

**PATUXENT RIVER OIL SPILL:
ASSESSMENT OF IMPACTS
ON BENTHOS**

Final Report

Prepared for

Swanson Creek Natural Resource Damage
Assessment Trustee Council

Under Contract With

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FOREWORD

This document, *Patuxent River Oil Spill: Assessment of Impacts on Benthos*, was prepared by Versar, Inc., at the request of the Swanson Creek NRDA Trustee Council under contract No. 729901, Task Order 0100, between Versar, Inc., and Entrix. The report assesses impacts on the benthic communities of Swanson Creek and the Patuxent River at Chalk Point as a result of the oil spill of 7 April 2000.

ABSTRACT

On 7 April 2000, approximately 126,000 gallons of oil were spilled into the Patuxent River in the vicinity of Chalk Point. An assessment of the potential impacts from the oil spill on benthic communities was conducted in conjunction with scheduled Chesapeake Bay Program monitoring activities. Macroinfauna and sediment characteristics were analyzed in Swanson Creek in the immediate vicinity of the spill and compared to the mainstem of the Patuxent River and to Hunting Creek, a presumably undisturbed control creek. Significant differences in benthic community parameters between Swanson Creek and both Hunting Creek and the Patuxent mainstem were found 3-6 months after the spill. These differences were mostly restricted to the upper portion of Swanson Creek, and indicated changes in benthic community structure (e.g., reduced diversity, increased abundance of pollution-indicative species) that were similar to those commonly reported for anthropogenic impacts. Benthic community structure as measured by the Chesapeake Bay index of biotic integrity was also classified predominately as degraded in this region. The impact, however, if attributable to the oil spill, appeared localized and of relatively low magnitude.

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1.0 INTRODUCTION

On 7 April 2000, approximately 126,000 gallons of oil were spilled into the Patuxent River in the vicinity of Chalk Point. The spill resulted from a rupture of a pipeline owned by the Potomac Electric Power Company (PEPCO). Versar was directed by the natural resources trustees to assess the impacts (if any) on the benthic communities of subtidal soft-bottom habitats near Chalk Point. Versar's study is intended to provide background information to aid in the natural resource damage assessment process.

The spill occurred in sensitive marsh areas of Swanson Creek adjacent to the PEPCO Chalk Point generating station (Figure 1). Although booms deployed immediately after the spill contained much of the oil within Swanson Creek, an undetermined amount of oil leaked into the Patuxent River during a storm on the night of April 8. Cleanup operations recovered over 45,000 gallons of oil. In addition to Swanson Creek, potentially affected areas included the main Patuxent River downstream of Chalk Point and shallow embayments and creeks south of the town of Benedict. Visual assessments conducted within a month of the spill revealed no oil in samples from creek or river bottom sediments (Swanson Creek Marsh Joint Information Center Press Release of 1 May 2000). Some oil, however, was observed in association with the intertidal zones of shorelines. A reconnaissance field visit made to the spill site by Versar found a substantial amount of oil within the marsh areas (Harriott 2000). This last study, conducted on 17 and 18 April 2000, mapped wetland vegetation types along Swanson Creek (1.6 Km upstream and 0.8 Km downstream of the spill location) and provided observations of physical impacts on the marsh.

The present study was conducted in conjunction with the Maryland Chesapeake Bay Long-Term Benthic Monitoring Program (LTB) with the objective of determining whether the benthos were adversely affected by the oil spill. LTB has monitored the health of benthic communities in Chesapeake Bay since 1984. As part of its bay-wide sampling design, LTB collects annual samples at fixed and random locations throughout the Patuxent River. Fixed locations are used to evaluate trends in benthic community condition over time. Random locations are used to estimate the percentage of river bottom that meets the Chesapeake Bay Benthic Community Restoration Goals. The Restoration Goals are benchmarks that describe the characteristics of benthic assemblages expected in non-degraded habitats of Chesapeake Bay. LTB has accumulated an extensive data base of benthic and water quality data in the region. This study was integrated with on-going LTB efforts so that LTB data, as well as common locations and platforms for the collection of samples, could be used.

Benthic organisms are generally included in monitoring programs and environmental impact assessments because they are reliable and sensitive indicators of habitat quality in aquatic environments. Most benthic organisms have limited mobility and cannot avoid changes in environmental conditions (Gray 1979). Benthos live in bottom sediments where exposure to contaminants and low dissolved oxygen is generally high, although relative exposure to contaminants in sediments depends on a variety of factors. Benthic communities include diverse taxa representing a variety of physiological tolerances to environmental conditions. They respond, therefore, to changes in environmental conditions, both natural and anthropogenic, in a variety of ways, and are sensitive indicators and integrators of

environmental change (Pearson and Rosenberg 1978, Warwick 1986, Dauer 1993, Wilson and Jeffrey 1994).

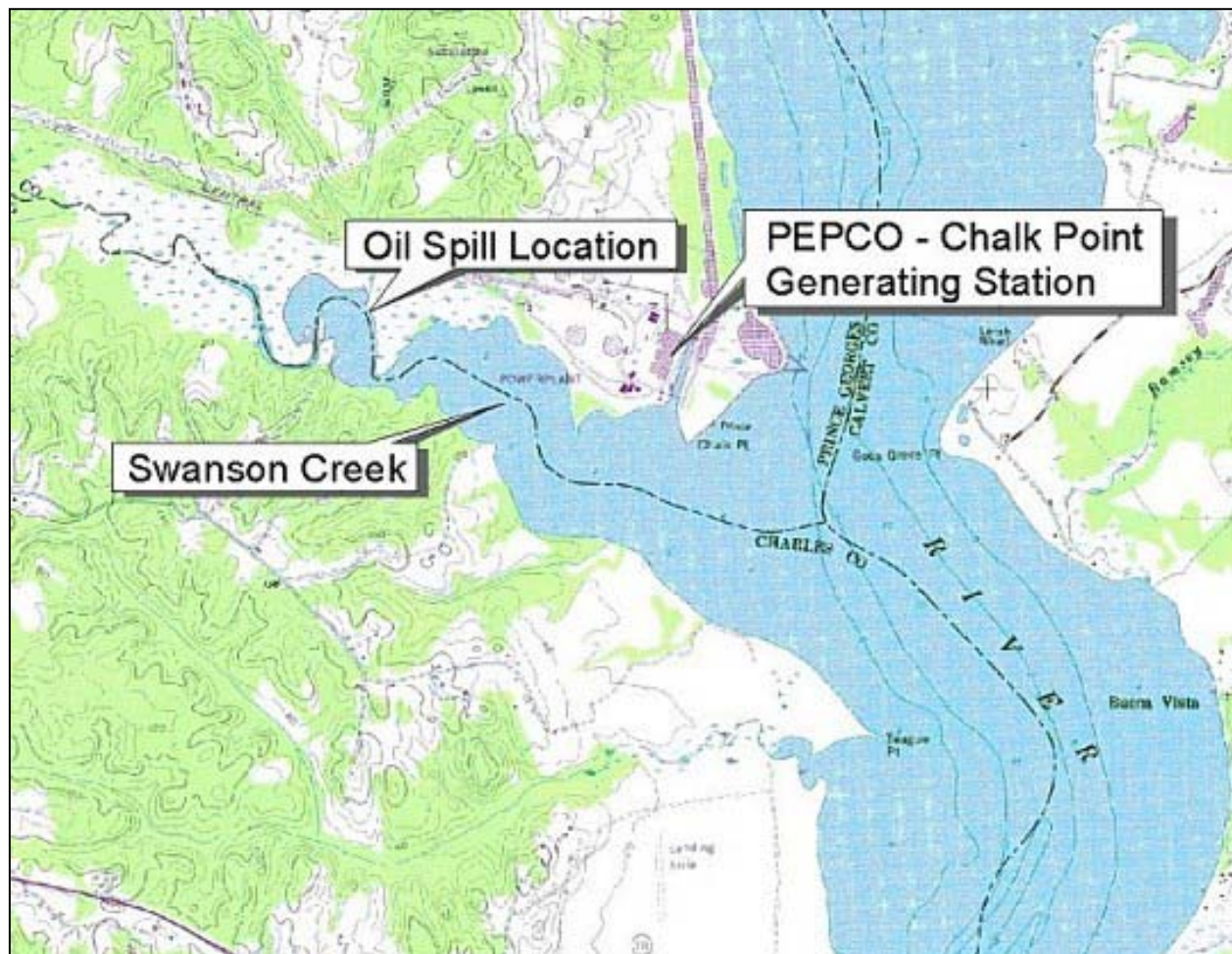


Figure 1. Oil spill location (source: Maryland DNR web site).

2.0 METHODS

2.1 APPROACH

The study consisted of river and creek subtidal benthic assessments. The river component consisted of revisiting sites in the mainstem of the Patuxent River that were previously sampled as part of LTB, plus the addition of new sites. The creek component allocated random samples to Swanson Creek in the immediate vicinity of the spill, and to a presumably undisturbed nearby creek (Hunting Creek). Figures 2 and 3 show the sampling locations. Samples were also collected in Indian Creek and Trent Hall Creek, but these samples were not examined in this study. Sampling was conducted on 29-30 June 2000 upon contract award and in conjunction with the next scheduled LTB sampling event on 27-29 September 2000.

2.1.1 River Component

The sampling approach was based on the Before-After-Control-Impact design (BACI) (Stewart-Oaten et al. 1986, Underwood 1991) with modifications to take advantage of the large data set collected by the LTB program. The LTB data included samples from several years (up to five years for random locations and up to 17 years for a fixed location at Chalk Point) before the perturbation at both the impact site in the Patuxent River and control sites in nearby rivers (for example, the Potomac and Chester Rivers). The BACI design allows for natural differences between Control and Impact locations, as well as for changes between the Before and After period that influence the sites in a similar way. We tested whether the mean Impact-Control difference changed before and after the oil spill. We used data collected by LTB in May 1991-2000 and August-September 1990-2000 at two fixed locations (impact Station 074 and control Station 068), and data collected in August-September 1995-2000 at several random locations in the main Patuxent near Chalk Point. These data were supplemented by additional collections from random sites sampled specifically for this study (Table 1).

For the oil spill assessment, the main Patuxent River was sampled at 12 sites in June 2000 and at 10 sites in September 2000. Sites were located in the Chalk Point region between the Highway 231 bridge at Benedict and Holland Cliff upstream (Figures 2 and 3). Of the 12 June sites, six were sampled in 1990-1993 as part of LTB (Table 1). The other six were newly established in order to increase coverage in the area immediately adjacent to Chalk Point. The random sites used in June 1990-1993 did not adequately cover this area. The 10 September sites were all previously sampled in 1998 or 1999 as part of LTB.

Table 1. Data available for the Patuxent River oil spill benthic assessment.			
Sampling Date	Location	Source	Number of Samples
River Component			
June 1990-1993	Main Patuxent	LTB	3 per year
June 2000	Main Patuxent	This study	12
September 1995	Main Patuxent	LTB	3
September 1997	Main Patuxent	LTB	1
August 1998	Main Patuxent	LTB	3
August 1999	Main Patuxent	LTB	7
September 2000	Main Patuxent	LTB	4
September 2000	Main Patuxent	This study	10
May 1991-1994	Station 074	LTB	1 per year
May 1996-2000	Station 074	LTB	3 per year
Aug.-Sept. 1990-1994	Station 074	LTB	1 per year
Aug.-Sept. 1995-2000	Station 074	LTB	3 per year
May 1991-1992	Station 068	LTB	2 per year
May 1993-1994	Station 068	LTB	1 per year
May 1996-2000	Station 068	LTB	3 per year
Aug.-Sept. 1990-1992	Station 068	LTB	1 per year
September 1993	Station 068	LTB	2
August 1994	Station 068	LTB	1
Aug-Sept. 1995-2000	Station 068	LTB	3 per year
Creek Component			
June 2000	Upper Swanson	This study	3
June 2000	Lower Swanson	This study	7
June 2000	Hunting	This study	10
September 2000	Upper Swanson	This study	10
September 2000	Lower Swanson	This study	10
September 2000	Hunting	This study	10

2.1.2 Creek Component

No previous benthic data were available from Swanson Creek. Therefore, Hunting Creek was selected for comparison. Ten sites were randomly allocated to each creek in June 2000 (Table 1, Figure 2). In September, sampling effort in Swanson Creek was increased to 20 sites allocated proportionally among two strata (Table 1, Figure 3). In addition, 10 sites were sampled in each of Hunting Creek, Indian Creek, and Trent Hall Creek. Indian Creek and Trent Hall Creek were sampled as requested by the trustees; however, the samples were archived pending potential future analysis.

In order to provide estimates of seasonal variability, half of the sites sampled in June were revisited in September (Figure 3). Sites to be revisited were selected at random. In upper Swanson Creek, three sites had been sampled in June, but one was associated with marsh vegetation and was excluded from consideration. Therefore, only two sites were revisited in upper Swanson Creek. Additional September sites in all creeks were aimed at providing increased spatial coverage.

2.2 FIELD AND LABORATORY PROCEDURES

Sediment samples were collected using a Young grab, which samples an area of 440 cm² to a depth of 10 cm. One sample per site was taken. With the exception of the 1990-1993 LTB samples, collected with a Wildco box corer, the same gear and methods were used for all collections. Grab samples were sieved through a 0.5-mm mesh screen, and the organisms retained on the screen were preserved in a 10% formalin solution and stained. In the laboratory, organisms were counted, identified, and their biomass (ash-free dry weight) measured following LTB protocols. Ash-free dry weight was determined for each species by drying the organisms to a constant weight at 60 °C followed by ashing in a muffle furnace at 500 °C for four hours. Because most species of oligochaetes need to be slide mounted for identification, species-specific biomass for oligochaetes could not be provided except for *Tubificoides* spp., which do not need slide mounting for identification. All sorting and identification were conducted at Versar.

Surface and bottom water temperature, conductivity, salinity, and dissolved oxygen concentration were measured at most sites using a Hydrolab multiprobe. The unit became inoperable at a few sites, so for these sites water quality parameter values are not available. Surface sediment for silt-clay and organic carbon content analysis was collected from an additional grab sample at each site. Surface sediment (top 2 cm) samples were also taken at each site for analysis of PAH concentration. PAH samples were frozen and archived as directed by the trustees.

Sediment grain size analysis followed procedures described in Folk (1980). Sand was separated from silt-clay by wet sieving and the percent silt-clay fraction (particles smaller than 63 microns) was determined by weighing. Percent organic carbon (TOC) was determined by combustion at 550 °C in a carbon analyzer (Exeter Analytical Inc. CE440 Elemental Analyzer) for four hours. Analysis of TOC samples was provided by the Chesapeake Biological Laboratory.

2.3 DATA ANALYSIS

Data from the river component was analyzed using the BACI design outline above. LTB stations 074 and 068 were compared. Station 068 is located in the upper Chester River and has habitat characteristics similar to station 074. Benthic community condition at station 068 meets the benthic community restoration goals and therefore can be used as a reference. The BACI design could not be applied to LTB random data collected 1995-2000 in the vicinity of Chalk Point because there were no comparable post-spill data outside the Patuxent River available at this time. However, data were analyzed for differences in benthic community parameters across years using a generalized linear model (see below).

In addition to the above analysis, September data were interpreted in the context of measures of benthic community health using the Chesapeake Bay benthic index of biotic integrity (B-IBI, Weisberg et al. 1997, updated in Alden et al. 2002). The B-IBI takes into account the natural range of variability within reference areas in Chesapeake Bay. The B-IBI is based on a number of summer time benthic invertebrate attributes such as total abundance and biomass, diversity, abundance of pollution indicative species, and biomass of pollution sensitive species (Weisberg et al. 1997, see Appendix B of this report for details). The index is calculated by scoring each attribute as either 5, 3, or 1 depending on whether the value of the attribute approximates, deviates slightly from, or deviates strongly from values at the best reference sites in similar habitats. These scores are then averaged across attributes to obtain an index value. Index values of 3 or more are considered to meet the restoration goals.

For the creek component, we assessed the magnitude of the impact by comparing sites near to and distant from the spill source. Data were analyzed with ANOVA (alpha level = 0.05) using the General Linear Model procedure in SAS for unbalance designs (SAS Institute, Inc., v. 8). Abundance and biomass data were standardized to values per square meter and log transformed to lessen the sensitivity of the method to large abundances. The log transformation stabilizes the variance and reduces or eliminates dependence between the variance and the mean.

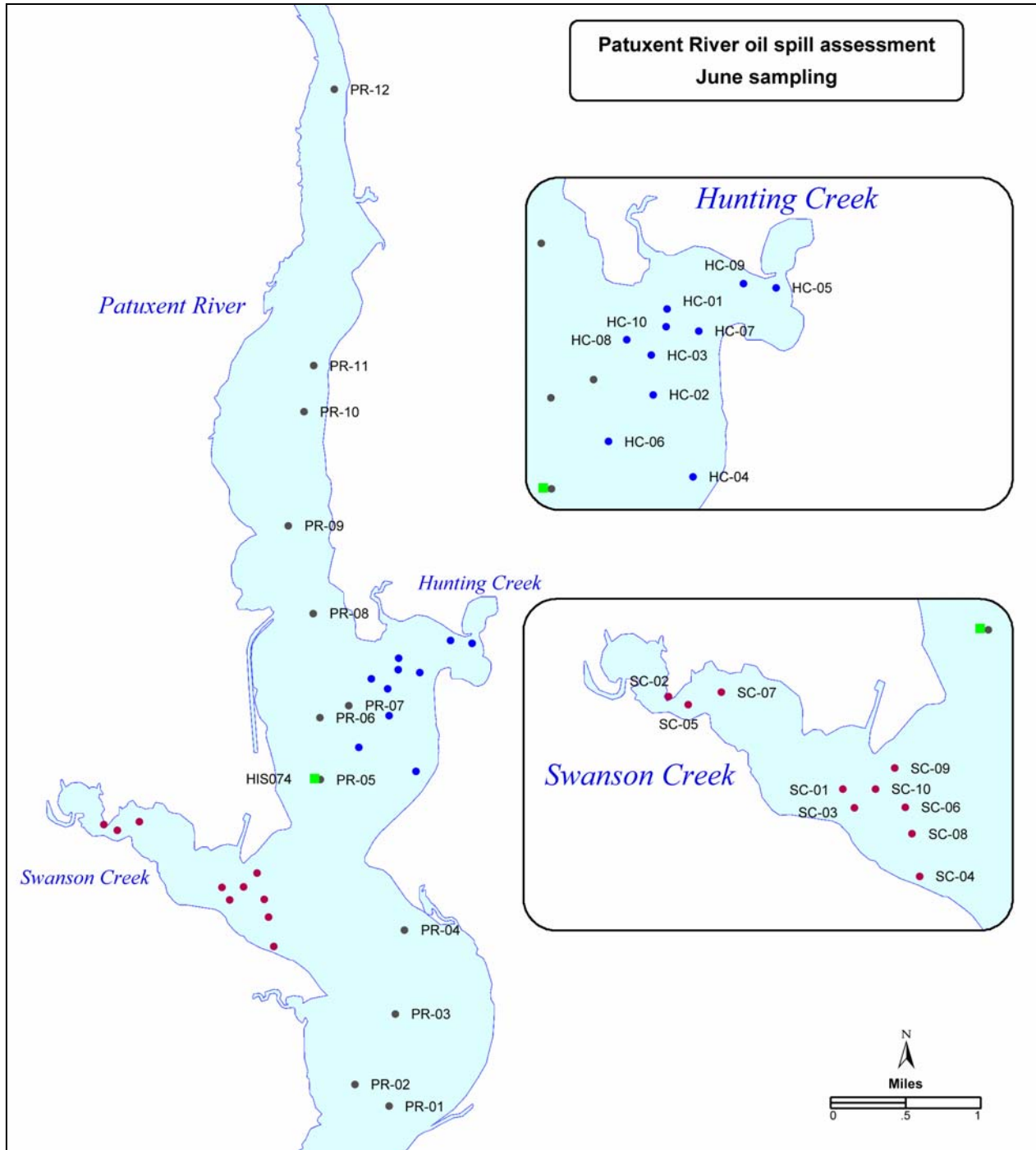


Figure 2. Patuxent River. Sites sampled in June 2000.

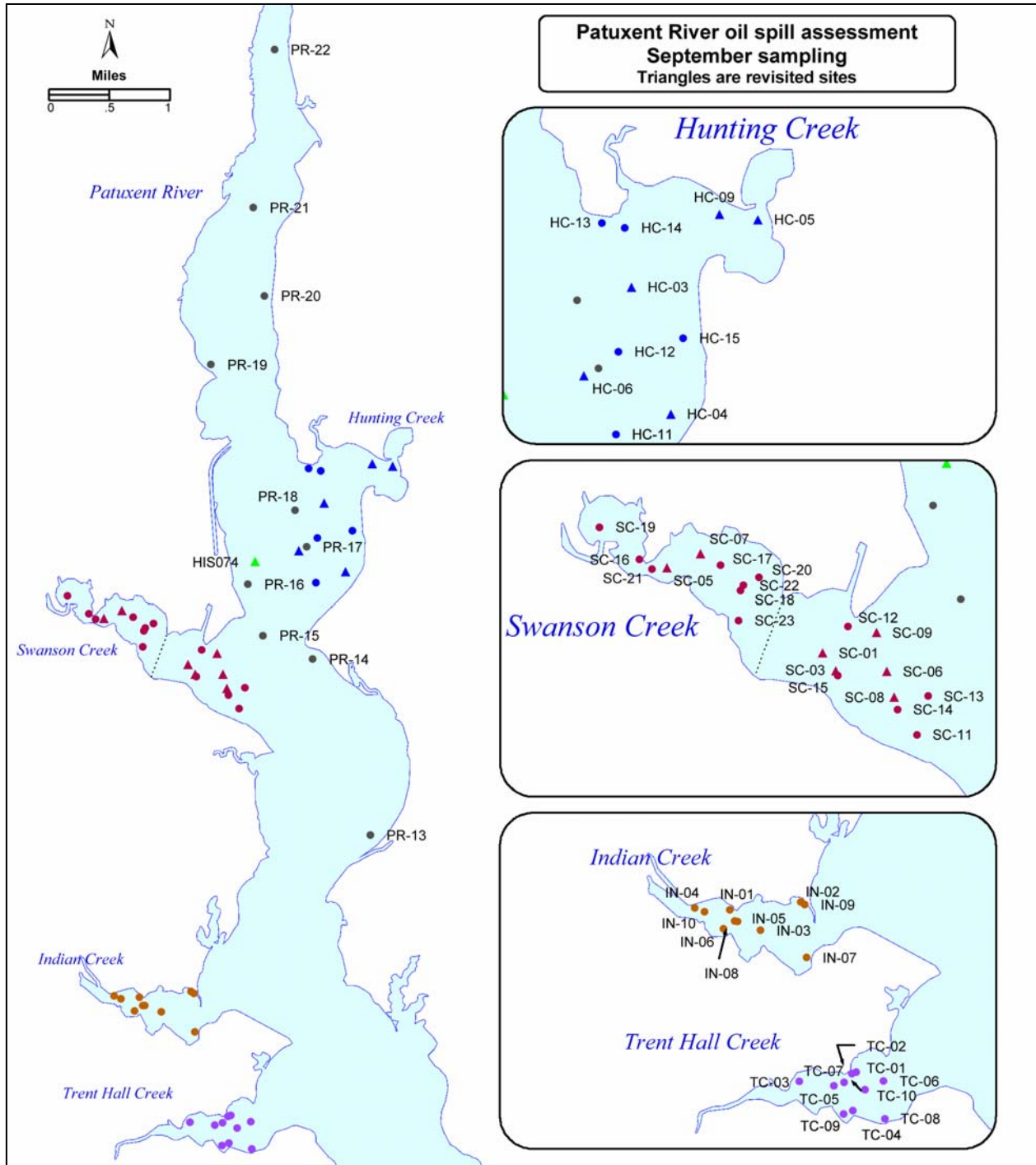


Figure 3. Patuxent River. Sites sampled in September 2000.

3.0 RESULTS

For each comparison (e.g., Patuxent mainstem vs. LTB), Shannon diversity (H' , with \log_2), number of species, abundance, and biomass are presented below. Whenever the number of samples for a comparison is greater than 1 (see Table 1), we have plotted the mean plus or minus one standard error. All statistical analyses are based on means. Shannon diversity and number of species should be interpreted with caution for those comparisons where the number of samples varies among locations, as a higher number of species would be expected with increased replication. To be consistent with LTB protocols, epifaunal organisms were excluded from calculations except where indicated. All organisms collected during this study are listed in the appendices. The appendices summarize water quality measurements, sediment parameters, and benthic community data for all sites.

3.1 RIVER COMPONENT

Shannon diversity and number of species from samples collected in the Patuxent mainstem in June 2000 did not differ significantly ($p=0.064$ and 0.861 , respectively) from 1990-1993 collections, either individually (LTB 93, LTB 92, etc., Figure 4) or as a group (LTB 90-93). Total abundance and biomass, however, were significantly lower in June 2000 than in June 1990-1993 ($p<0.001$) (Figure 4). Inclusion of epifaunal organisms did not change these results. The large variability in the biomass data was due to the bivalve *Rangia cuneata*. Collections with few, relatively large individuals of this species tend to skew the data. *Rangia* usually accounts for a large portion of the biomass in the upper Patuxent River.

Shannon diversity, number of species, abundance, and biomass from samples collected in the Patuxent mainstem in September 2000 did not differ significantly from 1995-1999 summer collections ($p=0.214$, 0.055 , 0.169 , and 0.836 , respectively) or from LTB 2000 collections (Figure 5). The year 1997 did not count in the comparison because it did not have a variance estimate. As before, inclusion of epifaunal organisms did not change these results. The exclusion of *Rangia cuneata* from the analysis resulted in relatively similar biomass patterns across years in the remaining community (Figure 5e).

Benthic community parameters for station 074 in May 2000 were within the range of typical values observed at this station for Shannon diversity, abundance, and biomass, and higher than average values for number of species (Figure 6). In September 2000, all four benthic community parameters were within the range of values typical of summer benthic collections, and within the "good range" of B-IBI thresholds (≥ 1.7 for Shannon diversity, 500-6000 individuals m^{-2} for abundance, 1-30 $g m^{-2}$ for biomass) (Figure 7). Application of the BACI design revealed no significant differences in the relative mean abundance between the impact (Station 074) and the control site (Station 068) from before the spill to after the spill, indicating that there was no effect of the perturbation (Figure 8). Note that there was no major decline in the difference between impact and control sites after the spill.

3.2 CREEK COMPONENT

Comparisons between Swanson Creek, Hunting Creek, and the Patuxent mainstem revealed differences in benthic community parameters and species composition. Upper Swanson Creek most often accounted for the differences. Shannon diversity was significantly lower ($p < 0.001$) in upper Swanson Creek in June 2000 than in lower Swanson Creek, Hunting Creek, or the Patuxent mainstem (Figure 9a). Number of species and abundance were significantly higher ($p < 0.001$) in upper Swanson Creek (Figures 9b and 9c), but biomass did not differ significantly among locations ($p = 0.146$), most likely as a result of the large variability in biomass observed in the Patuxent mainstem (Figure 9d). The polychaete *Streblospio benedicti* and, to a lesser extent, the oligochaete *Tubificoides* spp. accounted for the large difference in abundance between upper Swanson Creek and the other three locations in June 2000 (Figure 10). *Streblospio* was particularly abundant at station SC-02, with densities over 17,000 individuals per square meter. Sediments from this station, adjacent to the marsh, were obviously oiled and contained a large proportion of organic matter (TOC = 14.7%, see Appendix A). When the abundance of *Streblospio* and *Tubificoides* was excluded, the abundance of the remaining of the community became more similar among locations (Figure 10c). Inclusion of epifaunal organisms in the analysis did not change these results.

In September 2000, Shannon diversity was significantly lower ($p = 0.043$) in upper Swanson Creek than in lower Swanson Creek, Hunting Creek, or the Patuxent mainstem (Figure 11a). Number of species also differed significantly among locations. The Patuxent mainstem accounted for this difference, with significantly higher number of species ($p = 0.005$) than Swanson Creek and Hunting Creek (Figure 11b). Upper Swanson Creek, however, did not differ significantly in number of species from lower Swanson Creek or Hunting Creek, even though Swanson Creek sites more often had lower species numbers than sites elsewhere (Figure 11b). Similar patterns were found for abundance (Figure 11c). Although some sites in upper Swanson Creek were impoverished, Patuxent mainstem sites exhibited the largest abundance ($p = 0.009$). Biomass was significantly lower ($p = 0.015$) in upper Swanson Creek than in the other three locations (Figure 11d). Inclusion of epifaunal organisms resulted in non-significant differences among locations for Shannon diversity ($p = 0.056$).

In addition to community parameters, differences in the proportion of abundance of taxa classified as bivalves, crustaceans, oligochaetes, polychaetes, and others (including epifauna) were revealed. Overall, upper Swanson Creek had fewer bivalves and crustaceans than lower Swanson Creek, Hunting Creek, or the Patuxent mainstem in both June 2000 (Figure 12) and September 2000 (Figure 13). In June 2000, polychaetes were obviously dominant in upper Swanson Creek, and this pattern was still evident in September 2000, although much more attenuated. Notably, polychaetes also exhibited higher abundance in lower Swanson Creek than in Hunting Creek or the Patuxent mainstem in June 2000 (Figure 12), but not in September 2000.

3.3 BENTHIC INDEX OF BIOTIC INTEGRITY

For each of the September 2000 creek and river sites, B-IBI values and the corresponding benthic community condition are presented in Appendix B and Figure 14. Details of the B-IBI metric values and scores are provided in the appendix. In calculating the B-IBI, we

used low mesohaline metrics even though some sites in Swanson Creek had point-in-time salinity values slightly below 5.0 ppt (within the range of oligohaline habitats). We used low mesohaline metrics because benthic community structure in this region is typical of low mesohaline habitats, and long-term salinity averages are within the low mesohaline range (i.e., 5-12 ppt).

Of the 10 sites in upper Swanson Creek, two met the benthic community restoration goals and 8 were degraded or severely degraded (see Appendix B). One of the “good” sites, SC-017, was only marginally so. Of the 10 sites in lower Swanson Creek, 8 met the benthic community restoration goals and two were degraded. In Hunting Creek, 6 sites met the goals, 3 were degraded, and one was marginally degraded. All sites in the main Patuxent River met the restoration goals except the upper most site in the river (Figure 14).

Figure 15 shows benthic community condition at LTB sites sampled in the Patuxent River. Most sites in the lower Patuxent were degraded in the summer of 2000, while sites in the Chalk Point region further upstream met the restoration goals.

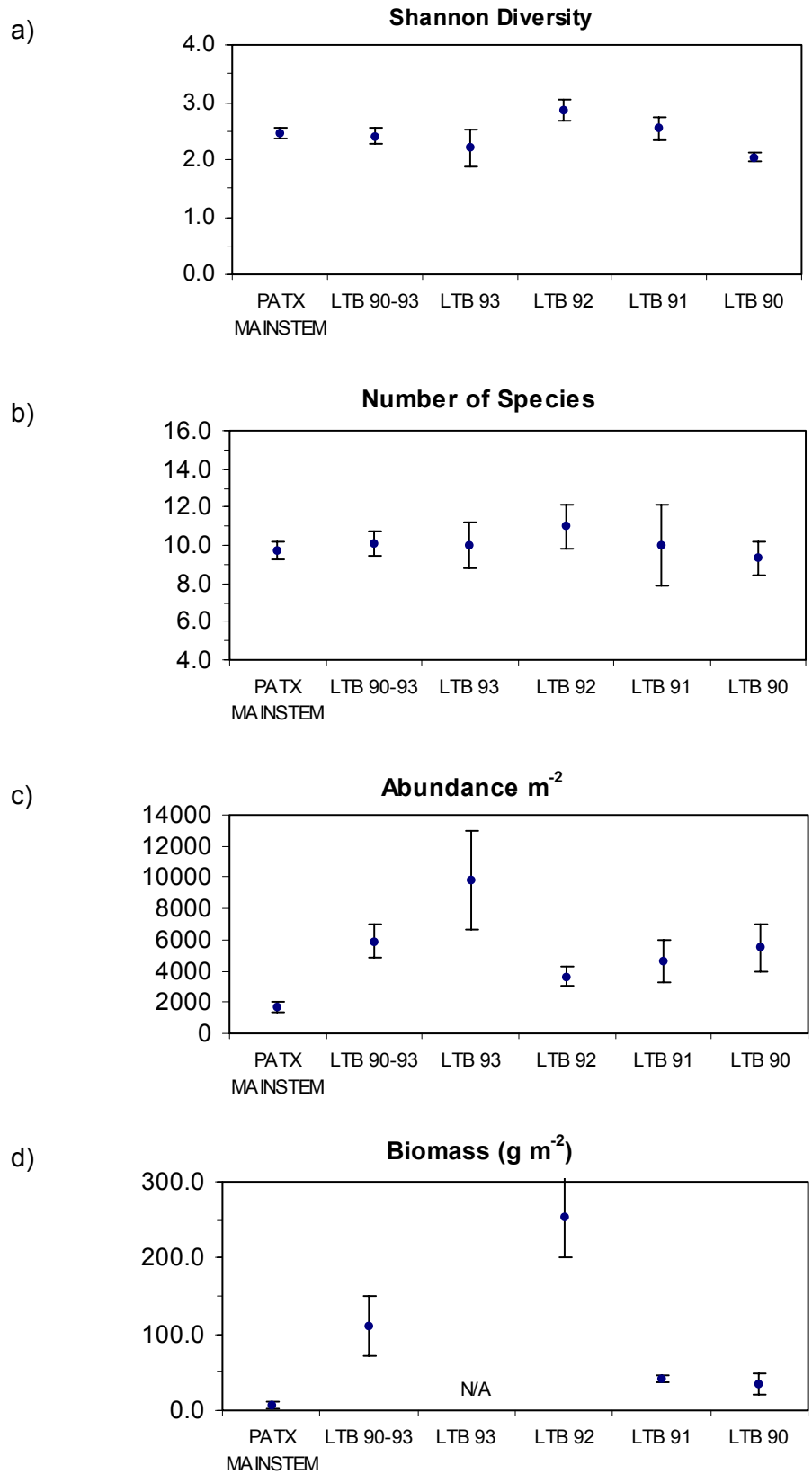


Figure 4. June mainstem comparisons. N/A= not available.

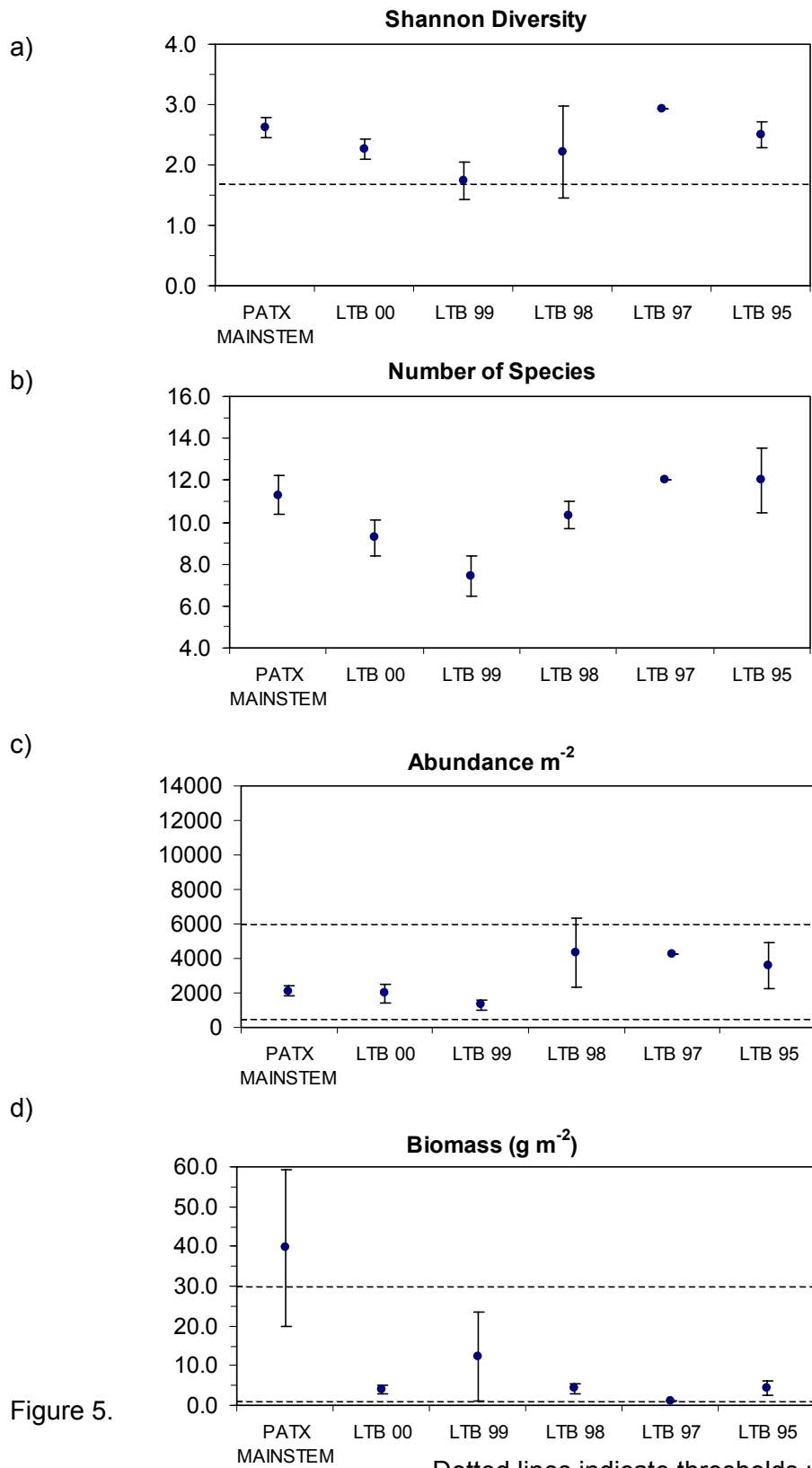


Figure 5.

September mainstem comparisons.

Dotted lines indicate thresholds used to score each metric of the Chesapeake Bay B-IBI.

e)

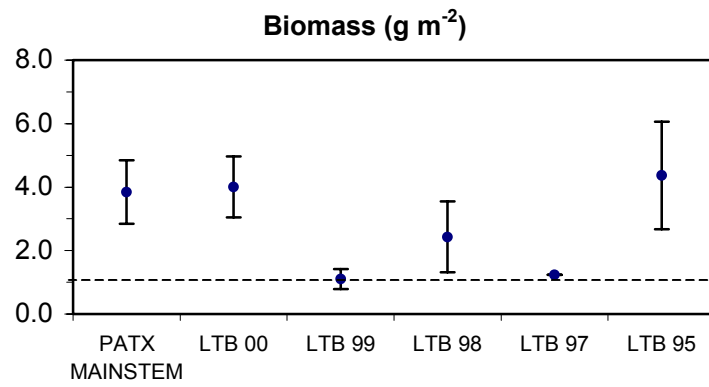


Figure 5. September mainstem comparisons (continued). Biomass in 5e excludes the bivalve *Rangia cuneata*.

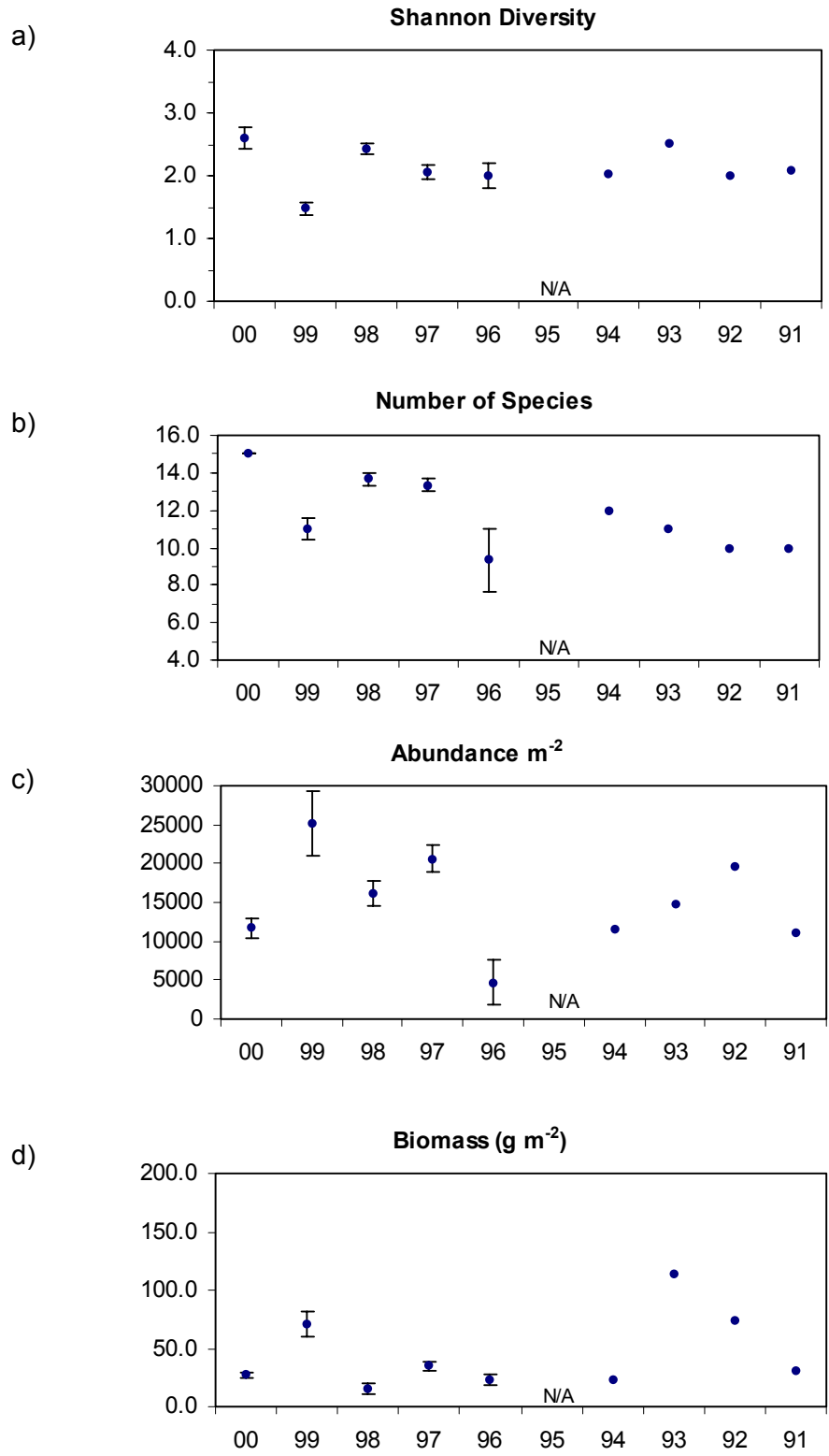


Figure 6. Station 074, May 1991-2000. N/A= not available.

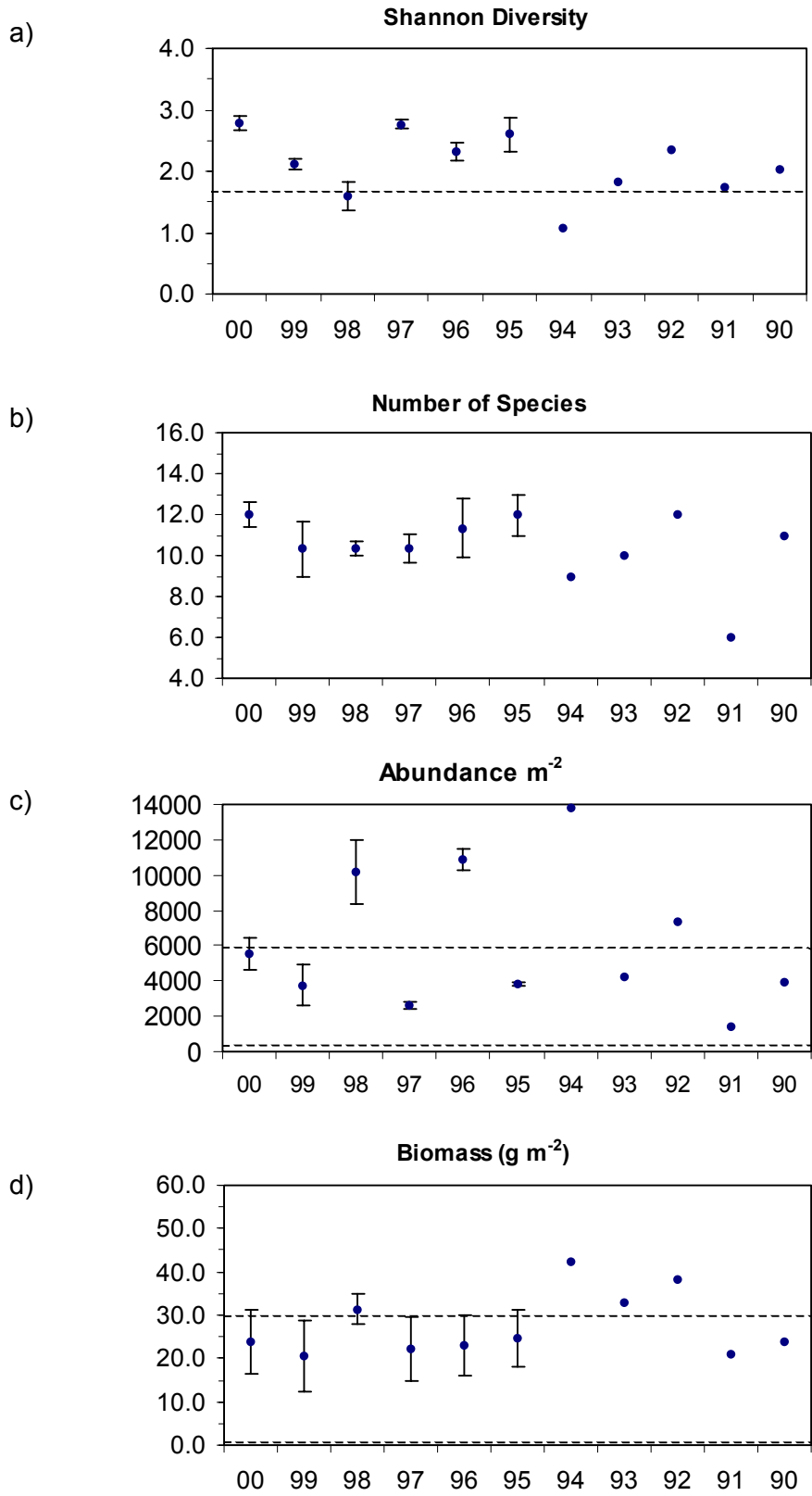


Figure 7. Station 074, August-September 1990-2000. Dotted lines are thresholds used to score each metric of the Chesapeake Bay B-IBI.

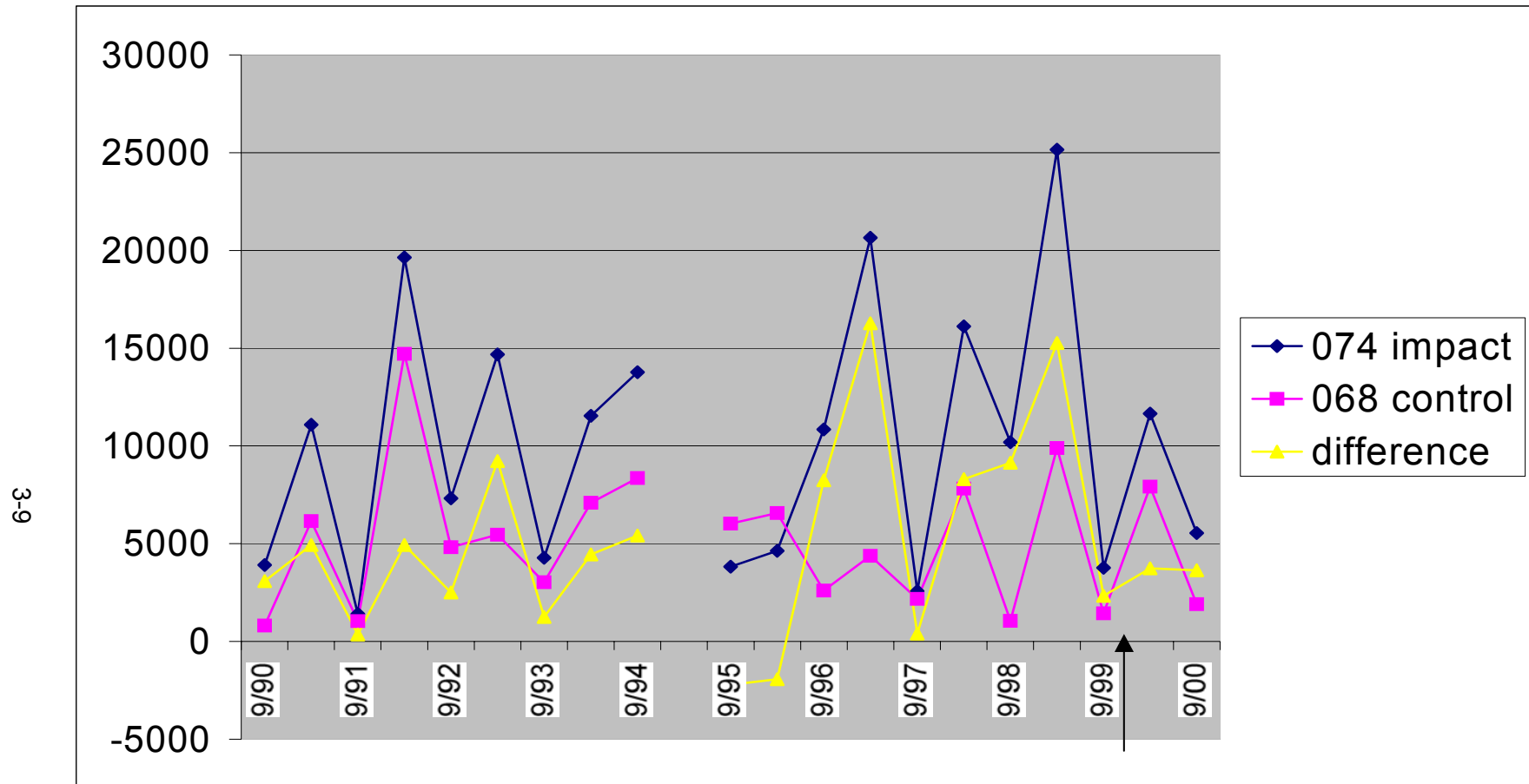


Figure 8. Mean abundance at the impact station in Chalk Point and at a control station in the Chester River, 1990-2000, and difference between the impact and the control station. The arrow indicates the time of the oil spill.

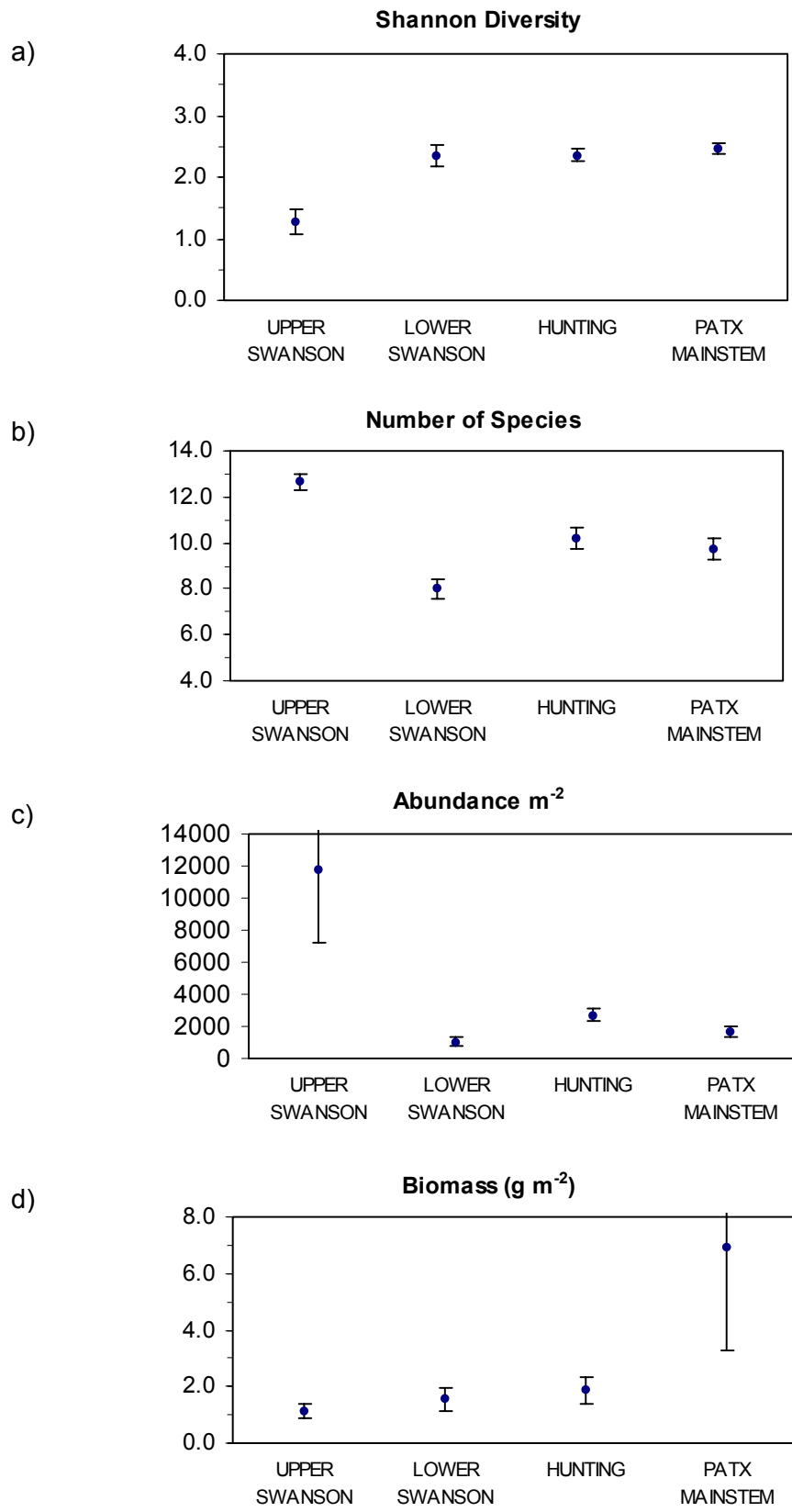


Figure 9. June creek comparisons.

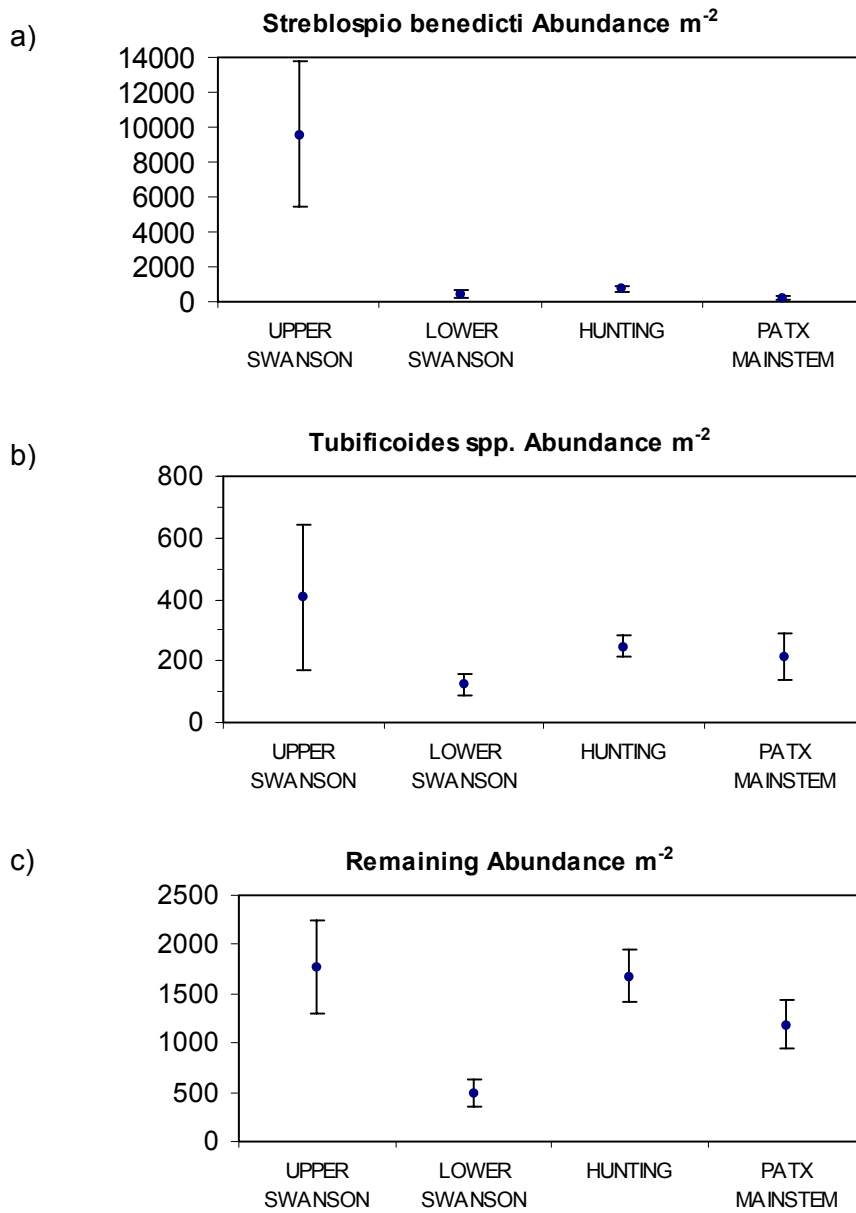


Figure 10. June creek comparisons (continued). Remaining abundance is total abundance exclusive of *Streptospio benedicti* and *Tubificoides* spp.

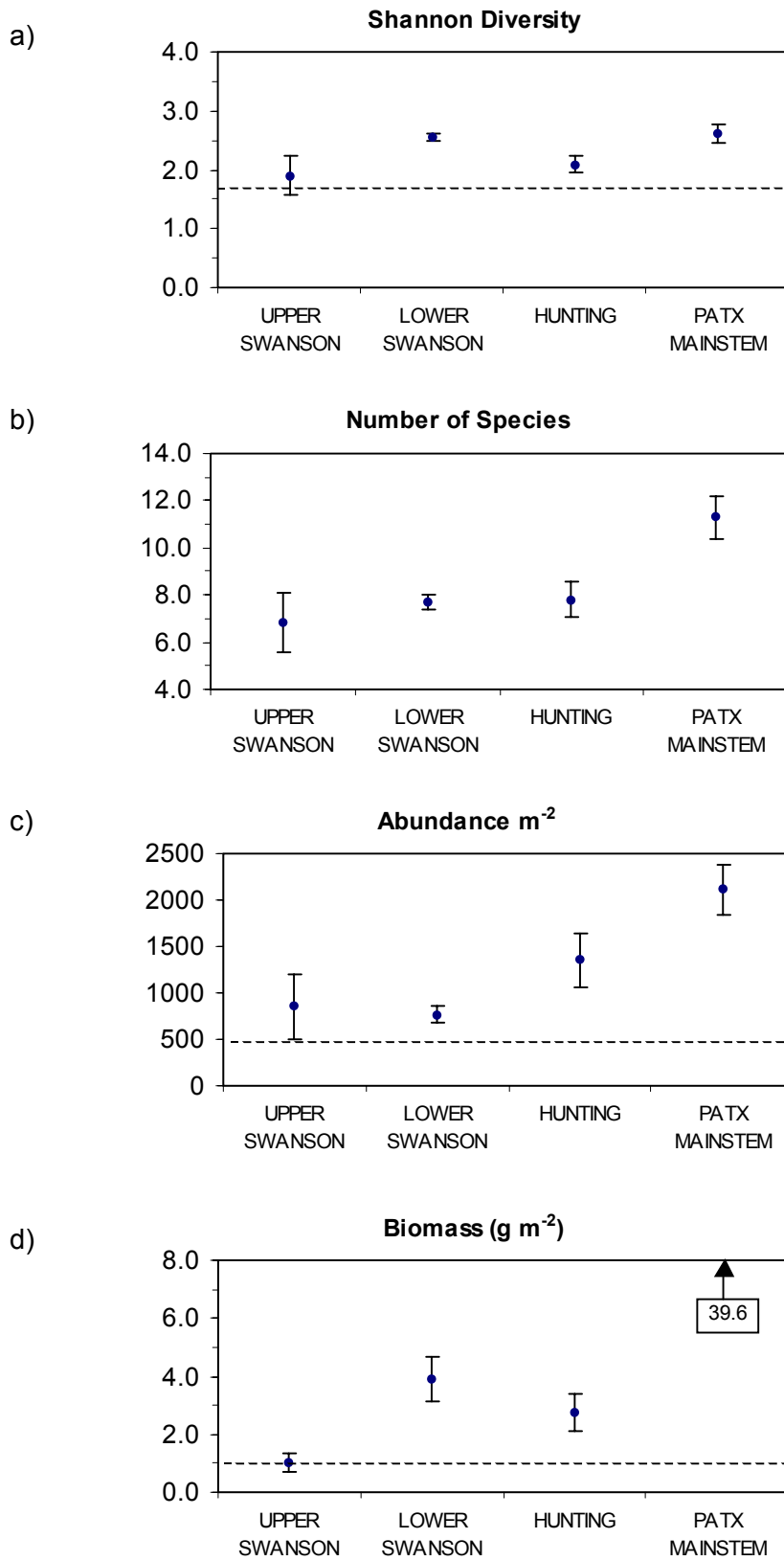


Figure 11. September creek comparisons. Dotted lines indicate thresholds used to score each metric of the Chesapeake Bay B-IBI.

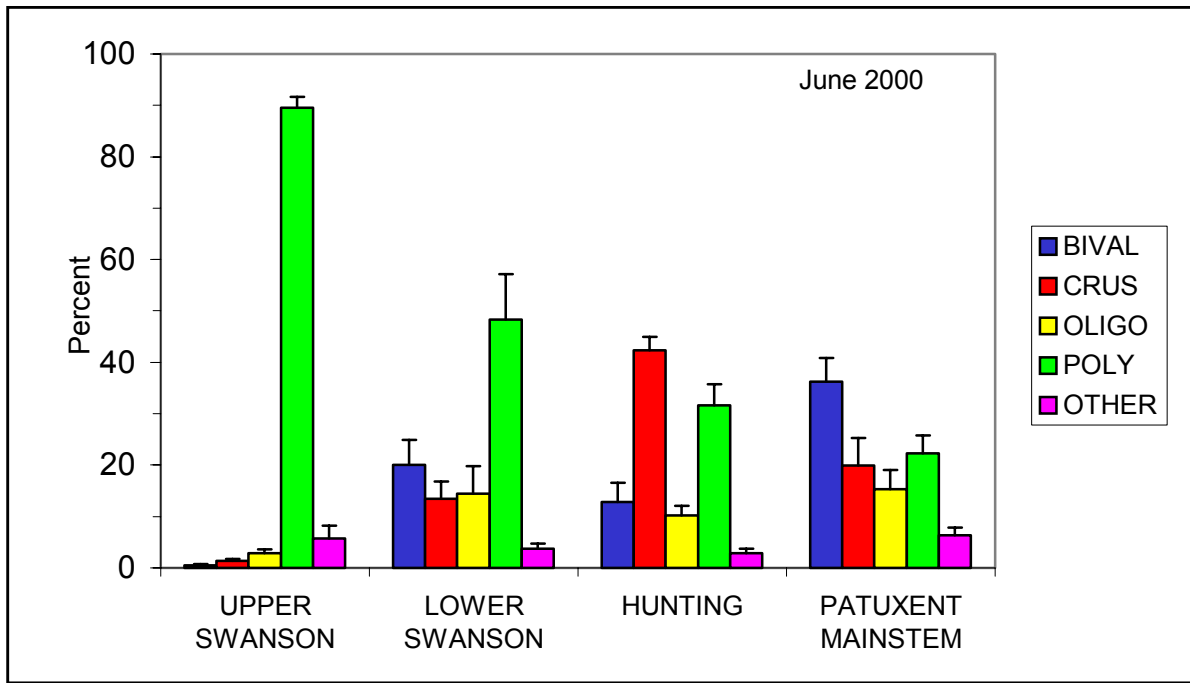


Figure 12. Percent abundance composition at June creek and river sites.

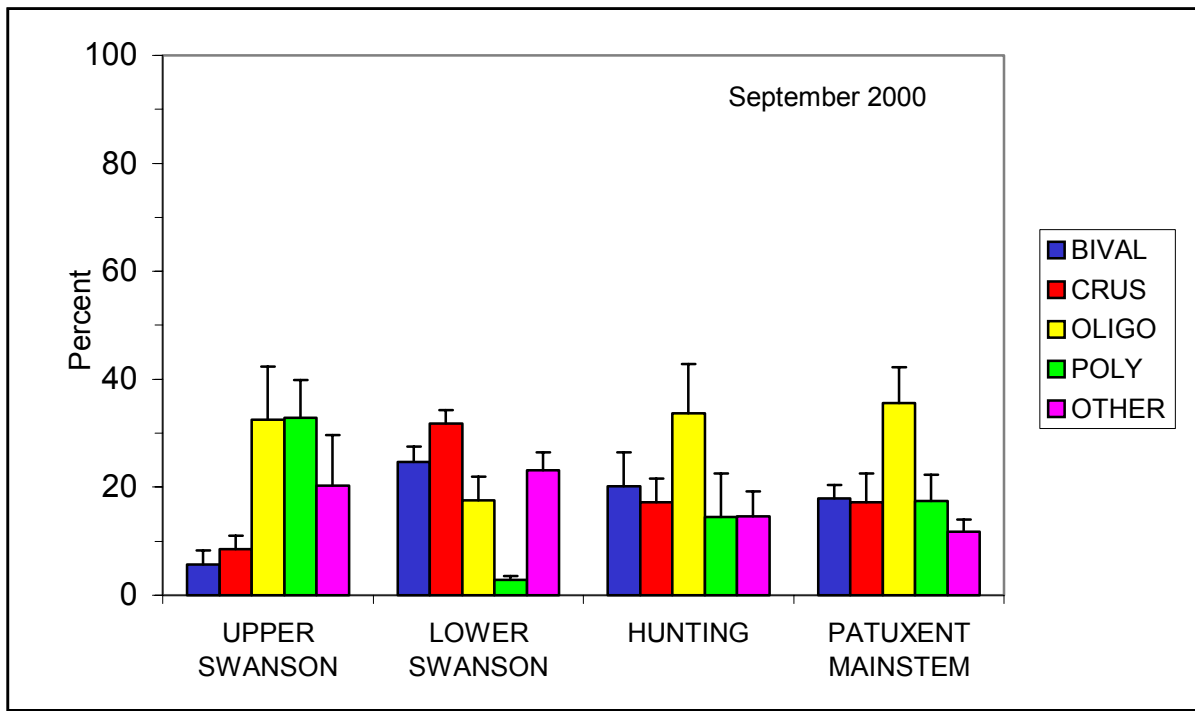


Figure 13. Percent abundance composition at September creek and river sites.

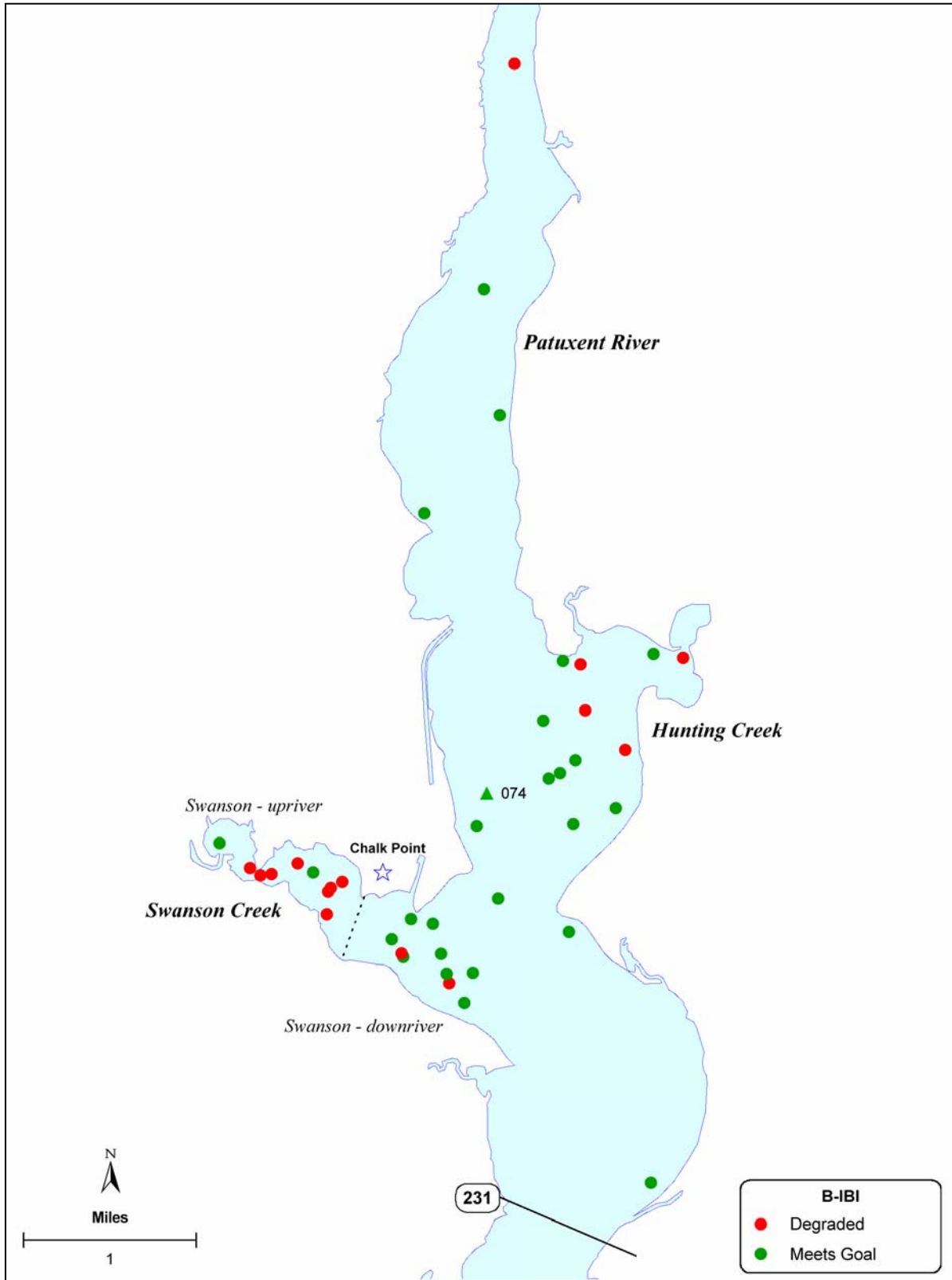


Figure 14. Benthic community condition at creek and river sites in September 2000.

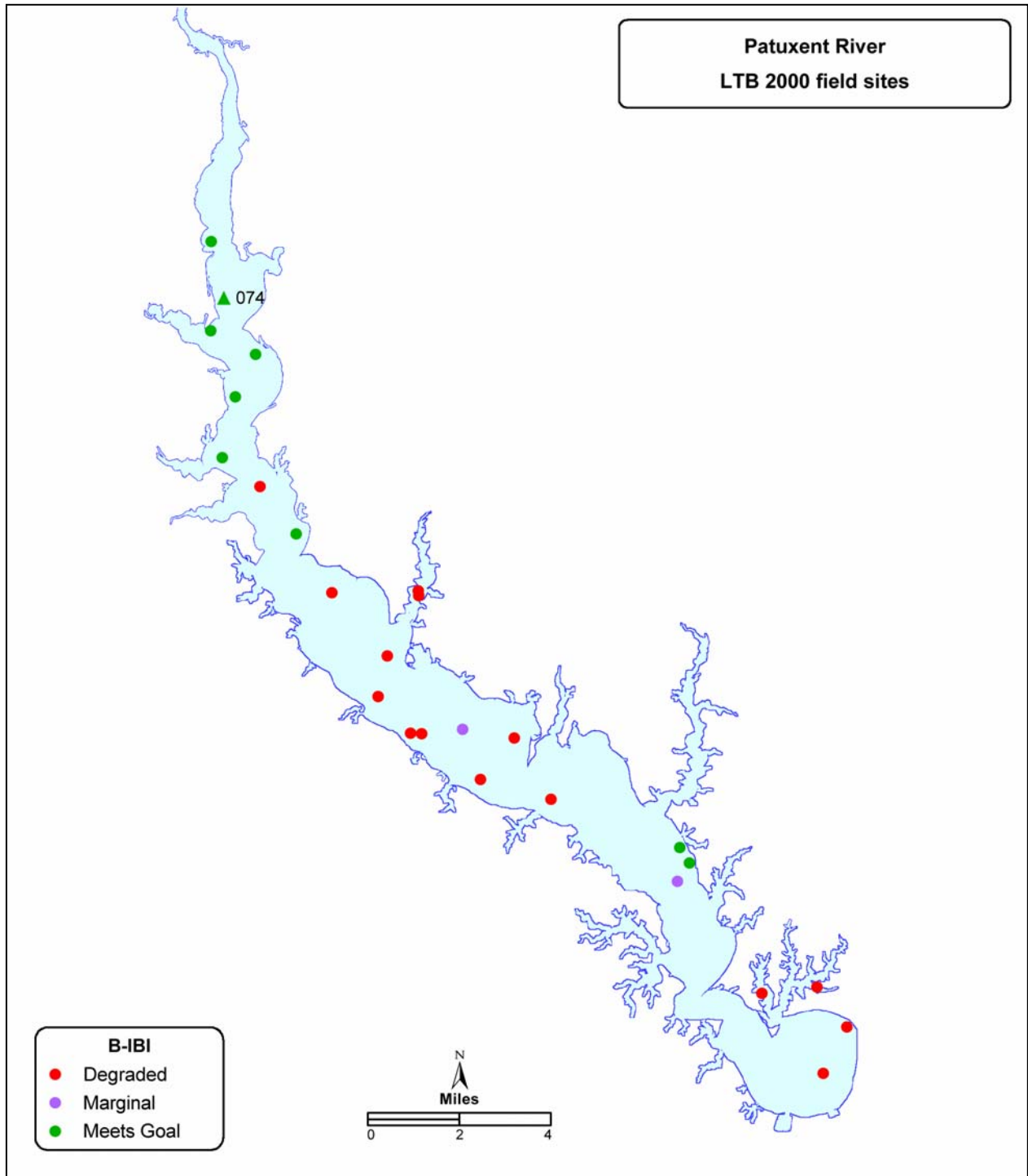


Figure 15. Benthic community condition at LTB Patuxent River sites in September 2000.

4.0 DISCUSSION

The effects of oil spills on benthic organisms vary as a function of the severity and spatial extent of the event. The effects of oil spills and chronic hydrocarbon inputs on benthic organisms have been previously documented (e.g., Samiullah 1985, Gray et al. 1990, McGuinness 1990, Agard et al. 1993, Clarke 1993). Large hydrocarbon concentrations in sediment are toxic to many organisms and may cause widespread mortality. However, in systems that experience aperiodic disturbances such as those related to high summer temperatures and low dissolved oxygen, sensitive species are usually eliminated (Diaz and Rosenberg 1995). Structural and organizational changes in the community following aperiodic disturbances may lead to pollution resistant communities. This may have been the case in the upper Patuxent River. Communities in the upper Patuxent River are likely to be resilient to stress. Although we are not certain of the degree to which the oil affected the bottom sediments, alterations to community structure were noticeable only in Swanson Creek, and these were apparently limited to quantitative changes in abundance, a response consistent with systems that experience aperiodic disturbance (Diaz 1994).

Benthic community parameters for sites in the mainstem of the Patuxent River in September 2000 were within the range of values expected for the region. In June 2000, abundance and biomass in the Patuxent mainstem were lower than what would be expected based on historical data collected in 1990-1993. However, results from the adjacent station 074 did not indicate depressed abundance or biomass in May 2000 compared to the long-term average. One caveat is in order here. Estuarine benthic communities are extremely dynamic. Large fluctuations in abundance over time are usually common among numerically dominant species, especially during the spring months (April-June) when settlement and growth occur rapidly and densities of organisms often overshoot the carrying capacity of the environment. Our study is not more than a snapshot in time, limited by the constraints inherent in evaluating impacts from unpredictable events. With this in mind, the differences in abundance and biomass in the Patuxent mainstem between 2000 and 1990-1993 could be explained in several ways. Inter-annual variations in abundance, for example, often result from intrinsic variation in the population of a species, or from seasonal or annual variations in environmental factors. The year 2000 was extremely wet, with low dissolved oxygen occurring near Chalk Point as early as June (see Appendix). The overall effect of such unusual year may have been of a reduction in the size of the benthic populations.

Results from the creek component did suggest an impact in upper Swanson Creek; however the magnitude of the impact does not appear to have been extensive. There was no widespread mortality that might be associated with toxic effects. The three upper Swanson Creek sites sampled in June 2000 had very high densities of *Streblospio benedicti*, which was reflected in low diversity values. The average number of species at these sites, however, was the highest among the three locations. The average number of species was still relatively high in September 2000, although variability in the data indicated some sites in upper Swanson Creek as having low species richness. Sublethal effects may have occurred, but such effects usually go undetected. More evident were the changes in species composition. Upper Swanson Creek had proportionally fewer bivalves and crustaceans than the other three

locations. With oil pollution, polychaetes are enhanced while crustaceans are suppressed by the oil impact (Peterson et al. 1996). These results, however, should be viewed with caution. The natural, unaltered condition of Swanson Creek cannot be observed after the spill, and therefore we do not know what the benthic community would have been in the absence of the spill.

The large abundance of *Streblospio benedicti* in upper Swanson Creek is more difficult to explain, but it may have been related to organic enrichment. Quantitative changes in abundance with organic enrichment of the sediment are typical of opportunist species. The largest *Streblospio* densities were associated with the marsh fringe, where samples were obviously oiled. In this case the response may have been elicited by either the oil or the marsh vegetation. In general, distinguishing between the effects of organic enrichment and the effects of contaminant toxicity is difficult, especially when related to oil pollution. Polychaetes were dominant in both upper and lower Swanson Creek in June 2000. But whatever effect organic enrichment may have had on the community, differences in species abundance and composition among locations were much more attenuated in September.

It has been suggested that to describe the impact of oil pollution, a combination of community and species-based parameters should be used (Daan et al. 1992). The B-IBI provides such combination. The B-IBI uses measures of standing stock, diversity, species composition, and trophic composition. The B-IBI is applicable in summer, where the differences among reference and degraded sites are greatest (Alden et al. 1997). The application of the B-IBI to Chalk Point data revealed that benthic community condition was worst in upper Swanson Creek, just around the area where cleaning and oil recovery activities were conducted after the spill. Whether the oil, the cleaning operation itself, or some other factor were responsible for the observed alterations to community structure in Swanson Creek is unknown. Ultimately, it is the magnitude of the impact that actually matters, especially because of the implications that these changes may have for economically important resources. However, given the data collected by this study, it is not possible to relate these changes directly to food webs. Alterations to abundance and species composition are most severe if sustained over the long-term or at large spatial scales. The information gathered during the present study suggests that the impact may have been largely ephemeral and of small spatial extent. However, this distinction can only be discerned with further sampling. Further monitoring may also help determine the time necessary for recovery.

In conclusion, this study found significant differences in benthic community parameters between Swanson Creek and both Hunting Creek and the Patuxent mainstem in the vicinity of Chalk Point 3-6 months after the spill. These differences were mostly restricted to the upper portion of Swanson Creek. Benthic community condition as measured by the Chesapeake Bay benthic index of biotic integrity was also classified predominately as degraded in this region. Provided that these differences are attributable to an impact from the oil spill, the impact appeared to be localized and of relatively low magnitude. The analysis of PAH samples may help determine a relationship between oil and benthic community condition.

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APPENDIX A
BOTTOM ENVIRONMENT AND
BENTHOS SPRING

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-01		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt): 5.6		Temperature (C): 26.58		
Dissolved Oxygen (mg/l): 3.06		Sediment Silt-Clay (%): 93.55		Total Carbon (%): 2.96		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.99		Pollution Indicative Species Abundance (%)	44.72		
Abundance (#/m2)	2829		Pollution Indicative Species Biomass (%)	14.15		
Biomass (g/m2)	0.49		Pollution Sensitive Species Abundance (%)	9.76		
Carnivore-Omnivore Abundance (%)	3.25		Pollution Sensitive Species Biomass (%)	69.34		
Deep Deposit Feeder Abundance (%)	8.13					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	1242	1242.0		1242	1242	
Leptocheirus plumulosus	1012	1012.0		1012	1012	
Tubificoides spp.	230	230.0		230	230	
Rangia cuneata	138	138.0		138	138	
Marenzelleria viridis	92	92.0		92	92	
Cyathura polita	46	46.0		46	46	
Neomysis americana (Epi)	23	23.0		23	23	
Carinoma tremaphoros	23	23.0		23	23	
Littoridinops tenuipes (Epi)	23	23.0		23	23	
Coelotanypus spp.	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	2875				
Total Abundance (w/o Epifauna)	2829				
Number of Taxa	11				
Number of Taxa (w/o Epifauna)	9				
BENTHIC BIOMASS (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Marenzelleria viridis	0.2530	0.2530		0.2530	0.2530
Leptocheirus plumulosus	0.0644	0.0644		0.0644	0.0644
Rangia cuneata	0.0529	0.0529		0.0529	0.0529
Streblospio benedicti	0.0483	0.0483		0.0483	0.0483
Cyathura polita	0.0322	0.0322		0.0322	0.0322
Coelotanypus spp.	0.0207	0.0207		0.0207	0.0207
Carinoma tremaphoros	0.0115	0.0115		0.0115	0.0115
Littoridinops tenuipes (Epi)	0.0069	0.0069		0.0069	0.0069
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023
Ameroculodes species complex	0.0023	0.0023		0.0023	0.0023
Neomysis americana (Epi)	0.0012	0.0012		0.0012	0.0012
Total Biomass	0.4957				
Total Biomass (w/o Epifauna)	0.4876				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-02		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 96.21		Total Carbon (%): 2.58		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.84		Pollution Indicative Species Abundance (%)	16.87		
Abundance (#/m2)	1909		Pollution Indicative Species Biomass (%)	0.66		
Biomass (g/m2)	2.25		Pollution Sensitive Species Abundance (%)	22.89		
Carnivore-Omnivore Abundance (%)	9.64		Pollution Sensitive Species Biomass (%)	61.69		
Deep Deposit Feeder Abundance (%)	12.05					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	759	759.0		759	759	
Streblospio benedicti	299	299.0		299	299	
Tubificoides spp.	207	207.0		207	207	
Macoma balthica	161	161.0		161	161	
Rangia cuneata	138	138.0		138	138	
Marenzelleria viridis	69	69.0		69	69	
Cyathura polita	69	69.0		69	69	
Carinoma tremaphoros	46	46.0		46	46	
Littoridinops tenuipes (Epi)	46	46.0		46	46	
Neanthes succinea	46	46.0		46	46	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	46	46.0		46	46	
Hypereteone heteropoda	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Leucon americanus	23	23.0		23	23	
Total Abundance	1955					
Total Abundance (w/o Epifauna)	1909					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	13					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.1017	1.1017		1.1017	1.1017	
Macoma mitchelli	0.7406	0.7406		0.7406	0.7406	
Marenzelleria viridis	0.2024	0.2024		0.2024	0.2024	
Leptocheirus plumulosus	0.0851	0.0851		0.0851	0.0851	
Rangia cuneata	0.0437	0.0437		0.0437	0.0437	
Cyathura polita	0.0391	0.0391		0.0391	0.0391	
Streblospio benedicti	0.0138	0.0138		0.0138	0.0138	
Carinoma tremaphoros	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Littoridinops tenuipes (Epi)	0.0046	0.0046		0.0046	0.0046	
Neanthes succinea	0.0046	0.0046		0.0046	0.0046	
Hypereteone heteropoda	0.0012	0.0012		0.0012	0.0012	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Leucon americanus	0.0012	0.0012		0.0012	0.0012	
Total Biomass	2.2483					
Total Biomass (w/o Epifauna)	2.2438					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-03		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 94.71		Total Carbon (%): 2.90		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.47		Pollution Indicative Species Abundance (%)	42.39		
Abundance (#/m2)	2116		Pollution Indicative Species Biomass (%)	1.68		
Biomass (g/m2)	1.92		Pollution Sensitive Species Abundance (%)	9.78		
Carnivore-Omnivore Abundance (%)	10.87		Pollution Sensitive Species Biomass (%)	60.38		
Deep Deposit Feeder Abundance (%)	15.22					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	851	851.0		851	851	
Leptocheirus plumulosus	552	552.0		552	552	
Tubificoides spp.	299	299.0		299	299	
Littoridinops tenuipes (Epi)	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Macoma balthica	69	69.0		69	69	
Hypereteone heteropoda	46	46.0		46	46	
Neanthes succinea	46	46.0		46	46	
Ameroculodes species complex	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Rangia cuneata	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	2277					
Total Abundance (w/o Epifauna)	2116					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	12					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.0971	1.0971		1.0971	1.0971	
Macoma mitchelli	0.4347	0.4347		0.4347	0.4347	
Neanthes succinea	0.2323	0.2323		0.2323	0.2323	
Cyathura polita	0.0529	0.0529		0.0529	0.0529	
Leptocheirus plumulosus	0.0368	0.0368		0.0368	0.0368	
Streblospio benedicti	0.0299	0.0299		0.0299	0.0299	
Littoridinops tenuipes (Epi)	0.0161	0.0161		0.0161	0.0161	
Carinoma tremaphoros	0.0069	0.0069		0.0069	0.0069	
Ameroculodes species complex	0.0069	0.0069		0.0069	0.0069	
Rangia cuneata	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Heteromastus filiformis	0.0046	0.0046		0.0046	0.0046	
Hypereteone heteropoda	0.0023	0.0023		0.0023	0.0023	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.9332					
Total Biomass (w/o Epifauna)	1.9159					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-04		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 86.05		Total Carbon (%): 2.43		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.14		Pollution Indicative Species Abundance (%)	37.66		
Abundance (#/m2)	1771		Pollution Indicative Species Biomass (%)	10.96		
Biomass (g/m2)	0.25		Pollution Sensitive Species Abundance (%)	9.09		
Carnivore-Omnivore Abundance (%)	2.60		Pollution Sensitive Species Biomass (%)	63.93		
Deep Deposit Feeder Abundance (%)	16.88					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	667	667.0		667	667	
Leptocheirus plumulosus	598	598.0		598	598	
Tubificoides spp.	299	299.0		299	299	
Littoridinops tenuipes (Epi)	69	69.0		69	69	
Rangia cuneata	69	69.0		69	69	
Cyathura polita	46	46.0		46	46	
Marenzelleria viridis	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	
Leucon americanus	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Total Abundance	1840					
Total Abundance (w/o Epifauna)	1771					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	9					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.1127	0.1127		0.1127	0.1127	
Leptocheirus plumulosus	0.0529	0.0529		0.0529	0.0529	
Melita nitida (Epi)	0.0322	0.0322		0.0322	0.0322	
Marenzelleria viridis	0.0276	0.0276		0.0276	0.0276	
Streblospio benedicti	0.0276	0.0276		0.0276	0.0276	
Rangia cuneata	0.0207	0.0207		0.0207	0.0207	
Littoridinops tenuipes (Epi)	0.0161	0.0161		0.0161	0.0161	
Tubificoides spp.	0.0069	0.0069		0.0069	0.0069	
Ameroculodes species complex	0.0023	0.0023		0.0023	0.0023	
Leucon americanus	0.0012	0.0012		0.0012	0.0012	
Total Biomass	0.3003					
Total Biomass (w/o Epifauna)	0.2842					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-05		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.7		Salinity (ppt): 4.6		Temperature (C): 26.31		
Dissolved Oxygen (mg/l): 3.6		Sediment Silt-Clay (%): 54.99		Total Carbon (%): 2.34		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.16		Pollution Indicative Species Abundance (%)	30.95		
Abundance (#/m2)	4830		Pollution Indicative Species Biomass (%)	3.35		
Biomass (g/m2)	1.37		Pollution Sensitive Species Abundance (%)	9.52		
Carnivore-Omnivore Abundance (%)	9.05		Pollution Sensitive Species Biomass (%)	23.60		
Deep Deposit Feeder Abundance (%)	7.62					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	2231	2231.0		2231	2231	
Streblospio benedicti	1495	1495.0		1495	1495	
Cyathura polita	299	299.0		299	299	
Tubificoides spp.	230	230.0		230	230	
Rangia cuneata	161	161.0		161	161	
Heteromastus filiformis	138	138.0		138	138	
Carinoma tremaphoros	115	115.0		115	115	
Ameroculodes species complex	69	69.0		69	69	
Apocorophium lacustre (Epi)	46	46.0		46	46	
Hobsonia florida	46	46.0		46	46	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Edwardsia elegans	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Edotea triloba (Epi)	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Total Abundance	4922					
Total Abundance (w/o Epifauna)	4830					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.6072	0.6072		0.6072	0.6072	
Cyathura polita	0.2369	0.2369		0.2369	0.2369	
Leptocheirus plumulosus	0.2323	0.2323		0.2323	0.2323	
Heteromastus filiformis	0.1012	0.1012		0.1012	0.1012	
Rangia cuneata	0.0874	0.0874		0.0874	0.0874	
Carinoma tremaphoros	0.0506	0.0506		0.0506	0.0506	
Streblospio benedicti	0.0460	0.0460		0.0460	0.0460	
Melita nitida (Epi)	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Ameroculodes species complex	0.0046	0.0046		0.0046	0.0046	
Apocorophium lacustre (Epi)	0.0046	0.0046		0.0046	0.0046	
Edotea triloba (Epi)	0.0023	0.0023		0.0023	0.0023	
Hobsonia florida	0.0023	0.0023		0.0023	0.0023	
Edwardsia elegans	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.3858					
Total Biomass (w/o Epifauna)	1.3743					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-06		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 96.72		Total Carbon (%): 2.12		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.56		Pollution Indicative Species Abundance (%)	0.00		
Abundance (#/m2)	1932		Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	5.65		Pollution Sensitive Species Abundance (%)	44.05		
Carnivore-Omnivore Abundance (%)	19.05		Pollution Sensitive Species Biomass (%)	83.22		
Deep Deposit Feeder Abundance (%)	4.76					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	667	667.0		667	667	
Macoma balthica	483	483.0		483	483	
Rangia cuneata	276	276.0		276	276	
Neanthes succinea	161	161.0		161	161	
Carinoma tremaphoros	115	115.0		115	115	
Cyathura polita	92	92.0		92	92	
Heteromastus filiformis	69	69.0		69	69	
Macoma mitchelli	46	46.0		46	46	
Tubificoides spp.	23	23.0		23	23	
Neomysis americana (Epi)	23	23.0		23	23	
Total Abundance	1955					
Total Abundance (w/o Epifauna)	1932					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	9					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.4850	4.4850		4.4850	4.4850	
Macoma mitchelli	0.7061	0.7061		0.7061	0.7061	
Cyathura polita	0.1610	0.1610		0.1610	0.1610	
Leptocheirus plumulosus	0.1403	0.1403		0.1403	0.1403	
Neanthes succinea	0.0713	0.0713		0.0713	0.0713	
Rangia cuneata	0.0529	0.0529		0.0529	0.0529	
Carinoma tremaphoros	0.0276	0.0276		0.0276	0.0276	
Neomysis americana (Epi)	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Total Biomass	5.6558					
Total Biomass (w/o Epifauna)	5.6467					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-07		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt): 5.4		Temperature (C): 26.61		
Dissolved Oxygen (mg/l): 2.31		Sediment Silt-Clay (%): 96.30		Total Carbon (%): 3.02		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.26		Pollution Indicative Species Abundance (%)	38.19		
Abundance (#/m2)	4577		Pollution Indicative Species Biomass (%)	2.97		
Biomass (g/m2)	1.39		Pollution Sensitive Species Abundance (%)	13.57		
Carnivore-Omnivore Abundance (%)	6.03		Pollution Sensitive Species Biomass (%)	84.32		
Deep Deposit Feeder Abundance (%)	9.55					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	1748	1748.0		1748	1748	
Leptocheirus plumulosus	1564	1564.0		1564	1564	
Tubificoides spp.	437	437.0		437	437	
Marenzelleria viridis	299	299.0		299	299	
Rangia cuneata	161	161.0		161	161	
Cyathura polita	138	138.0		138	138	
Carinoma tremaphoros	115	115.0		115	115	
Littoridinops tenuipes (Epi)	115	115.0		115	115	
Ameroculodes species complex	69	69.0		69	69	
Edotea triloba (Epi)	69	69.0		69	69	
Edwardsia elegans	23	23.0		23	23	
Americamysis almyra (Epi)	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	4784				
Total Abundance (w/o Epifauna)	4577				
Number of Taxa	13				
Number of Taxa (w/o Epifauna)	10				
BENTHIC BIOMASS (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
					Cum %
Marenzelleria viridis	0.7222	0.7222		0.7222	0.7222
Macoma balthica	0.2691	0.2691		0.2691	0.2691
Leptocheirus plumulosus	0.1150	0.1150		0.1150	0.1150
Cyathura polita	0.1081	0.1081		0.1081	0.1081
Rangia cuneata	0.0759	0.0759		0.0759	0.0759
Carinoma tremaphoros	0.0437	0.0437		0.0437	0.0437
Streblospio benedicti	0.0414	0.0414		0.0414	0.0414
Littoridinops tenuipes (Epi)	0.0184	0.0184		0.0184	0.0184
Tubificoides spp.	0.0092	0.0092		0.0092	0.0092
Americamysis almyra (Epi)	0.0069	0.0069		0.0069	0.0069
Edwardsia elegans	0.0046	0.0046		0.0046	0.0046
Edotea triloba (Epi)	0.0046	0.0046		0.0046	0.0046
Ameroculodes species complex	0.0046	0.0046		0.0046	0.0046
Total Biomass	1.4235				
Total Biomass (w/o Epifauna)	1.3936				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-08		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 95.30		Total Carbon (%): 2.70		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
		Value	Score	Value	Score	
Shannon-Weiner Index		2.84		Pollution Indicative Species Abundance (%)	16.87	
Abundance (#/m2)		1909		Pollution Indicative Species Biomass (%)	0.40	
Biomass (g/m2)		2.01		Pollution Sensitive Species Abundance (%)	25.30	
Carnivore-Omnivore Abundance (%)		16.87		Pollution Sensitive Species Biomass (%)	94.00	
Deep Deposit Feeder Abundance (%)		19.28				
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	552	552.0		552	552	
Tubificoides spp.	368	368.0		368	368	
Streblospio benedicti	299	299.0		299	299	
Macoma balthica	207	207.0		207	207	
Carinoma tremaphoros	138	138.0		138	138	
Rangia cuneata	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Edwardsia elegans	23	23.0		23	23	
Hypereteone heteropoda	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Procladius spp.	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	1909					
Total Abundance (w/o Epifauna)	1909					
Number of Taxa	11					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.5571	1.5571		1.5571	1.5571	
Cyathura polita	0.1909	0.1909		0.1909	0.1909	
Marenzelleria viridis	0.0874	0.0874		0.0874	0.0874	
Leptocheirus plumulosus	0.0621	0.0621		0.0621	0.0621	
Rangia cuneata	0.0552	0.0552		0.0552	0.0552	
Carinoma tremaphoros	0.0460	0.0460		0.0460	0.0460	
Streblospio benedicti	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Edwardsia elegans	0.0012	0.0012		0.0012	0.0012	
Hypereteone heteropoda	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Total Biomass	2.0115					
Total Biomass (w/o Epifauna)	2.0115					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-09		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 4.9		Temperature (C): 26.39		
Dissolved Oxygen (mg/l): 4.5		Sediment Silt-Clay (%): 89.80		Total Carbon (%): 3.09		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.10		Pollution Indicative Species Abundance (%)	13.16		
Abundance (#/m2)	3496		Pollution Indicative Species Biomass (%)	0.78		
Biomass (g/m2)	2.35		Pollution Sensitive Species Abundance (%)	19.08		
Carnivore-Omnivore Abundance (%)	5.92		Pollution Sensitive Species Biomass (%)	68.40		
Deep Deposit Feeder Abundance (%)	9.21					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	1932	1932.0		1932	1932	
Rangia cuneata	506	506.0		506	506	
Streblospio benedicti	460	460.0		460	460	
Tubificoides spp.	230	230.0		230	230	
Cyathura polita	138	138.0		138	138	
Heteromastus filiformis	92	92.0		92	92	
Neanthes succinea	46	46.0		46	46	
Edotea triloba (Epi)	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	3565					
Total Abundance (w/o Epifauna)	3495					
Number of Taxa	12					
Number of Taxa (w/o Epifauna)	10					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.2604	1.2604		1.2604	1.2604	
Neanthes succinea	0.3174	0.3174		0.3174	0.3174	
Rangia cuneata	0.2346	0.2346		0.2346	0.2346	
Leptocheirus plumulosus	0.2001	0.2001		0.2001	0.2001	
Macoma mitchelli	0.1495	0.1495		0.1495	0.1495	
Cyathura polita	0.1127	0.1127		0.1127	0.1127	
Carinoma tremaphoros	0.0345	0.0345		0.0345	0.0345	
Edotea triloba (Epi)	0.0207	0.0207		0.0207	0.0207	
Streblospio benedicti	0.0184	0.0184		0.0184	0.0184	
Heteromastus filiformis	0.0184	0.0184		0.0184	0.0184	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Total Biomass	2.3725					
Total Biomass (w/o Epifauna)	2.3506					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Hunting Creek		Station: HC-10		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.0		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 95.35		Total Carbon (%): 2.32		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.36		Pollution Indicative Species Abundance (%)	29.69		
Abundance (#/m2)	1472		Pollution Indicative Species Biomass (%)	0.86		
Biomass (g/m2)	1.07		Pollution Sensitive Species Abundance (%)	17.19		
Carnivore-Omnivore Abundance (%)	4.69		Pollution Sensitive Species Biomass (%)	90.85		
Deep Deposit Feeder Abundance (%)	10.94					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	575	575.0		575	575	
Streblospio benedicti	437	437.0		437	437	
Tubificoides spp.	161	161.0		161	161	
Littoridinops tenuipes (Epi)	138	138.0		138	138	
Macoma balthica	92	92.0		92	92	
Rangia cuneata	69	69.0		69	69	
Marenzelleria viridis	46	46.0		46	46	
Cyathura polita	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Americamysis almyra (Epi)	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	1656					
Total Abundance (w/o Epifauna)	1472					
Number of Taxa	12					
Number of Taxa (w/o Epifauna)	9					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.8073	0.8073		0.8073	0.8073	
Leptocheirus plumulosus	0.0782	0.0782		0.0782	0.0782	
Cyathura polita	0.0782	0.0782		0.0782	0.0782	
Marenzelleria viridis	0.0621	0.0621		0.0621	0.0621	
Rangia cuneata	0.0230	0.0230		0.0230	0.0230	
Littoridinops tenuipes (Epi)	0.0161	0.0161		0.0161	0.0161	
Streblospio benedicti	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Carinoma tremaphoros	0.0046	0.0046		0.0046	0.0046	
Americamysis almyra (Epi)	0.0023	0.0023		0.0023	0.0023	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Ameroculodes species complex	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.0880					
Total Biomass (w/o Epifauna)	1.0684					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: LTB Fixed Site		Station: HIS-074		Date: June 30, 2000			
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m			
BOTTOM ENVIRONMENT							
Depth (m): 3.4		Salinity (ppt): 7.2		Temperature (C): 26.52			
Dissolved Oxygen (mg/l): 2.8		Sediment Silt-Clay (%): 90.64		Total Carbon (%): 2.76			
BENTHIC INDEX OF BIOTIC INTEGRITY							
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0			
	Value	Score		Value	Score		
Shannon-Weiner Index	2.04		Pollution Indicative Species Abundance (%)	5.26			
Abundance (#/m2)	1748		Pollution Indicative Species Biomass (%)	0.19			
Biomass (g/m2)	4.20		Pollution Sensitive Species Abundance (%)	23.68			
Carnivore-Omnivore Abundance (%)	15.79		Pollution Sensitive Species Biomass (%)	88.01			
Deep Deposit Feeder Abundance (%)	55.26						
BENTHIC ABUNDANCE (per sq. meter)							
			Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	943		943.0		943	943	
Macoma balthica	414		414.0		414	414	
Carinoma tremaphoros	138		138.0		138	138	
Hypereteone heteropoda	69		69.0		69	69	
Neanthes succinea	69		69.0		69	69	
Heteromastus filiformis	23		23.0		23	23	
Streblospio benedicti	23		23.0		23	23	
Leptocheirus plumulosus	23		23.0		23	23	
Ameroculodes species complex	23		23.0		23	23	
Macoma mitchelli	23		23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

(Station: HIS-Contd.)

Total Abundance	1748					
Total Abundance (w/o Epifauna)	1748					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	10					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	3.6961	3.6961		3.6961	3.6961	
Macoma mitchelli	0.2967	0.2967		0.2967	0.2967	
Carinoma tremaphoros	0.1196	0.1196		0.1196	0.1196	
Neanthes succinea	0.0621	0.0621		0.0621	0.0621	
Tubificoides spp.	0.0115	0.0115		0.0115	0.0115	
Hypereteone heteropoda	0.0069	0.0069		0.0069	0.0069	
Heteromastus filiformis	0.0023	0.0023		0.0023	0.0023	
Ameroculodes species complex	0.0023	0.0023		0.0023	0.0023	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Leptocheirus plumulosus	0.0012	0.0012		0.0012	0.0012	
Total Biomass	4.1999					
Total Biomass (w/o Epifauna)	4.1999					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-01		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 4.7		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 98.13		Total Carbon (%): 2.77		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
		Value	Score	Value	Score	
Shannon-Weiner Index		2.67		Pollution Indicative Species Abundance (%)	16.67	
Abundance (#/m2)		414		Pollution Indicative Species Biomass (%)	1.70	
Biomass (g/m2)		0.95		Pollution Sensitive Species Abundance (%)	22.22	
Carnivore-Omnivore Abundance (%)		33.33		Pollution Sensitive Species Biomass (%)	73.45	
Deep Deposit Feeder Abundance (%)		22.22				
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Carinoma tremaphoros	69	69.0		69	69	
Hypereteone heteropoda	69	69.0		69	69	
Leptocheirus plumulosus	69	69.0		69	69	
Heteromastus filiformis	23	23.0		23	23	
Leucon americanus	23	23.0		23	23	
Total Abundance	414					
Total Abundance (w/o Epifauna)	414					
Number of Taxa	7					
Number of Taxa (w/o Epifauna)	7					

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.6969	0.6969		0.6969	0.6969	
Heteromastus filiformis	0.1058	0.1058		0.1058	0.1058	
Carinoma tremaphoros	0.0943	0.0943		0.0943	0.0943	
Leptocheirus plumulosus	0.0322	0.0322		0.0322	0.0322	
Hypereteone heteropoda	0.0161	0.0161		0.0161	0.0161	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Leucon americanus	0.0012	0.0012		0.0012	0.0012	
Total Biomass	0.9488					
Total Biomass (w/o Epifauna)	0.9488					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-02		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 3.1		Salinity (ppt): 9.7		Temperature (C): 24.94		
Dissolved Oxygen (mg/l):0.61		Sediment Silt-Clay (%): 70.27		Total Carbon (%): 2.16		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.39		Pollution Indicative Species Abundance (%)	23.81		
Abundance (#/m2)	483		Pollution Indicative Species Biomass (%)	1.14		
Biomass (g/m2)	1.11		Pollution Sensitive Species Abundance (%)	47.62		
Carnivore-Omnivore Abundance (%)	23.81		Pollution Sensitive Species Biomass (%)	97.21		
Deep Deposit Feeder Abundance (%)	14.29					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	230	230.0		230	230	
Hypereteone heteropoda	69	69.0		69	69	
Tubificoides spp.	46	46.0		46	46	
Carinoma tremaphoros	46	46.0		46	46	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Mucrogammarus mucronatus (Epi)	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	
Leucon americanus	23	23.0		23	23	
Ischadium recurvum (Epi)	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	529					
Total Abundance (w/o Epifauna)	483					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	8					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.0810	1.0810		1.0810	1.0810	
Ischadium recurvum (Epi)	0.0230	0.0230		0.0230	0.0230	
Carinoma tremaphoros	0.0138	0.0138		0.0138	0.0138	
Hypereteone heteropoda	0.0115	0.0115		0.0115	0.0115	
Mucrogammarus mucronatus (Epi)	0.0023	0.0023		0.0023	0.0023	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Ameroculodes species complex	0.0012	0.0012		0.0012	0.0012	
Leucon americanus	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.1376					
Total Biomass (w/o Epifauna)	1.1123					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-03		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 3.5		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 92.37		Total Carbon (%): 2.369		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.51		Pollution Indicative Species Abundance (%)	6.90		
Abundance (#/m2)	667		Pollution Indicative Species Biomass (%)	0.79		
Biomass (g/m2)	1.74		Pollution Sensitive Species Abundance (%)	58.62		
Carnivore-Omnivore Abundance (%)	10.34		Pollution Sensitive Species Biomass (%)	72.32		
Deep Deposit Feeder Abundance (%)	10.34					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	322	322.0		322	322	
Leptocheirus plumulosus	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Rangia cuneata	46	46.0		46	46	
Edwardsia elegans	23	23.0		23	23	
Carinoma tremaphoros	23	23.0		23	23	
Hypereteone heteropoda	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Total Abundance	667					
Total Abundance (w/o Epifauna)	667					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	10					

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Macoma balthica</i>	1.0419	1.0419		1.0419	1.0419	
<i>Macoma mitchelli</i>	0.4324	0.4324		0.4324	0.4324	
<i>Marenzelleria viridis</i>	0.2001	0.2001		0.2001	0.2001	
<i>Carinoma tremaphoros</i>	0.0253	0.0253		0.0253	0.0253	
<i>Rangia cuneata</i>	0.0138	0.0138		0.0138	0.0138	
<i>Hypereteone heteropoda</i>	0.0115	0.0115		0.0115	0.0115	
<i>Leptocheirus plumulosus</i>	0.0046	0.0046		0.0046	0.0046	
<i>Tubificoides spp.</i>	0.0023	0.0023		0.0023	0.0023	
<i>Streblospio benedicti</i>	0.0023	0.0023		0.0023	0.0023	
<i>Edwardsia elegans</i>	0.0023	0.0023		0.0023	0.0023	
Total Biomass	1.7365					
Total Biomass (w/o Epifauna)	1.7365					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-04		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.3		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 89.90		Total Carbon (%): 2.24		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
		Value Score		Value Score		
Shannon-Weiner Index		2.58		Pollution Indicative Species Abundance (%) 4.76		
Abundance (#/m2)		966		Pollution Indicative Species Biomass (%) 0.42		
Biomass (g/m2)		2.76		Pollution Sensitive Species Abundance (%) 26.19		
Carnivore-Omnivore Abundance (%)		23.81		Pollution Sensitive Species Biomass (%) 59.00		
Deep Deposit Feeder Abundance (%)		11.90				
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	391	391.0		391	391	
Macoma balthica	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Macoma mitchelli	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Carinoma tremaphoros	69	69.0		69	69	
Hypereteone heteropoda	46	46.0		46	46	
Heteromastus filiformis	46	46.0		46	46	
Total Abundance	966					
Total Abundance (w/o Epifauna)	966					
Number of Taxa	8					
Number of Taxa (w/o Epifauna)	8					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.4122	1.4122		1.4122	1.4122	
Macoma mitchelli	0.9936	0.9936		0.9936	0.9936	
Cyathura polita	0.2162	0.2162		0.2162	0.2162	
Leptocheirus plumulosus	0.1058	0.1058		0.1058	0.1058	
Carinoma tremaphoros	0.0184	0.0184		0.0184	0.0184	
Hypereteone heteropoda	0.0115	0.0115		0.0115	0.0115	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Total Biomass	2.7601					
Total Biomass (w/o Epifauna)	2.7601					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-05		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 3.8		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 88.23		Total Carbon (%): 2.62		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.17		Pollution Indicative Species Abundance (%)	13.25		
Abundance (#/m2)	1909		Pollution Indicative Species Biomass (%)	0.10		
Biomass (g/m2)	9.31		Pollution Sensitive Species Abundance (%)	53.01		
Carnivore-Omnivore Abundance (%)	8.43		Pollution Sensitive Species Biomass (%)	98.58		
Deep Deposit Feeder Abundance (%)	30.12					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	989	989.0		989	989	
Tubificoides spp.	460	460.0		460	460	
Streblospio benedicti	115	115.0		115	115	
Imm. Tubificid w/o Cap. Chaete	92	92.0		92	92	
Neanthes succinea	92	92.0		92	92	
Hypereteone heteropoda	46	46.0		46	46	
Neomysis americana (Epi)	23	23.0		23	23	
Carinoma tremaphoros	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	1932					
Total Abundance (w/o Epifauna)	1909					
Number of Taxa	12					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	9.1126	9.1126		9.1126	9.1126	
Neanthes succinea	0.0920	0.0920		0.0920	0.0920	
Marenzelleria viridis	0.0644	0.0644		0.0644	0.0644	
Neomysis americana (Epi)	0.0207	0.0207		0.0207	0.0207	
Heteromastus filiformis	0.0115	0.0115		0.0115	0.0115	
Tubificoides spp.	0.0069	0.0069		0.0069	0.0069	
Hypereteone heteropoda	0.0046	0.0046		0.0046	0.0046	
Leptocheirus plumulosus	0.0046	0.0046		0.0046	0.0046	
Carinoma tremaphoros	0.0046	0.0046		0.0046	0.0046	
Streblospio benedicti	0.0046	0.0046		0.0046	0.0046	
Ameroculodes species complex	0.0023	0.0023		0.0023	0.0023	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Total Biomass	9.3300					
Total Biomass (w/o Epifauna)	9.3093					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-06		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.9		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 96.38		Total Carbon (%): 2.52		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.21		Pollution Indicative Species Abundance (%)	5.75		
Abundance (#/m2)	2001		Pollution Indicative Species Biomass (%)	0.03		
Biomass (g/m2)	4.08		Pollution Sensitive Species Abundance (%)	32.18		
Carnivore-Omnivore Abundance (%)	5.75		Pollution Sensitive Species Biomass (%)	90.58		
Deep Deposit Feeder Abundance (%)	50.57					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	920	920.0		920	920	
Macoma balthica	552	552.0		552	552	
Leptocheirus plumulosus	184	184.0		184	184	
Neanthes succinea	92	92.0		92	92	
Streblospio benedicti	69	69.0		69	69	
Rangia cuneata	69	69.0		69	69	
Imm. Tubificid w/o Cap. Chaete	46	46.0		46	46	
Heteromastus filiformis	46	46.0		46	46	
Neomysis americana (Epi)	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	2024					
Total Abundance (w/o Epifauna)	2001					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	9					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Macoma balthica</i>	3.6662	3.6662		3.6662	3.6662	
<i>Neanthes succinea</i>	0.3381	0.3381		0.3381	0.3381	
<i>Leptocheirus plumulosus</i>	0.0276	0.0276		0.0276	0.0276	
<i>Rangia cuneata</i>	0.0253	0.0253		0.0253	0.0253	
<i>Tubificoides</i> spp.	0.0092	0.0092		0.0092	0.0092	
<i>Neomysis americana</i> (Epi)	0.0069	0.0069		0.0069	0.0069	
<i>Heteromastus filiformis</i>	0.0069	0.0069		0.0069	0.0069	
<i>Streblospio benedicti</i>	0.0012	0.0012		0.0012	0.0012	
<i>Cyathura polita</i>	0.0012	0.0012		0.0012	0.0012	
<i>Oligochaeta</i>	0.0012	0.0012		0.0012	0.0012	
Total Biomass	4.0838					
Total Biomass (w/o Epifauna)	4.0769					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-07		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.8		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 91.97		Total Carbon (%): 1.76		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.42		Pollution Indicative Species Abundance (%)	2.27		
Abundance (#/m2)	3036		Pollution Indicative Species Biomass (%)	0.03		
Biomass (g/m2)	3.60		Pollution Sensitive Species Abundance (%)	28.79		
Carnivore-Omnivore Abundance (%)	12.88		Pollution Sensitive Species Biomass (%)	75.27		
Deep Deposit Feeder Abundance (%)	7.58					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	1564	1564.0		1564	1564	
Macoma balthica	345	345.0		345	345	
Rangia cuneata	345	345.0		345	345	
Tubificoides spp.	207	207.0		207	207	
Carinoma tremaphoros	161	161.0		161	161	
Cyathura polita	161	161.0		161	161	
Neanthes succinea	69	69.0		69	69	
Streblospio benedicti	69	69.0		69	69	
Ameroculodes species complex	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Marenzelleria viridis	23	23.0		23	23	
Edotea triloba (Epi)	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Apocorophium lacustre (Epi)	23	23.0		23	23	
Total Abundance	3082					
Total Abundance (w/o Epifauna)	3036					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	12					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	2.4380	2.4380		2.4380	2.4380	
Neanthes succinea	0.3611	0.3611		0.3611	0.3611	
Leptocheirus plumulosus	0.2530	0.2530		0.2530	0.2530	
Macoma mitchelli	0.1656	0.1656		0.1656	0.1656	
Cyathura polita	0.1472	0.1472		0.1472	0.1472	
Rangia cuneata	0.1035	0.1035		0.1035	0.1035	
Heteromastus filiformis	0.0598	0.0598		0.0598	0.0598	
Carinoma tremaphoros	0.0437	0.0437		0.0437	0.0437	
Marenzelleria viridis	0.0207	0.0207		0.0207	0.0207	
Ameroculodes species complex	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Edotea triloba (Epi)	0.0012	0.0012		0.0012	0.0012	
Apocorophium lacustre (Epi)	0.0012	0.0012		0.0012	0.0012	
Total Biomass	3.6019					
Total Biomass (w/o Epifauna)	3.5995					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-08		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 3.9		Salinity (ppt): 6.8		Temperature (C): 26.78		
Dissolved Oxygen (mg/l): 3.25		Sediment Silt-Clay (%): 88.63		Total Carbon (%): 2.72		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.90		Pollution Indicative Species Abundance (%)	13.92		
Abundance (#/m2)	1817		Pollution Indicative Species Biomass (%)	0.19		
Biomass (g/m2)	4.80		Pollution Sensitive Species Abundance (%)	24.05		
Carnivore-Omnivore Abundance (%)	21.52		Pollution Sensitive Species Biomass (%)	75.39		
Deep Deposit Feeder Abundance (%)	15.19					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	552	552.0		552	552	
Macoma balthica	368	368.0		368	368	
Neanthes succinea	230	230.0		230	230	
Carinoma tremaphoros	161	161.0		161	161	
Streblospio benedicti	138	138.0		138	138	
Imm. Tubificid w/o Cap. Chaete	115	115.0		115	115	
Tubificoides spp.	92	92.0		92	92	
Heteromastus filiformis	69	69.0		69	69	
Rangia cuneata	46	46.0		46	46	
Marenzelleria viridis	23	23.0		23	23	
Edotea triloba (Epi)	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	1840					
Total Abundance (w/o Epifauna)	1817					
Number of Taxa	12					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Macoma balthica</i>	3.5880	3.5880		3.5880	3.5880	
<i>Neanthes succinea</i>	0.7935	0.7935		0.7935	0.7935	
<i>Macoma mitchelli</i>	0.1909	0.1909		0.1909	0.1909	
<i>Leptocheirus plumulosus</i>	0.1104	0.1104		0.1104	0.1104	
<i>Carinoma tremaphoros</i>	0.0483	0.0483		0.0483	0.0483	
<i>Heteromastus filiformis</i>	0.0253	0.0253		0.0253	0.0253	
<i>Marenzelleria viridis</i>	0.0184	0.0184		0.0184	0.0184	
<i>Rangia cuneata</i>	0.0115	0.0115		0.0115	0.0115	
<i>Streblospio benedicti</i>	0.0092	0.0092		0.0092	0.0092	
<i>Edotea triloba</i> (Epi)	0.0046	0.0046		0.0046	0.0046	
<i>Tubificoides</i> spp.	0.0023	0.0023		0.0023	0.0023	
<i>Oligochaeta</i>	0.0012	0.0012		0.0012	0.0012	
Total Biomass	4.8036					
Total Biomass (w/o Epifauna)	4.7990					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-09		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.5		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 93.55		Total Carbon (%): 2.85		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
		Value	Score	Value	Score	
Shannon-Weiner Index		2.93		Pollution Indicative Species Abundance (%)	20.00	
Abundance (#/m2)		920		Pollution Indicative Species Biomass (%)	0.38	
Biomass (g/m2)		4.78		Pollution Sensitive Species Abundance (%)	32.50	
Carnivore-Omnivore Abundance (%)		15.00		Pollution Sensitive Species Biomass (%)	93.53	
Deep Deposit Feeder Abundance (%)		30.00				
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Heteromastus filiformis	207	207.0		207	207	
Macoma balthica	184	184.0		184	184	
Streblospio benedicti	161	161.0		161	161	
Carinoma tremaphoros	115	115.0		115	115	
Rangia cuneata	92	92.0		92	92	
Tubificoides spp.	46	46.0		46	46	
Leptocheirus plumulosus	46	46.0		46	46	
Neomysis americana (Epi)	23	23.0		23	23	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	943					
Total Abundance (w/o Epifauna)	920					
Number of Taxa	11					
Number of Taxa (w/o Epifauna)	10					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.4045	4.4045		4.4045	4.4045	
Macoma mitchelli	0.2300	0.2300		0.2300	0.2300	
Rangia cuneata	0.0552	0.0552		0.0552	0.0552	
Carinoma tremaphoros	0.0414	0.0414		0.0414	0.0414	
Streblospio benedicti	0.0184	0.0184		0.0184	0.0184	
Cyathura polita	0.0115	0.0115		0.0115	0.0115	
Neomysis americana (Epi)	0.0092	0.0092		0.0092	0.0092	
Leptocheirus plumulosus	0.0069	0.0069		0.0069	0.0069	
Heteromastus filiformis	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Total Biomass	4.7898					
Total Biomass (w/o Epifauna)	4.7806					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-10		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.0		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 94.79		Total Carbon (%): 2.62		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.46		Pollution Indicative Species Abundance (%)	28.30		
Abundance (#/m2)	1219		Pollution Indicative Species Biomass (%)	0.03		
Biomass (g/m2)	46.59		Pollution Sensitive Species Abundance (%)	52.83		
Carnivore-Omnivore Abundance (%)	1.89		Pollution Sensitive Species Biomass (%)	99.71		
Deep Deposit Feeder Abundance (%)	13.21					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Rangia cuneata	368	368.0		368	368	
Streblospio benedicti	345	345.0		345	345	
Macoma balthica	253	253.0		253	253	
Heteromastus filiformis	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Littoridinops tenuipes (Epi)	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Procladius spp.	23	23.0		23	23	
Total Abundance	1242					
Total Abundance (w/o Epifauna)	1219					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	9					

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Rangia cuneata	45.3836	45.3836		45.3836	45.3836	
Macoma balthica	1.0281	1.0281		1.0281	1.0281	
Macoma mitchelli	0.0736	0.0736		0.0736	0.0736	
Marenzelleria viridis	0.0483	0.0483		0.0483	0.0483	
Heteromastus filiformis	0.0391	0.0391		0.0391	0.0391	
Streblospio benedicti	0.0138	0.0138		0.0138	0.0138	
Leptocheirus plumulosus	0.0046	0.0046		0.0046	0.0046	
Littoridinops tenuipes (Epi)	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Total Biomass	46.5981					
Total Biomass (w/o Epifauna)	46.5935					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-11		Date: June 30, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 4.7		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 88.58		Total Carbon (%): 2.29		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.83		Pollution Indicative Species Abundance (%)	28.87		
Abundance (#/m2)	4462		Pollution Indicative Species Biomass (%)	0.84		
Biomass (g/m2)	3.01		Pollution Sensitive Species Abundance (%)	64.43		
Carnivore-Omnivore Abundance (%)	8.25		Pollution Sensitive Species Biomass (%)	91.78		
Deep Deposit Feeder Abundance (%)	2.58					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Apocorophium lacustre (Epi)	10833	10833.0		10833	10833	
Rangia cuneata	2438	2438.0		2438	2438	
Streblospio benedicti	1288	1288.0		1288	1288	
Littoridinops tenuipes (Epi)	575	575.0		575	575	
Cyathura polita	322	322.0		322	322	
Balanus improvisus (Epi)	207	207.0		207	207	
Edotea triloba (Epi)	161	161.0		161	161	
Gammarus daiberi (Epi)	161	161.0		161	161	
Polydora cornuta	115	115.0		115	115	
Tubificoides spp.	92	92.0		92	92	

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Marenzelleria viridis	92	92.0		92	92	
Rhithropanopeus harrisi (Epi)	69	69.0		69	69	
Neomysis americana (Epi)	23	23.0		23	23	
Edwardsia elegans	23	23.0		23	23	
Carinoma tremaphoros	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Turbellaria (Epi)	23	23.0		23	23	
Total Abundance	16514					
Total Abundance (w/o Epifauna)	4462					
Number of Taxa	19					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Rangia cuneata	2.3368	2.3368		2.3368	2.3368	
Apocorophium lacustre (Epi)	0.8004	0.8004		0.8004	0.8004	
Cyathura polita	0.2645	0.2645		0.2645	0.2645	
Balanus improvisus (Epi)	0.2208	0.2208		0.2208	0.2208	
Rhithropanopeus harrisi (Epi)	0.1702	0.1702		0.1702	0.1702	
Macoma mitchelli	0.1173	0.1173		0.1173	0.1173	
Marenzelleria viridis	0.1081	0.1081		0.1081	0.1081	
Carinoma tremaphoros	0.0920	0.0920		0.0920	0.0920	
Gammarus spp. (Epi)	0.0713	0.0713		0.0713	0.0713	
Macoma balthica	0.0529	0.0529		0.0529	0.0529	
Littoridinops tenuipes (Epi)	0.0414	0.0414		0.0414	0.0414	
Edotea triloba (Epi)	0.0345	0.0345		0.0345	0.0345	
Streblospio benedicti	0.0253	0.0253		0.0253	0.0253	
Polydora cornuta	0.0069	0.0069		0.0069	0.0069	
Neomysis americana (Epi)	0.0046	0.0046		0.0046	0.0046	
Turbellaria (Epi)	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Edwardsia elegans	0.0023	0.0023		0.0023	0.0023	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Total Biomass	4.3574					
Total Biomass (w/o Epifauna)	3.0096					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Patuxent River		Station: PR-12		Date: June 30, 2000	
Gear: Young Grab		Habitat: Oligohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 5.8		Salinity (ppt): 3.2		Temperature (C): 27.75	
Dissolved Oxygen (mg/l): 3.12		Sediment Silt-Clay (%): 92.57		Total Carbon (%): 2.56	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.47		Pollution Indicative Species Abundance (%)	35.44	
Abundance (#/m2)	1817		Pollution Indicative Species Biomass (%)	7.11	
Biomass (g/m2)	0.29		Pollution Sensitive Species Abundance (%)	11.39	
Carnivore-Omnivore Abundance (%)	5.06		Pollution Sensitive Species Biomass (%)	42.29	
Deep Deposit Feeder Abundance (%)	24.05				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	621	621.0		621	621
Tubificoides spp.	437	437.0		437	437
Ameroculodes species complex	391	391.0		391	391
Rangia cuneata	161	161.0		161	161
Carinoma tremaphoros	69	69.0		69	69
Littoridinops tenuipes (Epi)	69	69.0		69	69
Gammarus daiberi (Epi)	69	69.0		69	69
Apocorophium lacustre (Epi)	46	46.0		46	46
Marenzelleria viridis	23	23.0		23	23
Leptocheirus plumulosus	23	23.0		23	23
Macoma balthica	23	23.0		23	23
Macoma mitchelli	23	23.0		23	23
Cryptochironomus spp.	23	23.0		23	23
Hobsonia florida	23	23.0		23	23

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	2001					
Total Abundance (w/o Epifauna)	1817					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	11					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Marenzelleria viridis	0.0736	0.0736		0.0736	0.0736	
Macoma mitchelli	0.0483	0.0483		0.0483	0.0483	
Rangia cuneata	0.0483	0.0483		0.0483	0.0483	
Carinoma tremaphoros	0.0460	0.0460		0.0460	0.0460	
Ameroculodes species complex	0.0437	0.0437		0.0437	0.0437	
Streblospio benedicti	0.0207	0.0207		0.0207	0.0207	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Apocorophium lacustre (Epi)	0.0046	0.0046		0.0046	0.0046	
Littoridinops tenuipes (Epi)	0.0023	0.0023		0.0023	0.0023	
Hobsonia florida	0.0023	0.0023		0.0023	0.0023	
Gammarus spp. (Epi)	0.0023	0.0023		0.0023	0.0023	
Leptocheirus plumulosus	0.0012	0.0012		0.0012	0.0012	
Macoma balthica	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Total Biomass	0.3006					
Total Biomass (w/o Epifauna)	0.2914					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-01		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.1		Salinity (ppt): 5.9		Temperature (C): 27.20	
Dissolved Oxygen (mg/l): 6.0		Sediment Silt-Clay (%): 90.55		Total Carbon (%): 3.22	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	1.38		Pollution Indicative Species Abundance (%)	75.79	
Abundance (#/m2)	2185		Pollution Indicative Species Biomass (%)	5.47	
Biomass (g/m2)	1.14		Pollution Sensitive Species Abundance (%)	10.53	
Carnivore-Omnivore Abundance (%)	5.26		Pollution Sensitive Species Biomass (%)	31.98	
Deep Deposit Feeder Abundance (%)	8.42				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	1656	1656.0		1656	1656
Tubificoides spp.	184	184.0		184	184
Rangia cuneata	115	115.0		115	115
Carinoma tremaphoros	69	69.0		69	69
Marenzelleria viridis	69	69.0		69	69
Cyathura polita	46	46.0		46	46
Macoma mitchelli	46	46.0		46	46
Littoridinops tenuipes (Epi)	23	23.0		23	23
Total Abundance	2208				
Total Abundance (w/o Epifauna)	2185				
Number of Taxa	8				
Number of Taxa (w/o Epifauna)	7				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.4255	0.4255		0.4255	0.4255	
Carinoma tremaphoros	0.2829	0.2829		0.2829	0.2829	
Marenzelleria viridis	0.2185	0.2185		0.2185	0.2185	
Rangia cuneata	0.0759	0.0759		0.0759	0.0759	
Cyathura polita	0.0690	0.0690		0.0690	0.0690	
Streblospio benedicti	0.0621	0.0621		0.0621	0.0621	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Littoridinops tenuipes (Epi)	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.1374					
Total Biomass (w/o Epifauna)	1.1362					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-02		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 0.7		Salinity (ppt): 4.2		Temperature (C): 27.03	
Dissolved Oxygen (mg/l): 8.13		Sediment Silt-Clay (%): 53.30		Total Carbon (%): 18.70	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	0.88		Pollution Indicative Species Abundance (%)	87.15	
Abundance (#/m2)	20401		Pollution Indicative Species Biomass (%)	45.22	
Biomass (g/m2)	1.58		Pollution Sensitive Species Abundance (%)	1.80	
Carnivore-Omnivore Abundance (%)	3.16		Pollution Sensitive Species Biomass (%)	36.18	
Deep Deposit Feeder Abundance (%)	4.62				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	17733	17733.0		17733	17733
Hobsonia florida	966	966.0		966	966
Tubificoides spp.	874	874.0		874	874
Cyathura polita	299	299.0		299	299
Procladius spp.	115	115.0		115	115
Carinoma tremaphoros	92	92.0		92	92
Edotea triloba (Epi)	92	92.0		92	92
Edwardsia elegans	69	69.0		69	69
Heteromastus filiformis	69	69.0		69	69
Marenzelleria viridis	69	69.0		69	69
Chironomus spp.	46	46.0		46	46
Neanthes succinea	23	23.0		23	23
Polydora cornuta	23	23.0		23	23
Macoma mitchelli	23	23.0		23	23

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Total Abundance	20493				
Total Abundance (w/o Epifauna)	20401				
Number of Taxa	14				
Number of Taxa (w/o Epifauna)	13				
BENTHIC BIOMASS (Grams per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	0.7130	0.7130		0.7130	0.7130
Cyathura polita	0.5428	0.5428		0.5428	0.5428
Hobsonia florida	0.0989	0.0989		0.0989	0.0989
Heteromastus filiformis	0.0897	0.0897		0.0897	0.0897
Carinoma tremaphoros	0.0529	0.0529		0.0529	0.0529
Marenzelleria viridis	0.0276	0.0276		0.0276	0.0276
Edotea triloba (Epi)	0.0161	0.0161		0.0161	0.0161
Tubificoides spp.	0.0138	0.0138		0.0138	0.0138
Edwardsia elegans	0.0115	0.0115		0.0115	0.0115
Neanthes succinea	0.0092	0.0092		0.0092	0.0092
Macoma mitchelli	0.0092	0.0092		0.0092	0.0092
Polydora cornuta	0.0069	0.0069		0.0069	0.0069
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012
Total Biomass	1.5928				
Total Biomass (w/o Epifauna)	1.5767				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Station: SC-03 Location: Swanson's Creek Habitat: Low Mesohaline Date: June 30, 2000 Gear: Young Grab Sampled Area: 0.044 sq.m						
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt): 6.0		Temperature (C): 27.09		
Dissolved Oxygen (mg/l): 5.62		Sediment Silt-Clay (%): 96.79		Total Carbon (%): 2.77		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score:		Condition: Not Applicable			# Attributes Scored: 0	
	Value	Score		Value	Score	
Shannon-Weiner Index	2.55		Pollution Indicative Species Abundance (%)	47.62		
Abundance (#/m2)	966		Pollution Indicative Species Biomass (%)	1.38		
Biomass (g/m2)	1.84		Pollution Sensitive Species Abundance (%)	28.57		
Carnivore-Omnivore Abundance (%)	19.05		Pollution Sensitive Species Biomass (%)	68.42		
Deep Deposit Feeder Abundance (%)	7.14					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	460	460.0		460	460	
Cyathura polita	138	138.0		138	138	
Tubificoides spp.	69	69.0		69	69	
Rangia cuneata	69	69.0		69	69	
Carinoma tremaphoros	46	46.0		46	46	
Marenzelleria viridis	46	46.0		46	46	
Leptocheirus plumulosus	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Ameroculodes species complex	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Total Abundance	966					
Total Abundance (w/o Epifauna)	966					
Number of Taxa	10					
Number of Taxa (w/o Epifauna)	10					

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.9154	0.9154		0.9154	0.9154	
Macoma mitchelli	0.5244	0.5244		0.5244	0.5244	
Cyathura polita	0.2254	0.2254		0.2254	0.2254	
Marenzelleria viridis	0.0851	0.0851		0.0851	0.0851	
Rangia cuneata	0.0299	0.0299		0.0299	0.0299	
Streblospio benedicti	0.0253	0.0253		0.0253	0.0253	
Carinoma tremaphoros	0.0184	0.0184		0.0184	0.0184	
Leptocheirus plumulosus	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Ameroculodes species complex	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.8355					
Total Biomass (w/o Epifauna)	1.8355					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-04		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 0.9		Salinity (ppt): 5.4		Temperature (C): 27.72	
Dissolved Oxygen (mg/l): 6.43		Sediment Silt-Clay (%): 9.98		Total Carbon (%): 0.24	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.14		Pollution Indicative Species Abundance (%)	18.67	
Abundance (#/m2)	1725		Pollution Indicative Species Biomass (%)	5.22	
Biomass (g/m2)	0.31		Pollution Sensitive Species Abundance (%)	16.00	
Carnivore-Omnivore Abundance (%)	6.67		Pollution Sensitive Species Biomass (%)	35.82	
Deep Deposit Feeder Abundance (%)	58.67				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Heteromastus filiformis	943	943.0		943	943
Streblospio benedicti	322	322.0		322	322
Marenzelleria viridis	115	115.0		115	115
Rangia cuneata	115	115.0		115	115
Tubificoides spp.	69	69.0		69	69
Edwardsia elegans	46	46.0		46	46
Leptocheirus plumulosus	46	46.0		46	46
Cyathura polita	46	46.0		46	46
Carinoma tremaphoros	23	23.0		23	23
Total Abundance	1725				
Total Abundance (w/o Epifauna)	1725				
Number of Taxa	9				
Number of Taxa (w/o Epifauna)	9				

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Heteromastus filiformis	0.1610	0.1610		0.1610	0.1610	
Marenzelleria viridis	0.0391	0.0391		0.0391	0.0391	
Rangia cuneata	0.0368	0.0368		0.0368	0.0368	
Cyathura polita	0.0345	0.0345		0.0345	0.0345	
Streblospio benedicti	0.0161	0.0161		0.0161	0.0161	
Edwardsia elegans	0.0069	0.0069		0.0069	0.0069	
Leptocheirus plumulosus	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Carinoma tremaphoros	0.0023	0.0023		0.0023	0.0023	
Total Biomass	0.3082					
Total Biomass (w/o Epifauna)	0.3082					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location:		Station: SC-04-XX		Date: June 30, 2000	
Gear: Modified Box Corer		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m):		Salinity (ppt):		Temperature (C):	
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%):		Total Carbon (%):	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored:	
	Value	Score		Value	Score
Shannon-Weiner Index	2.51		Pollution Indicative Species Abundance (%)	20.54	
Abundance (#/m2)	14800		Pollution Indicative Species Biomass (%)		
Biomass (g/m2)	6.46		Pollution Sensitive Species Abundance (%)	17.03	
Carnivore-Omnivore Abundance (%)	10.54		Pollution Sensitive Species Biomass (%)		
Deep Deposit Feeder Abundance (%)	53.51				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Heteromastus filiformis	7480	7480.0		7480	7480
Streblospio benedicti	2560	2560.0		2560	2560
Marenzelleria viridis	1400	1400.0		1400	1400
Cyathura polita	520	520.0		520	520
Leptocheirus plumulosus	480	480.0		480	480
Rangia cuneata	480	480.0		480	480
Carinoma tremaphoros	400	400.0		400	400
Hypereteone heteropoda	280	280.0		280	280
Tubificoides spp.	240	240.0		240	240
Imm. Tubificid w/o Cap. Chaete	200	200.0		200	200

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Neanthes succinea</i>	200	200.0		200	200	
<i>Macoma mitchelli</i>	200	200.0		200	200	
<i>Edwardsia elegans</i>	160	160.0		160	160	
<i>Macoma balthica</i>	120	120.0		120	120	
<i>Hobsonia florida</i>	80	80.0		80	80	
Total Abundance	14800					
Total Abundance (w/o Epifauna)	14800					
Number of Taxa	15					
Number of Taxa (w/o Epifauna)	15					
BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Heteromastus filiformis</i>	2.2960	2.2960		2.2960	2.2960	
<i>Marenzelleria viridis</i>	1.1480	1.1480		1.1480	1.1480	
<i>Macoma mitchelli</i>	0.8160	0.8160		0.8160	0.8160	
<i>Rangia cuneata</i>	0.7320	0.7320		0.7320	0.7320	
<i>Macoma balthica</i>	0.5440	0.5440		0.5440	0.5440	
<i>Cyathura polita</i>	0.3120	0.3120		0.3120	0.3120	
<i>Neanthes succinea</i>	0.2880	0.2880		0.2880	0.2880	
<i>Carinoma tremaphoros</i>	0.0960	0.0960		0.0960	0.0960	
<i>Hypereteone heteropoda</i>	0.0880	0.0880		0.0880	0.0880	
<i>Streblospio benedicti</i>	0.0640	0.0640		0.0640	0.0640	
<i>Leptocheirus plumulosus</i>	0.0520	0.0520		0.0520	0.0520	
<i>Edwardsia elegans</i>	0.0160	0.0160		0.0160	0.0160	
<i>Hobsonia florida</i>	0.0040	0.0040		0.0040	0.0040	
<i>Tubificoides spp.</i>	0.0020	0.0020		0.0020	0.0020	
<i>Oligochaeta</i>	0.0020	0.0020		0.0020	0.0020	
Total Biomass	6.4600					
Total Biomass (w/o Epifauna)	6.4600					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-05		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.4		Salinity (ppt): 4.9		Temperature (C): 27.08	
Dissolved Oxygen (mg/l): 7.71		Sediment Silt-Clay (%): 66.05		Total Carbon (%): 3.08	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	1.34		Pollution Indicative Species Abundance (%)	80.56	
Abundance (#/m2)	4968		Pollution Indicative Species Biomass (%)	29.52	
Biomass (g/m2)	0.69		Pollution Sensitive Species Abundance (%)	2.78	
Carnivore-Omnivore Abundance (%)	7.41		Pollution Sensitive Species Biomass (%)	47.43	
Deep Deposit Feeder Abundance (%)	4.63				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	3933	3933.0		3933	3933
Hobsonia florida	391	391.0		391	391
Heteromastus filiformis	138	138.0		138	138
Tubificoides spp.	92	92.0		92	92
Cyathura polita	92	92.0		92	92
Procladius spp.	92	92.0		92	92
Chironomus spp.	69	69.0		69	69
Edwardsia elegans	46	46.0		46	46
Carinoma tremaphoros	46	46.0		46	46
Edotea triloba (Epi)	46	46.0		46	46

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Laeonereis culveri</i>	23	23.0		23	23	
<i>Marenzelleria viridis</i>	23	23.0		23	23	
<i>Rangia cuneata</i>	23	23.0		23	23	
Total Abundance	5014					
Total Abundance (w/o Epifauna)	4968					
Number of Taxa	13					
Number of Taxa (w/o Epifauna)	12					
BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Cyathura polita</i>	0.2576	0.2576		0.2576	0.2576	
<i>Streblospio benedicti</i>	0.2047	0.2047		0.2047	0.2047	
<i>Heteromastus filiformis</i>	0.0828	0.0828		0.0828	0.0828	
<i>Rangia cuneata</i>	0.0644	0.0644		0.0644	0.0644	
<i>Hobsonia florida</i>	0.0345	0.0345		0.0345	0.0345	
<i>Carinoma tremaphoros</i>	0.0299	0.0299		0.0299	0.0299	
<i>Edwardsia elegans</i>	0.0069	0.0069		0.0069	0.0069	
<i>Edotea triloba</i> (Epi)	0.0069	0.0069		0.0069	0.0069	
<i>Marenzelleria viridis</i>	0.0069	0.0069		0.0069	0.0069	
<i>Tubificoides</i> spp.	0.0023	0.0023		0.0023	0.0023	
<i>Laeonereis culveri</i>	0.0023	0.0023		0.0023	0.0023	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Total Biomass	0.7004					
Total Biomass (w/o Epifauna)	0.6935					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-06		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.3		Salinity (ppt): 6.1		Temperature (C): 26.74	
Dissolved Oxygen (mg/l): 4.32		Sediment Silt-Clay (%): 97.81		Total Carbon (%): 2.00	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.49		Pollution Indicative Species Abundance (%)	16.13	
Abundance (#/m2)	713		Pollution Indicative Species Biomass (%)	0.44	
Biomass (g/m2)	2.62		Pollution Sensitive Species Abundance (%)	48.39	
Carnivore-Omnivore Abundance (%)	12.90		Pollution Sensitive Species Biomass (%)	99.21	
Deep Deposit Feeder Abundance (%)	35.48				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Tubificoides spp.	253	253.0		253	253
Macoma balthica	138	138.0		138	138
Marenzelleria viridis	92	92.0		92	92
Streblospio benedicti	92	92.0		92	92
Cyathura polita	69	69.0		69	69
Rangia cuneata	46	46.0		46	46
Littoridinops tenuipes (Epi)	23	23.0		23	23
Hypereteone heteropoda	23	23.0		23	23
Total Abundance	736				
Total Abundance (w/o Epifauna)	713				
Number of Taxa	8				
Number of Taxa (w/o Epifauna)	7				

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	2.3230	2.3230		2.3230	2.3230	
Marenzelleria viridis	0.1426	0.1426		0.1426	0.1426	
Cyathura polita	0.1150	0.1150		0.1150	0.1150	
Rangia cuneata	0.0184	0.0184		0.0184	0.0184	
Tubificoides spp.	0.0092	0.0092		0.0092	0.0092	
Streblospio benedicti	0.0092	0.0092		0.0092	0.0092	
Littoridinops tenuipes (Epi)	0.0069	0.0069		0.0069	0.0069	
Hypereteone heteropoda	0.0023	0.0023		0.0023	0.0023	
Total Biomass	2.6266					
Total Biomass (w/o Epifauna)	2.6197					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-07		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.0		Salinity (ppt): 5.2		Temperature (C): 26.76	
Dissolved Oxygen (mg/l): 8.73		Sediment Silt-Clay (%): 88.94		Total Carbon (%): 3.60	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	1.58		Pollution Indicative Species Abundance (%)	73.50	
Abundance (#/m2)	9982		Pollution Indicative Species Biomass (%)	20.82	
Biomass (g/m2)	1.15		Pollution Sensitive Species Abundance (%)	2.30	
Carnivore-Omnivore Abundance (%)	11.52		Pollution Sensitive Species Biomass (%)	42.84	
Deep Deposit Feeder Abundance (%)	3.23				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	7153	7153.0		7153	7153
Hobsonia florida	1219	1219.0		1219	1219
Edwardsia elegans	667	667.0		667	667
Tubificoides spp.	253	253.0		253	253
Carinoma tremaphoros	184	184.0		184	184
Tanypus neopunctipennis	138	138.0		138	138
Cyathura polita	92	92.0		92	92
Heteromastus filiformis	69	69.0		69	69
Chironomus spp.	46	46.0		46	46
Marenzelleria viridis	46	46.0		46	46

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC ABUNDANCE (per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	46	46.0		46	46	
Rangia cuneata	46	46.0		46	46	
Neanthes succinea	23	23.0		23	23	
Edotea triloba (Epi)	23	23.0		23	23	
Total Abundance	10005					
Total Abundance (w/o Epifauna)	9982					
Number of Taxa	14					
Number of Taxa (w/o Epifauna)	13					
BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.2898	0.2898		0.2898	0.2898	
Streblospio benedicti	0.2392	0.2392		0.2392	0.2392	
Marenzelleria viridis	0.1817	0.1817		0.1817	0.1817	
Carinoma tremaphoros	0.1656	0.1656		0.1656	0.1656	
Edwardsia elegans	0.1403	0.1403		0.1403	0.1403	
Heteromastus filiformis	0.0644	0.0644		0.0644	0.0644	
Hobsonia florida	0.0391	0.0391		0.0391	0.0391	
Edotea triloba (Epi)	0.0322	0.0322		0.0322	0.0322	
Rangia cuneata	0.0184	0.0184		0.0184	0.0184	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Neanthes succinea	0.0023	0.0023		0.0023	0.0023	
Cyathura polita	0.0023	0.0023		0.0023	0.0023	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.1811					
Total Biomass (w/o Epifauna)	1.1420					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-08		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.3		Salinity (ppt): 5.7		Temperature (C): 27.05	
Dissolved Oxygen (mg/l): 4.59		Sediment Silt-Clay (%): 93.75		Total Carbon (%): 2.02	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.87		Pollution Indicative Species Abundance (%)	13.33	
Abundance (#/m2)	345		Pollution Indicative Species Biomass (%)	0.28	
Biomass (g/m2)	1.65		Pollution Sensitive Species Abundance (%)	60.00	
Carnivore-Omnivore Abundance (%)	26.67		Pollution Sensitive Species Biomass (%)	43.25	
Deep Deposit Feeder Abundance (%)	6.67				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Cyathura polita	69	69.0		69	69
Macoma balthica	69	69.0		69	69
Marenzelleria viridis	46	46.0		46	46
Streblospio benedicti	46	46.0		46	46
Macoma mitchelli	46	46.0		46	46
Carinoma tremaphoros	23	23.0		23	23
Heteromastus filiformis	23	23.0		23	23
Rangia cuneata	23	23.0		23	23
Total Abundance	345				
Total Abundance (w/o Epifauna)	345				
Number of Taxa	8				
Number of Taxa (w/o Epifauna)	8				

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.6279	0.6279		0.6279	0.6279	
Macoma balthica	0.4646	0.4646		0.4646	0.4646	
Heteromastus filiformis	0.2760	0.2760		0.2760	0.2760	
Marenzelleria viridis	0.1748	0.1748		0.1748	0.1748	
Cyathura polita	0.0644	0.0644		0.0644	0.0644	
Carinoma tremaphoros	0.0299	0.0299		0.0299	0.0299	
Rangia cuneata	0.0115	0.0115		0.0115	0.0115	
Streblospio benedicti	0.0046	0.0046		0.0046	0.0046	
Total Biomass	1.6537					
Total Biomass (w/o Epifauna)	1.6537					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-09		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.1		Salinity (ppt): 6.1		Temperature (C): 26.88	
Dissolved Oxygen (mg/l): 4.02		Sediment Silt-Clay (%): 99.35		Total Carbon (%): 2.75	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.71		Pollution Indicative Species Abundance (%)	17.86	
Abundance (#/m2)	644		Pollution Indicative Species Biomass (%)	0.22	
Biomass (g/m2)	3.17		Pollution Sensitive Species Abundance (%)	53.57	
Carnivore-Omnivore Abundance (%)	32.14		Pollution Sensitive Species Biomass (%)	79.57	
Deep Deposit Feeder Abundance (%)	14.29				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Macoma balthica	161	161.0		161	161
Cyathura polita	138	138.0		138	138
Streblospio benedicti	115	115.0		115	115
Tubificoides spp.	92	92.0		92	92
Carinoma tremaphoros	46	46.0		46	46
Rangia cuneata	46	46.0		46	46
Rhithropanopeus harrisi (Epi)	23	23.0		23	23
Neanthes succinea	23	23.0		23	23
Leptocheirus plumulosus	23	23.0		23	23
Total Abundance	667				
Total Abundance (w/o Epifauna)	644				
Number of Taxa	9				
Number of Taxa (w/o Epifauna)	8				

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	2.4495	2.4495		2.4495	2.4495	
Neanthes succinea	0.5911	0.5911		0.5911	0.5911	
Cyathura polita	0.0437	0.0437		0.0437	0.0437	
Carinoma tremaphoros	0.0322	0.0322		0.0322	0.0322	
Rangia cuneata	0.0322	0.0322		0.0322	0.0322	
Leptocheirus plumulosus	0.0138	0.0138		0.0138	0.0138	
Streblospio benedicti	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Rhithropanopeus harrisi (Epi)	0.0046	0.0046		0.0046	0.0046	
Total Biomass	3.1786					
Total Biomass (w/o Epifauna)	3.1740					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

Location: Swanson's Creek		Station: SC-10		Date: June 30, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.0		Salinity (ppt): 5.9		Temperature (C): 27.29	
Dissolved Oxygen (mg/l): 4.84		Sediment Silt-Clay (%): 96.98		Total Carbon (%): 2.65	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score:		Condition: Not Applicable		# Attributes Scored: 0	
	Value	Score		Value	Score
Shannon-Weiner Index	2.29		Pollution Indicative Species Abundance (%)	35.71	
Abundance (#/m2)	644		Pollution Indicative Species Biomass (%)	11.39	
Biomass (g/m2)	0.18		Pollution Sensitive Species Abundance (%)	28.57	
Carnivore-Omnivore Abundance (%)	7.14		Pollution Sensitive Species Biomass (%)	83.54	
Deep Deposit Feeder Abundance (%)	32.14				
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Streblospio benedicti	230	230.0		230	230
Tubificoides spp.	207	207.0		207	207
Rangia cuneata	69	69.0		69	69
Marenzelleria viridis	46	46.0		46	46
Cyathura polita	46	46.0		46	46
Littoridinops tenuipes (Epi)	23	23.0		23	23
Ameroculodes species complex	23	23.0		23	23
Macoma balthica	23	23.0		23	23
Total Abundance	667				
Total Abundance (w/o Epifauna)	644				
Number of Taxa	8				
Number of Taxa (w/o Epifauna)	7				

Continued . . .

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SPRING 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.0552	0.0552		0.0552	0.0552	
Marenzelleria viridis	0.0552	0.0552		0.0552	0.0552	
Rangia cuneata	0.0253	0.0253		0.0253	0.0253	
Streblospio benedicti	0.0207	0.0207		0.0207	0.0207	
Cyathura polita	0.0161	0.0161		0.0161	0.0161	
Ameroculodes species complex	0.0069	0.0069		0.0069	0.0069	
Littoridinops tenuipes (Epi)	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Total Biomass	0.1886					
Total Biomass (w/o Epifauna)	0.1817					

APPENDIX B

**BOTTOM ENVIRONMENT AND
BENTHOS SUMMER**

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-03		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.9		Salinity (ppt): 6.92		Temperature (C): 22.38		
Dissolved Oxygen (mg/l): 6.9		Sediment Silt-Clay (%): 95.85		Total Carbon (%): 2.71		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.42	1	Pollution Indicative Species Abundance (%)	0.00	5	
Abundance (#/m2)	276	1	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	4.54	3	Pollution Sensitive Species Abundance (%)	75.00		
Carnivore-Omnivore Abundance (%)	25.00		Pollution Sensitive Species Biomass (%)	97.77	3	
Deep Deposit Feeder Abundance (%)	8.33					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	184	184.0		184	184	
Carinoma tremaphoros	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	
Number of Species	4					
Number of Species (w/o Epifauna)	4					
Abundance	276					
Abundance (w/o Epifauna)	276					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.3401	4.3401		4.3401	4.3401	
Cyathura polita	0.1035	0.1035		0.1035	0.1035	
Heteromastus filiformis	0.0621	0.0621		0.0621	0.0621	
Carinoma tremaphoros	0.0391	0.0391		0.0391	0.0391	
Biomass	4.5448					
Biomass (w/o Epifauna)	4.5448					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-04		Date: September 6, 2000	
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m	
BOTTOM ENVIRONMENT					
Depth (m): 1.4		Salinity (ppt): 7.23		Temperature (C): 20.91	
Dissolved Oxygen (mg/l): 6.5		Sediment Silt-Clay (%): 82.07		Total Carbon (%): 2.34	
BENTHIC INDEX OF BIOTIC INTEGRITY					
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5	
		Value	Score	Value	Score
Shannon-Weiner Index		1.87	3	Pollution Indicative Species Abundance (%)	48.72
Abundance (#/m2)		897	3	Pollution Indicative Species Biomass (%)	5.13
Biomass (g/m2)		1.55	3	Pollution Sensitive Species Abundance (%)	15.38
Carnivore-Omnivore Abundance (%)		56.41		Pollution Sensitive Species Biomass (%)	86.92
Deep Deposit Feeder Abundance (%)		2.56			5
BENTHIC ABUNDANCE (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
Coelotanypus spp.	414	414.0		414	414
Leptocheirus plumulosus	299	299.0		299	299
Melita nitida (Epi)	161	161.0		161	161
Cyathura polita	92	92.0		92	92
Macoma balthica	46	46.0		46	46
Tubificoides spp.	23	23.0		23	23
Streblospio benedicti	23	23.0		23	23
Number of Species	7				
Number of Species (w/o Epifauna)	6				
Abundance	1058				
Abundance (w/o Epifauna)	897				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	0.9108	0.9108		0.9108	0.9108	
Cyathura polita	0.4347	0.4347		0.4347	0.4347	
Leptocheirus plumulosus	0.1219	0.1219		0.1219	0.1219	
Coelotanypus spp.	0.0782	0.0782		0.0782	0.0782	
Melita nitida (Epi)	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.5721					
Biomass (w/o Epifauna)	1.5652					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-05		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.0		Salinity (ppt): 5.67		Temperature (C): 21.56		
Dissolved Oxygen (mg/l): 8.5		Sediment Silt-Clay (%): 40.62		Total Carbon (%): 2.30		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.32	3	Pollution Indicative Species Abundance (%)	20.51	1	
Abundance (#/m2)	1794	5	Pollution Indicative Species Biomass (%)	0.32		
Biomass (g/m2)	0.71	1	Pollution Sensitive Species Abundance (%)	8.97		
Carnivore-Omnivore Abundance (%)	15.38		Pollution Sensitive Species Biomass (%)	64.61	3	
Deep Deposit Feeder Abundance (%)	53.85					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	828	828.0		828	828	
Streblospio benedicti	368	368.0		368	368	
Carinoma tremaphoros	184	184.0		184	184	
Heteromastus filiformis	138	138.0		138	138	
Leptocheirus plumulosus	115	115.0		115	115	
Cyathura polita	92	92.0		92	92	
Rhithropanopeus harrisi (Epi)	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Rangia cuneata	23	23.0		23	23	
Number of Species	10					
Number of Species (w/o Epifauna)	9					
Abundance	1817					
Abundance (w/o Epifauna)	1794					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Rangia cuneata	0.1794	0.1794		0.1794	0.1794	
Cyathura polita	0.1495	0.1495		0.1495	0.1495	
Carinoma tremaphoros	0.1081	0.1081		0.1081	0.1081	
Marenzelleria viridis	0.1058	0.1058		0.1058	0.1058	
Heteromastus filiformis	0.0966	0.0966		0.0966	0.0966	
Rhithropanopeus harrisi (Epi)	0.0713	0.0713		0.0713	0.0713	
Leptocheirus plumulosus	0.0414	0.0414		0.0414	0.0414	
Macoma balthica	0.0230	0.0230		0.0230	0.0230	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Streblospio benedicti	0.0023	0.0023		0.0023	0.0023	
Biomass	0.7797					
Biomass (w/o Epifauna)	0.7084					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-06		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.3		Salinity (ppt): 6.60		Temperature (C): 21.93		
Dissolved Oxygen (mg/l): 6.7		Sediment Silt-Clay (%): 96.92		Total Carbon (%): 2.51		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.69	5	Pollution Indicative Species Abundance (%)	9.09	5	
Abundance (#/m2)	2783	3	Pollution Indicative Species Biomass (%)	0.02		
Biomass (g/m2)	5.56	5	Pollution Sensitive Species Abundance (%)	24.79		
Carnivore-Omnivore Abundance (%)	14.05		Pollution Sensitive Species Biomass (%)	91.06	5	
Deep Deposit Feeder Abundance (%)	31.40					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	943	943.0		943	943	
Macoma balthica	529	529.0		529	529	
Tubificoides spp.	437	437.0		437	437	
Imm. Tubificid w/o Cap. Chaete	230	230.0		230	230	
Heteromastus filiformis	207	207.0		207	207	
Carinoma tremaphoros	184	184.0		184	184	
Cyathura polita	161	161.0		161	161	
Neanthes succinea	46	46.0		46	46	
Streblospio benedicti	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	11					
Number of Species (w/o Epifauna)	10					
Abundance	2806					
Abundance (w/o Epifauna)	2783					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.8806	4.8806		4.8806	4.8806	
Leptocheirus plumulosus	0.2852	0.2852		0.2852	0.2852	
Cyathura polita	0.1817	0.1817		0.1817	0.1817	
Macoma mitchelli	0.1541	0.1541		0.1541	0.1541	
Neanthes succinea	0.0230	0.0230		0.0230	0.0230	
Heteromastus filiformis	0.0184	0.0184		0.0184	0.0184	
Tubificoides spp.	0.0115	0.0115		0.0115	0.0115	
Carinoma tremaphoros	0.0023	0.0023		0.0023	0.0023	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	5.5603					
Biomass (w/o Epifauna)	5.5491					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-09		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 5.89		Temperature (C): 22.11		
Dissolved Oxygen (mg/l): 8.9		Sediment Silt-Clay (%): 91.77		Total Carbon (%): 2.39		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.37	1	Pollution Indicative Species Abundance (%)	6.67	5	
Abundance (#/m2)	1035	3	Pollution Indicative Species Biomass (%)	0.47		
Biomass (g/m2)	0.24	1	Pollution Sensitive Species Abundance (%)	8.89		
Carnivore-Omnivore Abundance (%)	8.89		Pollution Sensitive Species Biomass (%)	85.31	5	
Deep Deposit Feeder Abundance (%)	82.22					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	805	805.0		805	805	
Limnodrilus hoffmeisteri	46	46.0		46	46	
Leptocheirus plumulosus	46	46.0		46	46	
Cyathura polita	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Coelotanypus spp.	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	8					
Abundance	1058					
Abundance (w/o Epifauna)	1035					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Cyathura polita	0.1012	0.1012		0.1012	0.1012	
Macoma balthica	0.0989	0.0989		0.0989	0.0989	
Leptocheirus plumulosus	0.0207	0.0207		0.0207	0.0207	
Carinoma tremaphoros	0.0115	0.0115		0.0115	0.0115	
Marenzelleria viridis	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Coelotanypus spp.	0.0012	0.0012		0.0012	0.0012	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	0.2438					
Biomass (w/o Epifauna)	0.2426					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-11		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.4		Salinity (ppt): 6.24		Temperature (C): 18.81		
Dissolved Oxygen (mg/l): 5.0		Sediment Silt-Clay (%): 98.42		Total Carbon (%): 2.77		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.40		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.34	3	Pollution Indicative Species Abundance (%)	16.07	3	
Abundance (#/m2)	1288	3	Pollution Indicative Species Biomass (%)	0.21		
Biomass (g/m2)	4.90	3	Pollution Sensitive Species Abundance (%)	35.71		
Carnivore-Omnivore Abundance (%)	16.07		Pollution Sensitive Species Biomass (%)	98.69	5	
Deep Deposit Feeder Abundance (%)	48.21					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	483	483.0		483	483	
Macoma balthica	391	391.0		391	391	
Imm. Tubificid w/o Cap. Chaete	138	138.0		138	138	
Carinoma tremaphoros	92	92.0		92	92	
Cyathura polita	69	69.0		69	69	
Coelotanypus spp.	46	46.0		46	46	
Leptocheirus plumulosus	46	46.0		46	46	
Streblospio benedicti	23	23.0		23	23	
Number of Species	8					
Number of Species (w/o Epifauna)	8					
Abundance	1288					
Abundance (w/o Epifauna)	1288					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.5287	4.5287		4.5287	4.5287	
Cyathura polita	0.3082	0.3082		0.3082	0.3082	
Carinoma tremaphoros	0.0345	0.0345		0.0345	0.0345	
Leptocheirus plumulosus	0.0161	0.0161		0.0161	0.0161	
Coelotanypus spp.	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	4.9013					
Biomass (w/o Epifauna)	4.9013					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-12		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.4		Salinity (ppt): 5.99		Temperature (C): 18.86		
Dissolved Oxygen (mg/l): 5.4		Sediment Silt-Clay (%): 99.25		Total Carbon (%): 2.91		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.77	3	Pollution Indicative Species Abundance (%)	7.95	5	
Abundance (#/m2)	2024	5	Pollution Indicative Species Biomass (%)	0.18		
Biomass (g/m2)	5.11	5	Pollution Sensitive Species Abundance (%)	13.64		
Carnivore-Omnivore Abundance (%)	9.09		Pollution Sensitive Species Biomass (%)	89.20	5	
Deep Deposit Feeder Abundance (%)	73.86					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	1334	1334.0		1334	1334	
Macoma balthica	253	253.0		253	253	
Carinoma tremaphoros	138	138.0		138	138	
Imm. Tubificid w/o Cap. Chaete	138	138.0		138	138	
Leptocheirus plumulosus	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Coelotanypus spp.	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	9					
Abundance	2024					
Abundance (w/o Epifauna)	2024					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter) - Contd.						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.3654	4.3654		4.3654	4.3654	
Macoma mitchelli	0.4439	0.4439		0.4439	0.4439	
Cyathura polita	0.1955	0.1955		0.1955	0.1955	
Carinoma tremaphoros	0.0759	0.0759		0.0759	0.0759	
Tubificoides spp.	0.0184	0.0184		0.0184	0.0184	
Coelotanypus spp.	0.0092	0.0092		0.0092	0.0092	
Leptocheirus plumulosus	0.0023	0.0023		0.0023	0.0023	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	5.1129					
Biomass (w/o Epifauna)	5.1129					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-13		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.9		Salinity (ppt): 6.12		Temperature (C): 19.27		
Dissolved Oxygen (mg/l): 4.4		Sediment Silt-Clay (%): 2.05		Total Carbon (%): 0.06		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.62	5	Pollution Indicative Species Abundance (%)	44.25	1	
Abundance (#/m2)	2599	3	Pollution Indicative Species Biomass (%)	2.50		
Biomass (g/m2)	1.47	3	Pollution Sensitive Species Abundance (%)	11.50		
Carnivore-Omnivore Abundance (%)	33.63		Pollution Sensitive Species Biomass (%)	76.50	3	
Deep Deposit Feeder Abundance (%)	11.50					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	1012	1012.0		1012	1012	
Laonereis culveri	621	621.0		621	621	
Heteromastus filiformis	276	276.0		276	276	
Rangia cuneata	161	161.0		161	161	
Hypereteone heteropoda	138	138.0		138	138	
Leptocheirus plumulosus	138	138.0		138	138	
Marenzelleria viridis	92	92.0		92	92	
Carinoma tremaphoros	46	46.0		46	46	
Cyathura polita	46	46.0		46	46	
Tubificoides spp.	23	23.0		23	23	
Neanthes succinea	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Apocorophium lacustre (Epi)	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	13					
Number of Species (w/o Epifauna)	12					
Abundance	2622					
Abundance (w/o Epifauna)	2599					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Rangia cuneata</i>	1.0350	1.0350		1.0350	1.0350	
<i>Laonereis culveri</i>	0.1196	0.1196		0.1196	0.1196	
<i>Macoma mitchelli</i>	0.0874	0.0874		0.0874	0.0874	
<i>Heteromastus filiformis</i>	0.0736	0.0736		0.0736	0.0736	
<i>Marenzelleria viridis</i>	0.0575	0.0575		0.0575	0.0575	
<i>Cyathura polita</i>	0.0345	0.0345		0.0345	0.0345	
<i>Streblospio benedicti</i>	0.0230	0.0230		0.0230	0.0230	
<i>Leptocheirus plumulosus</i>	0.0161	0.0161		0.0161	0.0161	
<i>Hypereteone heteropoda</i>	0.0138	0.0138		0.0138	0.0138	
<i>Carinoma tremaphoros</i>	0.0092	0.0092		0.0092	0.0092	
<i>Neanthes succinea</i>	0.0023	0.0023		0.0023	0.0023	
<i>Tubificoides</i> spp.	0.0012	0.0012		0.0012	0.0012	
<i>Apocorophium lacustre</i> (Epi)	0.0012	0.0012		0.0012	0.0012	
Biomass	1.4743					
Biomass (w/o Epifauna)	1.4711					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-14		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.4		Salinity (ppt): 6.57		Temperature (C): 19.28		
Dissolved Oxygen (mg/l): 4.0		Sediment Silt-Clay (%): 91.90		Total Carbon (%): 2.72		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.28	3	Pollution Indicative Species Abundance (%)	12.50	3	
Abundance (#/m2)	368	1	Pollution Indicative Species Biomass (%)	0.24		
Biomass (g/m2)	1.94	3	Pollution Sensitive Species Abundance (%)	50.00		
Carnivore-Omnivore Abundance (%)	18.75		Pollution Sensitive Species Biomass (%)	99.47	3	
Deep Deposit Feeder Abundance (%)	25.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	138	138.0		138	138	
Tubificoides spp.	92	92.0		92	92	
Leptocheirus plumulosus	46	46.0		46	46	
Cyathura polita	46	46.0		46	46	
Coelotanypus spp.	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Number of Species	6					
Number of Species (w/o Epifauna)	6					
Abundance	368					
Abundance	368					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.7641	1.7641		1.7641	1.7641	
Cyathura polita	0.1702	0.1702		0.1702	0.1702	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Coelotanypus spp.	0.0023	0.0023		0.0023	0.0023	
Streblospio benedicti	0.0023	0.0023		0.0023	0.0023	
Leptocheirus plumulosus	0.0012	0.0012		0.0012	0.0012	
Total Biomass	1.9445					
Biomass (w/o Epifauna)	1.9445					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Hunting Creek		Station: HC-15		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.4		Salinity (ppt): 6.63		Temperature (C): 19.07		
Dissolved Oxygen (mg/l): 4.4		Sediment Silt-Clay (%): 97.32		Total Carbon (%): 2.80		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.20		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.23	3	Pollution Indicative Species Abundance (%)	40.00	1	
Abundance (#/m2)	460	1	Pollution Indicative Species Biomass (%)	1.12		
Biomass (g/m2)	1.64	3	Pollution Sensitive Species Abundance (%)	25.00		
Carnivore-Omnivore Abundance (%)	45.00		Pollution Sensitive Species Biomass (%)	97.69	3	
Deep Deposit Feeder Abundance (%)	35.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	161	161.0		161	161	
Tubificoides spp.	138	138.0		138	138	
Macoma balthica	69	69.0		69	69	
Cyathura polita	46	46.0		46	46	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	6					
Abundance	483					
Abundance (w/o Epifauna)	460					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.3754	1.3754		1.3754	1.3754	
Cyathura polita	0.2300	0.2300		0.2300	0.2300	
Coelotanypus spp.	0.0184	0.0184		0.0184	0.0184	
Leptocheirus plumulosus	0.0161	0.0161		0.0161	0.0161	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	1.6445					
Biomass (w/o Epifauna)	1.6433					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-13		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt): 8.84		Temperature (C): 19.55		
Dissolved Oxygen (mg/l): 4.4		Sediment Silt-Clay (%): 28.84		Total Carbon (%): 1.52		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	3.15	5	Pollution Indicative Species Abundance (%)	2.15	5	
Abundance (#/m2)	2139	5	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	4.97	3	Pollution Sensitive Species Abundance (%)	31.18		
Carnivore-Omnivore Abundance (%)	41.94		Pollution Sensitive Species Biomass (%)	82.90	5	
Deep Deposit Feeder Abundance (%)	20.43					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Carinoma tremaphoros	483	483.0		483	483	
Leptocheirus plumulosus	345	345.0		345	345	
Macoma balthica	299	299.0		299	299	
Cyathura polita	276	276.0		276	276	
Heteromastus filiformis	207	207.0		207	207	
Tubificoides spp.	184	184.0		184	184	
Macoma mitchelli	115	115.0		115	115	
Neanthes succinea	69	69.0		69	69	
Imm. Tubificid w/o Cap. Chaete	46	46.0		46	46	
Glycinde solitaria	46	46.0		46	46	
Podarkeopsis levifuscina	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Rangia cuneata	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	13					
Number of Species (w/o Epifauna)	13					
Abundance	2139					
Abundance (w/o Epifauna)	2139					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Macoma balthica</i>	3.1970	3.1970		3.1970	3.1970	
<i>Cyathura polita</i>	0.5336	0.5336		0.5336	0.5336	
<i>Macoma mitchelli</i>	0.5037	0.5037		0.5037	0.5037	
<i>Rangia cuneata</i>	0.3634	0.3634		0.3634	0.3634	
<i>Heteromastus filiformis</i>	0.1472	0.1472		0.1472	0.1472	
<i>Carinoma tremaphoros</i>	0.0920	0.0920		0.0920	0.0920	
<i>Leptocheirus plumulosus</i>	0.0713	0.0713		0.0713	0.0713	
<i>Neanthes succinea</i>	0.0322	0.0322		0.0322	0.0322	
<i>Marenzelleria viridis</i>	0.0230	0.0230		0.0230	0.0230	
<i>Glycinde solitaria</i>	0.0023	0.0023		0.0023	0.0023	
<i>Tubificoides</i> spp.	0.0012	0.0012		0.0012	0.0012	
<i>Podarkeopsis levifuscina</i>	0.0012	0.0012		0.0012	0.0012	
<i>Oligochaeta</i>	0.0012	0.0012		0.0012	0.0012	
Biomass	4.6969					
Biomass	4.6969					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-14		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.1		Salinity (ppt): 7.70		Temperature (C): 19.35		
Dissolved Oxygen (mg/l): 3.7		Sediment Silt-Clay (%): 66.23		Total Carbon (%): 1.81		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.20		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	3.17	5	Pollution Indicative Species Abundance (%)	35.62	1	
Abundance (#/m2)	1679	5	Pollution Indicative Species Biomass (%)	1.45		
Biomass (g/m2)	5.64	5	Pollution Sensitive Species Abundance (%)	28.77		
Carnivore-Omnivore Abundance (%)	34.25		Pollution Sensitive Species Biomass (%)	85.10	5	
Deep Deposit Feeder Abundance (%)	21.92					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	345	345.0		345	345	
Macoma balthica	322	322.0		322	322	
Leptocheirus plumulosus	230	230.0		230	230	
Imm. Tubificid w/o Cap. Chaete	207	207.0		207	207	
Cyathura polita	138	138.0		138	138	
Tubificoides spp.	115	115.0		115	115	
Macoma mitchelli	115	115.0		115	115	
Carinoma tremaphoros	46	46.0		46	46	
Heteromastus filiformis	46	46.0		46	46	
Neanthes succinea	46	46.0		46	46	
Streblospio benedicti	46	46.0		46	46	
Marenzelleria viridis	23	23.0		23	23	
Number of Species	12					
Number of Species (w/o Epifauna)	12					
Abundance	1679					
Abundance (w/o Epifauna)	1679					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.3999	4.3999		4.3999	4.3999	
Macoma mitchelli	0.3657	0.3657		0.3657	0.3657	
Cyathura polita	0.3220	0.3220		0.3220	0.3220	
Neanthes succinea	0.2783	0.2783		0.2783	0.2783	
Coelotanypus spp.	0.0805	0.0805		0.0805	0.0805	
Marenzelleria viridis	0.0805	0.0805		0.0805	0.0805	
Heteromastus filiformis	0.0575	0.0575		0.0575	0.0575	
Leptocheirus plumulosus	0.0529	0.0529		0.0529	0.0529	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Carinoma tremaphoros	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	5.6431					
Biomass (w/o Epifauna)	5.6431					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-15		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 5.5		Salinity (ppt): 8.86		Temperature (C): 19.58		
Dissolved Oxygen (mg/l): 3.6		Sediment Silt-Clay (%): 95.43		Total Carbon (%): 2.41		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.56	5	Pollution Indicative Species Abundance (%)	3.60	5	
Abundance (#/m2)	3197	3	Pollution Indicative Species Biomass (%)	0.10		
Biomass (g/m2)	9.52	5	Pollution Sensitive Species Abundance (%)	18.71		
Carnivore-Omnivore Abundance (%)	16.55		Pollution Sensitive Species Biomass (%)	87.56	5	
Deep Deposit Feeder Abundance (%)	18.71					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	1403	1403.0		1403	1403	
Tubificoides spp.	506	506.0		506	506	
Macoma balthica	483	483.0		483	483	
Carinoma tremaphoros	299	299.0		299	299	
Neanthes succinea	115	115.0		115	115	
Cyathura polita	92	92.0		92	92	
Macoma mitchelli	92	92.0		92	92	
Imm. Tubificid w/o Cap. Chaete	46	46.0		46	46	
Heteromastus filiformis	46	46.0		46	46	
Streblospio benedicti	46	46.0		46	46	
Coelotanypus spp.	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Melita nitida (Epi)	23	23.0		23	23	
Leucon americanus	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	14					
Number of Species (w/o Epifauna)	13					
Abundance	3220					
Abundance (w/o Epifauna)	3197					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Macoma balthica</i>	8.1029	8.1029		8.1029	8.1029	
<i>Neanthes succinea</i>	0.3634	0.3634		0.3634	0.3634	
<i>Macoma mitchelli</i>	0.3404	0.3404		0.3404	0.3404	
<i>Leptocheirus plumulosus</i>	0.2530	0.2530		0.2530	0.2530	
<i>Cyathura polita</i>	0.2093	0.2093		0.2093	0.2093	
<i>Heteromastus filiformis</i>	0.1288	0.1288		0.1288	0.1288	
<i>Carinoma tremaphoros</i>	0.0759	0.0759		0.0759	0.0759	
<i>Marenzelleria viridis</i>	0.0207	0.0207		0.0207	0.0207	
<i>Tubificoides</i> spp.	0.0069	0.0069		0.0069	0.0069	
<i>Coelotanypus</i> spp.	0.0069	0.0069		0.0069	0.0069	
<i>Leucon americanus</i>	0.0046	0.0046		0.0046	0.0046	
<i>Streblospio benedicti</i>	0.0023	0.0023		0.0023	0.0023	
<i>Melita nitida</i> (Epi)	0.0023	0.0023		0.0023	0.0023	
<i>Oligochaeta</i>	0.0012	0.0012		0.0012	0.0012	
Biomass	9.5185					
Biomass (w/o Epifauna)	9.5162					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-16		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.5		Salinity (ppt): 6.86		Temperature (C): 20.36		
Dissolved Oxygen (mg/l): 5.6		Sediment Silt-Clay (%): 88.90		Total Carbon (%): 2.30		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 5.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.64	5	Pollution Indicative Species Abundance (%)	7.92	5	
Abundance (#/m2)	2323	5	Pollution Indicative Species Biomass (%)	0.02		
Biomass (g/m2)	6.59	5	Pollution Sensitive Species Abundance (%)	32.67		
Carnivore-Omnivore Abundance (%)	13.86		Pollution Sensitive Species Biomass (%)	97.75	5	
Deep Deposit Feeder Abundance (%)	47.52					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	759	759.0		759	759	
Macoma balthica	644	644.0		644	644	
Carinoma tremaphoros	184	184.0		184	184	
Heteromastus filiformis	184	184.0		184	184	
Leptocheirus plumulosus	184	184.0		184	184	
Imm. Tubificid w/o Cap. Chaete	161	161.0		161	161	
Cyathura polita	115	115.0		115	115	
Macoma mitchelli	46	46.0		46	46	
Neanthes succinea	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Number of Species	10					
Number of Species (w/o Epifauna)	10					
Abundance	2323					
Abundance (w/o Epifauna)	2323					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	6.0835	6.0835		6.0835	6.0835	
Cyathura polita	0.3588	0.3588		0.3588	0.3588	
Carinoma tremaphoros	0.0621	0.0621		0.0621	0.0621	
Heteromastus filiformis	0.0483	0.0483		0.0483	0.0483	
Macoma mitchelli	0.0322	0.0322		0.0322	0.0322	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Neanthes succinea	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Leptocheirus plumulosus	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	6.5906					
Biomass (w/o Epifauna)	6.5906					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-17		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.5		Salinity (ppt): 7.94		Temperature (C): 19.49		
Dissolved Oxygen (mg/l): 3.8		Sediment Silt-Clay (%): 89.93		Total Carbon (%): 2.99		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.08	3	Pollution Indicative Species Abundance (%)	6.73	5	
Abundance (#/m2)	2392	5	Pollution Indicative Species Biomass (%)	0.18		
Biomass (g/m2)	6.46	5	Pollution Sensitive Species Abundance (%)	24.04		
Carnivore-Omnivore Abundance (%)	11.54		Pollution Sensitive Species Biomass (%)	94.07	5	
Deep Deposit Feeder Abundance (%)	62.50					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	1357	1357.0		1357	1357	
Macoma balthica	460	460.0		460	460	
Leptocheirus plumulosus	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Imm. Tubificid w/o Cap. Chaete	92	92.0		92	92	
Carinoma tremaphoros	69	69.0		69	69	
Coelotanypus spp.	69	69.0		69	69	
Heteromastus filiformis	46	46.0		46	46	
Neanthes succinea	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	10					
Number of Species (w/o Epifauna)	10					
Abundance	2392					
Abundance (w/o Epifauna)	2392					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	5.6465	5.6465		5.6465	5.6465	
Cyathura polita	0.4278	0.4278		0.4278	0.4278	
Macoma mitchelli	0.2231	0.2231		0.2231	0.2231	
Neanthes succinea	0.0575	0.0575		0.0575	0.0575	
Leptocheirus plumulosus	0.0483	0.0483		0.0483	0.0483	
Carinoma tremaphoros	0.0299	0.0299		0.0299	0.0299	
Coelotanypus spp.	0.0115	0.0115		0.0115	0.0115	
Heteromastus filiformis	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	6.4572					
Biomass (w/o Epifauna)	6.4572					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-18		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.1		Salinity (ppt): 6.49		Temperature (C): 19.21		
Dissolved Oxygen (mg/l): 4.6		Sediment Silt-Clay (%): 88.56		Total Carbon (%): 2.18		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.60		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.77	5	Pollution Indicative Species Abundance (%)	5.43	5	
Abundance (#/m2)	2116	5	Pollution Indicative Species Biomass (%)	1.60		
Biomass (g/m2)	2.66	3	Pollution Sensitive Species Abundance (%)	20.65		
Carnivore-Omnivore Abundance (%)	16.30		Pollution Sensitive Species Biomass (%)	87.56	5	
Deep Deposit Feeder Abundance (%)	35.87					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	667	667.0		667	667	
Leptocheirus plumulosus	644	644.0		644	644	
Cyathura polita	184	184.0		184	184	
Macoma balthica	184	184.0		184	184	
Melita nitida (Epi)	92	92.0		92	92	
Carinoma tremaphoros	69	69.0		69	69	
Neanthes succinea	69	69.0		69	69	
Macoma mitchelli	69	69.0		69	69	
Imm. Tubificid w/o Cap. Chaete	46	46.0		46	46	
Heteromastus filiformis	46	46.0		46	46	
Marenzelleria viridis	46	46.0		46	46	
Streblospio benedicti	46	46.0		46	46	
Hypereteone heteropoda	23	23.0		23	23	
Rangia cuneata	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	14				
Number of Species (w/o Epifauna)	13				
Abundance	2208				
Abundance (w/o Epifauna)	2116				
BENTHIC BIOMASS (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max Cum %
Macoma balthica	1.8377	1.8377		1.8377	1.8377
Cyathura polita	0.2530	0.2530		0.2530	0.2530
Rangia cuneata	0.2047	0.2047		0.2047	0.2047
Macoma mitchelli	0.1150	0.1150		0.1150	0.1150
Leptocheirus plumulosus	0.1058	0.1058		0.1058	0.1058
Hypereteone heteropoda	0.0414	0.0414		0.0414	0.0414
Marenzelleria viridis	0.0368	0.0368		0.0368	0.0368
Neanthes succinea	0.0322	0.0322		0.0322	0.0322
Heteromastus filiformis	0.0161	0.0161		0.0161	0.0161
Carinoma tremaphoros	0.0138	0.0138		0.0138	0.0138
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012
Melita nitida (Epi)	0.0012	0.0012		0.0012	0.0012
Oligochaeta	0.0012	0.0012		0.0012	0.0012
Biomass	2.6646				
Biomass (w/o Epifauna)	2.6634				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-19		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt): 6.41		Temperature (C): 20.39		
Dissolved Oxygen (mg/l): 3.6		Sediment Silt-Clay (%): 18.74		Total Carbon (%): 0.88		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.40		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	3.01	5	Pollution Indicative Species Abundance (%)	13.45	3	
Abundance (#/m2)	2737	3	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	181.06	1	Pollution Sensitive Species Abundance (%)	31.93		
Carnivore-Omnivore Abundance (%)	26.05		Pollution Sensitive Species Biomass (%)	99.76	5	
Deep Deposit Feeder Abundance (%)	28.57					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	690	690.0		690	690	
Rangia cuneata	667	667.0		667	667	
Streblospio benedicti	345	345.0		345	345	
Carinoma tremaphoros	253	253.0		253	253	
Neanthes succinea	253	253.0		253	253	
Laeonereis culveri	138	138.0		138	138	
Marenzelleria viridis	92	92.0		92	92	
Heteromastus filiformis	69	69.0		69	69	
Polydora cornuta	69	69.0		69	69	
Cyathura polita	69	69.0		69	69	
Macoma balthica	46	46.0		46	46	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Mytilopsis leucophaeata (Epi)	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Gammarus daiberi (Epi)	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	15					
Number of Species (w/o Epifauna)	13					
Abundance	2783					
Abundance (w/o Epifauna)	2737					
BENTHIC BIOMASS (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Rangia cuneata</i>	179.9911	179.9911		179.9911	179.9911	
<i>Marenzelleria viridis</i>	0.3289	0.3289		0.3289	0.3289	
<i>Neanthes succinea</i>	0.2760	0.2760		0.2760	0.2760	
<i>Macoma balthica</i>	0.2507	0.2507		0.2507	0.2507	
<i>Mytilopsis leucophaeata</i> (Epi)	0.2392	0.2392		0.2392	0.2392	
<i>Laeonereis culveri</i>	0.0690	0.0690		0.0690	0.0690	
<i>Cyathura polita</i>	0.0621	0.0621		0.0621	0.0621	
<i>Heteromastus filiformis</i>	0.0368	0.0368		0.0368	0.0368	
<i>Carinoma tremaphoros</i>	0.0345	0.0345		0.0345	0.0345	
<i>Polydora cornuta</i>	0.0092	0.0092		0.0092	0.0092	
<i>Gammarus</i> spp. (Epi)	0.0069	0.0069		0.0069	0.0069	
<i>Tubificoides</i> spp.	0.0012	0.0012		0.0012	0.0012	
<i>Streblospio benedicti</i>	0.0012	0.0012		0.0012	0.0012	
<i>Leptocheirus plumulosus</i>	0.0012	0.0012		0.0012	0.0012	
<i>Oligochaeta</i>	0.0012	0.0012		0.0012	0.0012	
Biomass	181.3090					
Biomass (w/o Epifauna)	181.0629					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-20		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.9		Salinity (ppt): 6.13		Temperature (C): 19.48		
Dissolved Oxygen (mg/l): 4.2		Sediment Silt-Clay (%): 73.78		Total Carbon (%): 2.72		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	3.01	5	Pollution Indicative Species Abundance (%)	36.51	1	
Abundance (#/m2)	2898	3	Pollution Indicative Species Biomass (%)	0.04		
Biomass (g/m2)	117.59	1	Pollution Sensitive Species Abundance (%)	12.70		
Carnivore-Omnivore Abundance (%)	23.02		Pollution Sensitive Species Biomass (%)	99.58	5	
Deep Deposit Feeder Abundance (%)	27.78					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	920	920.0		920	920	
Tubificoides spp.	621	621.0		621	621	
Neanthes succinea	299	299.0		299	299	
Carinoma tremaphoros	253	253.0		253	253	
Rangia cuneata	207	207.0		207	207	
Rhithropanopeus harrisi (Epi)	138	138.0		138	138	
Polydora cornuta	138	138.0		138	138	
Imm. Tubificid w/o Cap. Chaete	115	115.0		115	115	
Cyathura polita	92	92.0		92	92	
Gammarus daiberi (Epi)	92	92.0		92	92	
Heteromastus filiformis	69	69.0		69	69	
Marenzelleria viridis	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Hypereteone heteropoda	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Ameroculodes species complex	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	17				
Number of Species (w/o Epifauna)	15				
Abundance	3122				
Abundance (w/o Epifauna)	2898				
BENTHIC BIOMASS (per sq. meter)					
	Rep 1	Mean	Std.Dev	Min	Max
					Cum %
Rangia cuneata	116.4766	116.4766		116.4766	116.4766
Rhithropanopeus harrisi (Epi)	0.7636	0.7636		0.7636	0.7636
Macoma balthica	0.3105	0.3105		0.3105	0.3105
Neanthes succinea	0.2921	0.2921		0.2921	0.2921
Cyathura polita	0.1679	0.1679		0.1679	0.1679
Marenzelleria viridis	0.1403	0.1403		0.1403	0.1403
Macoma mitchelli	0.0782	0.0782		0.0782	0.0782
Carinoma tremaphoros	0.0391	0.0391		0.0391	0.0391
Hypereteone heteropoda	0.0368	0.0368		0.0368	0.0368
Heteromastus filiformis	0.0253	0.0253		0.0253	0.0253
Gammarus spp. (Epi)	0.0161	0.0161		0.0161	0.0161
Streblospio benedicti	0.0115	0.0115		0.0115	0.0115
Polydora cornuta	0.0046	0.0046		0.0046	0.0046
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023
Leptocheirus plumulosus	0.0012	0.0012		0.0012	0.0012
Ameroculodes species complex	0.0012	0.0012		0.0012	0.0012
Oligochaeta	0.0012	0.0012		0.0012	0.0012
Biomass	118.3683				
Biomass (w/o Epifauna)	117.5886				

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-21		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.8		Salinity (ppt): 5.90		Temperature (C): 20.20		
Dissolved Oxygen (mg/l): 4.6		Sediment Silt-Clay (%): 92.04		Total Carbon (%): 2.84		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.30	3	Pollution Indicative Species Abundance (%)	15.52	3	
Abundance (#/m2)	1334	3	Pollution Indicative Species Biomass (%)	0.01		
Biomass (g/m2)	61.32	1	Pollution Sensitive Species Abundance (%)	10.34		
Carnivore-Omnivore Abundance (%)	20.69		Pollution Sensitive Species Biomass (%)	99.73	5	
Deep Deposit Feeder Abundance (%)	48.28					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	621	621.0		621	621	
Carinoma tremaphoros	253	253.0		253	253	
Streblospio benedicti	207	207.0		207	207	
Marenzelleria viridis	69	69.0		69	69	
Macoma mitchelli	69	69.0		69	69	
Rangia cuneata	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	
Leptocheirus plumulosus	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	9					
Abundance	1334					
Abundance (w/o Epifauna)	1334					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Rangia cuneata	60.3934	60.3934		60.3934	60.3934	
Marenzelleria viridis	0.7130	0.7130		0.7130	0.7130	
Macoma mitchelli	0.0621	0.0621		0.0621	0.0621	
Heteromastus filiformis	0.0529	0.0529		0.0529	0.0529	
Cyathura polita	0.0506	0.0506		0.0506	0.0506	
Carinoma tremaphoros	0.0414	0.0414		0.0414	0.0414	
Streblospio benedicti	0.0046	0.0046		0.0046	0.0046	
Leptocheirus plumulosus	0.0023	0.0023		0.0023	0.0023	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	61.3214					
Biomass	61.3214					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Patuxent River		Station: PR-22		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 4.6		Salinity (ppt): 4.25		Temperature (C): 19.85		
Dissolved Oxygen (mg/l): 5.0		Sediment Silt-Clay (%): 98.25		Total Carbon (%): 3.29		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 1.40		Condition: Severely Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.51	1	Pollution Indicative Species Abundance (%)	15.38	3	
Abundance (#/m2)	299	1	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	0.01	1	Pollution Sensitive Species Abundance (%)	0.00		
Carnivore-Omnivore Abundance (%)	7.69		Pollution Sensitive Species Biomass (%)	33.33	1	
Deep Deposit Feeder Abundance (%)	76.92					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	207	207.0		207	207	
Carinoma tremaphoros	23	23.0		23	23	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	5					
Number of Species (w/o Epifauna)	5					
Abundance	299					
Abundance (w/o Epifauna)	299					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	0.0023	0.0023		0.0023	0.0023	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Carinoma tremaphoros	0.0012	0.0012		0.0012	0.0012	
Macoma mitchelli	0.0012	0.0012		0.0012	0.0012	
Oligochaeta	0.0012	0.0012		0.0012	0.0012	
Biomass	0.0069					
Biomass (w/o Epifauna)	0.0069					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-01		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 4.65		Temperature (C): 18.70		
Dissolved Oxygen (mg/l): 5.7		Sediment Silt-Clay (%): 99.22		Total Carbon (%): 2.63		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.40		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.56	5	Pollution Indicative Species Abundance (%)	22.73	1	
Abundance (#/m2)	506	3	Pollution Indicative Species Biomass (%)	0.71		
Biomass (g/m2)	2.27	3	Pollution Sensitive Species Abundance (%)	18.18		
Carnivore-Omnivore Abundance (%)	36.36		Pollution Sensitive Species Biomass (%)	87.04	5	
Deep Deposit Feeder Abundance (%)	18.18					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	138	138.0		138	138	
Coelotanypus spp.	115	115.0		115	115	
Tubificoides spp.	92	92.0		92	92	
Macoma balthica	69	69.0		69	69	
Carinoma tremaphoros	46	46.0		46	46	
Cyathura polita	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	506					
Abundance (w/o Epifauna)	506					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.8262	1.8262		1.8262	1.8262	
Macoma mitchelli	0.1840	0.1840		0.1840	0.1840	
Cyathura polita	0.1518	0.1518		0.1518	0.1518	
Leptocheirus plumulosus	0.0713	0.0713		0.0713	0.0713	
Carinoma tremaphoros	0.0184	0.0184		0.0184	0.0184	
Coelotanypus spp.	0.0161	0.0161		0.0161	0.0161	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Biomass	2.2724					
Biomass (w/o Epifauna)	2.2724					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-03		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 5.03		Temperature (C): 18.97		
Dissolved Oxygen (mg/l): 5.3		Sediment Silt-Clay (%): 97.16		Total Carbon (%): 2.57		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.60	5	Pollution Indicative Species Abundance (%)	25.00	1	
Abundance (#/m2)	460	1	Pollution Indicative Species Biomass (%)	0.38		
Biomass (g/m2)	4.21	3	Pollution Sensitive Species Abundance (%)	30.00		
Carnivore-Omnivore Abundance (%)	40.00		Pollution Sensitive Species Biomass (%)	96.09	3	
Deep Deposit Feeder Abundance (%)	20.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	115	115.0		115	115	
Tubificoides spp.	92	92.0		92	92	
Macoma balthica	92	92.0		92	92	
Leptocheirus plumulosus	69	69.0		69	69	
Cyathura polita	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	460					
Abundance (w/o Epifauna)	460					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	3.9146	3.9146		3.9146	3.9146	
Cyathura polita	0.1311	0.1311		0.1311	0.1311	
Macoma mitchelli	0.1311	0.1311		0.1311	0.1311	
Coelotanypus spp.	0.0161	0.0161		0.0161	0.0161	
Leptocheirus plumulosus	0.0115	0.0115		0.0115	0.0115	
Carinoma tremaphoros	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	4.2101					
Biomass (w/o Epifauna)	4.2101					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-05		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 3.95		Temperature (C): 19.74		
Dissolved Oxygen (mg/l): 7.0		Sediment Silt-Clay (%): 71.66		Total Carbon (%): 4.67		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.97	5	Pollution Indicative Species Abundance (%)	23.08	1	
Abundance (#/m2)	897	3	Pollution Indicative Species Biomass (%)	0.13		
Biomass (g/m2)	0.86	1	Pollution Sensitive Species Abundance (%)	15.38		
Carnivore-Omnivore Abundance (%)	35.90		Pollution Sensitive Species Biomass (%)	52.14	3	
Deep Deposit Feeder Abundance (%)	33.33					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	253	253.0		253	253	
Streblospio benedicti	184	184.0		184	184	
Laeonereis culveri	115	115.0		115	115	
Carinoma tremaphoros	92	92.0		92	92	
Cyathura polita	69	69.0		69	69	
Heteromastus filiformis	46	46.0		46	46	
Rangia cuneata	46	46.0		46	46	
Chironomus spp.	23	23.0		23	23	
Edwardsia elegans	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Number of Species	11					
Number of Species (w/o Epifauna)	11					
Abundance	897					
Abundance (w/o Epifauna)	897					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
<i>Laeonereis culveri</i>	0.2691	0.2691		0.2691	0.2691	
<i>Cyathura polita</i>	0.2346	0.2346		0.2346	0.2346	
<i>Marenzelleria viridis</i>	0.1265	0.1265		0.1265	0.1265	
<i>Rangia cuneata</i>	0.0874	0.0874		0.0874	0.0874	
<i>Heteromastus filiformis</i>	0.0644	0.0644		0.0644	0.0644	
<i>Carinoma tremaphoros</i>	0.0598	0.0598		0.0598	0.0598	
<i>Macoma mitchelli</i>	0.0138	0.0138		0.0138	0.0138	
<i>Tubificoides</i> spp.	0.0012	0.0012		0.0012	0.0012	
<i>Edwardsia elegans</i>	0.0012	0.0012		0.0012	0.0012	
<i>Streblospio benedicti</i>	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Biomass	0.8602					
Biomass (w/o Epifauna)	0.8602					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-06		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m):		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 99.32		Total Carbon (%): 2.58		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.37	3	Pollution Indicative Species Abundance (%)	9.09	5	
Abundance (#/m2)	506	3	Pollution Indicative Species Biomass (%)	0.10		
Biomass (g/m2)	4.65	3	Pollution Sensitive Species Abundance (%)	40.91		
Carnivore-Omnivore Abundance (%)	18.18		Pollution Sensitive Species Biomass (%)	94.74	5	
Deep Deposit Feeder Abundance (%)	27.27					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	161	161.0		161	161	
Tubificoides spp.	138	138.0		138	138	
Leptocheirus plumulosus	69	69.0		69	69	
Coelotanypus spp.	46	46.0		46	46	
Cyathura polita	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Number of Species	6					
Number of Species (w/o Epifauna)	6					
Abundance	506					
Abundance (w/o Epifauna)	506					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.1814	4.1814		4.1814	4.1814	
Cyathura polita	0.2277	0.2277		0.2277	0.2277	
Macoma mitchelli	0.2277	0.2277		0.2277	0.2277	
Leptocheirus plumulosus	0.0115	0.0115		0.0115	0.0115	
Coelotanypus spp.	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	4.6540					
Biomass (w/o Epifauna)	4.6540					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-07		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 4.07		Temperature (C): 19.54		
Dissolved Oxygen (mg/l): 6.8		Sediment Silt-Clay (%): 92.44		Total Carbon (%): 3.73		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.20		Condition: Marginal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.68	5	Pollution Indicative Species Abundance (%)	10.53	3	
Abundance (#/m2)	437	1	Pollution Indicative Species Biomass (%)	0.19		
Biomass (g/m2)	0.60	1	Pollution Sensitive Species Abundance (%)	21.05		
Carnivore-Omnivore Abundance (%)	57.89		Pollution Sensitive Species Biomass (%)	38.22	3	
Deep Deposit Feeder Abundance (%)	26.32					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Carinoma tremaphoros	115	115.0		115	115	
Tubificoides spp.	69	69.0		69	69	
Laonereis culveri	69	69.0		69	69	
Cyathura polita	69	69.0		69	69	
Heteromastus filiformis	46	46.0		46	46	
Streblospio benedicti	46	46.0		46	46	
Marenzelleria viridis	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	437					
Abundance (w/o Epifauna)	437					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Laeonereis culveri	0.2208	0.2208		0.2208	0.2208	
Cyathura polita	0.1955	0.1955		0.1955	0.1955	
Carinoma tremaphoros	0.1104	0.1104		0.1104	0.1104	
Heteromastus filiformis	0.0345	0.0345		0.0345	0.0345	
Marenzelleria viridis	0.0322	0.0322		0.0322	0.0322	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Biomass	0.5957					
Biomass	0.5957					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-08		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m):		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 99.15		Total Carbon (%): 2.52		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.72	5	Pollution Indicative Species Abundance (%)	13.33	3	
Abundance (#/m2)	1035	3	Pollution Indicative Species Biomass (%)	0.72		
Biomass (g/m2)	4.78	3	Pollution Sensitive Species Abundance (%)	31.11		
Carnivore-Omnivore Abundance (%)	31.11		Pollution Sensitive Species Biomass (%)	91.87	5	
Deep Deposit Feeder Abundance (%)	28.89					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	276	276.0		276	276	
Macoma balthica	207	207.0		207	207	
Leptocheirus plumulosus	184	184.0		184	184	
Coelotanytus spp.	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Carinoma tremaphoros	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	
Neanthes succinea	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	9					
Abundance	1065					
Abundance (w/o Epifauna)	1035					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	3.8778	3.8778		3.8778	3.8778	
Cyathura polita	0.5129	0.5129		0.5129	0.5129	
Macoma mitchelli	0.1748	0.1748		0.1748	0.1748	
Leptocheirus plumulosus	0.1058	0.1058		0.1058	0.1058	
Coelotanypus spp.	0.0345	0.0345		0.0345	0.0345	
Heteromastus filiformis	0.0322	0.0322		0.0322	0.0322	
Carinoma tremaphoros	0.0299	0.0299		0.0299	0.0299	
Tubificoides spp.	0.0069	0.0069		0.0069	0.0069	
Neanthes succinea	0.0046	0.0046		0.0046	0.0046	
Biomass	4.7794					
Biomass (w/o Epifauna)	4.7794					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-09		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 5.37		Temperature (C): 18.99		
Dissolved Oxygen (mg/l): 5.1		Sediment Silt-Clay (%): 99.51		Total Carbon (%): 2.49		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 4.20		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.59	5	Pollution Indicative Species Abundance (%)	17.39	3	
Abundance (#/m2)	529	3	Pollution Indicative Species Biomass (%)	0.14		
Biomass (g/m2)	9.54	5	Pollution Sensitive Species Abundance (%)	30.43		
Carnivore-Omnivore Abundance (%)	39.13		Pollution Sensitive Species Biomass (%)	95.23	5	
Deep Deposit Feeder Abundance (%)	4.35					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	161	161.0		161	161	
Coelotanypus spp.	92	92.0		92	92	
Macoma balthica	92	92.0		92	92	
Cyathura polita	69	69.0		69	69	
Carinoma tremaphoros	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	529					
Abundance (w/o Epifauna)	529					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	8.8113	8.8113		8.8113	8.8113	
Macoma mitchelli	0.3105	0.3105		0.3105	0.3105	
Cyathura polita	0.2760	0.2760		0.2760	0.2760	
Leptocheirus plumulosus	0.0943	0.0943		0.0943	0.0943	
Carinoma tremaphoros	0.0253	0.0253		0.0253	0.0253	
Coelotanypus spp.	0.0138	0.0138		0.0138	0.0138	
Heteromastus filiformis	0.0115	0.0115		0.0115	0.0115	
Biomass	9.5427					
Biomass	9.5427					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-11		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.4		Salinity (ppt): 5.31		Temperature (C): 18.58		
Dissolved Oxygen (mg/l): 5.6		Sediment Silt-Clay (%): 98.67		Total Carbon (%): 2.48		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.74	5	Pollution Indicative Species Abundance (%)	19.05	3	
Abundance (#/m2)	966	3	Pollution Indicative Species Biomass (%)	1.30		
Biomass (g/m2)	3.00	3	Pollution Sensitive Species Abundance (%)	21.43		
Carnivore-Omnivore Abundance (%)	33.33		Pollution Sensitive Species Biomass (%)	87.66	5	
Deep Deposit Feeder Abundance (%)	16.67					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Leptocheirus plumulosus	299	299.0		299	299	
Coelotanypus spp.	161	161.0		161	161	
Tubificoides spp.	138	138.0		138	138	
Macoma balthica	138	138.0		138	138	
Carinoma tremaphoros	92	92.0		92	92	
Cyathura polita	69	69.0		69	69	
Heteromastus filiformis	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Macoma mitchelli	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	9					
Abundance	966					
Abundance (w/o Epifauna)	966					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	2.3736	2.3736		2.3736	2.3736	
Cyathura polita	0.2576	0.2576		0.2576	0.2576	
Leptocheirus plumulosus	0.1380	0.1380		0.1380	0.1380	
Macoma mitchelli	0.0920	0.0920		0.0920	0.0920	
Carinoma tremaphoros	0.0506	0.0506		0.0506	0.0506	
Heteromastus filiformis	0.0483	0.0483		0.0483	0.0483	
Coelotanypus spp.	0.0345	0.0345		0.0345	0.0345	
Streblospio benedicti	0.0046	0.0046		0.0046	0.0046	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Biomass	3.0015					
Biomass (w/o Epifauna)	3.0015					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-12		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 5.03		Temperature (C): 18.87		
Dissolved Oxygen (mg/l): 5.1		Sediment Silt-Clay (%): 98.87		Total Carbon (%): 2.78		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.21	3	Pollution Indicative Species Abundance (%)	12.50	3	
Abundance (#/m2)	920	3	Pollution Indicative Species Biomass (%)	1.49		
Biomass (g/m2)	1.62	3	Pollution Sensitive Species Abundance (%)	5.00		
Carnivore-Omnivore Abundance (%)	15.00		Pollution Sensitive Species Biomass (%)	47.48	3	
Deep Deposit Feeder Abundance (%)	47.50					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	437	437.0		437	437	
Leptocheirus plumulosus	184	184.0		184	184	
Macoma mitchelli	115	115.0		115	115	
Coelotanypus spp.	92	92.0		92	92	
Carinoma tremaphoros	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Cyathura polita	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	920					
Abundance (w/o Epifauna)	920					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.7475	0.7475		0.7475	0.7475	
Macoma balthica	0.5704	0.5704		0.5704	0.5704	
Cyathura polita	0.1978	0.1978		0.1978	0.1978	
Leptocheirus plumulosus	0.0575	0.0575		0.0575	0.0575	
Coelotanypus spp.	0.0230	0.0230		0.0230	0.0230	
Carinoma tremaphoros	0.0115	0.0115		0.0115	0.0115	
Tubificoides spp.	0.0092	0.0092		0.0092	0.0092	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Biomass	1.6180					
Biomass (w/o Epifauna)	1.6180					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-13		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.2		Salinity (ppt): 5.87		Temperature (C): 19.31		
Dissolved Oxygen (mg/l): 4.6		Sediment Silt-Clay (%): 98.90		Total Carbon (%): 2.72		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.35	3	Pollution Indicative Species Abundance (%)	7.55	5	
Abundance (#/m2)	1219	3	Pollution Indicative Species Biomass (%)	0.25		
Biomass (g/m2)	4.66	3	Pollution Sensitive Species Abundance (%)	54.72		
Carnivore-Omnivore Abundance (%)	32.08		Pollution Sensitive Species Biomass (%)	96.69	5	
Deep Deposit Feeder Abundance (%)	5.66					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	437	437.0		437	437	
Leptocheirus plumulosus	322	322.0		322	322	
Cyathura polita	230	230.0		230	230	
Coelotanypus spp.	92	92.0		92	92	
Tubificoides spp.	46	46.0		46	46	
Carinoma tremaphoros	46	46.0		46	46	
Heteromastus filiformis	23	23.0		23	23	
Neanthes succinea	23	23.0		23	23	
Number of Species	8					
Number of Species (w/o Epifauna)	8					
Abundance	1219					
Abundance (w/o Epifauna)	1219					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	4.0572	4.0572		4.0572	4.0572	
Cyathura polita	0.4439	0.4439		0.4439	0.4439	
Leptocheirus plumulosus	0.1012	0.1012		0.1012	0.1012	
Neanthes succinea	0.0207	0.0207		0.0207	0.0207	
Carinoma tremaphoros	0.0184	0.0184		0.0184	0.0184	
Coelotanypus spp.	0.0115	0.0115		0.0115	0.0115	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Heteromastus filiformis	0.0012	0.0012		0.0012	0.0012	
Biomass	4.6552					
Biomass (w/o Epifauna)	4.6552					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson' Creek		Station: SC-14		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 5.25		Temperature (C): 18.68		
Dissolved Oxygen (mg/l): 4.9		Sediment Silt-Clay (%): 99.10		Total Carbon (%): 2.59		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.37	3	Pollution Indicative Species Abundance (%)	42.11	1	
Abundance (#/m2)	874	3	Pollution Indicative Species Biomass (%)	3.31		
Biomass (g/m2)	2.71	3	Pollution Sensitive Species Abundance (%)	18.42		
Carnivore-Omnivore Abundance (%)	50.00		Pollution Sensitive Species Biomass (%)	68.76	3	
Deep Deposit Feeder Abundance (%)	13.16					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	368	368.0		368	368	
Leptocheirus plumulosus	184	184.0		184	184	
Macoma balthica	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Cyathura polita	69	69.0		69	69	
Heteromastus filiformis	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	874					
Abundance (w/o Epifauna)	874					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma balthica	1.7204	1.7204		1.7204	1.7204	
Macoma mitchelli	0.5543	0.5543		0.5543	0.5543	
Cyathura polita	0.1426	0.1426		0.1426	0.1426	
Heteromastus filiformis	0.1311	0.1311		0.1311	0.1311	
Coelotanypus spp.	0.0897	0.0897		0.0897	0.0897	
Leptocheirus plumulosus	0.0690	0.0690		0.0690	0.0690	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Biomass	2.7094					
Biomass	2.7094					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-15		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 1.1		Salinity (ppt): 4.55		Temperature (C): 18.46		
Dissolved Oxygen (mg/l): 5.3		Sediment Silt-Clay (%): 62.86		Total Carbon (%): 1.91		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.88	5	Pollution Indicative Species Abundance (%)	3.45	5	
Abundance (#/m2)	667	3	Pollution Indicative Species Biomass (%)	2.46		
Biomass (g/m2)	1.59	3	Pollution Sensitive Species Abundance (%)	27.59		
Carnivore-Omnivore Abundance (%)	37.93		Pollution Sensitive Species Biomass (%)	52.90	3	
Deep Deposit Feeder Abundance (%)	10.34					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Carinoma tremaphoros	138	138.0		138	138	
Macoma mitchelli	138	138.0		138	138	
Leptocheirus plumulosus	115	115.0		115	115	
Cyathura polita	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Rangia cuneata	46	46.0		46	46	
Coelotanypus spp.	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Macoma balthica	23	23.0		23	23	
Number of Species	9					
Number of Species (w/o Epifauna)	9					
Abundance	667					
Abundance (w/o Epifauna)	667					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.6371	0.6371		0.6371	0.6371	
Macoma balthica	0.5589	0.5589		0.5589	0.5589	
Cyathura polita	0.1932	0.1932		0.1932	0.1932	
Rangia cuneata	0.0805	0.0805		0.0805	0.0805	
Coelotanypus spp.	0.0391	0.0391		0.0391	0.0391	
Carinoma tremaphoros	0.0368	0.0368		0.0368	0.0368	
Leptocheirus plumulosus	0.0322	0.0322		0.0322	0.0322	
Marenzelleria viridis	0.0069	0.0069		0.0069	0.0069	
Tubificoides spp.	0.0023	0.0023		0.0023	0.0023	
Biomass	1.5870					
Biomass (w/o Epifauna)	1.5870					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-16		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.6		Salinity (ppt): 4.58		Temperature (C): 20.41		
Dissolved Oxygen (mg/l): 6.9		Sediment Silt-Clay (%): 75.97		Total Carbon (%): 7.79		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.20		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.24	3	Pollution Indicative Species Abundance (%)	36.53	1	
Abundance (#/m2)	3841	3	Pollution Indicative Species Biomass (%)	0.70		
Biomass (g/m2)	2.62	3	Pollution Sensitive Species Abundance (%)	3.59		
Carnivore-Omnivore Abundance (%)	14.97		Pollution Sensitive Species Biomass (%)	15.66	1	
Deep Deposit Feeder Abundance (%)	44.31					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	1541	1541.0		1541	1541	
Streblospio benedicti	1380	1380.0		1380	1380	
Laonereis culveri	345	345.0		345	345	
Heteromastus filiformis	138	138.0		138	138	
Cyathura polita	115	115.0		115	115	
Hobsonia florida	92	92.0		92	92	
Edwardsia elegans	46	46.0		46	46	
Macoma mitchelli	46	46.0		46	46	
Carinoma tremaphoros	23	23.0		23	23	
Imm. Tubificid w/o Cap. Chaete	23	23.0		23	23	
Tanytarsus spp.	23	23.0		23	23	
Neanthes succinea	23	23.0		23	23	
Polydora cornuta	23	23.0		23	23	
Edotea triloba (Epi)	23	23.0		23	23	
Rangia cuneata	23	23.0		23	23	
Apocorophium lacustre (Epi)	23	23.0		23	23	

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Gammarus daiberi (Epi)	23	23.0	23	23
Hirudinea (Epi)	23	23.0	23	23
Number of Species	18			
Number of Species (w/o Epifauna)	14			
Abundance	3933			
Abundance (w/o Epifauna)	3841			
BENTHIC BIOMASS (Grams per sq. meter) -				
	Rep 1	Mean	Std.Dev	Min Max Cum %
Laeonereis culveri	1.6077	1.6077		1.6077 1.6077
Cyathura polita	0.4094	0.4094		0.4094 0.4094
Macoma mitchelli	0.3312	0.3312		0.3312 0.3312
Heteromastus filiformis	0.1357	0.1357		0.1357 0.1357
Neanthes succinea	0.0460	0.0460		0.0460 0.0460
Carinoma tremaphoros	0.0391	0.0391		0.0391 0.0391
Streblospio benedicti	0.0184	0.0184		0.0184 0.0184
Tubificoides spp.	0.0138	0.0138		0.0138 0.0138
Hirudinea (Epi)	0.0115	0.0115		0.0115 0.0115
Gammarus spp. (Epi)	0.0115	0.0115		0.0115 0.0115
Edotea triloba (Epi)	0.0092	0.0092		0.0092 0.0092
Hobsonia florida	0.0092	0.0092		0.0092 0.0092
Edwardsia elegans	0.0069	0.0069		0.0069 0.0069
Polydora cornuta	0.0012	0.0012		0.0012 0.0012
Rangia cuneata	0.0012	0.0012		0.0012 0.0012
Apocorophium lacustre (Epi)	0.0012	0.0012		0.0012 0.0012
Chironomidae larvae	0.0012	0.0012		0.0012 0.0012
Oligochaeta	0.0012	0.0012		0.0012 0.0012
Biomass	2.6554			
Biomass (w/o Epifauna)	2.6220			

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-17		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 4.05		Temperature (C): 19.43		
Dissolved Oxygen (mg/l): 6.5		Sediment Silt-Clay (%): 92.42		Total Carbon (%): 3.37		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.00		Condition: Marginal		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.00	1	Pollution Indicative Species Abundance (%)	84.00	5	
Abundance (#/m2)	575	3	Pollution Indicative Species Biomass (%)	0.23		
Biomass (g/m2)	0.50	1	Pollution Sensitive Species Abundance (%)	12.00		
Carnivore-Omnivore Abundance (%)	16.00		Pollution Sensitive Species Biomass (%)	97.03	5	
Deep Deposit Feeder Abundance (%)	80.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	460	460.0		460	460	
Cyathura polita	69	69.0		69	69	
Carinoma tremaphoros	23	23.0		23	23	
Streblospio benedicti	23	23.0		23	23	
Number of Species	4					
Number of Species (w/o Epifauna)	4					
Abundance	575					
Abundance (w/o Epifauna)	575					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Cyathura polita	0.4876	0.4876		0.4876	0.4876	
Carinoma tremaphoros	0.0092	0.0092		0.0092	0.0092	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Biomass	0.5025					
Biomass	0.5025					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-18		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m):		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 97.48		Total Carbon (%): 2.74		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 1.80		Condition: Severely Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	0.54	1	Pollution Indicative Species Abundance (%)	0.00	5	
Abundance (#/m2)	184	1	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	0.10	1	Pollution Sensitive Species Abundance (%)	0.00		
Carnivore-Omnivore Abundance (%)	0.00		Pollution Sensitive Species Biomass (%)	0.00	1	
Deep Deposit Feeder Abundance (%)	100.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	161	161.0		161	161	
Heteromastus filiformis	23	23.0		23	23	
Number of Species	2					
Number of Species (w/o Epifauna)	2					
Abundance	184					
Abundance (w/o Epifauna)	184					
BENTHIC BIOMASS (Grams per sq. meter) -						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Heteromastus filiformis	0.0966	0.0966		0.0966	0.0966	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	0.0978					
Biomass (w/o Epifauna)	0.0978					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-19		Date: September 6, 2000		
Gear: Young Grab		Habitat: Oligohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.6		Salinity (ppt): 2.84		Temperature (C): 20.31		
Dissolved Oxygen (mg/l): 7.5		Sediment Silt-Clay (%): 94.45		Total Carbon (%): 4.18		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 3.80		Condition: Meets Goal		# Attributes Scored: 5		
		Value	Score	Value	Score	
Shannon-Weiner Index		2.73		Oligohaline Pollution Indicative Spp. Abund.	26.67 5	
Abundance (#/m2)		690		Tolerance Score	9.80 1	
Biomass (g/m2)		3.03		Oligohaline Pollution Sensitive Spp. Abund.	16.67 3	
Carnivore-Omnivore Abundance (%)		63.33		Tanypodinae/Chironomidae Abundance Ratio	0.00 5	
Deep Deposit Feeder Abundance (%)		6.67	5			
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Laeonereis culveri	207	207.0		207	207	
Marenzelleria viridis	115	115.0		115	115	
Cyathura polita	115	115.0		115	115	
Chironomus spp.	69	69.0		69	69	
Streblospio benedicti	69	69.0		69	69	
Tubificoides spp.	46	46.0		46	46	
Carinoma tremaphoros	46	46.0		46	46	
Macoma mitchelli	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	690					
Abundance (w/o Epifauna)	690					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Laeonereis culveri	1.0005	1.0005		1.0005	1.0005	
Marenzelleria viridis	0.7705	0.7705		0.7705	0.7705	
Cyathura polita	0.6279	0.6279		0.6279	0.6279	
Macoma mitchelli	0.5589	0.5589		0.5589	0.5589	
Carinoma tremaphoros	0.0736	0.0736		0.0736	0.0736	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Biomass	3.0348					
Biomass (w/o Epifauna)	3.0348					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-20		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 4.37		Temperature (C): 19.33		
Dissolved Oxygen (mg/l): 6.5		Sediment Silt-Clay (%): 97.20		Total Carbon (%): 3.29		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.60		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	1.97	3	Pollution Indicative Species Abundance (%)	0.00	5	
Abundance (#/m2)	253	1	Pollution Indicative Species Biomass (%)	0.00		
Biomass (g/m2)	1.32	3	Pollution Sensitive Species Abundance (%)	9.09		
Carnivore-Omnivore Abundance (%)	9.09		Pollution Sensitive Species Biomass (%)	2.95	1	
Deep Deposit Feeder Abundance (%)	54.55					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Tubificoides spp.	115	115.0		115	115	
Macoma mitchelli	69	69.0		69	69	
Carinoma tremaphoros	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Number of Species	5					
Number of Species (w/o Epifauna)	5					
Abundance	253					
Abundance (w/o Epifauna)	253					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.8993	0.8993		0.8993	0.8993	
Carinoma tremaphoros	0.3404	0.3404		0.3404	0.3404	
Heteromastus filiformis	0.0437	0.0437		0.0437	0.0437	
Marenzelleria viridis	0.0391	0.0391		0.0391	0.0391	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	1.3236					
Biomass (w/o Epifauna)	1.3235					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-21		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 2.4		Salinity (ppt): 4.43		Temperature (C): 20.06		
Dissolved Oxygen (mg/l): 7.0		Sediment Silt-Clay (%): 82.00		Total Carbon (%): 3.51		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 1.80		Condition: Severely Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.46	3	Pollution Indicative Species Abundance (%)	53.49	1	
Abundance (#/m2)	989	3	Pollution Indicative Species Biomass (%)	7.28		
Biomass (g/m2)	0.66	1	Pollution Sensitive Species Abundance (%)	9.30		
Carnivore-Omnivore Abundance (%)	32.56		Pollution Sensitive Species Biomass (%)	12.82	1	
Deep Deposit Feeder Abundance (%)	9.30					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Streblospio benedicti	460	460.0		460	460	
Carinoma tremaphoros	138	138.0		138	138	
Cyathura polita	92	92.0		92	92	
Macoma mitchelli	92	92.0		92	92	
Tubificoides spp.	69	69.0		69	69	
Coelotanypus spp.	69	69.0		69	69	
Edwardsia elegans	23	23.0		23	23	
Procladius sublettei	23	23.0		23	23	
Heteromastus filiformis	23	23.0		23	23	
Gammarus daiberi (Epi)	23	23.0		23	23	
Number of Species	10					
Number of Species (w/o Epifauna)	9					
Abundance	1012					
Abundance (w/o Epifauna)	989					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Macoma mitchelli	0.3335	0.3335		0.3335	0.3335	
Carinoma tremaphoros	0.1127	0.1127		0.1127	0.1127	
Cyathura polita	0.0851	0.0851		0.0851	0.0851	
Heteromastus filiformis	0.0759	0.0759		0.0759	0.0759	
Streblospio benedicti	0.0253	0.0253		0.0253	0.0253	
Coelotanypus spp.	0.0230	0.0230		0.0230	0.0230	
Tubificoides spp.	0.0046	0.0046		0.0046	0.0046	
Gammarus spp. (Epi)	0.0046	0.0046		0.0046	0.0046	
Edwardsia elegans	0.0023	0.0023		0.0023	0.0023	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Biomass	0.6682					
Biomass (w/o Epifauna)	0.6636					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-22		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m): 0.8		Salinity (ppt): 4.31		Temperature (C): 19.25		
Dissolved Oxygen (mg/l): 6.5		Sediment Silt-Clay (%): 97.37		Total Carbon (%): 2.86		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 2.20		Condition: Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	2.46	3	Pollution Indicative Species Abundance (%)	21.43	1	
Abundance (#/m2)	644	3	Pollution Indicative Species Biomass (%)	0.17		
Biomass (g/m2)	0.66	1	Pollution Sensitive Species Abundance (%)	25.00		
Carnivore-Omnivore Abundance (%)	57.14		Pollution Sensitive Species Biomass (%)	45.03	3	
Deep Deposit Feeder Abundance (%)	14.29					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Neanthes succinea	207	207.0		207	207	
Cyathura polita	138	138.0		138	138	
Streblospio benedicti	115	115.0		115	115	
Tubificoides spp.	92	92.0		92	92	
Macoma mitchelli	46	46.0		46	46	
Chironomus spp.	23	23.0		23	23	
Marenzelleria viridis	23	23.0		23	23	
Number of Species	7					
Number of Species (w/o Epifauna)	7					
Abundance	644					
Abundance (w/o Epifauna)	644					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Neanthes succinea	0.2852	0.2852		0.2852	0.2852	
Cyathura polita	0.2599	0.2599		0.2599	0.2599	
Macoma mitchelli	0.0736	0.0736		0.0736	0.0736	
Marenzelleria viridis	0.0368	0.0368		0.0368	0.0368	
Tubificoides spp.	0.0012	0.0012		0.0012	0.0012	
Streblospio benedicti	0.0012	0.0012		0.0012	0.0012	
Chironomidae larvae	0.0012	0.0012		0.0012	0.0012	
Biomass	0.6589					
Biomass (w/o Epifauna)	0.6589					

BOTTOM ENVIRONMENT AND BENTHOS, CHALK POINT OIL SPILL, SUMMER 2000

Location: Swanson's Creek		Station: SC-23		Date: September 6, 2000		
Gear: Young Grab		Habitat: Low Mesohaline		Sampled Area: 0.044 sq.m		
BOTTOM ENVIRONMENT						
Depth (m):		Salinity (ppt):		Temperature (C):		
Dissolved Oxygen (mg/l):		Sediment Silt-Clay (%): 94.60		Total Carbon (%): 2.66		
BENTHIC INDEX OF BIOTIC INTEGRITY						
B-IBI Score: 1.00		Condition: Severely Degraded		# Attributes Scored: 5		
	Value	Score		Value	Score	
Shannon-Weiner Index	0.00	1	Pollution Indicative Species Abundance (%)	100.00	1	
Abundance (#/m2)	23	1	Pollution Indicative Species Biomass (%)	100.00		
Biomass (g/m2)	0.00	1	Pollution Sensitive Species Abundance (%)	0.00		
Carnivore-Omnivore Abundance (%)	100.00		Pollution Sensitive Species Biomass (%)	0.00	1	
Deep Deposit Feeder Abundance (%)	0.00					
BENTHIC ABUNDANCE (per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	23	23.0		23	23	
Number of Species	1					
Number of Species (w/o Epifauna)	1					
Abundance	23					
Abundance (w/o Epifauna)	23					
BENTHIC BIOMASS (Grams per sq. meter)						
	Rep 1	Mean	Std.Dev	Min	Max	Cum %
Coelotanypus spp.	0.0012	0.0012		0.0012	0.0012	
Biomass	0.0012					
Biomass (w/o Epifauna)	0.0012					