

Technical Series

Vol.4 No.3

December 1979

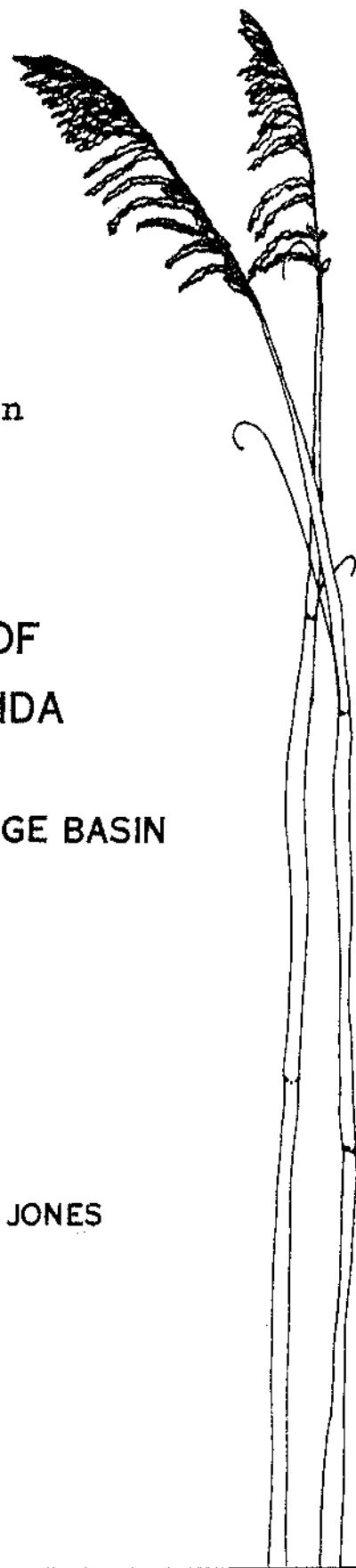
State of Florida
Department of
Environmental Regulation

BIOLOGICAL ASPECTS OF
WATER QUALITY IN FLORIDA

PART IV: LOWER FLORIDA DRAINAGE BASIN

EDITED BY

LANDON T. ROSS AND DOUGLAS A. JONES



OTHER REPORTS IN THE
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
TECHNICAL SERIES

VOLUME I

1. "Effects of Backpumping from Agricultural Drainage Canals on Water Quality in Lake Okeechobee." Patrick L. Brezonik and Anthony Federico.
2. "Limiting Nutrients in the Kissimmee River - Lake Okeechobee Basin Based on Algal Bioassay Techniques." Craig W. Dye, Douglas A. Jones, Landon T. Ross, and Ronald L. Willmore.
3. "A Study of the Precipitation Regimes of the Kissimmee River - Lake Okeechobee Watershed." Kenneth L. Echternacht.
4. "Agricultural Practices to Reduce Non-Point Pollution in the Okeechobee - Kissimmee Basin." L. B. Baldwin.
5. "Studies of the Geochemical Exchanges Across the Sediment - Water Interface in the Kissimmee River - Lake Okeechobee Watershed." Thomas M. Burton, Robert C. Harriss, Charles F. Dreyer and Douglas H. Taylor.
6. "Aquatic Vertebrate Fauna of the Kissimmee River - Lake Okeechobee Watershed." Ralph W. Yarger.
7. "Statistical Analysis of Aspects of the Trophic State of Selected Florida Lakes." Gerald van Belle and Duane A. Meeter.
8. "A Survey of Water Quality in the Kissimmee - Okeechobee Watershed." Anthony Federico and Patrick L. Brezonik.

VOLUME II

1. "Biology of the Larval Chironomids." William H. Beck, Jr. (Revised)
2. "Report of Investigations in the Kissimmee River - Lake Okeechobee Watershed." Patrick M. McCaffrey, William M. Hinkley, Rotha MacGill and Gordon D. Cherr.
3. "Nonpoint Source Effects." Martin Wanielista.
4. "Trophic Classifications and Trophic State Indices: Rationale, Progress, Prospects." Patrick L. Brezonik.

VOLUME III

1. "A Review of Eutrophication, Nutrient Regulation and the Impacts of Nutrients on Water Quality." Craig W. Dye and Douglas A. Jones.

VOLUME IV

1. "Guide to Shallow-Water Mysids from Florida." Douglas H. Farrell.
2. "Identification Manual of the Freshwater Clams of Florida." William H. Heard.
3. "Biological Aspects of Water Quality in Florida." Landon T. Ross and Douglas A. Jones, editors.
Part I: Escambia-Perdido, Choctawhatchee, Apalachicola, Aucilla--
Ochlockonee-St. Marks, and Suwannee Drainage Basins.
Part II: Nassau-St. Marys, St. Johns, and East Coast Drainage Basins.
Part III: Withlacoochee, Tampa Bay, Peace, and Kissimmee Drainage Basins.
Part IV: Lower Florida Drainage Basin.

Technical Library
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32301

The findings and conclusions contained herein are those of the Authors and do not necessarily represent the policies and procedures of the Florida Department of Environmental Regulation.

BIOLOGICAL ASPECTS OF WATER QUALITY
IN FLORIDA

(Part IV: Lower Florida Drainage Basin)

Edited by
LANDON T. ROSS
and
DOUGLAS A. JONES

Department of Environmental Regulation
Tallahassee, Florida

(See Part I for introduction, methods, and related material.)

CONTENTS

Lower Florida Drainage Basin	2
--	---

LOWER FLORIDA DRAINAGE BASIN

The Lower Florida Drainage Basin includes approximately 13,000 square miles of the southern quarter of peninsular Florida. There are four sub-basins recognized in the basin: The Lake Okeechobee/St. Lucie River Sub-basin, the Caloosahatchee River Sub-basin, the Broward County/Upper Everglades Sub-basin, and the Dade County/Lower Everglades Sub-basin.

Lake Okeechobee/St. Lucie River Sub-basin

This sub-basin includes Lake Okeechobee and the area east and south-east to the Broward County line. The coastal area is heavily urbanized and the inland areas are agricultural. A system of canals, levees, and control structures is used, primarily, to prevent flooding and, secondarily, to retain water for irrigation and drinking water. In fact, water is periodically backpumped from nutrient rich agricultural areas into Lake Okeechobee. Natural drainage in this sub-basin was by sheet flow, although present drainage modifications are extensive.

Station 28.01.0702 is at channel marker #2 on the Okeechobee Waterway off Clewiston. Macroinvertebrate diversity was generally good and exhibited a significant improvement during the report period. No explanation for the improvement was apparent. Notable collections include estuarine isopods such as Cyathura polita and the recently introduced exotic snail, Melanoides tuberculata.

Miami Canal stretches from Lake Okeechobee, near the town of Lake Harbor, to Miami and crosses three sub-basins. It receives water from the lake and intercepts drainage from agricultural and water conservation areas. Station 28.01.0143 is on the canal below the control structure near the exit from Lake Okeechobee. Macroinvertebrate diversity was generally good during the period of record, 1975-78, and no significant trend occurred. However, three Biotic Index values were obtained, during 1977-78, and low values indicated that pollution intolerant forms were absent and that dissolved oxygen deficiencies occurred. In fact, samples were often dominated by pollution tolerant forms such as the oligochaete worms, Limnodrilus hoffmeisteri and Tubifex tubifex. Melanoides tuberculata was also prevalent at this station and at stations on the other canals in this sub-basin.

The North New River Canal flows from Lake Okeechobee near Belle Glade southward to near Ft. Lauderdale, and it functions in the same manner as Miami Canal and the others of its type. Station 28.01.0140 is on the canal, near Lake Okeechobee, just south of its junction with the Hillsborough Canal. Macroinvertebrate samples were analyzed three times, in 1975-77. The diversity was fair in each of the samples and the collections were dominated by pollution tolerant forms such as the oligochaetes listed above.

The Hillsborough Canal also leaves Lake Okeechobee near Belle Glade, but flows more southeastwardly to the vicinity of Boca Raton. Station 28.01.0142 is on the canal, near Lake Okeechobee, southeast of its junction with the North New River Canal. Natural substrate samples were analyzed, from 1975-78, and artificial substrate and qualitative samples were begun in late 1976. Macroinvertebrate diversities were quite variable, from poor to very good, in the natural substrate samples, usually depending upon the degree of dominance by Limnodrilus and Tubifex. A significant improvement in this index occurred, but no specific reason for this was apparent. Biotic Index numbers were poor, indicating oxygen deficiencies. The three artificial substrate samples had fairly good diversities.

The West Palm Beach Canal leaves Lake Okeechobee at Canal Point and reaches southeastward, then eastward to near West Palm Beach. Station 28.01.0141 is on the canal near Canal Point. Although two of the three samples analyzed, in 1975-77, had good macroinvertebrate diversities, not very many species were represented at the station and most of those present are considered to be at least somewhat pollution tolerant.

The St. Lucie Canal reaches from Lake Okeechobee at Port Myaca to the South Fork of the St. Lucie River. Station 28.01.0017 is on the canal immediately above the control structure at the South Fork. Macroinvertebrate diversity was generally good and exhibited no significant change during the report period. The species list for the station included a greater variety of taxa than most other canal sites. Also, several estuarine crustacea were present. Biotic Index numbers indicated probably low-dissolved oxygen problems. The significant improvement exhibited by the Biotic Index was, unfortunately, probably a result of a staff change in 1976 rather than a change in water quality. Bacteria concentrations were acceptable throughout the report period, when measured.

Station 28.01.0014 is on the St. Lucie River at the US 1 bridge near Stuart. This location is influenced by flow from the North and South Forks of the St. Lucie River and tidal flux in the Indian River and St. Lucie Inlet. The area is well flushed and the sediment is composed of coarse sand and shell. The City of Stuart sewage treatment plant is in the vicinity of the station. Macroinvertebrate diversity was fairly good, and showed no significant change throughout the report period. Sediment scouring and salinity variation may contribute to reduced diversity. Also, bacteria counts were normally low.

Station 28.01.0606 is on the Indian River, south of the Jensen Beach Causeway. The station location is relatively natural and the area receives some urban runoff. Two macroinvertebrate samples, in 1976 and 1977, had good diversity.

The Loxahatchee River drains the southeast corner of Martin County and the northeast corner of Palm Beach County. Quarterly sampling for natural substrate macroinvertebrates was begun at station 28.01.0144 near the US A1A bridge in mid-1976. Diversity from then through mid-1978 was generally very good and exhibited no significant trend, although two years is a short time for a biological trend to develop.

Jupiter Sound, station 28.01.0145, at the US A1A bridge, is part of the Intra-coastal Waterway north of the town of Jupiter. The location is shallow and relatively natural but receives some urban runoff. The three macroinvertebrate samples analyzed, during 1975-76, suggested generally excellent diversity.

Station 28.01.3001 is on the West Palm Beach Canal, approximately 200 feet west of the Florida East Coast Railroad Trestle, near its eastern end. Macroinvertebrate diversity was fairly good during the report period but two qualitative samplings in 1974 and 1975 indicated probable low-dissolved oxygen problems.

Lake Boca Raton, station 28.01.0710, is part of the Intra-coastal Waterway and opens to the Atlantic Ocean through the Boca Raton Inlet. Three macroinvertebrate samples, taken during 1975-77, had excellent diversities.

Caloosahatchee River Sub-basin

This sub-basin includes the area west and southwest of Lake Okeechobee, which drains through the Caloosahatchee River to the Gulf of Mexico.

Station 28.02.0022 is actually on the Rim Canal (of Lake Okeechobee) just upstream from the Moore Haven lock to the Caloosahatchee River. Artificial substrate macroinvertebrate diversity was consistently very good throughout the report period. Natural substrate diversity ranged from fair to excellent and exhibited a significant improvement, although no specific cause for improvement was documented. Interestingly, despite the surprisingly good diversity numbers, the Biotic Index was usually low, indicating possible oxygen deficiency problems. Estuarine isopods were collected at this station and at others on the river. Bacteria concentrations were consistently acceptable.

Station 28.02.0006 is on the Caloosahatchee River upstream from the Franklin Lock near Olga. This part of the river is designated Class I, as Ft. Myers and Lee County take drinking water from here. Artificial substrate macroinvertebrate diversity was good, during 1975-78, and exhibited a significant, but unexplained, improvement. Natural substrate diversities were quite variable, apparently due to seasonal cycles, but generally good. Biotic Index numbers were relatively low, apparently because of oxygen deficiencies. No significant trend was displayed by either natural substrate or qualitative analyses. Bacteria concentrations were usually low, when measured.

Station 28.02.0002 is on the Caloosahatchee River at SR 31. The mixture of freshwater and estuarine biota reflected the tidal influence at the station. The area is subject to domestic wastes and urban runoff. Macroinvertebrate diversity was monitored from 1973 to 1976 and was fairly good. Estuarine stresses (e.g. salinity variation) may have acted to reduce diversity somewhat. Bacteria counts were usually low during the period of record.

Station 28.02.0117 is on Estero Bay, south of Ft. Myers. Macroinvertebrate diversity ranged from fair to very good during the report period. A significant downward trend was noted but no specific cause and effect relationship was apparent. Bacteria counts were low during the period of record.

Broward County-Upper Everglades Sub-basin

This sub-basin includes the Ft. Lauderdale metropolitan area, the inland farm lands, the undeveloped wetlands north of Everglades National Park, and the Collier County coastline. Lake Trafford, station 28.02.0015, lies in northern Collier County. The lake is heavily infested with the exotic plant, Hydrilla verticillata.

Four macroinvertebrate samples, in 1975-78, had variable diversities ranging from fair to very good. Overall diversity could probably be characterized as fairly good.

Naples Bay, station 28.03.0033, near channel marker #36, is on the Gulf coast near the town of Naples. Macroinvertebrate diversity was fairly good, overall, for the three samples analyzed, in 1976-78. Urban runoff is a pollution source and may be upsetting the natural salinity gradient in the estuary.

Station 28.03.0500 is on the Hillsborough Canal upstream of the lock at Deerfield Beach. Artificial substrate macroinvertebrate diversity was fairly good during the report period, while natural substrate diversity was more variable and only fair, overall. The discrepancy between the two methods (which was seen in other canal data) reflects the greater stress in the sediment of a canal than on artificial substrates. The former consists of soft, organic muck, is sometimes anoxic, and may accumulate biocide residues. The latter have firm surfaces with crevices which provide habitat, are suspended in free water where there is usually more oxygen available, and are only exposed to pollutants during the four week incubation period. The low Biotic Index values at this station also indicated low-dissolved oxygen problems. None of the macroinvertebrate analyses exhibited any significant trend. Bacteria concentrations were normally acceptable when measured, although they were not low.

Station 28.03.0587 is on the New River, in Ft. Lauderdale, near its eastern confluence with the Tarpon River. This area receives urban runoff and a massive volume of boat traffic. Only two macroinvertebrate samples were analyzed, in 1976 and 1977. Diversity was only fair and the species list for the station was rather limited. Especially remarkable was the lack of a variety of mollusks.

Dade County-Lower Everglades Sub-basin

This sub-basin includes metropolitan Miami, the Everglades National Park, and the Florida Keys. The Oleta River, station 28.04.0376 near North Miami Beach, is a shallow tidal creek which receives urban runoff. It was sampled for macroinvertebrates three times, during 1975-77, and had fairly good diversity.

Station 28.04.2070 is on the Miami Canal northwest of Miami at SR 27 near its junction with US 27. Artificial substrate macroinvertebrate diversity was variable, from poor to very good, but was generally fair and had no significant trend. Natural substrate

diversity was also variable, in the same range, and exhibited a significant decline during the report period. The Biotic Index was poor and did not change significantly during the period. Bacteria levels were usually acceptable when monitored.

The Tamiami Canal was a result of fill removal for construction of the Tamiami Trail roadway from Naples to Miami. Station 28.04.2071 is on the canal near control structure S-12C, which is approximately 33 miles west of Miami. Artificial substrate macroinvertebrate diversity was very good, while natural substrate diversity was fairly good but less impressive than the former. Neither measure exhibited a significant trend during the period of record. Biotic Index levels improved significantly but were, nevertheless, poor, indicating the absence of pollution intolerant forms due to oxygen deficiencies. No reason for the improvement was evident. Occasional high total coliform counts were also noted.

Station 28.04.0349 is on Biscayne Bay just north of the Julia Tuttle Causeway. Macroinvertebrate diversity ranged from fair to excellent during the report period. Also, a significant improvement was noted in the diversity. This may reflect recovery of the biota after removal of a major sewage outfall in the late 1960's. Field biologists have also noted increased amounts of turtle grass, Thalassia testudinum, in the area. Also, bacteria concentrations were normally low during the period of record.

Station 28.04.0380 is on Biscayne Bay near channel marker #2 off the Turkey Point channel. Macroinvertebrate diversity ranged very good to excellent, but exhibited a significant decline during the report period. No specific reason for the decline was readily apparent. Bacteria counts were usually low.

Station 28.04.0375 is near channel marker #2 on Angelfish Creek at Key Largo. This is a shallow tidal creek with no notable sources in the immediate vicinity. Macroinvertebrate diversity was determined twice, in 1976 and 1977, and found to be excellent.

Station 28.04.0975 is near channel marker #2 of the South Creek channel in John Pennekamp Coral Reef State Park on the Straits of Florida. The station is in a grass bed area. It regularly produces the highest macroinvertebrate diversities and most taxa per sample of the stations in the monitoring program. The significant improvement probably reflects an expanding knowledge of the taxonomy of the biota rather than a water quality change. Bacteria counts were always low.

Station 28.04.0372 is on Florida Bay near channel marker #1, north-east of Lignum Vitae Key. It was sampled three times, in 1976-78, and macroinvertebrate diversity was found to be excellent.

Station 28.04.0374 is on Florida Bay near channel marker #13, north of Bamboo Key. Macroinvertebrate samples had generally excellent diversities, the three times it was sampled, in 1976-78.

Station 28.04.0373 is in Man of War Harbor between channel marker #27 and Wisteria Island on Frankfort Bank. Macroinvertebrate diversity was generally excellent in the three samples analyzed, in 1976-78.

Station 28.04.0377 is on Florida Bay near Flamingo, about twenty meters south of channel marker #8. Macroinvertebrate diversity ranged from very good to excellent in the three samples analyzed, in 1976-78.

Station 28.04.0976 is on Chokoloskee Bay south of Chokoloskee Island, which is south of Everglades City on the Gulf coast. Its more estuarine nature, relative to the preceding stations, is reflected in slightly lower, although very good, diversities.

Summary

In the Lake Okeechobee/St. Lucie River Sub-basin, the Lake Okeechobee station had good macroinvertebrate diversity and exhibited a significant, but unexplained, improvement. Stations on several of the water management canals - Miami, North New River, Hillsborough, West Palm Beach and St. Lucie - had, as a group, fairly good macroinvertebrate diversities, but Biotic Index numbers were low and the communities were often dominated by pollution tolerant taxa. The stations on the Miami Canal and the St. Lucie Canal showed no significant trends, while macroinvertebrate diversity significantly improved at Hillsborough Canal, for an undetected reason. Trend analysis was not performed for the other two canal stations in this sub-basin.

Near Stuart, the St. Lucie River station had fairly good diversity. In the same area, the Indian River station had better diversity. Both stations are subject to estuarine stresses, but the St. Lucie River station may also be affected by sewage effluent. It showed no significant trend during the report period.

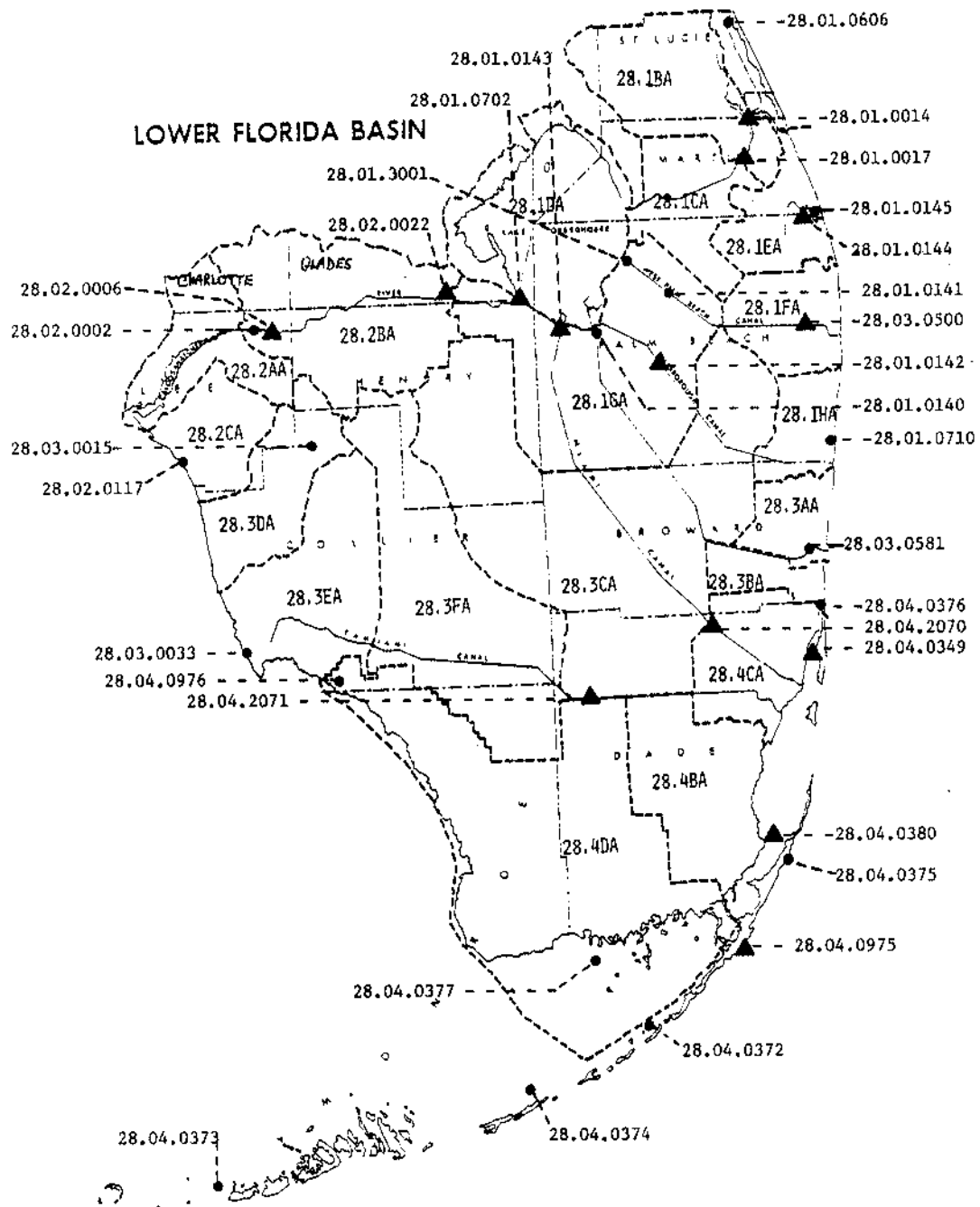
Near Jupiter, the Loxahatchee River station had very good macroinvertebrate diversity and displayed no significant change. The Jupiter Sound station had excellent diversity. Further south, along the coast, Lake Boca Raton also had excellent diversity.

In the Caloosahatchee River Sub-basin, stations on the Rim Canal at Moore Haven and on the Caloosahatchee River near Olga followed the pattern of canal stations, with generally good macroinvertebrate diversities but low Biotic Index levels, indicating low-dissolved oxygen problems. Both of these stations showed some indication of significant improvement but no specific reason for it was apparent. In the Caloosahatchee River estuary, sewage effluent and urban runoff may have combined with natural stresses to reduce diversity. Estero Bay had variable diversity, from fair to very good, and exhibited a significant, though unexplained, upward trend.

In the Broward County/Upper Everglades Sub-basin, the Naples Bay station had fairly good diversity. Urban runoff may be exacerbating natural estuarine salinity stresses by draining greater volumes of water faster than would naturally occur. Lake Trafford had fairly good macroinvertebrate diversity but an extreme nuisance growth of the exotic plant, Hydrilla verticillata. On the east coast in Fort Lauderdale, the New River station had only fair diversity, perhaps due, in part, to urban runoff and extremely heavy boat traffic. The Hillsborough Canal station at Deerfield Beach followed the typical pattern of fairly good diversity but a poor Biotic Index. It displayed no significant trend.

The two canal stations in the Dade County/Lower Everglades Sub-basin-Tamiami and Miami-also followed the typical canal pattern described above. In Biscayne Bay, the northern station exhibited a significant improvement (to excellent) in diversity, which evidently reflected recovery of the biota after discontinuation, in the late 1960's, of a sewage outfall in the area. The south Biscayne Bay station had a significant decline in diversity but no specific cause and effect relationship was apparent.

Several stations were monitored in the Straits of Florida and Florida Bay at Angelfish Creek, John Pennekamp Coral Reef State Park, Lignum Vitae Key, Bamboo Key, Man of War Harbor, and Flamingo. All of these stations had very good or excellent macroinvertebrate diversity. A station on Chokoloskee Bay, on the Gulf side of the Everglades National Park, also had very good diversity.



Macroinvertebrates:

Hydrozoa

Anthozoa

Turbellaria

Rhynchocoela

Oligochaeta

Polychaeta

11

Polychaeta (cont.)

Capitella capitata
Capitellides jonesi
Diopatra cuprea
Dorvillea sociabilis
Dorvillea sp.
Eteone sp.
Glycera americana
G. tessellata
Glycine solitaria
Haploscoloplos foliosus
Hydroides sp.
Lumbrineris sp.
Maldane sarsi
Nereis acuminata
Neanthes succinea
Ophiodromus obscurus
Pectinaria gouldii
Paraprionospio pinnata
Platynereis dumerilii
Polydora websteri
Potamilla reniformis
Spiophanes bombyx
Streblospio benedicti

Arthropoda

Crustacea

Isopoda

Cyathura polita
Edotea montosa

Amphipoda

Ampelisca abdita
Cerapus sp.
Erichthonius brasiliensis
Grandidierella bonnieroides
Leucothoe spinicarpa
Lysianopsis alba

Decapoda

Micropanope sp.
Periclimenes americanus
Portunus sp.
unident. portunid
unident. xanthid

Mysidacea

unident. sp.

Tanaidacea

Apseudes sp.
Leptochelia sp.

Cirripedia

Balanus sp.

Cumacea

Cyclaspis varians

Insecta

Diptera

Polypedilum illinoense

Pycnogonida

Callipallene brevirostrum

Mollusca

Gastropoda

Acteocina canaliculata

Mitrella lunata

Nassarius sp.

Odostomia laevigata

Phidiana lynceus

Tricolia thalassicola

unident. hydrobiid

Pelecypoda

Amygdalum papyrium

Anadara transversa

Astarte sp.

Chione cancellata

Lyonsia hyalina floridana

Modiolus modiolus

Mytilopsis leucophaeta

Mulinia lateralis

Musculus lateralis

Sphenia antillensis

Tellina cf. versicolor

Tagelus divisus

Echinodermata

Synaptula hydriformis

Phoronida

Phoronis architecta

Sipunculida

Phascolosoma strombi

DATA SUMMARY: St. Lucie River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-01.0014	25 Sep 74	2.288±0.182	0.284±0.045	15					Coc BG 2856 F11 BG 707 Coc Gr 125 F11 Gr 42 Gr Flag 50 Other Flag 0 Cen Dia 0 Pen Dia 8 Total 3788		280	250		
	14 Oct 74										GT180	180		
	13 Nov 74										200	8		
	11 Dec 74	1.644±0.113	0.555±0.031	29							12	LT2		
	20 Jan 75										32	4		
	4 Feb 75										LT4	LT4		
	4 Mar 75	1.729±0.080	0.402±0.018	25							4	4		
	2 Apr 75										114	LT4		

See Methods for explanation of table.

DATA SUMMARY: St. Lucie River

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28-01-0014	5 May 75	1.434±0.263	0.621±0.088	12	1.174±0.021	0.418±0.005	9			LT2	LT2	
	2 Jun 75									22	6	
	14 Jul 75									30	16	
	14 Aug 75	3.250±0.190	0.147±0.027	24						16	9	
	16 Sep 75									22	22	
	7 Oct 75									188	99	
	4 Nov 75									99	46	
	8 Dec 75									24	12	
	14 Jan 76	1.642±0.158	0.518±0.418	23						7	1	
	11 Feb 76									11	4	
	10 Mar 76									8	4	
	12 Aug 76	2.325±0.195	0.259±0.036	16								

See Methods for explanation of table.

DATA SUMMARY: St. Lucie River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate						Total	Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
														BI
28.01.0014	15 Nov 76	2.427±0.191	0.287±0.033	22							GT51	68		
	14 Dec 76										29	26		
	11 Jan 77											24		
	9 Feb 77	1.397±0.230	0.713±0.064	22					Coc BG 1 Fil BG 6 Coc Gr 7 Fil Gr 26 Gr Flag 1 Other Flag 0 Cen Dia 5 Pen Dia 1 Total 47		16	LT1		
	23 Mar 77										5	4		
	12 Apr 77												LT1	
	10 May 77												1	
	7 Jun 77	2.160±0.099	0.981±0.026	9									2	

See Methods for explanation of table.

DATA SUMMARY: St. Lucie River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		#Spp.	Redundancy				#Spp.	Fecal	
		Diversity	Redundancy	Diversity	Redundancy								
28.01.0014	13 Jul 77										22	4	
	8 Aug 77	0.321±0.109	0.929±0.038			7					LT1	LT1	
	2 Oct 77	2.166±0.131	0.314±0.036			15							
	12 Jan 78											LT3	
	17 Jan 78										47	15	
	2 Feb 78											195	
	13 Feb 78	2.522±0.299	0.388±0.074			21							
	6 Mar 78												
	5 Apr 78	1.652±0.281	0.624±0.083			16			Coc BG 2730 F11 BG 353 Coc Gr 69 F11 Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 0		1280	40	

See Methods for explanation of table.

DATA SUMMARY: St. Lucie River

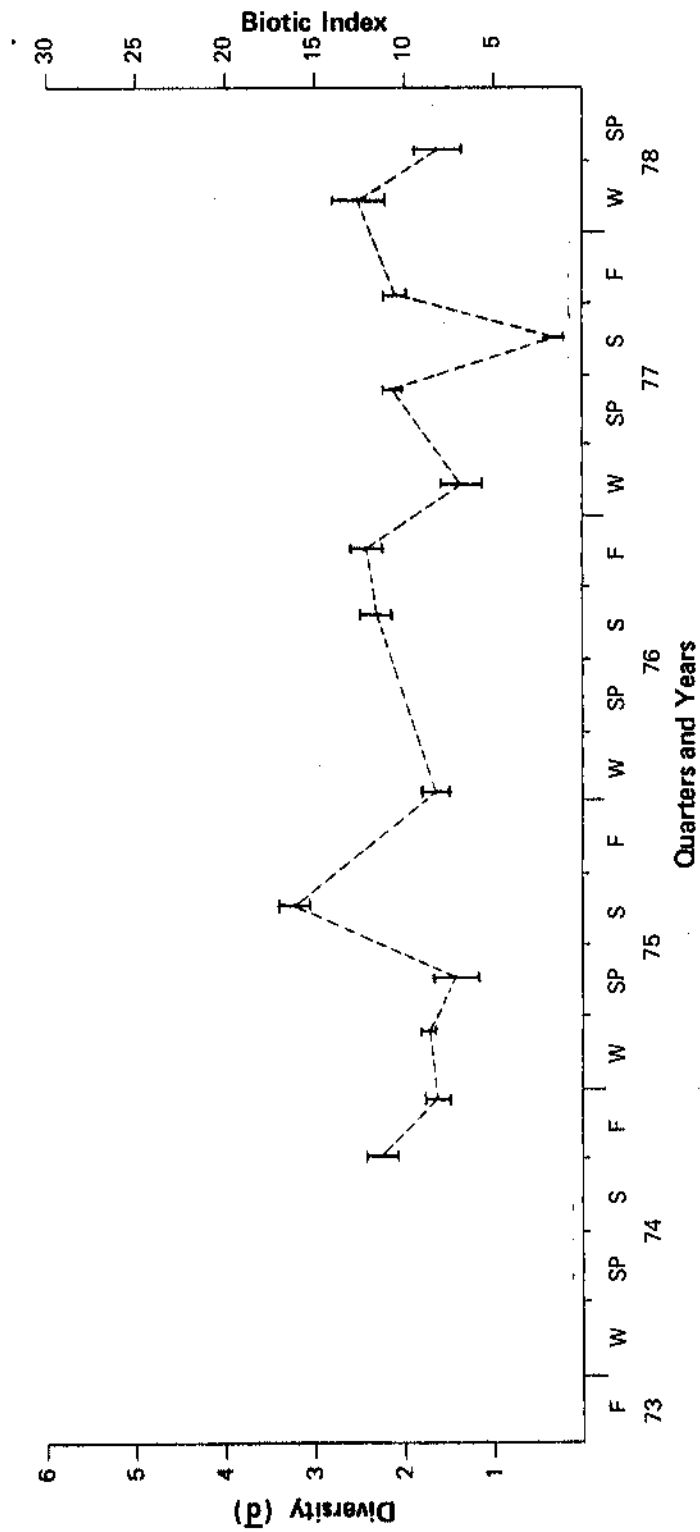
Station Number	Date	Macroinvertebrates								Phytoplankton Composition units/cm3	Periphyton Composition units/cm2	Coliform Bacteria Colonies/100ml		Comments		
		Natural Substrate		Artificial Substrate		Redundancy	Diversity	#Spp.	BI			#Spp.	Total		Fecal	
		Diversity	Redundancy	#Spp.	Diversity											#Spp.
28.01.0014	5 Apr 78 (cont.)									Pen Dia 21 Total = 3173			LT3			
	18 Apr 78													LT3		
	16 May 78															
	20 Jun 78													13		

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0014
 BODY OF WATER: ST. LUCIE RIVER

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0017 Body of Water St. Lucie Canal

Location immediately upstream of lock near Stuart

County Martin

Type Body of Water canal Classification III

Sources of Pollution agricultural

Nearby Land Use undeveloped, agriculture

Sampling Frequency quarterly Depth 2.0 - 7.0 m

Bottom Type silt, clay, detritus % Volatile Solids 0.56 - 6.56

Aquatic Plants: Submerged Ruppia maritima, Bacopa monnieri, Anacharis sp., Vallisneria sp., Hydrilla verticillata Emergent Panicum hemitomon, Pistia stratiotes, Phragmites communis, Eichhornia crassipes, Panicum repens, Paspalum fluitans, Ludwigia

Macroinvertebrates: peruviana, Typha sp., Leersia sp.

Cnidaria

Hydrozoa

Hydra sp. 1 - Hart

Platyhelminthes

Turbellaria

Planaria sp. 1 - Hart

Annelida

Oligochaeta

Ampichaeta americana

Aulodrilus sp. 1 - Hart

Branchiura sowerbyi

Chaetogaster sp.

Limnodrilus hoffmeisteri

Nais osborni

Pristina sp. 1 - Rohlke

Stylaria fossularis

Tubifex tubifex

28.01.0017

Arthropoda

Crustacea

Isopoda

Cassidinisca sp. 1 - Rohlke
Cirolana sp. 1 - Hart
Cyathura polita
Exosphaeroma sp. 1 - Hart

Amphipoda

Ampelisca sp. 1 - Hart
Corophium sp. 1 - Hart
C. lacustre
Gammarus fasciatus
Hyalella azteca

Decapoda

Palaemonetes paludosus
Rhithropanopeus harrisii

Mysidacea

Taphromysis louisianae

Tanaidacea

Tanais cavolinii

Insecta

Odonata

Aphylla williamsoni
Enallagma sp. 1 - Hart
Epicordulia sp. 1 - Hart
Ischnura sp. 1 - Hart
Leptemis sp. 1 - Hart
Macromia sp. 1 - Hart
Miathyria sp. 1 - Hart
Perithemis seminole
Erythemis sp. 1 - Hart

Ephemeroptera

Caenis diminuta
Callibaetis floridanus

Hemiptera

Belostoma sp. 1 - Hart
Gelastocoris sp. 1 - Hart
Limnogonus hesione
Mesovelis sp. 1 - Rohlke
Ranatra sp. 1 - Hart
Sigara sp. 1 - Hart

Trichoptera

Agraylea sp. 1 - Hart
Apatania sp. 1 - Hart
Hydroptila sp. 1 - Rohlke
Oecetis sp. 1 - Hart
Oxyethira sp. 1 - Rohlke
Polycentropus sp. 1 - Rohlke

Neuroptera

Sisyra sp. 1 - Rohlke

Diptera

Ablabesmyia janta
A. parajanta
A. ornata
Chaoborus punctipennis
Chironomus attenuatus
C. carus
C. crassicaudatus
C. stigmaterus
Coelotanypus concinnus
C. tricolor
Conchapelopia sp. 1 - Hart
Clinotanypus sp. 1 - Hart
Cryptochironomus sp. 1 - Hart
C. fulvus
Cricotopus remus
Cryptotendipes sp. 1 - Hart
Dicrotendipes neomodestus
D. lobus
D. nervosus
Einfeldia sp. 1 - Hart
Glyptotendipes paripes
Leptochironomus sp. 1 - Hart
Micropsectra sp. 1 - Hart
Orthocladius sp. 1 - Hart
Nimbocera sp. 1 - Hart
Parachironomus pectinatellae
P. carinatus
Paralauterborniella nigrohalteralis
Pedionomus beckae
Palpomyia sp. 1 - Hart
Polypedilum halterale
P. ontario
P. fallax
P. illinoense
Pseudochironomus sp. 1 - Hart
Psectrocladius vernalis
Pentaneura sp. 1 - Hart

Diptera (cont.)

Stictochironomus devinctus
Tanytarsus sp. 1 - Hart
Tanypus stellatus
Tribelos fuscicornis
Zavrelia sp.
unident. orthocladiin
unident. ceratopogonid sp. 1 - Rohlke

Coleoptera

Bidessus flavicollis
Dineutus carolinus
Gyrinus sp. 1 - Hart
G. elevatus
Peltodytes floridensis

Mollusca

Gastropoda

Fossaria sp. 1 - Hart
Helisoma sp. 1 - Hart
Lymnaea (Pseudosuccinea) columella
Melanoides sp. 1 - Hart
M. tuberculata
Physa sp. 1 - Hart
Planorbula sp. 1 - Hart
Pleurocera sp. 1 - Hart
Pyrgophorus platyrachis

Pelecypoda

Amygdalum sagittata
Corbicula manilensis
Pisidium sp. 1 - Hart
unident. unionid

DATA SUMMARY: St. Lucie Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-01-0017	30 Oct 73	3.167±0.268	0.146±0.268	16								60	5	
	22 Jan 74	2.613±0.309	0.132±0.080	8								55	11	
	21 Feb 74				2.590±0.087	0.141±0.016	12					44	33	
	20 Mar 74											33	2	
	9 Apr 74							2	26			19	4	
	22 May 74	2.439±0.306	0.288±0.070	13								580	240	
	18 Jun 74									Coc BG 485 Fil BG 30 Coc Gr 48 Fil Gr 4 Gr Flag 0 Other Flag 7 Cen Dia 0 Pen Dia 522 Total 1096	19	7		
17 Jul 74	3.148±0.312	0.130±0.054	13				0	21			50	2		

See Methods for explanation of table.

DATA SUMMARY: St. Lucie Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.01.0017	14 Aug 74											220	26	
	10 Sep 74											17	2	
	14 Oct 74											80	7	
	13 Nov 74											12	8	
	11 Dec 74	2.909±0.256	0.099±0.481	10	2.919±0.171	0.155±0.031	16			Coc BG 0 Fil BG 900 Coc Gr 500 Fil Gr 2000 Gr Flag 0 Other Flag 0 Cen Dia 3800 Pen Dia 23000 Total 30200		31	8	
	20 Jan 75											92	24	
	4 Feb 75											20	8	
	4 Mar 75	1.966±0.364	0.293±0.131	10				3	12			92	35	

See Methods for explanation of table.

DATA SUMMARY: St. Lucie Canal

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm3	Periphyton Composition units/cm2	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate					Total	Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.01.0017	7 Apr 75									59	4		
	5 May 75	2.074±0.345	0.155±0.146	5	2.231±0.193	0.155±0.052	7						
	2 Jun 75									15	LT2		
	14 Jul 75									55	34		
	4 Aug 75									33	LT2		
	2 Sep 75	2.088±0.219	0.304±0.075	9	2.064±0.268	0.288±0.093	8	4	21	20	6		
	7 Oct 75	1.523±0.541	0.809±0.184	10						250	66		
	5 Nov 75									55	LT2		
	8 Dec 75										5		
	14 Jan 75									131	7		
	11 Feb 76									59	5		

See Methods for explanation of table.

DATA SUMMARY: St. Lucie Canal

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate						Total	Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.01.0017	10 Mar 76	2.455+0.254	0.187+0.054	10	1.600+0.170	0.341+0.042	8	2	Coc BG 0 Fla BG 370 Coc Gr 0 Fla Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 0 Pen Dia 95560 Total 95930		231	30		
	25 May 76	2.830+0.380	0.251+0.081	14										
	23 Aug 76	2.775+0.225	0.247+0.056	20				6						
	15 Nov 76	3.269+0.241	0.096+0.026	15	3.316+0.160	0.100+0.023	18					5	5	
	14 Dec 76													
	11 Jan 77													
	9 Feb 77	3.175+0.229	0.126+0.025	18				8				185	120	
	23 Mar 77												5	
												46	20	
												36	9	

See Methods for explanation of table.

DATA SUMMARY: Sr. Lucie Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-01-0017	12 Apr 77											3	Florida Index	
	7 Jun 77	2.305 $\pm$ 0.355	0.189 $\pm$ 0.090		2.340 $\pm$ 0.152	0.321 $\pm$ 0.036	21				15			
	8 Aug 77	1.600 $\pm$ 0.224	0.472 $\pm$ 0.086	8	0.980 $\pm$ 0.046	0.703 $\pm$ 0.016	14			Coc BG 100 Fil BG 500 Coc Gr 1500 Fil Gr 200 Gr Flag 0 Other Flag 0 Cen Dia 0 Pen Dia 6300 Total 8600	39	11		
	12 Oct 77	2.605 $\pm$ 0.445	0.231 $\pm$ 0.091	8				5	24					
	17 Jan 78													
	2 Feb 78													
	13 Feb 78	2.214 $\pm$ 0.291	0.274 $\pm$ 0.069	10	2.730 $\pm$ 0.329	0.219 $\pm$ 0.062	13					97	75	
	6 Mar 78												8	
												1740	35	

See Methods for explanation of table.

DATA SUMMARY: St. Lucie Canal

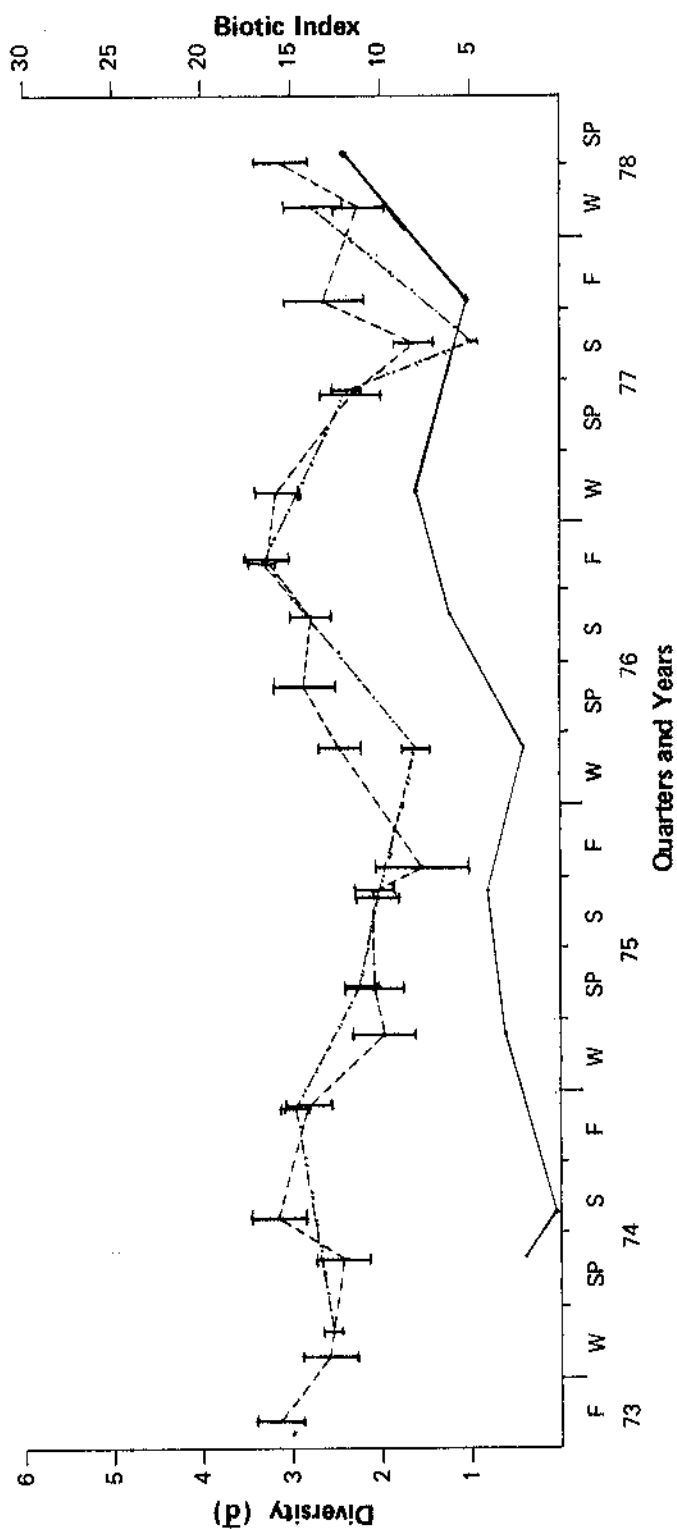
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal							
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.			BI	#Spp.	
28.01.0017	5 Apr 78	3.095±0.293	0.209±0.042	22				12	36			23	87	
	16 May 78											25	173	
	20 Jun 78												5	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0017
 BODY OF WATER: ST. LUCIE CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28.01.0140 Body of Water North New River Canal

Location near Lake Okeechobee

County Palm Beach

Type Body of Water canal Classification III

Sources of Pollution agricultural runoff

Nearby Land Use agriculture

Sampling Frequency annually Depth 4.6 - 7.0 m

Bottom Type silt, coarse, sand, rock % Volatile Solids _____

Aquatic Plants: Submerged Pithophora sp.

Emergent Eichhornia crassipes, Pistia stratiotes,

Bacopa monnieri, Ceratophyllum demersum, Lemna sp., Typha sp., Sagittaria sp.

Macroinvertebrates:

Annelida

Oligochaeta

Branchiura sowerbyi

Limnodrilus hoffmeisteri

Tubifex tubifex

Arthropoda

Crustacea

Amphipoda

Hyalella azteca

Insecta

Diptera

Ablabesmyia sp.

Chaoborus punctipennis

Chironomus attenuatus

C. carus

Clinotanypus sp.

Tanypus carinatus

Mollusca

Gastropoda

Melanoides tuberculata

Pomacea paludosa

Gastropoda (cont.)

Pyrgophorus platyrachis

Viviparus georgianus

Pelecypoda

Corbicula manilensis

Sphaerium partumeium

DATA SUMMARY: North New River Canal

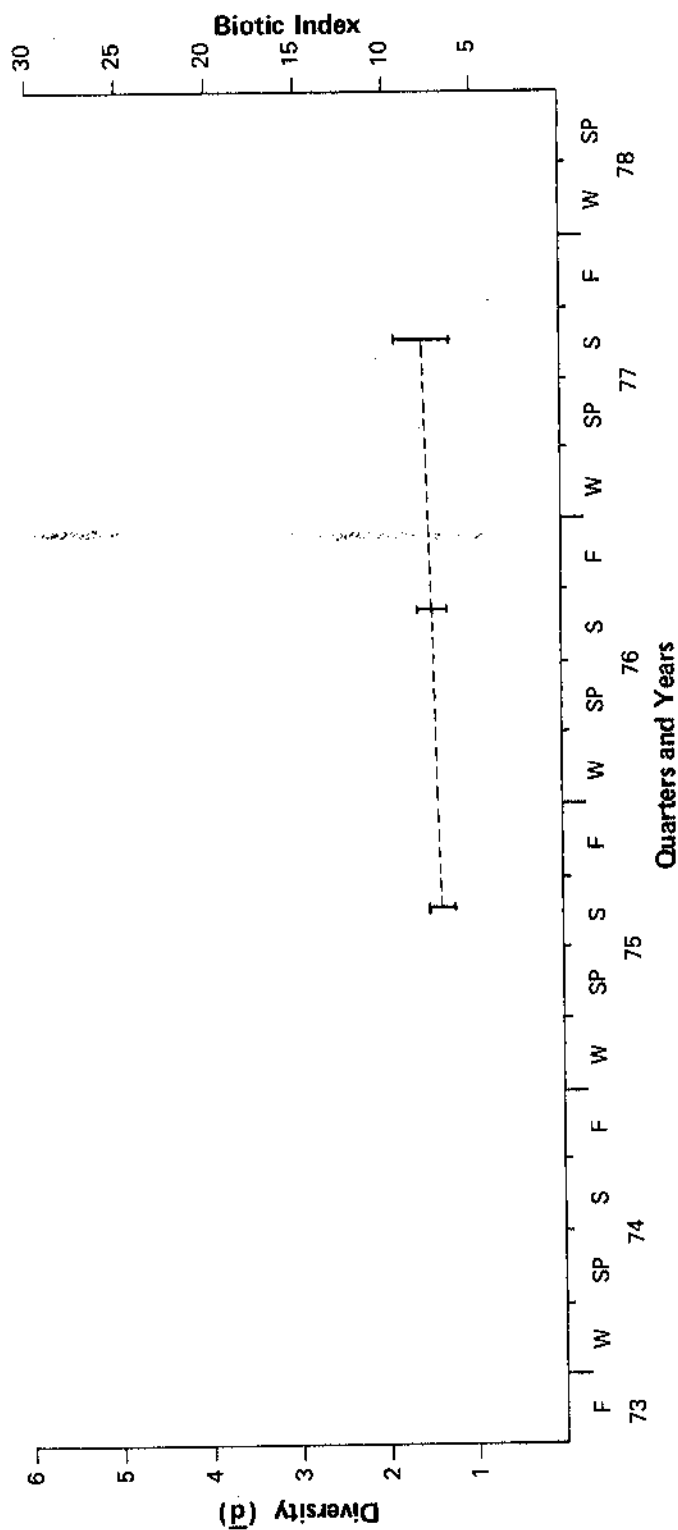
Station Number	Date	Macroinvertebrates							Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colouden/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.01.0140	12 Aug 75	1.439±0.130	0.363±0.045	7								Total	Fecal	
	24 Aug 76	1.560±0.177	0.401±0.072	7										
	16 Aug 77	1.661±0.302	0.555±0.099	12										

See Methods for explanation of Table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0140
 BODY OF WATER: NORTH NEW RIVER CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0141 Body of Water West Palm Beach Canal
Location Canal Point near Lake Okeechobee
County Palm Beach
Type Body of Water canal Classification III
Sources of Pollution agricultural and urban runoff
Nearby Land Use agriculture
Sampling Frequency annually Depth 3.6-4.7 m
Bottom Type silt, organics % Volatile Solids _____
Aquatic Plants: Submerged Cladophora sp.
Emergent Panicum hemitomon, Ceratophyllum demersum

Macroinvertebrates:

Annelida

Oligochaeta

Branchiura sowerbyi
Limnodrilus hoffmeisteri
Tubifex tubifex

Arthropoda

Crustacea

Amphipoda

Gammarus fasciatus

Insecta

Odonata

Perithemis tenera

Diptera

Chironomus carus
C. attenuatus
Chaoborus punctipennis
Coelotanypus sp.
Clinotanypus sp.
Dicrotendipes lobus
D. nervosus
Einfeldia sp.
Glyptotendipes sp.
Goeldichironomus holoprasinus
Nimbocera sp.
Parachironomus directus

28.01.0141

Mollusca

Gastropoda

Lymnaea cubensis
Melanoides tuberculata
Pomacea paludosa
Viviparus georgianus
Tarebia granifera

Pelecypoda

Corbicula manilensis
Elliptio sp.

DATA SUMMARY: West Palm Beach Canal

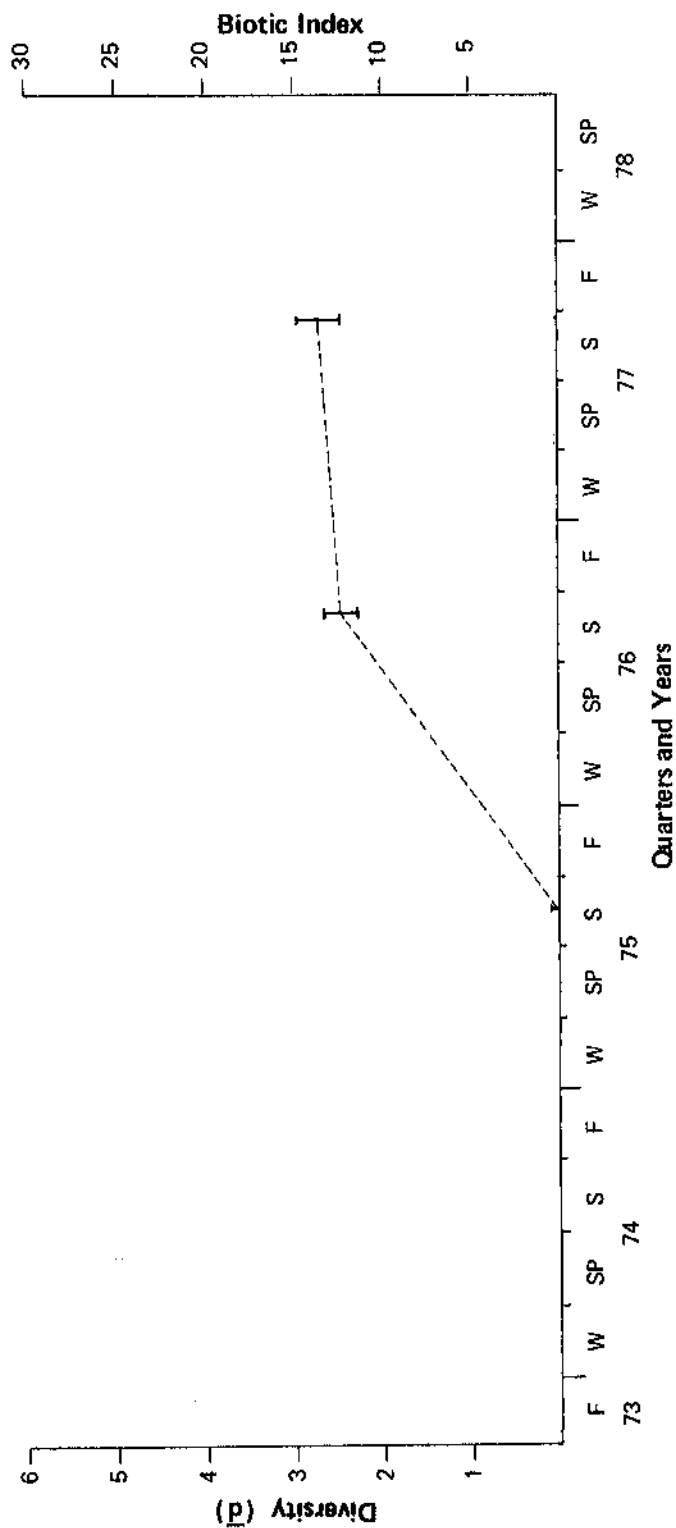
Station Number	Date	Macroinvertebrates								Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate		Artificial Substrate				Biotic Index					
		Diversity	Redundancy	Diversity	Redundancy	#Spp.							
							#Spp.						
26.01.0141	12 Aug 75	0.000						1					
	24 Aug 76	2.438±0.199	0.282±0.034					23					
	13 Sep 77	2.689±0.273	0.074±0.057					7					

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0141
 BODY OF WATER: WEST PALM BEACH CANAL

- - - NATURAL SUBSTRATE DIVERSITY
 - . . . ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0142 Body of Water Hillsboro Canal

Location near Lake Okeechobee

County Palm Beach

Type Body of Water canal Classification III

Sources of Pollution agricultural runoff

Nearby Land Use agriculture

Sampling Frequency _____ Depth 2.3 - 3.5 m

Bottom Type coarse sand, rock, organics % Volatile Solids 7.9-12.6

Aquatic Plants: Submerged _____

Emergent Pistia stratiotes, Panicum hemitomon, Cladium
jamaicense, Paspalum sp., Eichhornia crassipes, Anthemis sp., Salvinia rotundifolia,

Macroinvertebrates: Lemna sp., Alternanthera philoxeroides, Typha sp., Zizaniopsis
miliacea

Cnidaria
Hydrozoa

Cordylophora lacustris
Hydra americana

Platyhelminthes
Turbellaria

Dugesia tigrina

Annelida
Oligochaeta

Limnodrilus hoffmeisteri
Tubifex tubifex

Hirudinea

Erpobdella sp.
Helobdella elongata
H. triserialis
H. stagnalis
Placobdella parasitica

Polychaeta

Namalycastis abiuma

Arthropoda

Crustacea

Isopoda

Cassidinisca lunifrons

Amphipoda

Gammarus fasciatus

Hyaella azteca

Decapoda

Palaemonetes paludosus

unident. astacid

Insecta

Odonata

Enallagma sp.

Erythemis sp.

Libellula sp.

L. vibrans

Ischnura sp.

Pachydiplax longipennis

Perithemis sp.

Ephemeroptera

Caenis diminuta

Callibaetis floridanus

Hemiptera

Belostoma sp.

Mesovelia mulsanti

Pelocoris sp.

Diptera

Anopheles sp.

Chaoborus punctipennis

Chironomus attenuatus

C. carus

Clinotanypus sp.

Coelotanypus sp.

Cryptotendipes sp.

Cryptochironomus fulvus

Dicrotendipes modestus

D. lobus

D. nervosus

D. neomodestus

Einfeldia sp.

Eulalia sp.

Endochironomus nigricans

Glyptotendipes sp.

Goeldichironomus holoprasinus

Micropsectra sp.

Nimbocera sp.

Kiefferulus sp.

Parachironomus sp.

Diptera (cont.)

Palpomyia sp.
Pedionomus beckae
Procladius sp.
Psectrocladius sp.
Pseudochironomus sp.
Tanypus stellatus
Rheotanytarsus sp.
unident. orthocladiin

Coleoptera

Dytiscus sp.
Galerucella nymphaeae
Gyrinus sp. 1 - Deis
Berosus sp.
Hydrocanthus oblongus
Peltodytes floridensis

Mollusca

Gastropoda

Polygyra septemvolva
Helisoma sp.
Laevapex fusca
cf. Fossaria cubensis
Melanoides tuberculata
Physa sp.
Gyraulus sp.
Pomacea paludosa
Pyrgophorus platyrachis
unident. hydrobiid

Pelecypoda

Corbicula manilensis
Elliptio sp.
Sphaerium partumeium
S. transversum
Anodonta couperiana

DATA SUMMARY: Hillsboro Canal

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate			Artificial Substrate						
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.				
28.01.0142	12 Aug 75	0.039±0.025	0.995±0.007	4							
	24 Aug 76	1.004±0.085	0.504±0.039	6			2	20	Coc BG 147 Fil BG 2123 Coc Gr 4 Fil Gr 6 Gr Flag 0 Other Flag 0 Cen Dia 0 Pen Dia 80 Total 2360		
	12 Dec 76	3.344±0.143	0.097±0.018	19	2.471±0.215	0.225±0.064	10				
	24 Jan 77	2.878±0.248	0.078±0.044	9	2.349±0.140	0.235±0.042	3	8		Coc BG 125 Fil BG 250 Coc Gr 2050 Fil Gr 250 Gr Flag 150 Other Flag 0 Cen Dia 200	
	14 Jun 77	0.546±0.189	0.835±0.084	5							

See Methods for explanation of table.

DATA SUMMARY: Hillsboro Canal (Cont.)

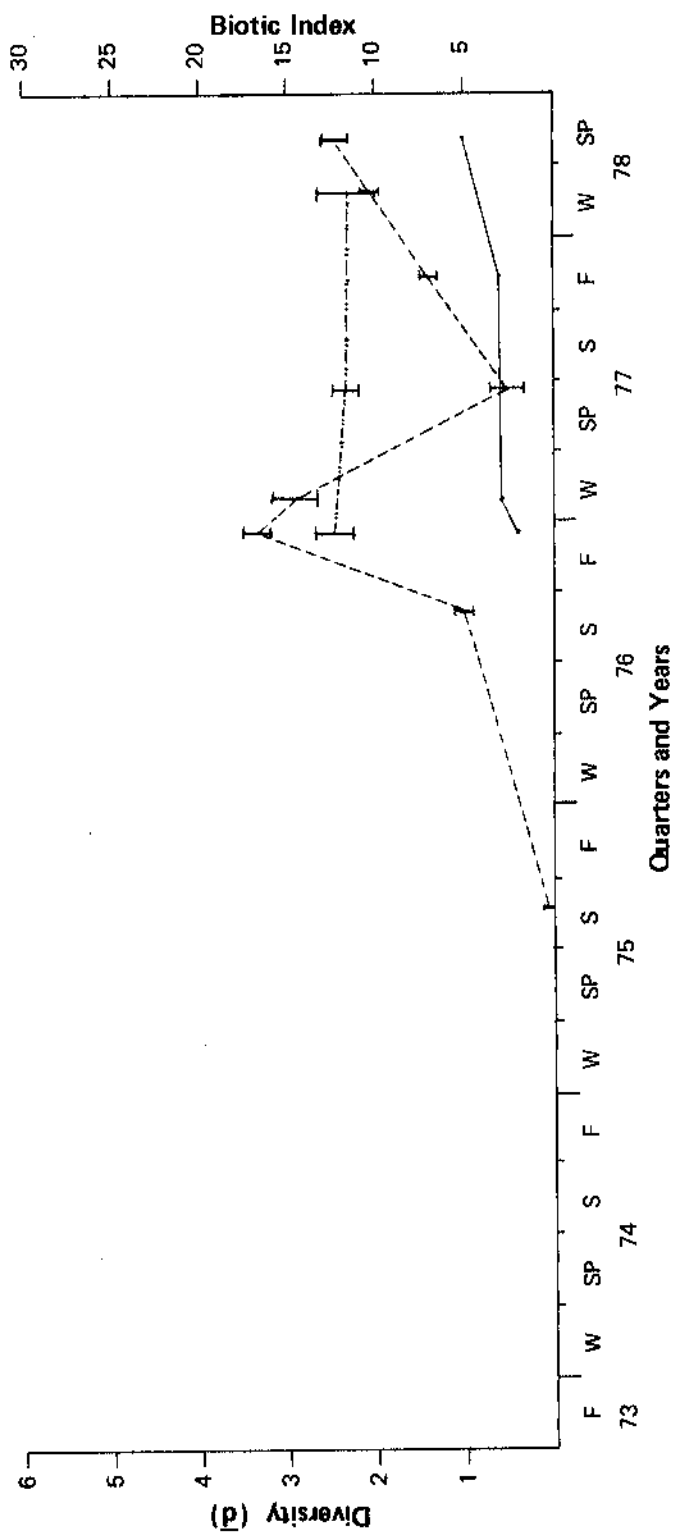
Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colouder/100ml	Calculation
		Natural Substrate			Artificial Substrate						
		Diversity	Redundancy	ESp.	Diversity	Redundancy	ESp.				
28.01.0142	14 Jun 77 (Cont.)								Pen Dia 8525 Total 11550		Florida Index
	31 Oct 77	1.410±0.110	0.420±0.019	14			3	43			
	20 Feb 78	2.032±0.100	0.239±0.021	11	2.290±0.311	0.307±0.087	11				
	25 Apr 78	2.485±0.161	0.160±0.030	11			5	47			

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0142
 BODY OF WATER: HILLSBOROUGH CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Amphipoda (cont.)

Hyalella azteca

Decapoda

Palaemonetes paludosus

Insecta

Odonata

Cannacria grvida

Coryphaeschna sp.

Enallagma sp.

Epicordulia princeps

Erythemis simplicicollis

Ischnura posita

I. ramburii

Pachydiplax longipennis

Libellula vibrans

Aphyllia williamsoni

Perithemis tenera seminole

Tetragoneuria sp.

Ephemeroptera

Caenis diminuta

Callibaetis floridanus

Hemiptera

Belostoma sp.

Mesovelgia mulsanti

Pelocoris sp.

Trichoptera

Nectopsyche tavana

Diptera

Ablabesmyia parajanta

Chaoborus punctipennis

Chironomus attenuatus

C. carus

C. crassicaudatus

C. stigmaterus

Cladotanytarsus sp.

Clinotanypus sp.

Coelotanypus concinnus

C. scapularis

C. tricolor

Cryptochironomus fulvus

Dicrotendipes lobus

D. modestus

D. neomodestus

Eulalia sp.

Einfeldia natchitoches

Endochironomus nigricans

Glyptotendipes sp.

Goeldichironomus holoprasinus

Diptera (cont.)

Kiefferulus sp.
Micropsectra sp.
Nimbocera sp.
Parachironomus directus
Pedionomus beckae
Palpomyia sp.
Polypedilum illinoense
Procladius sp.
Psectrocladius sp.
Tabanus sp.
Tanytarsus sp.

Coleoptera

Dineutus carolinus
Hydrocanthus oblongus
Peltodytes floridensis
Derovatellus lentus floridanus
Tropisternus quadristriatus

Mollusca

Gastropoda

Polygyra septemvolva
Goniobasis sp.
Gyraulus sp.
Helisoma scalare
cf. Laevapex fuscus
Melanoides tuberculata
Physa sp.
Pomacea paludosa
Pyrgophorus platyrachis
Viviparus georgianus

Pelecypoda

Corbicula manilensis
Elliptio sp.
Anodonta couperiana
Sphaerium transversum

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ²	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate			Artificial Substrate							
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28.01.0143	12 Aug 75	2.098±0.259	0.266±0.069	9								
	24 Aug 76	1.626±0.197	0.361±0.057	8								
	6 Dec 76	2.454±0.162	0.180±0.030	12	1.051±0.220	0.743±0.074	11		Coc BG 17270 Fil BG 24885 Coc Gr 3933 Fil Gr 0 Gr Flag 360 Other Flag 885 Cen Dia 164 Pen Dia 1868 Total 49373			
	24 Jan 77	3.002±0.180	0.136±0.029	16			3	26		Coc BG 164700 Fil BG 150 Coc Gr 3900 Fil Gr 0 Gr Flag 0 Other Flag 0		
	14 Jun 77	2.516±0.223	0.083±0.050	7								

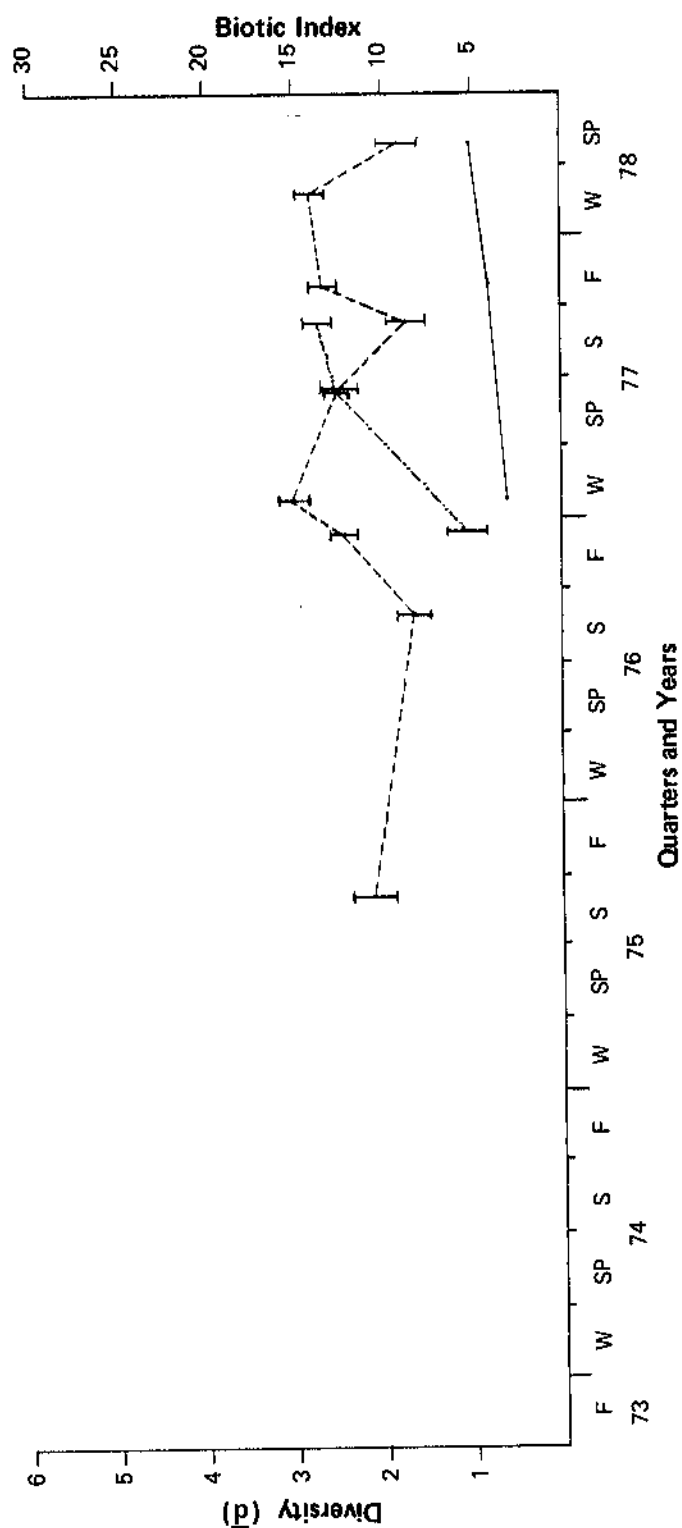
See Methods for explanation of table.

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0143
 BODY OF WATER: MIAMI CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0144 Body of Water Loxahatchee River
Location upstream of AlA. bridge
County Palm Beach
Type Body of Water estuarine river Classification III
Sources of Pollution urban runoff
Nearby Land Use residential
Sampling Frequency quarterly Depth 0.8-1.5 m
Bottom Type sand, shell % Volatile Solids 0.4
Aquatic Plants: Submerged _____
Emergent Rhizophora mangle

Macroinvertebrates:

Cnidaria

Hydrozoa

Campanularia sp.
unident. sp.

Rhynchocoela

cf. Micrura sp.
Tubulanus pellucidus
unident. sp.

Annelida

Oligochaeta

unident. tubificid

Polychaeta

Armandia agilis
A. maculata
Axiiothella mucosa
Autolytus sp.
Brania clavata
Capitella capitata
Capitomastus aciculatus
Capitellides jonesi
Caulleriella killariensis
Ceratonereis mirabilis
Diopatra cuprea
Eulalia sp.
Exogone dispar

Polychaeta (cont.)

Glycera americana
G. capitata
G. dibranchiata
G. tessellata
Glycinde solitaria
Haploscoloplos fragilis
Laonice cirrata
Lumbrineris impatiens
L. tenuis
Megalomma bioculatum
Mediomastus californiensis
Nereis sp.
Notomastus hemipodus
Odontosyllis enopla
Orbinia riseri
Owenia fusiformis
Paraonis fulgens
Pectinaria gouldii
Platynereis dumerilii
Polydora socialis
P. ligni
P. caeca
Polyopthalmus pictus
Prionospio cristata
Sabella melanostigma
Spio pettiboneae
Sthenelais boa
Syllis alternata
 unident. maldanid

Arthropoda

Crustacea

Isopoda

Cyathura polita
Xenanthura brevitelson
 unident. anthurid

Amphipoda

Ampelisca abdita
Cerapus sp.
Corophium acherusicum
Erichthonius brasiliensis
Grandidierella bonnieroides
Lembos smithi
Micropanope sp.
Monoculodes edwardsi
Paraphoxus spinosus
Platyischnopus sp.
 cf. Stenothoe sp. 1 - Walesky

Amphipoda (cont.)

Stenothoe minuta
Synchelidium americana

Decapoda

Alpheopsis frigus
Paguristes hymni
Penaeus duorarum

Caprellidea

Caprella equilibra
Luconacia incerta
Paracaprella pusilla
P. tenuis
Phtisica cf. marina

Tanaidacea

Leptochelia
Tanais cavolinii

Cirripedia

Balanus sp.

Cumacea

Cyclaspis varians

Pycnogonida

Callipallene brevirostrum

Mollusca

Gastropoda

Acteocina canaliculata
Bulla striata
Caecum pulchellum
C. nitidum
Cerithiopsis greeni
Cerithium atratum
Cerodrillia sp.
Crepidula sp.
Cylindrobulla beauii
Bittium varium
Haminoea elegans
Jaspidella jaspidea
Mitrella lunata
Odostomia laevigata
Rissoina catesbyana
Turbonilla sp.
Tricolia thalassicola
Vexillum cf. gemmatum
unident. cerithiid
unident. opisthobranch

Pelecypoda

Anomia simplex

Pelecypoda (cont.)

Anadara transversa
Cardita dominguensis
Chione cancellata
Crassinella sp.
Ervilia concentrica
Gastrochaena hians
cf. Gouldia cerina
Lucina nassula
Lyonsia hyalina floridana
Macoma sp.
Modiolus modiolus
Mulinia lateralis
Musculus lateralis
cf. Periglypta listeri
Pinctada imbricata
Solemya occidentalis
Sphenia antillensis
Tagelus divisus
T. cf. plebeius
Tellina cf. versicolor
Parvilucina multilineata

Echinodermata

Echinoidea

unident. sp.

Holothuroidea

Synaptula hydroformis

Bryozoa

Amathia sp.
A. alternata
Bugula neritina
Electra sp.

Phoronida

Phoronis architecta

Sipunculida

Aspidosiphon albus
Golfingia sp.
Phascolosoma strombi
unident. sp. 4 - Rudolph

Hemichordata

unident. sp.

DATA SUMMARY: Loxahatchee River

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria colonies/100ml	Comments
		Natural Substrate			Artificial Substrate						
		Diversity		#Spp.	Diversity		#Spp.				
		Diversity	Redundancy		Diversity	Redundancy					
28.01.0144	4 Aug 76	4.882±0.297	0.156±0.032	58							
	29 Nov 76	4.293±0.284	0.103±0.026	32							
	22 Jan 77	3.327±0.391	0.265±0.063	23							
	26 Apr 77	3.632±0.263	0.085±0.024	18							
	22 Aug 77	3.924±0.333	0.132±0.042	20							
	20 Oct 77	2.927±0.311	0.399±0.065	35							
	2 Feb 78	4.816±0.262	0.085±0.019	40							
	31 May 78	5.005±0.189	0.062±0.011	64							

See Methods for explanation of table.

DATA SUMMARY: Loxahatchee River (Cont.)

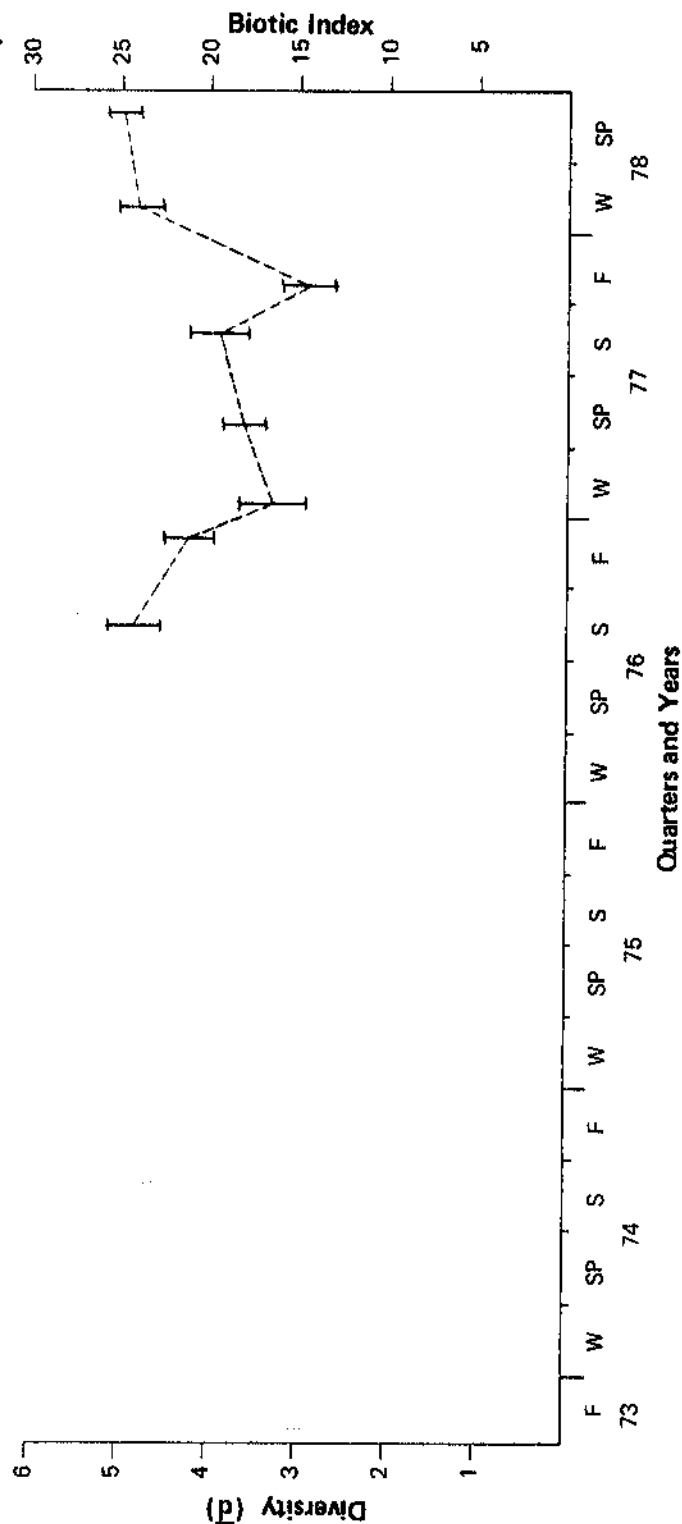
Station Number	Date	Macroinvertebrates								Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate				Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	Stotic Index						
									#Spp.					
28.01.0144	31 May 78 (Cont.)									Fil BG 245 Coc Gr 11 Fil Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 166 Pen Dia 11 Total 433				

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0144
 BODY OF WATER: LOXAHATCHEE RIVER

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0145 Body of Water Jupiter Sound
Location near US ALA bridge
County Palm Beach
Type Body of Water marine Classification III
Sources of Pollution _____
Nearby Land Use residential
Sampling Frequency annually Depth 0.3 - 0.85 m
Bottom Type grass, sand % Volatile Solids _____
Aquatic Plants: Submerged Thalassia sp., Caulerpa sp., Dictyota sp.,
Syringodium sp. Emergent Spartina sp., Rhizophora mangle

Macroinvertebrates:

Cnidaria
 Anthozoa
 unident. zoanthid

 Hydrozoa
 Campanularia sp.

Rhynchocoela
 unident. sp.

Annelida
 Oligochaeta
 Pelosclex gabriellae
 unident. tubificid

 Polychaeta
 Aricidea jeffreysii
 A. taylori
 Armandia maculata
 Branchiomma nigromaculata
 Capitella capitata
 Capitellides jonesi
 Caulleriella killariensis
 Cirriformia filigera
 Exogone dispar
 E. verugera

Polychaeta (cont.)

Lepidonotus variabilis
Lumbrineris sp.
Naineris sp.
Odontosyllis enopla
Platynereis dumerilii
Polydora caeca
Prionospio cristata
P. heterobranchia
P. fallax
Scoloplos rubra
Sabellaria vulgaris
Streblospio benedicti
Syllis ferrugina
Thelepus setosus
Terebellides stroemi
 unident. goniadid

Arthropoda

Crustacea

Isopoda

Apanthura magnifica

Amphipoda

Ampithoe longimana
Corophium acherusicum
Cymadusa compta
Grandidierella bonnieroides
Lembos smithi
Platyischnopus sp.

Decapoda

Alpheus armillatus
Hippolyte sp.
Latreutus fucorum
Pagurus sp.
Periclimenes americanus
 unident. brachyuran

Tanaidacea

Leptochelia forresti

Pycnogonida

Nymphon floridanum

Mollusca

Gastropoda

Doridium pusum
Caecum nitidum
C. pulchellum
Crepidula plana
Bittium varium
Costoanachis sparsa

Gastropoda (cont.)

Mitrella lunata
Rissoina catesbyana
Vexillum sp.
unident. opisthobranch

Pelecypoda

Anomia simplex
Arcinella cornuta
Chione cancellata
Lima pellucida
Lucina radians
Macoma tenta
Mulinia lateralis
Musculus lateralis
Ostrea equestris
Pinctada imbricata
Tellina cf. versicolor
Sphenia antillensis

DATA SUMMARY: Jupiter Sound

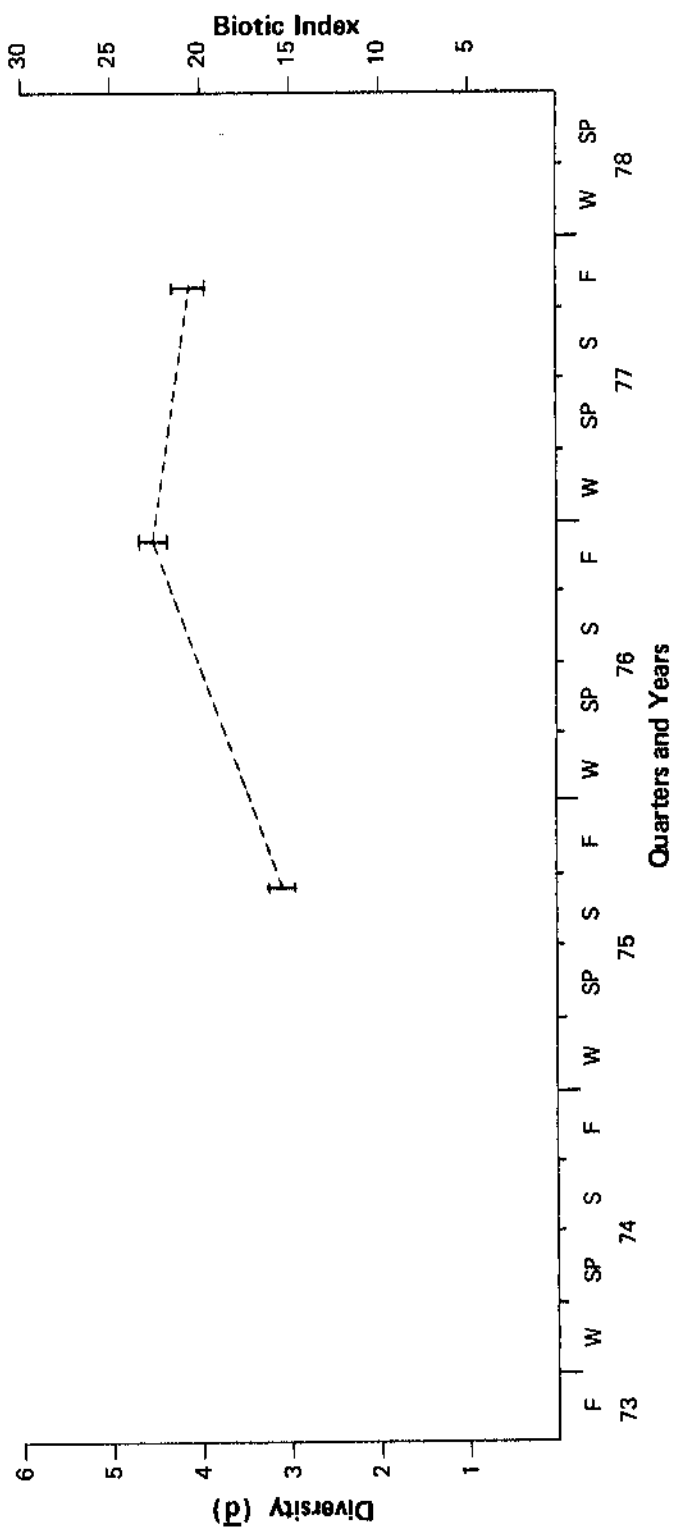
Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	ISpp.	Diversity	Redundancy	ISpp.					
28-01-0145	15 Sep 75	3.101±0.177	0.228±0.024	43								
	29 Nov 76	4.565±0.159	0.065±0.011	52								
	20 Oct 77	4.168±0.195	0.110±0.019	47								

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0145
 BODY OF WATER: JUPITER SOUND

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0606 Body of Water Indian River
Location south of Jensen Beach Causeway
County Martin
Type Body of Water marine Classification III
Sources of Pollution urban runoff
Nearby Land Use residential, commercial, recreation
Sampling Frequency annually Depth 2.7 - 3.0 m
Bottom Type sand, shell, clay % Volatile Solids _____
Aquatic Plants: Submerged _____
Emergent _____

Macroinvertebrates:

Rhynchocoela

Carinomella lactea

Annelida

Polychaeta

Antinoella sp.
Cirriformia filigera
Diopatra cuprea
Glycera sp.
Lumbrineris tetraura
Mediomastus californiensis
Paraprionospio pinnata
Prionospio cirrobranchiata
Scoloplos rubra
S. armiger
Sthenelais boa
Spiophones wigleyi

Arthropoda

Crustacea

Isopoda

Apanthura magnifica

28.01.0606

Amphipoda

Ampelisca abdita

Decapoda

Periclimenes americanus

Micropanope sp.

unident. caridean

Mollusca

Gastropoda

Caecum pulchellum

Nassarius albus

Odostomia sp.

Acteocina canaliculata

Pelecypoda

Pitar fulminatus

Chione cancellata

Corbula contracta

Periglypta listeri

Mulinia lateralis

Nuculana acuta

Sphenia antillensis

Tagelus plebeius

Echinodermata

Ophiuroidea

Amphipholis gracillima

Bryozoa

Electra laciniosa

Phoronida

Phoronis architecta

Sipunculida

unident. sp.

DATA SUMMARY: Indian River

Station Number	Date	Macroinvertebrates								Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate				Artificial Substrate						Total	Fecal	
		Diversity		Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
		Diversity	Redundancy											
28-01-0606	14 Aug 75											2	LT 2	
	30 Aug 76	3.369±0.232	0.160±0.040	27										
	7 Jul 77	3.590±0.261	0.150±0.039	26										

See Methods for explanation of table.

Station No. 28.01.0702 Body of Water Lake Okeechobee
Location south at Clewiston
County Palm Beach
Type Body of Water lake Classification I
Sources of Pollution domestic waste and agricultural run-off
Nearby Land Use residential and agriculture
Sampling Frequency quarterly Depth 1.5 - 3.9 m
Bottom Type mud, fine sand, shell, organic % Volatile Solids 4.2 - 4.83
Aquatic Plants: Submerged
Emergent

Macroinvertebrates:

Cnidaria

Hydra sp.

Annelida

Oligochaeta

Aulodrilus piqueti

A. pluriseta

Branchiura sowerbyi

Limnodrilus sp.

Pristina cf. osborni

Tubifex sp.

Arthropoda

Crustacea

Isopoda

Cassidinisca lunifrons

Cyathura polita

Amphipoda

Gammarus sp.

Mysidacea

Mysidopsis almyra

28.01.0702

Insecta

Ephemeroptera.

Caenis diminuta

Trichoptera

unident. leptocerid

Diptera

Chironomus sp.

Cladotanytarsus sp. 1 - Cantrell

Coelotanypus scapularis

C. tricolor

Dicrotendipes modestus

Nimbocera sp.

Procladius sp.

Tanytarsus sp. 1 - Cantrell

Mollusca

Gastropoda

Melanoides tuberculata

Pseudosuccinea sp.

unident. hydrobiid

Pelecypoda

Corbicula manilensis

DATA SUMMARY: Lake Okeechobee

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.01.0702	29 Jan 74											8		
	28 Feb 74											6	3	
	27 Mar 74				0.405±0.047	0.869±0.019	6					13	1	
	8 Apr 74											6	2	
	9 May 74											22	17	
	17 Jun 74											2	LT1	
	10 Jul 74											9	LT1	
	27 Aug 74											LT1	LT1	
	24 Sep 74	1.450±0.314	0.438±0.128	7	1.258±0.135	0.409±0.050	6			Coc BG 2325 F11 BG 144 Coc Gr 34 F11 Gr 0 Gr Flag 0 Other Flag 17 Cen Dia 56	Coc BG 3700 F11 BG 4500 Coc Gr 250 F11 Gr 350 Cen Dia 550 Pen Dia 127900	2	2	

See Methods for explanation of table.

DATA SUMMARY: Lake Okeechobee

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal							
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.			BI	#Spp.	
28.01.0702	24 Sep 74 (cont.)									Pen Dia 17 Total 2593	Total 137150			
	9 Oct 74											7	4	
	16 Oct 74											226	154	
	4 Nov 74											4	4	
	3 Dec 74											49	4	
	6 Jan 75											11	5	
	3 Feb 75	2.135±0.258	0.322±0.078	11						Coc BG 3628 Fil BG 5		4	174	

See Methods for explanation of table.

DATA SUMMARY: Lake Okeechobee

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
											BI	#Spp.		
28.01.0702	3 Feb 75 (cont.)								Coc Gr 15 Gr Flag 3 Other Flag 6 Cen Dia 36 Pen Dia 20 Total 3713					
	11 Mar 75										10	4		
	16 Apr 75										10	1		
	14 May 75										LT 2	LT 2		
	16 Jun 75										2	LT2		
	7 Jul 75										3	LT2		
	4 Aug 75										LT2	LT2		
	3 Sep 75										24	5		
	5 Nov 75	2.484±0.227	0.180±0.056	10									LT 5	
	20 Dec 75													

See Methods for explanation of table.

DATA SUMMARY: Lake Okeuchobee

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
.01.0702	1 May 76	2.030±0.150	0.262±0.041	10									LT2	
	17 May 76												LT2	
	21 Jun 76										40		LT2	
	19 Jul 76										1		LT1	
	9 Aug 76	2.658±0.174	0.170±0.031	14				3	14		8		LT2	
	18 Oct 76												LT4	
	13 Dec 76	2.381±0.173	0.189±0.040	10						Coc BG 18194 F11 BC 2518 Coc Gr 6155 F11 Gr 0 Gr Flag 840 Other Flag 0 Cen Dia 2799 Pen Dia 30789 Total 61295		84		LT2
	16 Mar 77	2.209±0.184	0.240±0.063	8										

See Methods for explanation of table.

DATA SUMMARY: Lake Okeechobee

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
									BI			#Spp.		
28.01.0702	23 May 77											24	LT2	
	28 May 77	1.643±0.316	0.498±0.121	8								24	LT 0.2	
	5 Dec 77	3.225±0.130	0.098±0.016	18								LT4	LT2	
	30 Jan 78	2.550±0.172	0.162±0.043	10								10	LT4	
	1 May 78											LT2		
	31 May 78											8	LT2	
	7 Jun 78	2.787±0.203	0.053±0.029	8										

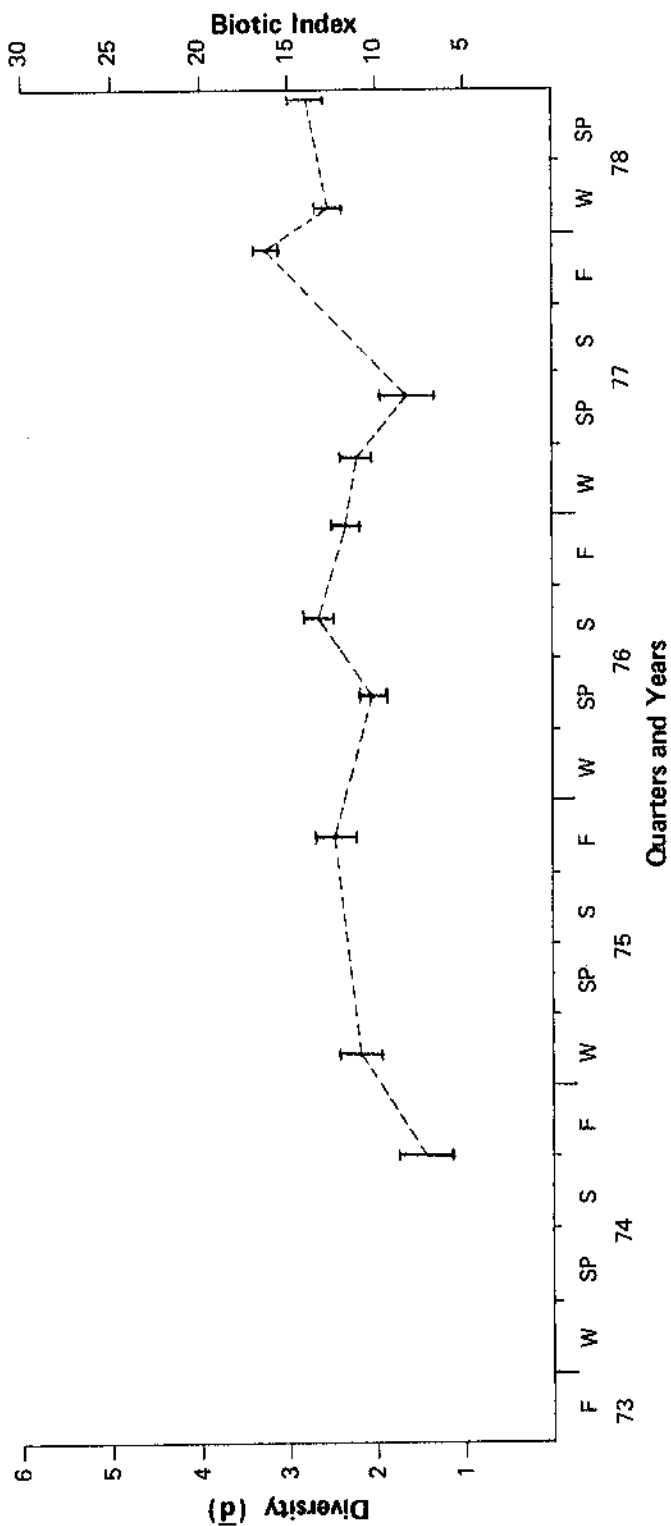
See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0702

BODY OF WATER: LAKE OKEECHOBEE

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.0710 Body of Water Lake Boca Raton
Location north center, near navigation marker #5
County Palm Beach
Type Body of Water marine Classification III
Sources of Pollution urban runoff
Nearby Land Use residential, recreation
Sampling Frequency annually Depth 1.1 - 2.4 m
Bottom Type sand, silt % Volatile Solids _____
Aquatic Plants: Submerged Caulerpa sp.
Emergent _____

Macroinvertebrates:

Porifera

Scypha sp.
unident. sp.

Cnidaria

Anthozoa

unident. sp.

Platyhelminthes

Turbellaria

unident. sp..

Rhynchocoela

Amphiporus cruentatus
Zygeupelopia rubens
unident. sp.

Annelida

Oligochaeta

Peloscolex benedeni
unident. tubificid sp.

Polychaeta

Amaeana trilobata
Aonides mayaguezensis
Armandia maculata
Aricidia jeffreysii
Axiothella mucosa
Bhawania goodei
Brania sp.
Capitellides jonesi
Caulleriella killariensis
Chone americana
Exogone verugera
Fabricia sabella
Glycera tessalata
Hydroides dianthus
Hypsicomus phaeotaenia
Lepidonotus variabilis
Lumbrineris latreilli
L. impatiens
L. coccinea
Megalomma bioculatum
Nereis sp.
Nothria conchylega
Odontosyllis enopla
Ophiodromus obscura
Phyllodoce fragilis
Polydora caeca
Praxillella sp.
Pectinaria gouldii
Protodorvillea kefersteini
Prionospio cristata
Spio pettiboneae
Spiochaetopterus costarum oculatus
Scoloplos rubra
Sphaerosyllis hystrix
Syllis cornuta
S. ferrugina

Arthropoda

Crustacea

Amphipoda

Cerapus tubularis
Erichthonius brasiliensis
Grandidierella bonnieroides
Rudilemboides naglei

Decapoda

Alpheus sp.

Tanaidacea

Leptochelia savignyi
Tanais cavolinii

28.01.0710

Cumacea

Cyclaspis varians
Oxyurostylis smithi

Pycnogonida

Achelia sawayai
Nymphon floridanum

Mollusca

Polyplacophora

Ischnochiton papillosus

Gastropoda

Acmaea pustulata
Acteocina caniculata
Bulla striata
Caecum pulchellum
C. nitidum
Cerithiopsis greeni
Bittium varium
Haminoea succinea
Mitrella lunata
Olivella perplexa
Rissoina catesbyana

Pelecypoda

Anomia simplex
Chione cancellata
Codakia orbiculata
Ervilia concentrica
Gastrochaena hians
Linga amianta
Lucinoma filosa
Lucina radians
Macoma tenta
Musculus lateralis
Ostrea equestris
Pleuromeris tridentata
Tagelus divisus
Tellina cf. versicolor
Trachycardium muricatum
Varicorbula operculata

Echinodermata

Holothuroidea

unident. sp.

Ophiuroidea

unident. sp.

Bryozoa

Amathia alternata

28.01.0710

Phoronida

Phoronis architecta

Sipunculida

Aspidosiphon albus

Golfingia pellucida

Paraspidosiphon fischeri

DATA SUMMARY: Lake Boca Raton

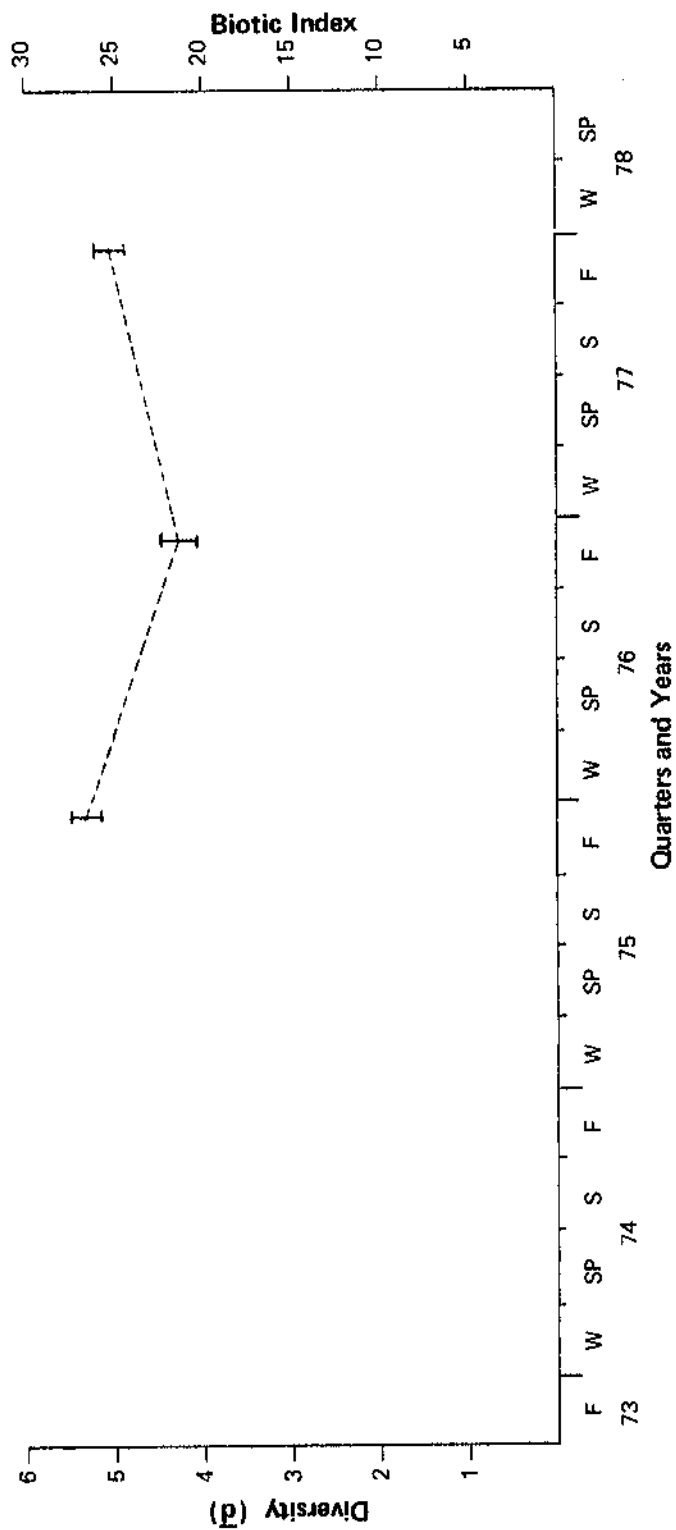
Station Number	Date	Macroinvertebrates							Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate			Plankton Index			Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
2B.01.0710	3 Dec 75	5.330±0.181	0.050±0.007	79									
	30 Nov 76	4.289±0.203	0.756±0.017	34									
	5 Dec 77	5.027±0.178	0.067±0.009	80									

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.0710
 BODY OF WATER: LAKE BOCA RATON

--- NATURAL SUBSTRATE DIVERSITY
 - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.01.3001 Body of Water West Palm Beach Canal
 Location approximately 200 feet west of railroad bridge - mid canal
 County Palm Beach
 Type Body of Water canal Classification III
 Sources of Pollution agriculture, urban runoff
 Nearby Land Use park, residential
 Sampling Frequency annually Depth 2.6 - 8.3 m
 Bottom Type silt, sand % Volatile Solids 16.4
 Aquatic Plants: Submerged Anacharis sp., Chara sp., Bacopa monnieri
 Emergent Phragmites communis, Paspalum fluitans, Panicum
hemitomon, Salvia bahamensis, Eichhornia crassipes, Pistia stratiotes, Spirodela sp.,
 Macroinvertebrates: Panicum repens, Limnea sp., Alternanthera philoxeroides, Hydro-
cotyle umbellata

Platyhelminthes
 Turbellaria
 Dugesia tigrina
 Annelida
 Oligochaeta
 Branchiura sowerbyi
 Limnodrilus hoffmeisteri
 Tubifex tubifex
 Arthropoda
 Crustacea
 Isopoda
 Cyathura polita
 Cassidinisca lunifrons
 Amphipoda
 Gammarus fasciatus
 Hyaella azteca
 Decapoda
 Palaemonetes paludosus

28.01.3001

Insecta

Odonata

Enallagma sp.

Ischnura sp.

Ephemeroptera

Caenis diminuta

Callibaetis floridanus

Hemiptera

Limnogonus hesione

Mesovelis mulsanti

Trichoptera

Cynellus fraternus

Diptera

Ablabesmyia janta

Chaoborus punctipennis

Chironomus attenuatus

Cladotanytarsus sp.

Coelotanypus sp.

C. concinnus

Cryptochironomus sp.

Dicrotendipes modestus

Einfeldia sp.

Glyptotendipes sp.

Kiefferulus sp.

Palpomyia sp.

Parachironomus sublettei

Pedionomus beckae

Polypedilum halterale

P. illinoense

Procladius sp.

Psectrocladius sp.

Pseudochironomus sp.

Tanytarsus sp.

Tribelos sp.

Zavrelia sp.

Arachnida

unident. sp.

Mollusca

Gastropoda

Promenetus sp.

Viviparus georgianus

unident. hydrobiid

Pelecypoda

Corbicula manilensis

Sphaerium partumeium

DATA SUMMARY: West Palm Beach Canal

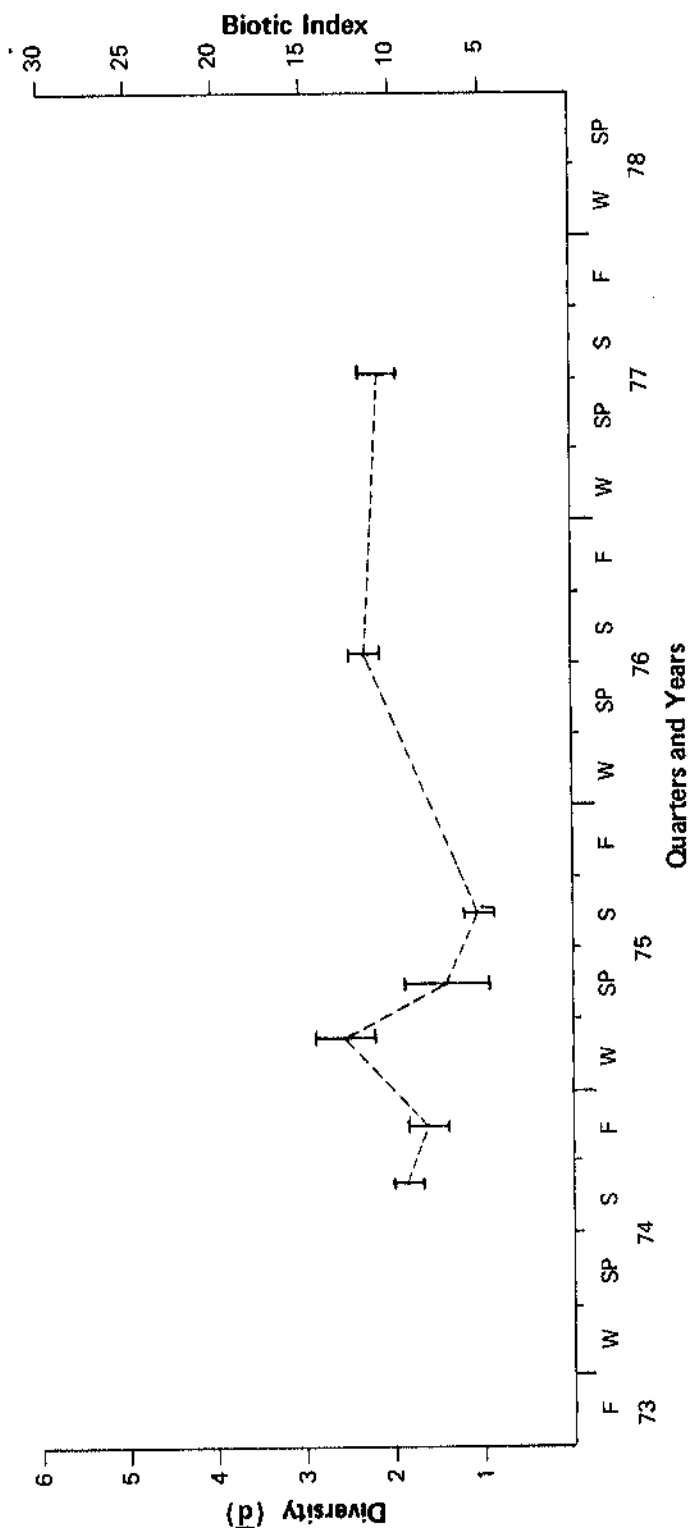
Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate					Biotic Index	Total		Fecal
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.01.3003	26 Aug 74	1.870±0.183	0.376±0.045	14									
	12 Nov 74	1.622±0.223	0.431±0.052	12	2.817±0.153	0.155±0.025	16	4	24		Coc BG 0 Fil BG 76000 Coc Gr 4800 Fil Gr 200 Gr Flag 4700 Other Flag 0 Cen Dia 1800 Pen Dia 65400 Total 153300		
	13 Mar 75	2.593±0.354	0.185±0.078	9									
	8 May 75	1.417±0.475	0.430±0.255	4	1.765±0.143	0.374±0.031	14	1	15				
	11 Aug 75	1.074±0.181	0.401±0.086	4									
	19 Jul 76	2.346±0.184	0.259±0.044	14									
	11 Jul 77	2.162±0.225	0.391±0.064	16									

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.01.3001
 BODY OF WATER: WEST PALM BEACH CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28.02.0002 Body of Water Caloosahatchee River
Location upstream of SR 31
County Lee
Type Body of Water "river" canal Classification III
Sources of Pollution channelization, domestic wastes, urban runoff, residential,
canals, pastures upstream
Nearby Land Use residential, industrial, pastures
Sampling Frequency random Depth 1.2 - 3.9 m
Bottom Type sand, mud, shell, detritus % Volatile Solids _____
Aquatic Plants: Submerged _____
Emergent Rhizophora mangle, Typha sp., Spartina sp.,
Juncus sp.

Macroinvertebrates:

Platyhelminthes
Turbellaria
 unident. sp.

Rhynchocoela
 unident. sp.

Annelida
 Oligochaeta
 Aulodrilus pigueti
 Nais sp.
 Pristina osborni
 Branchiobdella sp.

 Polychaeta
 Eteone sp.
 Nereis sp.
 N. occidentalis
 N. riisei
 Polydora ligni
 P. websteri
 unident. ampharetid
 unident. sp.

Arthropoda

Crustacea

Isopoda

Cassidinisca lunifrons
Cirolana parva
Cyathura sp.
Edotea montosa
Sphaeroma destructor

Amphipoda

Corophium sp.
Gammarus sp.
Hyalella azteca
Microdeutopus sp.

Decapoda

Rhithropanopeus harrisi
unident. sergestid
unident. xanthid

Mysidacea

unident. sp.

Tanaidacea

Tanais sp.

Cirripectida

Balanus sp.
B. eburneus

Cumacea

Diastylis sp.
unident. sp.

Insecta

Diptera

Chironomus sp.
Cricotopus bicinctus
Cryptochironomus sp.
Coelotanypus sp.
Dicrotendipes sp.
Glyptotendipes sp.
Parachironomus sp.
Paralauterborniella nigrohalteralis
Pedionomus beckae
Polypedilum sp.
P. halterale
Procladius sp.

Diptera (cont.)

Pseudochironomus sp.

2 Tanytarsus spp.

unident. ceratopogonid

Mollusca

Gastropoda

Fossaria sp.

Littorina sp.

Polinices sp.

unident. hydrobiid

unident. nudibranch

Pelecypoda

Corbicula manilensis

Modiolus sp.

Tagelus sp.

Tellina sp.

unident. mytilid

unident. venerid

unident. sphaerid

Sipunculida

unident. sp.

DATA SUMMARY: Calcoosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.02.0002	4 Sep 73											130	30	
	1 Oct 73											50	10	
	13 Nov 73											70	LT10	
	13 Dec 73	1.181±0.158	0.700±0.050	16								50	30	
	18 Dec 73											4		
	22 Jan 74											36	6	
	19 Feb 74													
	11 Mar 74	2.261±0.105	0.255±0.016	21	2.923±0.072	0.118±0.011	17							
	2 May 74	2.147±0.497	0.487±0.161	10										
	9 Jul 74													
22 Jul 74	3.204±0.305	0.157±0.054	16											
														Phl BG 1 Coc Gr 127 Other Flag 4
														LT2

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.02.0002	22 Jul 74 cont.								Cen Dia Pen Dia Total		4	LT2		
	12 Aug 74										98	20		
	10 Sep 74											2		
	14 Oct 74													
	28 Oct 74	2.399±0.190	0.297±0.040	21	1.137±0.021	0.502±0.008	13				Coc BG 622 Fil BG 1307 Coc Gr 560 Fil Gr 2X10 ⁵ Gr Flag 249 Cen Dia 248 Pen Dia 2.45X10 ⁵ Total 447986			
	16 Dec 74										40	20		

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

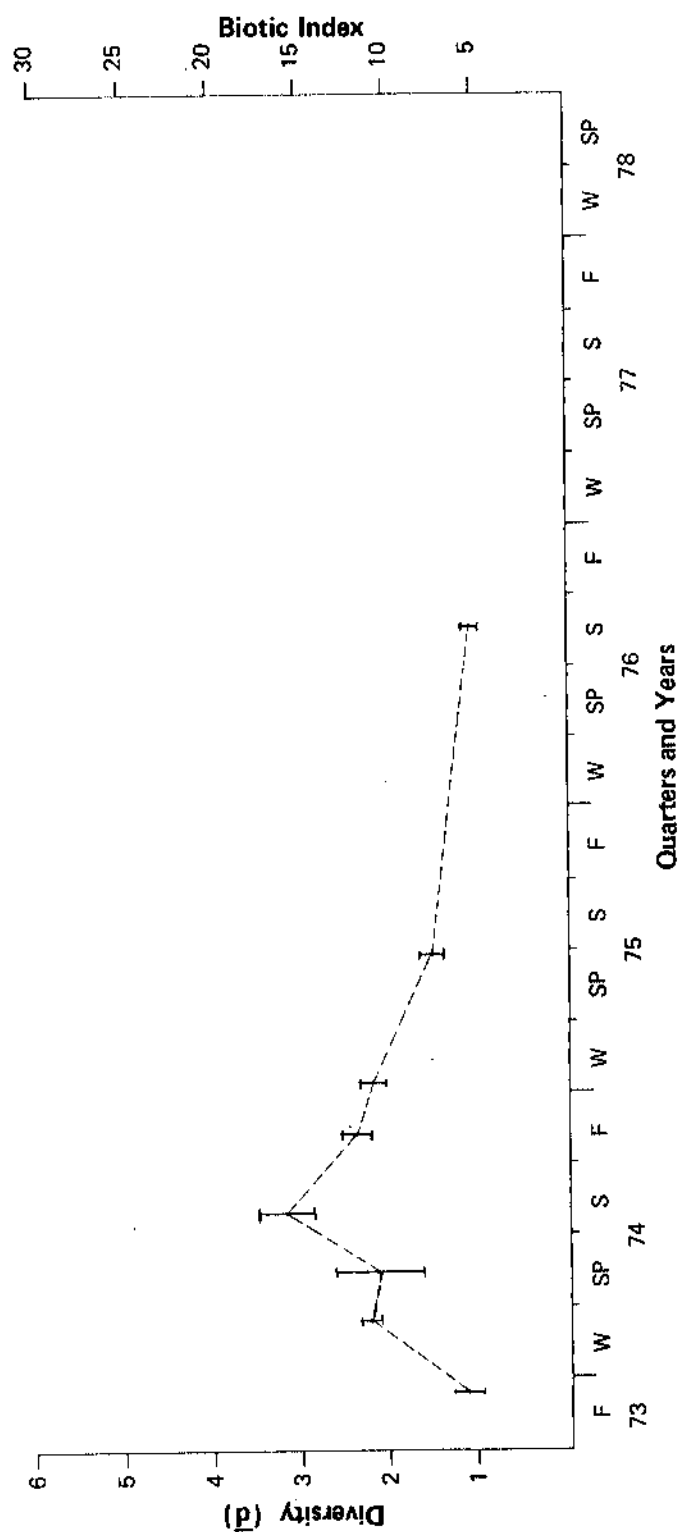
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.02.0002	14 Jan 75	2.196±0.133	0.338±0.284	24									
	20 Jan 75											8	
	10 Feb 75										12	20	
	3 Mar 75										22	10	
	14 Apr 75										4		
	19 May 75										16		
	20 Jun 75	1.534±0.114	0.419±0.030	13									
	23 Jun 75										38		
	2 Sep 75										40	11	
	2 Aug 76	1.113±0.097	0.700±0.031	18				6	24				

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.02.0002
 BODY OF WATER: CALOOSAHATCHEE RIVER

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.02.0006 Body of Water Caloosahatchee River
Location upstream of Franklin Lock
County Lee
Type Body of Water canal Classification I
Sources of Pollution runoff
Nearby Land Use residential, agriculture
Sampling Frequency quarterly Depth 0.75 - 3.3 m
Bottom Type sand, mud, shell % Volatile Solids 0.7 - 0.8
Aquatic Plants: Submerged Vallisneria sp.
Emergent Panicum sp., Typha sp., Acrostichum sp.

Macroinvertebrates:

Platyhelminthes
Turbellaria
 unident. sp.

Annelida
 Oligochaeta
 Aulodrilus piqueti
 Branchiura sowerbyi
 Dero digitata
 Limnodrilus sp.
 Nais sp.
 N. variabilis
 Pristina osborni
 Stylaria lacustris
 Tubifex sp.
 unident. lumbricolid

Hirudinea
 Helobdella sp.

Arthropoda
 Crustacea
 Isopoda
 Cassidinisca lunifrons
 Cirolana sp.
 Cyathura polita
 Exosphaeroma sp.
 Munna sp.

Amphipoda

Corophium lousianum
Gammarus sp.
Hyaella azteca

Decapoda

Eurypanopeus depressus
Palaemonetes paludosus

Mysidacea

Taphromysis sp.
 unident. sp.

Tanaidacea

Tanais sp.

Insecta

Odonata

Aphylla williamsoni
Epicordulia regina
Gomphus plagiatus
Macromia taeniolata
Enallagma pollutum
Ischnura ramburii

Ephemeroptera

Baetis cf. spinosus
Brachycercus maculatus
Caenis diminuta
Callibaetis floridanus

Trichoptera

Cyrnellus fraternus
Hydroptila sp.
Oecetis sp.
Orthotrichia sp.

Diptera

Ablabesmyia parajanta
Chironomus sp.
Cladotanytarsus sp. 1 - Cantrell
 C. sp. 2 - Cantrell
Coelotanypus scapularis
C. tricolor
Cricotopus sp. 1 (Beck)
C. bicinctus
C. remus
 C. sp.
Cryptotendipes sp.
Cryptochironomus fulvus
"Cryptochironomus" sp. (Saether)
Dicrotendipes cf. leucoscelis
D. modestus
D. neomodestus

Diptera (cont.)

Dicrotendipes cf. nervosus
Einfeldia sp.
Endochironomus nigricans
Glyptotendipes sp.
Harnischia sp. (Beck)
Micropsectra sp. 1 - Cantrell
M. sp. 2 - Cantrell
M. sp. 3 - Cantrell
Parachironomus sp.
Paralauterborniella nigrohalteralis
Pedionomus beckae
Polypedilum convictum
P. halterale
P. illinoense
Procladius sp.
Psectrocladius sp. (Beck)
Pseudochironomus sp.
Stenochironomus hilaris
Tanytarsus sp. 1 - Cantrell
T. sp. 3 - Cantrell
Tribelos cf. fuscicornis
Xenochironomus xenolabis
 unident. chironomine
 unident. ceratopogonid sp. 1 - Cantrell
 unident. ceratopogonid sp. 2 - Cantrell
 unident. ceratopogonid sp. 3 - Cantrell

Coleoptera

Peltodytes sp.

Mollusca

Gastropoda

Helisoma sp. 1 - Cantrell
H. sp. 2 - Cantrell
Melanoides tuberculata
Physa sp.
Pyrgophorus platyrachis
 unident. hydrobiid

Pelecypoda

Corbicula manilensis
Mytilopsis leucophaeta

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate						Total	Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.02.0006	13 Nov 73										90	10		
	10 Sep 74										74	2		
	10 Mar 75										16	6		
	15 Jul 75										56			
	23 Jul 75	2.013+0.117	0.402+0.032	24	2.616+0.253	0.303+0.043	25	6	39					
	11 Aug 75										LT2	3		
	2 Sep 75										29	12		
	15 Sep 75											84		
	7 Oct 75	2.407+0.162	0.193+0.033	12										
	20 Oct 75										18	4		
	17 Nov 75									48	12			

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.02.0006	15 Dec 75											76	27	
	27 Jan 76	3.170±0.180	0.111±0.022	17	0.200±0.170	0.200±0.030	21	4	31			44	14	
	16 Feb 76												11	
	15 Mar 76												8	
	12 Apr 76							6	24					
	3 May 76	1.113±0.097	0.700±0.011	18								264	2	
	10 May 76											228	10	
	14 Jun 76											80	9	
	12 Jul 76												LTI	
	16 Aug 76											170	2	
	20 Sep 76													

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28-02-0006	11 Oct 76									112	8	
	1 Nov 76	2.200±0.142	0.286±0.035	16								
	15 Nov 76									188	40	
	6 Jan 77	2.790±0.126	0.169±0.012	18								
	18 Apr 77									36	2	
	20 Apr 77	3.143±0.213	0.184±0.042	21	3.050±0.069	0.136±0.007	31		Coc BG Fil BG Coc Gr Fil Gr Gen Dia Pen Dia Total			

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.02.0006	9 May 77										252	8	
	11 Jul 77										28		
	28 Jul 77	0.616±0.055	0.851±0.016	22	3.422±0.134	0.129±0.017	30			Coc BG 3.530x10 ⁻⁴ Fil BG 3.470x10 ⁻⁴ Coc Gr 2.89x10 ⁻³ Fil Gr 723 Gr Flag 723 Other Flag 723 Cen Dia 11460 Pen Dia 4.909x10 ⁻⁵ Total 5.77419x10 ⁻⁵			
	3 Oct 77	1.156±0.113	0.664±0.037	18				4	24				Florida Index

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

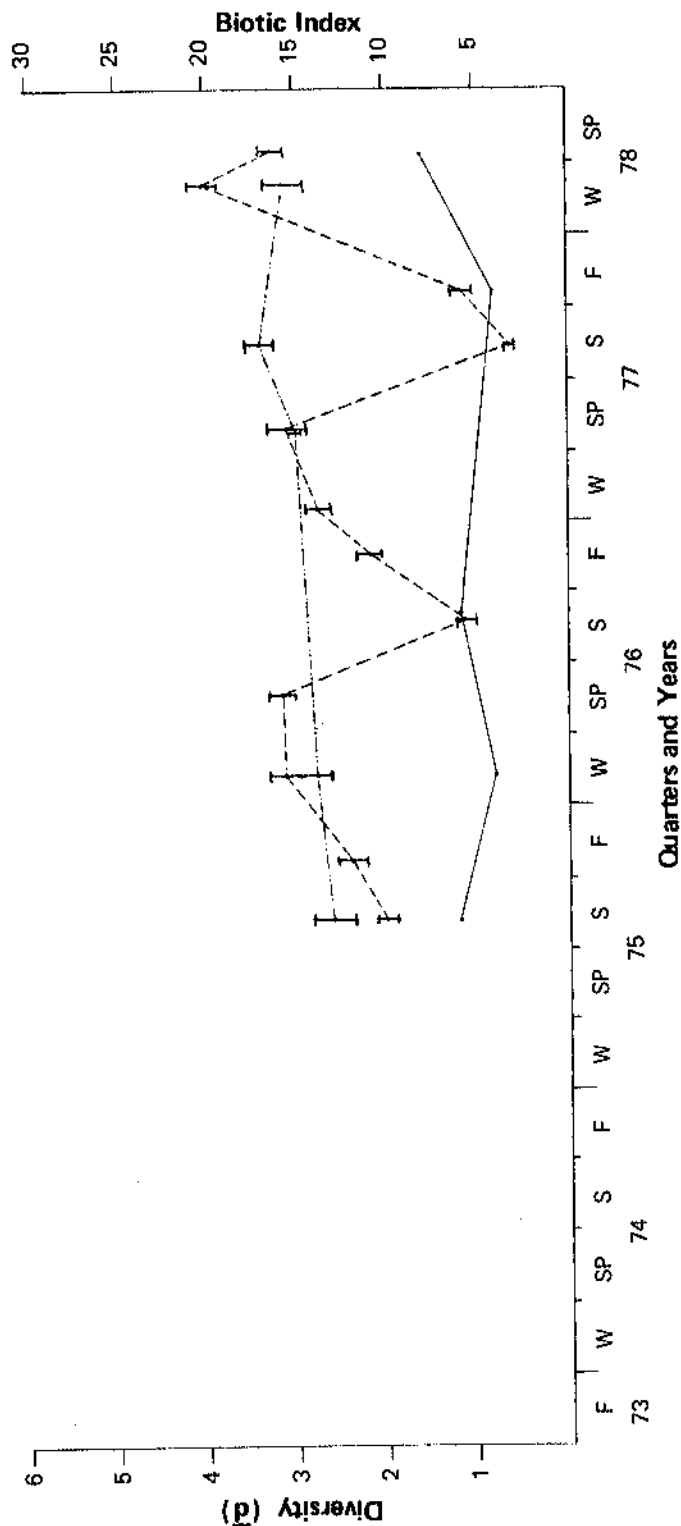
Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
2B-02-0006	12 Dec 77									112	4	
	9 Jan 78									92	4	
	6 Feb 78									148	6	
	20 Feb 78	4.042±0.173	0.060±0.014	27	3.170±0.230	0.125±0.230	18			100	140	
	13 Mar 78											
	27 Mar 78	3.282±0.124	0.159±0.015	36				8	40	94	4	
	17 Apr 78											
	8 May 78									128	20	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.02.0006
 BODY OF WATER: CALOOSAHATCHEE RIVER

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28.02.0022 Body of Water Caloosahatchee River
 Location Rim Canal at Moore Haven (immediately upstream of Moore Haven Lock)
north of US 27 County Glades
 Type Body of Water canal Classification III
 Sources of Pollution rural runoff
 Nearby Land Use agriculture, industrial
 Sampling Frequency quarterly Depth 1.05 - 4.8 m
 Bottom Type mud, detritus, shell % Volatile Solids 2.7 - 6.5
 Aquatic Plants: Submerged _____
 Emergent Panicum spp., Typha sp., Phragmites sp.,
Salix sp., Spartina sp., Nuphar sp., Ludwigia sp., Taxodium sp.

Macroinvertebrates:

Cnidaria
 Hydrozoa unident. sp.
 Platyhelminthes
 Turbellaria
 Planaria sp.
 unident. sp.
 Rhynchocoela
 Prostoma rubrum
 Annelida
 Oligochaeta
 Aeolosoma sp.
 Aulodrilus piqueti
 Aulophorus furcatus
 Branchiura sowerbyi
 Dero digitata
 Limnodrilus sp.
 Nais variabilis
 N. sp.
 Pristina osborni
 Tubifex sp.
 unident. sp.

Hirudinea

Helobdella stagnalis
Mooreobdella microstoma
Placobdella multilineata

Arthropoda

Crustacea

Isopoda

Cassidinisca lunifrons
Cyathura polita

Amphipoda

Gammarus sp.
Hyalella azteca

Decapoda

Palaemonetes paludosus
Procambarus sp.

Mysidacea

Taphromysis sp.

Tanaidacea

Tanais sp.

Brachiura

Argulus sp.

Insecta

Odonata

Aphylla williamsoni
Brachymesia gravida
Epicordulia regina
Macromia taeniolata
Perithemis tenera seminole

Ephemeroptera

Caenis diminuta
Callibaetis floridanus

Hemiptera

Belostoma sp.
Ranatra sp.

Trichoptera

Cyrnellus fraternus
Hydroptila sp.
Oecetis inconspicua
Oecetis sp. 3 - Cantrell

Trichoptera (cont.)

Oecetis sp. 5 - Cantrell
Orthotrichia sp.
Polycentropus cinereus

Diptera

Ablabesmyia mallochi
A. parajanta
Chironomus carus
C. stigmaterus
C. sp.
Cladotanytarsus sp. 1 - Cantrell
Clinotanypus sp.
Coelotanypus scapularis
C. tricolor
Cricotopus bicinctus
C. remus
C. sp. 1 - Cantrell
C. sp.
Cryptochironomus fulvus
Cryptotendipes sp.
Dicrotendipes modestus
D. neomodestus
D. cf. nervosus
Einfeldia sp.
Endochironomus nigricans
Glyptotendipes sp.
Goeldichironomus holoprasinus
Harnischia sp. (Beck)
Kiefferulus dux
Lauterborniella sp.
Micropsectra sp. 1 - Cantrell
M. sp. 2 - Cantrell
Nilothauma bicornis
Nimbocera sp.
Parachironomus sp.
Paralauterborniella nigrohalteralis
Paratanytarsus sp.
Pedionomus beckae
Polypedilum halterale
Procladius sp.
Psectrocladius sp. (Beck)
Pseudochironomus sp.
Stenochironomus hilaris
Tanypus stellatus
Tanytarsus sp. 1 - Cantrell
T. sp. 3 - Cantrell
Thienemanniella sp. 2 - Cantrell

Diptera (cont.)

Chaoborus sp.
Xenochironomus sp.
unident. ceratopogonid sp. 1 - Cantrell
unident. ceratopogonid sp. 2 - Cantrell
unident. tanytarsine

Coleoptera

Dineutus sp.
Hydrocanthus sp.
Laccophilus sp.
Peltodytes sp.

Arachnida

Acarina
unident. sp.

Mollusca

Gastropoda

Amnicola sp.
Gyraulus sp.
Helisoma sp. 1 - Cantrell
H. sp. 2 - Cantrell
Melanoides tuberculata
Physa sp.
Pomacea sp.
Pyrgophorus platyrachis
Viviparus sp.
unident. ancylid

Pelecypoda

Corbicula manilensis
unident. sphaeriid
unident. unionid

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.02.0022	4 Sep 73											560	LT10	
	1 Oct 73											1400	700	
	13 Nov 73											320	70	
	13 Dec 73	2.455±0.411	0.436±0.109	16										
	18 Dec 73											30	10	
	23 Jan 74											92		
	20 Feb 74											38	2	
	7 Mar 74	3.303±0.153	0.141±0.017	28	3.436±0.087	0.128±0.007	47							
	29 Apr 74	3.801±0.180	0.117±0.023	34				9	46					
	9 Jul 74							2	21				LT2	
	7 Aug 74	1.963±0.107	0.252±0.029	9										
			</											

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates							Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI				#Spp.		
													Total	
28, 62, 80, 22	7 Aug 74 cont.								Fil Gr 6 Gr Flag 2 Other Flag 0 Cen Dia 3 Pen Dia 1 Total 33			12		
	12 Aug 74											6	2	
	10 Sep 74													
	14 Oct 74											130	50	
	30 Oct 74	2.422±0.198	0.268±0.034	18	3.535±0.186	0.173±0.031	34				Coc BG 0 Fil BG 2300 Coc Gr 12300 Fil Gr 1100 Gr Flag 622 Other Flag 0 Cen Dia 1100 Pen Dia 5100 Total 22522			

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
		BI	#Spp.											
28-02-0022	18 Nov 74											200	LT10	
	9 Dec 74											390	110	
	10 Feb 75											20	fT10	
	24 Feb 75	2.491±0.0.137	0.278±0.023	27				2	15			50	10	
	3 Mar 75										60			
	14 Apr 75													
	10 Jun 75	1.638±0.093	0.465±0.026	21	2.502±0.142	0.259±0.028	25				8			
	23 Jun 75										8			
	15 Jul 75										8			
	11 Aug 75										8			8
	26 Aug 75	1.750±0.079	0.307±0.020	12	3.767±0.122	0.071±0.011	27	7	35					

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
									BI			#Spp.		
28.02.0022	2 Sep 75											44	LT1	
	15 Sep 75											15	LT1	
	20 Oct 75											7		
	4 Nov 75	2.082±0.210	0.308±0.041	14									14	
	17 Nov 75											190		
	15 Dec 75												24	
	12 Jan 76												88	
	16 Feb 76													
	4 Mar 76	2.010±0.170	0.483±0.041	35	0.663±0.190	0.180±0.033	35	16	59		Coc Gr 1.84x10 ⁵ Cen Dia 3.79x10 ⁵ Pen Dia 3.98x10 ⁶ Total 4.37x10 ⁶			

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.02.0022	15 Mar 76											10		
	12 Apr 76											14		
	10 May 76										64	16		
	17 May 76	3.150±0.143	0.170±0.020	29							240	14		
	14 Jun 76										204	16		
	12 Jul 76											4		
	9 Aug 76	2.074±0.180	0.380±0.055	15				7	31		70	LT2		
	20 Sep 76										90	8		
	11 Oct 76										52	4		
	15 Nov 76													
	1 Dec 76	3.206±0.192	0.236±0.036	35	3.250±0.140	0.161±0.019	32			Coc BG 18667 Fil BG 56420 Coc Gr 8947				

See Methods for explanation of table.

DATA SUMMARY: Calcoosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.02.0022	1 Dec 76 cont.								Fil Gr 380 Gr Flag 0 Other Flag 0 Cen Dia 4279 Pen Dia 23345 Total 112038				
	7 Feb 77	3.711±0.187	0.123±0.020	35							370	34	
	1 Mar 77												
	18 Apr 77										44	14	
	9 May 77										36	8	
	23 May 77	3.149±0.224	0.184±0.035	24	3.375±0.100	0.085±0.008	34			Coc BG 21838 Fil BG 7518 Coc Gr 13962 Fil Gr 3938 Cen Dia 15036 Pen Dia 219812			

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
26,02,0022	23 May 77 cont.									Total 281200	32		Florida Index
	11 Jul 77									Coc BG 8400 Fil BG 6480 Coc Gr 1920 Fil Gr 720 Other Flag 240 Cen Dia 8160 Pen Dia 5280 Total 31200			
	4 Aug 77	4.072±0.166	0.069±0.014	32	2.985±0.128	0.196±0.025	25						
	10 Oct 77	3.081±0.174	0.126±0.021	18				6	26				0.3
	12 Dec 77												8
	9 Jan 78												128
	21 Feb 78	3.700±0.160	0.090±0.015	28									174

See Methods for explanation of table.

DATA SUMMARY: Caloosahatchee River

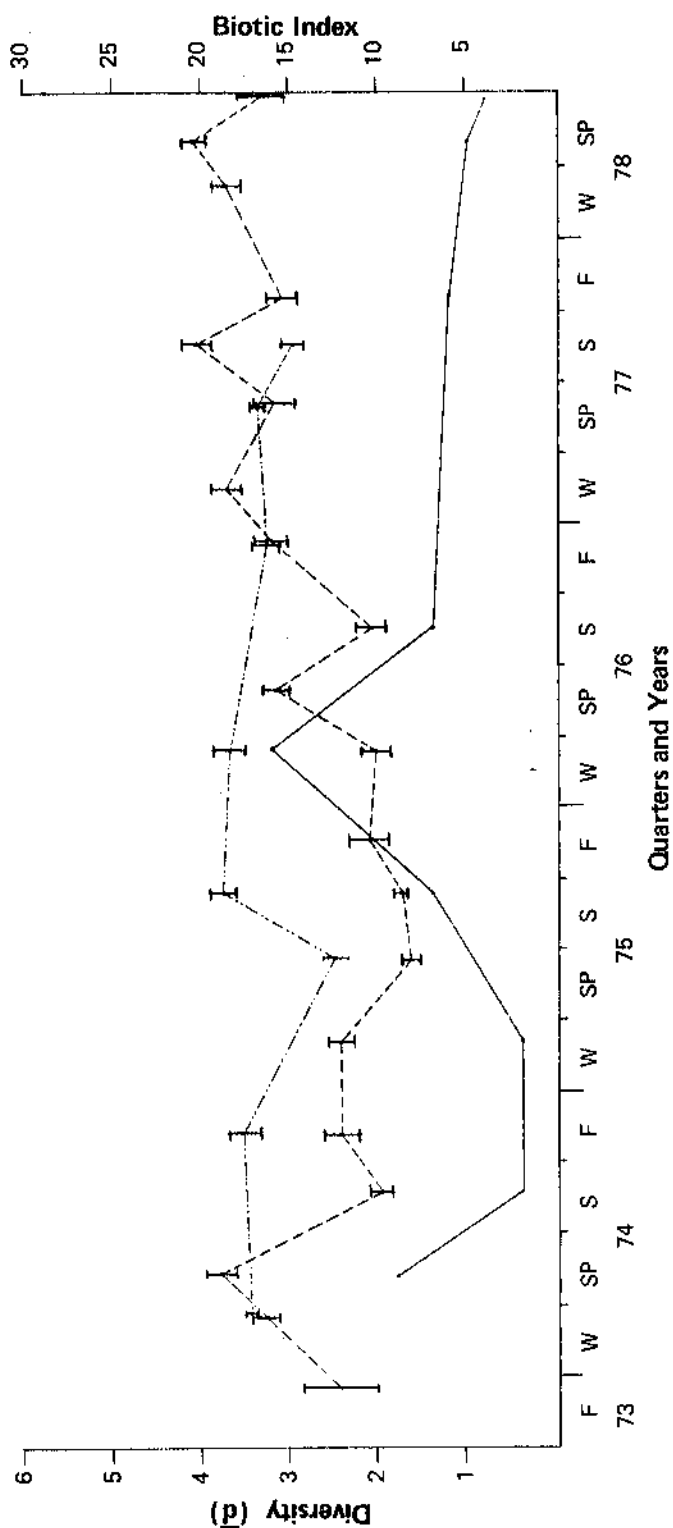
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28,02,0022	13 Mar 78											316	14	
	17 Apr 78											48	2	
	24 Apr 78	4.088±0.137	0.044±0.009	26			5	35						
	8 May 78													
	26 Jun 78	3.316±0.263	0.189±0.042	24			4	32				100	132	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.02.0022
 BODY OF WATER: CALOOSAHATCHEE RIVER

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.02.0117 Body of Water Estero Bay
Location at Big Carlos Pass Bridge
County Lee
Type Body of Water bay/estuary Classification III
Sources of Pollution urban runoff, agricultural runoff, marinas
Nearby Land Use urbanization, agricultural, residential
Sampling Frequency quarterly Depth 1.2 - 2.1 m
Bottom Type sand, shell % Volatile Solids 2.8
Aquatic Plants: Submerged Thalassia sp.
Emergent Rhizophora mangle

Macroinvertebrates:

Cnidaria

Hydrozoa

unident. sp.

Platyhelminthes

Turbellaria

unident. sp.

Rhynchocoela

unident. spp.

Nematoda

unident. sp.

Annelida

Oligochaeta

unident. spp.

Polychaeta

Apoprionospio dayi

Axiiothella sp.

A. mucosa

Capitella capitata

Chone duneri

C. americana

Cirratulus grandis

C. sp.

Clymenella sp.

Polychaeta (cont.)

Diopatra cuprea
Dispio uncinata
Eunice kinbergi
E. rubra
Exogone dispar
Fabricia sp.
Glycera sp.
G. cf. americana
G. dibranchiata
Haploscoloplos fragilis
H. robustus
Loimia sp.
Lumbrineris sp.
L. cf. tenuis
Lysidice sp.
Maldane sarsi
Maldanopsis sp.
Marphysa regalis
Megalomma bioculatum
Melinna maculata
Nereis sp.
Onuphis conchylega
O. magna
O. eremita oculata
Ophiodromus obscurus
Paraprionospio pinnata
Pectinaria gouldii
Pherusa inflata
Phyllodoce sp.
Pista cristata
P. palmata
Polydora socialis
Prionospio sp.
P. cirrifera
P. cristata
P. cirrobranchiata
Sabellides oculata
Semiodera roberti
Spirorbis spirillum
Syllis gracilis
Terebellides stroemi
 unident. chloraemid
 unident. maldanid
 unident. nereid
 unident. phyllodocid
 unident. polynoid
 unident. sabellid
 unident. orbinid
 unident. ampharetid
 unident. sp.

28.02.0117

Arthropoda

Crustacea

Isopoda

Apanthura cf. magnifica
cf. A. sp.
Cyathura sp.
Edotea sp.
E. montosa
Erichsonella attenuata
Mesanthura sp.
unident. sp.

Amphipoda

Ambasia sp.
Ampelisca sp.
Amphilocus sp.
Ampithoe sp.
Caprella sp.
Cerapus sp.
C. tubularis
Corophium sp.
C. acherusicum
Duetella mayeri
Elasmopus sp.
E. levis
Erichthonius sp.
E. brasiliensis
Gammaropsis sp.
Grandidierella bonnieroides
Laematophilus sp.
Leucothoe spinicarpa
Listriella barnardi
Lysianopsis sp.
Melita appendiculata
Metopella sp.
Microdeutopus sp.
Monoculodes sp.
M. nyei
Paraphoxus sp.
P. oculatus
P. spinosus
P. tridentatus
Photis reinhardi
Podocerus sp.
Rudilemboides sp.
Stenothoe sp.
Triphosella sarsi
Unciola sp.
Unciolella sp.
U. cf. irrorata
unident. photid
unident. podocerid sp.
3 unident. spp.

Decapoda

Alpheopsis labis
Callinectes sapidus
Euceramus praelongus
Hexapanopeus angustifrons
Petrochirus bahamensis
Portunus anceps
Pinnixa sp.
Tozeuma carolinensis
Trachypenaeus similis similis
unident. palaemonid sp.

Mysidacea

Mysis sp.
unident. sp.

Tanaidacea

Leptochelia sp.
Tanais sp.
unident. sp.

Cirripedia

Balanus eburneus

Insecta

Diptera

Dicrotendipes neomodestus

Pycnogonida

unident. sp.

Mollusca

Gastropoda

Acteon sp.
A. punctostriatus
Anachis obesa
Boreotrophon sp.
Bulla sp.
B. striata
Cancellaria sp.
Cerithium algicola
C. floridanum
Crepidula fornicata
C. maculosa
Cymatium sp.
Engina turbonilla
Eupleura caudata
Haminoea sp.
H. succinea
H. elegans

Gastropoda

Marginella sp.
M. apicina
Melampus sp.
Mitrella lunata
Natica sp.
N. pusilla
Odostomia sp.
Olivella spp.
O. perplexa
Polinices sp.
Prunum bellum
P. carneum
Pyramidella sp.
Turbonilla sp.
unident. sp.
unident. acmaeid
unident. nudibranch

Pelecypoda

Abra sp.
Anadara sp.
A. cf. floridana
A. notabilis
Atrina rigida
Cardita sp.
cf. Cerastoderma sp.
Chione sp.
C. sp. 1 - Cantrell
Crassostrea virginica
Dacrydium sp.
Gemma gemma
Laevicardium sp.
cf. Lucina sp.
Lucina cf. nassula
Lyonsia sp.
Macoma tenta
M. sp.
Mysella planulata
Nucula crenulata
Siphonaria alternata
Spisula sp.
Tagelus sp.
cf. Tellidora cristata
Tellina sp.
T. agilis
T. lineata

Echinodermata

Ophiuroidea

Amphiodia atra
A. pulchella
Amphioplus sp.
A. abdita
A. thromboides
A. gracillima
cf. Ophiopsilus bittata
unident. sp.

Echinoidea

Mellita quinquiesperforata

Holothuroidea

Holothuria sp.

Sipunculida

unident. spp.

Chordata

Cephalochordata

Branchiostoma virginiae
B. sp.

DATA SUMMARY: ESTERO Bay

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28.02.0117	1 Oct 73									LT10	10	
	18 Dec 73									LT10	LT10	
	22 Jan 74									10	LT10	
	19 Feb 74									LT 2	LT 2	
	25 Mar 74	1.332±0.165	0.742±0.042	32	0.896±0.039	0.760±0.012	19					
	9 May 74	3.625±0.171	0.075±0.021	20								
	9 Jul 74									LT 2		
	12 Aug 74									14	LT 2	
	16 Sep 74									LT 2	4	
	14 Oct 74									0	0	
	3 Dec 74	4.237±0.193	0.090±0.015	47								

See Methods for explanation of table.

DATA SUMMARY: Estero Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
		BI	#Spp.											
28.02.0117	16 Dec 74											2	210	
	20 Jan 75											LT2	6	
	10 Feb 75											LT2	LT2	
	18 Feb 75	4.419±0.187	0.088±0.014	54								8	8	
	3 Mar 75											6		
	14 Apr 75											2		
	19 May 75													
	22 May 75	4.084±0.154	0.101±0.015	47								LT2		
	23 Jun 75													
	15 Jul 75											3		
	11 Aug 75											8		

See Methods for explanation of table.

DATA SUMMARY: Estero Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm3	Periphyton Composition units/cm2	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28,02,0117	15 Sep 75											LT1	LT1	
	17 Nov 75											4	4	
	29 Dec 75											LT4	LT2	
	12 Jan 76											LT4	LT2	
	23 Feb 76											4	4	
	15 Mar 76											13	13	
	12 Apr 76											LT2	LT1	
	10 May 76											2	LT2	
	11 May 76	2.190±0.160	0.524±0.037	50								LT2	LT2	
	14 Jun 76											1	LT1	
	12 Jul 76													

See Methods for explanation of table.

DATA SUMMARY: Estero Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28,02,0117	16 Aug 76											10	2	
	20 Sep 76											LT2	LT2	
	11 Oct 76											2	2	
	8 Nov 76											LT0.2	LT0.2	
	13 Dec 76											32	LT2	
	26 Jan 77	1.404±0.209	0.746±0.053	29								4	6	
	14 Mar 77									Loc Gr 6809 Fil Gr 974 Gen Dia 2918 Pen Dia 12574 Total 23275				
	23 Mar 77	2.204±0.182	0.515±0.044	35								LT2	LT2	
	2 May 77											LT2	LT2	
	13 Jun 77													

See Methods for explanation of table.

DATA SUMMARY: Estero Bay

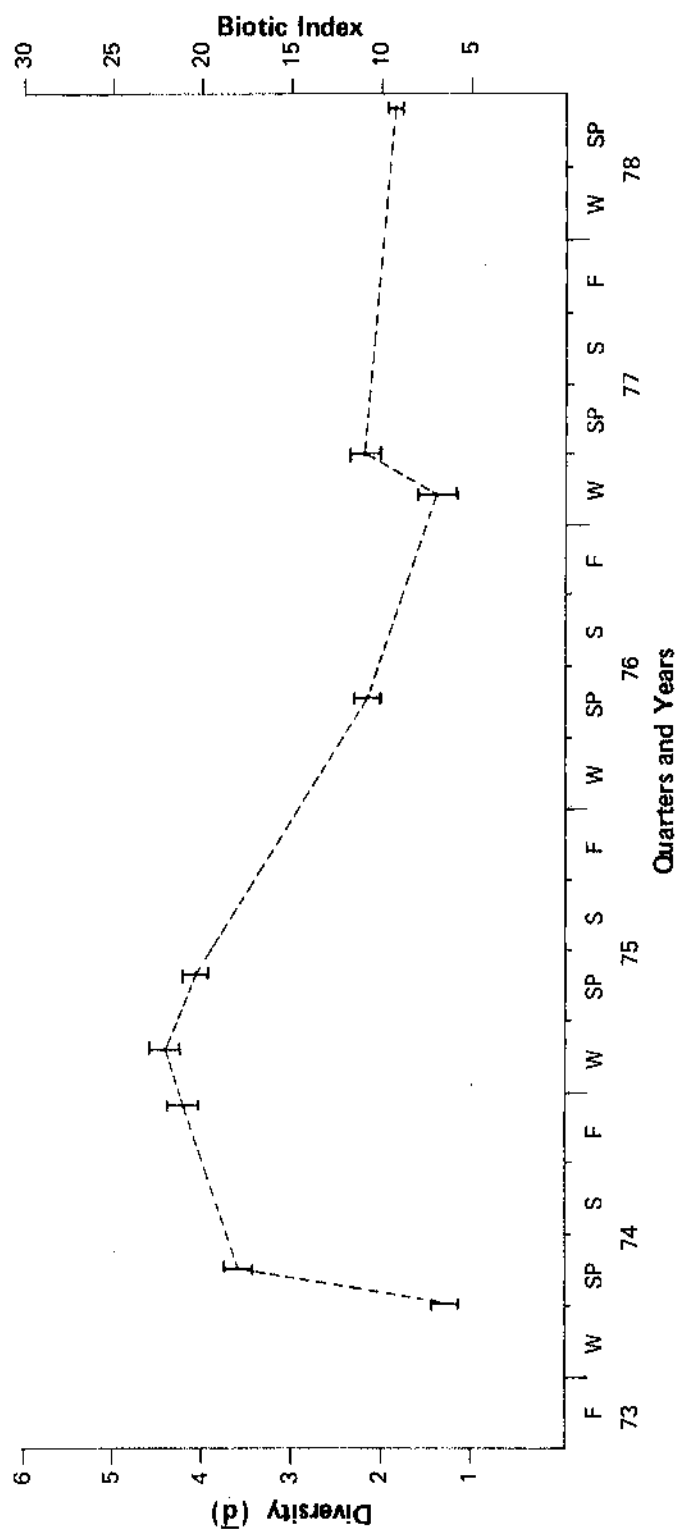
Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28-02-0117	11 Jul 77									LT2	LT2	Florida Index
	12 Dec 77									6	LT2	
	9 Jan 78									48	22	
	6 Feb 78									4	LT2	
	6 Mar 78										4	
	11 Apr 78									12	4	
	31 May 78	1.814±0.086	0.574±0.021	59						4	LT2	
	6 Jun 78											

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.02.0117
 BODY OF WATER: ESTERO BAY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28.03.0015 Body of Water Lake Trafford

Location 0.5 mile south of boat ramp

County Collier

Type Body of Water lake Classification _____

Sources of Pollution agricultural runoff

Nearby Land Use agriculture

Sampling Frequency annually Depth 1.2 - 1.6 m

Bottom Type mud, detritus % Volatile Solids _____

Aquatic Plants: Submerged Hydrilla verticillata

Emergent Eichhornia crassipes

Macroinvertebrates:

Annelida

Oligochaeta

Dero digitata

Limnodrilus sp.

Nais variabilis

Hirudinea

unident. sp.

Arthropoda

Crustacea

Amphipoda

Hyalella azteca

Decapoda

Palaemonetes paludosus

Insecta

Odonata

Enallagma pollutum

Erythemis simplicicollis

Ephemeroptera

Callibaetis floridanus

Trichoptera

Nectopsyche cf. tavana

Oecetis sp. 2 - Cantrell

Oecetis sp. 7 - Cantrell

Orthotrichia sp.

Diptera

Ablabesmyia cinctipes

A. peleensis

Chaoborus sp.

Cladotanytarsus sp. 1 - Cantrell

Dicrotendipes modestus

Einfeldia natchitochae

Microtendipes sp. 1 - Cantrell

Nimbocera sp.

Procladius sp.

unident. ceratopogonid sp. 2 - Cantrell

Mollusca

Gastropoda

Gyraulus sp.

Helisoma sp. 1 - Cantrell

H. sp. 2 - Cantrell

Physa sp.

unident. hydrobiid

DATA SUMMARY: Lake Trafford

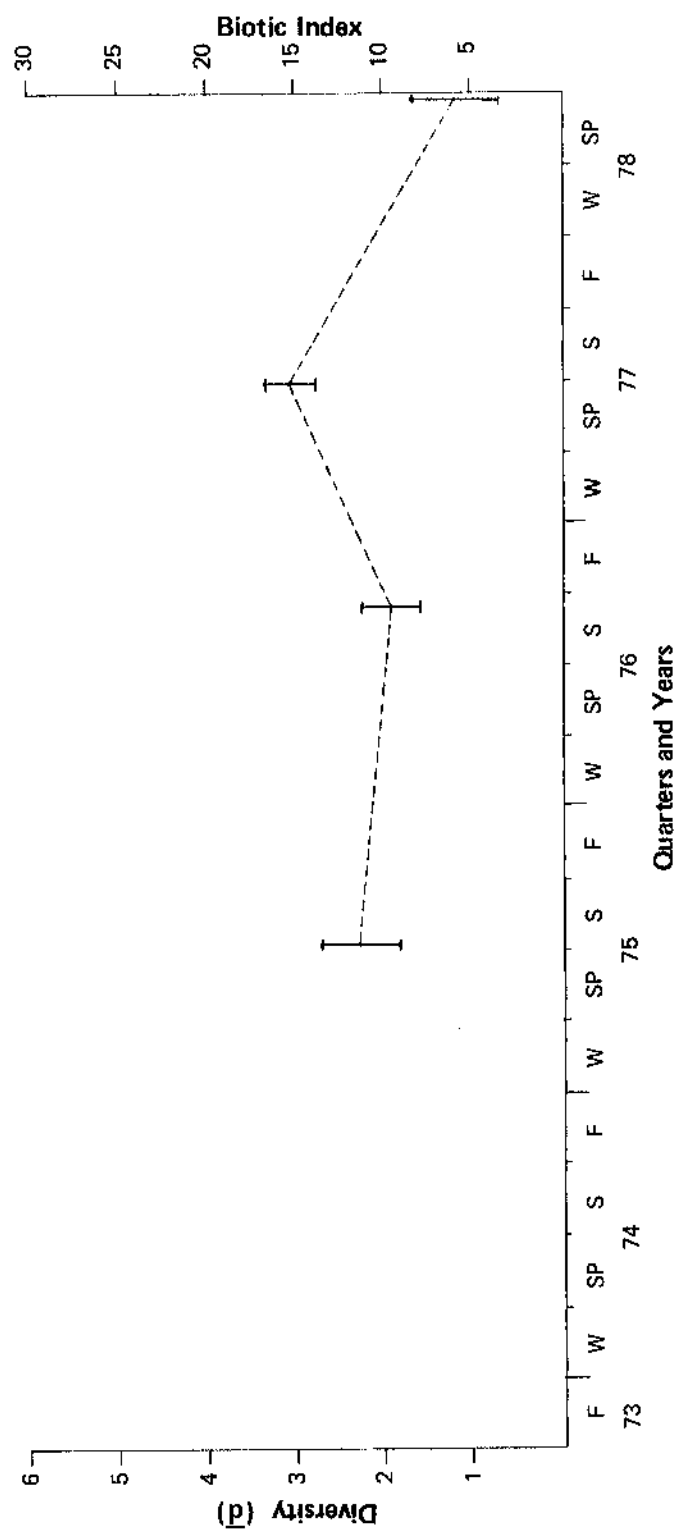
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.03.0015	7 Oct 74												LT10	Florida Index
	5 May 75												LT20 LT20	
	25 Jun 75	2.309±0.432	0.479±0.125	14								752 16		
	2 Feb 76													
	14 Sep 76	1.929±0.318	0.309±0.083	8										
	18 Jun 77	3.080±0.291	0.175±0.048	17										
	29 Jun 78	1.261±0.508	0.564±0.287	4										

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.03.0015
 BODY OF WATER: LAKE TRAFFORD

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 --- BIOTIC INDEX (= FLORIDA INDEX)



Amphipoda

Ampelisca sp.
Cerapus sp.
C. tubularis
Grandidierella sp.
Listriella barnardi
Melita sp.
Microdeutopus sp.
Monoculodes sp.
Photis sp.
Rudilemboides sp.
unident. corophiid

Decapoda

Pagurus sp.
Pinnixa sp.

Mysidacea

Mysidopsis bahia

Tanaidacea

Tanais sp.
unident. sp.

Cumacea

2 unident spp.

Mollusca

Gastropoda

Acteocina canaliculata
Acteon punctostriatus
Barbatia candida
Caecum pulchellum
Haminoea elegans
Marginella sp.
Nassarius vibex
Natica sp.
Polinices duplicatus
Turbonilla hemphilli
unident. sp.

Pelecypoda

Abra sp.
Anadara transversa
Barbatia candida
Chione cancellata
Lyonsia hyalina floridana
Mysella planulata
Macoma tenta
Tagelus sp.
Tellina sp.

28.03.0033

Sipunculida unident. sp.

Hemichordata unident. sp.

Chordata unident. sp.

DATA SUMMARY: Naples Bay

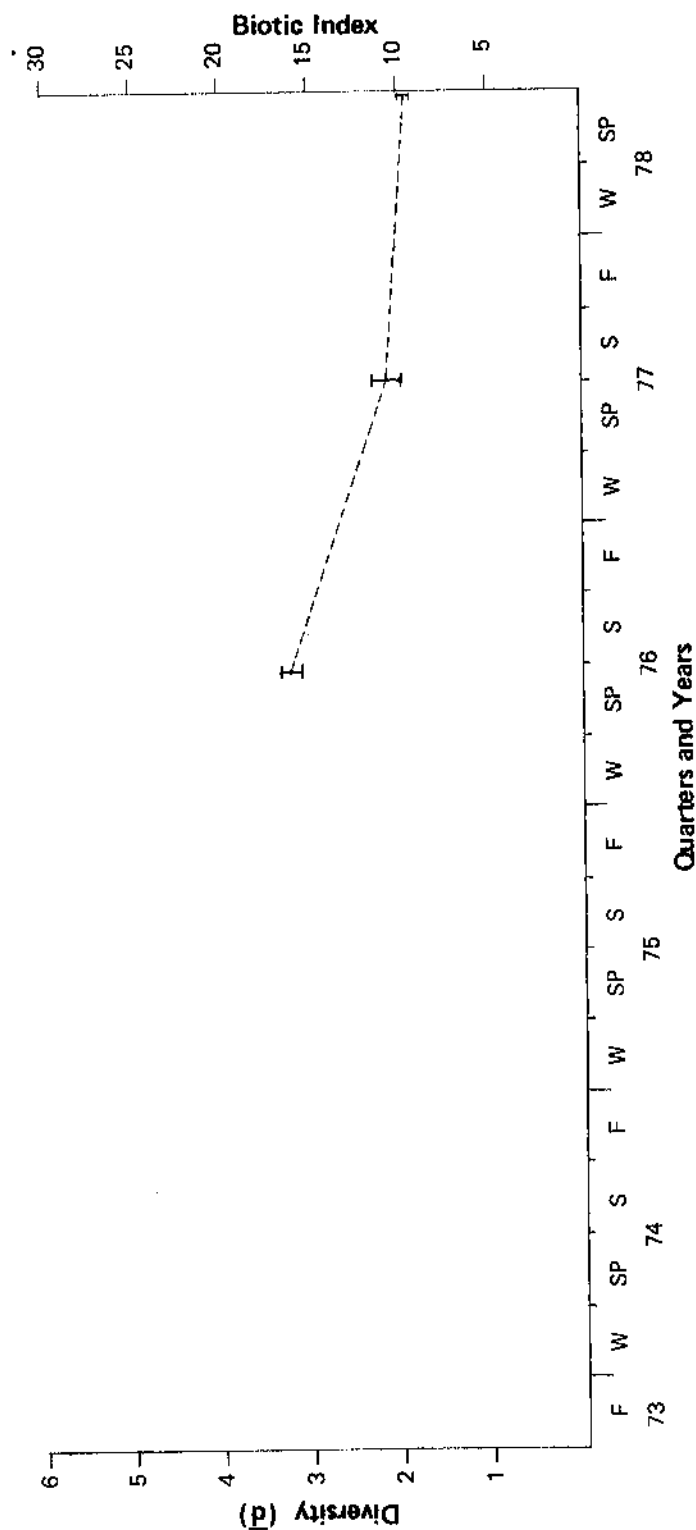
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28-03-0033	7 Aug 73										740		
	18 Aug 75										1710	LT2	
	7 Jun 76	3.280 $\pm$ 0.113	0.143 $\pm$ 0.014	33									
	20 Jun 77	2.161 $\pm$ 0.155	0.352 $\pm$ 0.031	24									
	19 Jun 78	1.904 $\pm$ 0.073	0.328 $\pm$ 0.013	25									

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.03.0033
 BODY OF WATER: NAPLES BAY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28,03,0500 Body of Water Hillsboro Canal

Location west of Deerfield Beach upstream of lock

County Palm Beach

Type Body of Water canal Classification III

Sources of Pollution golf course and agricultural runoff

Nearby Land Use golf course and nearshore development runoff

Sampling Frequency quarterly Depth 2.6 - 4.0 m

Bottom Type sand, detritus, clay % Volatile Solids 0.3 - 1.4

Aquatic Plants: Submerged Ceratophyllum demersum, Ludwigia peruviana, I. palustris,
Elodea sp., Bacopa monnieri,
Chara sp., Emergent Panicum hemitomon, Phragmites communis, Ruppia sp.,
Pistia,
stratiotes, Pontederia lanceolata, Polygonium sp., Wolffia columbiana, Paspalum fluitans,

Macroinvertebrates: Lemna sp., Cladium jamaicense, Alternanthera philoxeroides,
Panicum repens, Eichhornia crassipes

Porifera

unident. sp.

Cnidaria

Hydrozoa

Cordylophora lacustris
Hydra americana

Platyhelminthes

Turbellaria

Dugesia tigrina

Annelida

Oligochaeta

Branchiura sowerbyi
Limnodrilus hoffmeisteri
Pristina sp.
Tubifex tubifex

Hirudinea

Helobdella triserialis
H. elongata
H. stagnalis
Mycobdella moorei

28.03.0500

Arthropoda

Crustacea

Isopoda

Exosphaeroma sp.

Amphipoda

Hyalella azteca

Decapoda

Palaemonetes paludosus

Insecta

Odonata

Enallagma sp.

Erythemis simplicicollis

Erythrodiplax sp.

Epicordulia princeps

Ischnura posita

I. credula

Libellula sp.

Perithemis seminole

Pachydiplax longipennis

Tetragoneuria sp.

Ephemeroptera

Caenis diminuta

Callibaetis floridanus

Hemiptera

Limnogonus hesione

Mesovelgia mulsanti

Plea striola

Belostoma sp.

Velia sp.

Trichoptera

cf. Orthotrichia sp.

Oecetis sp.

unident. polcentropid sp.

Diptera

Ablabesmyia janta

Anopheles sp.

Chaoborus punctipennis

Chironomus attenuatus

C. carus

Cladotanytarsus sp.

Clinotanypus sp.

Cricotopus sp.

Diptera (cont.)

Cryptochironomus fulvus
Dicrotendipes lobus
D. modestus
D. nervosus
Einfeldia sp.
Endochironomus sp.
Eulalia sp.
Glyptotendipes sp.
Harnischia boydi
Klofferulus sp.
Larsia sp.
Labrundinia neopilosella
Micropsectra sp.
Nimbocera sp.
Palpomyia sp.
Parachironomus sp.
Pedionomus beckae
Polypedilum fallax
P. halterale
Prionocera sp.
Procladius sp.
Psectrocladius sp.
Pseudochironomus sp.
Rheotanytarsus sp.
Tanytarsus sp.
Tribelos sp.
unident. chironomin
unident. tanypodin

Coleoptera

Derovatellus lentus floridanus
Galerucella nymphaeae
Peltodytes sp.

Arachnida

Acarina

unident. sp.

Mollusca

Gastropoda

Drepanotrema sp.
Helisoma scalare
Laevapex cf. fuscus
Marisa cornuarietis
Melanoides tuberculata
Fossaria cubensis

Gastropoda (cont.)

Physa sp.
Pomacea paludosa
Pseudosuccinea sp.
Pyrgophorus platyrachis
Viviparus georgianus
unident. hydrobiid

Pelecypoda

Corbicula manilensis
Elliptio sp.
Anodonta couperiana
Sphaerium occidentale
S. partumeium

DATA SUMMARY: Hillsboro Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.01.0500	27 Nov 73	1.160±0.103	0.590±0.038	11			2	19				38		
	22 Jan 74											760	131	
	21 Feb 74	0.743±0.210	0.872±0.064	12	2.469±0.154	0.288±0.040	17					236	62	
	20 Mar 74											220	45	
	9 Apr 74											180	16	
	22 May 74	2.673±0.243	0.141±0.055	10			2	22				1300	350	
	18 Jun 74											150	62	
	22 Jul 74	1.832±0.220	0.448±0.074	11			4	30	Coc BG 19 Fil BG 17 Coc Gr 110 Fil Gr 4 Gr Flag 4 Other Flag 95 Cen Dia 245 Pen Dia 32 Total 526			380	80	

See Methods for explanation of table.

DATA SUMMARY: Hillsboro Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.03.0500	26 Aug 74											40	30	
	23 Sep 74											130	78	
	15 Oct 74											68	0	
	12 Nov 74	1.547±0.182	0.317±0.043	7	2.658±0.285	0.178±0.058	11				F11 BG 582 Coc Gr 23 F11 Gr 3 Gr Flag 19 Gen Dia 48 Pen Dia 767 Total 1412	90	24	
	9 Dec 74											260	65	
	21 Jan 75											86	40	
	10 Feb 75											12	7	
10 Mar 75											18	LT4		
	11 Mar 75	2.465±0.301	0.256±0.082	11				3	26					

See Methods for explanation of table.

DATA SUMMARY: Hillsboro Canal

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28.03.0500	10 Apr 75									850	20	
	8 May 75	3.222±0.199	0.073±0.026	13	2.930±0.225	0.246±0.052	20			103	19	
	4 Jun 75									189	119	
	15 Jul 75									42	15	
	11 Aug 75									GT5	5	
	8 Sep 75									94	11	
	9 Sep 75	1.407±0.394	0.673±0.143	9	2.033±0.206	0.295±0.048	11	4	27			
	6 Oct 75									214	52	
	4 Nov 75	1.180±0.307	0.591±0.135	6						330	82	
	8 Dec 75									108	11	
	13 Jan 76									152	40	
	10 Feb 76									109	20	

See Methods for explanation of table.

DATA SUMMARY: Hillsboro Canal

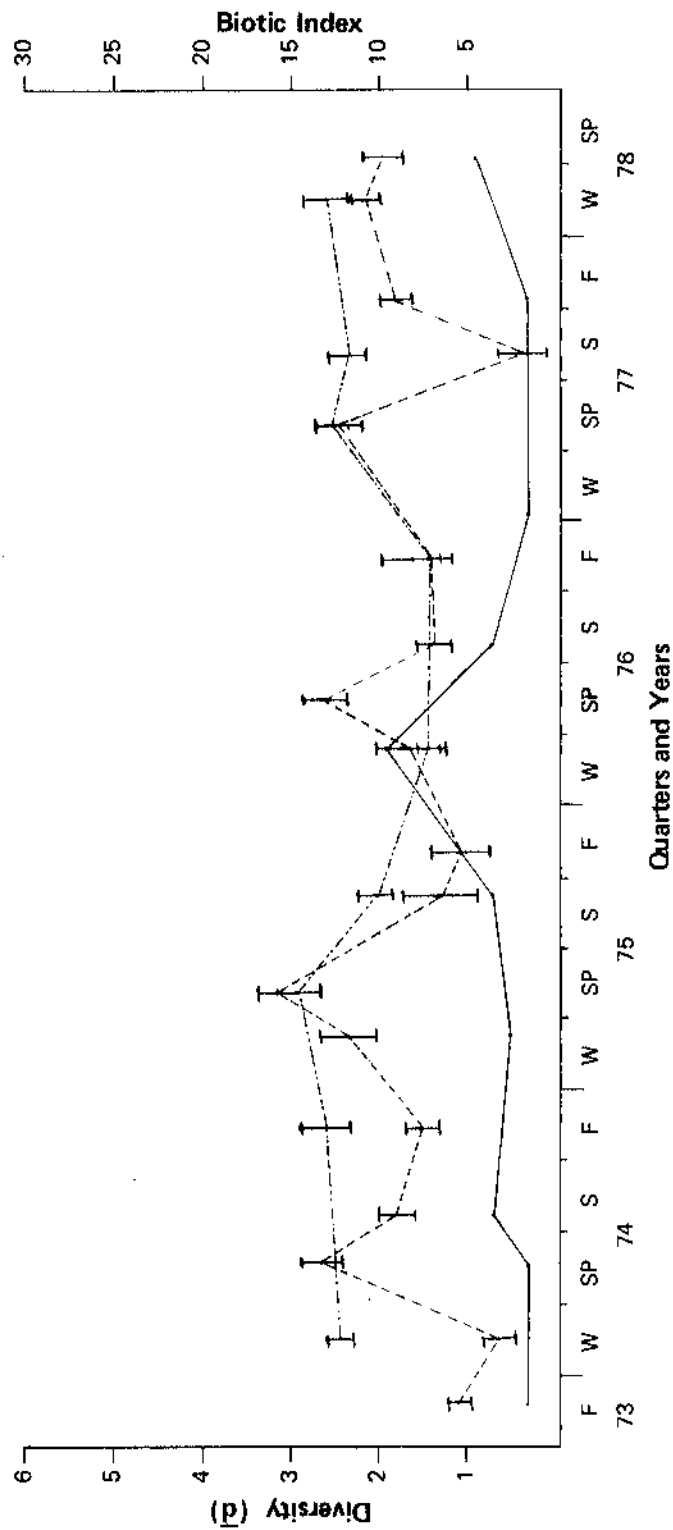
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.03.0500	9 Mar 76											230	49	
	10 Mar 76	1.742±0.396	0.451±0.156	8	1.547±0.146	0.439±0.033	15	10	29	Coc BG 862 Fil BG 286 Coc Gr 1031 Fil Gr 74 Gr Flag 169 Other Flag 0 Cen Dia 439 Pen Dia 114 Total 2975	Coc BG 1137 Fil BG 360 Coc Gr 47 Fil Gr 61 Gr Flag 8 Other Flag 0 Cen Dia 490 Pen Dia 613 Total 2716			
	12 May 76	2.630±0.251	0.220±0.044	15										
	19 Jul 76	1.463±0.180	0.344±0.088	5				4	30					
	16 Nov 76	1.473±0.203	0.535±0.073	10	1.755±0.308	0.627±0.088	18			Coc BG 59 Fil BG 14 Coc Gr 81 Fil Gr 6 Cen Dia 30 Pen Dia 34 Total 224				

See Methods for explanation of table.

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.03.0500
 BODY OF WATER: HILLSBORO CANAL
 --- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



28.03.0581

Amphipoda

Cerapus sp.

Corophium sp.

Corophium tuberculatum

Grandidierella bonnieroides

Leucothoe spinicarpa

Tanaidacea

Apseudes sp.

Leptochelia savigni

Mollusca

Gastropoda

Caecum pulchellum

Pelecypoda

Mytilopsis leucophaeta

DATA SUMMARY: NEW RIVER

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
2B.03.0581	30 Nov 76	1.986±0.190	0.433±0.055	17									
	20 Sep 77	1.571±0.097	0.391±0.026	11									

See Methods for explanation of table.

Station No. 28.04.0349 Body of Water Biscayne Bay

Location approximately 100 yards north of pumping station building

County Dade

Type Body of Water bay Classification III

Sources of Pollution urban runoff

Nearby Land Use residential, urban development

Sampling Frequency quarterly Depth 0.8 - 2.0 m

Bottom Type sandy mud, shell % Volatile Solids 3.2 - 19.5

Aquatic Plants: Submerged Halophila sp., Halimeda sp., Syringodium sp., Cymodocea
sp., Caulerpa sp., Dictyota sp. Emergent _____

Macroinvertebrates:

Cnidaria

Hydrozoa

Clytia sp.
unident. sp.

Anthozoa

unident. sp.

Platyhelminthes

Turbellaria

Gnesioceros floridana
cf. Prosthecereaus sp.
Stylochoplana sp.
unident. sp. 1 - Rudolph

Rhyncocoela

Amphiporus cruentatus
Carinomella lactea
Tetrastemma candidum

Annelida

Oligochaeta

Limnodrilus hoffmeisteri
unident. tubificid sp.
Pelosclex benedeni

Polychaeta

Armandia agilis
A. maculata
Autolytus sp. - Rudolph
Branchiomma nigromaculata
Branchioasychis americana
Brania clavata
Capitella capitata
Capitellides jonesi
Cautleriella killariensis
Piromis eruca
Dorvillea rubra
Shistomeringos rudolphi
Dorvillea sociabilis
Eulalia sanguinea
Eunice filamentosa
Exogone dispar
E. verugera
Fabricia sabella
Glycera americana
Glycinde solitaria
Glycera tessellata
Hydroides dianthus
Leiochrides pallidior
Lumbrineris cruzensis
Marphysa sanguinea
Mediomastus californiensis
Melinna sp.
Naineris laevigata
N. setosa
Nereis sp.
Odontosyllis enopla
Ophiodromus obscurus
Paraehesione luteola
Parapionosyllis longicirrata
cf. Paraonis fulgens
Phyllodoce fragilis
Pista cristata
P. palmata
Platynereis dumerilii
P. ligni
Prionospio steenstrupi
P. cirrobranchiata
P. heterobranchia

Polychaeta (cont.)

Sabella malanostigma
S. microphthalma
Sabellaria vulgaris
Scoloplos rubra
Spirorbis sp.
S. corrugatus
Streblosoma sp.
Scyphoproctus cf. platyproctus
Syllis sp. 1 - Rudolph
S. alternata
S. cornuta
S. hyalina
S. prolifera
Tharyx sp.
T. annulosus
T. marioni
 cf. Thelepus setosus
 cf. Glycinde solitaria

Arthropoda

Crustacea

Isopoda

Bagatus stylodactylus
Erichsonella attenuata
E. floridana
Exosphaeroma cf. diminutum
Paracerceis caudata
Sphaeroma sp.
Limnoria sp.

Amphipoda

Corophium sp.
C. acherusicum
Cymadusa compta
Elasmopus sp.
Erichthonius brasiliensis
Grandidierella bonnieroides
Lembos smithi
L. websteri
Leucothoe spinicarpa
Liljeborgia sp.
Lysianopsis alba
Melita appendiculata
Pontogeneia longleyi
Stenothoe sp.
S. minuta

Decapoda

Alpheus armillatus
Hippolyte zostericola
Fallotritella biscaynensis
Luconacia incerta
Thor floridanus

Tanaidacea

Leptochelia forresti
L. savignyi
Tanais cavolinii

Cirripedia

Balanus sp. 1 - Rudolph

Cumacea

Cyclaspis varians

Insecta

Diptera

Cladotanytarsus sp.
Pseudochironomus sp.

Ephemeroptera

Caenis diminuta

Pycnogonida

Achelia sawayai
Anoplodactylus pectinus
Callipallene brevirostrum

Mollusca

Polyplacophora

Ischnochiton papillosus

Gastropoda

Acteocina canaliculata
Doridium pusum
Costoanachis sparsa
Bailya intricata
Bittium varium
Bulla striata
Caecum pulchellum
C. nitidum
Cerithium atratum
Doto sp. 1 - Walesky
Elysia sp.
Haminoea elegans
Lapinura divae
Marginella aureocincta
Mitrella lunata
Modulus modulus
Nassarius albus
Olivella sp.
Phyllaplysia cf. engeli
Vexillum gemmatum
Rissoina catesbyana
Melanella cf. arcuata
Turbonilla sp.
Vermicularia spirata
Zebina browniana

Pelecypoda

Anomia simplex
Argopecten irradians concentricus

Pelecypoda (cont.)

Mytilopsis leucophaeata
Chione cancellata
Corbula contracta
Carditamera floridana
Laevicardium mortoni
L. laevigatum
Lima cf. pellucida
Lucina sp.
Lucinoma filosa
Macoma constricta
M. tenta
Nucula cf. aegeensis
Modiolus modiolus
Mulinia lateralis
Ostrea sp. 1 - Rudolph
Pinctada imbricata
Sphenia antillensis
Tagelus divisus
Tellina cf. versicolor
cf. Codakia orbiculata

Echinodermata

Ophiuroidea

Amphiodia pulchella
Amphipholis gracillima
A. squamata

Holothuroidea

Synaptula hydroformis

Bryozoa

Bugula neritina

Sipunculida

Golfingia elongata
G. pellucida
Phascolion strombi

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate		Artificial Substrate		Total	Fecal								
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.			BI	#Spp.		
28.06.0349	14 Aug 74											18			
	5 Sep 74											2			
	12 Sep 74	2.594±0.185	0.344±0.041	28						Coc BG 1584 Fil BG 1 Coc Gr 26 Fil Gr 5 Gr Flag 5 Other Flag LT1 Cen Dia 1 Pen Dia 6 Total 1629					
	24 Oct 74												LT2		
	21 Nov 74	3.594±0.161	0.169±0.019	52									LT2		
	5 Dec 74												33		
	9 Jan 75												110	33	

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.			BI	#Spp.	
28.04.0349	22 Jan 75	2.470±0.206	0.454±0.049	33					LT2			
	6 Feb 75								79	33		
	6 Mar 75								8	5		
	19 Mar 75								33			
	17 Apr 75								13	2		
	6 May 75								LT2			
	2 Jun 75								LT2			
	6 Jun 75	1.329±0.487	0.785±0.058	36	2.817±0.112	0.276±0.033	40			2		
	15 Jul 75	2.661±0.138	0.350±0.028	49						2	2	
	24 Jul 75											
	26 Aug 75									49	13	
	3 Sep 75									23		

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.04.0349	28 Oct 75	3.946±0.224	0.166±0.025	54					Coc BG 202 Fil BG 33 Coc Gr 3 Fil Gr 43 Gr Flag 0 Other Flag 169 Cen Dia 14 Pen Dia 0 Total 464		LT2		
	9 Dec 75										4900	1400	
	8 Jan 76	3.332±0.259	0.411±0.052	73							LT18	LT18	
	23 Feb 76										LT2	LT2	
	23 Mar 76										LT2	LT2	
	20 Apr 76	3.603±0.113	0.170±0.016	59							LT2	LT2	
	19 May 76										2	LT2	

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.04.0349	21 Jun 76											LT2	LT2	
	20 Jul 76											LT2	2	
	16 Aug 76	4.313±0.178	0.071±0.013	40								79	33	
	16 Sep 76											23	13	
	18 Oct 76											23	13	
	15 Nov 76	3.930±0.076	0.106±0.006	72								13	13	
	14 Dec 76											130	130	
	12 Jan 77											LT18	LT18	
	14 Feb 77	4.048±0.201	0.095±0.014	40						Coc BG 14 Fil BG 6 Coc Gr 21 Fil Gr 11 Gr Flag 3 Other Flag 1 Cen Dia 3				

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28,04,0349	14 Feb 77 (cont.)								Pen Dia 22 Total 81			2	2	
	28 Mar 77													
	27 Apr 77	4.419±0.158	0.050±0.008	40								LT2	LT2	
	13 Jun 77											LT 2	LT 2	
	6 Sep 77	4.592±0.267	0.095±0.020	41								LT18	LT18	
	4 Oct 77											LT18	LT18	
	14 Oct 77	4.108±0.286	0.172±0.029	47								23	13	
	2 Nov 77											33	7	
	19 Dec 77											33	7	
	3 Jan 78													
	15 Feb 78	4.595±0.231	0.080±0.020	42								920	540	

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

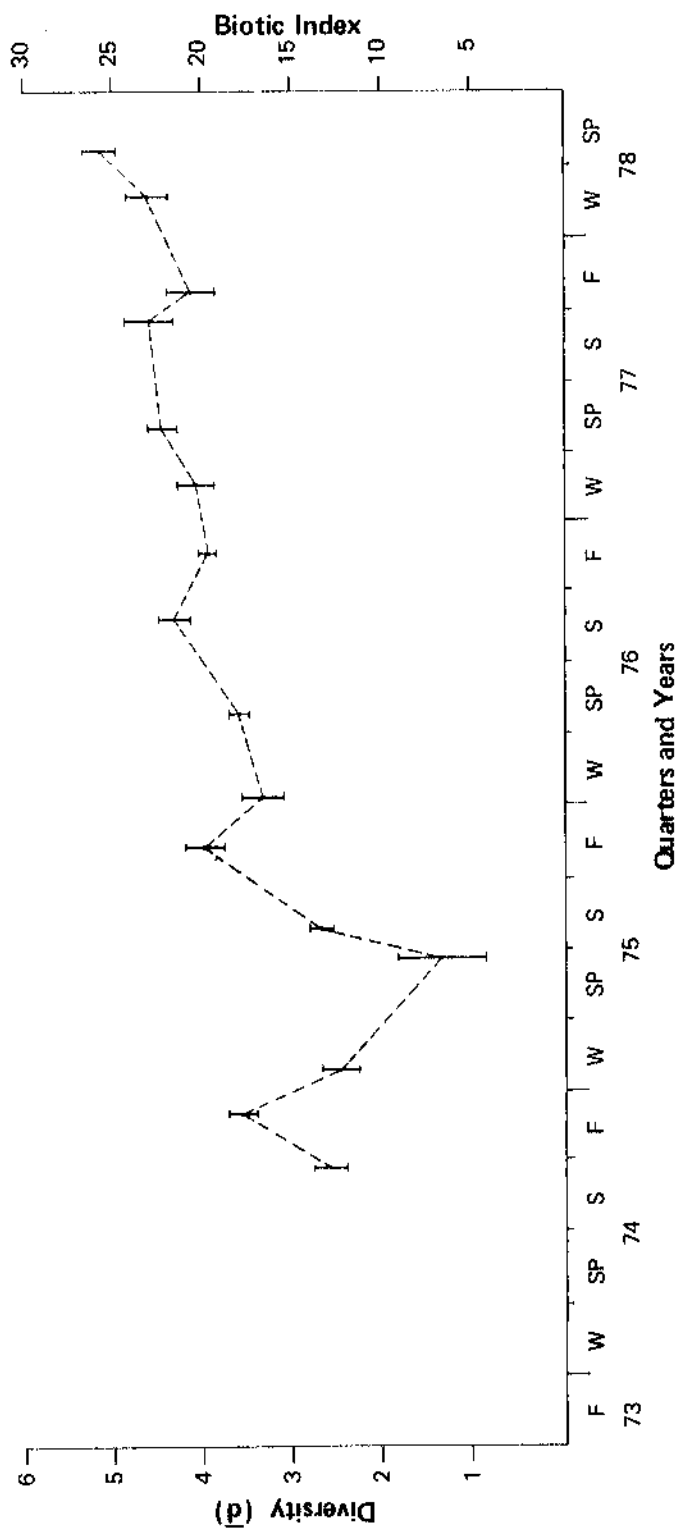
Station Number	Date	Macroinvertebrates							Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate			Total				Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.04.0349	15 Mar 78											8	5	
	17 Apr 78	5.129±0.184	0.048±0.010	58					Coc BG 13 Fl BG 0 Coc Gr 2 Fl Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 0 Pen Dia 4 Total 19			LT 2	LT 2	
	1 May 78											LT2	LT2	
	1 Jun 78											18	18	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0349
 BODY OF WATER: BISCAYNE BAY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28,04,0372 Body of Water Florida Bay

Location at Marker #1, NE of Lignum Vitae Key

County Monroe

Type Body of Water bay Classification III

Sources of Pollution _____

Nearby Land Use _____

Sampling Frequency annually Depth 2.5 m

Bottom Type grass, shell % Volatile Solids _____

Aquatic Plants: Submerged Thalassia sp., Penicillus sp.

Emergent _____

Macroinvertebrates:

Porifera

unident. sp. 2 - Kruer

Cnidaria

Hydrozoa

unident. sp. 1 - Kruer

Rhynchocoela

Carinomella lactea - Webb

unident. sp. 1 - Helbling

Annelida

Oligochaeta

unident. sp. 1 - Kruer

Polychaeta

Aricidea suecica

Axiiothella sp. 1 - Kruer

Brania clavata

Capitella capitata

Capitomastus sp. 1 - Helbling

Caulleriella sp. 1 - Kruer

Cirrophorus lyriformis

Polychaeta (cont.)

Dasybranchus sp. 1 - Helbling
D. lumbricoides
Eusyllis sp. 1 - Helbling
Exogone sp. 1 - Helbling
E. dispar
E. verugera
Fabricia sp. 1 - Helbling
Gyptis brevipalpa
Hydroides sp. 1 - Helbling
Janua sp. 1 - Helbling
Langerhansia cornuta
Leiochrides sp. 1 - Helbling
Lumbrineris coccinea
L. tetraura
Magelona sp. 1 - Helbling
Mediomastus sp. 1 - Helbling
Melinna maculata
Nematonereis sp. 1 - Helbling
Nereis sp. 1 - Helbling
Notomastus hemipodus
Pholoe sp. 1 - Kruer
Pista palmata
Prionospio cirrobranchiata
P. heterobranchia
Proscoloplos sp. 1 - Helbling
Schistomeringos sp. 1 - Helbling
S. rudolphi
Spirorbis sp. 1 - Helbling
Terebella sp. 1 - Kruer
T. turgidula
Terebellides stroemi
Tharyx annulosus
Thelepus setosus
Typosyllis regulata
unident. ampharetid sp. 1 - Kruer
unident. capitellid sp. 1 - Helbling

Arthropoda

Crustacea

Isopoda

Limnoria platycaudata
Mesanthura sp. 1 - Kruer
Paracerceis caudata
unident. janirid sp. 1 - Kruer

Amphipoda

Ampeleis sp. 1 - Kruer
A. vadorum
Aorcho sp. 1 - Kruer
Lembos smithi
Listriella barnardi
Lysianopsis alba
Paraphoxus sp. 1 - Kruer

Decapoda

Alpheus normanni
Penaeus aztecus

Mysidacea

unident. sp. 1 - Helbling
unident. sp. 4 - Kruer

Tanaidacea

Leptochelia sp. 1 - Kruer
L. forresti
L. savignyi
Zeuxo sp. 1 - Kruer
unident. sp. 9 - Kruer
unident. sp. 10 - Kruer

Cumacea

Cyclaspis sp. 1 - Helbling
Eudorella sp. 1 - Kruer

Mollusca

Polyplacophora

unident. chitonid sp. 2 - Helbling

Gastropoda

Architectonica sp. 1 - Helbling
Bittium sp. 1 - Helbling
B. sp. 3 - Kruer
B. sp. 4 - Kruer
Bulla striata
Caecum pulchellum
Cerithium muscarum
Granulina sp. 1 - Kruer
Hyalina sp. 1 - Kruer
Marginella hematita
Modulus modulus
Nassarius sp. 1 - Kruer
Odostomia sp. 1 - Kruer
O. sp. 2 - Kruer
Seila adamsi
Turbonilla sp. 2 - Kruer

Gastropoda (cont.)

Vermicularia fargoi

unident. columbellid sp. 1 - Kruer

Pelecypoda

Barbatia candida

Macoma sp. 2 - Kruer

Macrocallista maculata

Transenella sp. 1 - Helbling

Echinodermata

Ophiuroidea

Amphiodia pulchella

Amphipholis squamata

A. thrombodes

Ophiopsila riisei

Holothuroidea

unident. synaptid sp. 1 - Kruer

Sipunculida

unident. sp. 4 - Helbling

unident. sp. 5 - Helbling

DATA SUMMARY: Florida Bay

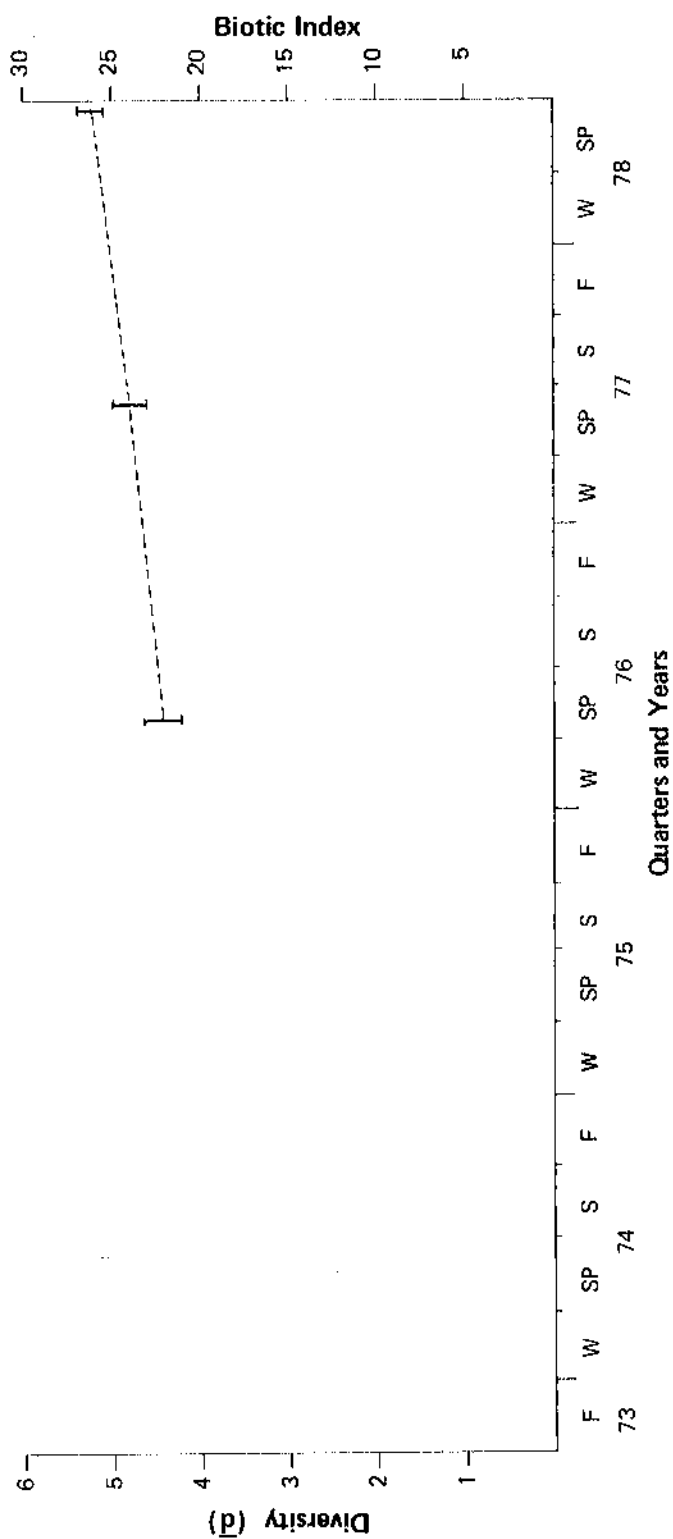
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Sp.	Diversity	Redundancy	#Sp.						
28-04-0372	16 Apr 76	4.521±0.211	0.080±0.014	46									
	31 May 77	4.888±0.196	0.101±0.015	86									
	7 Jun 78	5.250±0.180	0.060±0.009	85									

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0372
 BODY OF WATER: LIGNUM VITAE KEY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Station No.	28.04.0373	Body of Water	Man of War Harbor
-------------	------------	---------------	-------------------

Location halfway between Marker #27 and Wisteria Island on Frankfort Bank

County Monroe

Type Body of Water bay Classification III

Sources of Pollution urban runoff

Nearby Land Use _____

Sampling Frequency annually Depth 2.8 - 3.1 m

Bottom Type grass, sand, shell % Volatile Solids

Aquatic Plants: Submerged Thalassia sp., Halodule sp.

Emergent

Macroinvertebrates:

Cnidaria

Hydrozoa

unident. sp. 1 - Krueger

Anthozoa

unident. actiniarian sp. 2 - Kruer

Rhynchocoela

Cerebratulus sp. 1 - Webb

Micrura sp. 1 - Webb

unident. sp. 1 - Helbling

Annelida

Oligochaeta

unident. sp. 1 - Krueer

unident. sp. 1 - Krueger

Polychaeta

Arabella sp. 1 - Helbling

Aricidea suecica

Axiiothella sp. 1 - Kruer

Branchiomma sp. 1 - Helbling

Capitella capitata

Capitellidae Capitellidae
Capitellides sp. 1 - Helbling

Polychaeta (cont.)

Capitomastus sp. 1 - Helbling
Caulleriella sp. 1 - Kruer
Cirrophorus lyriformis
Dorvillea sociabilis
Eusyllis sp. 1 - Helbling
Exogone sp. 1 - Helbling
E. dispar
E. verugera
Fabricia sp. 1 - Helbling
Haploscoloplos sp. 1 - Kruer
Hyboscolex sp. 1 - Helbling
Langerhansia ferrugina
L. cornuta
Mediomastus sp. 1 - Helbling
Minuspio sp. 1 - Helbling
M. cirrifera
Nereis falsa
Notomastus sp. 2 - Kruer
Odontosyllis sp. 1 - Helbling
Ophiodromus obscurus
Cirrophorus lyriformis
Polycirrus sp. 1 - Helbling
Prionospio cristata
Pulliella sp. 1 - Helbling
Schistomeringos rudolphi
Scyphoproctus sp. 1 - Helbling
Serpula sp. 1 - Helbling
Terebellides stroemi
Tharyx marioni
Typosyllis hyalina
 unident. capitellid sp. 1 - Helbling
 unident. capitellid sp. 5 - Helbling
 unident. hesionid sp. 1 - Helbling
 unident. protariciin sp. 1 - Kruer

Arthropoda

Crustacea

Isopoda

Accalathura crenulata
Paracerceis caudata
 unident. anthurid sp. 1 - Kruer

Amphipoda

Ampithoe sp. 1 - Kruer
Carinobatea cuspidata
Erichthonius brasiliensis
Fallotritella biscayensis

Amphipoda (cont.)

Jassa sp. 1 - Kruer
Lysianopsis alba
Rudilemboides sp. 1 - Kruer
Elasmopus sp. 1 - Kruer
Chevalia avicula

Decapoda

Micropanope sp. 1 - Helbling
Mithrax sp. 1 - Webb

Tanaidacea

Apseudes sp. 1 - Kruer
Heterotanais sp. 1 - Kruer
Leptochelia forresti
L. savignyi
unident. sp. 1 - Kruer
unident. sp. 2 - Kruer

Cumacea

Cyclaspis sp. 1 - Helbling

Mollusca

Gastropoda

Acmaea pustulata
Marginella hematita

Pelecypoda

Gouldia cerina
Lucina amianta
L. sp. 1 - Kruer
Macoma sp. 1 - Helbling
M. tonta
M. sp. 2 - Kruer
Solemya occidentalis
Tellina sp. 3 - Kruer
Transennella sp. 1 - Helbling

Echinodermata

Ophiuroidea

Amphiodia trychna
Ophiocoma pumila

Bryozoa

unident. sp. 2 - Kruer

Sipunculida

unident. sp. 3 - Helbling
unident. sp. 4 - Helbling

DATA SUMMARY: Man-of-War Harbor

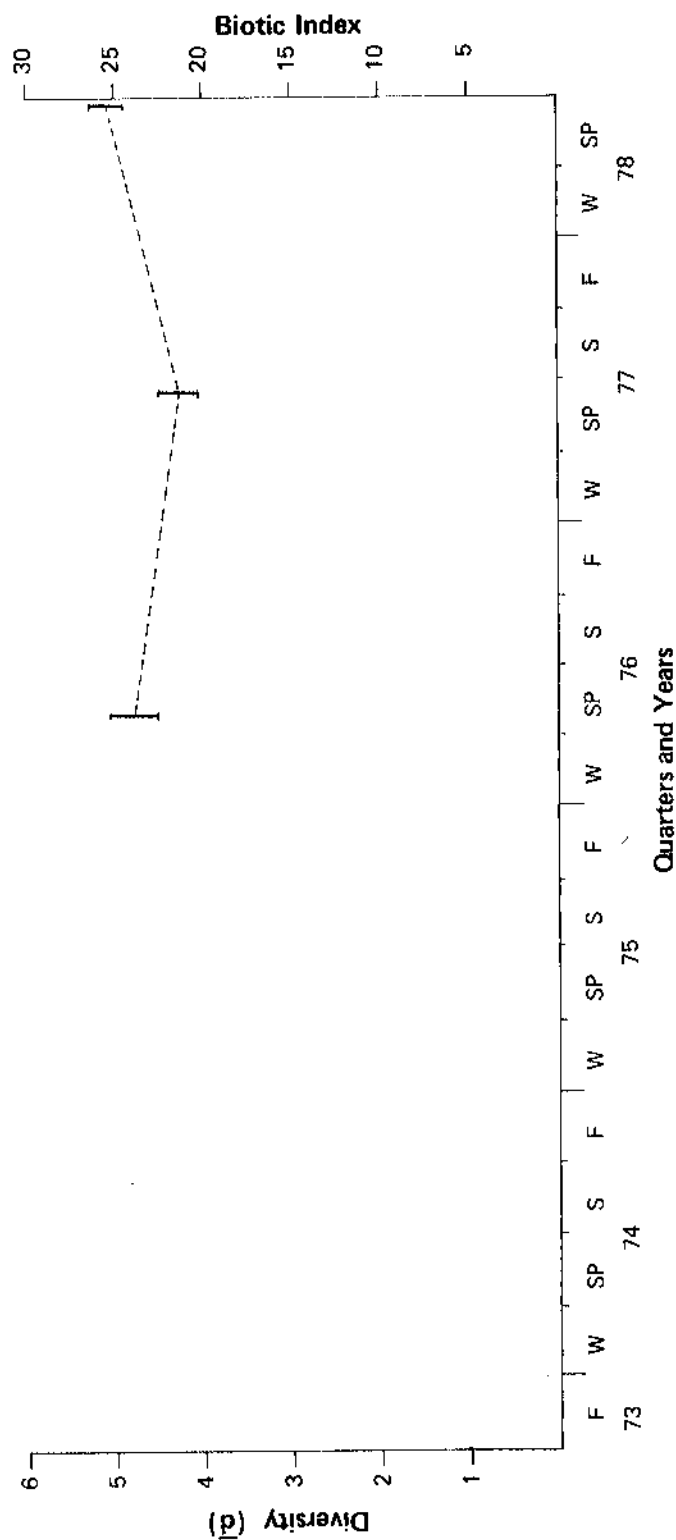
Station Number	Date	Macroinvertebrates										Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate			BI	#Spp.	Redundancy	#Spp.	Total			Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy									#Spp.	
28.04.0373	15 Apr 76	4.800±0.200	0.060±0.010	56												
	16 May 77	4.349±0.248	0.163±0.030	60												
	9 Jun 78	5.116±0.203	0.082±0.012	84												

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0373
 BODY OF WATER: MAN OF WAR HARBOR

--- NATURAL SUBSTRATE DIVERSITY
 - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.04.0374 Body of Water Florida Bay

Location at Marker #13 north of Bamboo Key

County Monroe

Type Body of Water bay Classification

Sources of Pollution

Nearby Land Use residential

Sampling Frequency annually Depth 2.1 - 2.2 m

Bottom Type shell, sand % Volatile Solids

Aquatic Plants: Submerged Caulerpa sp., Halimeda sp., Amphiroa sp., Thalassia sp.,
Penicillus sp., Udotea sp., ~~Dasyopsis~~ sp., Laurencia sp., Fragilissima sp., Chondria sp.

Macroinvertebrates:

Porifera

unident. sp. 1 - Kruer

Cnidaria

Anthozoa

unident. actiniarian sp. 1 - Kruer

unident. actiniarian sp. 2 - Kruer

Rhynchocoela

unident. sp. 1 - Helbling

Annelida

Oligochaeta

unident. sp. 1 - Kruer

unident. sp. 2 - Kruer

Polychaeta

Arabella sp. 1 - Helbling

Aricidea jeffreysii

Axiothella sp. 1 - Kruer

Brania clavata

Capitella capitata

Capitomastus sp. 1 - Helbling

Chaetozone sp. 1 - Helbling

C. gayheadi

Cirriformia sp. 1 - Kruer

Cirrophorus lyriformis

Dasybranchus sp. 1 - Helbling

Polychaeta (cont.)

Janua sp. 1 - Helbling
Dodecaceria diceria
Dorvillea rudolphi
Eusyllis sp. 1 - Helbling
Exogone sp. 1 - Helbling
E. dispar
E. verugera
Fabricia sp. 1 - Helbling
Langerhansia cornuta
L. ferrugina
Leiochrides sp. 1 - Helbling
Lumbrineris coccinea
L. tetraura
L. sp. 3 - Helbling
Mediomastus californiensis
M. sp. 1 - Helbling
Minuspio cirrifera
Naineris setosa
Nematonereis sp. 1 - Helbling
Nereis falsa
N. largoensis
Oriopsis sp. 1 - Kruer
Prionospio heterobranchia
Proscoloplos sp. 1 - Helbling
Protodorvillea kefersteini
Schistomeringos sp. 1 - Helbling
S. rudolphi
Sphaerosyllis sp. 2 - Helbling
Streblosoma sp. 1 - Helbling
Terebellides stroemi
Tharyx annulosus
T. marioni
Typosyllis alternata
T. hyalina
 unident. hesionis sp. 2 - Kruer

Arthropoda

Crustacea

Isopoda

Accalathura crenulata
Mesanthura sp. 1 - Kruer
Serolis mgrayi
Sphaeroma sp. 1 - Kruer
 unident. anthurid sp. 2 - Kruer

Amphipoda

Ampelisca sp. 1 - Kruer
Aorcho sp. 1 - Kruer
Carinobatea cuspidata
Chevalia mexicana
Erichthonius brasiliensis
Lembos smithi
Lysianopsis alba
Melita sp. 2 - Kruer
M. dentata
Pontogeneia longleyi
Chevalia avicula
unident. melitid sp. 2 - Kruer

Decapoda

Brachyura sp. 2 - Kruer
unident. pagurid sp. 2 - Kruer
unident. pagurid sp. 3 - Kruer

Tanaidacea

Heterotanaïs sp. 1 - Kruer
Leptochelia savignyi

Cumacea

Eudorella sp. 1 - Kruer

Pycnogonida

unident. sp. 1 - Kruer

Mollusca

Polyplacophora

unident. chitonid sp. 1 - Helbling

Gastropoda

Acteocina canaliculata
Bittium sp. 1 - Helbling
B. sp. 2 - Kruer
Caecum floridanum
C. nitidum
C. pulchellum
Cerithium muscarum
Cylindrobulla beauii
Littorina sp. 1 - Helbling
Mitrella sp. 1 - Kruer
Nassarius sp. 1 - Kruer
Odostomia sp. 2 - Kruer
Rissoina sp. 1 - Helbling

Gastropoda (cont.)

unident. columbellid sp. 1 - Kruer

Scaphopoda

Dentalium sp. 2 - Helbling

Pelecypoda

Macoma sp. 1 - Helbling

Pitar sp. 1 - Kruer

Tellina sp. 2 - Kruer

T. sp. 4 - Helbling

Echinodermata

Ophiurodea

Amphioplus abditus

Ophiostigma isacanthum

Bryozoa

unident. sp. 2 - Kruer

Chordata

unident. ascidiacean sp. 1 - Kruer

Sipunculida

unident. sp. 3 - Helbling

unident. sp. 4 - Helbling

Echiura

unident. sp. 1 - Kruer

DATA SUMMARY:

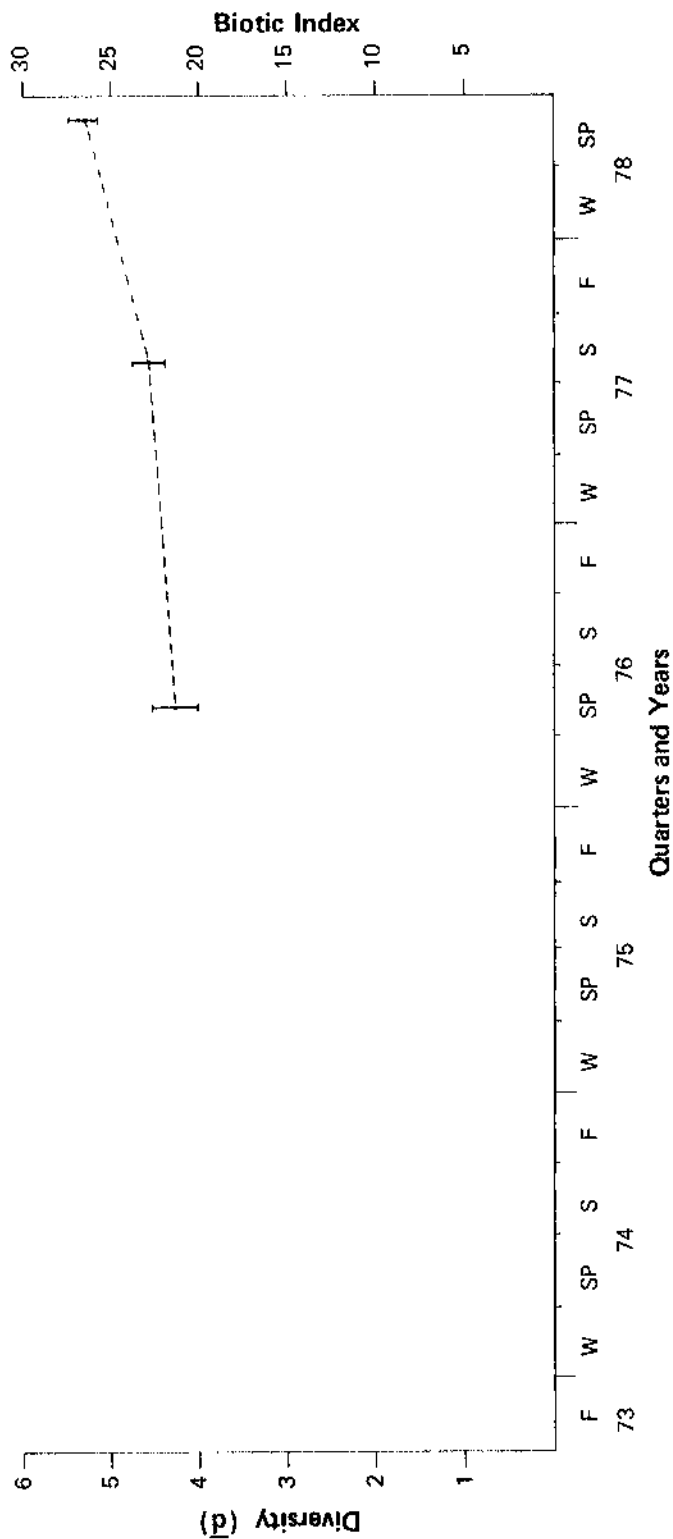
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal							
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.					
28.04.0374	16 Apr 76	4.322±0.300	0.150±0.029	43										
	1 Jun 77	4.630±0.210	0.083±0.014	56										
	21 Mar 78	5.316±0.169	0.066±0.011	93										

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0374
 BODY OF WATER: FLORIDA BAY NEAR BAMBOO KEY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



Polychaeta (cont.)

Dorvillea rudolphi
D. sociabilis
Eusyllis sp. 1 - Helbling
Exogone sp. 1 - Helbling
E. dispar
E. verugera
E. sp. 2 - Helbling
Fabricia sp. 1 - Helbling
Haploscoloplos robustus
Hyboscolex sp. 1 - Helbling
Janua sp. 1 - Helbling
Jasmineira bilobata
Langerhansia cornuta
L. ferrugina
Lumbrineris tetraura
Mediomastus sp. 1 - Helbling
Minuspio sp. 1 - Helbling
Nereis falsa
N. largoensis
Onuphis magna
Oriopsis sp. 1 - Kruer
Palaenotus sp. 1 - Helbling
Pectinaria meredithi
Polycirrus sp. 1 - Helbling
Prionospio cristata
Protodorvillea kefersteini
Schistomeringos sp. 1 - Helbling
Sphaerosyllis sp. 3 - Kruer
S. sp. 1 - Helbling
S. sp. 2 - Helbling
Spirorbis sp. 1 - Helbling
Streptosyllis sp. 1 - Helbling
Tharyx marioni
Trypanosyllis sp. 1 - Helbling
Typosyllis regulata
T. hyalina
T. alternata
 unident. aphroditid sp. 1 - Webb
 unident. capitellid sp. 4 - Helbling
 unident. hesionid sp. 1 - Helbling
 unident. polynoid sp. 4 - Helbling
 unident. syllid sp. 5 - Helbling

Arthropoda

Crustacea

Isopoda

Idotea 'sp. 1 - Kruer
Limnoria platycaudata
Munna sp. 2 - Helbling
unident. anthurid sp. 1 - Kruer
unident. bopyrid sp. 1 - Kruer

Amphipoda

Ampithoe rubricata
Chevalia avicula
Elasmopus sp. 1 - Kruer
Erichthonius brasiliensis
Gitanopsis tortuga
Lembos smithi
Lysianopsis alba
Melita sp. 1 - Helbling
Paraphoxus sp. 1 - Kruer
Pontogeneia longleyi
Synchelidium americanum

Tanaidacea

Heterotanais sp. 1 - Kruer
Leptochelia sp. 1 - Kruer
L. rapax
L. savignyi
unident. sp. 2 - Kruer
unident. sp. 3 - Kruer

Cumacea

Cyclaspis sp. 1 - Helbling
unident. sp. 4 - Helbling
unident. sp. 5 - Helbling

Pycnogonida

Anoplodactylus sp. 1 - Kruer

Mollusca

Polyplacophora

Ischnochiton papillosa
unident. chitonid sp. 2 - Helbling

Gastropoda

Acteon punctostriatus
Bulla sp. 1 - Helbling
Odostomia sp. 1 - Kruer
Tricolia thalassicola

Pelecypoda

Macoma sp. 2 - Kruer

28.04.0375

Pelecypoda (cont.)

Solemya occidentalis
S. sp. 1 - Helbling

Echinodermata

Ophiuroidea

Amphiodia pulchella
Amphipholis pachybactera
A. squammata
Ophioderma sp. 1 - Helbling
O. sp. 2 - Helbling
unident. sp. 1 - Kruer

Sipunculida

unident. sp. 4 - Helbling
unident. sp. 5 - Helbling

DATA SUMMARY: Angelfish Creek

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate			Artificial Substrate							
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28-04-0375	28 Apr 76	4.580±0.240	0.092±0.016	49								
	13 Jun 77	5.333±0.190	0.068±0.012	85								

See Methods for explanation of table.

Station No. 28.04.0376 Body of Water Oleta River

Location approximately 500 ft. west of ICWW.

County Dade

Type Body of Water estuary Classification III

Sources of Pollution urban runoff

Nearby Land Use _____

Sampling Frequency annually Depth 1.5 - 1.8 m

Bottom Type mud, sand % Volatile Solids _____

Aquatic Plants: Submerged _____

Emergent Rhizophora mangle

Macroinvertebrates:

Cnidaria

Anthozoa

unident. sp.

Platyhelminthes

cf. Gnesioceros floridana

Rhynchocoela

unident. sp.

Annelida

Oligochaeta

2 unident. tubificid spp.

Polychaeta

Aonides mayaguezensis

Aricidea jeffreysii

A. taylori

Armandia agilis

Capitella capitata

Capitellides jonesi

Caulleriella killariensis

Polychaeta (cont.)

Diopatra cuprea
Dorvillea sociabilis
Exogone dispar
Fabricia sabella
Glycera tessellata
Haploscoloplos foliosus
Lumbrineris latreilli
L. tenuis
L. impatiens
Nereiphylla fragilis
Nereis succinea
Onuphis sp.
Parapionosyllis longicirrata
Polydora caeca
P. socialis
Polyophthalmus pictus
Schistomeringos rudolphi
Spio setosa
Streblospio benedicti
Syllides setosa
Syllis sp.

Arthropoda

Crustacea

Isopoda

cf. Exosphaeroma diminutum

Amphipoda

Grandidierella bonnieroides
Melita nitida
Paraphoxus spinosus
cf. Lysianopsis alba

Mysidacea

Bowmaniella dissimilis

Tanaidacea

Leptochelia forresti

Cumacea

Cyclaspis varians
Oxyurostylis smithi

Mollusca

Gastropoda

Acteocina canaliculata
Caecum nitidum
C. pulchellum
Bittium varium
Sayella cf. crosseana

28.04.0376

Pelecypoda

Chione cancellata
Diplodonta punctata
Lucinoma filosa
Mytilopsis leucophaeata
Macoma constricta
Modiolus modiolus
Mulinia lateralis
Sphenia antillensis
Tagelus divisus

DATA SUMMARY: Oleta River

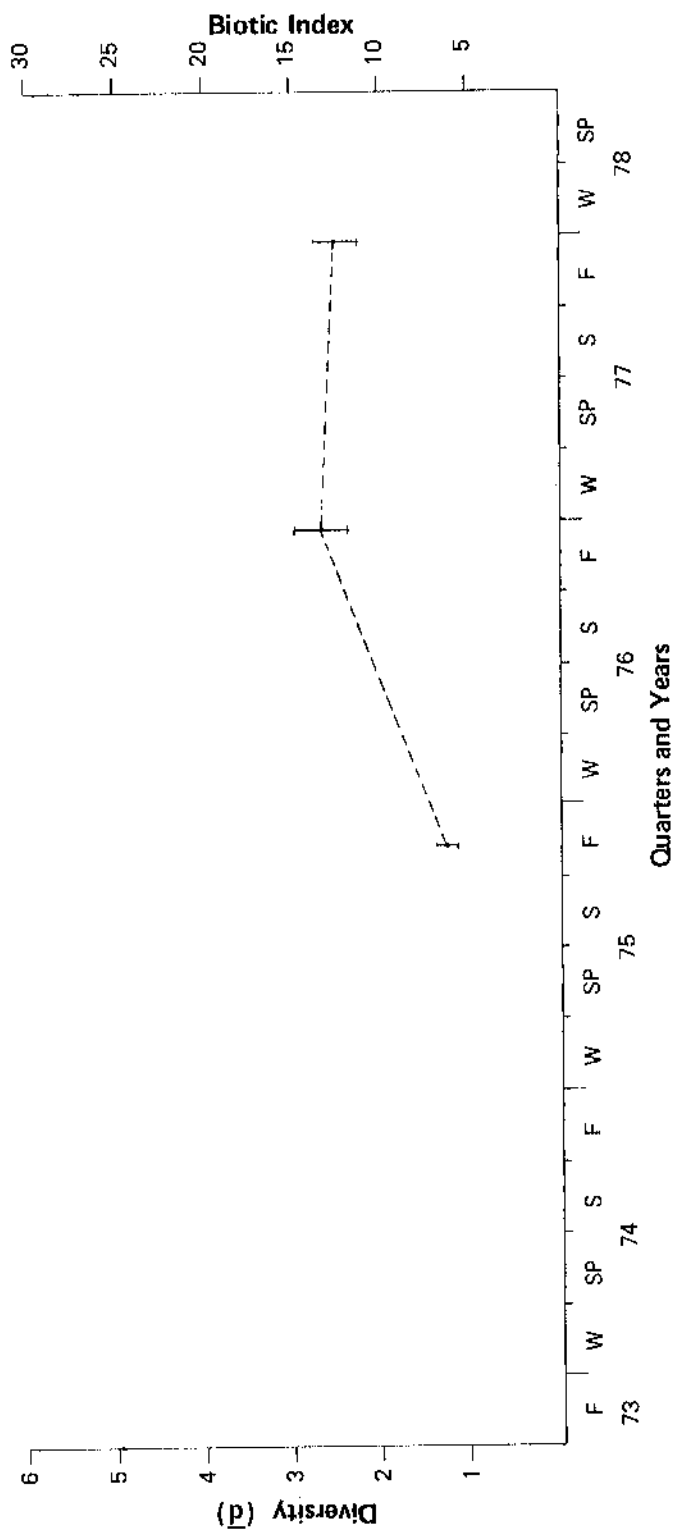
Station Number	Date	Macroinvertebrates										Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comment
		Natural Substrate				Artificial Substrate				Intol. Index					
		Diversity		Redundancy		Diversity		Redundancy							
		Diversity	Redundancy	E Spp.	Diversity	Redundancy	E Spp.	Diversity	Redundancy	E Spp.	Diversity				
28.04.0376	28 Oct 75	1.313±0.122	0.690±0.033	39											
	14 Dec 76	2.668±0.295	0.374±0.069	24											
	19 Dec 77	2.532±0.246	0.465±0.054	40											

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0376
 BODY OF WATER: OLETA RIVER

--- NATURAL SUBSTRATE DIVERSITY
 ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.04.0377 Body of Water Florida Bay

Location near Flamingo, 20 meters South of Marker #8

County Monroe

Type Body of Water bay Classification

Sources of Pollution

Nearby Land Use national park

Sampling Frequency annually Depth 1.5 - 2.0 m

Bottom Type silt, sand, grass, algae % Volatile Solids

Aquatic Plants: Submerged Caulerpa sp., Halodule sp., Syringodium sp.

Emergent

Macroinvertebrates:

Cnidaria

Hydrozoa

Clytia sp.

Sertularia sp.

Anthozoa

Renilla reniformis

Platyhelminthes

Turbellaria

Stylochoplana sp.

Rhynchocoela

Tubulanus pellucidus

Annelida

Oligochaeta

unident. tubificid

Polychaeta

Amaeana trilobata

Aricidea jeffreysi

Autolytus sp.

Axiiothella mucosa

Boguea enigmatica

Branchiomma nigromaculata

Polychaeta (cont.)

Capitella capitata
Caulleriella killariensis
Chaetozone sp.
Chone americana
Cirriformia filigera
Schistomeringos rudolphi
Eulalia sanguinea
Exogone dispar
Fabricia sabella
Glycera americana
G. dibranchiata
Haploscoloplos fragilis
Lepidonotus variabilis
Lumbrineris latreilli
L. tetraura
Lysidice ninetta
Megalomma bioculatum
Mediomastus californiensis
Naineris sp.
Nereis acuminata
Onuphis pallidula
Platynereis dumerilli
cf. Pionosyllis sp.
Polycirrus eximus
Prionospio cirrobranchiata
P. heterobranchia
Pseudobranchionma emersoni
Sabella melanostigma
S. microphthalma
Scoloplos rubra
Scyphoproctus cf. platyproctus
Sphaerosyllis erinaceus
S. pirifera
Spio pettiboneae
Syllis cornuta
S. regulata
Terebellides stroemi
Tharyx annulosus
Thelepus setosus

Arthropoda

Crustacea

Isopoda

Apanthura magnifica
Bagatus bermudensis
Edotea montosa
Erichsonella attenuata
E. floridana
Paracerceis caudata

Amphipoda

Ampelisca abdita
A. vadorum

Amphipoda (cont.)

Ampithoe longimana
Carinobatea cuspidata
Cerapus tubularis
C. simile
Cymadusa compta
Erichthonius brasiliensis
Lembos smithi
Luconacia incerta
Lysianopsis alba
Melita appendiculata
Photis macrocoxa
Podocerus sp.
Pontogeneia longleyi
Rudilemboides naglei
Stenothoe minuta
Synchelidium americanum

Decapoda

Thor floridanus
Micropanope sp.

Tanaidacea

Apseudes sp.
Leptochelia savignyi

Cumacea

Cyclaspis varians
Oxyurostylis smithi

Pycnogonida

Achelia sawayai

Mollusca

Gastropoda

Doto sp.
Haminoea elegans
Modulus modulus
Nassarius albus
Olivella perplexa
Rissoina catesbyana
unident. sp.

Pelecypoda

Chione cancellata
Codakia orbiculata
Corbula contracta
Macoma tenta
Musculus lateralis
Nucula acuta

28.04.0377

Pelecypoda (cont.)

Nucula cf. aegeensis
Solemya occidentalis
Tellina cf. versicolor

Echinodermata

Ophiuroidea

Amphipholis squamata
Amphipodia pulchella

Bryozoa

Amathia alternata
A. vidovici
Bowerbankia gracilis
Schizoporella unicornis

Sipunculida

Phascolion strombi

DATA SUMMARY: Florida Bay at Flamingo Key

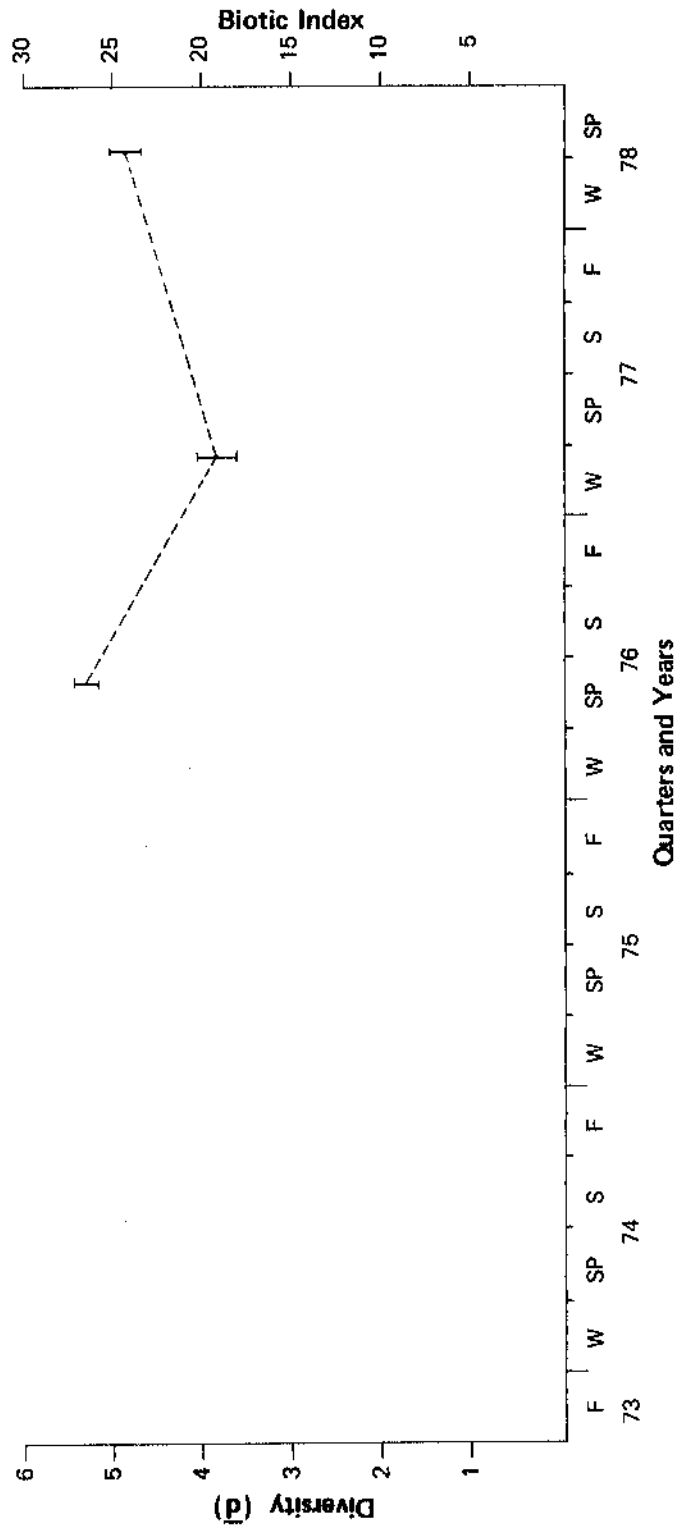
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Calculated/100ml	Comments
		Natural Substrate			Artificial Substrate							
		Diversity		#Spp.	Diversity		#Spp.					
		Redundancy	#Spp.		Redundancy	#Spp.						
28.04.0377	21 May 76	5.312±0.125	0.032±0.006	68								
	10 Mar 77	3.824±0.209	0.172±0.024	49								
	28 Mar 78	4.882±0.173	0.059±0.007	69								

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0377
 BODY OF WATER: FLORIDA BAY AT
 FLAMINGO KEY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 --- BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.04.0380 Body of Water Biscayne Bay
Location south portion, approximately 50 feet NW of marker #2 - entrance channel
to Turkey Point County Dade
Type Body of Water bay Classification IV
Sources of Pollution urban runoff, power plant

Nearby Land Use industry, agriculture
Sampling Frequency quarterly Depth 1.6 - 2.8 m
Bottom Type grass, sand, shell % Volatile Solids 1.4 - 5.3
Aquatic Plants: Submerged Cymodocea sp., Halophila sp., Ceramium sp., Thalassia sp.,
Diplanthera sp., Amphiroa fragilissima, Caulerpa sp., Halimeda sp., Hypoglossum sp.
Emergent

Macroinvertebrates:

Porifera

Chondrilla nucula
unident. sp.

Cnidaria

Hydrozoa

unident. sp.

Anthozoa

unident. sp.

Platyhelminthes

Turbellaria

Gnesioceros floridana
Hofstenia miami
Prosthecereaus sp.
Stylochoplana sp.
unident. sp.

Rhynchocoela

cf. Amphiporus cruentatus
Carinomella lactea
Cerebratulus sp.
cf. Micrura sp.
Nemertopsis bivittata
Zygeupolia rubens
unident. sp.

Annelida

Oligochaeta

Peloscolex benedeni
P. gabriellae
2 unident. tubificid sp.

Polychaeta

Amaeana trilobata
Armandia agilis
A. maculata
Aonides mayaguezensis
Aedicira albatrossae
Aricidea fragilis
A. jeffreysii
Arabella iricolor
Autolytus sp.
Axiiothella mucosa
Brania clavata
Branchiomma nigromaculata
Capitella capitata
C. jonesi
Capitomastus aciculatus
Caulleriella killariensis
Ceratonereis mirabilis
Cirrophorus lyriformis
Clymenella torquata
Diopatra cuprea
Dorvillea sp.
D. sociabilis
Drilonereis sp.
D. cf. longa
cf. Dasybranchus sp.
Eulalia sp.
Eumida sp.
Eunice sp. 1 - Rudolph
E. rubra
E. vittata
E. websteri
Eusyllis sp.

Polychaeta (cont.)

Exogone dispar
E. verugera
Exogonella sp.
Fabricia sabella
Gyptis sp.
Haploscoloplos fragilis
Haplosyllis spongicola
Hesion e picta
Heteromastus filiformis
Hyboscolex longiseta
Hydroides crucigera
Hypsicomus sp.
Isolda pulchella
Jasmineira elegans
Laonice cirrata
Leiochrides pallidior
Lepidonotus sublevis
Loimia medusa
Lumbrineris coccinea
L. cruzensis
L. latreilli
L. tenuis
L. impatiens
Lysidice ninetta
Magelona pettiboneae
Marphysa regalis
M. sanguinea
Mediomastus californiensis
Melinna maculata
Naineris laevigata
N. setosus
Nematoneris unicornis
Phyllodoce fragilis
Nereis sp.
N. falsa
N. pelagica
Notomastus hemipodus
Odontosyllis enopla
Ophiodromus obscurus
Owenia fusiformis
Orbinia riseri
Paraonis fulgens
P. cristata
P. palmata
P. quadrilobata
Polycirrus carolinensis
P. eximus

Polychaeta (cont.)

Polydora websteri
Prionospio cirrobranchiata
P. cirrifera
P. cristata
P. heterobranchia
P. steenstrupi
Pseudovermilia occidentalis
Pulliella sp.
Samythella eliasoni
Schistomeringos rudolphi
Scolecopides viridis
Schyphoproctus cf. platyproctus
Sphaerosyllis sp.
S. erinaceus
S. pirifera
Spirorbis knightjonesi
S. corrugatus
S. spirillum
 cf. Spiophanes bombyx
Sthenelais boa
Syllis sp.
S. alternata
S. (Ehlarsia) cornuta
S. ferrugina
S. gracilis
S. hyalina
S. prolifera
S. regulata
Terebellides stroemi
Tharyx sp.
T. annulosus
Thalenessa lewisii
Trichobranchus glacialis
Vermiliopsis bermudensis
V. sp.

Arthropoda

Crustacea

Isopoda

Apanthura magnifica
Bagatus stylodactylus
Cyathura polita
Erichsonella attenuata
E. floridana
Exosphaeroma sp.
Limnora sp.
L. lignorum
Paracerceis caudata
Ptilanthura tricarina

Isopoda (cont.)
Sphaeroma sp.

Amphipoda
Ampelisca abdita
A. vadorum
Ampithoe longimana
Carinobatea cuspidata
Cerapus sp.
Ceradocus sp.
Corophium sp.
Elasmopus pectinicus
Erichthonius brasiliensis
Gammaropsis sp.
Grandidierella bonnieroides
Guernea sp.
Heterophilas seclusus
Lembos smithi
L. websteri
Listriella barnardi
Lysianopsis alba
Melita nitida
Paraphoxus spinosus
Podocerus sp.
Pontogeneia longleyi
Stenothoe minuta

Decapoda
Clibanarius sp.
Paguristes hummi
Periclimenes longicaudatus
Thor sp.
T. floridanus
Micropanope sp.

Mysidacea
Heteromysis sp.
 unident. sp.

Tanaidacea
Apseudes sp.
Leptochelia forresti
L. savignyi
Tanais cavolinii

Nebaliacea
Nebalia bipes
Paranebalia longipes

Cirripedia

Balanus eburneus

Cumacea

Cyclaspis varians

Pycnogonida

Amphiporus sp. 3 - Rudolph

Nymphon floridanum

unident. sp.

3 unident. nymphonid spp.

unident. achelid

Xiphosura

Limulus polyphemus

Mollusca

Polyplacophora

Acanthochitona pygmaeus

Ischnochiton papillosus

Gastropoda

Acmaea pustulata

Alvania auberiana

Bittium varium

Costoanachis sparsa

Caecum floridanum

C. nitidum

C. pulchellum

Cerithiopsis greeni

Cerodrillia sp.

Cingula floridana

Columbella rusticoidea

Conus floridanus

Crepidula fornicata

C. maculosa

C. plana

Crassispira sp.

C. leucocyma

Cylindrobulla beaulti

Elysia sp.

Favorinus auritulus

Granulina ovuliformis

Marginella apicina

M. aureocincta

Melanella cf. arcata

Gastropoda (cont.)

Modulus modulus
Nassarius albus
Odostomia cf. conoida
O. laevigata
O. sp. 1 - Rudolph
Pyramidella sp.
Rissoina catesbyana
Tegula fasciata
Tricolia thalassicola
Vermicularia spirata
Vexillum gemmatum
Zebina browniana

Scaphopoda

Prodentalium antillarum
P. laqueatum
P. sp.

Pelecypoda

Arca sp.
Chione cancellata
Cyrenoida floridana
Codakia orbiculata
Glycymeris pectinata
Ervilia concentrica
Lima pellucida
Linga amiantus
Linga amiantus
Lucina nassula
Parvilucina multileneata
Macoma constricta
M. tenta
Musculus lateralis
Nucula cf. aegeensis
Pinctada imbricata
Pleuromeris tridentata
Tellina cf. versicolor
Transennella stimpsoni
unident. sp.

Echinodermata

Ophiuroidea

Amphiodia trychna
Amphipholis gracillima
Ophiostigma isacantham

28.04.0380

Holothuroidea

Synaptula hydroformis

Bryozoa

Parasmittia trispinosa

Sipunculida

Golfingia elongata

G. pellucida

P. strombi

Hemichordata

unident. sp.

Chordata

unident. sp.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28-04-0380	15 Jul 74										79		
	8 Aug 74										33		
	14 Aug 74	5.275±0.161	0.055±0.009	87					Coc BG 1376 Fil BG 3 Coc Gr 37 Fil Gr 1 Gr Flag 2 Other Flag LT1 Cen Dia 1 Pen Dia 13 Total 1433				
	23 Sep 74											23	
	23 Oct 74											LT2	
	20 Nov 74											LT2	
	18 Dec 74	5.489±0.141	0.045±0.006	103	1.126±0.054	0.676±0.070	16					LT2	

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-04-0380	20 Jan 75	5.444±0.148	0.034±0.005	80										
	28 Jan 75											49		
	19 Feb 75											8		
	18 Mar 75											79		
	18 Apr 75											5		
	9 May 75											LT2		
	3 Jun 75	5.427±0.180	0.058±0.009	94	3.555±0.183	0.115±0.020	28					LT2		
	14 Jul 75	5.541±0.184	0.058±0.009	96								2		
	4 Sep 75											8		
	14 Oct 75	5.359±0.636	0.042±0.007	71								LT2		
	9 Dec 75											LT18	LT18	
												Coc BG 15 Fil BG 22 Coc Gr 0		

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.04.0380	9 Dec 75 (cont.)									Fill Gr 0 Gr Flag 0 Other Flag 26 Cen Dia 1 Pen Dia 12 Total 76				
	8 Jan 76	5.263±0.647	0.057±0.000	70							LT18	LT18		
	23 Feb 76										LT2	LT2		
	23 Mar 76										LT2	LT2		
	20 Apr 76	5.820±0.170	0.040±0.007	90							LT2	LT2		
	19 May 76										LT2	LT2		
	21 Jun 76										LT2	LT2		
	20 Jul 76	4.435±0.298	0.144±0.033	43							LT2	LT2		
	16 Aug 76	4.945±0.173	0.081±0.011	88							LT2	LT2		
										LT 2	LT 2			

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate		Artificial Substrate		Biotic Index	Total			Fecal			
		Diversity	Redundancy	#Spp.	Diversity						Redundancy		#Spp.
28.04.0380	27 Apr 77	4.706±0.175	0.080±0.014	65						11	LT2		
	10 May 77									LT2	LT2		
	13 Jun 77									LT 2	LT 2		
	9 Aug 77	4.819±0.194	0.063±0.013	53						LT18	LT18		
	4 Oct 77	5.422±0.148	0.034±0.004	79						LT2	LT2		
	2 Nov 77									11	4		
	19 Dec 77									LT 2	LT 2		
	3 Jan 78									LT 2	LT 2		
	15 Feb 78	4.302±0.247	0.241±0.035	76						5	LT2		
	15 Mar 78									5	LT2		
	17 Apr 78												

See Methods for explanation of table.

DATA SUMMARY: Biscayne Bay

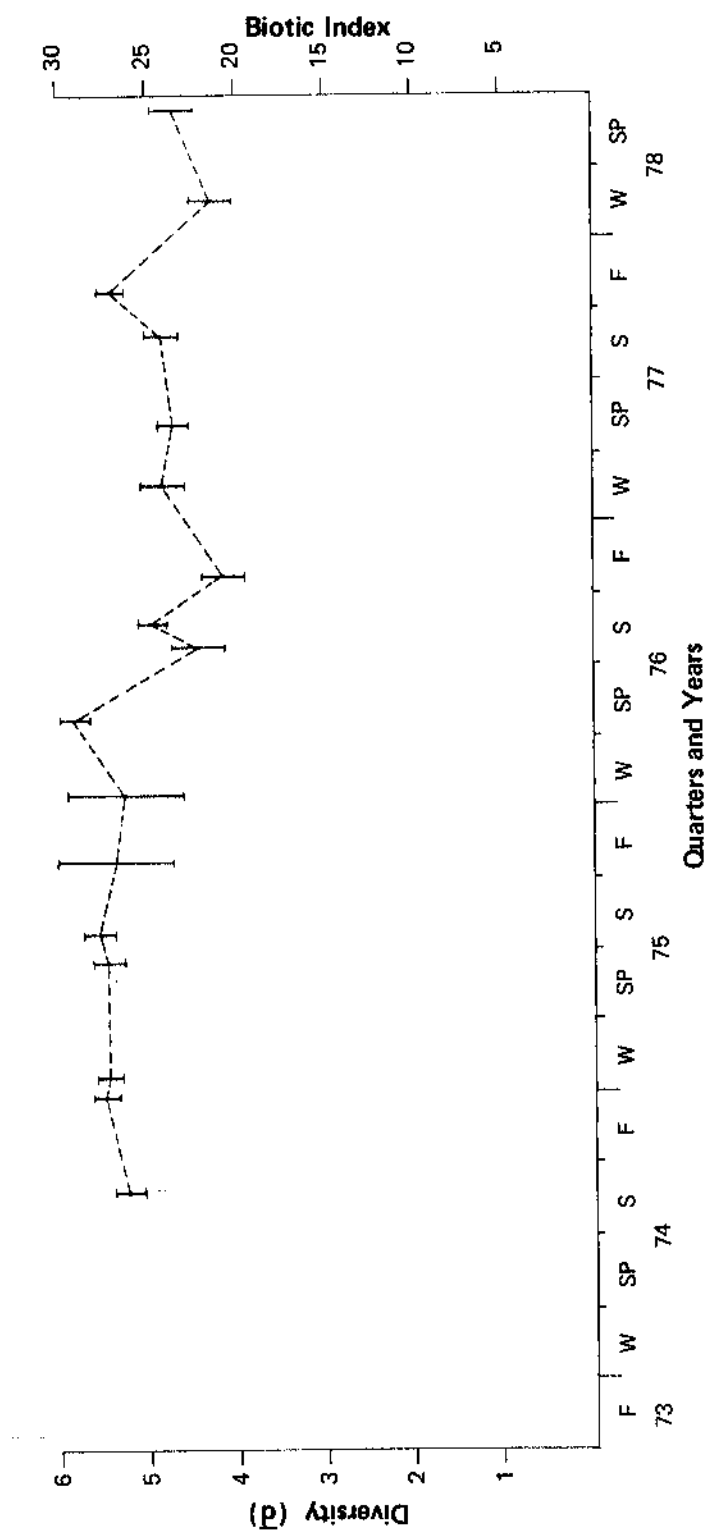
Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal							
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.					
28-04-0380	1 May 78											LT2	LT2	
	1 Jun 78	4.693±0.225	0.131±0.022	72								LT18	LT18	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0380
BODY OF WATER: BISCAYNE BAY

--- NATURAL SUBSTRATE DIVERSITY
- - - - - ARTIFICIAL SUBSTRATE DIVERSITY
— BIOTIC INDEX (= FLORIDA INDEX)



Station No. 28.04.0975 Body of Water Straits of Florida

Location channel Marker #2 South Creek Channel, Pennekamp State Park

County Monroe

Type Body of Water marine/ocean Classification III

Sources of Pollution _____

Nearby Land Use residential, business and undeveloped (red mangrove)

Sampling Frequency quarterly Depth 3.0 - 4.0 m

Bottom Type sandy shell, mixed grass, coral, & Volatile Solids 10.18

Aquatic Plants: Submerged Thalassia sp., Thalassia testudinum, Batophora sp.,

Penicillus sp., Halimeda sp., Udotea sp., Acetabularia sp.

Macroinvertebrates:

Porifera

unident. sp. 1 - Kruer
unident. sp. 2 - Kruer

Cnidaria

Hydrozoa

unident. sp. 1 - Kruer
unident. sp. 2 - Kruer

Anthozoa

unident. actiniarian sp. 1 - Kruer
unident. actiniarian sp. 2 - Kruer

Platyhelminthes

Turbellaria

unident. sp. 1 - Helbling

Rhynchocoela

unident. sp. 1 - Helbling
unident. sp. 2 - Helbling
unident. sp. 3 - Helbling
unident. sp. 4 - Helbling
unident. sp. 5 - Helbling

Annelida

Oligochaeta

unident. sp. 1 - Kruer
unident. sp. 2 - Kruer
unident. sp. 3 - Kruer
unident. sp. 4 - Kruer

Polychaeta

Aedicira sp. 1 - Helbling
Arabella sp. 1 - Helbling
A. sp. 2 - Helbling
Armandia maculata
Aricidea sp. 1 - Helbling
A. suecica
A. jeffreysii
Axiothella sp. 1 - Kruer
A. sp. 2 - Helbling
Branchioma sp. 1 - Helbling
Brania clavata
Chaetozone sp. 1 - Helbling
Cirriiformis sp. 1 - Kruer
Cirrophorus lyriformis
Dasybranchus sp. 1 - Helbling
Dodecaceria diceria
Dorvillea sociabilis
Drilonereis sp. 1 - Kruer
D. longa
Ephesiella minutum
Euclymene sp. 1 - Helbling
Eulalia sp. 1 - Kruer
Eunice rubra
E. vittata
Euphrosine sp. 1 - Helbling
Exogone atlantica
E. dispar
E. gemmifera
E. naidina
E. verugera
E. sp. - Helbling
Fabricia sp. 1 - Helbling
F. sp. 2 - Helbling
Flabellifera sp. 1 - Helbling
Gyptis brevipalpa
Haploscoloplos sp. 1 - Helbling
Haplosyllis spongicola
Harmothoe sp. 1 - Kruer
Hydroides crucigera
H. sp. 1 - Helbling
Hyboscolex sp. 1 - Helbling
Janua sp. 1 - Helbling
Jasmineira bilobata

Polychaeta (cont.)

Langerhansia cornuta
Leiochrides sp. 1 - Helbling
Lepidonotus variabilis
Linopherus sp. 1 - Kruer
L. sp. 2 - Kruer
Luibrineris tetraura
L. sp. 1 - Kruer
L. sp. 2 - Kruer
L. sp. 3 - Kruer
Lysidice ninetta
Macrochaeta sp. 1 - Kruer
Magelona sp. 1 - Helbling
Marphysa bellii oculata
Mediomastus sp. 1 - Helbling
Melinna maculata
Minuspio cirrifera
M. sp. 1 - Helbling
Nematonereis sp. 1 - Helbling
Nephtys sp. 1 - Helbling
Nereis falsa
N. largoensis
N. rava
N. succinea
N. sp. 1 - Kruer
Nerinides sp. 1 - Helbling
Notomastus hemipodus
N. lobatus
N. sp. 1 - Helbling
N. sp. 2 - Kruer
N. sp. 3 - Kruer
Odontosyllis sp. 1 - Helbling
O. sp. 2 - Helbling
Onuphis magna
O. sp. 1 - Kruer
Ophelina sp. 1 - Helbling
Ophryotrocha sp. 1 - Helbling
Orbinia sp. 1 - Helbling
O. riseri
Oriopsis sp. 1 - Kruer
Palaenotus sp. 1 - Helbling
Parapionosyllis sp. 1 - Helbling
Pectinaria meredethi
Pherusa sp. 1 - Helbling
Pholoe sp. 1 - Kruer
Phyllodoce fragilis
P. sp. 1 - Helbling
Pionosyllis uraga
P. sp. 1 - Kruer

Polychaeta (cont.)

Piromis sp. 1 - Helbling
Pista cristata
P. palmata
P. sp. 1 - Helbling
Polycirrus sp. 1 - Helbling
Prionospio cristata
P. heterobranchia
P. steenstrupi
P. sp. 1 - Helbling
Proscoplos sp. 1 - Helbling
Protodorvillea kefersteini
Pseudocapitella sp. 1 - Helbling
Pulliella sp. 1 - Helbling
Schistomeringos rudolphi
Scoloplos capensis
S. rubra
Scyphoproctus sp. 1 - Helbling
S. sp. 2 - Kruer
S. sp. 3 - Helbling
S. sp. 4 - Helbling
Serpula sp. 1 - Helbling
Spermosyllis sp. 1 - Helbling
Sphaerodorum sp. 1 - Kruer
Sphaerosyllis sp. 1 - Helbling
S. sp. 2 - Helbling
S. sp. 3 - Kruer
Spirorbis sp. 1 - Helbling
Sthenelais boa
Streblosoma abbranchiata
S. hartmanae
S. sp. 1 - Helbling
Streptosyllis sp. 1 - Helbling
Syllis sp. 2 - Kruer
S. sp. 3 - Kruer
S. sp. 4 - Kruer
Terebella turgidula
T. sp. 1 - Helbling
Terebellides stroemii
Tharyx annulosus
T. marioni
Trichobranchus sp. 1 - Kruer
Trypanosyllis zebra
T. sp. 1 - Helbling
Typosyllis alternata
T. hyalina
T. prolifera
T. regulata
Vermiliopsis annulata
 unident. capitellid sp. 1 - Helbling
 unident. capitellid sp. 4 - Helbling
 unident. capitellid sp. 5 - Helbling
 unident. capitellid sp. 6 - Helbling

Polychaeta (cont.)

unident. capitellid sp. 7 - Helbling
 unident. capitellid sp. 8 - Helbling
 unident. dorvilleid sp. 1 - Kruer
 unident. eusyllin sp. 1 - Kruer
 unident. hesionid sp. 1 - Kruer
 unident. hesionid sp. 2 - Kruer
 unident. maldanid sp. 2 - Helbling
 unident. maldanid sp. 3 - Helbling
 unident. magelonid sp. 1 - Helbling
 unident. nereid sp. 2 - Helbling
 unident. nereid sp. 4 - Helbling
 unident. oweniid sp. 1 - Kruer
 unident. phyllodocid sp. 1 - Helbling
 unident. polynoid sp. 3 - Kruer
 unident. polynoid sp. 4 - Kruer
 unident. pectinariid sp. 1 - Helbling
 unident. protoariciin sp. 1 - Kruer
 unident. protoariciin sp. 2 - Kruer
 unident. sigalionid sp. 1 - Helbling
 unident. spionid sp. 1 - Helbling
 unident. syllid sp. 4 - Helbling
 unident. syllid sp. 5 - Helbling
 unident. syllid sp. 6 - Helbling

Arthropoda

Crustacea

Isopoda

Cirolana mayana
Edotea montosa
Erichsonella floridana
Exospheroma sp. 1 - Kruer
Flabellifera sp. 1 - Helbling
Idotea sp. 1 - Kruer
Limnoria platycauda
Mesanthura pulchra
M. sp. 1 - Kruer
Munna sp. 1 - Helbling
Paranthura sp. 1 - Kruer
Serolis mgrayi
 unident. anthurid sp. 1 - Kruer

Amphipoda

Aorcho sp. 1 - Kruer
Carinobatea cuspidata
Chevalia avicula
Concholestes sp. 1 - Kruer
Elasmopus sp. 1 - Kruer
Erichthonius brasiliensis
Gitanopsis tortuga

Amphipoda (cont.)

Harpinia sp. 1 - Kruer
Lembos smithi
Leucothoe sp. 2 - Kruer
Leucothoides pottsi
Listriella barnardi
Lysianopsis alba
Melita sp. 1 - Helbling
M. sp. 2 - Kruer
Monoculodes nyei
Paraphoxous sp. 1 - Kruer
Periculodes sp. 1 - Kruer
Photis sp. 1 - Kruer
Phoxocephalus sp. 1 - Kruer
Pontogeneia longleyi
Rudilemboides sp. 1 - Kruer
Siphonocetes sp. 1 - Kruer
Synchelidium americanum
unident. acanthonotozomid sp. 1 - Kruer
unident. aorid sp. 1 - Kruer
unident. gammarid sp. 9 - Helbling
unident. melitid sp. 2 - Kruer
unident. melitid sp. 3 - Kruer
unident. phoxocephalid sp. 1 - Kruer
unident. stenothoid sp. 1 - Kruer

Decapoda

Alpheus normanni
A. sp. 1 - Helbling
Automate sp. 1 - Helbling
Paguristes triangulatus
Periclimenes americanus
Processa sp. 1 - Kruer
unident. brachyuran sp. 1 - Helbling
unident. brachyuran sp. 2 - Helbling
unident. brachyuran sp. 3 - Helbling
unident. caridean sp. 1 - Helbling
unident. dromiid sp. 1 - Helbling

Caprellidea

Fallortitella biscayensis
Haemiaegina minuta

Mysidacea

unident. sp. 1 - Helbling
unident. sp. 2 - Helbling
unident. sp. 3 - Helbling
unident. sp. 4 - Kruer
unident. sp. 5 - Kruer

Tanaidacea

Apseudes sp. 1 - Kruer
Heterotanaïs sp. 1 - Kruer
Kalliapseudes sp. 1 - Kruer
Leptochelia savignyi
L. rapax
L. forresti
unident. sp. 2 - Kruer
unident. sp. 3 - Kruer
unident. sp. 8 - Kruer
unident. sp. 9 - Kruer
unident. sp. 10 - Kruer
unident. sp. 11 - Kruer

Nebaliacea

unident. sp. 1 - Helbling
unident. sp. 2 - Helbling

Cumacea

Cyclaspis sp. 1 - Helbling
C. sp. 2 - Kruer
C. sp. 3 - Kruer
Eudorella sp. 1 - Kruer
unident. sp. 1 - Kruer
unident. sp. 3 - Kruer
unident. sp. 4 - Kruer
unident. sp. 5 - Kruer
unident. sp. 6 - Kruer

Pycnogonida

Anoplodactylus sp. 1 - Kruer
Nymphon sp. 1 - Kruer
unident. sp. 1 - Kruer

Mollusca

Polyplacophora

Chiton marmoratus
Ischnochiton papillosus
unident. chitonid sp. 1 - Helbling
unident. chitonid sp. 2 - Helbling
unident. chitonid sp. 3 - Helbling

28.04.0975

Gastropoda

Acmaea pustulata
Acteon punctostriatus
Acteocina canaliculata
Alvania sp. 1 - Kruer
Astraea phoebia
Alys caribaea
Bittium sp. 1 - Helbling
B. sp. 2 - Kruer
B. sp. 3 - Kruer
Bulla striata
Caecum cornucopiae
C. floridanum
C. nitidum
C. pulchellum
C. sp. 1 - Kruer
Calliostoma sp. 1 - Helbling
Cerithiopsis sp. 2 - Helbling
Cylichna sp. 1 - Helbling
Cylindrobulla beauii
Granulina sp. 1 - Kruer
Haminoea sp. 1 - Helbling
Inodrilla sp. 1 - Kruer
Littorina sp. 1 - Helbling
Marginella apicina
M. sp. 1 - Kruer
Melanella sp. 1 - Kruer
Melongena corona
Modulus modulus
Nassarius sp. 1 - Kruer
Pyramidella crenulata
P. sp. 1 - Kruer
Retusa sulcata
Rissoina sp. 1 - Helbling
Tegula fasciata
Tricolia bella
T. thalassicola
Turbonilla sp. 3 - Kruer
Williamia krebbsi
unident. trochid sp. 1 - Kruer
unident. turrid sp. 1 - Helbling
unident. turrid sp. 2 - Helbling
unident. sp. 1 - Helbling
unident. sp. 2 - Helbling
unident. sp. 3 - Helbling
unident. sp. 4 - Helbling

Scaphopoda

Cadulus sp. 1 - Helbling
Dentalium sp. 2 - Helbling
 unident. sp. 1 - Helbling
 unident. sp. 2 - Helbling

Pelecypoda

Arca sp. 2 - Helbling
Barbatia sp. 1 - Helbling
B. domingensis
Chione grus
Codakia orbicularis
Diplodonta sp. 1 - Kruer
Glycymeris sp. 1 - Kruer
Lucina nassula
Lyropecten antillarum
Macoma sp. 1 - Helbling
M. sp. 2 - Kruer
M. sp. 4 - Kruer
Nucula crenulata
Solemya occidentalis
S. sp. 1 - Helbling
Tellina sp. 1 - Helbling
T. sp. 2 - Helbling
T. sp. 3 - Kruer
T. sp. 4 - Helbling
T. sp. 5 - Helbling
Trachycardium sp. 1 - Helbling
Transennella sp. 1 - Helbling
T. sp. 2 - Helbling
T. sp. 3 - Helbling
 unident. arcid sp. 1 - Kruer
 unident. arcid sp. 2 - Kruer
 unident. pectinid sp. 1 - Helbling
 unident. sp. 1 - Helbling
 unident. sp. 3 - Helbling
 unident. sp. 4 - Helbling
 unident. sp. 5 - Helbling
 unident. venerid sp. 1 - Kruer

Echinodermata

Ophiuroidea

Amphiodia pulchella
Amphioplus thrombodes
Amphiozona impressa
Amphipholis pachybactera
A. squamata
A. sp. 1 - Kruer
Micropholis sp. 1 - Helbling
Ophioderma sp. 1 - Helbling
O. sp. 2 - Kruer
O. reticulata
Ophionereis squamulosa
Ophiophragmus pulcher
 unident. sp. 1 - Kruer

28.04.0975

Bryozoa

unident. sp. 1 - Kruer
unident. sp. 2 - Kruer
unident. sp. 3 - Kruer
unident. sp. 4 - Kruer

Sipunculida

Phascolion sp. 1 - Helbling
unident. sp. 1 - Helbling
unident. sp. 2 - Helbling
unident. sp. 3 - Helbling
unident. sp. 4 - Helbling
unident. sp. 5 - Helbling
unident. sp. 6 - Helbling
unident. sp. 7 - Helbling
unident. sp. 8 - Helbling

DATA SUMMARY: John Pennekamp Park

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal							
		Diversity	Redundancy	#Spp.	Diversity			Redundancy	#Spp.					
		BI	#Spp.											
28.04.0975	18 Jul 74	4.169±0.199	0.261±0.029	108						Coc BG 291 Fil BG 1 Coc Gr 22 Fil Gr LTI Gr Flag 2 Other Flag 0 Cen Dia 1 Pen Dia 2 Total 320				
	20 Aug 74										LTI	LTI	LTI	
	17 Sep 74										LTI	LTI	LTI	
	15 Oct 74										LTI	LTI	LTI	
	5 Nov 74										LTI	LTI	LTI	
	5 Dec 74	5.000±0.340	0.220±0.040	53							LTI	LTI	LTI	
	6 Feb 75										LTI	LTI	LTI	
	7 Mar 75	5.277±0.217	0.086±0.014	87							LTI	LTI	LTI	

See Methods for explanation of table.

DATA SUMMARY: John Pennakamp Park

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.04.0975	10 Apr 75											LT1	LT1	
	21 May 75												LT1	
	7 Jul 75	5.022±0.328	0.155±0.015	151								LT1		
	10 Jul 75													
	7 Aug 75													
	4 Sep 75											LT1	LT1	
	13 Nov 75	5.072±0.506	0.188±0.025	85								LT1	LT1	
	12 Jan 76	4.620±0.390	0.090±0.015	89								0	0	
	9 Feb 76													
	12 Apr 76											LT1	LT1	
	10 May 76	5.631±0.770	0.071±0.009	136								LT1	LT1	

See Methods for explanation of table.

DATA SUMMARY: John Pennekamp Park

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate										
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.04.0975	7 Jun 76												LTI	LTI
	26 Jul 76												LTI	LTI
	16 Aug 76	5.867±0.146	0.032±0.005	105										
	15 Sep 76												LTI	LTI
	20 Oct 76													
	15 Nov 76	5.037±0.200	0.122±0.018	103						Coc BG 650 F11 BG 67 Coc Gr 32 F11 Gr 0 Gr Flag 5 Other Flag 0 Cen Dia 21 Pen Dia 86 Total 860		LTI	LTI	LTI
	20 Dec 76													
	10 Jan 77												LTI	LTI

See Methods for explanation of table.

See Methods for explanation of table.

DATA SUMMARY: John Pennekamp Park

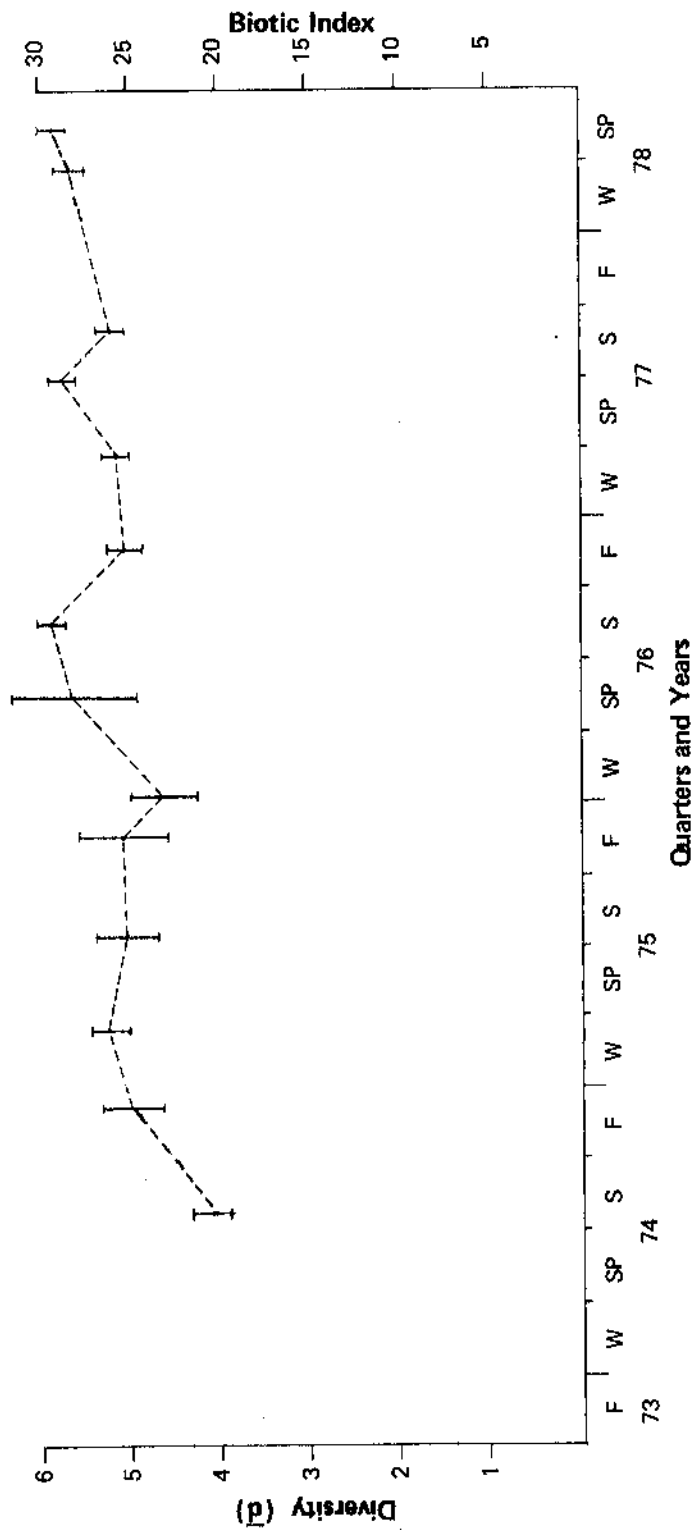
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal						
		Diversity	Redundancy	#Spp.	Diversity						Redundancy	#Spp.	
28.04.0975	15 Feb 78										LT1	LT1	
	16 Mar 78										GT10000	GT10000	
	3 Apr 78										LT1	LT1	
	8 May 78	5.850±0.146	0.044±0.007	118							LT1	LT1	
	22 May 78												
	12 Jun 78										LT1	LT1	
									Coc BG 2641 Fil BG 277 Coc Gr 36 Fil Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 26 Pen Dia 53 Total 2833				

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0975
 BODY OF WATER: JOHN PENNEKAMP PARK

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)



Polychaeta

Haploscoloplos robustus
Harmothoe sp.
Lumbrineris sp.
L. cf. tetraura
Megalomma bioculatum
Melinna maculata
Nereis sp.
N. acuminata
Ophiodromus obscurus
Paraprionospio pinnata
Pectinaria gouldii
Phyllodoce sp.
Pista palmata
Platynereis sp.
Potamilla reniformis
Scoelelepis cf. squamata
Stenelais cf. limicola
Terebellides stroemi
Tharyx annulosus
unident. ampharetid
unident. capitellid
unident. cirratulid
unident. goniadid
unident. onuphid
unident. paraonid
unident. polynoid
unident. sabellid
unident. sigalionid sp.
unident. syllid
unident. terebellid
unident. sp.

Arthropoda

Crustacea

Amphipoda

Ampelisca sp.
Cerapus tubularis
Erichthonius brasiliensis
Grandidierella bonnieroides
Leucothoe spinicarpa
Melita appendiculata
Microdeutopus sp.
Photis reinhardi
unident. sp.

Decapoda

cf. Panopeus sp.
Thor floridanus
unident. grapsid
unident. natantian
unident. xanthid

Cumacea

Diastylis sp.
unident. sp.

Mollusca

Gastropoda

Acteocina canaliculata
Acteon sp.
A. punctostriatus
Bulla striata
Cancellaria sp.
Cerithium sp.
Cyclostremiscus sp.
Epitonium lamellosum
Haminoea succinea
Marginella cf. apicina
Mitrella lunata
Nassarius vibex
Odostomia sp.
Olivella sp.
O. perplexa
Pyramidella cf. fusca
Retusa candeii
Strombiformis cf. hemphilli
Turbonilla sp.
T. cf. dalli
unident. acmaeid
unident. sp.

Pelecypoda

Abra cf. aequalis
Anomalocardia auferiana
Corbula sp.
Laevicardium sp.
Lucina nassula
Macoma sp.
M. tenta
Nucula sp.
N. cf. crenulata
Nuculana sp.
Parastarte triquetra
Tellina sp.
T. cristata
unident. sp.

28.04.0976

Echinodermata

Ophiuroidea

Amphioplus abditus
cf. Amphioplus sp.
Ophiopsila cf. riisei
unident. sp.

Sipunculida

unident. sp.

Hemichordata

unident. sp.

DATA SUMMARY: Chokoloskee Bay

Station Number	Date	Macrolinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate			Artificial Substrate							
		Diversity	Redundancy	ISpp.	Diversity	Redundancy	ISpp.					
28.04.0976	7 Jun 76	3.972±0.186	0.145±0.019	57								
	15 Jun 77	4.153±0.220	0.162±0.030	51								
	22 May 78	4.634±0.199	0.051±0.014	37								

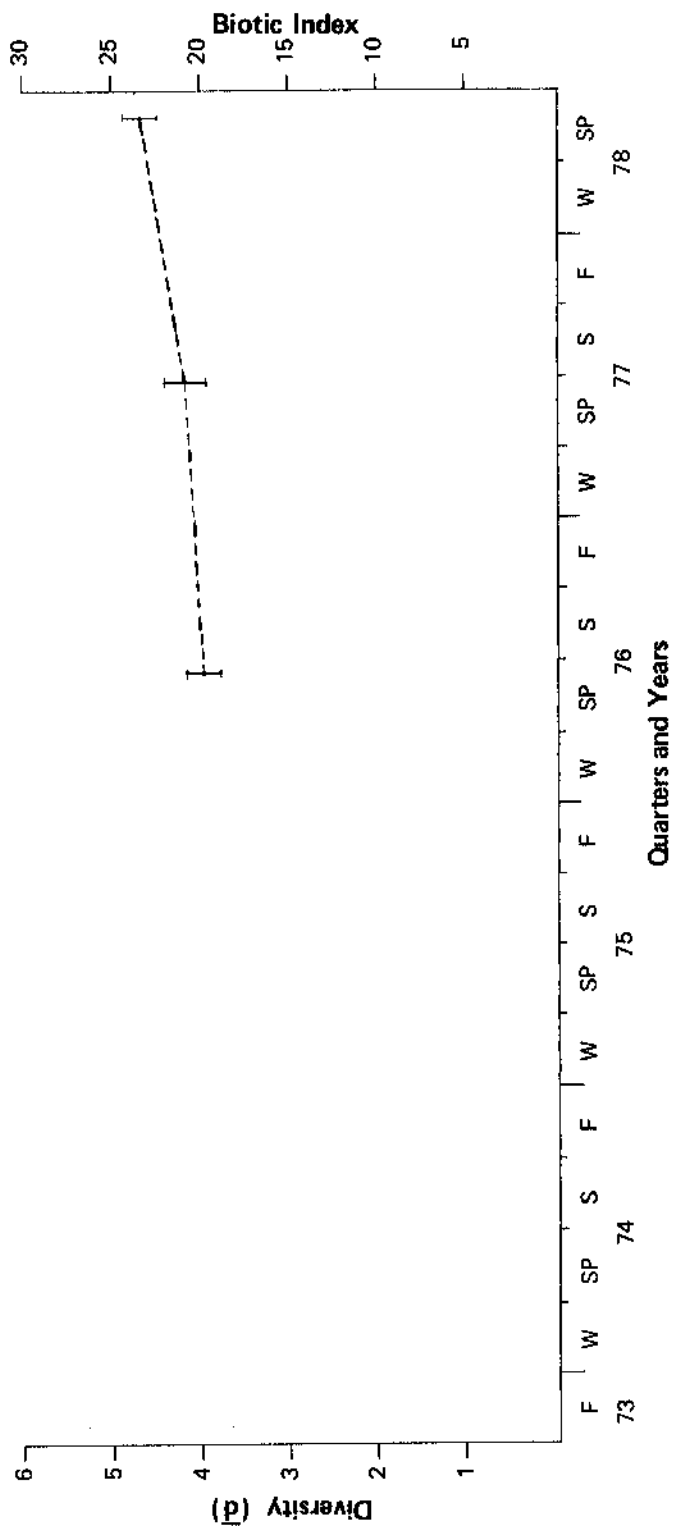
See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.0976

BODY OF WATER: CHOKOLOSKEE BAY

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 ——— BIOTIC INDEX (= FLORIDA INDEX)



28.04.2070

Insecta

Odonata

Enallagma sp.
Erythemis simplicicollis
Ischnura credula
I. sp.
Pachydiplax longipennis
Perithemis tenera

Ephemeroptera

Caenis diminuta
Callibaetis floridana

Hemiptera

Belostoma sp.
Limnogonus hesione
Pelocoris sp.
unident. corixid

Trichoptera

unident. sp.

Diptera

Ablabesmyia parajanta
Chironomus sp.
C. attenuatus
C. carus
C. crassicaudatus
C. stigmaterus
Cladotanytarsus sp.
Cryptochironomus sp.
Dicrotendipes modestus
D. neomodestus
D. nervosus
Einfeldia sp.
Goeldichironomus holoprasinus
Glyptotendipes sp.
Harnischia sp.
Labrundinia johannseni
Larsia sp.
Nimbocera sp.
cf. Palpomyia sp.
Parachironomus directus
Pedionomus beckae
Procladius sp.
Rheotanytarsus sp.
Tanypus carinatus
T. sp.
Tanytarsus stellatus
T. sp.
Tribelos sp.

28.04.2070

Coleoptera

Berosus sp.
Dineutus carolinus
Gyrinus sp.
Peltodytes floridensis

Mollusca

Gastropoda

Drepanotrema sp.
Helisoma scalare
Laevapex fuscus
Lymnaea sp.
Marisa cornuarietis
Melanoides tuberculata
Physa sp.
Planorbula sp.
Promenetus sp.
Pyrgophorus platyrachis
Viviparus georgianus

Pelecypoda

Corbicula manilensis
Sphaerium sp.

Bryozoa

Plumatella repens

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments	
		Natural Substrate			Artificial Substrate						Total	Fecal		
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
28.04.2070	4 Dec 73	2.095+0.110	0.231+0.033	9				3	17			55	5	
	31 Jan 74	2.216+0.070	0.138+0.013	8								18		
	26 Feb 74				1.866+0.095	0.286+0.023	11					170		
	25 Mar 74											45		
	23 Apr 74											2400		
	20 May 74	1.959+0.151	0.367+0.051	11				2	23			230		
	19 Jun 74											230		
	24 Jul 74	2.216+0.163	0.214+0.032	11				1	20	Coc BG 687 Fil BG 42 Coc Gr 31 Fil Gr 0 Gr Flag 0 Other Fla 125 Gen Dia 0 Pen Dia 31 Total 916		2300		

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28-04-2070	6 Aug 74										47		
	16 Sep 74										220		
	8 Oct 74										5		
	18 Nov 74										33		
	16 Dec 74	1.765±0.171	0.275±0.044	7	0.375±0.114	0.916±0.038	7			Coc BG 45900 Fil BG 41900 Coc Gr 0 Fil Gr 200 Gr Flag 0 Other Flag 0 Cen Dia 200 Pen Dia 400 Total 88600	110		
	21 Jan 75										79		
	18 Feb 75	2.345±0.159	0.163±0.037	9				0	15		18		
	17 Mar 75										79		

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml	Comments
		Natural Substrate			Artificial Substrate							
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.				Total	
		Fecal										
28.04.2070	29 Apr 75										240	
	27 May 75	2.758±0.195	0.156±0.031	14	3.104±0.376	0.205±0.082	14				240	
	24 Jun 75										2400	
	16 Jul 75										330	
	5 Aug 75										20	
	2 Sep 75										790	
	4 Sep 75	2.529±0.319	0.329±0.088	14	2.623±0.204	0.258±0.037	20	6				
	6 Oct 75										1300	
	7 Oct 75	2.449±0.207	0.230±0.051	12								
	17 Nov 75										490	LT18
17 Dec 75										20		
	14 Jan 76										LT18	LT18

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Pecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.04.2070	12 Feb 76	1.146±0.143	0.621±0.054	9	1.564±0.138	0.362±0.041	8	2	18	Coc BC 282 Fil BG 45 Coc Gr 20 Fil Gr 4 Gr Flag 0 Other Flag 0 Cen Dia 4 Pen Dia 3 Total 358	Coc BG 128300 Fil BG 18600 Coc Gr 18800 Fil Gr 11900 Gr Flag 0 Other Flag 0 Cen Dia 4400 Pen Dia 12600 Total 194600	23	23	
	28 Apr 76													
	10 May 76	1.510±0.180	0.400±0.050	9								GT2400	1600	
	17 May 76											300	LT2	
	11 Jun 76											540	5	
	27 Jul 76											130	5	
	10 Aug 76													

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28.04.2070	8 Sep 76											230	45	
	26 Oct 76											45		
	22 Nov 76	1.622+0.075	0.122+0.025	4	1.500+0.177	0.350+0.087	5		Coc BG 3 Fil BG 5 Coc Gr 4 Fil Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 0 Pen Dia 0 Total 12		49	2		
	7 Dec 76										45	LT18		
	18 Jan 77	1.278+0.114	0.281+0.042	4								LT18	LT18	
	23 Feb 77											49	8	
	21 Mar 77													

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-04-2070	2 May 77	1.740±0.102	0.236±0.037	6	2.182±0.142	0.272±0.040	11				Coc BG 0 Fil BG 275 Coc GR 425 Fil GR 75 Gr Flag 25 Other Flag 0 Cen Dia 125 Pen Dia 3625 Total 4550	130	LT18	
	7 Jun 77											78	78	
	7 Sep 77	0.327±0.133	0.866±0.078	3	2.126±0.121	0.174±0.029	8					330	49	
	17 Oct 77											78	LT18	
	14 Nov 77	1.695±0.213	0.393±0.068	9				2	22			33	11	Florida Index
	12 Dec 77											LT18	LT18	
	9 Jan 78											330	78	

See Methods for explanation of table.

DATA SUMMARY: Miami Canal

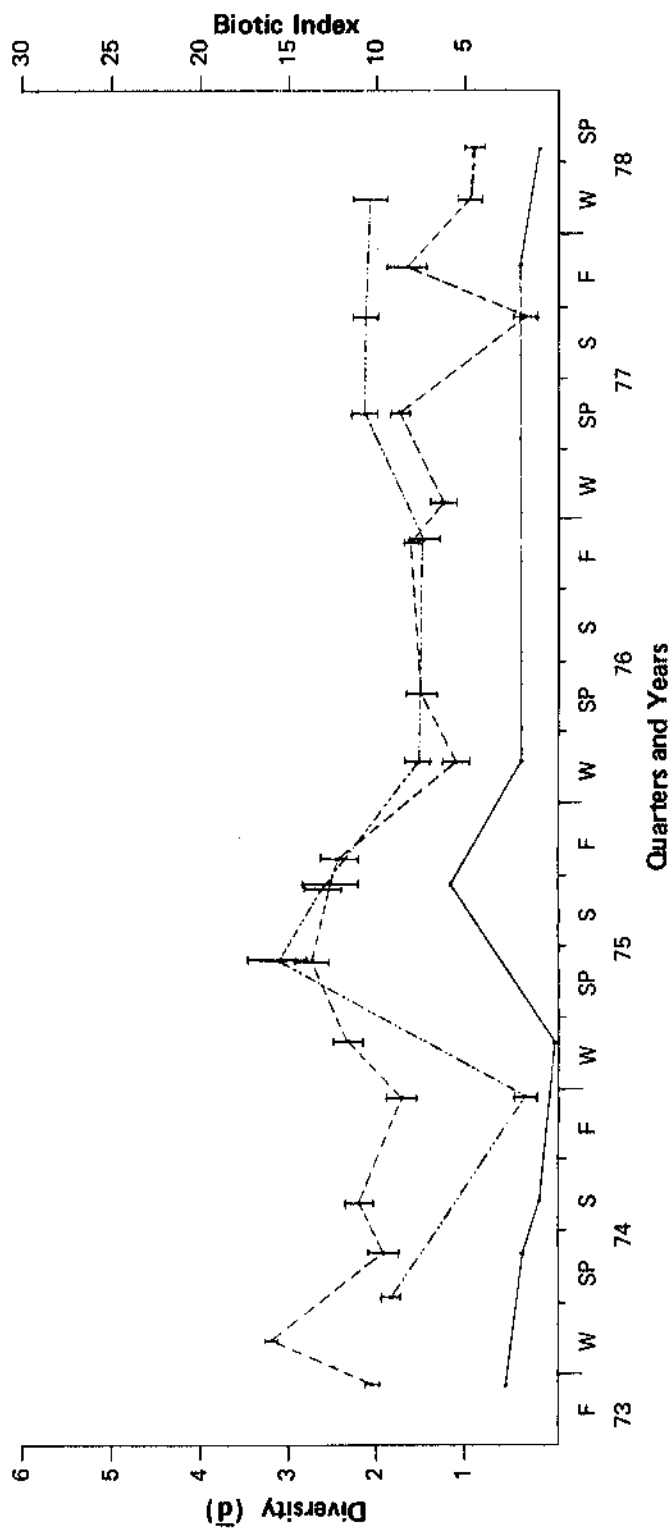
Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.04.2070	6 Feb 78	0.969±0.123	0.756±0.038	15	2.067±0.198	0.359±0.059	13				240	240	
	22 Mar 78										78	20	
	10 Apr 78	0.900±0.096	0.751±0.032	15				1	29		240	5	
	8 May 78										130	23	
	5 Jun 78										130	1718	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.2070
 BODY OF WATER: MIAMI CANAL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — Biotic Index (= FLORIDA INDEX)



Station No. 28.04.2071 Body of Water Tamiami Canal

Location 150 feet northwest of S 12-C

County Dade

Type Body of Water canal Classification III

Sources of Pollution highway runoff

Nearby Land Use highway, Everglades

Sampling Frequency quarterly Depth 3.2 - 6.1 m

Bottom Type marl, organic % Volatile Solids

Aquatic Plants: Submerged Potamogeton illinoensis, Chara sp., Hydrilla verticillata,

Nitella sp., Emergent Typha sp., Nuphar sp., Panicum hemitomon

Pontederia lanceolata, Phragmites communis

Macroinvertebrates:

Platyhelminthes

Turbellaria

Dugesia tigrina

Annelida

Oligochaeta

Branchiura sowerbyi

Limnodrilus hoffmeisteri

Pristina sp.

Tubifex tubifex

unident. sp.

Hirudinea

Helobdella stagnalis

H. elongata

H. triserialis

unident. erpobdellid

Arthropoda

Crustacea

Isopoda

Cassidinisca lunifrons

Exosphaeroma sp.

Amphipoda

Gammarus fasciatus
Hyaella azteca

Decapoda

Palaemonetes paludosus
unident. astacid

Insecta

Odonata

Enallagma sp.
Epicordulia princeps
Erythemis simplicicollis
Ischnura posita
Macrothemis sp.
Pachydiplax longipennis
Perithemis tenera
Tetragoneuria sp.

Ephemeroptera

Caenis diminuta
Callibaetis floridanus

Hemiptera

Limnogonus hesione
Pelocoris sp.
Ranatra fusca

Trichoptera

Orthotrichia sp.
Oecetis sp.
Cyrnellus fraternus

Diptera

Ablabesmyia parajanta
Chaoborus punctipennis
Chironomus attenuatus
C. carus
Cladotanytarsus sp.
Coelotanypus concinnus
C. scapularis
C. tricolor
Cricotopus sp.
Cryptochironomus fulvus
Dicrotendipes lobus
D. neomodestus
D. nervosus
Einfeldia sp.
Endochironomus nigricans

Diptera (cont.)

Eulalia sp.
Glyptotendipes sp.
Harnischia boydi
Labrundinia neopilosella
Larsia sp.
Micropsectra sp.
Nimbocera sp.
Palpomyia sp.
Parachironomus directus
P. monochromus
Pedionomus beckae
Polypedilum fallax
P. halterale
Procladius sp.
Psectrocladius sp.
Pseudochironomus sp.
Rheotanytarsus sp.
Smittia sp.
Stempellina sp.
Tanytarsus sp.
Thienemanniella sp.
Tribelos sp.

Coleoptera

Gyrinus sp.
Listronotus sp.

Mollusca

Gastropoda

Drepanotrema sp.
cf. Laevapex fuscus
Helisoma scalare
Fossaria cubensis
Melanoides tuberculata
Physa sp.
Polygyra septemvolva
Pomacea paludosus
Pyrqophorus platyrachis
Viviparus georgianus

Pelecypoda

Anodonta couperiana
Corbicula manilensis
Sphaerium partumeium
S. transversum

Bryozoa

Plumatella repens

DATA SUMMARY: USGS STATION on Tamiami Trail

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate							Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.							
									BI			#Spp.		
28.04.2071	4 Dec 73	1.783±0.318	0.562±0.094	15				3	22			620	34	
	31 Jan 74											45		
	26 Feb 74	1.395±0.483	0.763±0.173	9								20		
	25 Mar 74				2.068±0.145	0.428±0.044	16					330		
	23 Apr 74											330		
	20 May 74	1.745±0.180	0.325±0.069	7				1	15			78		
	19 Jun 74											78		
	24 Jul 74	1.641±0.244	0.474±0.149	10				1	18	Coc BG 945 Fil BG 7658 Coc Gr 4 Fil Gr 0 Gr Flag 0 Other Flag 0 Cen Dia 5 Pen Dia 16 Total 8628		330		

See Methods for explanation of table.

DATA SUMMARY: USGS STATION On Tamiami Trail

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.04.2071	6 Aug 74										350		
	16 Sep 74										31		
	8 Oct 74										31		
	18 Nov 74										1600		
	16 Dec 74	2.126+0.300	0.239+0.109	7	3.163+0.152	0.107+0.021	17			Coc BG 0 Fil BG 64800 Coc Gr 22900 Fil Gr 2500 Gr Flag 1500 Other Flag 0 Cen Dia 7100 Pen Dia 336200 Total 435100	350		
	21 Jan 75										920		
	18 Feb 75	1.994+0.302	0.394+0.080	12				4			250		

See Methods for explanation of table.

DATA SUMMARY: USGS STATION on Tamiad Trial

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate		Artificial Substrate		Total	Fecal						
		Diversity	Redundancy	#Spp.	Diversity						Redundancy	#Spp.	
28.04.2071	17 Mar 75										351		
	29 Apr 75										350	79	
	27 May 75	1.795±0.217	0.295±0.061	8							1600		
	24 Jun 75										9200		
	16 Jul 75										2300		
	5 Aug 75										230		
	2 Sep 75										2300		
	4 Sep 75	2.999±0.193	0.107±0.031	13	3.062±0.263	0.181±0.096	18	3	34				
	6 Oct 75										78		
	7 Oct 75	2.199±0.136	0.132±0.032	7							2300	78	
	17 Nov 75										3300		
	17 Dec 75												
	14 Jan 76										78	LT18	

See Methods for explanation of table.

DATA SUMMARY: USGS STATION on Tamiami Trail

Station Number	Date	Macroinvertebrates						Biotic Index		Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate									
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.	BI	#Spp.					
28-04-2071	12 Feb 76	2.815+0.346	0.188+0.060	12	3.891+0.159	0.051+0.013	22	9	37	Coc BG 44 Fil BG 2 Coc Gr 6 Fil Gr 1 Gr Flag 0 Other Flag 4 Cen Dia 2 Pen Dia 22 Total 81				
	16 Mar 76										78	45		
	28 Apr 76	2.130+0.212	0.225+0.050	9							79	5		
	17 May 76										GT2400	33		
	11 Jun 76										140	LT2		
	27 Jul 76	1.289+0.181	0.502+0.072	8							700	23		
	10 Aug 76										GT2400	23		
	8 Sep 76										1100	20		

See Methods for explanation of table.

DATA SUMMARY: USGS STATION on Tamiami Trail

Station Number	Date	Macroinvertebrates						Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate					Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.					
28.04.2071	26 Oct 76									2300		
	22 Nov 76	2.726+0.276	0.160+0.072	12						350	79	
	7 Dec 76									230	45	
	18 Jan 77	2.981+0.286	0.155+0.046	14						1718	LT18	
	23 Feb 77									240	49	
	21 Mar 77									790	78	
	4 Apr 77									130	LT18	
	2 May 77	2.106+0.258	0.234+0.071	8	3.285+0.176	0.097+0.018	18		Coc BG 175 F11 BG 69200 Coc Gr 1000 F11 Gr 1050 Gr Flag 0 Other Flag 0 Cen Dia 275 Pen Dia 25000			

See Methods for explanation of table.

DATA SUMMARY: USGS STATION on Tamiami Trail

Station Number	Date	Macroinvertebrates						Biotic Index	Phytoplankton Composition units/cm ³	Periphyton Composition units/cm ²	Coliform Bacteria Colonies/100ml		Comments
		Natural Substrate			Artificial Substrate						Total	Fecal	
		Diversity	Redundancy	#Spp.	Diversity	Redundancy	#Spp.						
28.04.2071	2 May 77 (cont.)									Total 96700			
	7 Jun 77										230	230	
	7 Sep 77	2.521±0.231	0.233±0.035	16	3.060±0.219	0.150±0.031	18				2300	130	
	17 Oct 77	1.086±0.188	0.600±0.086	6				6	32		1300	1718	Florida Index
	14 Nov 77										240	79	
	12 Dec 77										790	790	
	6 Feb 78	1.144±0.264	0.772±0.081	14	2.651±0.151	0.192±0.032	19				350	11	
	22 Mar 78										330	20	
	10 Apr 78										1600	8	
	8 May 78	2.639±0.355	0.219±0.079	11				4	26		1600	45	
	5 Jun 78										490	1718	

See Methods for explanation of table.

MACROINVERTEBRATE PARAMETERS VS TIME

STATION NO.: 28.04.2071
 BODY OF WATER: USGS STATION ON TAMIAHI TRAIL

--- NATURAL SUBSTRATE DIVERSITY
 - - - - - ARTIFICIAL SUBSTRATE DIVERSITY
 — BIOTIC INDEX (= FLORIDA INDEX)

