.5	0.4	1.6	1.0	10.8	7.4
Cum %	4.5	9.3	7.6	14.3	13.1	18.2	20.0	22.7	26.2	31.8	40.1	48.3	44.5	51.1	100.0	100.0
F2-1	0.0	0.6	0.0	0.6	2.8	1.3	6.9	1.3	8.3	1.9	4.2	1.3	2.8	1.3	75.0	91.6
F2-2	2.8	0.0	1.4	0.0	2.8	0.0	8.3	0.0	11.1	1.3	8.3	1.3	5.6	0.6	59.7	96.8
F2-3	0.0	1.3	0.0	1.3	1.4	1.3	5.6	0.6	9.7	1.9	4.2	1.3	1.4	1.3	77.8	90.9
Mean	0.9	0.6	0.5	0.6	2.3	0.9	6.9	0.6	9.7	1.7	5.6	1.3	3.2	1.1	70.8	93.1
Std Dev	1.6	0.6	0.8	0.6	0.8	0.7	1.4	0.6	1.4	0.4	2.4	0.0	2.1	0.4	9.7	3.2
Cum %	0.9	0.6	1.4	1.3	3.7	2.2	10.6	2.8	20.4	4.5	25.9	5.8	29.2	6.9	100.0	100.0
F3-1	0.0	0.0	0.7	0.0	0.7	0.0	2.8	0.6	5.6	2.6	6.9	1.9	4.2	1.9	79.2	92.9
F3-2	0.0	0.0	0.7	0.0	0.7	0.6	1.4	1.3	4.2	3.2	2.8	3.9	2.8	3.9	87.5	87.0
F3-3	0.0	1.3	0.0	3.9	0.7	7.8	0.7	5.8	1.4	7.1	2.8	6.5	1.4	3.2	93.1	64.3
Mean	0.0	0.4	0.5	1.3	0.7	2.8	1.6	2.6	3.7	4.3	4.2	4.1	2.8	3.0	86.6	81.4
Std Dev	0.0	0.7	0.4	2.2	0.0	4.3	1.1	2.8	2.1	2.5	2.4	2.3	1.4	1.0	7.0	15.1
Cum %	0.0	0.4	0.5	1.7	1.2	4.5	2.8	7.1	6.5	11.5	10.6	15.6	13.4	18.6	100.0	100.0
C1-1	0.0	0.0	1.4	0.0	2.8	0.0	4.2	3.9	6.9	5.2	5.6	2.6	4.2	2.6	75.0	85.7
C1-2	0.0	0.0	1.4	0.0	2.8	0.6	4.2	1.9	8.3	3.9	2.8	3.9	4.2	3.2	76.4	86.4
C1-3	1.4	0.0	1.4	0.0	1.4	1.9	2.8	2.6	4.2	4.5	5.6	3.9	2.8	1.3	80.6	85.7
Mean	0.5	0.0	1.4	0.0	2.3	0.9	3.7	2.8	6.5	4.5	4.6	3.5	3.7	2.4	77.3	85.9
Std Dev	0.8	0.0	0.0	0.0	0.8	1.0	0.8	1.0	2.1	0.6	1.6	0.7	0.8	1.0	2.9	0.4
Cum %	0.5	0.0	1.9	0.0	4.2	0.9	7.9	3.7	14.4	8.2	19.0	11.7	22.7	14.1	100.0	100.0
C2-1	2.8	0.0	4.2	0.0	9.7	1.3	34.7	1.9	16.7	3.2	9.7	3.9	4.2	2.6	18.1	87.0
C2-2	4.2	0.0	2.8	0.0	6.9	0.6	31.9	3.2	15.3	5.2	6.9	2.6	4.2	3.9	27.8	84.4
C2-3	4.2	1.3	2.8	0.6	4.2	1.9	11.1	3.9	9.7	5.2	6.9	3.9	2.8	3.2	58.3	79.9
Mean	3.7	0.4	3.2	0.2	6.9	1.3	25.9	3.0	13.9	4.5	7.9	3.5	3.7	3.2	34.7	83.8
Std Dev	0.8	0.7	0.8	0.4	2.8	0.6	12.9	1.0	3.7	1.1	1.6	0.7	0.8	0.6	21.0	3.6
Cum %	3.7	0.4	6.9	0.6	13.9	1.9	39.8	5.0	53.7	9.5	61.6	13.0	65.3	16.2	100.0	100.0
C3-1	0.0	0.0	0.7	1.3	2.1	5.2	8.3	15.6	15.3	18.8	9.7	7.1	4.2	2.6	59.7	49.4
C3-2	0.7	1.3	0.7	1.3	2.8	3.2	12.5	12.3	18.1	12.3	12.5	8.4	5.6	3.2	47.2	57.8
C3-3	0.0	18.2	0.7	15.6	2.1	1.3	8.3	15.6	23.6	9.7	11.1	7.1	8.3	2.6	45.8	29.9
Mean	0.2	6.5	0.7	6.1	2.3	3.2	9.7	14.5	19.0	13.6	11.1	7.6	6.0	2.8	50.9	45.7
Std Dev	0.4	10.1	0.0	8.2	0.4	1.9	2.4	1.9	4.2	4.7	1.4	0.7	2.1	0.4	7.6	14.3
Cum %	0.2	6.5	0.9	12.6	3.2	15.8	13.0	30.3	31.9	43.9	43.1	51.5	49.1	54.3	100.0	100.0

Table 7.3-2 Particle size analysis in percent of top 100 mm of sediment cores from the subtidal farm and control sites in 2003 and 2005

	Sieve mesh size (mm)															
	4 %		2 %		1 %		0.5 %		0.25 %		0.125 %		0.063 %		<0.063 %	
Sample	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
F4-1	0.0	0.6	1.0	0.0	1.0	0.6	2.0	1.9	24.0	46.1	12.0	16.9	2.0	0.0	58.0	33.8
F4-2	0.7	0.0	0.7	1.3	1.4	0.0	15.3	2.6	9.7	59.7	11.1	15.6	2.8	0.0	58.3	20.8
F4-3	0.7	1.3	0.7	0.6	1.4	1.3	2.8	1.9	30.6	39.0	6.9	13.0	1.4	0.0	55.6	42.9
Mean	0.5	0.6	0.8	0.6	1.3	0.6	6.7	2.2	21.4	48.3	10.0	15.2	2.1	0.0	57.3	32.5
Std Dev	0.4	0.6	0.2	0.6	0.2	0.6	7.5	0.4	10.7	10.6	2.7	2.0	0.7	0.0	1.5	11.1
Cum %	0.5	0.6	1.3	1.3	2.5	1.9	9.2	4.1	30.6	52.4	40.6	67.5	42.7	67.5	100.0	100.0
F5-1	0.0	0.0	0.7	0.0	0.7	0.0	0.7	0.0	1.4	1.3	3.5	1.9	4.2	2.6	88.9	94.2
F5-2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	0.7	1.3	1.4	1.9	2.8	1.9	94.4	93.5
F5-3	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	1.4	1.3	2.1	0.6	2.8	1.3	93.1	96.8
Mean	0.0	0.0	0.2	0.0	0.2	0.0	0.7	0.4	1.2	1.3	2.3	1.5	3.2	1.9	92.1	94.8
Std Dev	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.7	0.4	0.0	1.1	0.7	0.8	0.6	2.9	1.7
Cum %	0.0	0.0	0.2	0.0	0.5	0.0	1.2	0.4	2.3	1.7	4.6	3.2	7.9	5.2	100.0	100.0
F6-1	5.6	0.0	2.8	3.2	2.8	1.9	2.8	1.9	2.8	0.6	4.2	2.6	11.1	6.5	68.1	83.1
F6-2	6.9	9.1	5.6	2.6	2.8	2.6	2.8	1.3	1.4	1.3	2.8	1.3	8.3	6.5	69.4	75.3
F6-3	5.6	2.6	4.2	1.3	4.2	1.3	2.8	1.3	4.2	1.3	2.8	2.6	6.9	7.8	69.4	81.8
Mean	6.0	3.9	4.2	2.4	3.2	1.9	2.8	1.5	2.8	1.1	3.2	2.2	8.8	6.9	69.0	80.1
Std Dev	0.8	4.7	1.4	1.0	0.8	0.6	0.0	0.4	1.4	0.4	0.8	0.7	2.1	0.7	0.8	4.2
Cum %	6.0	3.9	10.2	6.3	13.4	8.2	16.2	9.7	19.0	10.8	22.2	13.0	31.0	19.9	100.0	100.0
C4-1	5.6	5.8	2.8	3.2	4.2	3.9	5.6	5.8	4.2	22.7	5.6	10.4	2.8	2.6	69.4	45.5
C4-2	8.3	3.2	5.6	3.2	5.6	5.2	5.6	5.8	4.2	29.9	2.8	13.6	2.8	2.6	65.3	36.4
C4-3	6.9	6.5	6.9	1.9	8.3	3.9	5.6	4.5	6.9	22.1	6.9	18.2	4.2	2.6	54.2	40.3
Mean	6.9	5.2	5.1	2.8	6.0	4.3	5.6	5.4	5.1	24.9	5.1	14.1	3.2	2.6	63.0	40.7
Std Dev	1.4	1.7	2.1	0.7	2.1	0.7	0.0	0.7	1.6	4.3	2.1	3.9	0.8	0.0	7.9	4.6
Cum %	6.9	5.2	12.0	8.0	18.1	12.3	23.6	17.7	28.7	42.6	33.8	56.7	37.0	59.3	100.0	100.0
C5-1	6.9	1.9	4.2	3.2	4.2	5.8	8.3	5.8	8.3	10.4	6.9	6.5	2.8	3.9	58.3	62.3
C5-2	2.8	9.1	2.8	7.1	6.9	8.4	8.3	6.5	15.3	9.7	12.5	8.4	4.2	3.2	47.2	47.4
C5-3	8.3	6.5	5.6	3.9	6.9	4.5	6.9	4.5	12.5	11.0	9.7	7.1	2.8	2.6	47.2	59.7
Mean	6.0	5.8	4.2	4.8	6.0	6.3	7.9	5.6	12.0	10.4	9.7	7.4	3.2	3.2	50.9	56.5
Std Dev	2.9	3.6	1.4	2.1	1.6	2.0	0.8	1.0	3.5	0.6	2.8	1.0	0.8	0.6	6.4	8.0
Cum %	6.0	5.8	10.2	10.6	16.2	16.9	24.1	22.5	36.1	32.9	45.8	40.3	49.1	43.5	100.0	100.0
C6-1	0.0	3.9	0.7	0.0	0.7	1.3	5.6	3.9	25.0	7.8	15.3	9.7	5.6	7.8	47.2	65.6
C6-2	0.0	0.0	0.0	0.0	0.7	0.6	3.5	3.9	16.7	10.4	8.3	11.7	6.9	5.2	63.9	68.2
C6-3	0.0	0.0	0.0	0.0	0.7	0.6	4.9	4.5	15.3	10.4	9.7	7.8	11.1	6.5	58.3	70.1
Mean	0.0	1.3	0.2	0.0	0.7	0.9	4.6	4.1	19.0	9.5	11.1	9.7	7.9	6.5	56.5	68.0
Std Dev	0.0	2.2	0.4	0.0	0.0	0.4	1.1	0.4	5.3	1.5	3.7	1.9	2.9	1.3	8.5	2.3
Cum %	0.0	1.3	0.2	1.3	0.9	2.2	5.6	6.3	24.5	15.8	35.6	25.5	43.5	32.0	100.0	100.0

7.4 Water quality measurement

Table 7.4-1 Port Hurd cumulative rainfall data (mm) from 2003 to 2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003	488.0	1107.0	1356.6	1410.1	1415.1	1415.1	1415.1	1431.1	1466.1	1452.1	1670.1	2368.2
2004	429.5	834.0	1194.0	1234.0	1363.0	1411.0	1411.0	1411.0	1439.0	1439.0	1611.5	1842.0
2005	279.0	548.8	818.5	871.5	871.5	871.5	871.5	871.5	888.0	927.0	ND	ND

Table 7.4-2 Port Hurd salinity data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/03	35.89	0.04			35.11	0.02	35.60	0.00	35.72	0.02	35.68	0.04	35.69	0.00
22/10/03	33.00	0.00	33.00	0.00	33.00	0.00	35.00	0.00	35.00	0.00	34.50	0.71	35.00	0.00
11/11/03	33.50	2.12	35.00	0.00	31.00	1.41	31.50	2.12	34.00	0.00	34.50	0.71	33.00	0.00
27/11/03			31.00	1.41	25.50	0.71	22.50	0.71	25.00	0.00	28.50	0.71	27.50	0.71
25/03/04	27.00	2.83	24.50	0.71	23.00	4.24	25.00	1.41	27.00	1.41	24.00	0.00	24.50	0.71
6/07/04	30.00	0.00	34.00	0.00	31.00	0.00	30.50	0.71	32.50	0.71	27.00	0.00	30.00	0.00
5/08/04	33.50	0.71	36.50	2.12	31.00	0.00	31.50	0.71	33.00	1.41	27.00	1.41	30.00	1.41
19/08/04	33.50	3.54	38.00	1.41	33.50	0.71	30.00	0.00	36.00	2.83	34.00	0.00	35.00	1.41
6/09/04	34.00	0.00	34.00	0.00	33.00	0.00	33.50	0.71	34.50	0.71	34.00	0.00	34.00	0.00
3/10/04	36.50	0.71	37.00	1.41	37.00	1.41	37.50	2.12	38.00	1.41	36.50	0.71	38.50	0.71
14/10/04	36.50	0.71			35.00	0.00	36.00	0.00	36.00	0.00	35.00	0.00	36.00	0.00
28/10/04	36.00	0.00	36.00	0.00	36.00	0.00	37.00	0.00	37.00	0.00	37.00	0.00	37.00	0.00
17/11/04	35.00	0.00	35.00	0.00	35.00	0.00	35.00	0.00	35.00	0.00	35.00	0.00	35.00	0.00
30/11/04	33.00	0.00	33.00	0.00	33.50	0.71	34.00	0.00	35.00	0.00	34.50	0.71	34.00	0.00
26/02/05	32.00	0.00	32.00	0.00	29.00	1.41	30.00	0.00	31.00	0.00	30.00	0.00	30.00	0.00
8/05/05	36.00	0.00	35.60	0.00	35.15	0.07	35.40	0.28	36.00	0.00	35.60	0.00	35.50	0.00
28/06/05														
12/07/05														
25/08/05														
8/09/05														
17/10/05	33.00	0.00	33.50	0.00	32.20	0.00	32.60	0.00	33.10	0.00	32.90	0.00	32.30	0.00

Table 7.4-3 Port Hurd temperature data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/03	32.43	0.16			32.72	0.01	31.11	0.00	31.47	0.01	30.83	0.01	30.90	0.00
22/10/03	32.20	0.14	33.00	0.28	31.95	0.07	30.60	0.14	30.50	0.42	31.60	0.14	30.05	0.07
11/11/03	28.90	0.14	28.15	0.07	29.05	0.07	28.90	0.14	29.15	0.07	29.20	0.14	29.30	0.00
27/11/03			30.95	0.49	31.25	0.07	30.95	0.07	31.30	0.00	31.90	0.00	31.80	0.00
25/03/04	30.75	0.21	29.05	0.07	31.05	0.21	31.25	0.35	31.60	0.00	31.60	0.14	31.50	0.28
6/07/04	25.85	1.34	24.65	0.21	25.65	0.07	26.15	0.49	26.10	0.85	26.15	0.78	25.65	0.49
5/08/04	26.55	0.78	25.15	0.21	27.15	0.49	26.25	0.07	26.45	0.07	26.90	0.42	26.30	0.00
19/08/04	26.10	0.14	24.95	0.07	26.70	0.00	26.55	0.07	26.65	0.07	27.55	0.21	26.85	0.07
6/09/04	27.45	0.07	26.65	0.07	27.65	0.49	27.75	0.21	28.05	0.07	27.50	0.00	27.70	0.00
3/10/04	29.15	0.07	28.15	0.07	31.15	0.49	29.90	0.42	30.60	1.13	29.25	0.07	29.45	0.21
14/10/04	29.60	0.00			30.00	0.14	29.70	0.14	29.90	0.00	29.90	0.14	29.80	0.00
28/10/04	30.45	0.07	29.75	0.07	30.85	0.21	31.10	0.00	30.85	0.21	31.10	0.00	31.20	0.28
17/11/04	32.30	0.00	31.30	0.14	32.45	0.07	32.10	0.14	32.20	0.00	32.25	0.07	32.40	0.00
30/11/04	30.20	0.00	29.35	0.07	31.55	0.07	31.10	0.00	31.20	0.00	31.60	0.00	31.70	0.00
26/02/05	31.70	0.00	31.20	0.00	30.50	0.42	32.05	0.07	32.35	0.07	32.10	0.00	32.10	0.00
8/05/05	28.15	0.07	27.70	0.00	28.65	0.07	28.55	0.21	28.75	0.07	28.80	0.00	29.00	0.00
28/06/05	26.45	0.07	25.10	0.14	26.60	0.00	26.50	0.00	27.15	0.07	26.85	0.07	26.60	0.00
12/07/05	26.60	0.14	25.60	0.00	26.85	0.07	26.70	0.00	26.65	0.07	26.70	0.14	26.70	0.00
25/08/05	27.15	0.07			27.60	0.00	27.40	0.00	27.50	0.00	28.40	0.00	27.90	0.00
8/09/05	27.80	0.00	26.90	0.00	27.90	0.00	27.70	0.00	28.10	0.00	28.00	0.00	28.30	0.00
17/10/05	32.20	0.00	33.40	0.00	31.30	0.00	31.10	0.00	31.00	0.00	31.70	0.00	31.10	0.00

Table 7.4-4 Port Hurd dissolved oxygen % data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
22/10/03														
11/11/03	72.00	1.41	60.50	0.71	74.00	0.00	76.50	3.54	90.50	0.71	78.50	0.71	84.00	4.24
27/11/03			51.00	1.41	58.00	2.83	55.00	1.41	65.50	2.12	59.00	1.41	62.50	3.54
25/03/04	70.50	0.71	65.50	0.71	75.00	1.41	72.00	4.24	78.00	1.41	83.00	1.41	77.00	0.00
6/07/04	81.00	1.41	90.50	0.71	85.50	0.71	76.50	0.71	79.50	0.71	78.50	0.71	78.50	0.71
5/08/04	83.00	0.00	77.00	0.00	79.00	1.41	74.00	2.83	83.00	0.00	81.00	0.00	80.00	0.00
19/08/04	86.00	0.00	75.50	0.71	84.50	0.71	82.00	4.24	96.00	2.83	86.00	1.41	87.50	0.71
6/09/04	87.00	0.00	79.00	0.00	90.00	2.83	86.00	0.00	89.00	5.66	82.50	0.71	80.00	1.41
3/10/04	69.50	0.71	52.50	0.71	62.50	3.54	62.50	0.71	68.50	2.12	71.50	0.71	70.00	2.83
14/10/04	78.50	0.71			80.00	2.83	74.00	0.00	78.50	0.71	82.00	4.24	75.50	0.71
28/10/04	77.00	1.41	62.00	0.00	77.50	0.71	74.50	0.71	80.50	0.71	79.50	2.12	74.50	0.71
18/11/04	81.50	2.12	63.50	2.12	74.00	0.00	73.00	2.83	73.50	2.12	68.00	1.41	69.50	3.54
30/11/04	75.00	1.41	70.00	1.41	85.50	0.71	80.00	1.41	87.00	2.83	91.00	2.83	81.00	1.41
26/02/05	89.50	0.71	79.50	0.71	76.50	0.71	84.50	6.36	86.50	0.71	83.00	1.41	80.00	1.41
8/05/05	76.00	0.00	75.50	0.71	77.00	1.41	73.00	0.00	75.00	7.07	74.00	0.00	76.50	0.71
28/06/05	82.00	0.00	81.00	1.41	81.00	1.41	79.50	6.36	87.00	0.00	85.00	0.00	80.00	0.00
12/07/05	79.50	0.71	70.50	2.12	80.50	2.12	82.00	0.00	88.00	0.00	84.00	2.83	85.00	0.00
25/08/05	71.00	0.00			75.00	1.41	66.00	0.00	73.00	1.41	75.00	0.00	61.50	0.71
8/09/05	71.00	0.00	68.00	0.00	74.00	0.00	74.00	0.00	75.00	0.00	75.00	0.00	74.00	0.00
17/10/05	74.00	0.00	72.00	0.00	72.00	0.00	68.00	0.00	67.00	0.00	68.00	0.00	59.00	0.00

Table 7.4-5 Port Hurd nitrate data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/2003	0.003	0.001			0.001	0.000	0.003	0.001	0.001	0.000	0.001	0.000	0.003	0.001
13/10/2003			0.030	0.000	0.030	0.000	0.030	0.000	0.040	0.000	0.030	0.000	0.040	0.000
24/10/2003	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001
14/11/2003	0.020	0.000	0.020	0.000	0.020	0.000	0.010		0.020	0.000	0.020	0.000	0.020	0.000
28/11/2003			0.030	0.000	0.030	0.000	0.030	0.000	0.040	0.000	0.030	0.000	0.040	0.000
26/03/2004	0.010	0.000	0.013	0.004	0.010	0.000	0.023	0.004	0.043	0.004	0.005	0.001	0.013	0.004
6/07/2004	0.004	0.000	0.004	0.000	0.005	0.001	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
5/08/2004	0.005	0.001	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001
19/08/2004	0.010	0.000	0.010	0.000	0.005	0.000	0.008	0.004	0.010	0.000	0.010	0.000	0.013	0.004
7/09/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001	0.004	0.000
3/10/2004	0.005	0.001	0.004	0.000	0.007	0.004	0.004	0.000	0.010	0.000	0.010	0.000	0.008	0.004
14/10/2004	0.004	0.000			0.004	0.000	0.005	0.000	0.015	0.007	0.004	0.000	0.010	0.008
28/10/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
17/11/2004	0.005	0.000	0.005	0.000	0.005	0.001	0.005	0.001	0.005	0.000	0.005	0.000	0.005	0.000
30/11/2004	0.004	0.000	0.005	0.001	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001
02/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.000	0.005	0.000	0.008	0.004	0.010	0.000
8/05/2005	0.010	0.000	0.010	0.000	0.010	0.000	0.015	0.000	0.013	0.004	0.020	0.000	0.023	0.004
06/2005	0.010	0.000	0.010	0.000	0.010	0.000	0.013	0.004	0.010	0.000	0.010	0.000	0.013	0.004
12/07/2005	0.008	0.004	0.010	0.000	0.008	0.004	0.010	0.000	0.010	0.000	0.010	0.000	0.015	0.000
08/2005	0.023	0.004			0.025	0.000	0.025	0.000	0.030	0.000	0.030	0.000	0.030	0.000
09/2005	0.004	0.000	0.007	0.004	0.004	0.000	0.007	0.004	0.013	0.004	0.005	0.001	0.010	0.000
8/10/2005	0.015	0.000	0.015	0.000	0.010	0.000	0.008	0.004	0.015	0.000	0.020	0.000	0.015	0.000
10/2005	0.018	0.004	0.015	0.000	0.013	0.004	0.015	0.000	0.025	0.000	0.015	0.000	0.020	0.000

Table 7.4-6 Port Hurd nitrite data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/2003	0.001	0.000			0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000	0.001	0.000
13/10/2003			0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
24/10/2003	0.004	0.000	0.005	0.001	0.005	0.001	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
14/11/2003	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
28/11/2003	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
26/03/2004	0.005	0.001	0.005	0.000	0.005	0.000	0.010	0.000	0.055	0.021	0.010	0.000	0.055	0.021
6/07/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
5/08/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001	0.004	0.000	0.005	0.001
19/08/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
7/09/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
3/10/2004	0.005	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.008	0.004	0.005	0.000
14/10/2004	0.004	0.000			0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
28/10/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
17/11/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
30/11/2004	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
02/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
8/05/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001	0.005	0.000	0.005	0.001
06/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
07/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000
08/2005	0.004	0.000			0.005	0.001	0.005	0.001	0.005	0.001	0.008	0.004	0.005	0.000
09/2005	0.004	0.000	0.004	0.000	0.004	0.000	0.004	0.000	0.005	0.001	0.004	0.000	0.004	0.000
8/10/2005	0.010	0.000	0.008	0.004	0.005	0.000	0.005	0.001	0.010	0.000	0.010	0.000	0.010	0.000
10/2005	0.010	0.000	0.008	0.004	0.005	0.000	0.010	0.000	0.013	0.004	0.010	0.000	0.010	0.000

Table 7.4-7 Port Hurd NOx data from 2003 to 2005

	Average						
Date	F1	F2	F3	F4	F5	C7	C8
4/10/2003	0.004	0.000	0.002	0.004	0.002	0.002	0.004
13/10/2003	0.000	0.034	0.034	0.034	0.044	0.034	0.044
24/10/2003	0.008	0.009	0.009	0.008	0.008	0.008	0.009
14/11/2003	0.024	0.024	0.024	0.014	0.024	0.024	0.024
28/11/2003	0.004	0.034	0.034	0.034	0.044	0.034	0.044
26/03/2004	0.015	0.018	0.015	0.033	0.098	0.015	0.068
6/07/2004	0.008	0.008	0.009	0.008	0.008	0.008	0.008
5/08/2004	0.009	0.008	0.008	0.008	0.009	0.008	0.009
19/08/2004	0.014	0.014	0.009	0.012	0.014	0.014	0.017
7/09/2004	0.008	0.008	0.008	0.008	0.008	0.009	0.008
3/10/2004	0.010	0.008	0.011	0.008	0.014	0.018	0.013
14/10/2004	0.008	0.000	0.008	0.009	0.019	0.008	0.014
28/10/2004	0.008	0.008	0.008	0.008	0.008	0.008	0.008
17/11/2004	0.009	0.009	0.009	0.009	0.009	0.009	0.009
30/11/2004	0.008	0.009	0.008	0.008	0.008	0.008	0.009
02/2005	0.008	0.008	0.008	0.009	0.009	0.012	0.014
8/05/2005	0.014	0.014	0.014	0.019	0.017	0.025	0.027
06/2005	0.014	0.014	0.014	0.017	0.014	0.014	0.017
07/2005	0.012	0.014	0.012	0.014	0.014	0.014	0.019
08/2005	0.027	0.000	0.030	0.030	0.035	0.038	0.035
09/2005	0.008	0.011	0.008	0.011	0.017	0.009	0.014
8/10/2005	0.025	0.023	0.015	0.012	0.025	0.030	0.025
10/2005	0.0275	0.0225	0.018	0.025	0.038	0.025	0.030

Table 7.4-8 Port Hurd ammonia nitrogen data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/2003	0.008	0.004			0.006	0.001	0.013	0.007	0.006	0.000	0.005	0.000	0.010	0.001
13/10/2003			0.020	0.000	0.045	0.007	0.040	0.014	0.030	0.000	0.030	0.000	0.030	0.000
24/10/2003	0.010	0.000	0.020	0.000	0.007	0.004	0.004	0.000	0.004	0.000	0.010	0.000	0.015	
14/11/2003	0.015	0.007	0.070	0.028	0.050	0.014	0.005		0.015	0.007	0.015	0.007	0.010	0.000
28/11/2003			0.020	0.000	0.045	0.007	0.040	0.014	0.030	0.000	0.030	0.000	0.030	0.000
26/03/2004	0.008	0.004	0.013	0.004	0.018	0.011	0.070	0.000	0.055	0.021	0.010	0.000	0.055	0.021
6/07/2004	0.015	0.000	0.020	0.000	0.010	0.007	0.023	0.011	0.018	0.004	0.025	0.014	0.035	0.021
5/08/2004	0.030	0.000	0.023	0.004	0.020	0.000	0.033	0.004	0.035	0.000	0.030	0.000	0.093	0.046
19/08/2004	0.025	0.000	0.025	0.000	0.028	0.004	0.090	0.049	0.038	0.004	0.025	0.007	0.075	0.049
7/09/2004	0.020	0.000	0.035	0.000	0.010	0.000	0.035	0.014	0.083	0.032	0.023	0.004	0.045	0.014
3/10/2004	0.038	0.018	0.035	0.007	0.048	0.032	0.153	0.018	0.220	0.064	0.050	0.007	0.193	0.095
14/10/2004	0.025	0.000			0.033	0.018	0.098	0.018	0.128	0.018	0.020	0.007	0.170	0.000
28/10/2004	0.010	0.000	0.005	0.000	0.007	0.004	0.035	0.007	0.038	0.004	0.010	0.000	0.033	0.025
17/11/2004	0.025	0.000	0.035	0.000	0.015	0.000	0.025	0.014	0.040	0.007	0.035	0.000	0.030	0.000
30/11/2004	0.013	0.004	0.025	0.007	0.015	0.000	0.053	0.060	0.010	0.000	0.020	0.007	0.018	0.004
02/2005	0.018	0.004	0.023	0.004	0.010	0.000	0.050	0.000	0.048	0.025	0.035	0.000	0.040	0.007
8/05/2005	0.023	0.004	0.015	0.007	0.025	0.007	0.030	0.007	0.023	0.004	0.025	0.000	0.043	0.011
06/2005	0.038	0.018	0.050	0.000	0.040	0.021	0.070	0.014	0.068	0.004	0.038	0.011	0.055	0.014
07/2005	0.028	0.011	0.013	0.011	0.020	0.000	0.030	0.007	0.043	0.011	0.028	0.004	0.025	0.007
08/2005	0.058	0.011			0.103	0.046	0.068	0.004	0.100	0.021	0.063	0.004	0.100	0.007
09/2005	0.018	0.004	0.015	0.007	0.008	0.004	0.038	0.004	0.103	0.011	0.013	0.004	0.045	0.007
8/10/2005	0.028	0.004	0.035	0.000	0.020	0.000	0.020	0.000	0.033	0.004	0.048	0.018	0.018	0.004
10/2005	0.050	0.000	0.043	0.004	0.033	0.004	0.045	0.007	0.030	0.000	0.035	0.007	0.050	0.000

Table 7.4-9 Port Hurd total dissolved inorganic nitrogen data from 2003 to 2005.

	Average						
Date	F1	F2	F3	F4	F5	C7	C8
4/10/03	0.01		0.01	0.02	0.01	0.01	0.01
13/10/03		0.05	0.08	0.07	0.07	0.06	0.07
24/10/03	0.02	0.03	0.02	0.01	0.01	0.02	0.02
14/11/03	0.04	0.09	0.07	0.02	0.04	0.04	0.03
28/11/03	0.00	0.05	0.08	0.07	0.07	0.06	0.07
26/03/04	0.02	0.03	0.03	0.10	0.15	0.02	0.12
6/07/04	0.02	0.03	0.02	0.03	0.03	0.03	0.04
5/08/04	0.04	0.03	0.03	0.04	0.04	0.04	0.10
19/08/04	0.04	0.04	0.04	0.10	0.05	0.04	0.09
7/09/04	0.03	0.04	0.02	0.04	0.09	0.03	0.05
3/10/04	0.05	0.04	0.06	0.16	0.23	0.07	0.21
14/10/04	0.03		0.04	0.11	0.15	0.03	0.18
28/10/04	0.02	0.01	0.02	0.04	0.05	0.02	0.04
17/11/04	0.03	0.04	0.02	0.03	0.05	0.04	0.04
30/11/04	0.02	0.03	0.02	0.06	0.02	0.03	0.03
02/2005	0.03	0.03	0.02	0.06	0.06	0.05	0.05
8/05/05	0.04	0.03	0.04	0.05	0.04	0.05	0.07
06/2005	0.05	0.06	0.05	0.09	0.08	0.05	0.07
12/07/05	0.04	0.03	0.03	0.04	0.06	0.04	0.04
08/2005	0.08	0.00	0.13	0.10	0.13	0.10	0.14
09/2005	0.03	0.03	0.02	0.05	0.12	0.02	0.06
8/10/2005	0.05	0.06	0.04	0.03	0.06	0.08	0.04
10/2005	0.08	0.07	0.05	0.07	0.07	0.06	0.08

Table 7.4-10 Port Hurd chlorophyll α data from 2003 to 2005

	F1		F2		F3		F4		F5		C7		C8	
Date	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev	Avge	StDev
4/10/2003	1.857	0.202	0.000	0.000	1.714	0.808	3.000	0.202	4.571	0.000	12.571	5.253	4.286	0.404
22/10/2003	2.000	0.000	2.000	0.000	1.500	0.707					3.000	0.000		
11/11/2003	0.000	0.000	0.500	0.707	0.500	0.707					0.000	0.000		
14/11/2003	0.900	0.000	0.950	0.071	0.500						0.900	0.000		
27/11/2003	0.000		1.500	0.707	2.000	0.000					1.500	0.707		
28/11/2003	2.000	0.000	2.000	0.000	1.000						3.000	0.000		
26/03/2004	6.500	2.121	3.000	0.000	4.500	0.707					5.500	2.121		
6/07/2004	1.500	0.707	2.500	0.707	3.500	2.121					2.000	0.000		
5/08/2004	0.450		0.900	0.000	0.900	0.000	0.900	0.000			0.900	0.000		
19/08/2004	0.900	0.000	0.900	0.000	0.900	0.000					0.900	0.000		
7/09/2004	4.000	0.000	3.000	0.000	3.500	0.707					5.000	0.000		
3/10/2004	2.500	0.707	2.500	0.707	2.500	0.707					1.500	0.707		
14/10/2004	4.000	0.000			3.000	0.000					4.000	0.000		
28/10/2004	4.000	0.000	3.000	0.000	5.000	1.414					4.000	0.000		
17/11/2004	5.500	0.707	3.500	0.707	7.500	0.707					6.000	0.000		
30/11/2004	5.000	0.000	5.500	3.536	4.500	0.707					6.000	0.000		
02/2005	3.500	0.707	4.000	0.000	5.500	2.121					7.500	0.707		
8/05/2005	4.000	0.000	4.500	0.707	5.500	0.707					5.500	0.707		
06/2005	5.000	0.000	4.500	0.707	4.000	0.000					5.000	0.000		
07/2005											3.000	0.000		
08/2005	4.000	0.000			3.500	0.707					3.000	0.000		
09/2005	3.500	0.707	4.500	0.707	4.500	0.707					5.000	0.000		
08/10/05	3.000	0.000	3.000	0.000	3.500	0.707	3.000	0.000	3.500	0.707	2.500	0.707	3.500	0.707
10/2005	3.000	0.000	3.000	0.000	4.000	0.000					2.500	0.707		

7.5 Mangrove stand structure and composition

Table 7.5-1 Mangrove structure and composition at site F1-12 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F1-1	Rhizophora sp.	31.5	10	1	1.7	10
2	F1-2	Rhizophora sp.	16.4	13	1	1.7	36
3	F1-3	Rhizophora sp.	13.9	12	1	1.6	49
4	F1-4	Rhizophora sp.	18.2	14	1	1	29
5	F1-5	Rhizophora sp.	14.1	14	1	1.7	48
6		Rhizophora sp.	14.5	13	1	1	45
7		Rhizophora sp.	9.1	9	1	1.6	115
8		Rhizophora sp.	14.0	10	1	1	49
9		Rhizophora sp.	24.0	8	1	3.1.6	17
10		Rhizophora sp.	20.0	12	1	1.6	24
11		Rhizophora sp.	5.9	1	1	1	274
12		Rhizophora sp.	26.5	12	1	1.7	14
13		Rhizophora sp.	4.2	6	0	7	541
14		Rhizophora sp.	11.8	11	1	1.7	69
15		Rhizophora sp.	34.0	1	1	1.6.3	8
16		Rhizophora sp.	9.8	12	1	1.7	99
17		Rhizophora sp.	31.2	12	1	4.6	10
18		Rhizophora sp.	9.8	10	1	1.6	99
19		Rhizophora sp.	11.1	11	1	1	78
20		Rhizophora sp.	10.2	11	1	1.6	92
21		Rhizophora sp.	10.5	12	1	1	87
22		Rhizophora sp.	16.0	12	1	1	37
23		Rhizophora sp.	14.8	13	1	1	44
24		Rhizophora sp.	8.9	10	1	1	121
25		Rhizophora sp.	11.8	14	1	1	69
26		Rhizophora sp.	9.0	10	1	1	118
27		Rhizophora sp.	8.2	10	1	1.6	142
28		Rhizophora sp.	15.8	14	1	1	38
29		Rhizophora sp.	15.0	14	1	1	42
30		Rhizophora sp.	17.1	14	1	6.7	33
31		Rhizophora sp.	15.9	14	1	1	38
32		Rhizophora sp.	15.3	14	1	1	41
33		Rhizophora sp.	7.5	9	1	1.6	170
34		Rhizophora sp.	15.0	14	1	1	42
35		Rhizophora sp.	9.5	12	1	1.6	106
36		Rhizophora sp.	17.2	14	1	1	32
37		Rhizophora sp.	16.0	10	1	1.6	37
38		Rhizophora sp.	15.2	13	1	1	41
39		Rhizophora sp.	20.0	13	1	1	24
40		Rhizophora sp.	18.0	14	1	1	29
41		Rhizophora sp.	17.5	14	1	1	31

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-2 Mangrove structure and composition at site F1-23 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F1-6	Rhizophora sp.	15.8	14	1	1	38
2	F1-7	Rhizophora sp.	9.8	10	1	1	99
3	F1-8	Rhizophora sp.	6.5	8	1	1	226
4	F1-9	Rhizophora sp.	13.0	12	1	1	57
5	F1-10	Rhizophora sp.	13.0	13	1	1	57
6	F1-5	Rhizophora sp.	14.1	14	1	1.7	48
7		Rhizophora sp.	6.2	7	1	1.3	248
8		Rhizophora sp.	14.0	12	1	1	49
9		Rhizophora sp.	11.0	12	1	1	79
10		Rhizophora sp.	10.0	12	1	1.3	95
11		Rhizophora sp.	11.0	12	1	1.3	79
12		Rhizophora sp.	8.0	8	1	1	149
13		Rhizophora sp.	8.5	10	1	1	132
14		Rhizophora sp.	10.0	11	1	1	95
15		Rhizophora sp.	8.3	10	1	1	139
16		Rhizophora sp.	13.3	12	1	1	54
17		Rhizophora sp.	10.5	12	1	1	87
18		Rhizophora sp.	14.5	13	1	1.7	45
19		Rhizophora sp.	5.0	2	0	0	382
20		Rhizophora sp.	10.0	13	1	1	95
21		Rhizophora sp.	11.5	14	1	1	72
22		Rhizophora sp.	11.5	14	1	1	72
23		Rhizophora sp.	11.0	13	1	1	79
24		Rhizophora sp.	13.0	13	1	1	57
25		Rhizophora sp.	10.0	10	1	1	95
26		Rhizophora sp.	3.0	5	1	1	1061
27		Rhizophora sp.	13.8	11	1	1	50
28		Rhizophora sp.	4.8	7	1	1	414
29		Rhizophora sp.	5.4	8	1	1	327
30		Rhizophora sp.	13.0	11	1	1	57
31		Rhizophora sp.	15.5	14	1	1	40
32		Rhizophora sp.	7.5	10	1	1.6	170
33		Rhizophora sp.	12.0	12	1	1	66
34		Rhizophora sp.	11.2	13	1	1	76
35		Rhizophora sp.	15.0	13	1	1	42

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-3 Mangrove structure and composition at site F1-35 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F1-11	Bruguiera exaristata	10.4	10	1	1	29
2	F1-12	Rhizophora sp.	7.8	8	1	1	52
3	F1-13	Rhizophora sp.	3.7	4	1	1	233
4	F1-14	Rhizophora sp.	6.1	7	1	1.7	86
5	F1-15	Ceriops sp.	1.8	4	1	1	982
6		Bruguiera parviflora	3.5	3	1	1	260
7		Rhizophora sp.	4.0	4	1	1	199
8		Rhizophora sp.	10.5	8	1	1	29
9		Rhizophora sp.	10.9	10	1	1	27
10		Rhizophora sp.	3.5	4.5	1	1	260
11		Rhizophora sp.	10.0	8	1	1	32
12		Rhizophora sp.	6.0	5	1	1	88
13		Rhizophora sp.	12.0	10	1	1	22
14		Rhizophora sp.	11.5	8	1	1	24
15		Rhizophora sp.	13.0	12	1	1	19
16		Rhizophora sp.	13.0	7	1	1.6	19
17		Rhizophora sp.	11.7	12	1	1	23
18		Rhizophora sp.	15.6	12	1	1	13
19		Rhizophora sp.	11.0	7	1	1	26
20		Rhizophora sp.	10.0	8	1	1	32
21		Rhizophora sp.	10.5	7	1	1	29
22		Rhizophora sp.	14.0	7	1	1	16
23		Rhizophora sp.	7.7	10	1	1	54
24		Rhizophora sp.	10.3	6	1	1.7	30
25		Rhizophora sp.	8.2	8	1	1	47
26		Rhizophora sp.	9.5	10	1	1	35
27		Rhizophora sp.	15.0	6	1	1.7	14
28		Rhizophora sp.	4.6	7	1	1.7	150
29		Rhizophora sp.	4.6	7	1	1	150
30		Rhizophora sp.	13.0	7	1	1.7	19
31		Rhizophora sp.	13.0	6	1	1.7	19
32		Rhizophora sp.	7.4	8	1	1	58
33		Rhizophora sp.	4.2	4	0	0	180
34		Rhizophora sp.	5.4	7	1	1	109
35		Rhizophora sp.	8.8	6	1	1.7	41
36		Rhizophora sp.	7.0	7	1	1	65
37		Rhizophora sp.	10.0	8	1	1	32
38		Rhizophora sp.	7.8	8	1	1	52
39		Rhizophora sp.	6.2	6	1	1	83
40		Rhizophora sp.	17.5	8	1	4.6.7	10
41		Rhizophora sp.	9.2	8	1	1	38
42		Rhizophora sp.	5.4	7	1	1	109
43		Rhizophora sp.	3.0	4	1	1	354
44		Rhizophora sp.	4.7	5	1	1	144
45		Rhizophora sp.	7.0	8	1	1	65
46		Rhizophora sp.	4.5	6	1	1	157
47		Rhizophora sp.	7.0	8	1	1	65
48		Ceriops sp.	3.3	7	1	1	292
49		Ceriops sp.	2.3	5	1	1	602
50		Ceriops sp.	4.2	4	1	1.7	180

Table 7-19 continued

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
51		Rhizophora sp.	9.0	8	1	1	39
52		Rhizophora sp.	10.9	10	1	1	27
53		Rhizophora sp.	11.2	12	1	1	25
54		Rhizophora sp.	12.2	12	1	1	21
55		Rhizophora sp.	4.5	4.5	1	1	157
56		Rhizophora sp.	5.8	5	1	1	95
57		Ceriops sp.	7.0	5	1	1	65
58		Rhizophora sp.	5.4	4	1	1	109
59		Bruguiera parviflora	5.9	6	1	1	91
60		Rhizophora sp.	4.6	6	1	1	150
61		Rhizophora sp.	12.4	10	1	1	21
62		Rhizophora sp.	3.2	4	1	1	311
63		Rhizophora sp.	3.7	4	1	1.7	233
64		Rhizophora sp.	3.8	4	1	1	220
65		Ceriops sp.	1.5	2	1	1	1415
66		Rhizophora sp.	6.4	8	1	1	78
67		Rhizophora sp.	11	10	1	1	26
68		Ceriops sp.	4.5	5	1	1	157
69		Rhizophora sp.	6.1	6	1	1.7	86
70		Rhizophora sp.	12	10	1	1	22

0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-4 Mangrove structure and composition at site F1-50 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F1-16	Rhizophora sp.	10.3	6	1	1	60
2	F1-17	Rhizophora sp.	13.0	6	1	1	38
3	F1-18	Rhizophora sp.	6.6	6	1	1	146
4	F1-19	Rhizophora sp.	13.7	8	1	1	34
5	F1-20	Rhizophora sp.	9.0	6	1	1	79
6		Rhizophora sp.	4.9	5	1	1.7	265
7		Rhizophora sp.	4.9	5	1	1	265
8		Rhizophora sp.	7.8	6	1	1.3	105
9		Rhizophora sp.	9.1	7	1	1	77
10		Rhizophora sp.	3.5	4	1	1	520
11		Rhizophora sp.	11.0	7	1	1	53
12		Rhizophora sp.	11.0	6	1	1	53
13		Rhizophora sp.	9.5	6	1	1	71
14		Rhizophora sp.	10.5	6	1	1	58
15		Rhizophora sp.	10.0	6	1	1	64
16		Rhizophora sp.	9.4	5	1	1	72
17		Rhizophora sp.	11.0	6	1	1.7	53
18		Rhizophora sp.	7.3	6	1	1	119
19		Rhizophora sp.	7.0	6	1	1	130
20		Rhizophora sp.	10.3	6	1	1.7	60
21		Bruguiera parviflora	19.0	6	1	2.4.6	18
22		Bruguiera parviflora	14.5	5	1	2.4.6	30
23		Rhizophora sp.	8.0	5	1	1.7	99
24		Rhizophora sp.	8.0	4	1	1.7	99
25		Rhizophora sp.	12.0	8	1	1	44
26		Rhizophora sp.	8.2	6	1	1.2.3	95
27		Rhizophora sp.	8.4	6	1	1	90
28		Rhizophora sp.	5.6	5	1	1	203
29		Rhizophora sp.	9.0	5	1	1	79
30		Rhizophora sp.	5.7	4	1	1.3	196
31		Rhizophora sp.	4.7	2.5	1	1.3	288

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-5 Mangrove structure and composition at site F2-7 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F2-16	Rhizophora sp.	15.0	12	1	1	42
2	F2-17	Rhizophora sp.	12.0	12	1	1	66
3	F2-18	Rhizophora sp.	32.2	11	1	1	9
4	F2-19	Rhizophora sp.	10.0	7	1	1	95
5	F2-20	Rhizophora sp.	15.2	9	1	1.7	41
6		Rhizophora sp.	24.5	8	1	3.4.6	16
7		Rhizophora sp.	13.0	8	1	1	57
8		Rhizophora sp.	12.5	7	1	1.3	61
9		Rhizophora sp.	12.5	8	1	1.3	61
10		Rhizophora sp.	32.0	14	1	1	9
11		Rhizophora sp.	22.6	4	1	4.7	19
12		Rhizophora sp.	22.0	4	1	4.7	20
13		Rhizophora sp.	14.3	8	1	1	47
14		Rhizophora sp.	21.0	5	0	0	22
15		Rhizophora sp.	48.5	6	1	2.5.6	4
16		Rhizophora sp.	18.0	7	1	1	29
17		Rhizophora sp.	22.2	8	1	1.7	19
18		Rhizophora sp.	23.0	6	0	0.7	18
19		Rhizophora sp.	23.2	8	1	1.6	18
20		Rhizophora sp.	22.5	10	1	1.7	19
21		Rhizophora sp.	22.5	10	1	1.7	19
22		Rhizophora sp.	31.0	8	1	1.7	10
23		Rhizophora sp.	26.0	10	1	1.7	14
24		Rhizophora sp.	25.8	11	1	1	14
25		Rhizophora sp.	26.5	12	1	1	14
26		Rhizophora sp.	21.0	9	1	1.7	22
27		Rhizophora sp.	5.2	3	1	1	353
28		Rhizophora sp.	21.5	5	1	1.7	21
29		Rhizophora sp.	26.0	5	1	1.7	14

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-6 Mangrove structure and composition at site F2-18 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F2-11	Rhizophora sp.	4.0	4	1	1.7	796
2	F2-12	Rhizophora sp.	14.3	9	1	1	62
3	F2-13	Rhizophora sp.	12.0	7	1	1	88
4	F2-14	Rhizophora sp.	21.2	10	1	1	28
5	F2-15	Rhizophora sp.	10.4	6	1	1	118
6		Rhizophora sp.	14.0	10	1	1	65
7		Rhizophora sp.	3.9	5	1	1.7	837
8		Rhizophora sp.	6.1	5	1	1.7	342
9		Rhizophora sp.	16.5	12	1	1.3.6	47
10		Rhizophora sp.	4.4	5	1	1.7	658
11		Rhizophora sp.	4.8	4	1	1.7	553
12		Rhizophora sp.	7.0	6	1	1.3	260
13		Rhizophora sp.	20.0	12	1	1	32
14		Rhizophora sp.	5.4	4	1	1.7	437
15		Rhizophora sp.	13.0	12	1	1.7	75
16		Rhizophora sp.	9.0	6	1	1	157
17		Rhizophora sp.	7.5	6	1	1	226
18		Rhizophora sp.	9.7	6	1	1.7	135
19		Rhizophora sp.	12.3	10	1	1	84
20		Rhizophora sp.	11.7	4	1	1.7	93
21		Rhizophora sp.	8.3	5	1	1.7	185
22		Rhizophora sp.	12.5	8	1	1	81
23		Rhizophora sp.	9.8	7	1	1.7	133
24		Rhizophora sp.	4.1	4	1	1	757
25		Rhizophora sp.	6.7	5.5	1	1.7	284
26		Rhizophora sp.	17.5	8	1	1.6	42
27		Rhizophora sp.	14.5	7	1	1	61
28		Rhizophora sp.	5.0	4	1	1.7	509
29		Rhizophora sp.	9.2	7	1	1.7	150
30		Rhizophora sp.	8.3	6	1	1.7	185
31		Rhizophora sp.	17.5	6	1	1.3	42
32		Rhizophora sp.	20.0	7	1	4.3.6	32
33		Rhizophora sp.	13.0	8	1	1	75
34		Rhizophora sp.	6.7	5	1	1.7	284
35		Rhizophora sp.	8.5	6	1	1	176
36		Rhizophora sp.	13.5	7	1	1	70

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-7 Mangrove structure and composition at site F2-37 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F2-6	Rhizophora sp.	6.1	4.5	1	1	86
2	F2-7	Rhizophora sp.	1.1	2.2	1	1	2631
3	F2-8	Rhizophora sp.	3.1	4	1	1	331
4	F2-9	Rhizophora sp.	6.3	5	1	1	80
5	F2-10	Rhizophora sp.	4.2	4.5	1	1	180
6		Rhizophora sp.	3.6	4	1	1	246
7		Rhizophora sp.	4.3	3.5	1	1	172
8		Rhizophora sp.	2.9	2.5	1	1	378
9		Rhizophora sp.	2.8	3	1	1	406
10		Rhizophora sp.	8.5	2	1	1	44
11		Rhizophora sp.	1.9	2.5	1	1	882
12		Rhizophora sp.	5.8	4	1	1	95
13		Rhizophora sp.	3.1	4	1	1	331
14		Rhizophora sp.	3.7	3.5	1	1	233
15		Rhizophora sp.	3.6	3	1	1	246
16		Rhizophora sp.	2.7	3	1	1	437
17		Rhizophora sp.	2.0	2.5	1	1	796
18		Rhizophora sp.	2.5	3	1	1	509
19		Rhizophora sp.	1.4	2	1	1	1624
20		Rhizophora sp.	0.9	2	1	1	3930
21		Rhizophora sp.	3.4	3	1	1	275
22		Rhizophora sp.	1.0	2.2	1	1	3183
23		Rhizophora sp.	1.0	2.2	1	1	3183
24		Rhizophora sp.	1.0	2	1	1	3183
25		Rhizophora sp.	1.4	2	1	1	1624
26		Rhizophora sp.	2.4	3	1	1	553
27		Rhizophora sp.	4.0	4.5	1	1	199
28		Rhizophora sp.	4.6	5	1	1	150
29	F2-4	Rhizophora sp.	3.7	4	1	1	233
30		Rhizophora sp.	6.6	5	1	3	73
31		Rhizophora sp.	4.8	4	1	1	138
32	F2-2	Rhizophora sp.	6.2	5	1	1	83

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-8 Mangrove structure and composition at site F2-45 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F2-1	Rhizophora sp.	1.9	3	1	1	882
2	F2-2	Rhizophora sp.	6.2	5	1	1	83
3	F2-3	Rhizophora sp.	4.2	4	1	1	180
4	F2-4	Rhizophora sp.	3.7	4	1	1	233
5	F2-5	Rhizophora sp.	9.0	5	1	1	39
6		Rhizophora sp.	1.6	2.5	1	1	1243
7		Rhizophora sp.	6.6	2	0	6	73
8		Rhizophora sp.	3.2	4	1	1	311
9		Rhizophora sp.	2.2	2.5	1	1	658
10		Rhizophora sp.	2.7	3	1	1.3	437
11		Rhizophora sp.	5.0	3.5	1	1.3	127
12		Rhizophora sp.	4.2	3.5	1	1	180
13		Rhizophora sp.	3.3	3	1	1	292
14		Rhizophora sp.	6.2	5	1	1	83
15		Rhizophora sp.	6.8	6	1	1	69
16		Rhizophora sp.	3.8	3.5	1	1	220
17		Rhizophora sp.	3.9	3.5	1	1	209
18		Rhizophora sp.	1.2	2	1	1	2210
19		Rhizophora sp.	3.0	3.5	1	1	354
20		Rhizophora sp.	2.1	2.5	1	1	722
21		Rhizophora sp.	1.9	2.2	1	1	882
22		Rhizophora sp.	2.7	3	1	1	437
23		Rhizophora sp.	3.6	4	1	1	246
24		Rhizophora sp.	1.8	2.5	1	1	982
25		Rhizophora sp.	4.1	4.5	1	1	189
26		Rhizophora sp.	4.5	4	1	1	157
27		Rhizophora sp.	5.6	4	1	1	102
28		Rhizophora sp.	6.7	4	1	1.3	71
29		Rhizophora sp.	4.5	5	1	1	157
30	F6	Rhizophora sp.	6.1	4.5	1	1	86
31		Rhizophora sp.	4.0	2	1	3	199
32		Rhizophora sp.	14.0	4	1	3.4	16
33		Rhizophora sp.	4.0	2.5	1	1	199
34		Rhizophora sp.	6.8	5	1	1	69
35		Rhizophora sp.	5.2	4	1	1	118
36		Rhizophora sp.	1.0	1.5	1	1	3183
37		Rhizophora sp.	7.1	3	1	1.3	63
38		Rhizophora sp.	8.7	5.5	1	1	42
39		Rhizophora sp.	5.2	6	1	1	118
40		Rhizophora sp.	4.1	4	1	1	189

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-9 Mangrove structure and composition at site F3-17 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F3-1	Bruguiera exaristata	4.3	7	1	1.6	689
2	F3-2	Rhizophora sp.	13.5	9	0		70
3	F3-3	Bruguiera exaristata	8.0	10	1	1	199
4	F3-4	Bruguiera exaristata	6.8	9	1	1	275
5	F3-5	Bruguiera exaristata	12.5	9	1	1	81
6		Rhizophora sp.	28.0	10	0	3.6	16
7		Rhizophora sp.	19.0	8	1	1.6	35
8		Rhizophora sp.	28.0	12	1	1	16
9		Rhizophora sp.	5.4	7	1	1	437
10		Rhizophora sp.	23.0	12	1	1.7	24
11		Bruguiera exaristata	5.7	8	1	1	392
12		Rhizophora sp.	19.5	11	1	1.7	33
13		Bruguiera exaristata	2.0	2.5	1	1	3183
14		Rhizophora sp.	6.7	8	1	1	284
15		Bruguiera exaristata	2.9	4	1	1	1514
16		Rhizophora sp.	15.5	9	1	1.7	53
17		Rhizophora sp.	23.0	8	1	1.7	24
18		Rhizophora sp.	30.0	12	1	4.6.7	14
19		Rhizophora sp.	17.0	12	1	1.7	44
20	F3-2	Rhizophora sp.	19.5	9	1	4.7	33
21		Rhizophora sp.	16.0	5	0	0	50
22		Rhizophora sp.	13.5	12	1	1	70
23		Rhizophora sp.	15.5	10	1	1	53
24		Rhizophora sp.	19.0	8	1	1.6	35
25		Rhizophora sp.	19.0	7	0	7	35
26		Rhizophora sp.	27.0	9	1	4.6	17
27		Rhizophora sp.	17.0	7	1	1.3	44

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-10 Mangrove structure and composition at site F3-24 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F3-6	Rhizophora sp.	17.5	12	1	1	31
2	F3-7	Bruguiera exaristata	7.3	8	0	1	179
3	F3-8	Bruguiera exaristata	9.2	10	1	1	113
4	F3-9	Rhizophora sp.	12.5	9	1	1.7	61
5	F3-10	Rhizophora sp.	5.7	8	1	1.6	294
6		Rhizophora sp.	14.5	10	1	1	45
7		Bruguiera exaristata	6.9	7	1	1.3	201
8		Rhizophora sp.	5.9	5	1	1.3.7	274
9		Bruguiera exaristata	3.8	5	0		661
10		Rhizophora sp.	8.1	9	1	1.3	146
11		Rhizophora sp.	31.0	10	1	1	10
12		Bruguiera exaristata	5.9	6	0	0	274
13		Bruguiera exaristata	12.0	9	1	1.6	66
14		Rhizophora sp.	11.0	8	1	1	79
15		Rhizophora sp.	13.5	10	1	1	52
16		Rhizophora sp.	9.0	11	1	1	118
17		Rhizophora sp.	6.7	8	1	1	213
18		Rhizophora sp.	3.9	5	1	1.7	628
19		Rhizophora sp.	10.0	10	1	1	95
20	F3-2	Rhizophora sp.	13.5	9	0		52
21		Rhizophora sp.	9.0	8.5	1	1	118
22		Rhizophora sp.	32.5	12	1	4.7	9
23		Rhizophora sp.	32.0	10	1	4	9
24		Bruguiera exaristata	2.3	3	1	1	1805
25		Bruguiera exaristata	7.5	7	1	1.7	170
26		Rhizophora sp.	15.0	10	1	1	42
27		Bruguiera exaristata	9.0	8	1	1	118
28		Rhizophora sp.	16.5	9	1	1.3.6	35
29		Rhizophora sp.	22.0	9	1	1	20

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-11 Mangrove structure and composition at site F3-34 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F3-11	Bruguiera exaristata	4.9	0	0	0	265
2	F3-12	Rhizophora sp.	15.0	9	1	1.3	28
3	F3-13	Rhizophora sp.	8.1	9	1	1.3	97
4	F3-14	Bruguiera exaristata	4.2	5	1	1	361
5	F3-15	Rhizophora sp.	10.0	11	1	1	64
6	F3-11	Ceriops sp.	3.5	4	1	1	520
7		Rhizophora sp.	14.0	10	1	1	32
8		Bruguiera exaristata	6.5	6	1	1	151
9		Rhizophora sp.	11.0	8	1	1.3	53
10		Rhizophora sp.	8.3	7	1	1.7.6	92
11		Bruguiera exaristata	6.5	6	1	3	151
12		Rhizophora sp.	14.0	9	1	1	32
13		Bruguiera exaristata	12.0	10	1	1.7	44
14		Rhizophora sp.	10.5	9	1	1	58
15		Rhizophora sp.	7.0	8	1	1	130
16		Rhizophora sp.	14.5	11	1	1	30
17	F3-6	Rhizophora sp.	17.5	12	1	1	21
18		Bruguiera exaristata	7.0	4	0	0	130
19		Rhizophora sp.	10.0	8	1	1	64
20		Rhizophora sp.	17.0	8	1	3.6	22
21		Rhizophora sp.	9.0	8	1	1	79
22		Rhizophora sp.	11.0	10	1	1	53
23		Bruguiera exaristata	8.5	10	1	1.6	88
24		Rhizophora sp.	13.0	10	1	1	38
25		Rhizophora sp.	13.0	10	1	1	38
26		Bruguiera exaristata	9.0	8	1	1	79
27		Bruguiera exaristata	12.5	8	1	3.6	41
28		Rhizophora sp.	12.5	2	0	0	41

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-12 Mangrove structure and composition at site F3-50 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	F3-16	Bruguiera exaristata	4.4	5	0		164
2	F3-17	Bruguiera exaristata	5.6	6	1	1.6	102
3	F3-18	Rhizophora sp.	8.5	7	1	1	44
4	F3-19	Rhizophora sp.	12.0	7	1	1.6	22
5	F3-20	Bruguiera exaristata	6.8	0	0	1	69
6		Bruguiera exaristata	6.9	7	1	1	67
7	F3-20	Bruguiera exaristata	6.3	6	1	1	80
8		Bruguiera exaristata	8.8	7	1	1	41
9		Rhizophora sp.	9.2	7	1	1	38
10		Bruguiera exaristata	4.8	5	1	1	138
11		Rhizophora sp.	8.4	6	1	1.6.7	45
12		Bruguiera exaristata	2.3	4	1	1	602
13		Rhizophora sp.	8.0	4	1	3.6	50
14		Bruguiera exaristata	1.2	2.5	1	1	2210
15		Rhizophora sp.	9.0	7	1	1	39
16		Rhizophora sp.	12.5	7	1	1.3	20
17		Bruguiera exaristata	8.3	8	1	1	46
18		Rhizophora sp.	3.2	4	1	3	311
19		Bruguiera exaristata	1.4	3	1	1	1624
20		Bruguiera exaristata	1.1	3	1	1	2631
21		Bruguiera exaristata	0.9	2	1	1	3930
22		Rhizophora sp.	4.2	5.5	1	1	180
23		Bruguiera exaristata	10.0	5	1	1	32
24		Bruguiera exaristata	4.5	6	1	1	157
25		Bruguiera exaristata	5.6	6	1	1	102
26		Bruguiera exaristata	6.7	6	1	1	71
27		Bruguiera exaristata	4.6	6	1	1.3	150
28		Rhizophora sp.	5.0	6	1	1	127
29		Bruguiera exaristata	6.6	6	1	1	73
30		Rhizophora sp.	6.7	5	1	1.3	71
31		Bruguiera exaristata	1.6	3	1	6	1243
32		Rhizophora sp.	2.2	4	1	3	658
33		Bruguiera exaristata	7.0	1.5	0		65
34		Bruguiera exaristata	3.6	5	1	1	246
35		Rhizophora sp.	4.4	4.5	0		164
36		Bruguiera exaristata	1.6	2.5	1	1	1243
37		Rhizophora sp.	6.0	5	1	1.3	88
38		Bruguiera exaristata	1.5	3	1	1.6	1415
39		Bruguiera exaristata	1.7	3	1	1	1101
40		Rhizophora sp.	10.0	8	1	1	32
41		Rhizophora sp.	4.4	6	1	1	164
42		Rhizophora sp.	12.0	10	1	1.3	22
43		Bruguiera exaristata	3.0	5	1	1	354
44		Bruguiera exaristata	8.0	1.5	1	1	50
45		Rhizophora sp.	5.3	7	1	1	113
46		Rhizophora sp.	4.6	7	1	1	150
47		Rhizophora sp.	3.7	6	1	1	233
48		Bruguiera exaristata	2.3	5	1	1	602
49		Rhizophora sp.	2.6	6	1	1	471
50		Rhizophora sp.	3.0	6	1	1	354
51		Bruguiera exaristata	3.7	6	1	1	233
52		Bruguiera exaristata	7.8	6	1	1	52
53		Rhizophora sp.	8.0	6	1	1	50
54		Bruguiera exaristata	1.4	2.5	1	1	1624
55		Rhizophora sp.	2.1	3	1	1	722

Table 7.5-13 Mangrove structure and composition at site C1-6 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C1-1	Rhizophora sp.	18.0	10	1	1.3	20
2	C1-2	Bruguiera exaristata	9.1	7	1	1	77
3	C1-3	Bruguiera exaristata	8.2	8	1	1	95
4	C1-4	Rhizophora sp.	14.0	7	1	3.7	32
5	C1-5	Bruguiera exaristata	5.3	7	0		227
6	C1-5	Rhizophora sp.	18.8	12	1	1.3	18
7		Bruguiera exaristata	8.6	8	1	1.6	86
8		Bruguiera exaristata	4.7	3	0		288
9		Bruguiera exaristata	4.1	6	1	1	379
10		Bruguiera exaristata	6.3	8	1	1	160
11		Bruguiera exaristata	4.8	6	1	1	276
12		Rhizophora sp.	23.0	11	1	1	12
13		Rhizophora sp.	24.0	6	1	1.7	11
14		Rhizophora sp.	16.3	12	1	1.3	24
15		Rhizophora sp.	11.0	10	1	1.3	53
16		Rhizophora sp.	13.8	12	1	1.7	33
17		Bruguiera exaristata	6.4	6	1	1.3	155
18		Bruguiera exaristata	6.6	6	1	1.3	146
19		Rhizophora sp.	13.0	11	1	1	38
20		Rhizophora sp.	17.0	12	0		22
21		Rhizophora sp.	16.5	12	1	1	23
22		Rhizophora sp.	10.5	6	1	1.3.7	58
23		Bruguiera exaristata	6.3	4	0		160
24		Rhizophora sp.	29.0	8	1	4.7	8
25		Bruguiera exaristata	7.0	5	1	1	130
26		Rhizophora sp.	10.3	7	1	1	60
27		Rhizophora sp.	18.0	12	1	1.7	20
28		Rhizophora sp.	11.0	8	1	1	53
29		Rhizophora sp.	10.2	8	1	1	61
30		Rhizophora sp.	11.0	10	1	1.7	53
31		Rhizophora sp.	32.5	12	1	1	6
32		Rhizophora sp.	13.8	10	1	1.7	33
33		Rhizophora sp.	15.5	14	1	1	26
34		Rhizophora sp.	9.0	6	1	4.6.7	79
35		Rhizophora sp.	13.0	10	1	1.6	38
36	C1-6	Rhizophora sp.	12.3	10	1	1.7	42
37		Ceriops sp.	2.7	4	1	1	873
38		Bruguiera exaristata	4.7	4	1	1.6	288
39		Rhizophora sp.	11.5	10	1	1.6	48
40		Rhizophora sp.	13.0	8	1	1.7	38
41		Bruguiera exaristata	9.3	7	1	1.3	74
42		Bruguiera exaristata	14.0	10	1	1	32
43		Rhizophora sp.	11.0	11	1	1	53
44		Rhizophora sp.	16.3	12	1	1.3	24
45		Rhizophora sp.	11.5	10	1	1.3	48
46		Rhizophora sp.	16.0	12	1	1.3	25

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-14 Mangrove structure and composition at site C1-13 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C1-6	Rhizophora sp.	12.3	8	1	1.7	21
2	C1-7	Rhizophora sp.	3.8	4	1	1.3	220
3	C1-8	Ceriops sp.	3.4	5	1	1	275
4	C1-9	Ceriops sp.	3.2	5	1	1	311
5	C1-10	Bruguiera parviflora	3.8	4	1	1	220
6		Rhizophora sp.	9.0	7	1	1.7.3	39
7		Rhizophora sp.	10.0	8	1	1.7	32
8		Rhizophora sp.	13.0	8	1	1.7	19
9		Rhizophora sp.	10.5	6	1	1.3	29
10		Bruguiera parviflora	3.4	4	1	1	275
11		Rhizophora sp.	11.0	10	1	1.7	26
12		Rhizophora sp.	13.0	10	1	1.7	19
13		Ceriops sp.	1.2	2.3	1	1	2210
14		Bruguiera parviflora	1.5	3	1	1	1415
15		Ceriops sp.	1.7	4	1	1	1101
16		Rhizophora sp.	13.0	10	1	1	19
17		Ceriops sp.	1.5	3	1	1	1415
18		Bruguiera parviflora	2.5	3	1	1.3	509
19		Ceriops sp.	1.7	4	1	1	1101
20		Ceriops sp.	3.2	5	1	1.6	311
21		Rhizophora sp.	6.0	5	1	1.7	88
22		Ceriops sp.	4.0	5	1	1	199
23		Ceriops sp.	3.2	4	1	1	311
24		Rhizophora sp.	11.5	10	1	1.3	24
25		Bruguiera parviflora	4.5	5	1	1.6	157
26		Rhizophora sp.	8.5	8	1	1.3	44
27		Rhizophora sp.	10.0	5	0	7	32
28		Rhizophora sp.	14.0	10	1	1.7	16
29		Bruguiera parviflora	2.3	3	1	1.7	602
30		Bruguiera parviflora	2.3	2	1	3	602
31		Ceriops sp.	2.2	3	1	1.6	658
32		Ceriops sp.	2.4	4	1	1	553
33		Rhizophora sp.	10.0	10	1	1.3	32
34		Rhizophora sp.	6.5	5	1	3	75
35	C1-11	Rhizophora sp.	12.0	11	1	1.3	22

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-15 Mangrove structure and composition at site C1-22 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C1-11	Rhizophora sp.	12.0	11	1	1.3	44
2	C1-12	Rhizophora sp.	8.7	7	1	1.6	84
3	C1-13	Ceriops sp.	2.3	2.5	1	1.3	1203
4	C1-14	Ceriops sp.	2.3	2.5	1	1	1203
5	C1-15	Rhizophora sp.	9.0	5	1	1.3	79
6		Ceriops sp.	2.1	2	1	1.6	1444
7		Ceriops sp.	2.7	3	1	1	873
8		Ceriops sp.	2.1	2.5	1	1.3	1444
9		Ceriops sp.	1.3	1.5	1	1	3767
10		Ceriops sp.	1.2	2	1	3.6	4421
11		Ceriops sp.	1.9	2	1	1.3	1763
12		Ceriops sp.	2.6	2	1	1.3	942
13		Rhizophora sp.	9.0	6	1	1.3	79
14		Rhizophora sp.	13.0	5	1	1.3	38
15		Rhizophora sp.	6.5	5	1	1.3.7	151
16		Rhizophora sp.	16.0	8	1	1.6	25
17		Ceriops sp.	1.6	2.5	1	1.3.6	2487
18		Ceriops sp.	1.8	2	1	3.6	1965
19		Bruguiera exaristata	1.9	2	1	1	1763
20		Rhizophora sp.	12.3	4	0		42
21		Ceriops sp.	1.2	2	1	1	4421
22		Rhizophora sp.	6.7	5	1	3.4.7	142
23		Ceriops sp.	1.9	2.5	1	1	1763
24		Ceriops sp.	0.6	1.5	1	1	17684

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-16 Mangrove structure and composition at site C2-15 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C2-16	Bruguiera exaristata	7.0	5.5	1	1.3	195
2	C2-17	Rhizophora sp.	29.0		0	0	11
3	C2-18	Rhizophora sp.	18.0	14	1	1.3.6	29
4	C2-19	Bruguiera exaristata	8.1	8	1	1.3	146
5	C2-20	Rhizophora sp.	10.1	10	1	1.3	94
6		Rhizophora sp.	19.0	8	1	1.7	26
7		Rhizophora sp.	30.0	8	1	3.7	11
8		Rhizophora sp.	18.0	10	1	3.7	29
9		Rhizophora sp.	33.0	12	1	1.3	9
10		Bruguiera exaristata	2.9	3.5	1	1	1135
11		Rhizophora sp.	15.0	12	1	1.3	42
12		Rhizophora sp.	13.8	12	1	1	50
13		Rhizophora sp.	22.0	10	1	1.3	20
14		Rhizophora sp.	15.0	10	1	1.3	42
15		Rhizophora sp.	13.0	12	1	1.3	57
16		Rhizophora sp.	18.0	12	1	1	29
17		Rhizophora sp.	13.0	10	0		57
18		Rhizophora sp.	12.0	8	1	3.6.7	66
19		Rhizophora sp.	14.2	12	1	3.6	47
20		Rhizophora sp.	12.0	8	1	3.6	66
21		Rhizophora sp.	10.0	12	1	1	95
22		Rhizophora sp.	10.0	8	1	1.7	95
23		Rhizophora sp.	11.0	12	1	1	79
24		Rhizophora sp.	12.0	12	1	1	66
25		Rhizophora sp.	19.0	12	1	1	26
26		Rhizophora sp.	13.0	10	1	3.7	57
27		Rhizophora sp.	15.0	12	1	1.7	42
28		Rhizophora sp.	12.8	12	1	1.7	58
29		Rhizophora sp.	15.0	12	1	1.7	42
30		Rhizophora sp.	14.0	11	1	3.6	49
31		Rhizophora sp.	19.5	10	1	1	25
32		Rhizophora sp.	7.8	7	0	1	157
33		Rhizophora sp.	18.0	8	1	1.7	29
34		Rhizophora sp.	30.0		0	7	11
35		Rhizophora sp.	31.0	12	1	1.3	10
36		Rhizophora sp.	34.0	10	1	4.7	8

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-17 Mangrove structure and composition at site C2-29 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C2-11	Rhizophora sp.	8.8	10	1	1	123
2	C2-12	Bruguiera exaristata	2.2	3	1	1	1973
3	C2-13	Rhizophora sp.	12.0	7	0		66
4	C2-14	Rhizophora sp.	9.5	8	1	3.6	106
5	C2-15	Bruguiera exaristata	2.5	3	1	1	1528
6	C2-13	Rhizophora sp.	13.0	8	1	1.3	57
7		Rhizophora sp.	12.0	7	0		66
8		Rhizophora sp.	10.3	7	1	1	90
9		Bruguiera exaristata	2.3	3	1	1	1805
10		Rhizophora sp.	6.4	6	1	1	233
11		Rhizophora sp.	9.5	8	1	1.6.3	106
12		Rhizophora sp.	11.7	7	1	1.6.3	70
13		Rhizophora sp.	6.4	6	1	1.3	233
14		Rhizophora sp.	5.0	6	1	1.3	382
15		Rhizophora sp.	8.5	9	1	1	132
16		Rhizophora sp.	10.0	8	1	1	95
17		Rhizophora sp.	8.0	6	0	3	149
18		Rhizophora sp.	3.5	4	1	1.3	780
19		Bruguiera exaristata	2.2	3	1	1	1973
20		Rhizophora sp.	9.0	8	1	3.6	118
21		Rhizophora sp.	11.5	10	1	1	72
22		Bruguiera exaristata	2.2	3	1	1	1973
23		Rhizophora sp.	7.2	9	1	1	184
24		Rhizophora sp.	9.8	10	1	1	99
25		Rhizophora sp.	9.7	10	1	1	101
26		Rhizophora sp.	9.2	8	1	1.3	113
27		Rhizophora sp.	4.3	5	1	1	516
28		Rhizophora sp.	4.4	2	0		493
29		Bruguiera exaristata	3.3	4	1	1	877

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-18 Mangrove structure and composition at site C2-38 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C2-6	Rhizophora sp.	8.7	8	1	1	126
2	C2-7	Rhizophora sp.	5.6	6.5	1	1	305
3	C2-8	Rhizophora sp.	6.2	6	1	1.6	248
4	C2-9	Ceriops sp.	2.7	4.5	1	1	1310
5	C2-10	Bruguiera exaristata	2.7	4	1	1	1310
6		Rhizophora sp.	4.5	6	1	1	472
7		Rhizophora sp.	5.5	6	1	1	316
8		Rhizophora sp.	8.0	8	1	1	149
9		Rhizophora sp.	5.8	6	1	1	284
10		Bruguiera exaristata	2.2	3	1	1	1973
11		Rhizophora sp.	5.5	6	1	3.6	316
12		Rhizophora sp.	5.0	5	1	1	382
13		Rhizophora sp.	3.1	4	1	7	994
14		Rhizophora sp.	6.5	6	1	1	226
15		Rhizophora sp.	5.6	6	1	1	305
16		Bruguiera exaristata	3.4	4	1	1	826
17		Rhizophora sp.	4.2	4.5	1	1.3	541
18		Rhizophora sp.	4.3	4	1	1.3	516
19		Ceriops sp.	1.7	3	1	1.3	3304
20		Ceriops sp.	0.6	1.5	1	1	26526
21		Rhizophora sp.	4.5	6	1	1.3	472
22		Bruguiera exaristata	2.5	3	1	1	1528
23		Rhizophora sp.	2.2	3	0		1973
24		Rhizophora sp.	9.5	10	1	1	106
25		Rhizophora sp.	4.9	4.5	1	7	398
26		Bruguiera exaristata	1.5	2	1	1	4244
27		Rhizophora sp.	7.8	7	1	6	157
28		Rhizophora sp.	4.5	5	1	6.7	472
29		Rhizophora sp.	8.0	9	0		149
30		Rhizophora sp.	7.4	8	1	1	174
31		Rhizophora sp.	7	7	1	1.3	195
32		Rhizophora sp.	8.0	6	1	1.3	149
33		Rhizophora sp.	6.8	6	1	1.3	207
34		Rhizophora sp.	8.5	6	1	1	132
35		Rhizophora sp.	7.5	6	1	3	170
36		Bruguiera exaristata	1.4	2	0		4872
37		Rhizophora sp.	6.3	7	1	1	241
38		Rhizophora sp.	5.0	7	1	1	382
39		Rhizophora sp.	6.5	8	1	1.3	226

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

Table 7.5-19 Mangrove structure and composition at site C2-50 in 2005

No.	Tag No.	Species	Diam at Breast Height (cm)	Height (m)	Status	Condition	Stem Density
1	C2-1	Rhizophora sp.	4.0	4	1	1	597
2	C1-2	Ceriops sp.	2.2	2.5	1	1	1973
3	C1-3	Rhizophora sp.	5.0	4	0	3	382
4	C1-4	Rhizophora sp.	5.7	5	1	1	294
5	C1-5	Ceriops sp.	2.7	5	1	1	1310
6		Rhizophora sp.	2.8	4.5	1	7	1218
7		Rhizophora sp.	4.2	3.5	0		541
8		Rhizophora sp.	5.8	5	1	1	284
9		Rhizophora sp.	4.5	5	1	1	472
10		Rhizophora sp.	3.0	2.5	1	1	1061
11		Ceriops sp.	1.5	2.5	1	1	4244
12		Ceriops sp.	1.3	2.5	1	1	5650
13		Rhizophora sp.	4.2	4	1	3	541
14		Bruguiera exaristata	1.4	2.5	1	1	4872
15		Rhizophora sp.	1.9	2.5	1	1	2645
16		Rhizophora sp.	7.3	6	0		179
17		Ceriops sp.	0.9	1.5	1	1	11789
18		Rhizophora sp.	5.4	6	1	1	327
19		Rhizophora sp.	4.5	4	1	1	472
20		Rhizophora sp.	5.3	6	1	1	340
21		Rhizophora sp.	4.8	6	1	1	414
22		Rhizophora sp.	3.6	4.5	1	1	737
23		Bruguiera exaristata	0.9	2.5	1	1	11789
24		Rhizophora sp.	4.3	6	1	1	516
25		Bruguiera exaristata	1.5	2.5	1	1	4244
26		Rhizophora sp.	3.9	5	1	1	628
27		Ceriops sp.	2.3	4.5	1	1	1805
28		Rhizophora sp.	4.6	6	1	1	451
29		Rhizophora sp.	6.1	6	1	1	257
30		Rhizophora sp.	4.8	6	1	1.6	414

Status: 0 = dead, 1 = alive

Condition: 1 = healthy, 2 = trunk rot, 3 = crown damage, 4 = overmature, 5 = senescent, 6 = dead branches, 7 = leaning

7.6 Benthic faunal analysis

Table 7.6-1 Number of macrofaunal taxa collected in replicate samples at Port Hurd farm sites in 2003

Species	F1-1	F1-2	F1-3	F2-1	F2-2	F2-3	F3-1	F3-2	F3-3	F4-1	F4-2	F4-3	F5-1	F5-2	F5-3	F6-1	F6-2	F6-3	Total
Isaeid sp.	0	0	0	0	0	0	4	0	0	0	0	2	0	0	0	2	0	2	10
Melitid sp.1	0	0	4	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0	9
Melitid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Melitid sp.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Hymenosomatid sp.	0	1	1	0	0	0	3	1	2	0	0	0	0	0	0	0	0	0	8
Majid sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Goneplacid sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
Macrophthalmus sp.1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Macrophthalmus sp.2	57	45	70	0	0	0	38	83	40	0	2	3	1	0	0	4	2	8	353
Pilumnus sp.1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	0	4
Pilumnus sp.2	0	0	1	0	0	0	0	1	0	4	0	1	0	0	0	1	0	0	8
Alpheid sp.	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	5
Clordina sp.	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	4
Pandalid sp.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Axius sp.	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	4
Macrobrachium sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Ogyrides sp.	0	0	0	0	0	0	0	0	0	0	0	0	17	2	4	0	0	0	23
Caridea sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Processa sp.	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0	2	3	2	12
Balanus sp.	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Ostracod sp.2	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	7
Ostracod sp.4	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
Apseudes sp.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Apseudes sp.2	0	0	0	0	0	0	1	2	0	64	45	103	0	1	0	1	17	15	249
Holothurian sp.1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Ophiactis sp.	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Ophiocentrus sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2	3	9
Haloginella sp.	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Nassarius sp.	0	1	2	0	3	0	1	2	1	0	0	4	0	0	0	0	0	0	14
Eulima sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Eudoridoid sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Natica sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Nuculana sp.	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	0	0	4
Yoldia lata	0	1	0	0	0	0	0	0	0	1	3	9	0	0	0	0	0	0	14
Leionucula sp.	0	0	1	0	0	0	1	1	1	0	0	4	3	0	2	1	1	1	16
Ostreid sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Gari sp.	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Tellina sp.1	0	1	1	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	16
Tellina sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	4
Paphia undulata	1	0	0	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	6
Bassina sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Linga sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Mactra sp.	0	0	0	0	2	0	0	1	6	0	0	1	0	0	0	0	0	0	10
Lucinid sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Laternulid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
Anadara sp.	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4
Galeommatid sp.	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Theora sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Corbula sp.	2	3	4	0	0	0	28	25	6	5	0	24	0	0	0	3	2	3	105
Ungulinid sp.	0	0	1	12	2	2	2	2	0	0	0	0	0	0	0	0	0	0	21
Dentaliid sp.	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Sipunculan sp.	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3
Edwardsia sp.1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1

Species	F1-1	F1-2	F1-3	F2-1	F2-2	F2-3	F3-1	F3-2	F3-3	F4-1	F4-2	F4-3	F5-1	F5-2	F5-3	F6-1	F6-2	F6-3	Total
Edwardsia sp.2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Gobid sp.1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Gobid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Enteropneust sp.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Nemertean sp.	0	0	1	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	7
Armandia sp.	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Capitellid sp.1	0	0	5	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	9
Scyphoproctus sp.	4	4	4	0	0	0	5	8	12	14	8	1	0	0	0	1	0	0	61
Nephtys sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Flabelligerid sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	3
Glycera cinnamomea	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bispira sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sabellid sp.1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sabellid sp.2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	3
Eunice sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Marphysa sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Lumbrineris sp.	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2	6
Maldanid spp.	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Nereid sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Prionospio fallax	0	0	0	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	7
Prionospio sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Allia sp.	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Timarete sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Lysilla sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Sosanides sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4
Magelona sp.1	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	5
Magelona sp.2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Paleaequor sp.	0	0	0	0	0	0	2	1	0	2	0	10	0	0	0	1	0	0	16
Horstileanira sp.	0	1	0	0	0	0	0	0	0	1	5	4	0	0	1	0	2	0	14
Sternaspis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Linopherus sp.	0	2	1	0	0	1	1	1	0	6	1	0	1	0	0	3	9	1	27
Total Species	9	13	20	7	12	5	24	24	18	13	10	28	10	6	8	19	13	16	84
Total Individuals	76	63	104	19	22	8	101	142	86	103	69	197	32	9	14	28	46	44	1163

Table 7.6-2 Number of macrofaunal taxa collected in replicate samples at Gullala Creek control sites in 2003

Species	C1-1	C1-2	C1-3	C2-1	C2-2	C2-3	C3-1	C3-2	C3-3	C4-1	C4-2	C4-3	C5-1	C5-2	C5-3	C6-1	C6-2	C6-3	Total
Ascidia sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Ampelisca sp.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Byblis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0	5
Corophium sp.	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5
Jassa sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lysianassid sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
Melitid sp.1	0	0	0	3	2	0	0	0	1	0	0	0	0	0	1	0	1	0	8
Melitid sp.2	0	0	2	0	0	0	6	1	0	0	1	1	0	1	0	0	0	1	13
Oedicerotid sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Phoxocephalid sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	3	0	9
Leucothoe sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Podocerus sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hymenosomatid sp.1	5	4	0	0	0	0	2	1	2	0	0	0	0	0	0	0	0	0	14
Hymenosomatid sp.2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Majid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Goneplacid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Macrophthalmus sp.1	8	0	31	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	41
Macrophthalmus sp.2	0	2	1	0	1	6	6	2	0	0	0	0	0	0	0	0	0	0	18
Pilumnus sp.1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Pilumnus sp.2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Alpheid sp.	0	1	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	5
Clordina sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pandalid sp.	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	4
Axius sp.	6	13	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Caridea sp.	0	0	2	0	0	1	0	0	0	2	1	3	0	0	0	0	0	0	9
Processa sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	6
Cirolana sp.	0	0	0	0	0	0	0	0	0	3	0	0	0	1	1	0	2	0	7
Anthurid sp.1	0	0	0	0	0	1	2	2	1	0	0	1	0	0	0	0	0	0	7
Anthurid sp.2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
Serolis sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Serolis sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Mysid sp.1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Mysid sp.2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Ostracod sp.1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Ostracod sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Ostracod sp.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Apseudes sp.1	5	4	11	0	1	2	5	6	8	0	0	3	0	2	2	4	0	0	53
Apseudes sp.2	0	0	0	0	0	0	5	4	4	0	0	0	4	2	0	3	1	3	26
Kalliapseudes sp.1	3	6	4	0	1	1	5	9	16	47	33	36	9	4	26	17	5	4	226
Kalliapseudid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Leptochelia sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Leuconiid sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cyclaspis sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Holothurian sp.	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4
Ophiactis sp.	2	17	4	0	0	2	1	1	2	6	5	3	3	4	5	0	0	0	55
Ophiocentrus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	41	15	71
Ophiuroid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Haloginella sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nassarius sp.	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Tornatina sp.	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Turrid sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Philine sp.	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Turritellid sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1

Species	C1-1	C1-2	C1-3	C2-1	C2-2	C2-3	C3-1	C3-2	C3-3	C4-1	C4-2	C4-3	C5-1	C5-2	C5-3	C6-1	C6-2	C6-3	Total
Rissoid sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Salinator fragilis	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Nuculana sp.	4	11	3	0	0	4	0	0	0	0	0	0	0	0	0	1	0	1	24
Yoldia lata	0	0	0	0	0	0	0	0	0	3	1	0	0	0	2	5	6	3	20
Leionucula sp.	1	3	1	0	0	2	1	2	0	8	1	6	3	2	5	7	5	2	49
Gari sp.	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	1	6
Tellina sp.1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Paphia undulata	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Mactra sp.	1	1	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	9
Lucinid sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Glauconome sp.	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Galeommatid sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Barbatia sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Laternulid sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	3
Solemya sp.	2	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	7
Theora sp.	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	5
Ungulinid sp.	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Corbula sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ungulinid sp.	3	9	3	0	0	9	0	5	0	0	0	0	0	0	0	0	0	0	29
Platyhelminth sp.1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Platyhelminth sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Edwardsia sp.	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
Nemertean sp.	0	0	4	1	0	2	2	1	0	0	0	0	0	0	1	0	1	0	12
Nematode sp.	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
Armandia sp.	1	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	7
Phyllodoce sp.	1	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	5
Capitellid sp.1	1	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	5
Scyphoproctus sp.	2	9	0	0	0	1	2	4	0	4	8	34	13	11	14	1	3	0	106
Capitellid sp.2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Capitellid sp.3	0	0	0	0	0	0	0	0	0	2	1	2	0	0	4	0	0	0	9
Schistomeringos sp.	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	6
Nephtys sp.	8	3	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	18
Aglaophamus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Bradiella sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Flabelligerid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3
Glycera cinnamomea	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Leocrates sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Hesionid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Bispira sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sabellid sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Eunice sp.1	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1	0	0	0	5
Eunice sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Diopatra sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lumbrineris sp.	9	8	5	0	0	1	0	3	0	0	1	1	0	0	1	0	1	0	30
Maldanid spp.	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Maldanid sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Maldane sp.	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Nereid sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Prionospio fallax	6	1	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	12
Scolelepis sp.	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Prionospio sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4
Paraonella sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Allia sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1

Species	C1 1	C1 2	C1 3	C2 1	C2 2	C2 3	C3 1	C3 2	C3 3	C4 1	C4 2	C4 3	C5 1	C5 2	C5 3	C6 1	C6 2	C6 3	Total
Allia sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Timarete sp.	2	0	0	2	3	0	0	0	0	0	0	0	0	0	0	1	0	1	9
Cirratulus sp.	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	4
Syllid sp.	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Lysilla sp.	1	0	0	1	1	0	0	0	0	1	1	2	1	2	0	4	5	1	20
Nicolea sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Streblosoma sp.	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Pista sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Artacamella sp.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	4
Terebellides sp.	2	0	0	2	4	3	0	0	0	8	13	10	5	1	0	0	0	1	49
Isolda sp.	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Sosanides sp.	0	0	0	0	0	0	0	0	0	2	1	2	3	0	4	0	0	0	12
Disconatis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Polynoid sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4
Harmothoe sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Loandalia sp.	8	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	0	14
Chloeia sp.	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
Magelona sp.	0	7	2	0	0	1	21	0	0	0	0	0	0	0	0	0	0	0	31
Paleaequor sp.	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	0	0	7
Phyllochaetopterus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Poecilochaetus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pectinaria sp.	0	0	0	0	0	0	0	0	0	0	2	0	1	1	2	0	0	0	6
Horstileanira sp.	0	0	0	0	0	0	0	0	0	1	0	0	1	5	5	4	7	0	23
Sternaspis sp.	4	2	13	7	4	1	2	0	1	0	1	0	0	0	0	0	0	0	35
Pilargid sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ancistrosyllis sp.	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	4
Linopherus sp.	1	0	0	0	1	0	0	0	0	1	4	0	6	1	0	0	2	0	16
Total species	29	18	17	24	30	30	22	6	15	34	29	30	34	30	27	25	28	30	133
Total individuals	84	100	75	75	78	58	73	9	29	164	122	76	210	205	102	80	107	76	1723

Table 7.6-3 Number of macrofaunal taxa collected in replicate samples at Port Hurd farm sites in 2005

Species	F1 1	F1 2	F1 3	F2 1	F2 2	F2 3	F3 1	F3 2	F3 3	F4 1	F4 2	F4 3	F5 1	F5 2	F5 3	F6 1	F6 2	F6 3	Total
Pycnogonid sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Byblis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Corophium sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Melitid sp.1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Melitid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
Melitid sp.3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Aorid sp.	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4
Leucothoe sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Grapsid sp.1	0	4	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	10
Hymenosomatid sp.1	1	1	0	0	0	0	9	1	11	0	0	0	0	0	0	1	0	0	24
Hymenosomatid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hymenosomatid sp.3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cryptocnemus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Majid sp.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Goneplacid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
Macrophthalmus sp.2	10	20	7	0	0	0	68	12	80	0	0	1	0	0	0	3	2	2	205
Portunus pelagicus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pilumnus sp.1	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	4
Pilumnus sp.2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	3
Clordina sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Ogyrides sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	6
Processa sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Penaeid sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Philocheras sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Cirolana sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Gnathia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Anthurid sp.1	4	1	2	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	11
Anthurid sp.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Serolis sp.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Ostracod sp.1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
Ostracod sp.2	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	7
Pagurid sp.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Apseudes sp.1	1	1	5	0	0	0	0	1	1	5	5	6	0	2	0	0	0	4	31
Apseudes sp.2	0	2	0	0	0	0	1	0	0	6	12	5	10	0	3	3	1	2	45
Apseudes sp.3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8
Cyclaspis sp.	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4
Diadematid sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Holothurian sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Ophiactis sp.	2	0	0	0	0	2	3	0	0	1	5	1	1	0	0	8	2	3	28
Ophiocentrus sp.2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Haloginella sp.	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
Nassarius sp.	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	4
Eulima sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Turrid sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Philine sp.	1	0	0	1	0	0	3	0	4	0	0	0	0	0	0	0	0	0	9
Salinator fragilis	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mytilid sp.1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nuculana sp.1	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Nuculana sp.2	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	4
Leionucula sp.	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	0	4
Gari sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Tellina sp.1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4
Tellina sp.2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2

Species	F1 1	F1 2	F1 3	F2 1	F2 2	F2 3	F3 1	F3 2	F3 3	F4 1	F4 2	F4 3	F5 1	F5 2	F5 3	F6 1	F6 2	F6 3	Total
Paphia undulata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Bassina sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Linga sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
Venerupis sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Mactra sp.1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	3
Mactra sp.2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Barbatia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Laternulid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Trisidos sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Corbula sp.	4	3	1	0	0	0	6	0	11	1	0	0	0	0	0	1	0	4	31
Ungulinid sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Phoronid sp.	0	1	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	6
Sipunculan sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Edwardsia sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Edwardsia sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Gobid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Pleuronectiformes sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nemertean sp.	2	3	3	1	0	1	1	0	3	0	1	3	1	0	1	1	0	0	21
Nematode sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Armandia sp.	0	3	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	9
Phyllodoce sp.1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Capitellid sp.1	1	0	5	1	0	0	0	1	2	3	5	3	1	0	0	1	1	1	25
Scyphoproctus sp.	14	26	28	0	0	1	1	3	2	11	20	29	0	0	0	6	1	1	143
Schistomeringos sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nephtys sp.	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Goniadid sp.	0	1	3	2	0	0	0	0	0	0	1	6	0	0	0	0	0	0	13
Glycera cinnamomea	0	2	0	0	0	0	0	1	1	5	6	1	0	0	0	2	0	4	22
Hesionid sp.2	0	0	1	0	0	0	1	0	2	0	0	0	1	1	0	0	0	0	6
Sabellid sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Sabellid sp.2	2	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	6
Eunice sp.2	0	0	1	0	0	0	0	0	0	1	2	1	0	0	0	2	2	3	12
Lumbrinereis sp.2	1	1	0	0	0	0	0	1	0	0	0	2	0	0	0	1	0	0	6
Lumbrinereis sp.3	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Maldanid sp.1	8	21	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	35
Maldanid sp.2	0	3	0	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	7
Nereid sp.1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Nereid sp.2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Orbiniid sp.1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	3
Orbiniid sp.2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	3
Prionospio fallax	0	2	1	4	0	1	0	0	1	0	0	1	0	0	0	0	0	0	10
Scolelepis sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Paraprionospio sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
Allia sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Timarete sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
Cirratulus sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Syllid sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lysilla sp.	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	1	3	0	8
Nicolea sp.	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Terebellides sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
Isolda sp.	2	1	0	0	0	0	0	2	0	0	1	3	0	0	0	0	0	0	9
Sosanides sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3
Disconatis sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
Polynoid sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2

Species	F1 1	F1 2	F1 3	F2 1	F2 2	F2 3	F3 1	F3 2	F3 3	F4 1	F4 2	F4 3	F5 1	F5 2	F5 3	F6 1	F6 2	F6 3	Total
Loandalia sp.	1	0	3	0	0	0	2	0	2	2	5	3	0	0	0	0	0	0	18
Chloeia sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Magelona sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Paleaequor sp.	4	0	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	8
Phyllochaetopterus sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Poecilochaetus sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pectinaria sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
Horstileanira sp.	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0	2	1	10
Sternaspis sp.	0	0	0	2	0	0	0	1	0	0	0	0	0	1	0	1	1	0	6
Pilargid sp.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Ancistrosyllis sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Linopherus sp.	7	0	2	0	0	0	1	0	0	0	3	2	0	0	0	24	0	1	40
Scalibregmatid sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total species	28	27	30	11	8	9	21	17	28	14	17	26	13	10	12	33	17	20	119
Total individuals	79	108	91	16	10	11	107	36	139	40	71	86	23	15	18	78	23	38	989

Table 7.6-4 Number of macrofaunal taxa collected in replicate samples at Gullala Creek control sites in 2005

Species	C1 1	C1 2	C1 3	C2 1	C2 2	C2 3	C3 1	C3 2	C3 3	C4 1	C4 2	C4 3	C5 1	C5 2	C5 3	C6 1	C6 2	C6 3	Total
Byblis sp.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	3
Corophium sp.	0	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	4
Isaeid sp.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Lysianassid sp.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Melitid sp.1	0	0	0	0	0	0	0	0	0	3	3	0	0	1	2	1	0	0	10
Melitid sp.2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	4
Phoxocephalid sp.	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Leucothoe sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Podocerus sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grapsid sp.1	6	0	1	1	6	2	5	0	0	0	0	0	1	0	2	0	0	0	24
Grapsid sp.2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hymenosomatid sp.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Goneplacid sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Macrophthalmus sp.1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Macrophthalmus sp.2	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1	0	0	0	5
Pilumnus sp.1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
Pilumnus sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Alpheid sp.	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	0	0	7
Clordina sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3
Pandalid sp.	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4
Axius sp.	12	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Processa sp.	0	0	0	0	0	0	0	0	0	4	1	1	0	0	0	0	1	2	9
Thalassinid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Cirolana sp.	0	0	0	0	0	0	0	0	0	0	3	0	2	0	2	2	3	1	13
Cirolanid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Anthurid sp.1	0	0	0	0	0	0	0	0	0	4	7	1	2	7	1	0	1	0	23
Anthurid sp.2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Serolis sp.1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Serolis sp.2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3
Ostracod sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	4
Ostracod sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Ostracod sp.3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Apseudes sp.1	0	0	2	0	0	0	3	0	0	0	1	1	1	1	5	0	0	5	19
Apseudes sp.2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	8	13	3	1	27
Apseudes sp.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8
Kalliapseudes sp.	0	1	1	0	1	0	0	0	1	1	0	6	58	30	10	1	15	12	137
Holothurian sp.	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Ophiactis sp.	5	0	0	1	0	3	0	0	2	8	20	13	17	6	8	23	38	16	160
Ophiocentrus sp.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Ophiocentrus sp.2	0	0	0	0	0	0	0	0	0	5	1	2	0	3	0	0	0	0	11
Columbellid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Tornatina sp.	0	1	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Retusid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Gymnodoridid sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Rissoid sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Natica sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Sinum sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Mytilid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Nuculana sp.1	1	0	0	4	2	7	0	0	0	0	0	0	0	0	0	0	0	0	14
Nuculana sp.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Yoldia lata	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Leionucula sp.	0	0	0	1	0	0	0	0	0	0	3	2	0	0	1	8	3	3	21
Gari sp.	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2

Species	C1 1	C1 2	C1 3	C2 1	C2 2	C2 3	C3 1	C3 2	C3 3	C4 1	C4 2	C4 3	C5 1	C5 2	C5 3	C6 1	C6 2	C6 3	Total
Tellina sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	4
Paphia undulata	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Linga sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Mactra sp.	2	6	15	6	6	5	3	2	0	1	0	0	0	0	0	0	0	0	46
Lucinid sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Galeommatid sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Laternulid sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Anadara sp.	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Solemya sp.	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Cultellus attenuatus	1	3	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	11
Lucinid sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Theora sp.	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Corbula sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	1	5
Ungulinid sp.	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	4
Phoronid sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Platyhelminth sp.1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Platyhelminth sp.2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Edwardsia sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Gobid sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Ophichthidid sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Enteropneust sp.	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Nemertean sp.	1	3	2	1	1	1	3	1	1	1	0	0	0	1	0	0	1	0	17
Armandia sp.	4	0	0	0	2	1	0	0	0	4	0	0	16	0	0	0	1	0	28
Phyllodoce sp.1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	3
Phyllodoce sp.2	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	1	0	5
Capitellid sp.1	0	0	3	0	1	1	7	0	1	0	0	2	0	3	0	5	1	1	25
Capitellid sp.2	0	0	0	0	0	0	0	0	0	0	0	0	1	23	4	0	0	0	28
Capitella sp.	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Scyphoproctus sp.	0	0	0	0	0	1	0	0	0	88	42	5	65	95	32	0	5	0	333
Schistomeringos sp.	1	0	0	0	1	0	1	1	11	1	0	0	0	0	0	0	0	0	16
Nephtys sp.	6	27	9	11	4	1	6	0	2	0	0	0	0	0	0	0	0	0	66
Flabelligerid sp.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	4
Goniadid sp.	0	7	1	1	2	0	1	0	0	4	2	5	1	0	0	0	0	0	24
Glycera cinnamomea	4	2	1	5	8	3	3	0	1	1	1	1	3	3	0	1	1	2	40
Leocrates sp.	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	3
Hesionid sp.1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Hesionid sp.2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3
Sabellid sp.1	2	0	0	1	3	0	0	0	0	2	5	2	0	0	0	0	0	4	19
Sabellid sp.2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Eunice sp.1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Eunice sp.2	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	0	0	0	7
Diopatra sp.	0	0	0	0	0	0	0	0	0	2	0	4	0	0	1	0	0	0	7
Lumbrinereis sp.1	8	17	10	11	2	6	3	0	0	0	0	0	0	0	0	3	2	3	65
Lumbrinereis sp.2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Lumbrinereis sp.3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Maldanid sp.1	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	2	1	1	8
Maldanid sp.2	0	0	0	0	0	0	0	0	0	2	1	1	0	1	0	0	0	0	5
Nereid sp.	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Paraleonnates sp.	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	4
Orbiniid sp.	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	3
Prionospio fallax	3	11	0	4	12	2	5	0	3	0	0	0	1	0	0	0	1	1	43
Scolelepis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	4
Paraonella sp.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1

Species	C1 1	C1 2	C1 3	C2 1	C2 2	C2 3	C3 1	C3 2	C3 3	C4 1	C4 2	C4 3	C5 1	C5 2	C5 3	C6 1	C6 2	C6 3	Total
Allia sp.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Timarete sp.	2	0	0	2	3	0	0	0	0	0	0	0	0	0	0	1	0	1	9
Cirratulus sp.	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	4
Syllid sp.	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Lysilla sp.	1	0	0	1	1	0	0	0	0	1	1	2	1	2	0	4	5	1	20
Nicolea sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
Streblosoma sp.	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Pista sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Artacamella sp.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	4
Terebellides sp.	2	0	0	2	4	3	0	0	0	8	13	10	5	1	0	0	0	1	49
Isolda sp.	0	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Sosanides sp.	0	0	0	0	0	0	0	0	0	2	1	2	3	0	4	0	0	0	12
Disconatis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Polynoid sp.	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4
Harmothoe sp.	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Loandalia sp.	8	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	1	0	14
Chloeia sp.	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
Magelona sp.	0	7	2	0	0	1	21	0	0	0	0	0	0	0	0	0	0	0	31
Paleaequor sp.	0	0	0	0	0	0	0	0	0	3	1	0	0	3	0	0	0	0	7
Phyllochaetopterus sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Poecilochaetus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pectinaria sp.	0	0	0	0	0	0	0	0	0	0	2	0	1	1	2	0	0	0	6
Horstileanira sp.	0	0	0	0	0	0	0	0	0	1	0	0	1	5	5	4	7	0	23
Sternaspis sp.	4	2	13	7	4	1	2	0	1	0	1	0	0	0	0	0	0	0	35
Pilargid sp.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ancistrosyllis sp.	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	4
Linopherus sp.	1	0	0	0	1	0	0	0	0	1	4	0	6	1	0	0	2	0	16
Total species	29	18	17	24	30	30	22	6	15	34	29	30	34	30	27	25	28	30	133
Total individuals	84	100	75	75	78	58	73	9	29	164	122	76	210	205	102	80	107	76	1723