

Section 7

Results – Benthos

The sorting and identification of meiofauna from November 2001 – November 2002 is not yet complete. This section contains results from samples collected in February and March 2002. Additional data describing the meiofauna and trends throughout the remainder of the sampling period will be submitted as a supplement to this report.

Abundance

Meiofaunal abundance was substantially higher in sediments collected near Ventura Point than at any other site in Mission Bay in February 2002 (Figure 53). Densities among subsites was fairly consistent at most sites, however substantial variability in abundance was observed among subsites at Cudahy Creek and Ventura Point. Meiofaunal densities were consistently higher in March than in February (Figure 54), but overall trends were similar among subsites and sites.

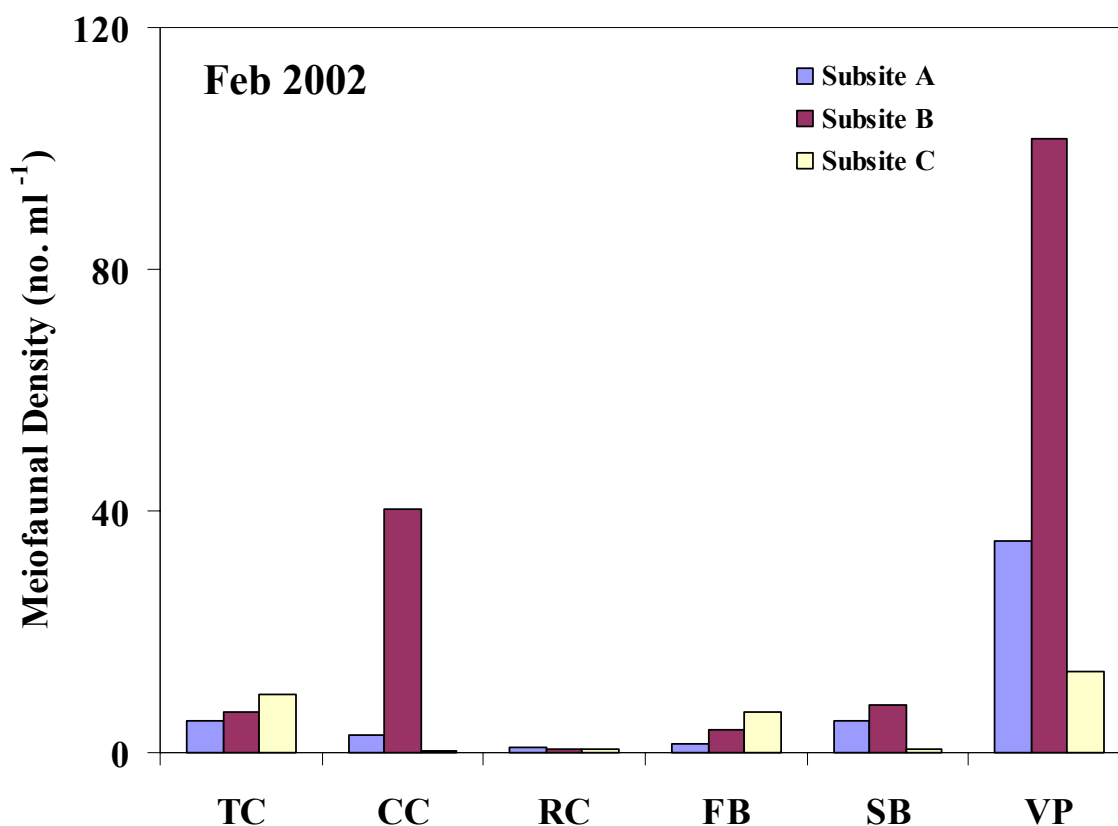


Figure 53. Abundance of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during February 2002.

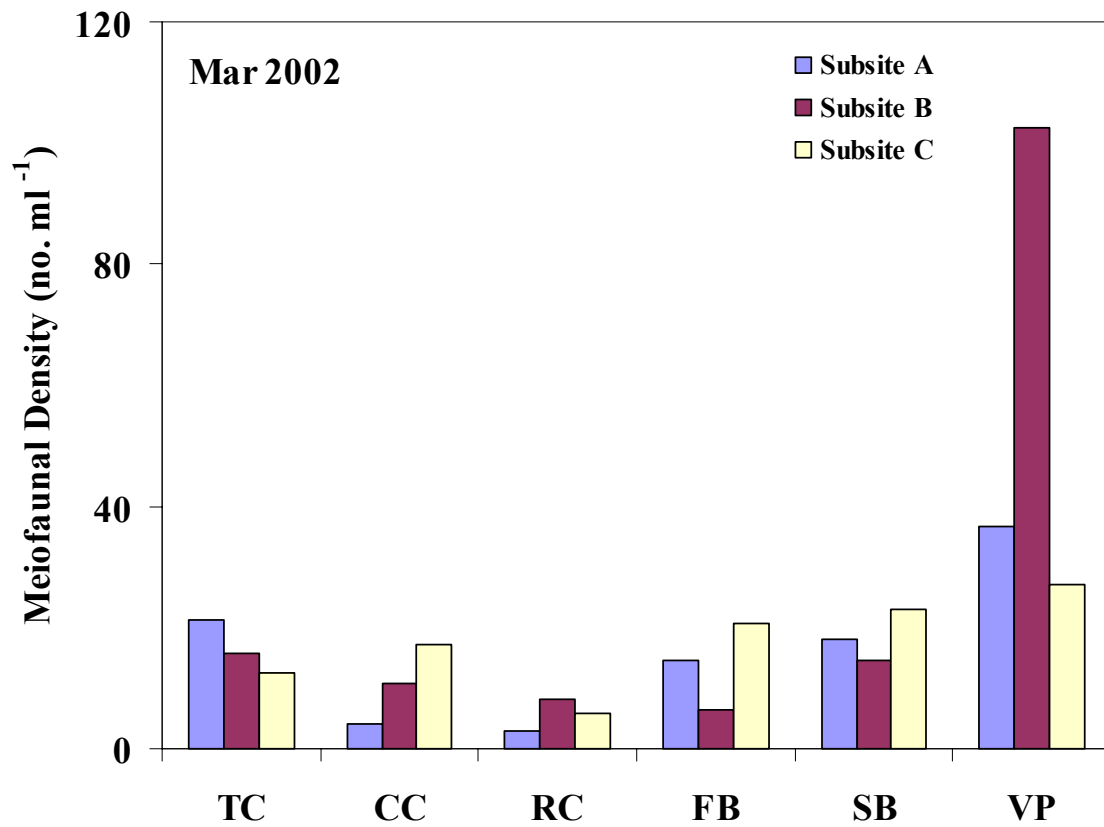


Figure 54. Abundance of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during March 2002.

Species Composition

Nematodes, copepods and polychaete annelids were the dominant meiofaunal taxa at all sites in February 2002 (Figure 55). Nematodes dominated the fine, organic-rich, contaminated sediments near the Tecolote Creek inlet as well as the coarse, sandy sediments near Ventura Point. Polychaetes and copepods were most dominant at Rose Creek, Fiesta Bay and Sail Bay. In March 2002, some of the distribution patterns had shifted. Sites previously occupied by polychaetes and crustaceans instead were dominated by benthic foraminifera (Figure 56). Nematode dominance of the back bay and Ventura Point was similar in both February and March.

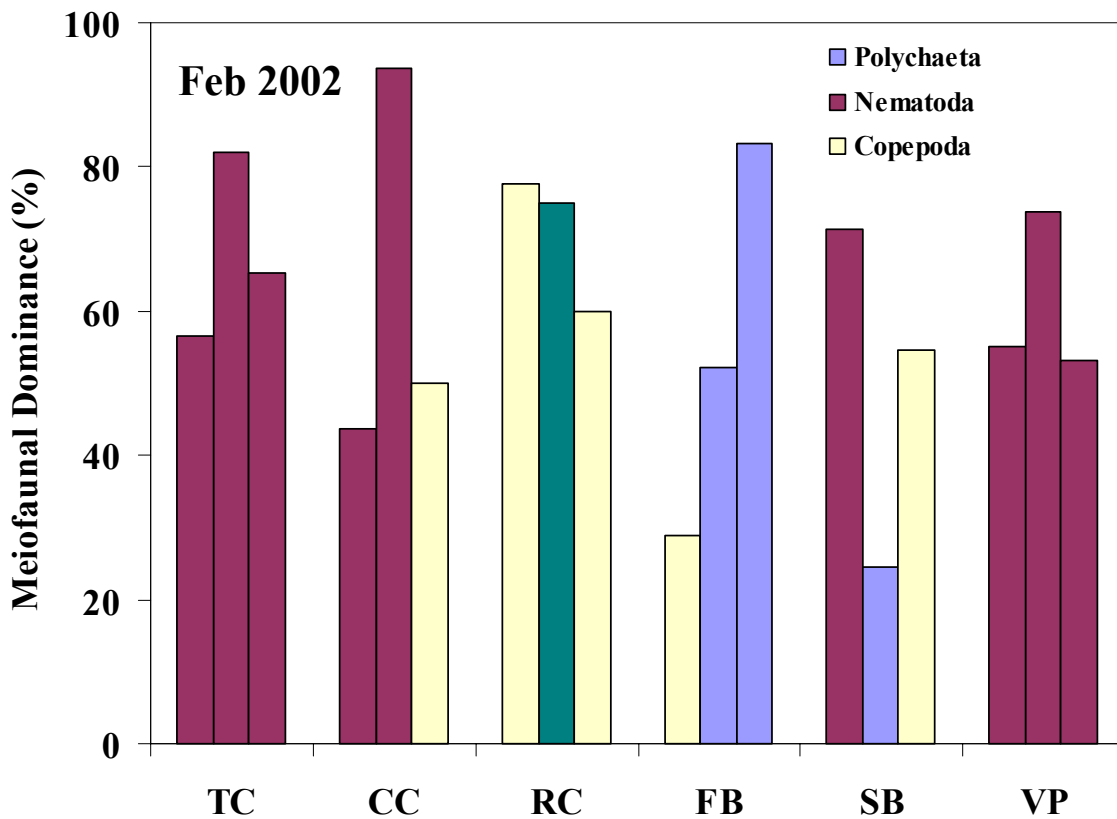


Figure 55. Dominance of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during February 2002. Amphipods were the dominant taxon at Rose Creek subsite B, indicated by a green bar.

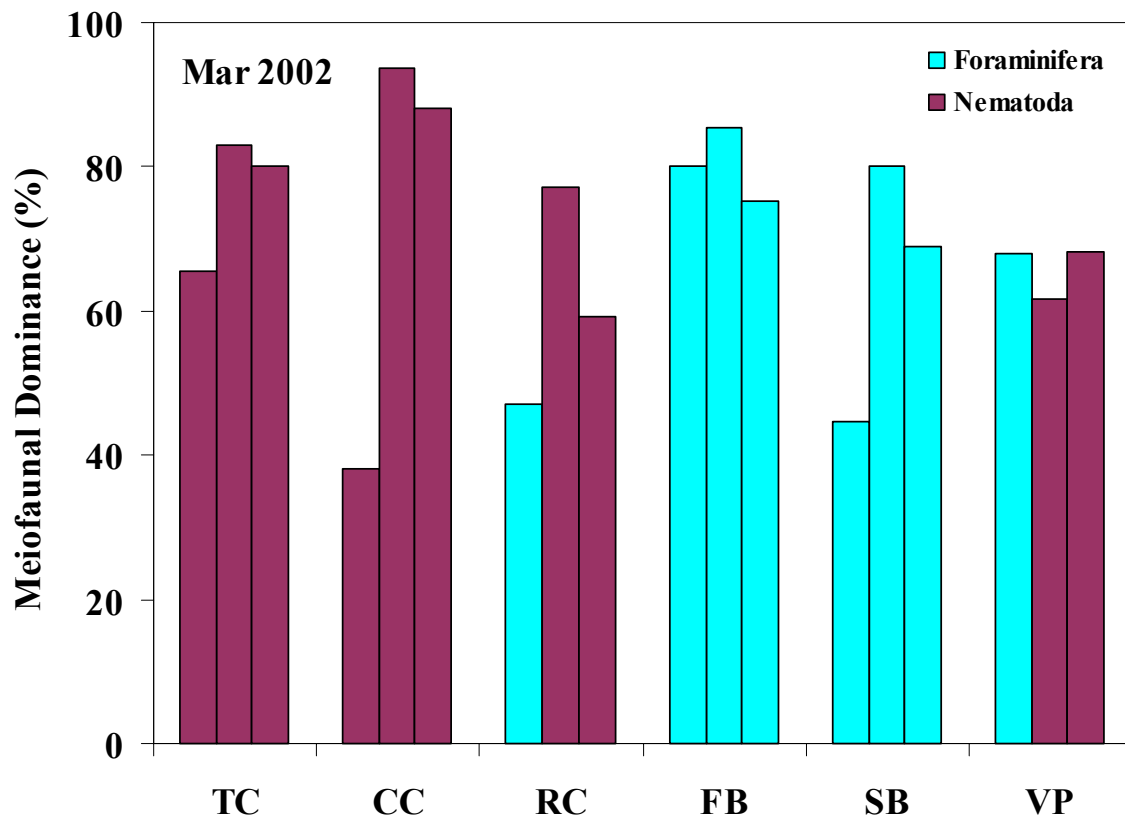


Figure 56. Dominance of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during March 2002.

Diversity

Few clear spatial diversity patterns were identifiable in Shannon-Wiener diversity. During February 2002, maximum diversity among meiofaunal communities was identified at Fiesta Bay subsite A and Sail Bay subsite B (Figure 57). However, in March 2002, maximum diversity occurred at Cudahy Creek subsite A (Figure 58). One common feature between the two months was the low diversity present at Cudahy Creek subsite B. In both cases, this subsite was dominated by nematodes that made up 94% of the community, contributing to the low diversity values.

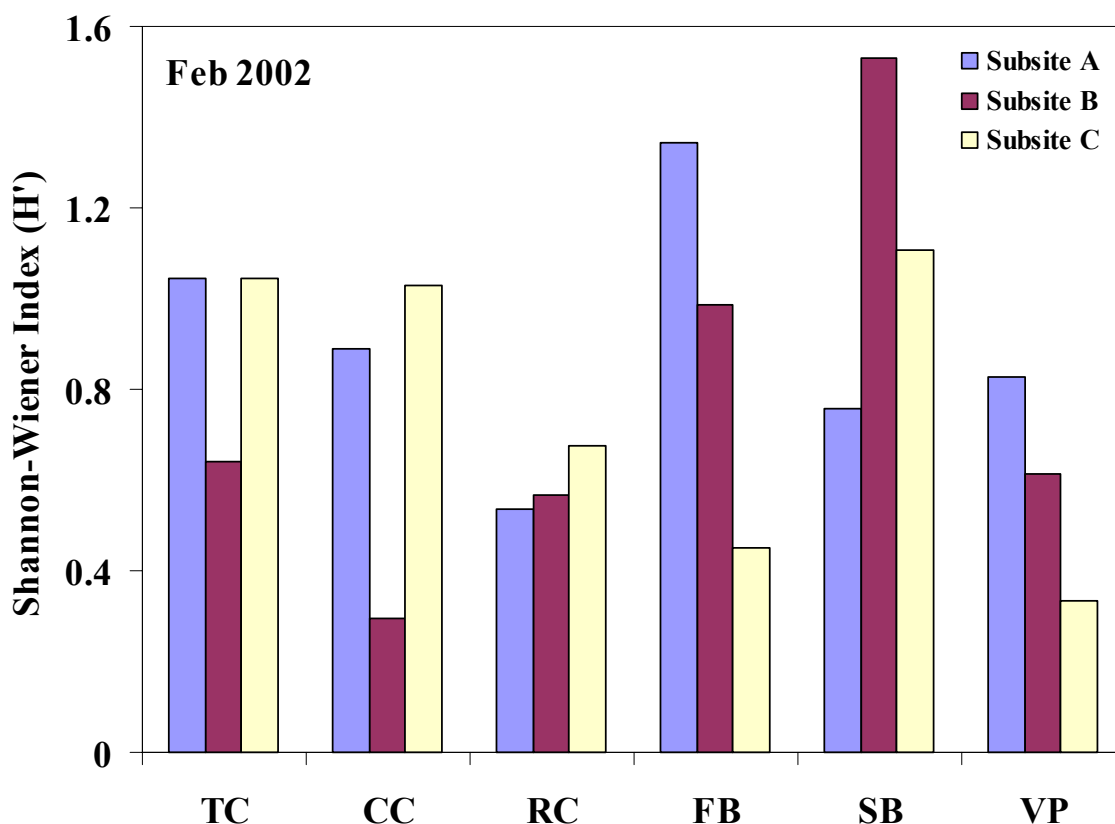


Figure 57. Shannon-Wiener diversity of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during February 2002.

Meiofaunal density correlated significantly and positively with median sediment particle size and negatively with water content, TOC content and concentrations of copper, lead and zinc (Table 9). These correlations were evident in both February and March 2002. Meiofaunal diversity did not correlate extensively with the same sediment characteristics, with the exceptions of a negative correlation with median grain size and a positive correlation with TOC in March 2002. Interestingly, no significant relationship was apparent between TRPH or PAH concentrations and either meiofaunal density or diversity.

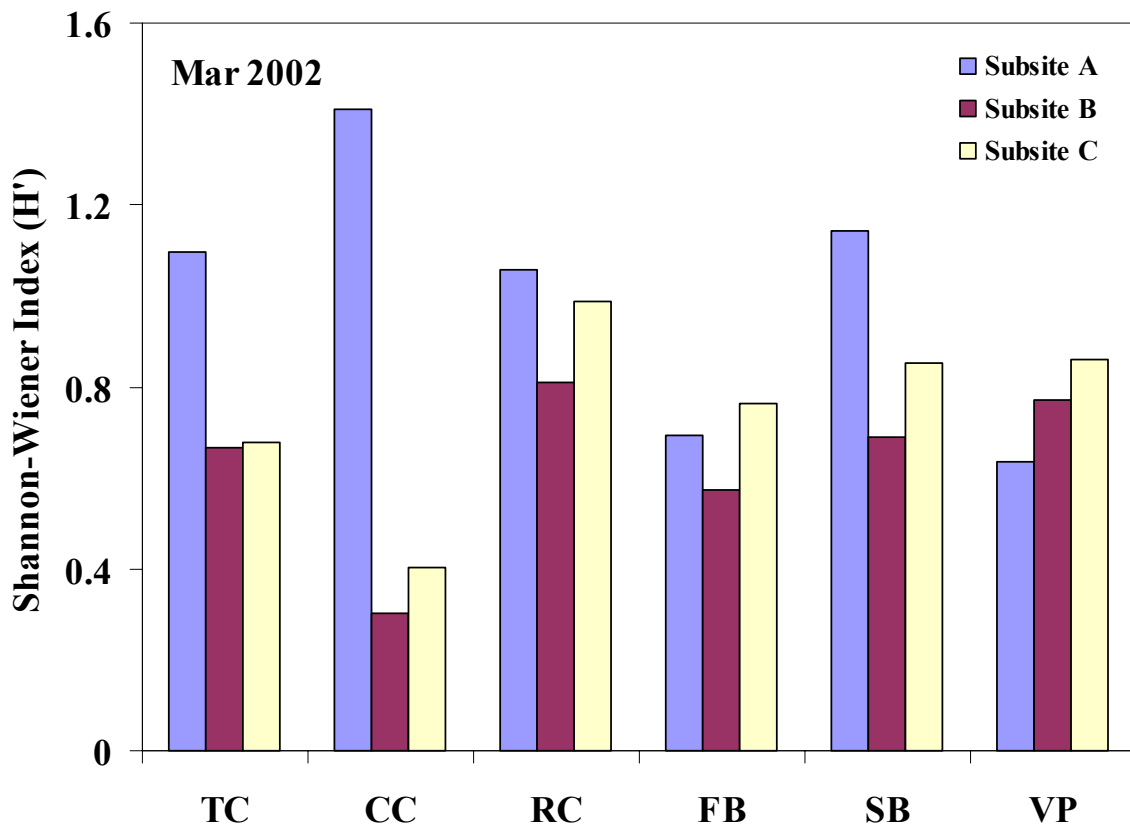


Figure 58. Shannon-Wiener diversity of meiofauna collected at 0-2 cm depth in the sediments at 18 subsites in Mission Bay during March 2002.

Parameter	Meiofaunal Density		Meiofaunal Diversity	
	February 2002	March 2002	February 2002	March 2002
Median Grain Size	0.51	0.56	-0.48	-0.60*
Water Content	-0.57	-0.72*	0.25	0.40
TOC	-0.59	-0.62*	0.030	0.62*
Copper	-0.56	-0.65*	0.34	0.46
Lead	-0.49	-0.71*	0.19	0.31
Zinc	-0.55	-0.63*	0.35	0.43
TRPH	-0.15	-0.43	-0.046	0.0093
PAH	-0.12	-0.39	-0.026	-0.17

Table 9. Spearman rho correlations between meiofaunal community characteristics in February and March 2002 and sediment parameters measured quarterly in samples collected at 18 locations throughout Mission Bay between November 2001 and November 2002. P-values in red indicate a statistically significant correlation at an alpha level of 0.05. Asterisks indicate statistical significance at an alpha level of 0.01.