

Appendix M. Status in benthic community condition based on the B-IBI at the Virginia tributary and mainstem monitoring stations for the period of 1999 through 2001.

Station	Score	Status
TF5.5	3.8	Meets Goals
RET5.2	2.9	Marginal
LE5.1	3.1	Meets Goals
LE5.2	2.7	Marginal
LE5.4	3.8	Meets Goals
SBE2	2.3	Degraded
SBE5	2.2	Degraded
TF4.2	3.7	Meets Goals
RET4.3	2.6	Degraded
LE4.1	2.7	Marginal
LE4.3	4.0	Meets Goals
LE4.3B	2.6	Marginal
TF3.3	2.7	Marginal
RET3.1	2.6	Degraded
LE3.2	2.0	Degraded
LE3.4	2.0	Degraded
CB5.4	2.2	Degraded
CB6.1	3.6	Meets Goals
CB6.4	3.5	Meets Goals
CB7.3E	4.0	Meets Goals
CB8.1	3.9	Meets Goals

Appendix N. Long term trends in benthic bioindicators at the Virginia tributary and mainstem monitoring stations for the period of 1985 through 2001.

Station	Parameter	Baseline	Slope	% Change	Absolute	p Value
					Change	
TF5.5	Benthic IBI	2.13	0.09	61.98	1.32	0.0027
TF5.5	Total abundance	1335.60	353.30	370.33	4946.17	0.0581
TF5.5	Total biomass	0.34	0.06	266.82	0.91	0.0633
TF5.5	Pollution sensitive species abundance	0.00	2.41	ne	33.68	0.0003
TF5.5	Pollution indicative species abundance	20.14	-0.96	-66.57	-13.41	0.0322
TF5.5	Pollution sensitive species biomass	0.00	4.10	ne	57.45	0.0004
TF5.5	Pollution indicative species biomass	43.89	-2.46	-78.40	-34.41	0.0394
TF5.5	Shannon-Weiner diversity index	1.18	0.03	37.85	0.45	0.2487
RET5.2	Benthic IBI	2.00	0.06	38.92	0.78	0.0081
RET5.2	Total abundance	610.56	45.87	105.17	642.12	0.1490
RET5.2	Total biomass	7.34	-0.05	-8.68	-0.64	0.2648
RET5.2	Pollution sensitive species abundance	10.42	1.10	147.12	15.33	0.0211
RET5.2	Pollution indicative species abundance	16.67	-0.11	-8.89	-1.48	0.3525
RET5.2	Pollution sensitive species biomass	28.04	1.27	63.23	17.73	0.1874
RET5.2	Pollution indicative species biomass	8.42	-0.05	-7.58	-0.64	0.2912
RET5.2	Shannon-Weiner diversity index	1.66	0.06	48.24	0.80	0.0084
LE5.1	Benthic IBI	3.03	0.00	0.00	0.00	0.5732
LE5.1	Total abundance	772.74	52.04	67.34	520.36	0.1257
LE5.1	Total biomass	0.94	0.00	0.00	0.00	0.7981
LE5.1	Pollution sensitive species abundance	5.57	-0.65	-116.86	-6.51	0.3879
LE5.1	Pollution indicative species abundance	0.00	0.00	ne	0.00	0.0162
LE5.1	Pollution sensitive species biomass	11.81	0.83	70.36	8.31	0.4575
LE5.1	Pollution indicative species biomass	0.00	0.00	ne	0.00	0.1087
LE5.1	Shannon-Weiner diversity index	1.93	0.03	17.20	0.33	0.0847
LE5.2	Benthic IBI	3.33	-0.01	-4.96	-0.17	0.8691
LE5.2	Total abundance	1221.12	72.61	83.25	1016.54	0.0527
LE5.2	Total biomass	4.58	-0.12	-37.90	-1.74	0.4092
LE5.2	Pollution sensitive species abundance	34.48	2.36	95.65	32.98	0.0322
LE5.2	Pollution indicative species abundance	17.25	0.04	3.55	0.61	0.8048
LE5.2	Pollution sensitive species biomass	40.78	0.94	32.26	13.16	0.6804
LE5.2	Pollution indicative species biomass	8.76	0.38	60.91	5.34	0.2165
LE5.2	Shannon-Weiner diversity index	2.55	0.00	1.21	0.03	1.0000
LE5.4	Benthic IBI	3.72	0.01	3.09	0.11	0.3574
LE5.4	Total abundance	2528.10	0.00	0.00	0.00	1.0000
LE5.4	Total biomass	22.86	-2.00	-122.69	-28.05	0.0480
LE5.4	Pollution sensitive species abundance	50.52	-0.32	-8.75	-4.42	0.3648
LE5.4	Pollution indicative species abundance	1.99	-0.15	-105.11	-2.09	0.0061
LE5.4	Pollution sensitive species biomass	60.10	-1.63	-38.07	-22.88	0.1381
LE5.4	Pollution indicative species biomass	0.51	-0.01	-34.59	-0.18	0.0472
LE5.4	Shannon-Weiner diversity index	3.69	-0.00	-1.25	-0.05	0.8048
SBE5	Benthic IBI	1.31	0.11	84.81	1.11	0.0001
SBE5	Total abundance	3148.20	180.58	57.36	1805.79	0.0492
SBE5	Total biomass	0.60	0.04	59.67	0.36	0.0364
SBE5	Pollution sensitive species abundance	0.00	2.91	ne	29.08	0.0000
SBE5	Pollution indicative species abundance	91.62	-6.03	-65.82	-60.31	0.0000

Appendix N. Continued.

Station	Parameter	Baseline	Slope	% Change	Absolute Change	p Value
SBE5	Pollution sensitive species biomass	0.00	3.24	ne	32.41	0.0001
SBE5	Pollution indicative species biomass	81.62	-5.09	-62.35	-50.89	0.0000
SBE5	Shannon-Weiner diversity index	1.14	0.05	44.56	0.51	0.0650
SBE2	Benthic IBI	2.00	0.03	17.25	0.35	0.3103
SBE2	Total abundance	1631.34	120.84	74.07	1208.40	0.0184
SBE2	Total biomass	0.89	0.02	21.46	0.19	0.3119
SBE2	Pollution sensitive species abundance	4.86	3.28	674.73	32.79	0.0000
SBE2	Pollution indicative species abundance	71.15	-2.98	-41.94	-29.84	0.0128
SBE2	Pollution sensitive species biomass	6.80	2.76	405.90	27.60	0.0011
SBE2	Pollution indicative species biomass	41.37	-1.50	-36.38	-15.05	0.0840
SBE2	Shannon-Weiner diversity index	1.78	0.04	23.99	0.43	0.1291
TF4.2	Benthic IBI	3.00	0.04	17.97	0.54	0.2066
TF4.2	Total abundance	410.22	149.17	509.09	2088.39	0.0138
TF4.2	Total biomass	0.15	0.03	254.80	0.38	0.0789
TF4.2	Pollution sensitive species abundance	12.50	0.96	107.13	13.39	0.1247
TF4.2	Pollution indicative species abundance	4.17	0.26	88.43	3.69	0.2709
TF4.2	Pollution sensitive species biomass	19.44	0.15	10.67	2.07	0.8264
TF4.2	Pollution indicative species biomass	11.11	0.14	17.06	1.90	0.3486
TF4.2	Shannon-Weiner diversity index	0.96	0.06	93.92	0.90	0.0026
RET4.3	Benthic IBI	3.71	-0.08	-30.38	-1.13	0.0328
RET4.3	Total abundance	1030.32	102.34	139.06	1432.73	0.2983
RET4.3	Total biomass	4.43	-0.30	-94.46	-4.18	0.1388
RET4.3	Pollution sensitive species abundance	40.89	-1.73	-59.12	-24.17	0.1711
RET4.3	Pollution indicative species abundance	12.91	-0.11	-12.25	-1.58	0.6222
RET4.3	Pollution sensitive species biomass	83.08	-0.70	-11.82	-9.82	0.7016
RET4.3	Pollution indicative species biomass	3.23	0.14	60.98	1.97	0.4767
RET4.3	Shannon-Weiner diversity index	2.74	-0.05	-25.91	-0.71	0.0554
LE4.1	Benthic IBI	3.10	-0.06	-25.11	-0.78	0.0995
LE4.1	Total abundance	1535.94	-14.99	-13.66	-209.88	0.7016
LE4.1	Total biomass	27.51	-0.57	-28.94	-7.96	0.6222
LE4.1	Pollution sensitive species abundance	37.56	-0.31	-11.48	-4.31	0.7016
LE4.1	Pollution indicative species abundance	23.71	0.02	0.97	0.23	0.9127
LE4.1	Pollution sensitive species biomass	82.49	-2.47	-41.89	-34.55	0.0897
LE4.1	Pollution indicative species biomass	8.28	0.22	36.40	3.01	0.5106
LE4.1	Shannon-Weiner diversity index	2.54	-0.02	-13.45	-0.34	0.0897
LE4.3	Benthic IBI	2.92	0.01	6.66	0.19	0.3885
LE4.3	Total abundance	3138.66	-12.72	-5.67	-178.08	0.8046
LE4.3	Total biomass	6.32	-0.36	-79.26	-5.01	0.4002
LE4.3	Pollution sensitive species abundance	56.44	-0.25	-6.12	-3.45	0.5862
LE4.3	Pollution indicative species abundance	15.73	0.07	6.48	1.02	0.9605
LE4.3	Pollution sensitive species biomass	72.97	-0.23	-4.41	-3.22	0.8046
LE4.3	Pollution indicative species biomass	4.14	-0.01	-4.57	-0.19	0.9605
LE4.3	Shannon-Weiner diversity index	2.47	0.04	22.73	0.56	0.3471
LE4.3B	Benthic IBI	1.33	0.11	75.18	1.00	0.0326
LE4.3B	Total abundance	1373.76	0.00	0.00	0.00	0.9255
LE4.3B	Total biomass	0.52	0.02	39.63	0.21	0.7085

Appendix N. Continued.

Station	Parameter	Baseline	Slope	% Change	Absolute Change	p Value
LE4.3B	Pollution sensitive species abundance	20.97	0.69	29.80	6.25	0.4918
LE4.3B	Pollution indicative species abundance	66.67	-2.57	-34.73	-23.16	0.0867
LE4.3B	Pollution sensitive species biomass	44.44	0.00	0.00	0.00	0.9626
LE4.3B	Pollution indicative species biomass	20.00	-0.61	-27.59	-5.52	0.2686
LE4.3B	Shannon-Weiner diversity index	1.45	0.08	52.14	0.76	0.0480
TF3.3	Benthic IBI	3.40	-0.04	-17.58	-0.60	0.2533
TF3.3	Total abundance	1001.70	12.72	17.78	178.08	0.8820
TF3.3	Total biomass	93.92	-1.05	-15.70	-14.74	0.7290
TF3.3	Pollution sensitive species abundance	32.36	-1.52	-65.73	-21.27	0.1025
TF3.3	Pollution indicative species abundance	0.00	0.72	ne	10.10	0.0383
TF3.3	Pollution sensitive species biomass	80.17	-2.59	-45.26	-36.28	0.0260
TF3.3	Pollution indicative species biomass	0.00	0.41	ne	5.71	0.1428
TF3.3	Shannon-Weiner diversity index	1.95	-0.01	-5.10	-0.10	0.7290
RET3.1	Benthic IBI	3.58	-0.10	-37.39	-1.34	0.0222
RET3.1	Total abundance	1001.70	184.44	257.78	2582.16	0.1977
RET3.1	Total biomass	9.02	-0.53	-82.43	-7.44	0.0536
RET3.1	Pollution sensitive species abundance	33.99	-2.22	-91.26	-31.02	0.0025
RET3.1	Pollution indicative species abundance	1.88	0.44	324.83	6.11	0.1513
RET3.1	Pollution sensitive species biomass	71.23	-4.66	-91.50	-65.17	0.0536
RET3.1	Pollution indicative species biomass	1.57	0.30	267.43	4.20	0.0671
RET3.1	Shannon-Weiner diversity index	2.40	-0.05	-26.89	-0.65	0.0333
LE3.2	Benthic IBI	2.05	0.02	10.86	0.22	0.5862
LE3.2	Total abundance	429.30	30.53	99.56	427.39	0.0197
LE3.2	Total biomass	0.27	0.01	57.56	0.16	0.1502
LE3.2	Pollution sensitive species abundance	41.28	-0.25	-8.38	-3.46	0.5822
LE3.2	Pollution indicative species abundance	50.26	-0.11	-3.18	-1.60	0.9211
LE3.2	Pollution sensitive species biomass	46.51	-0.09	-2.69	-1.25	0.6526
LE3.2	Pollution indicative species biomass	36.27	0.41	15.93	5.78	0.7662
LE3.2	Shannon-Weiner diversity index	1.21	0.03	32.05	0.39	0.2987
LE3.4	Benthic IBI	1.00	0.04	33.30	0.33	0.2192
LE3.4	Total abundance	57.24	38.16	600.00	343.44	0.0569
LE3.4	Total biomass	0.06	0.02	286.50	0.17	0.0463
LE3.4	Pollution sensitive species abundance	0.00	1.10	ne	9.89	0.0807
LE3.4	Pollution indicative species abundance	100.00	-2.02	-18.21	-18.21	0.2706
LE3.4	Pollution sensitive species biomass	0.00	2.50	ne	22.50	0.0632
LE3.4	Pollution indicative species biomass	100.00	-3.57	-32.14	-32.14	0.1227
LE3.4	Shannon-Weiner diversity index	0.00	0.10	ne	0.86	0.0302
CB5.4	Benthic IBI	1.81	-0.00	-3.56	-0.06	0.8212
CB5.4	Total abundance	333.90	35.50	148.85	497.00	0.2794
CB5.4	Total biomass	0.44	-0.01	-26.09	-0.11	0.7517
CB5.4	Pollution sensitive species abundance	29.84	-0.38	-17.78	-5.30	0.7187
CB5.4	Pollution indicative species abundance	36.32	0.19	7.19	2.61	0.7871
CB5.4	Pollution sensitive species biomass	29.89	-1.03	-48.14	-14.39	0.3219
CB5.4	Pollution indicative species biomass	33.95	-0.73	-30.05	-10.20	0.2418
CB5.4	Shannon-Weiner diversity index	1.71	0.02	13.35	0.23	0.5285
CB6.1	Benthic IBI	3.58	0.00	1.25	0.04	0.8567

Appendix N. Continued.

Station	Parameter	Baseline	Slope	% Change	Absolute Change	p Value
CB6.1	Total abundance	1488.24	120.05	112.93	1680.63	0.0030
CB6.1	Total biomass	10.82	-0.08	-10.70	-1.16	0.7187
CB6.1	Pollution sensitive species abundance	34.86	-0.39	-15.63	-5.45	0.6525
CB6.1	Pollution indicative species abundance	16.08	0.80	70.07	11.27	0.0586
CB6.1	Pollution sensitive species biomass	43.49	-1.99	-63.98	-27.83	0.1497
CB6.1	Pollution indicative species biomass	1.70	0.41	338.80	5.76	0.1258
CB6.1	Shannon-Weiner diversity index	2.64	0.04	18.77	0.50	0.0150
CB6.4	Benthic IBI	4.47	-0.03	-9.24	-0.41	0.4168
CB6.4	Total abundance	1640.88	208.61	177.98	2920.51	0.0476
CB6.4	Total biomass	5.35	-0.21	-55.29	-2.96	0.1147
CB6.4	Pollution sensitive species abundance	49.63	-0.43	-12.17	-6.04	0.5285
CB6.4	Pollution indicative species abundance	16.91	-0.14	-11.73	-1.98	0.7871
CB6.4	Pollution sensitive species biomass	83.36	-2.35	-39.52	-32.94	0.0384
CB6.4	Pollution indicative species biomass	1.39	0.20	197.01	2.74	0.4713
CB6.4	Shannon-Weiner diversity index	2.94	0.04	17.76	0.52	0.0384
CB7.3E	Benthic IBI	4.22	0.00	0.00	0.00	0.8899
CB7.3E	Total abundance	5495.04	-45.83	-11.68	-641.57	0.3439
CB7.3E	Total biomass	12.91	-0.34	-36.71	-4.74	0.1912
CB7.3E	Pollution sensitive species abundance	50.28	-0.26	-7.11	-3.57	0.4177
CB7.3E	Pollution indicative species abundance	13.62	-0.79	-81.30	-11.07	0.0244
CB7.3E	Pollution sensitive species biomass	63.36	-0.22	-4.88	-3.09	0.7871
CB7.3E	Pollution indicative species biomass	1.30	-0.07	-79.15	-1.03	0.1497
CB7.3E	Shannon-Weiner diversity index	3.72	0.00	0.56	0.02	0.9283
CB8.1	Benthic IBI	4.33	0.00	0.00	0.00	0.8026
CB8.1	Total abundance	3129.12	101.36	45.35	1419.08	0.1175
CB8.1	Total biomass	12.22	0.35	39.86	4.87	0.5098
CB8.1	Pollution sensitive species abundance	55.49	-0.37	-9.34	-5.18	0.3648
CB8.1	Pollution indicative species abundance	18.00	-0.99	-77.34	-13.92	0.0066
CB8.1	Pollution sensitive species biomass	83.43	-2.07	-34.74	-28.99	0.0394
CB8.1	Pollution indicative species biomass	1.07	-0.07	-93.29	-1.00	0.1381
CB8.1	Shannon-Weiner diversity index	3.79	0.04	15.48	0.59	0.0261

Appendix O. Scatterplots of benthic bioindicators

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TF5.5 (1-J)

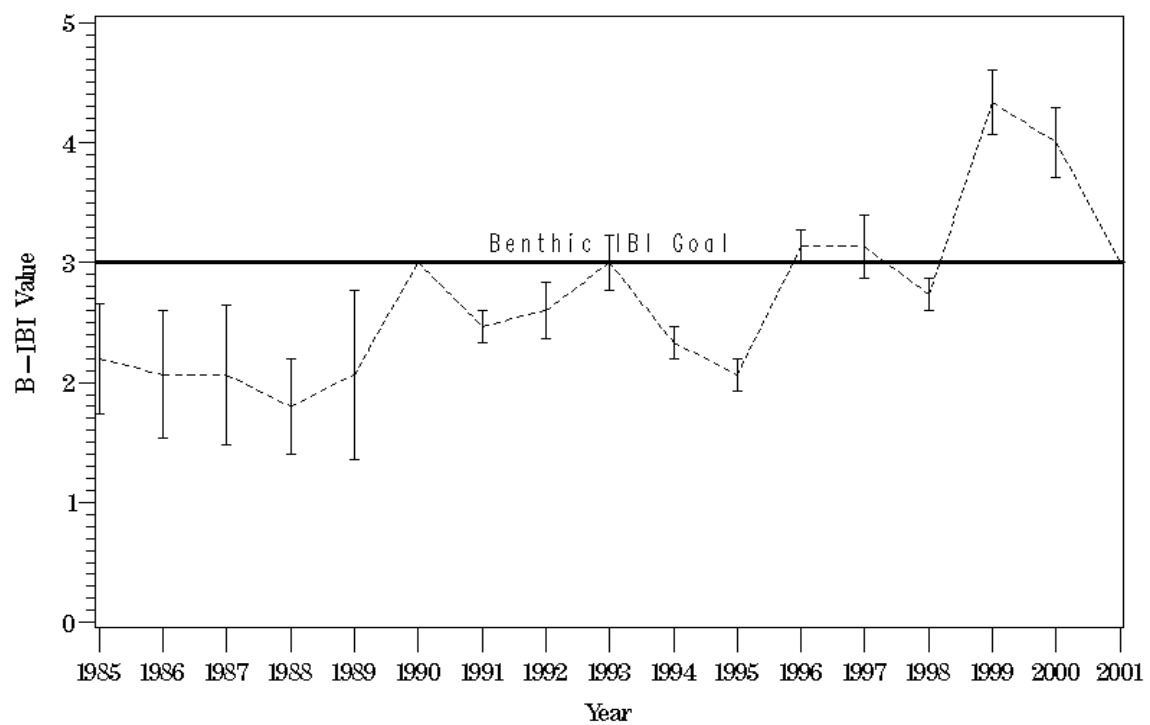


Figure 1. Plot of the benthic IBI against time at station TF5.5 for the period of 1985 through 2001.

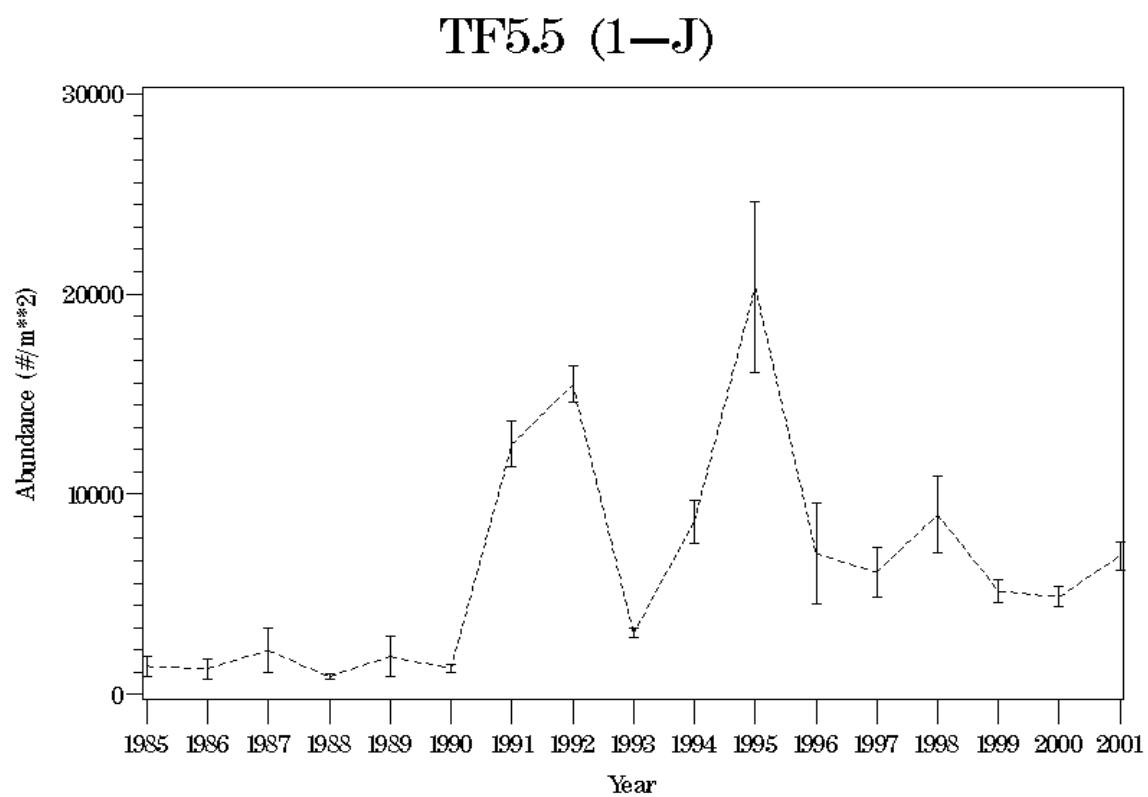


Figure 2. Plot of total benthic community abundance against time at station TF5.5 for the period of 1985 through 2001.

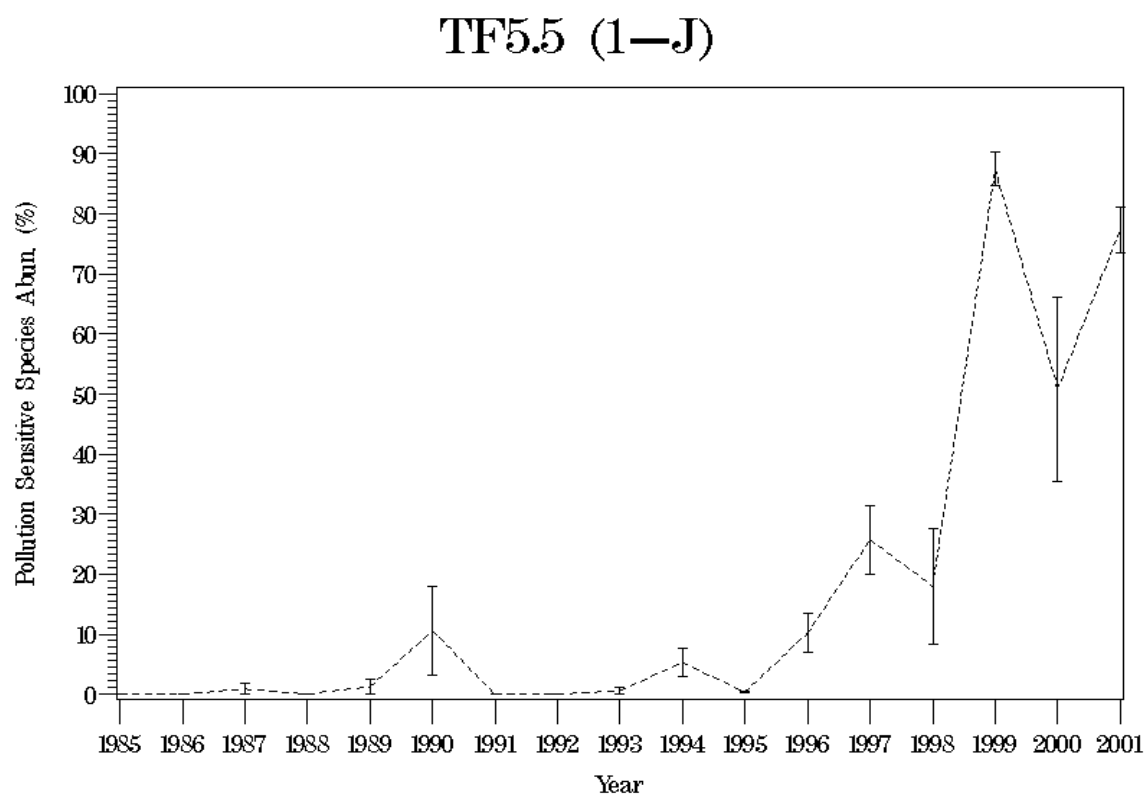


Figure 3. Plot of pollution sensitive species abundance against time at station TF5.5 for the period of 1985 through 2001.

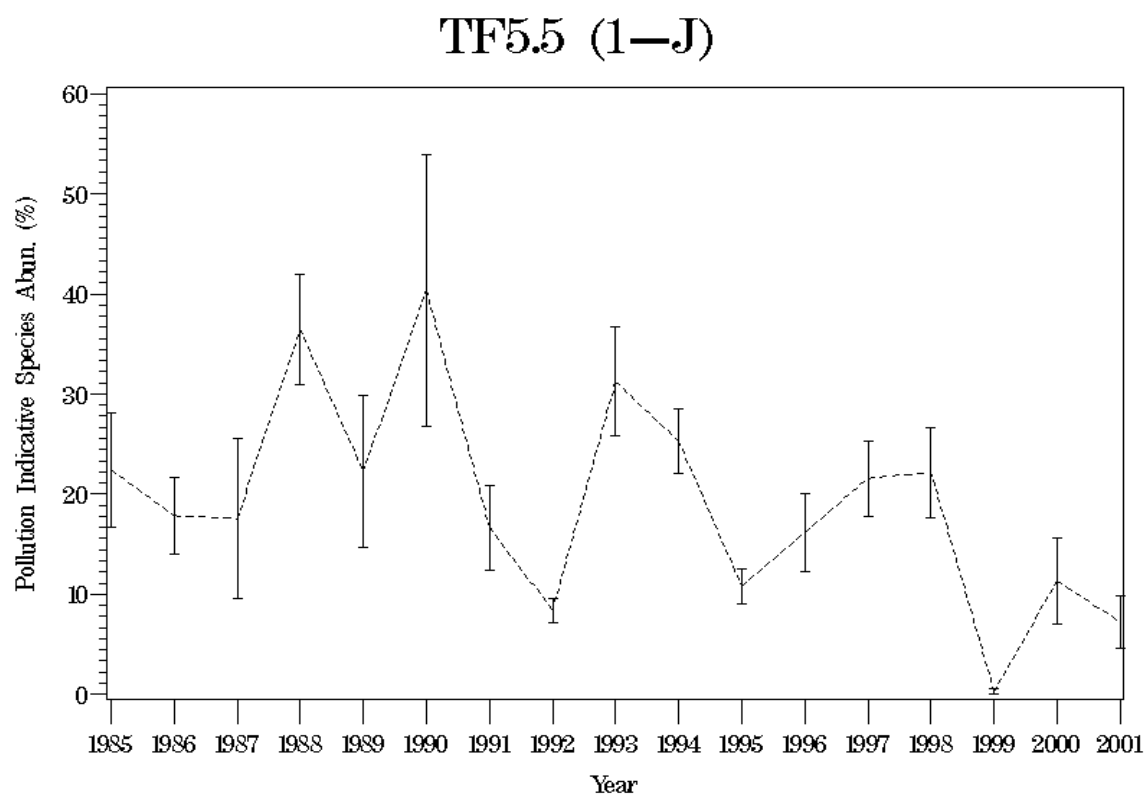


Figure 4. Plot of pollution indicative species abundance against time at station TF5.5 for the period of 1985 through 2001.

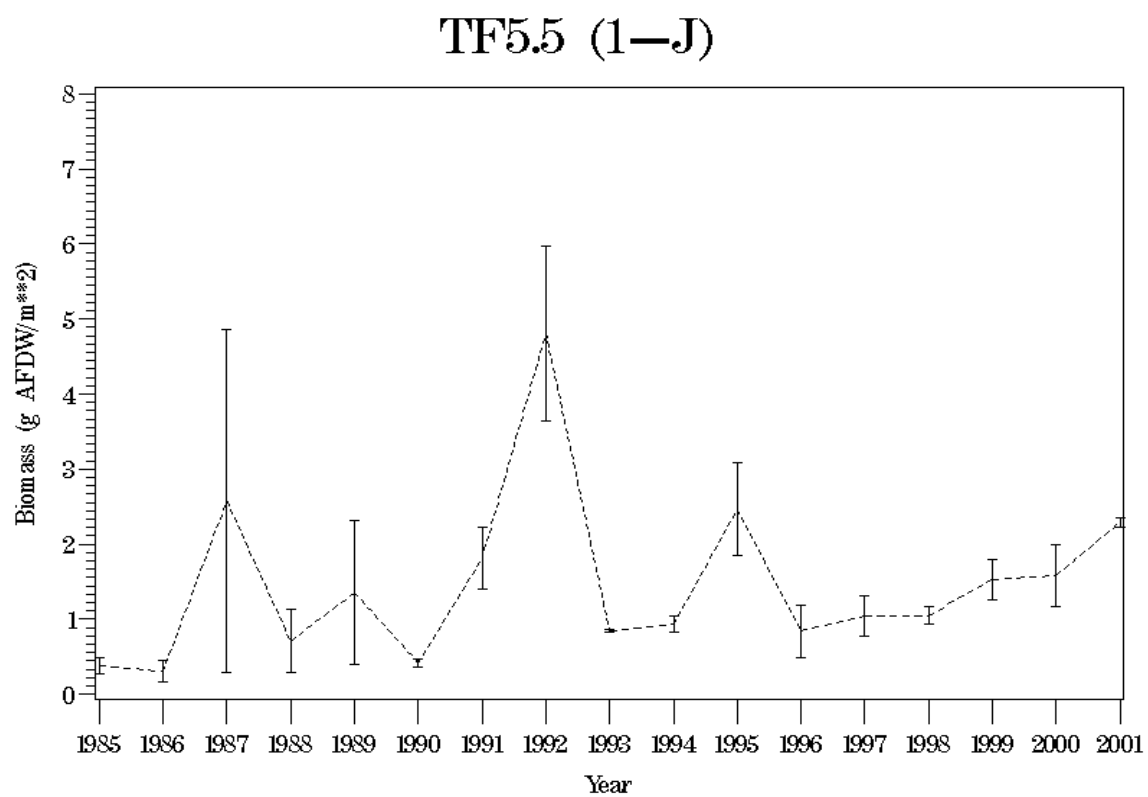


Figure 5. Plot of total benthic community biomass against time at station TF5.5 for the period of 1985 through 2001.

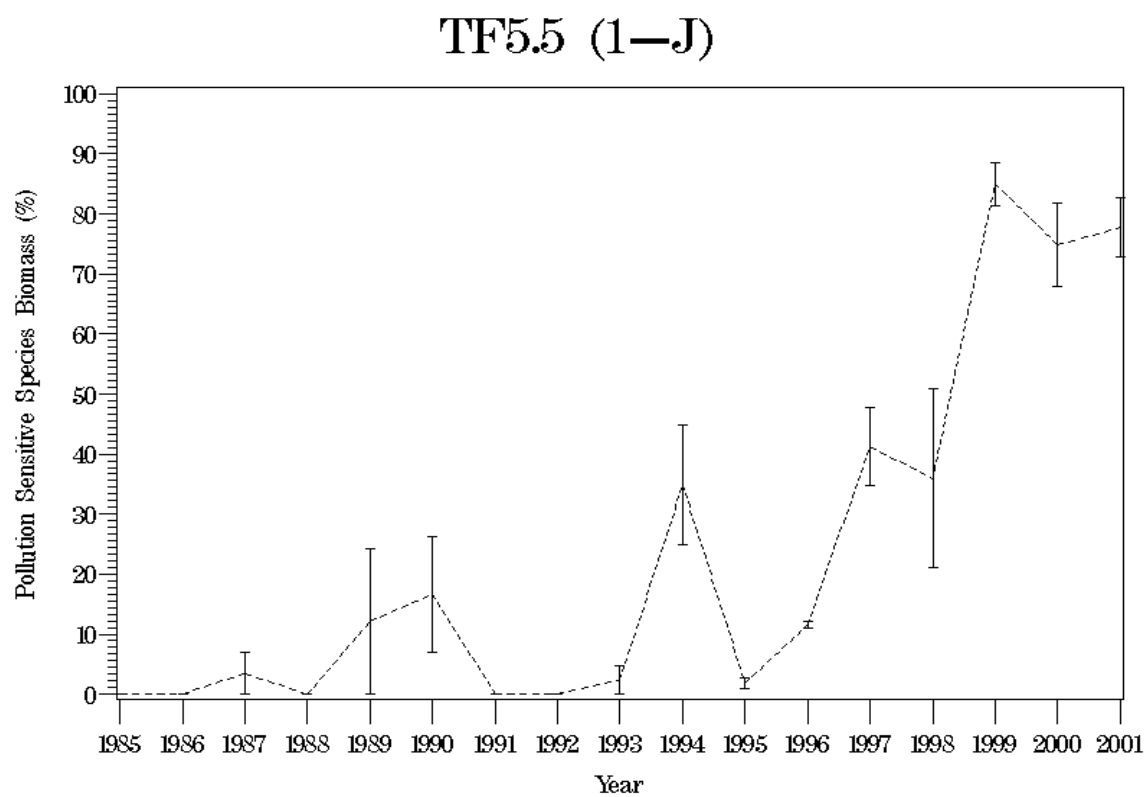


Figure 6. Plot of pollution sensitive species biomass against time at station TF5.5 for the period of 1985 through 2001.

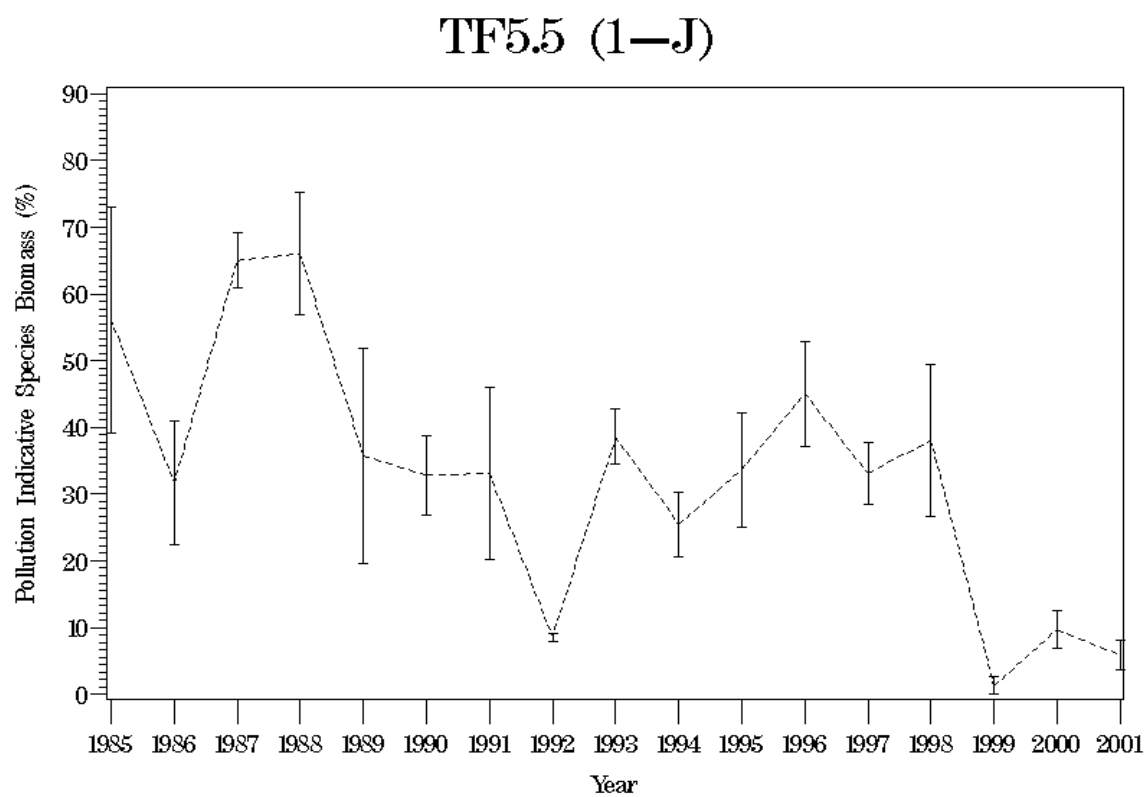


Figure 7. Plot of pollution indicative species biomass against time at station TF5.5 for the period of 1985 through 2001.

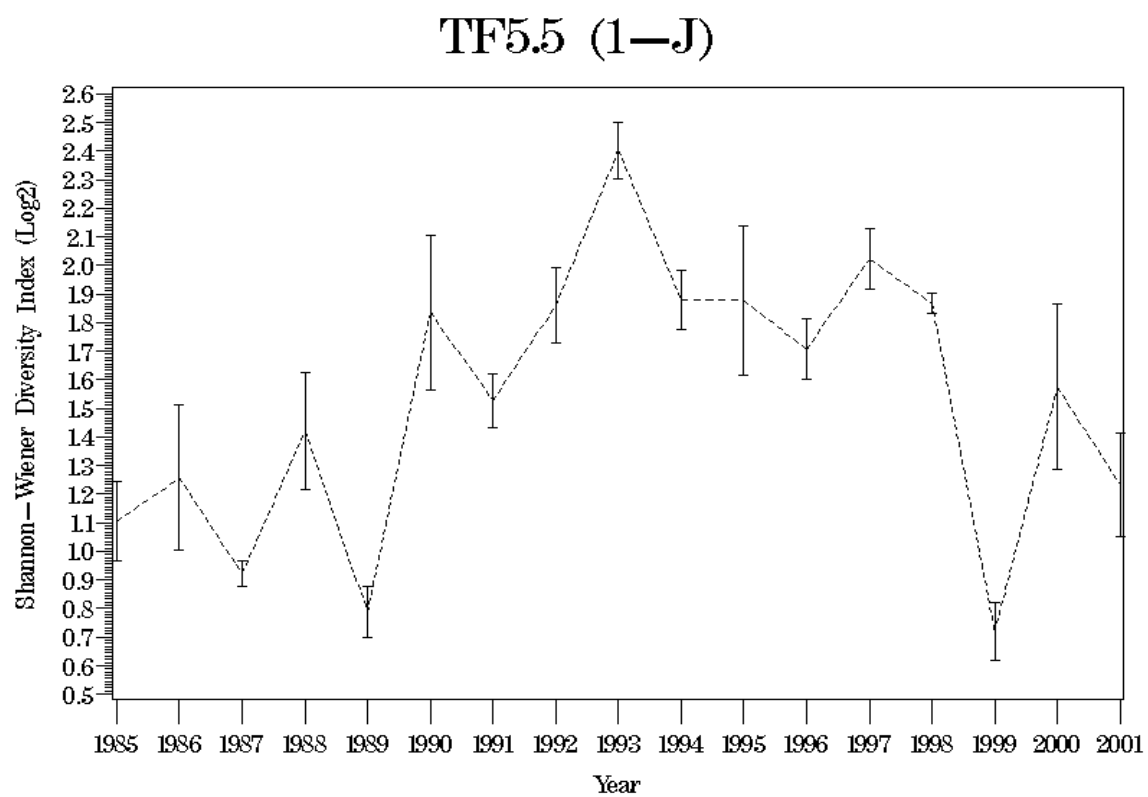


Figure 8. Plot of the Shannon-Weiner diversity index against time at station TF5.5 for the period of 1985 through 2001.

RET5.2 (2-J)

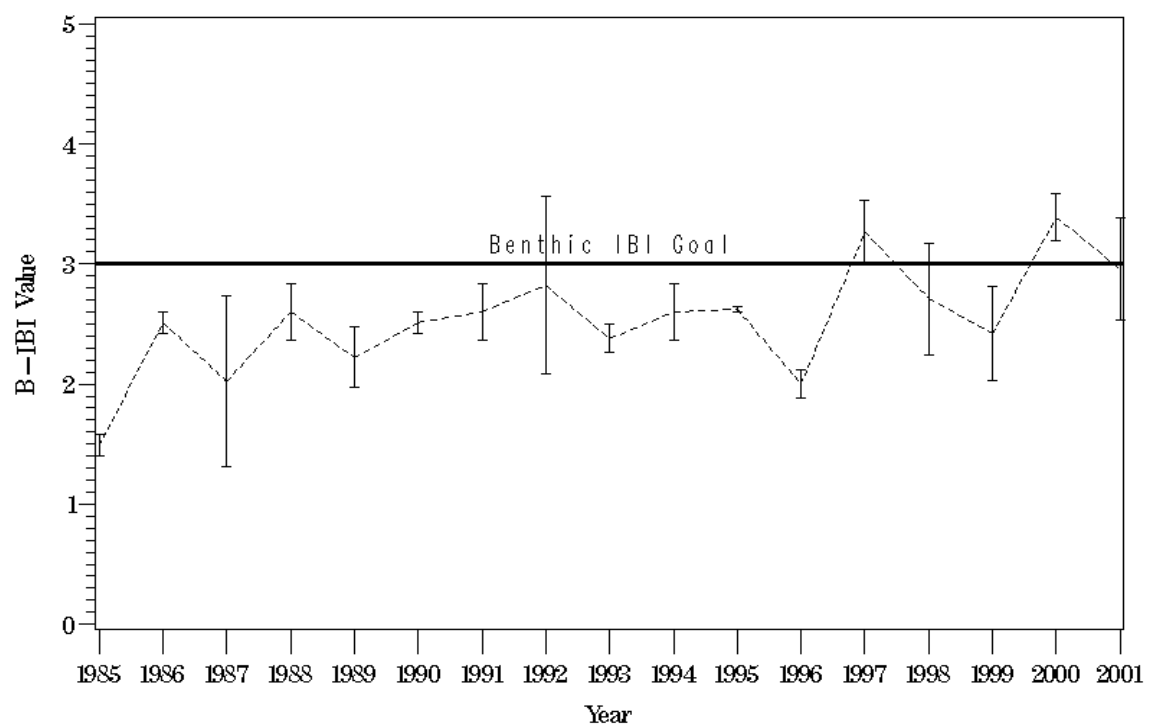


Figure 9. Plot of the benthic IBI against time at station RET 5.2 for the period of 1985 through 2001.

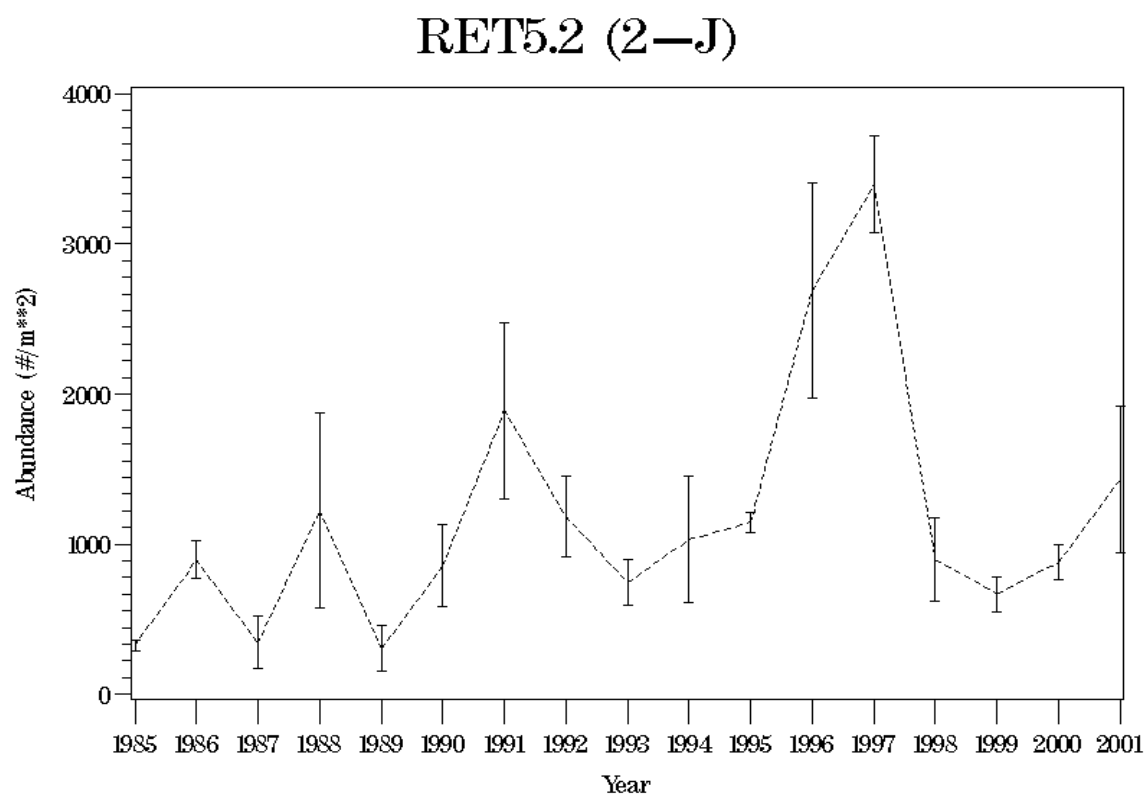


Figure 10. Plot of total benthic community abundance against time at station RET5.2 for the period of 1985 through 2001.

RET5.2 (2-J)

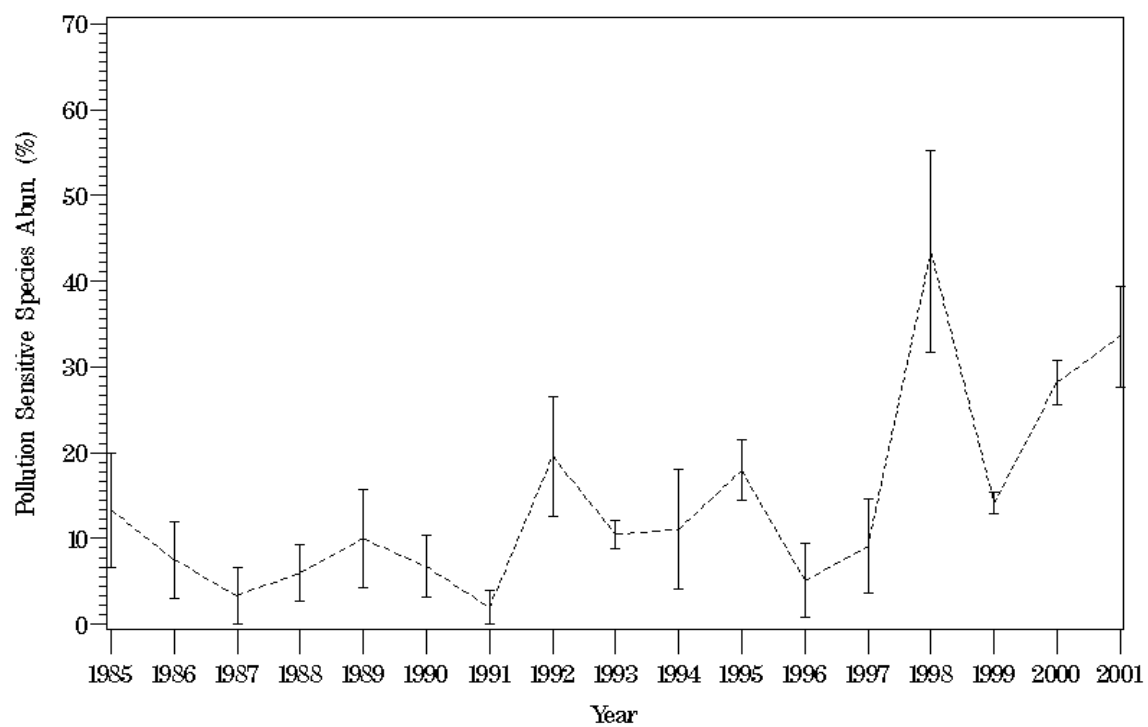


Figure 11. Plot of pollution sensitive species abundance against time at station RET5.2 for the period of 1985 through 2001.

RET5.2 (2-J)

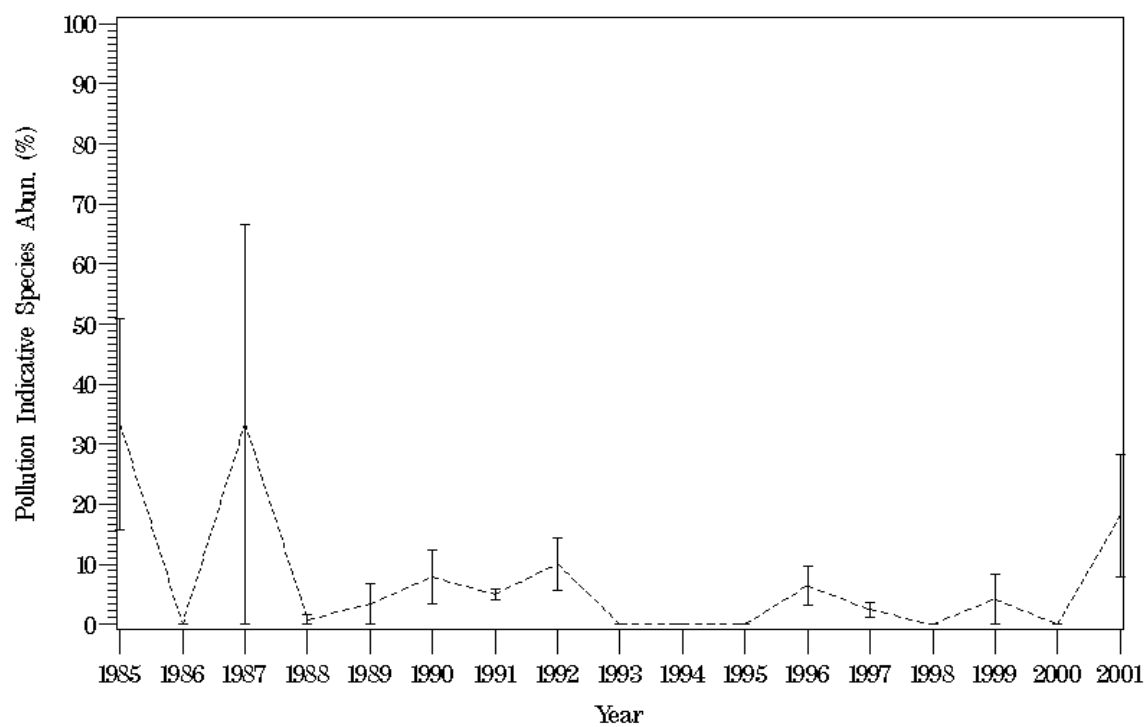


Figure 12. Plot of pollution indicative species abundance against time at station RET5.2 for the period of 1985 through 2001.

RET5.2 (2-J)

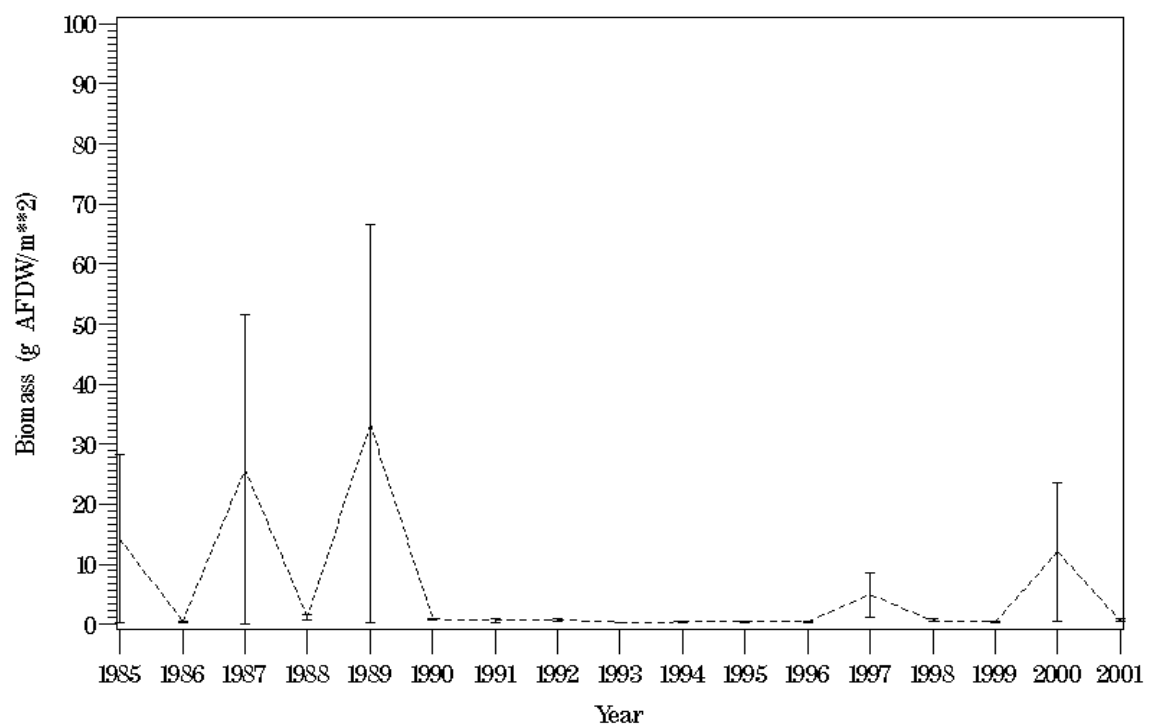


Figure 13. Plot of total benthic community biomass against time at station RET5.2 for the period of 1985 through 2001.

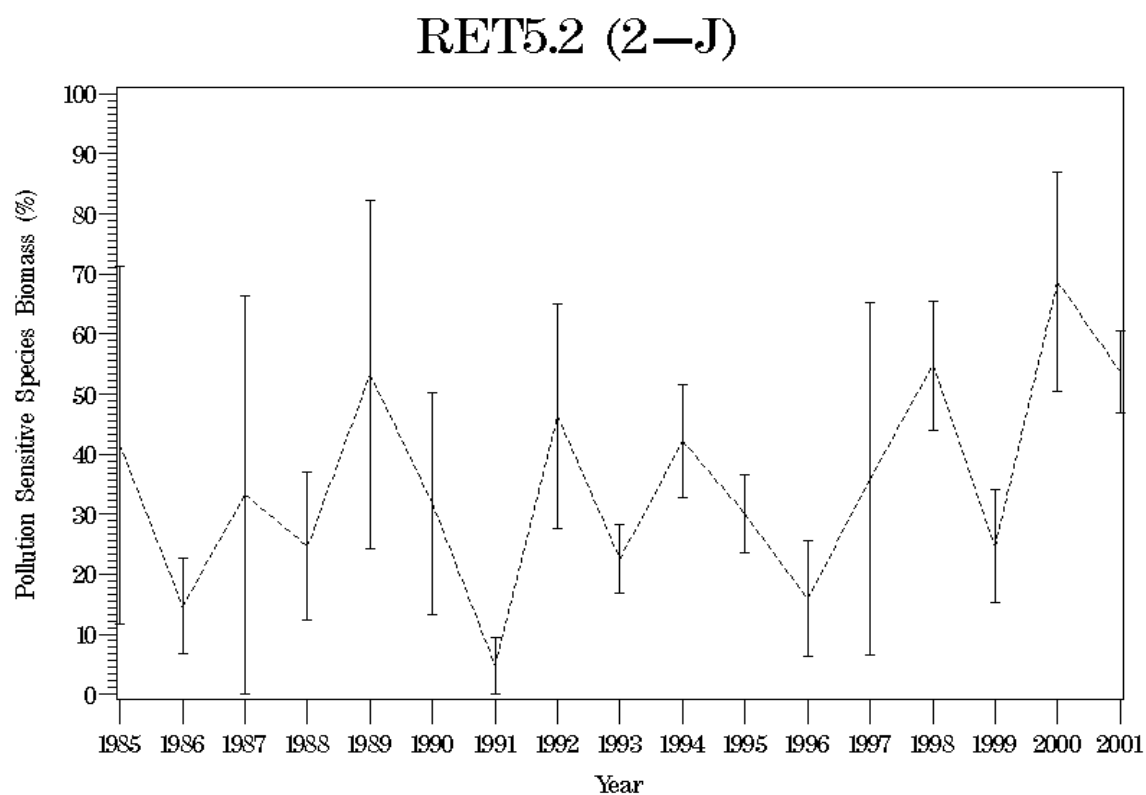


Figure 14. Plot of pollution sensitive species biomass against time at station RET5.2 for the period of 1985 through 2001.

RET5.2 (2-J)

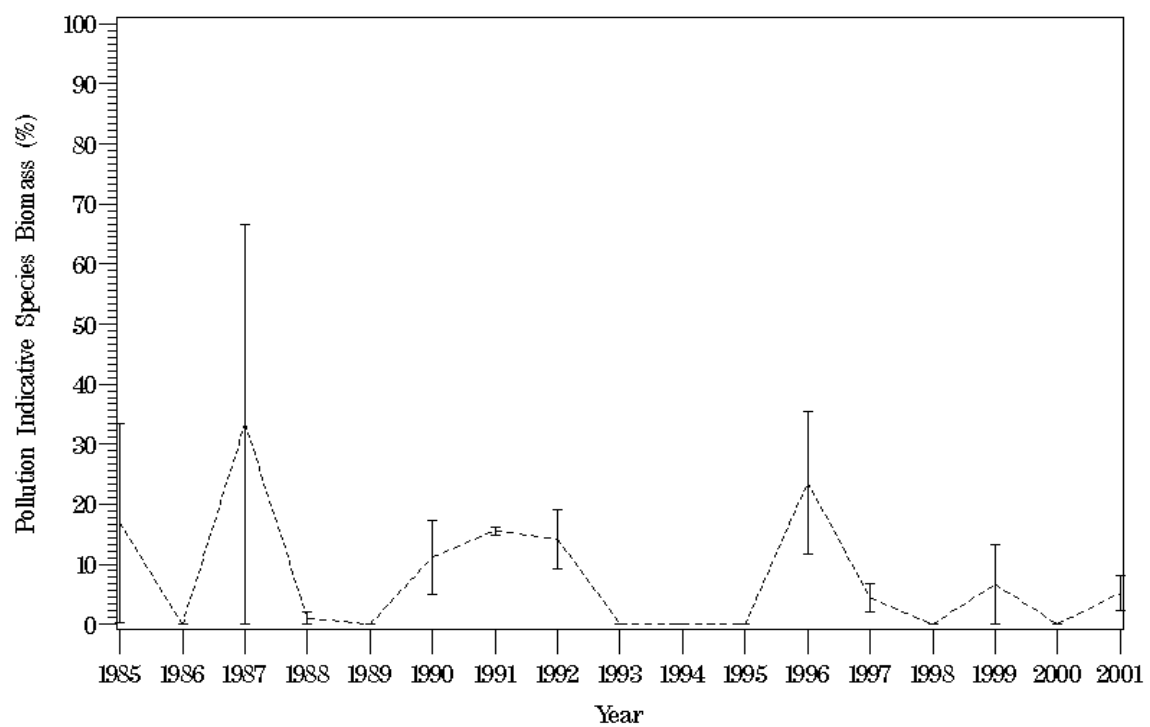


Figure 15. Plot of pollution indicative species biomass against time at station RET5.2 for the period of 1985 through 2001.

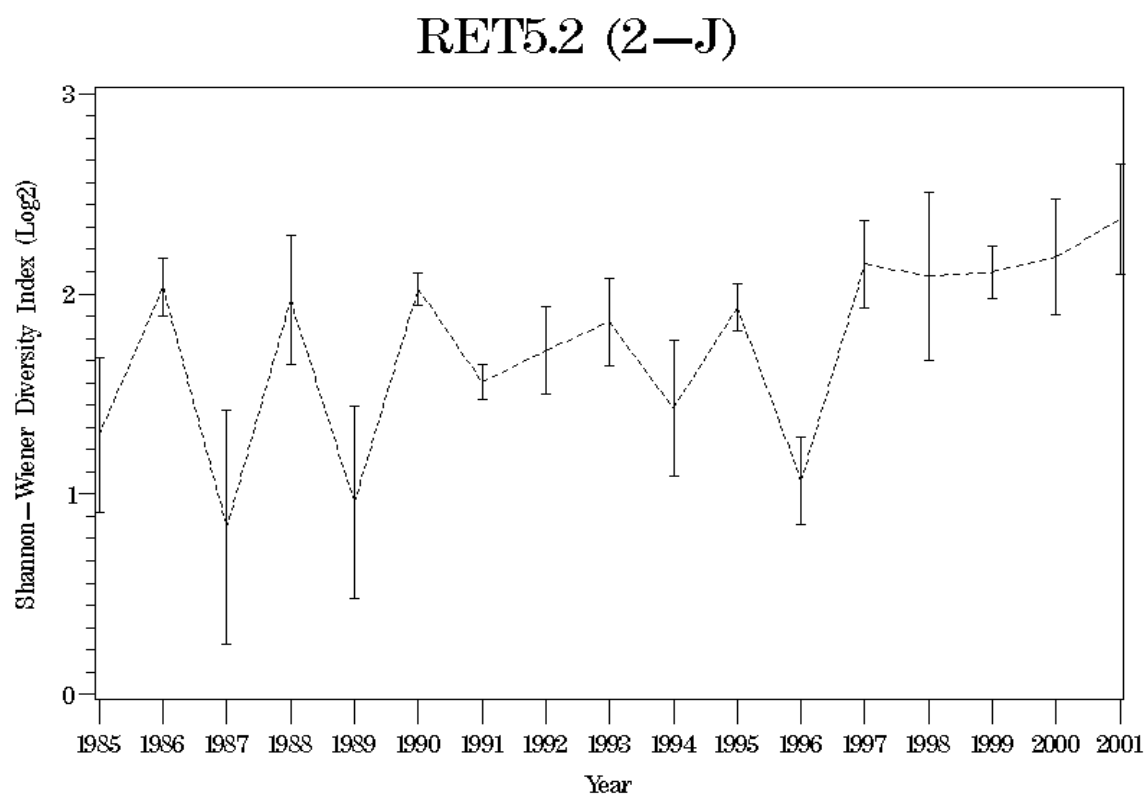


Figure 16. Plot of the Shannon-Weiner diversity index against time at station RET5.2 for the period of 1985 through 2001.

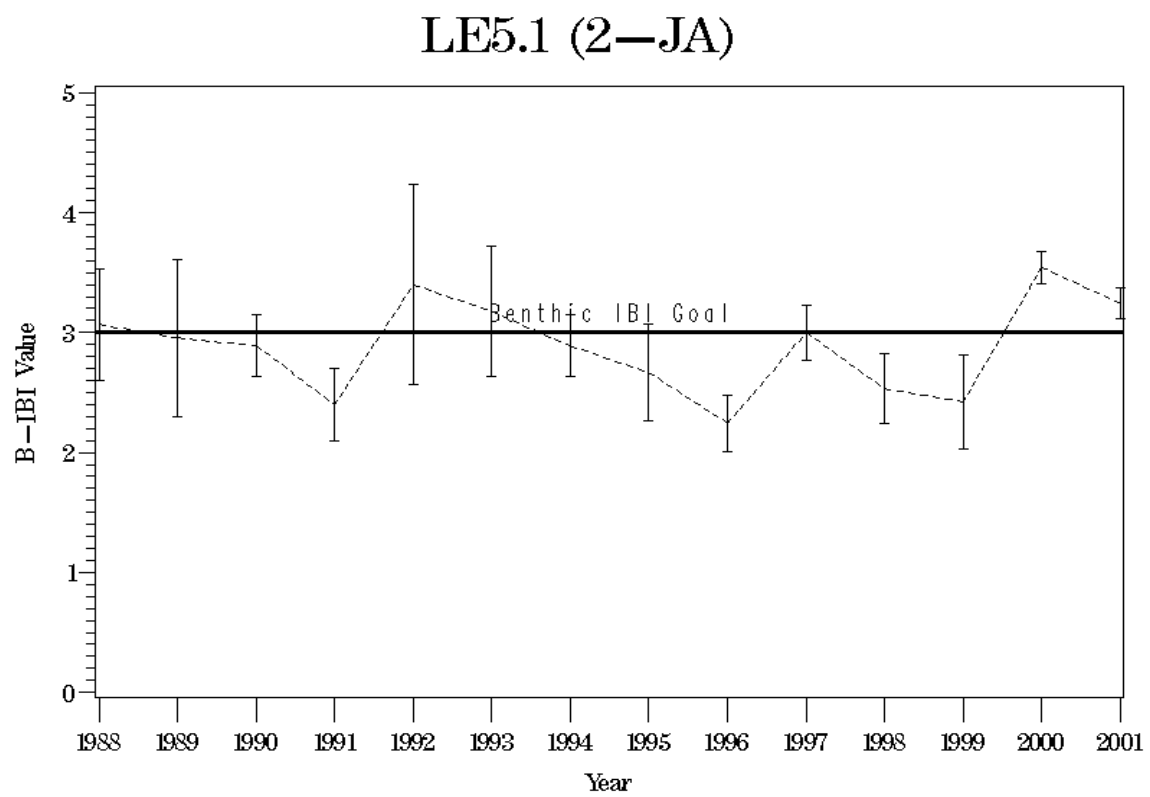


Figure 17. Plot of the benthic IBI against time at station LE5.1 for the period of 1985 through 2001.

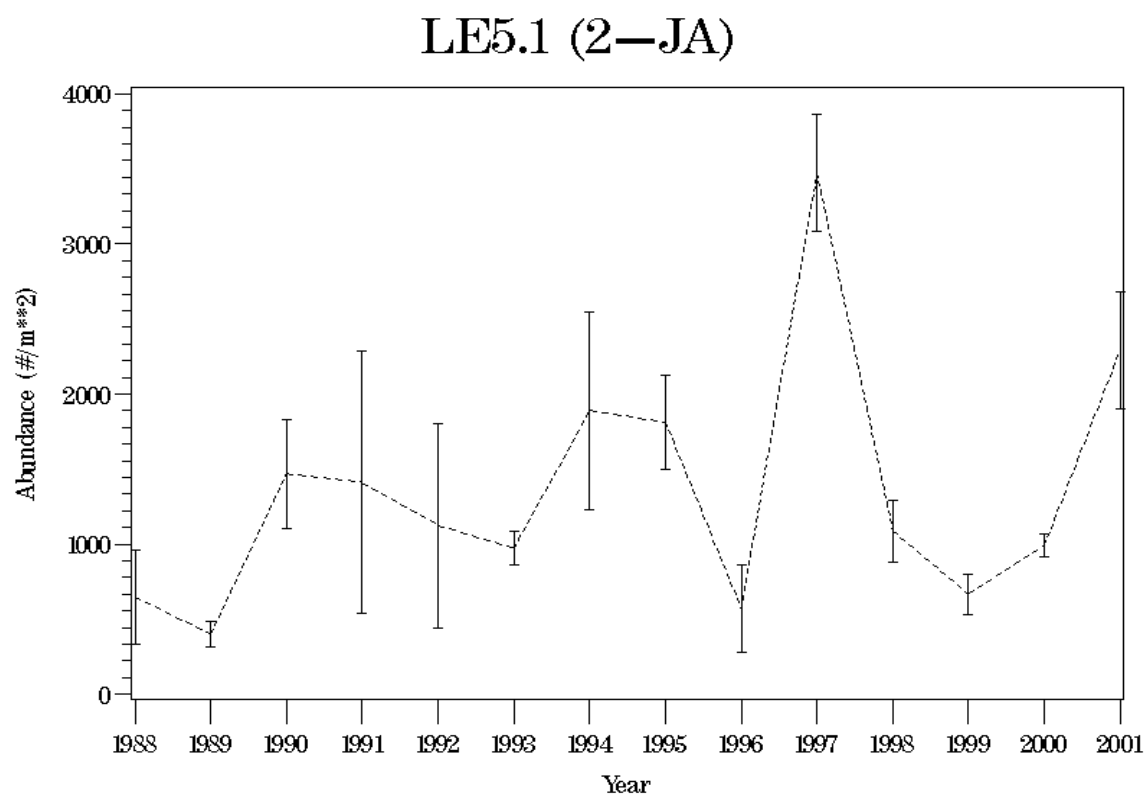


Figure 18. Plot of total benthic community abundance against time at station LE5.1 for the period of 1985 through 2001.

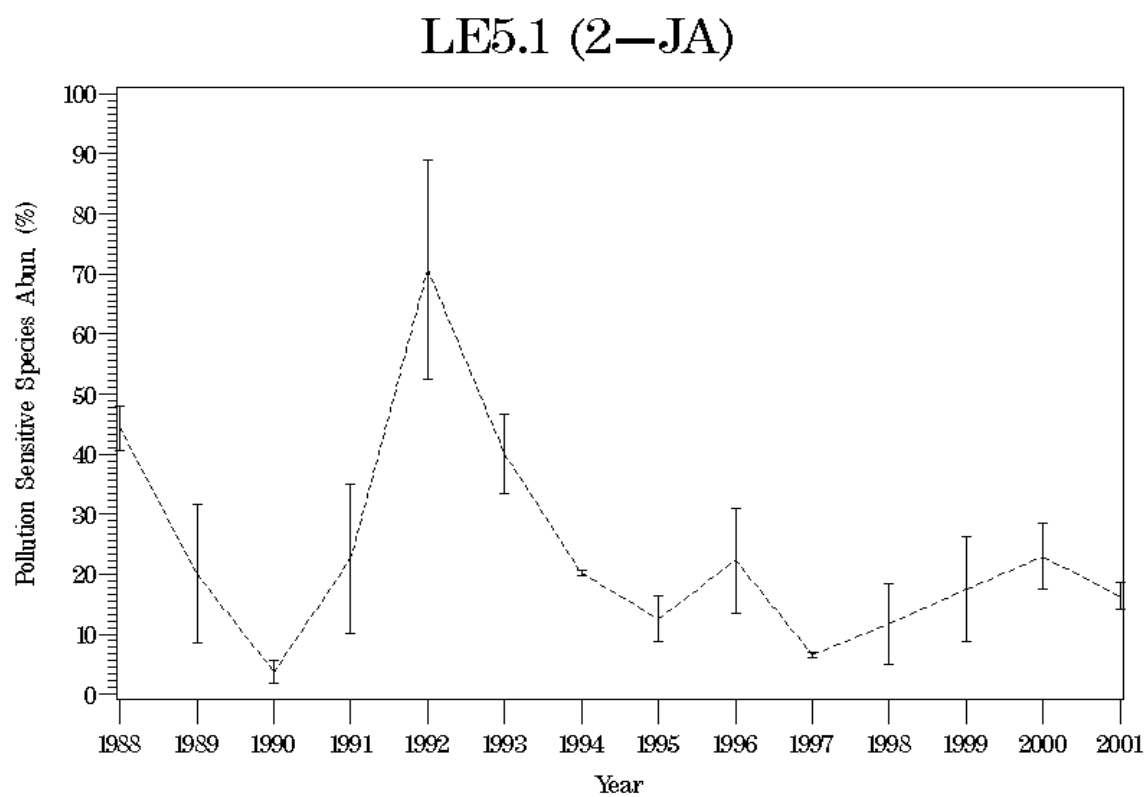


Figure 19. Plot of pollution sensitive species abundance against time at station LE5.1 for the period of 1985 through 2001.

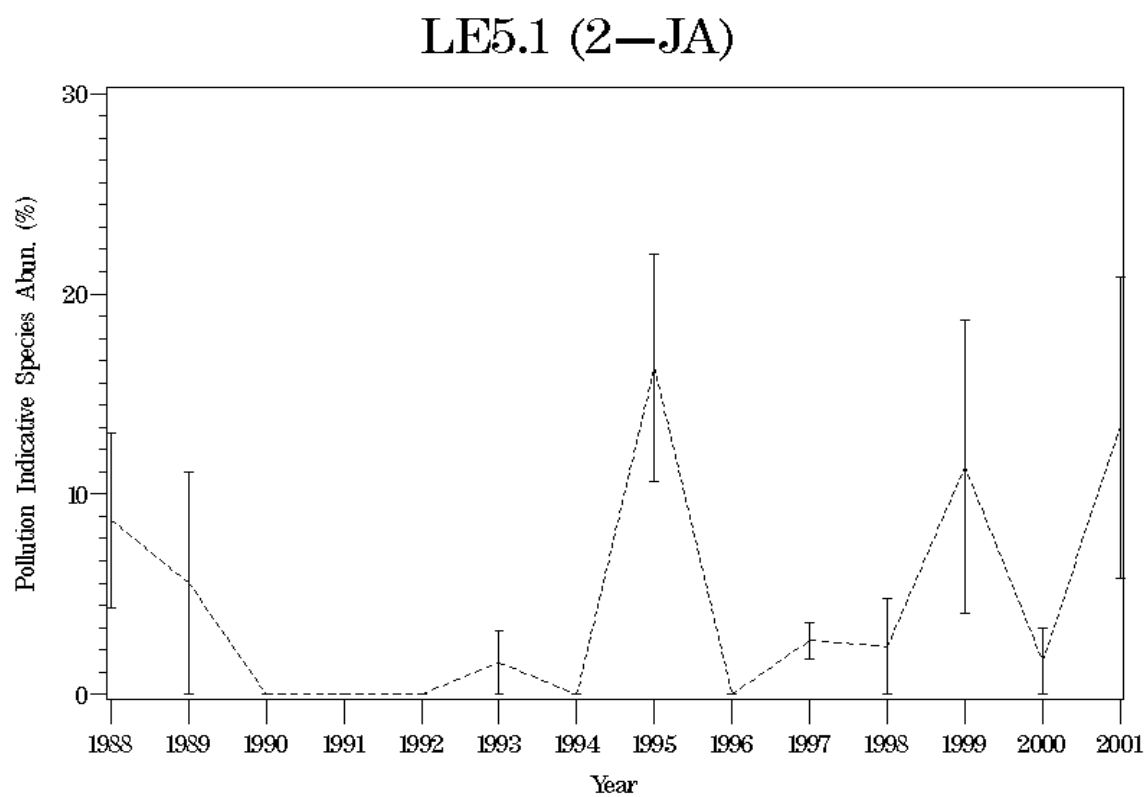


Figure 20. Plot of pollution indicative species abundance against time at station LE5.1 for the period of 1985 through 2001.

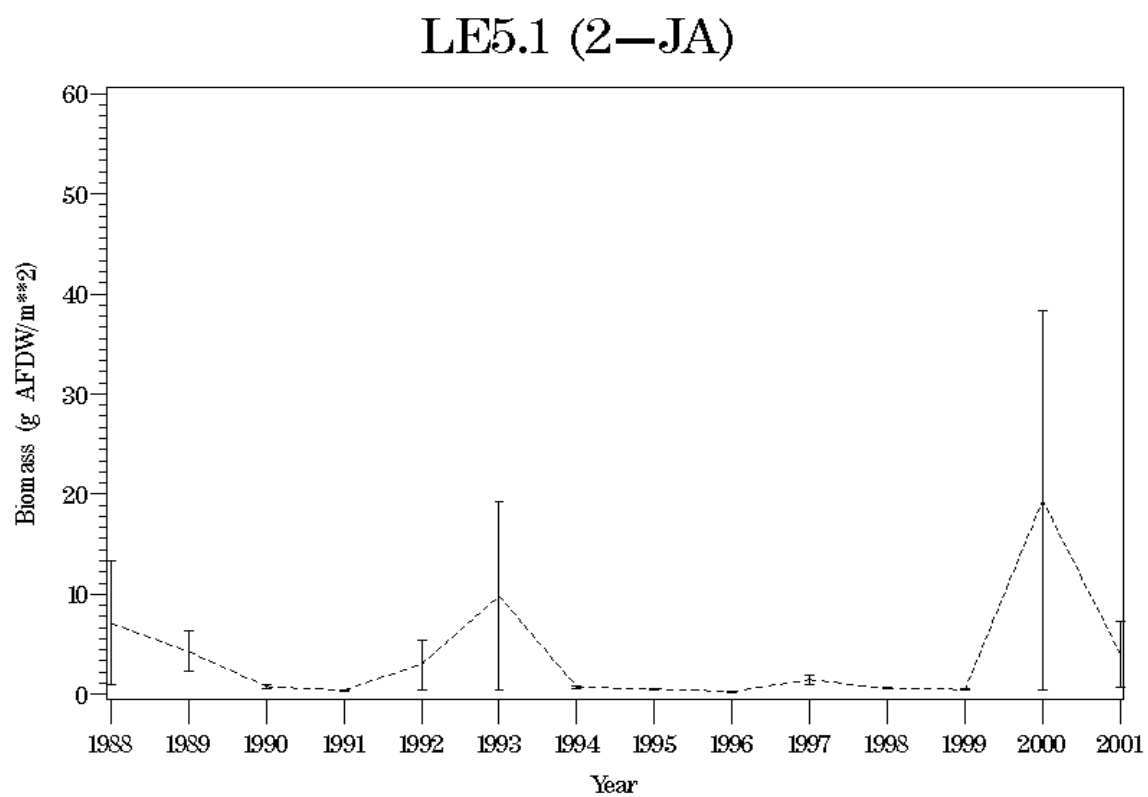


Figure 21. Plot of total benthic community biomass against time at station LE5.1 for the period of 1985 through 2001.

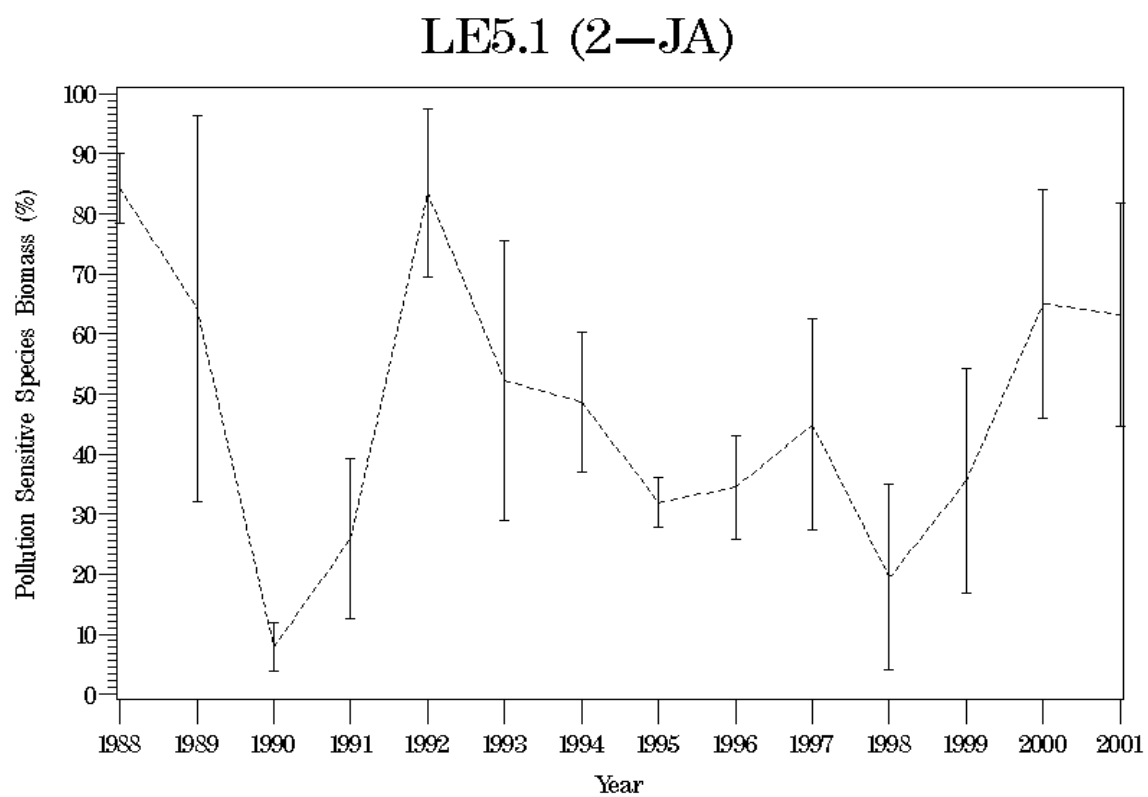


Figure 22. Plot of pollution sensitive species biomass against time at station LE5.1 for the period of 1985 through 2001.

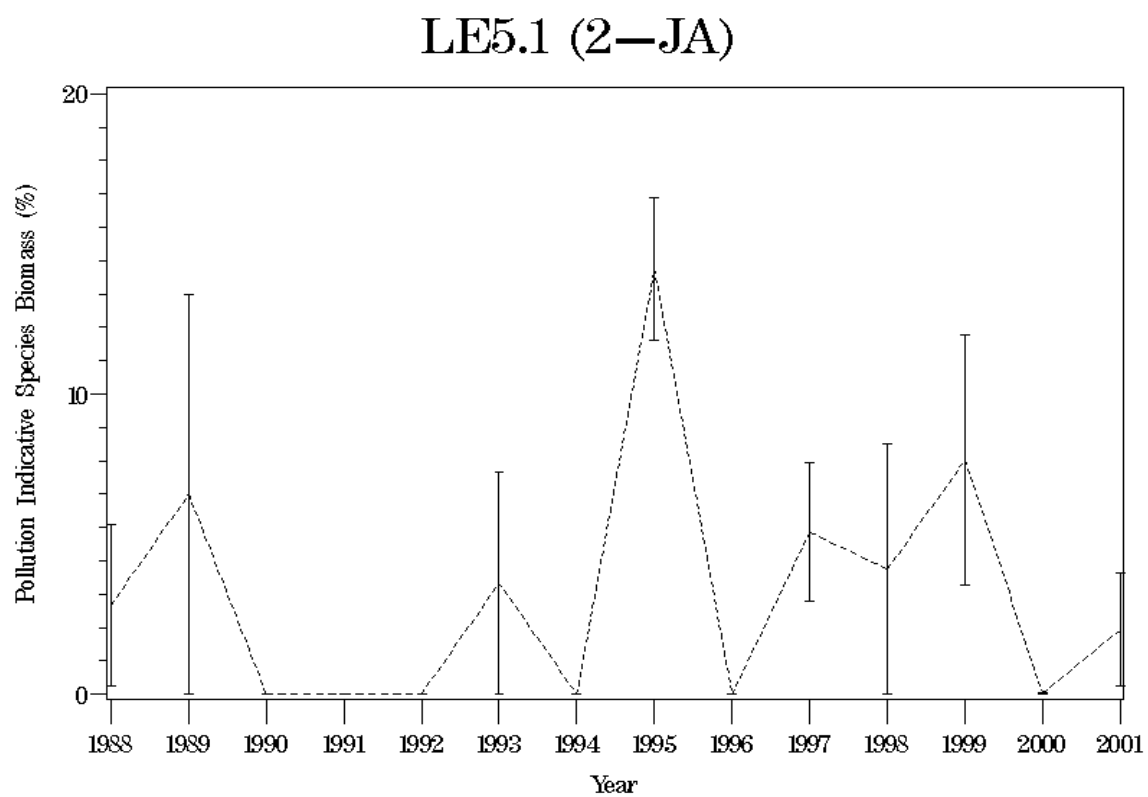


Figure 23. Plot of pollution indicative species biomass against time at station LE5.1 for the period of 1985 through 2001.

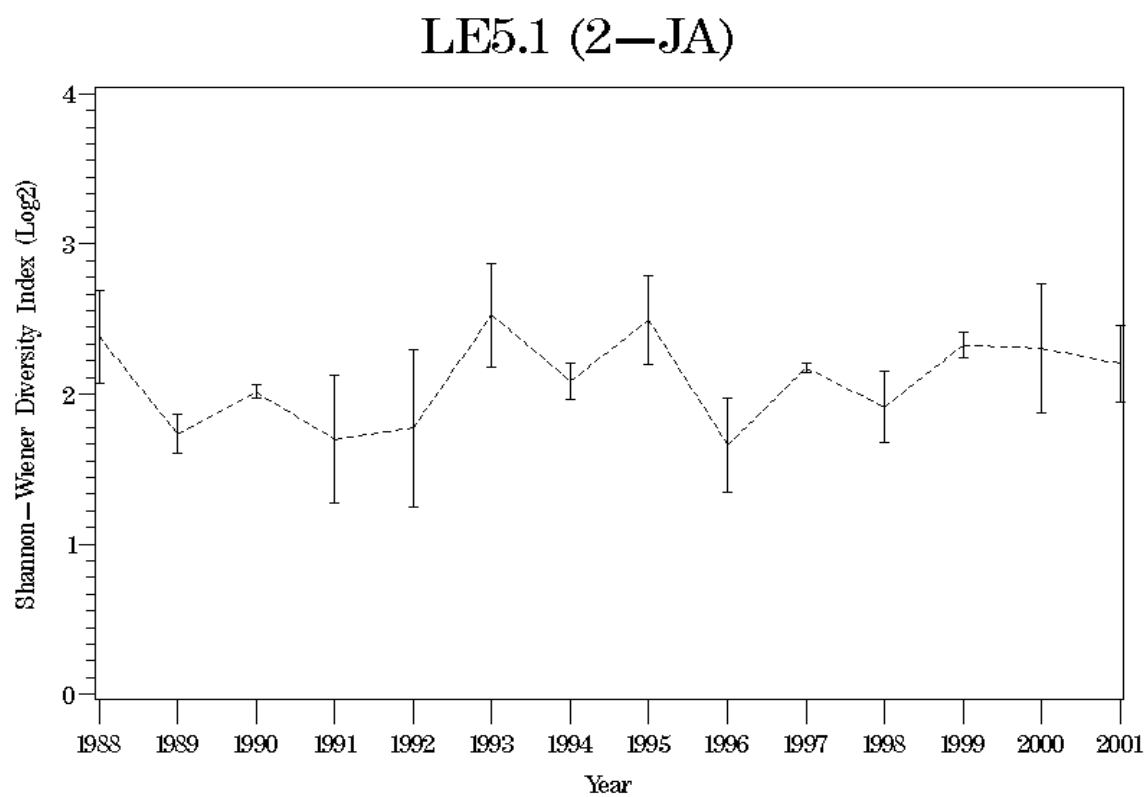


Figure 24. Plot of the Shannon-Weiner diversity index against time at station LE5.1 for the period of 1985 through 2001.

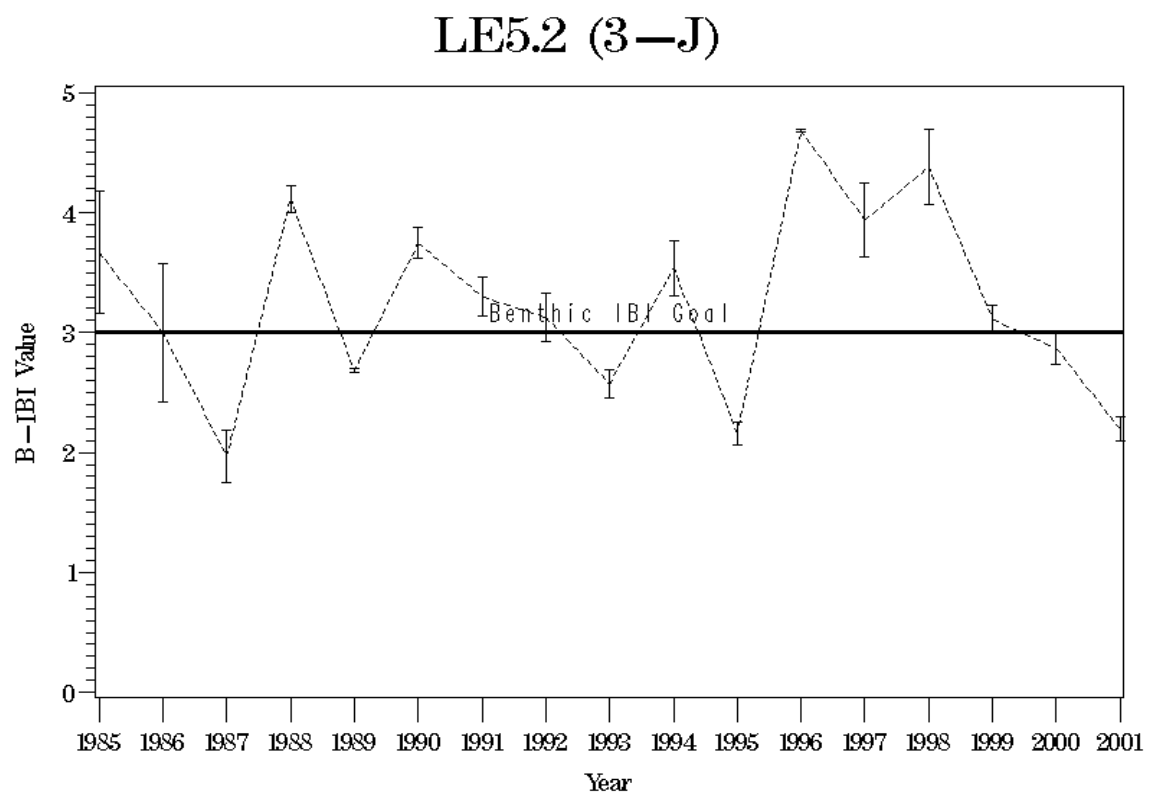


Figure 25. Plot of the benthic IBI against time at station LE5.2 for the period of 1985 through 2001.

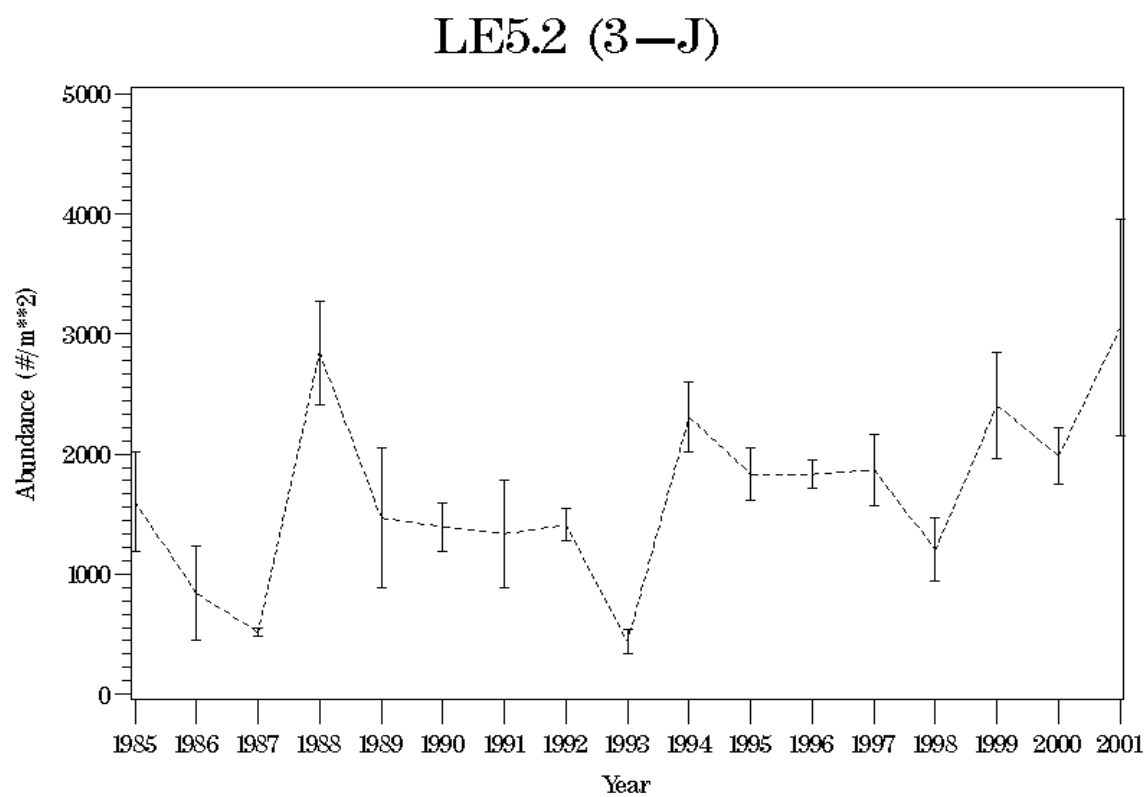


Figure 26. Plot of total benthic community abundance against time at station LE5.2 for the period of 1985 through 2001.

LE5.2 (3-J)

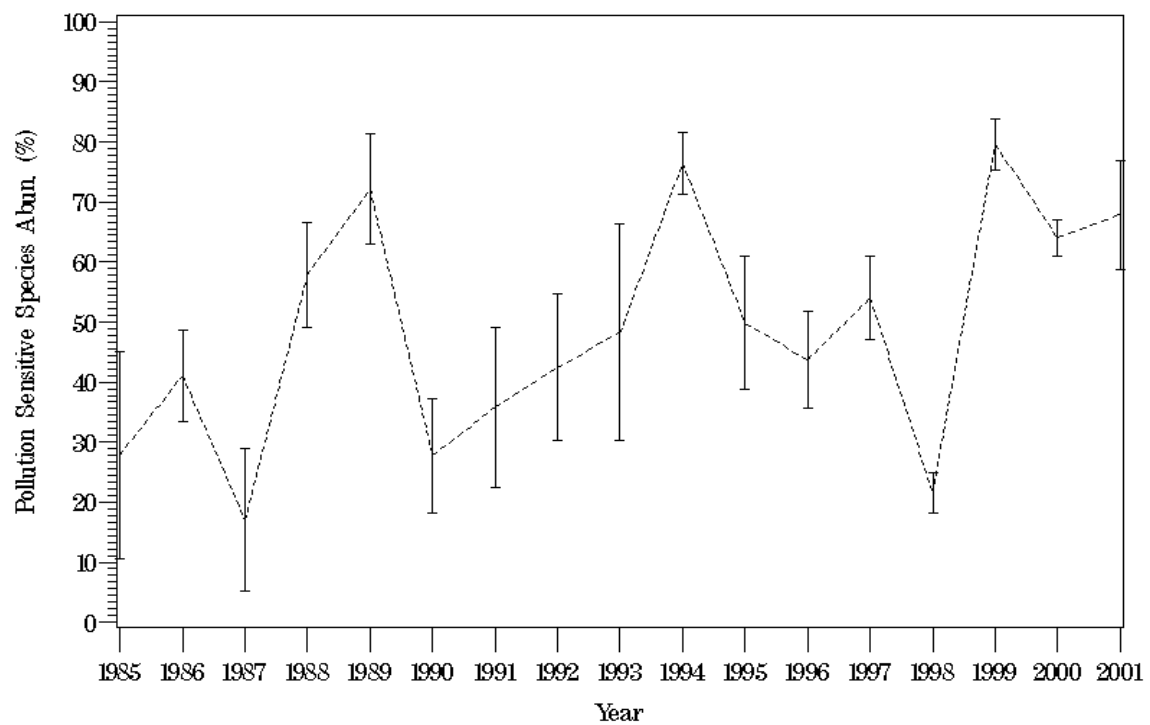


Figure 27. Plot of pollution sensitive species abundance against time at station LE5.2 for the period of 1985 through 2001.

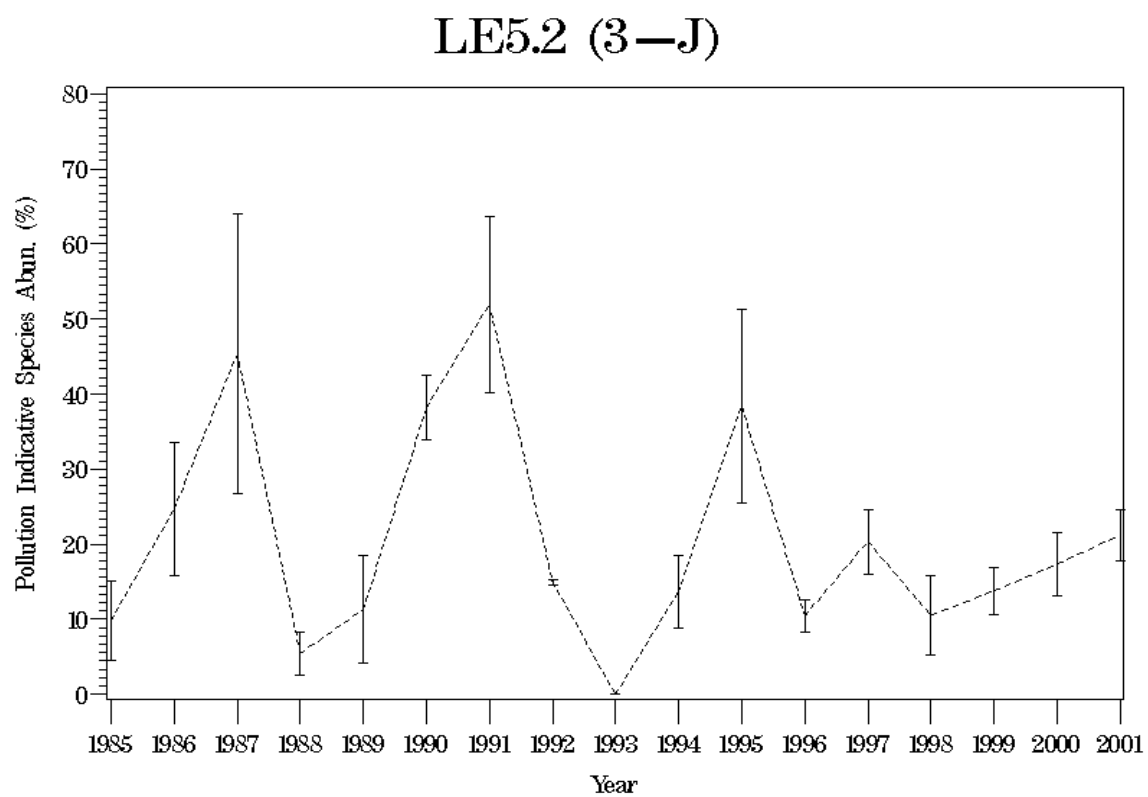


Figure 28. Plot of pollution indicative species abundance against time at station LE5.2 for the period of 1985 through 2001.

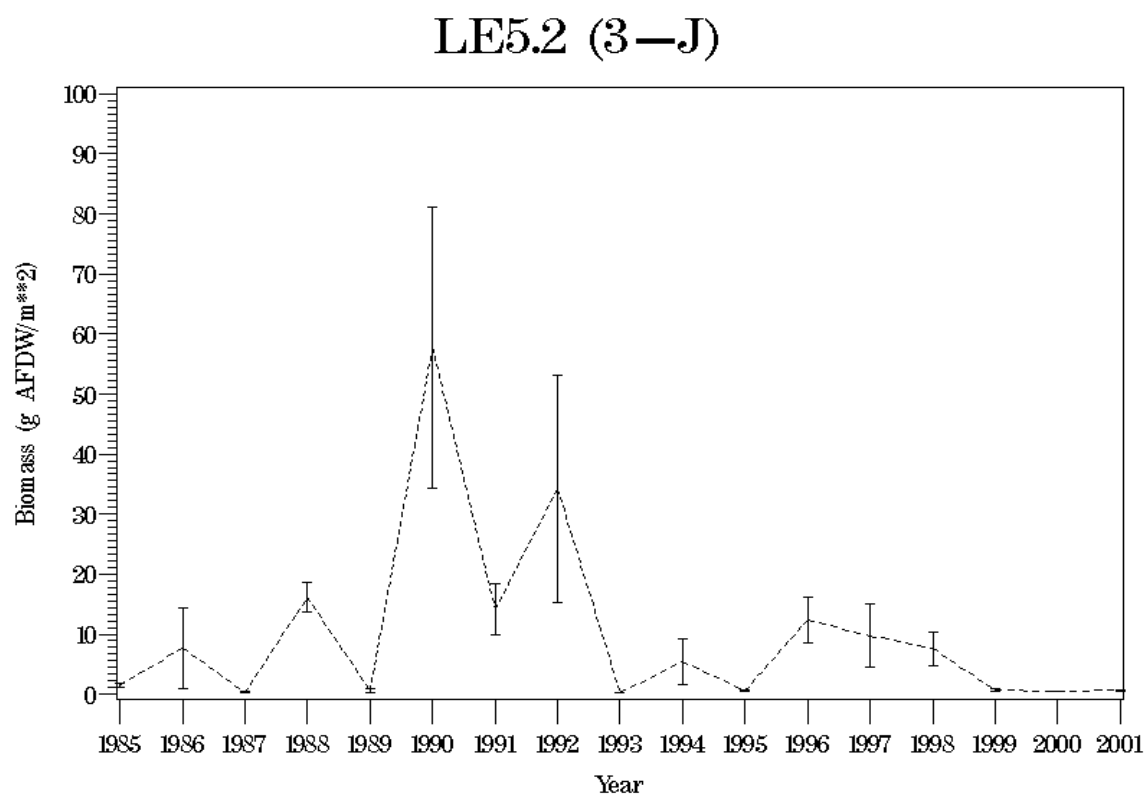


Figure 29. Plot of total benthic community biomass against time at station LE5.2 for the period of 1985 through 2001.

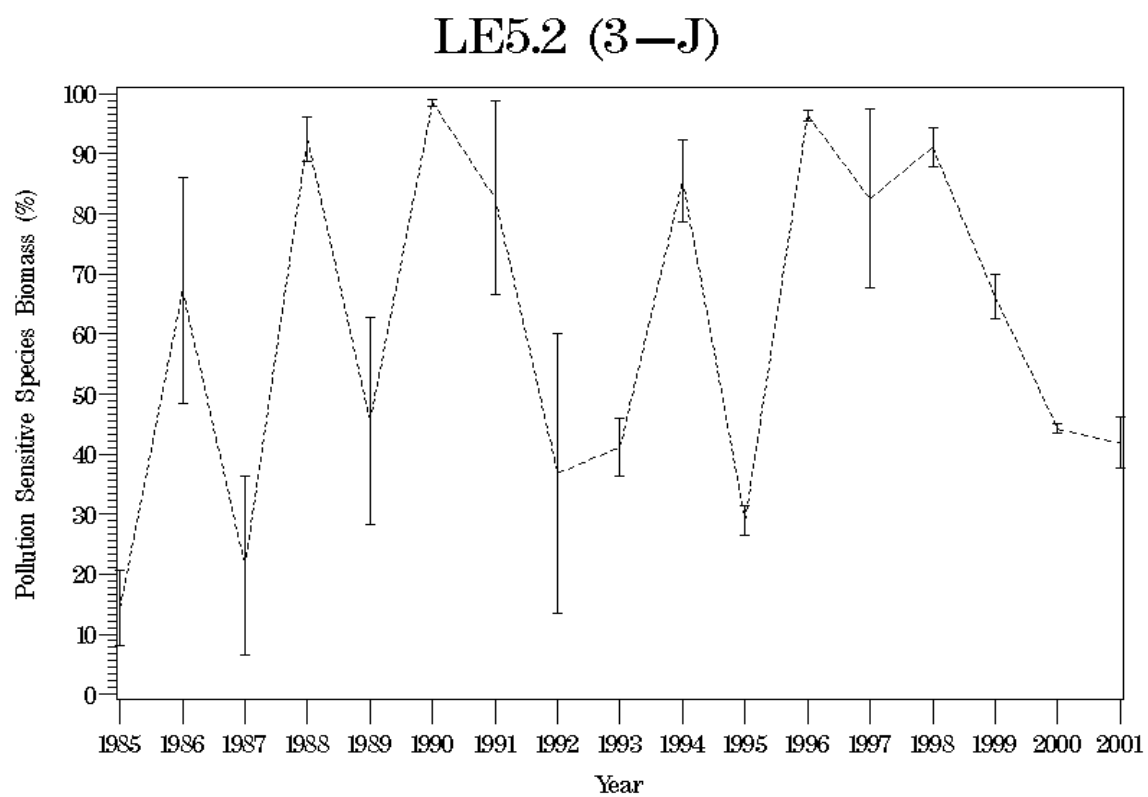


Figure 30. Plot of pollution sensitive species biomass against time at station LE5.2 for the period of 1985 through 2001.

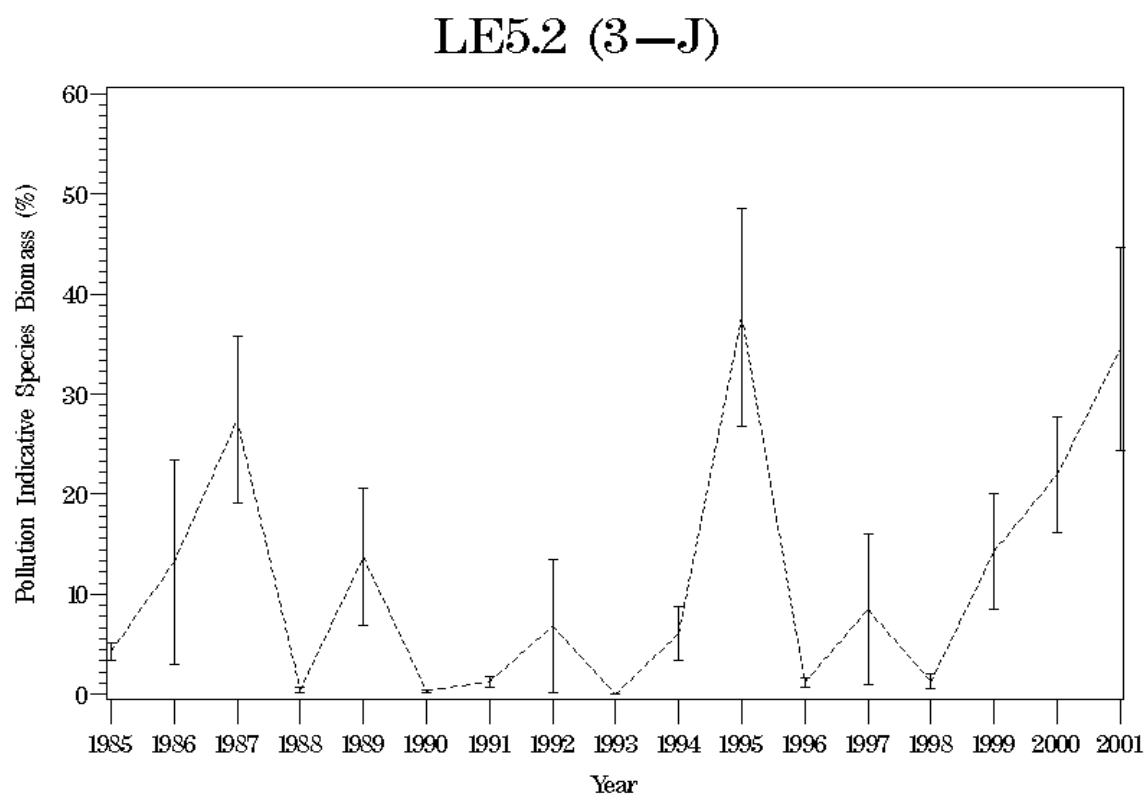


Figure 31. Plot of pollution indicative species biomass against time at station LE5.2 for the period of 1985 through 2001.

LE5.2 (3-J)

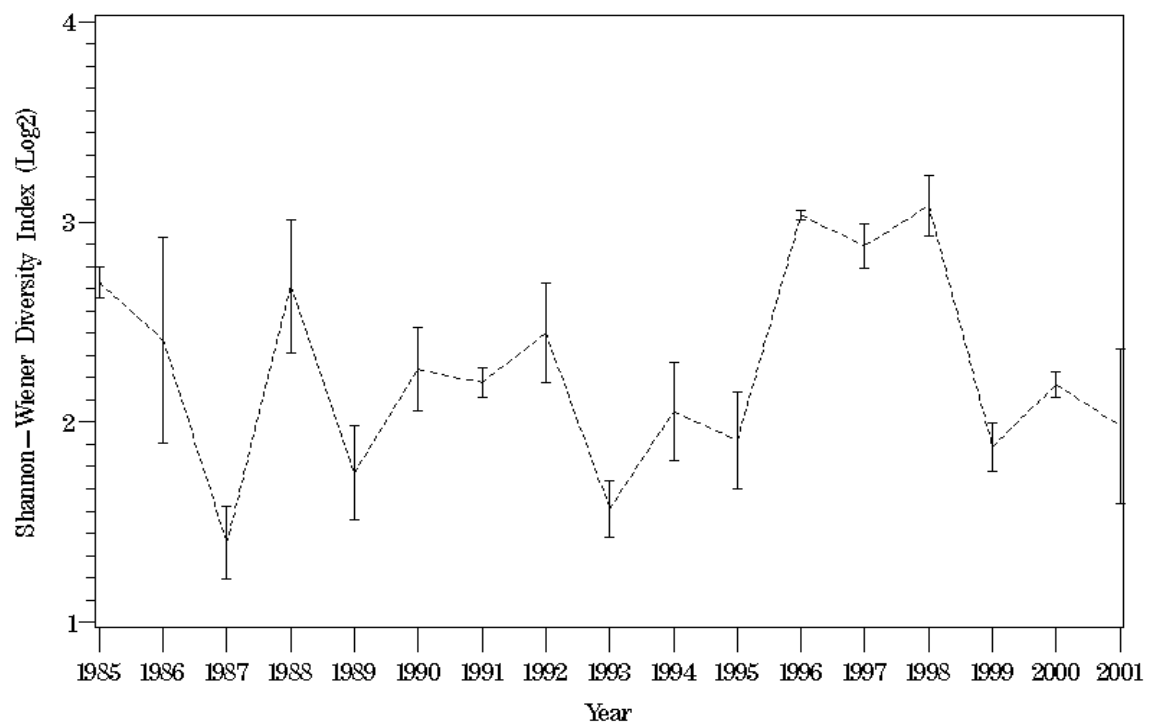


Figure 32. Plot of the Shannon-Weiner diversity index against time at station LE5.2 for the period of 1985 through 2001.

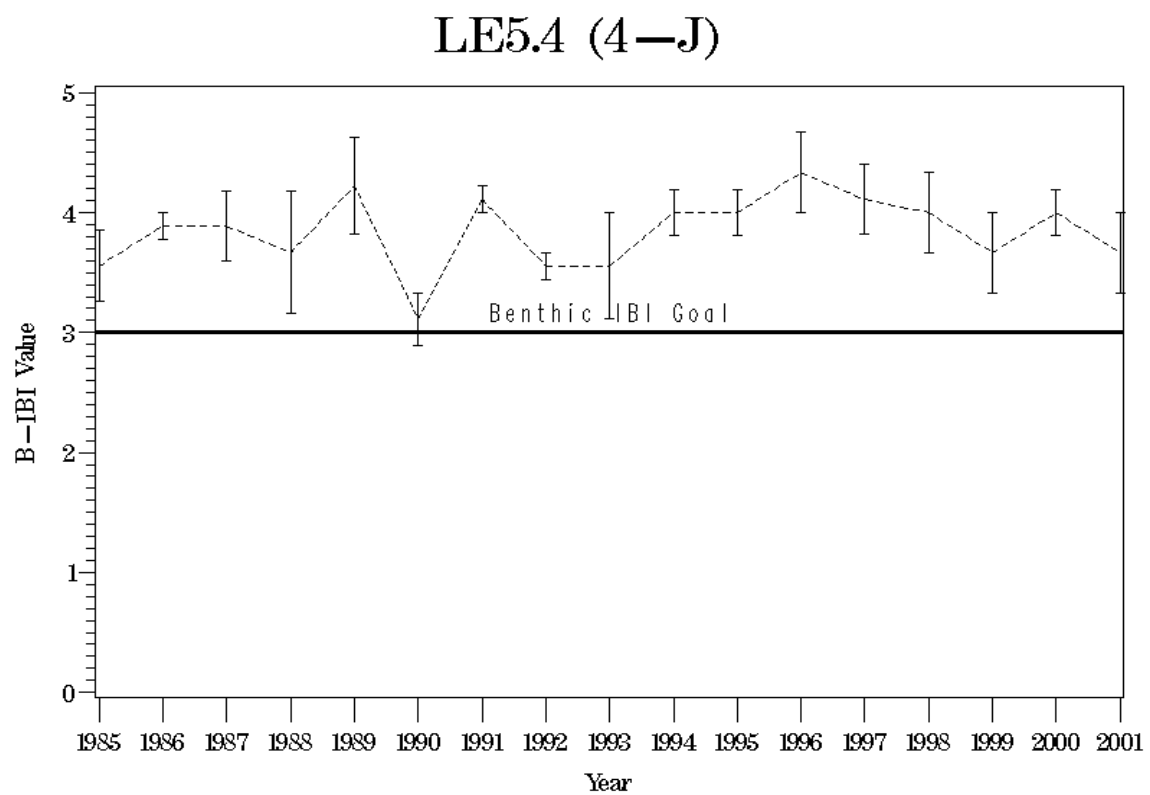


Figure 33. Plot of the benthic IBI against time at station LE5.4 for the period of 1985 through 2001.

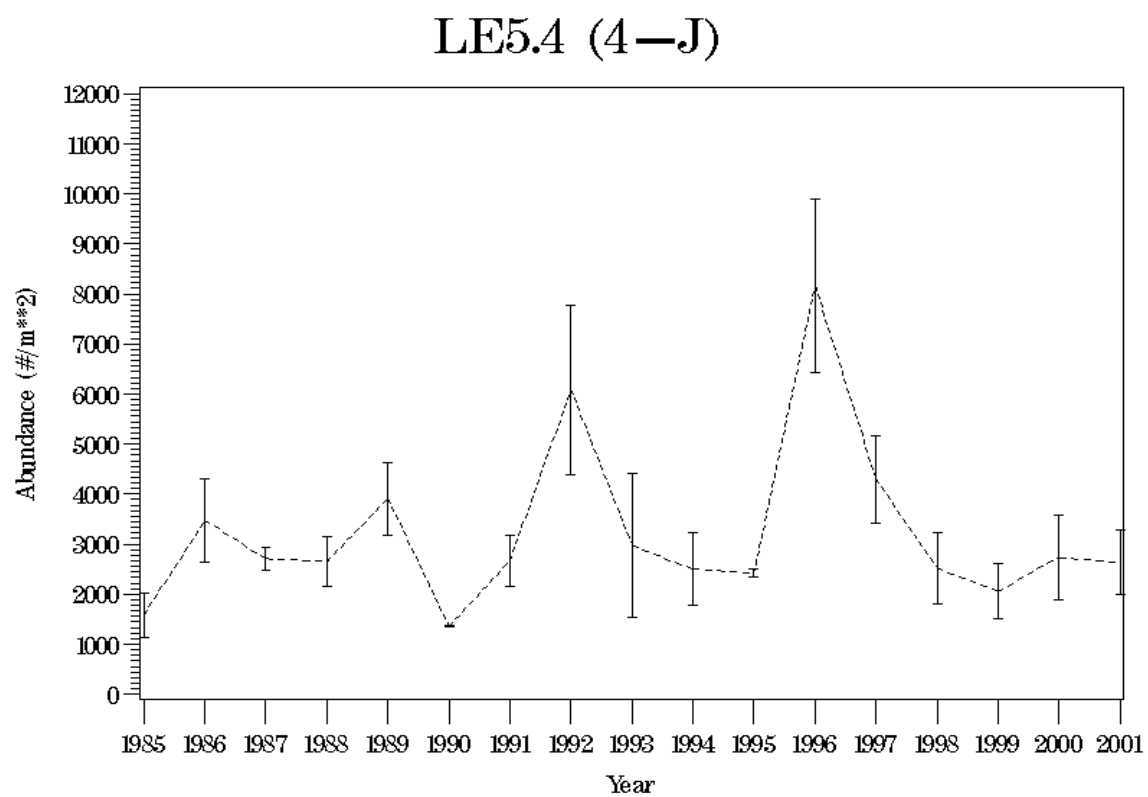


Figure 34. Plot of total benthic community abundance against time at station LE5.4 for the period of 1985 through 2001.

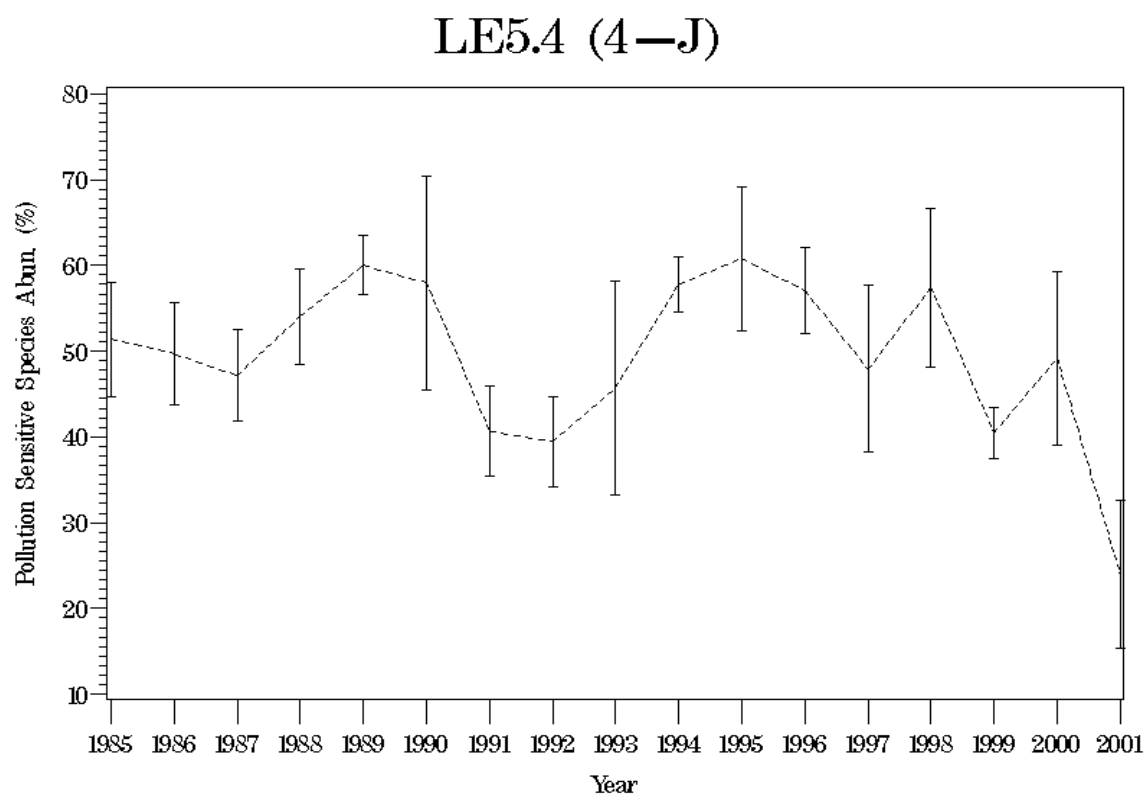


Figure 35. Plot of pollution sensitive species abundance against time at station LE5.4 for the period of 1985 through 2001.

LE5.4 (4-J)

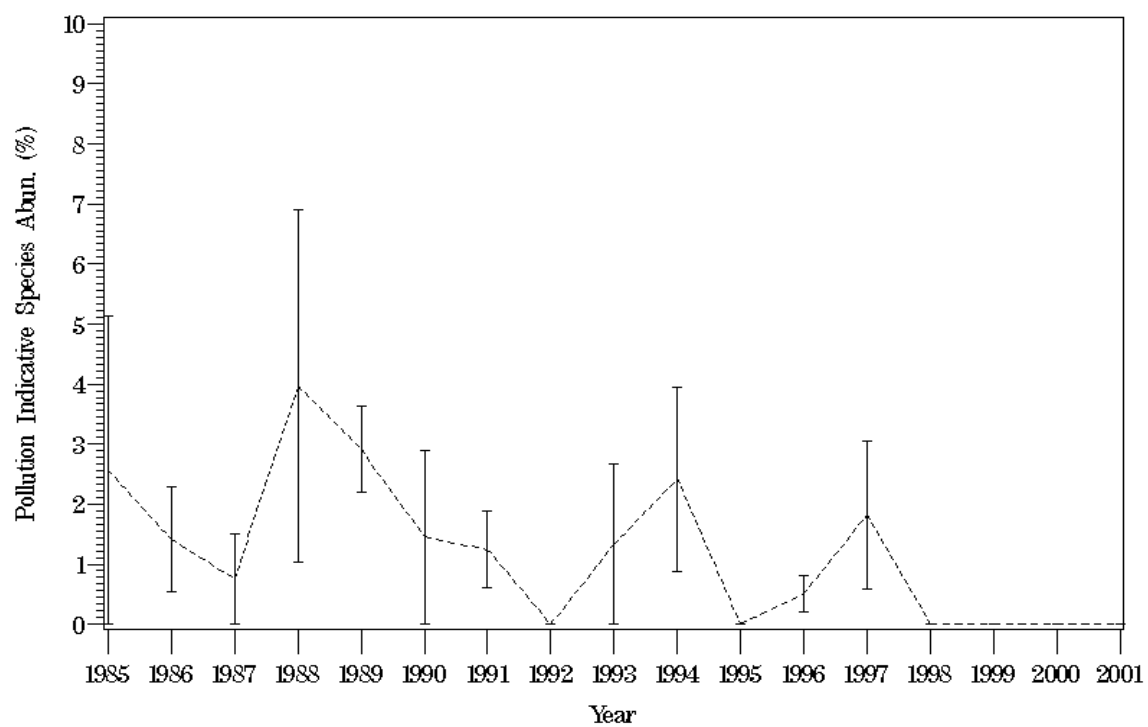


Figure 36. Plot of pollution indicative species abundance against time at station LE5.4 for the period of 1985 through 2001.

LE5.4 (4-J)

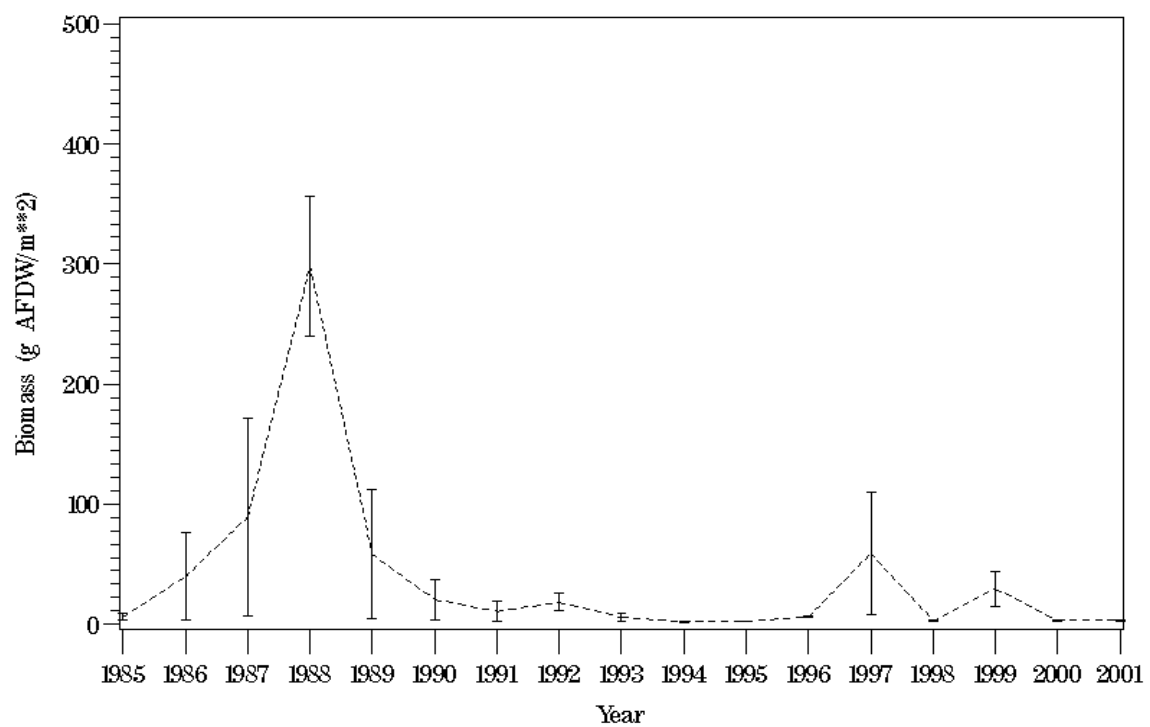


Figure 37. Plot of total benthic community biomass against time at station LE5.4 for the period of 1985 through 2001.

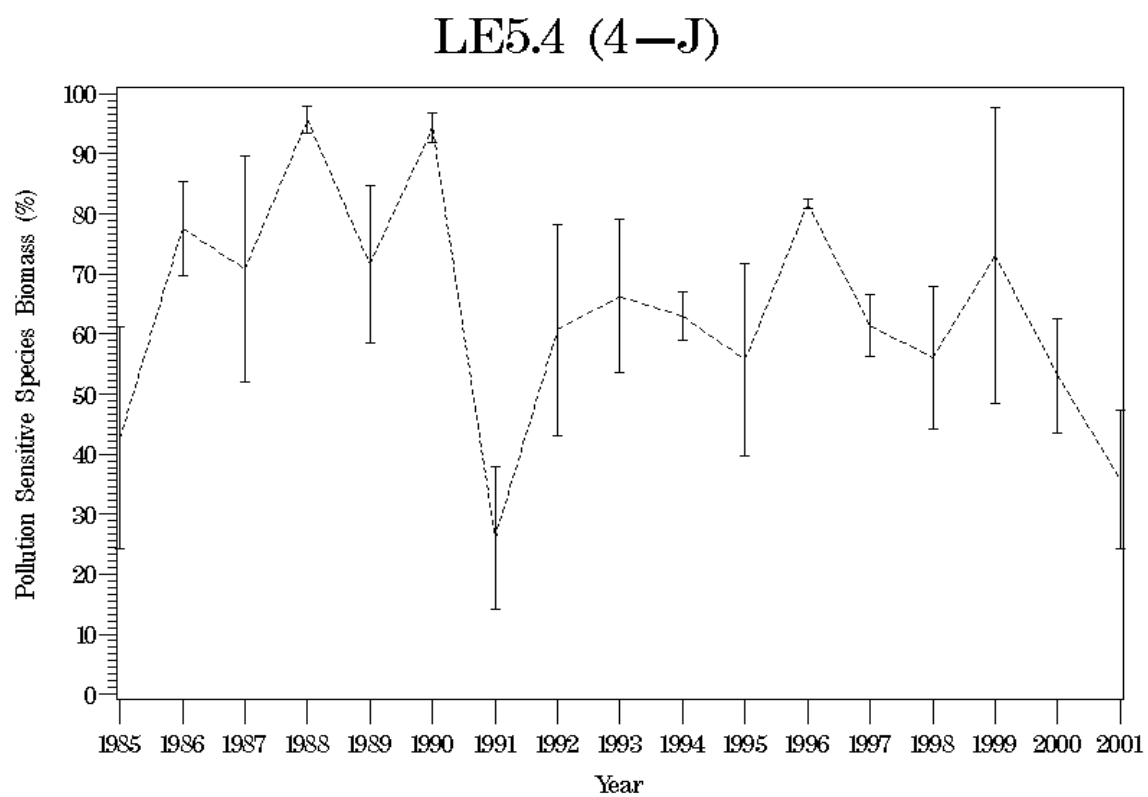


Figure 38. Plot of pollution sensitive species biomass against time at station LE5.4 for the period of 1985 through 2001.

LE5.4 (4-J)

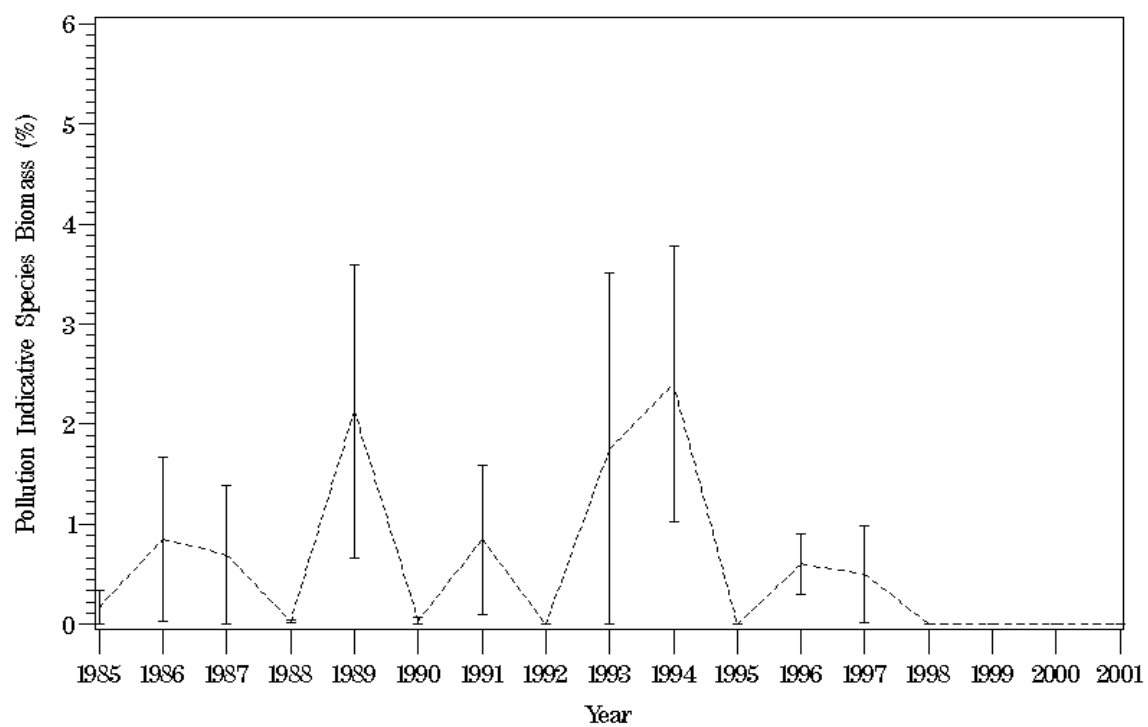


Figure 39. Plot of pollution indicative species biomass against time at station LE5.4 for the period of 1985 through 2001.

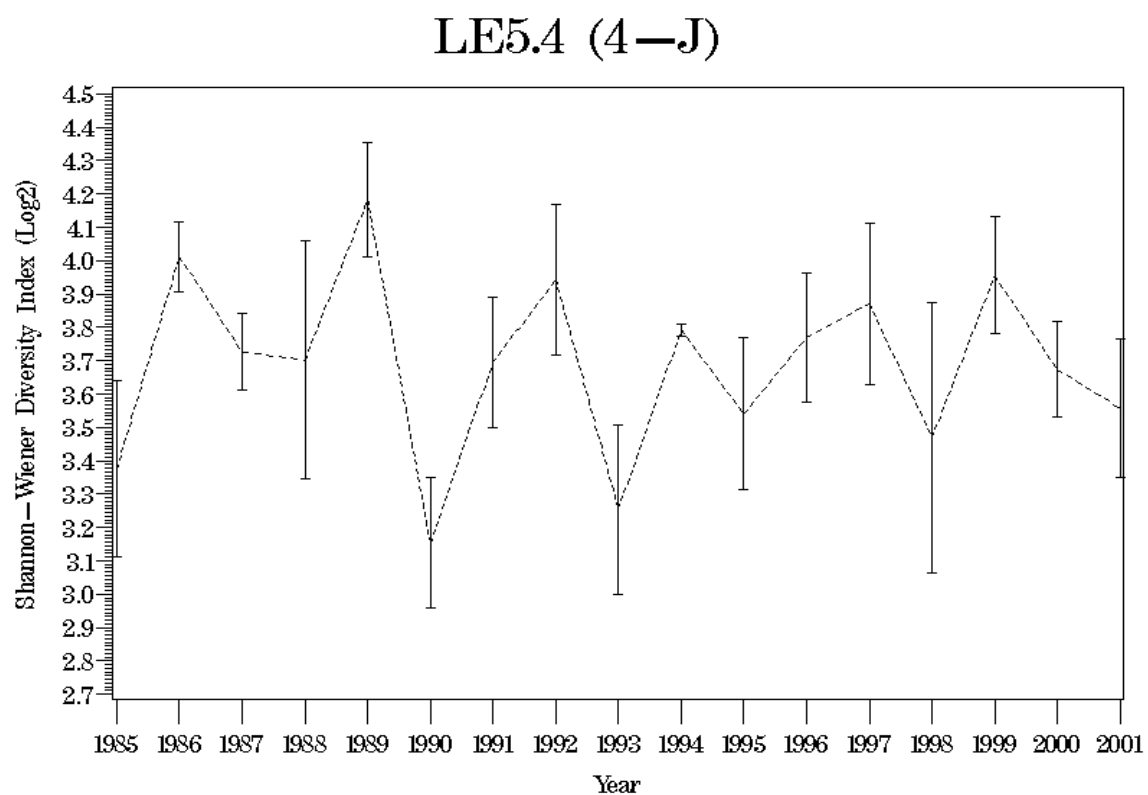


Figure 40. Plot of the Shannon-Weiner diversity index against time at station LE5.4 for the period of 1985 through 2001.

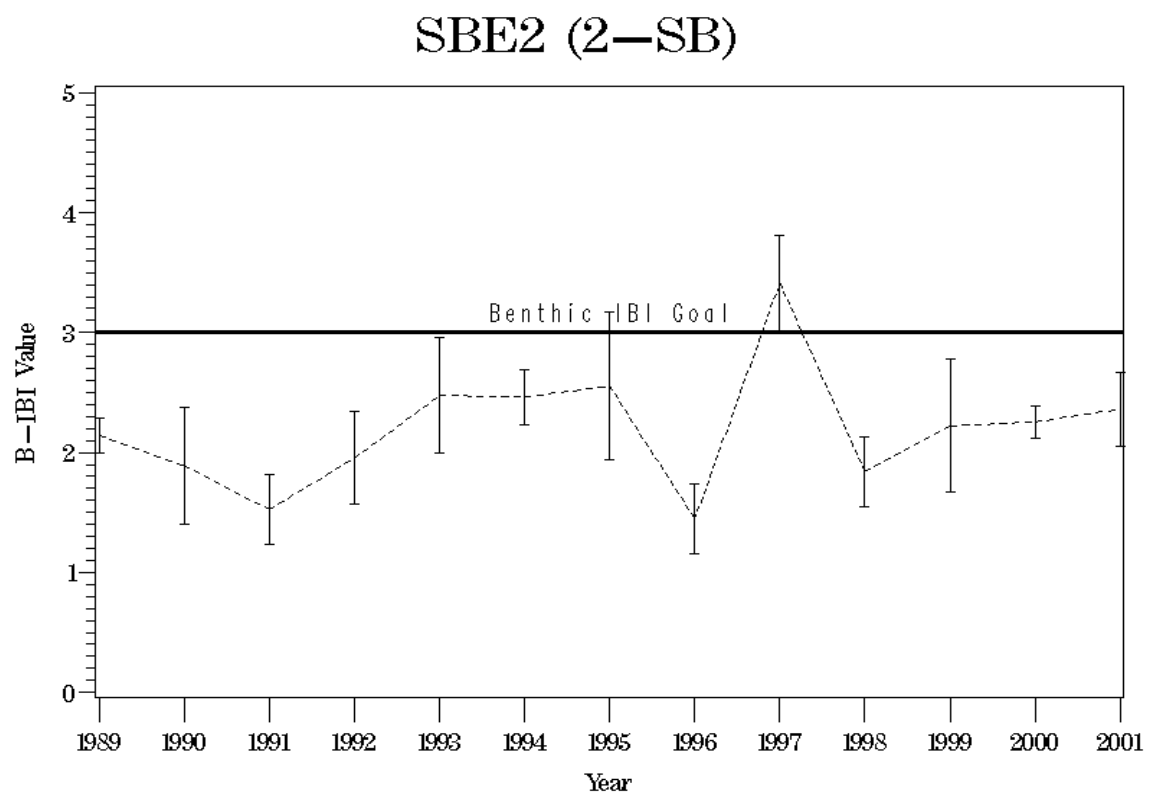


Figure 41. Plot of the benthic IBI against time at station SBE2 for the period of 1985 through 2001.

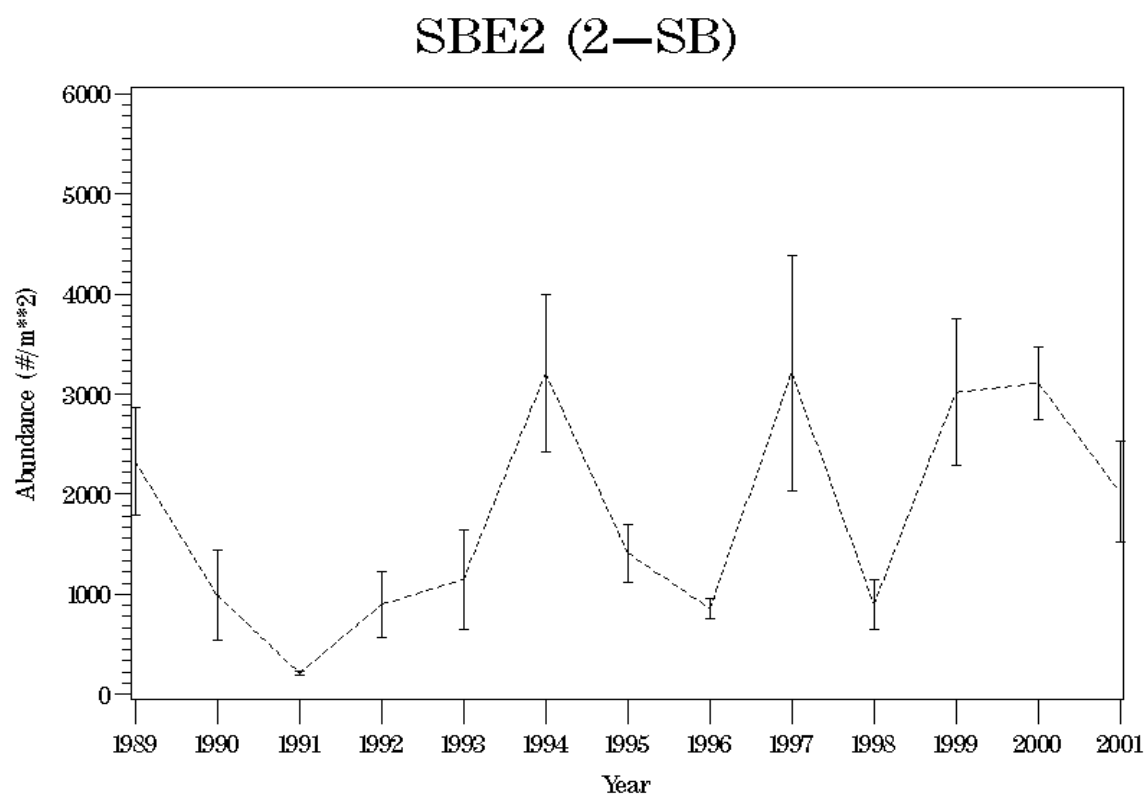


Figure 42. Plot of total benthic community abundance against time at station SBE2 for the period of 1985 through 2001.

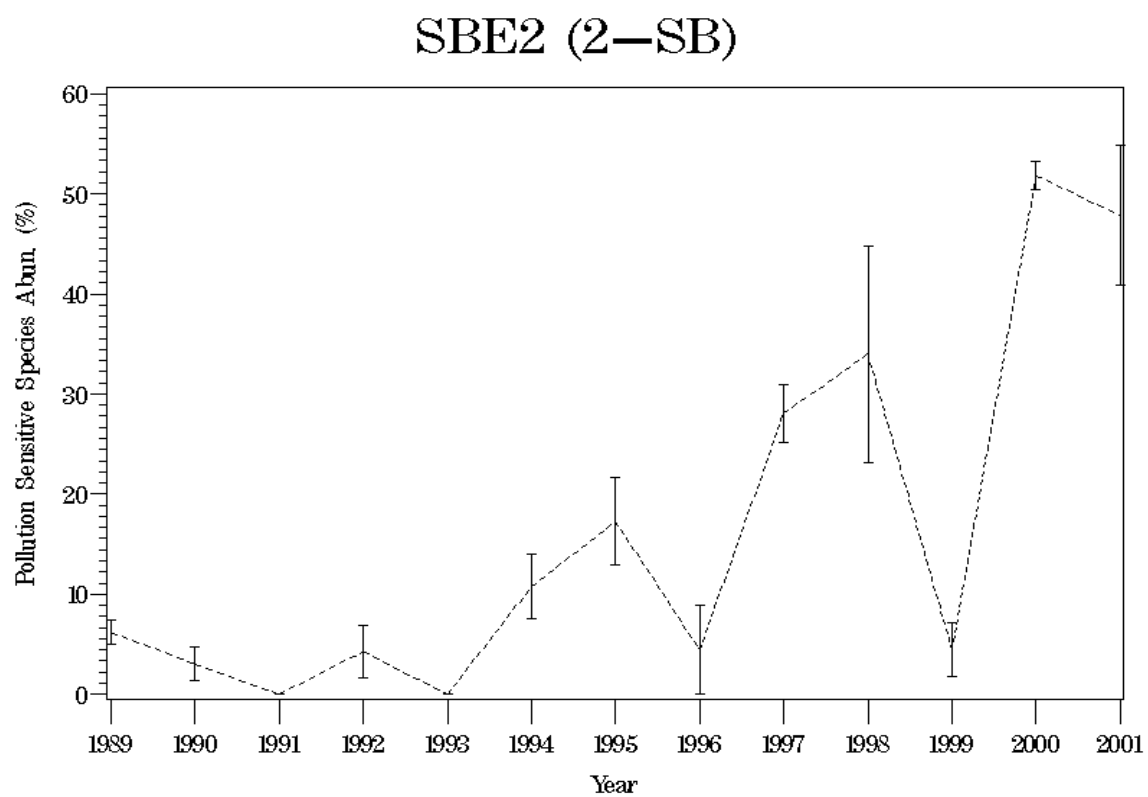


Figure 43. Plot of pollution sensitive species abundance against time at station SBE2 for the period of 1985 through 2001.

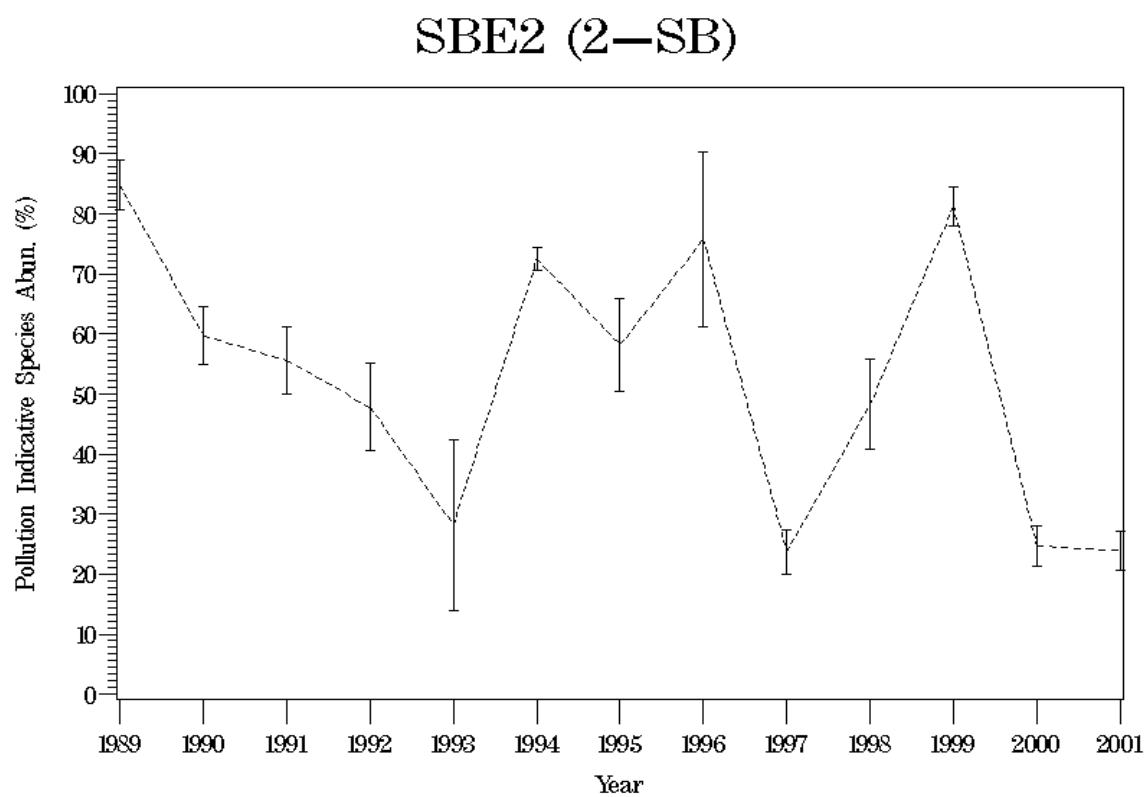


Figure 44. Plot of pollution indicative species abundance against time at station SBE2 for the period of 1985 through 2001.

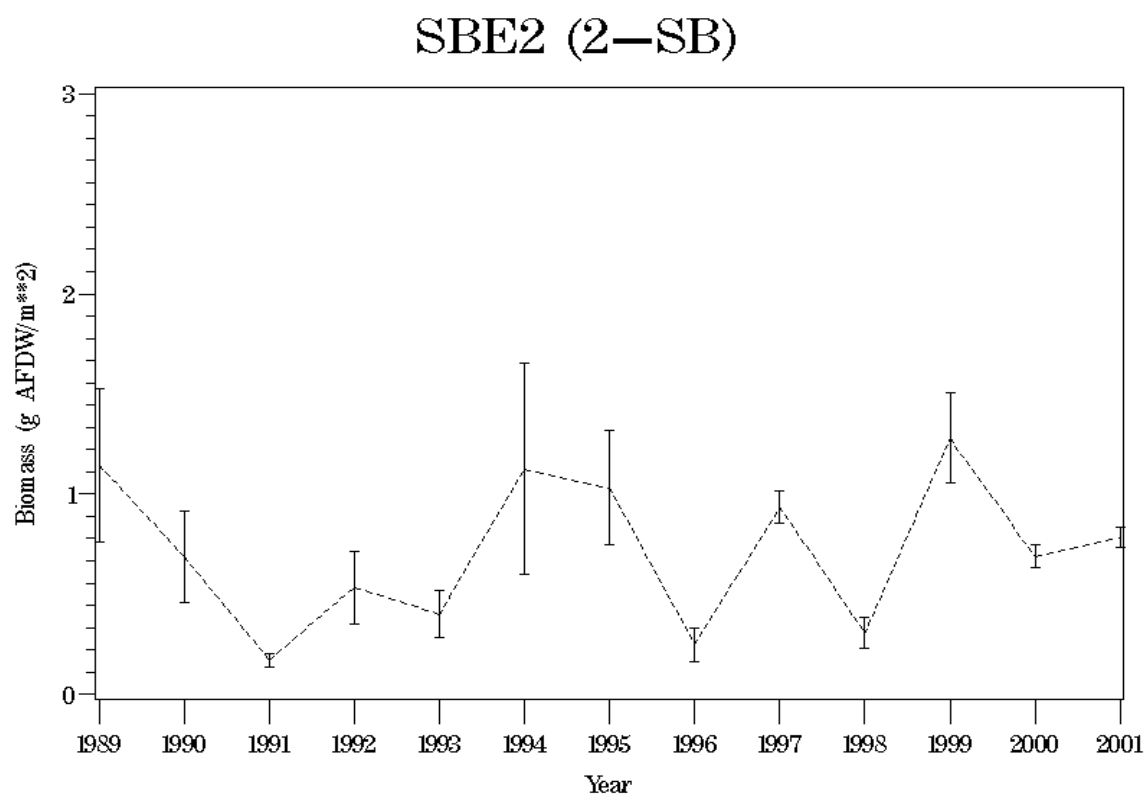


Figure 45. Plot of total benthic community biomass against time at station SBE2 for the period of 1985 through 2001.

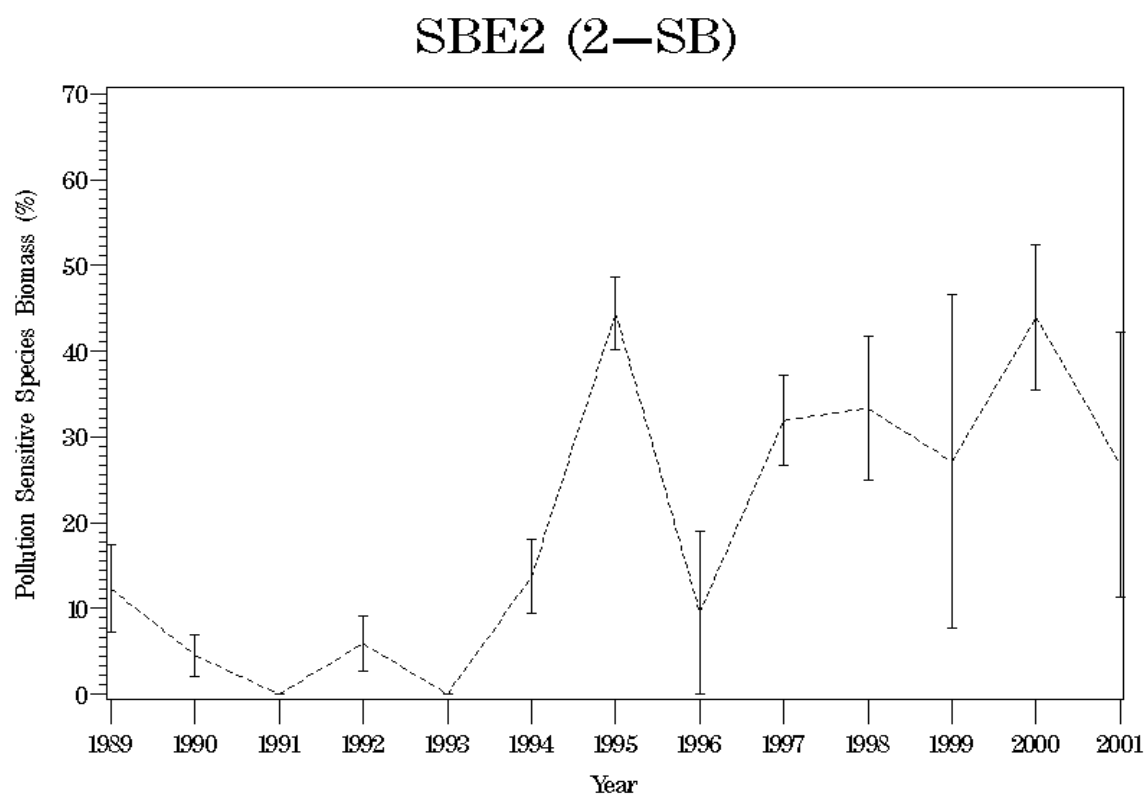


Figure 46. Plot of pollution sensitive species biomass against time at station SBE2 for the period of 1985 through 2001.

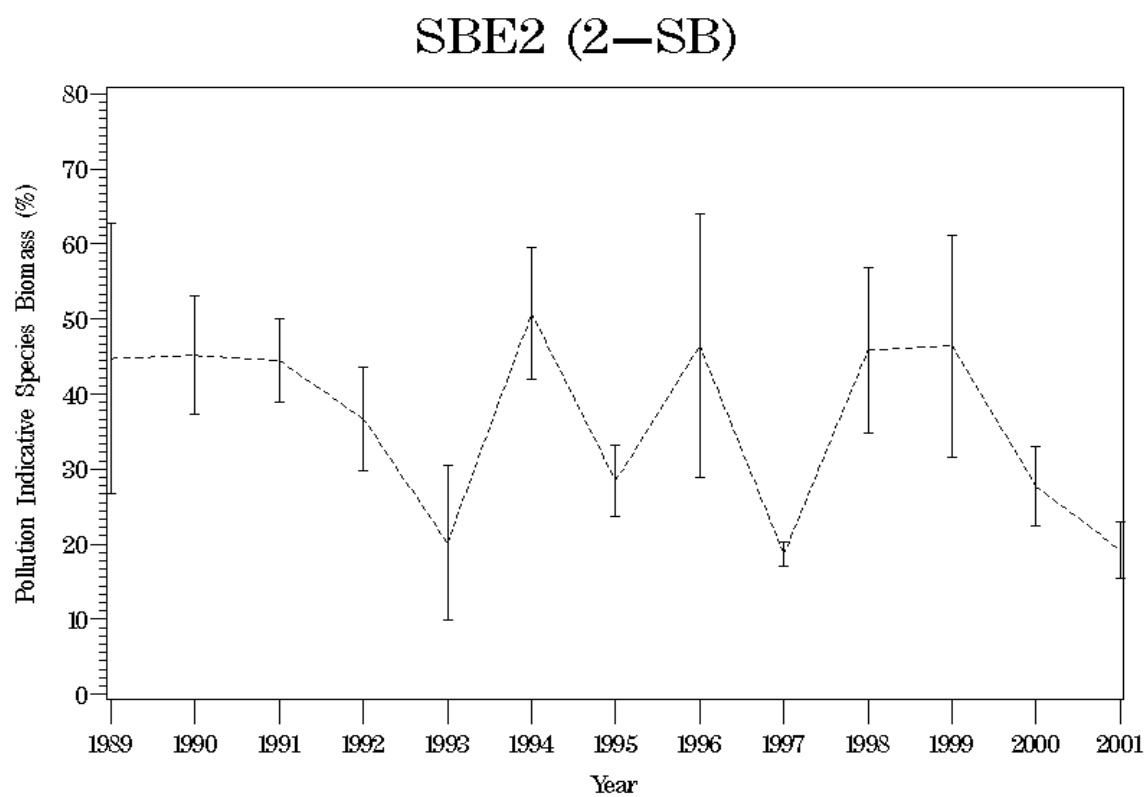


Figure 47. Plot of pollution indicative species biomass against time at station SBE2 for the period of 1985 through 2001.

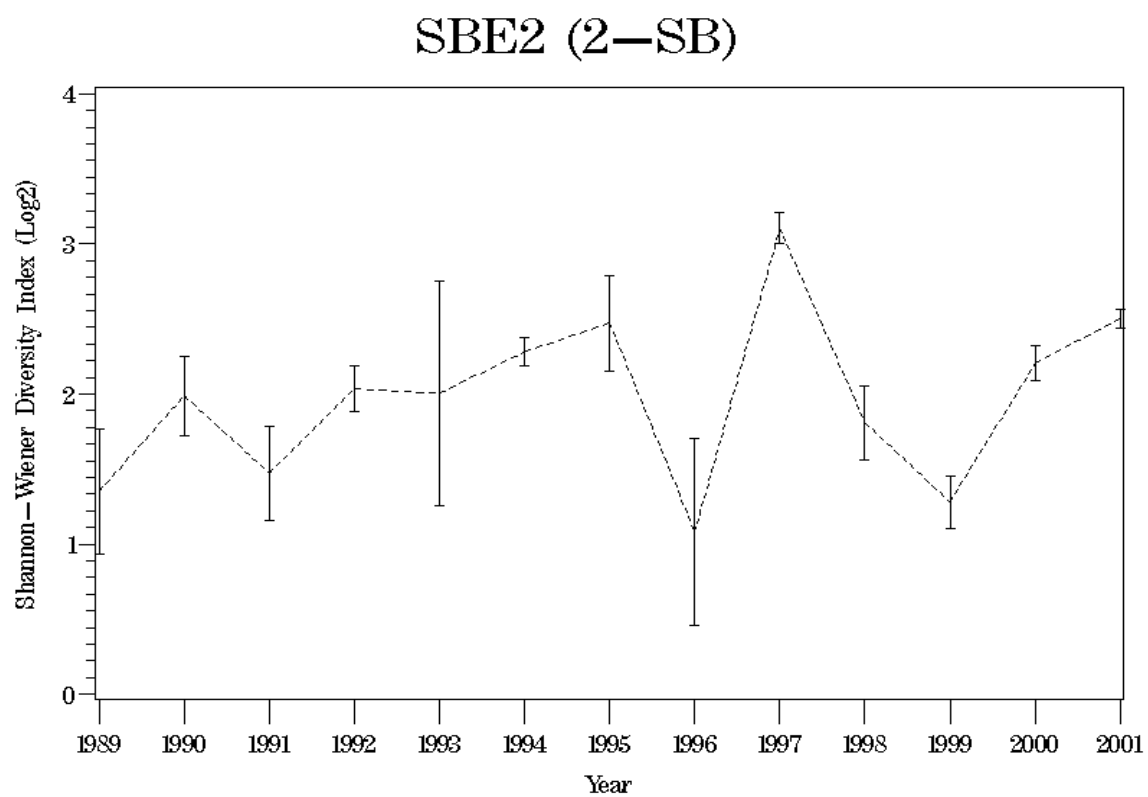


Figure 48. Plot of the Shannon-Weiner diversity index against time at station SBE2 for the period of 1985 through 2001.

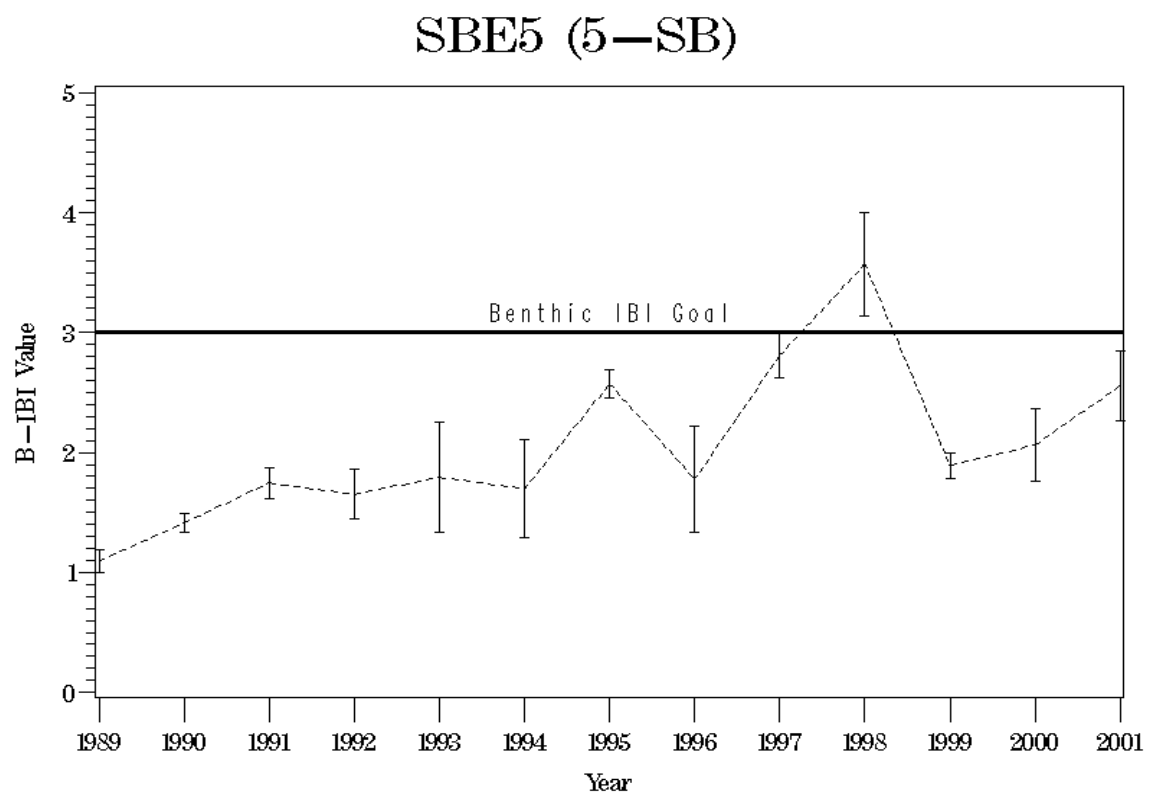


Figure 49. Plot of the benthic IBI against time at station SBE5 for the period of 1985 through 2001.

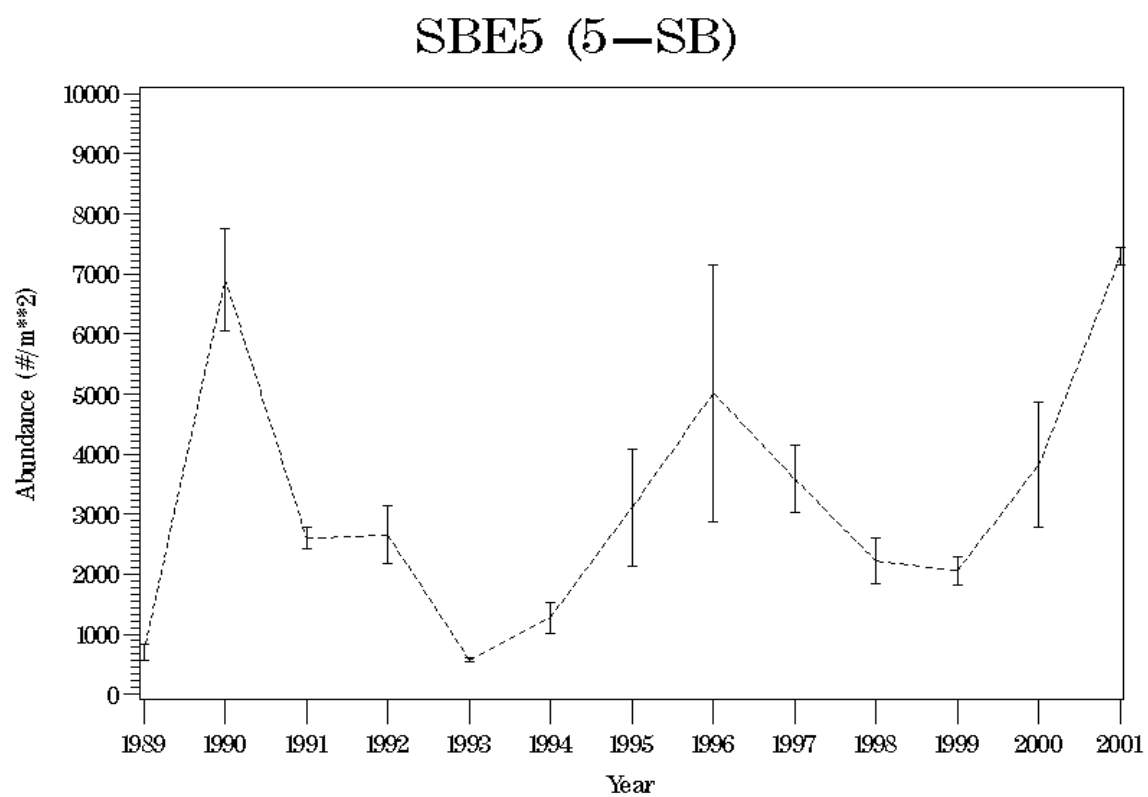


Figure 50. Plot of total benthic community abundance against time at station SBE5 for the period of 1985 through 2001.

SBE5 (5—SB)

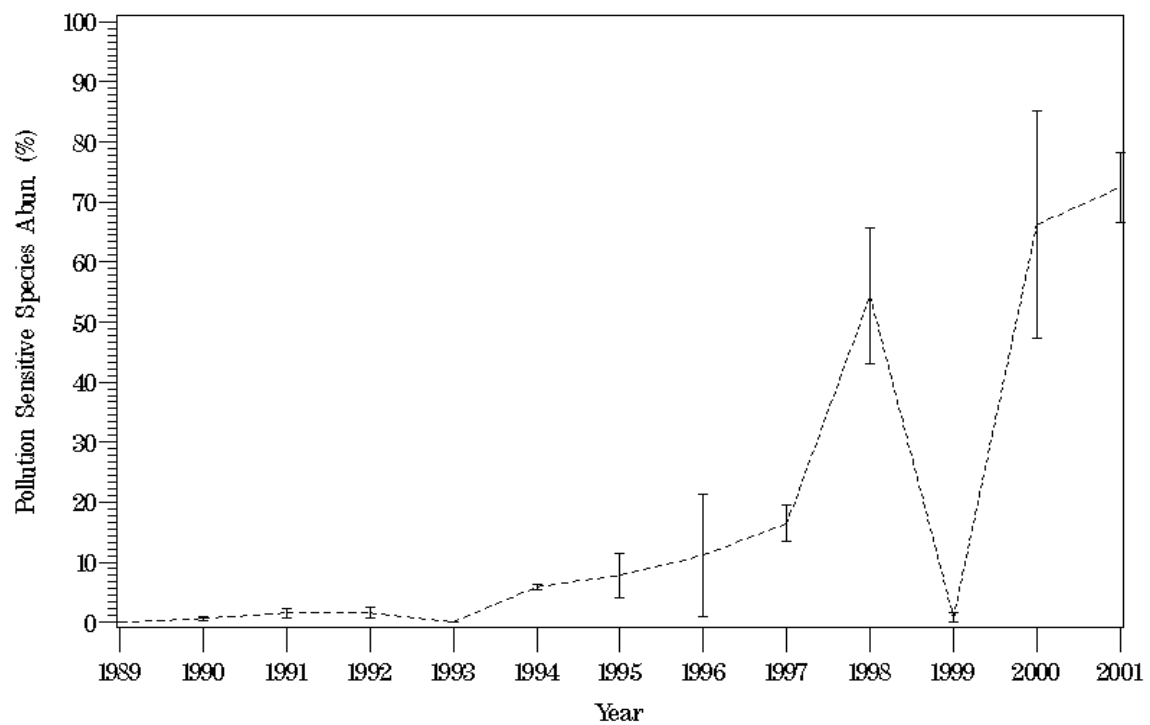


Figure 51. Plot of pollution sensitive species abundance against time at station SBE5 for the period of 1985 through 2001.

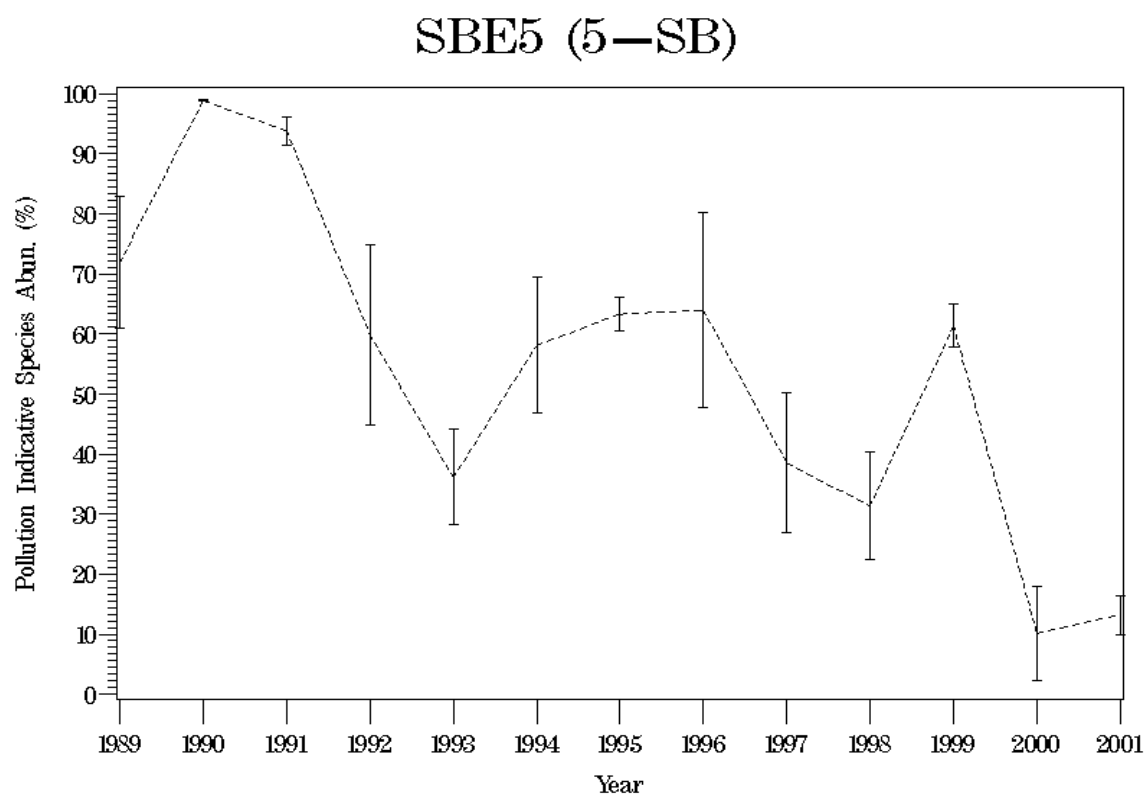


Figure 52. Plot of pollution indicative species abundance against time at station SBE5 for the period of 1985 through 2001.

SBE5 (5—SB)

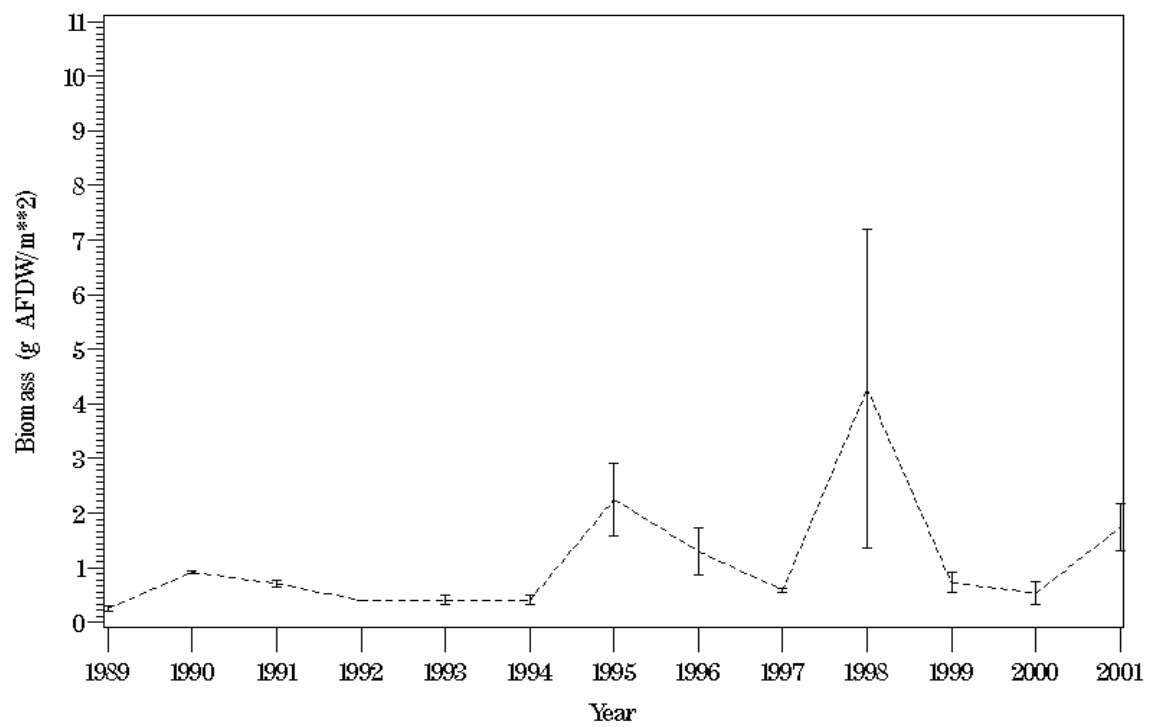


Figure 53. Plot of total benthic community biomass against time at station SBE5 for the period of 1985 through 2001.

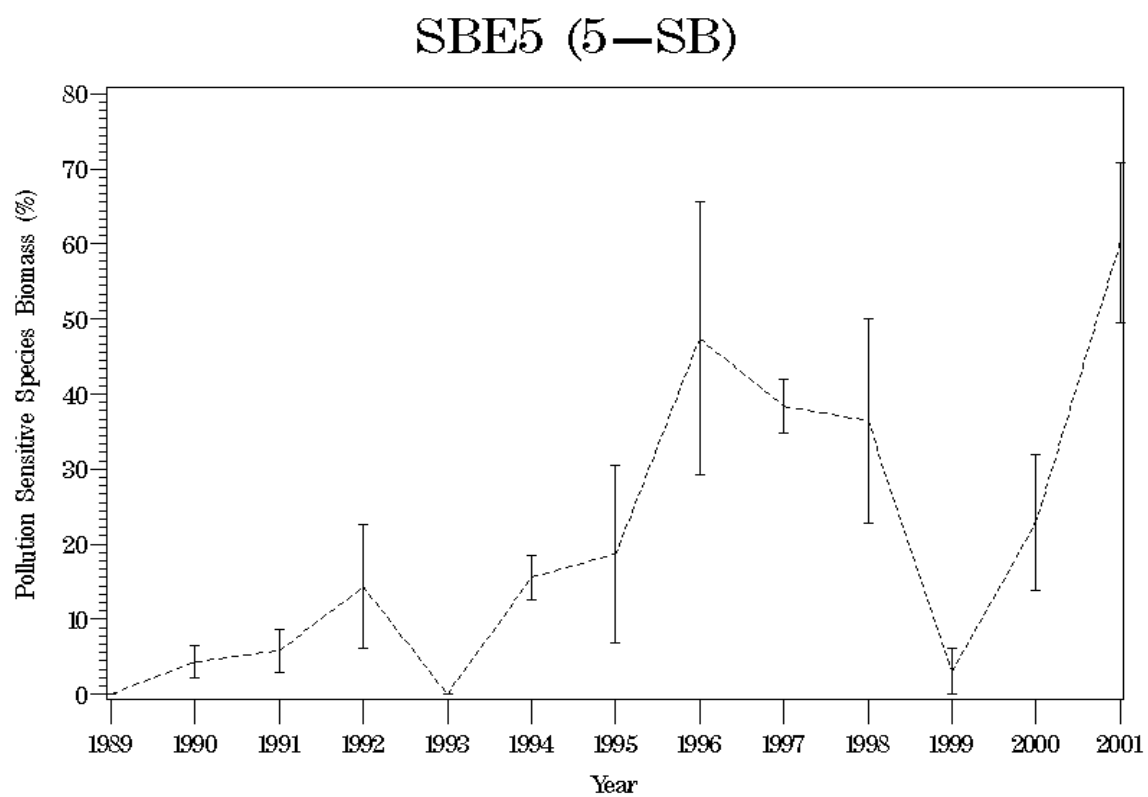


Figure 54. Plot of pollution sensitive species biomass against time at station SBE5 for the period of 1985 through 2001.

SBE5 (5—SB)

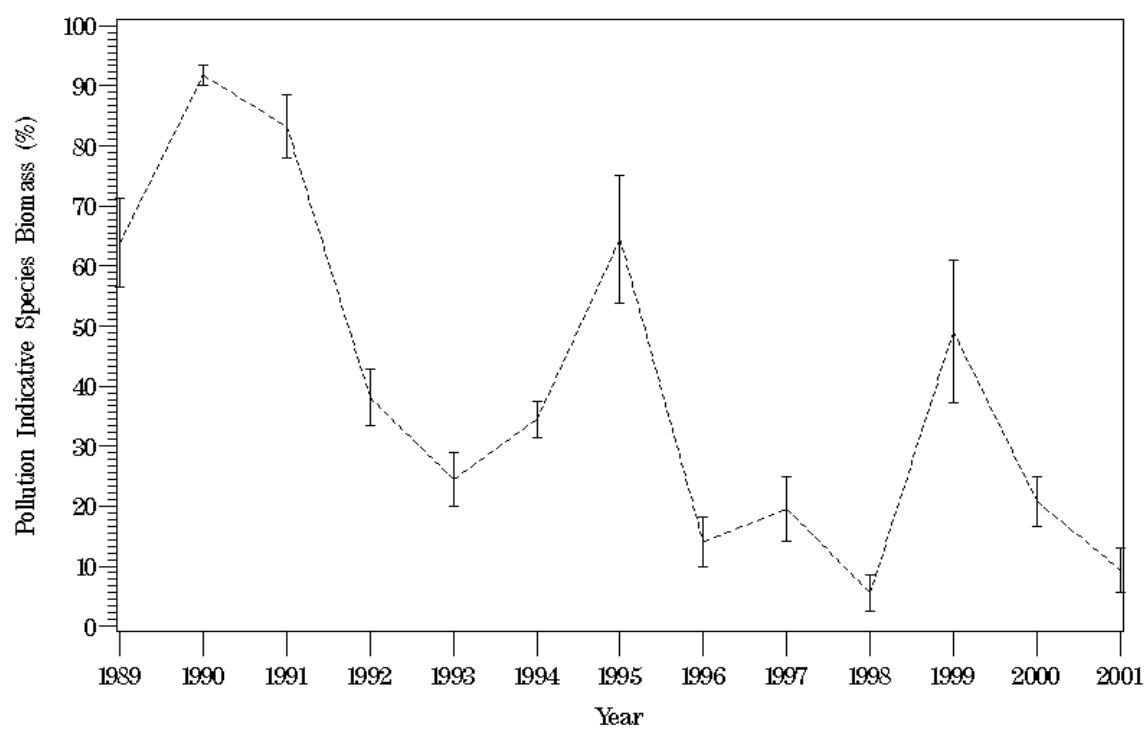


Figure 55. Plot of pollution indicative species biomass against time at station SBE5 for the period of 1985 through 2001.

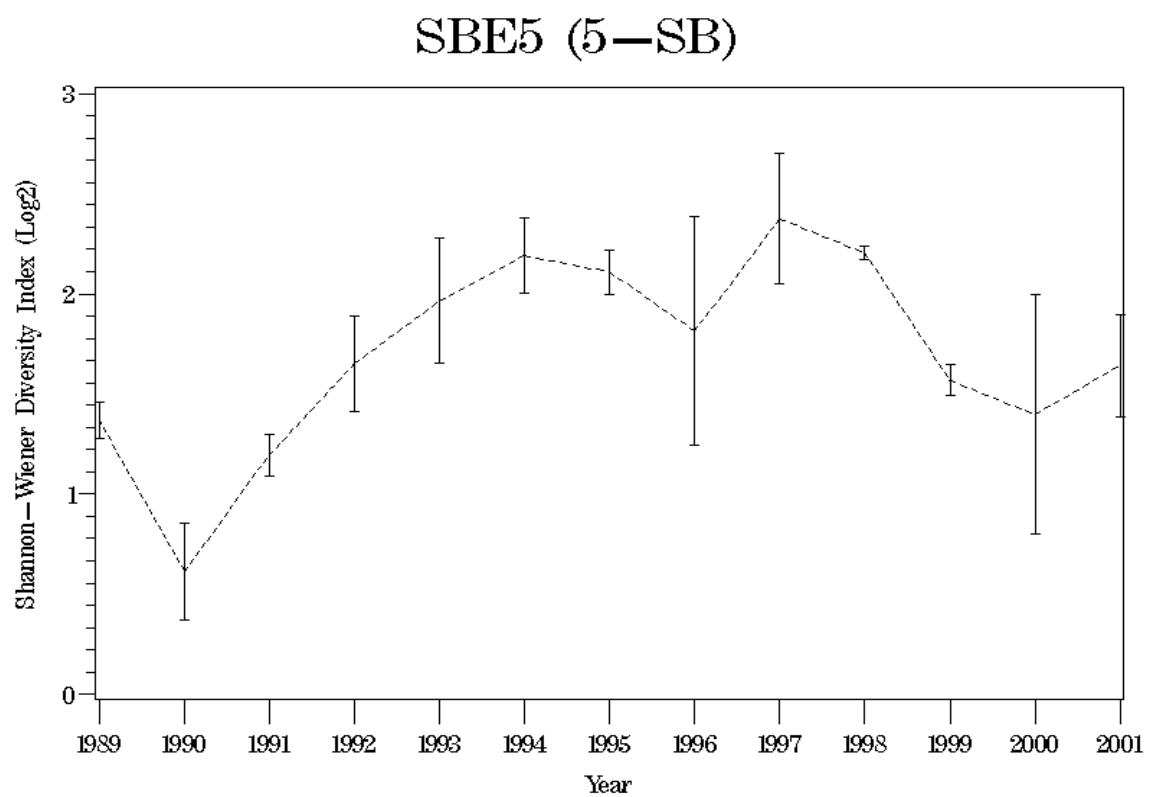


Figure 56. Plot of the Shannon-Weiner diversity index against time at station SBE5 for the period of 1985 through 2001.

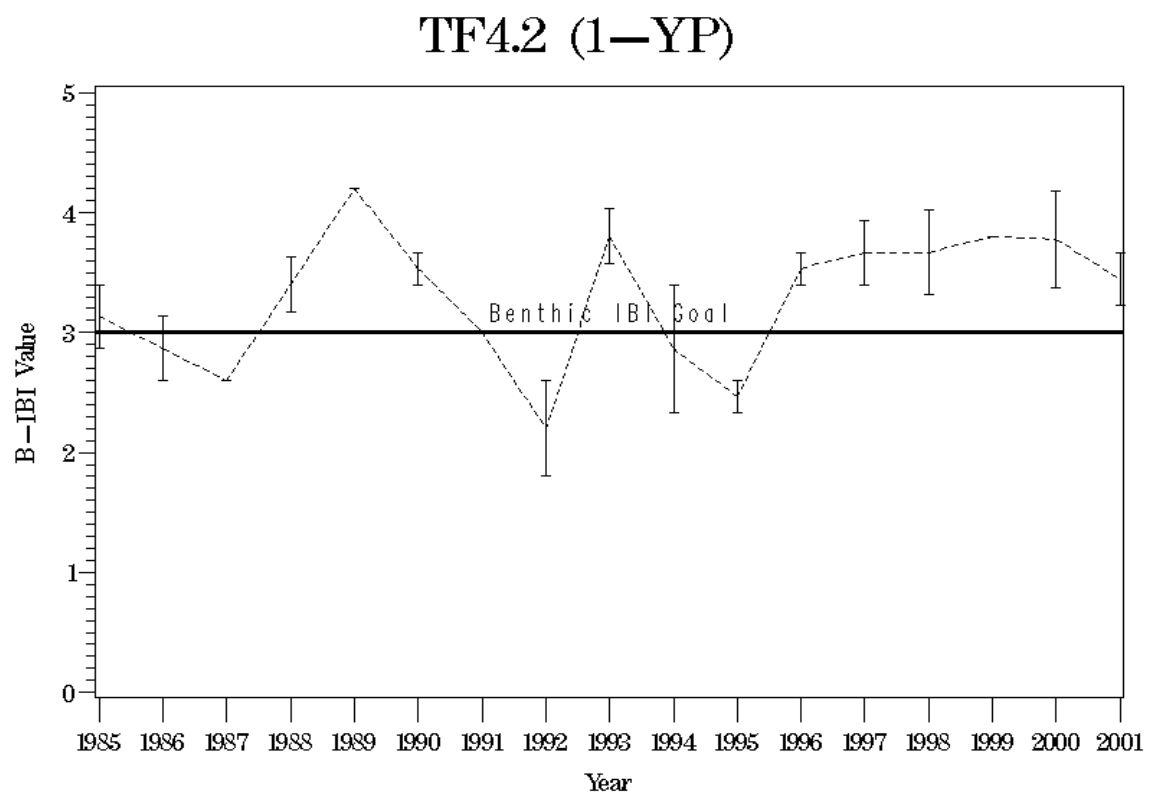


Figure 57. Plot of the benthic IBI against time at station TF4.2 for the period of 1985 through 2001.

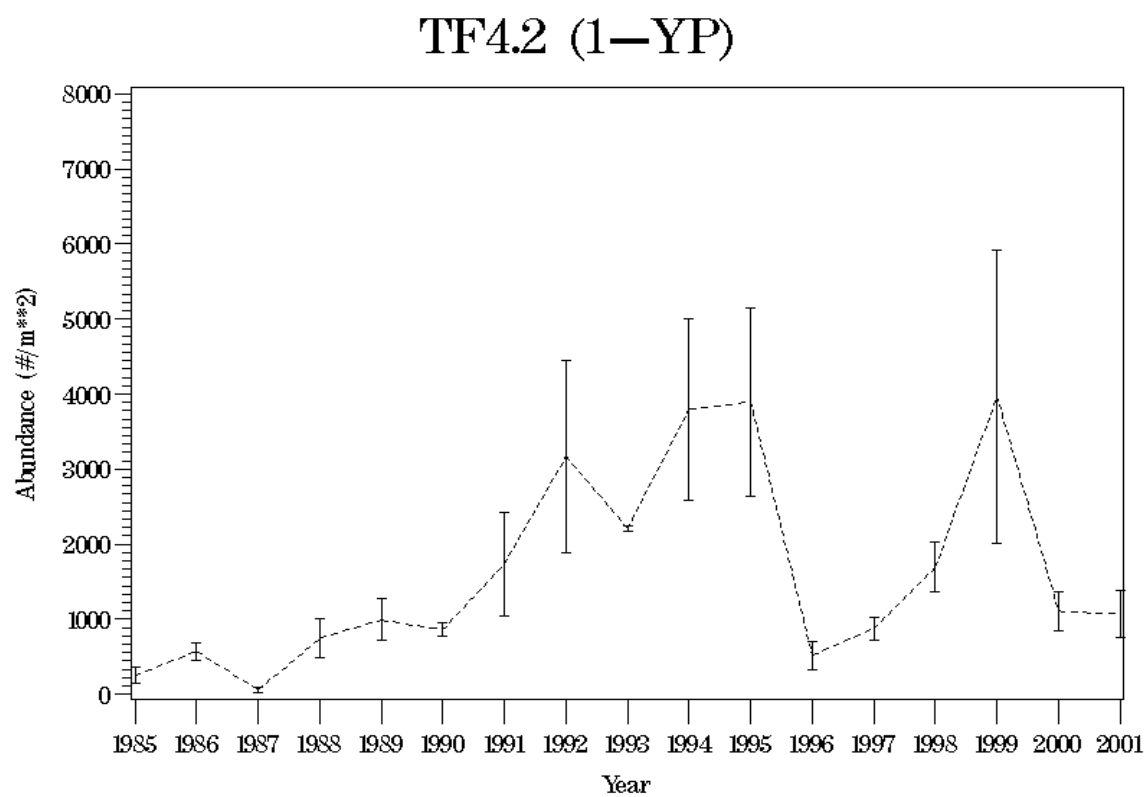


Figure 58. Plot of total benthic community abundance against time at station TF4.2 for the period of 1985 through 2001.

TF4.2 (1-YP)

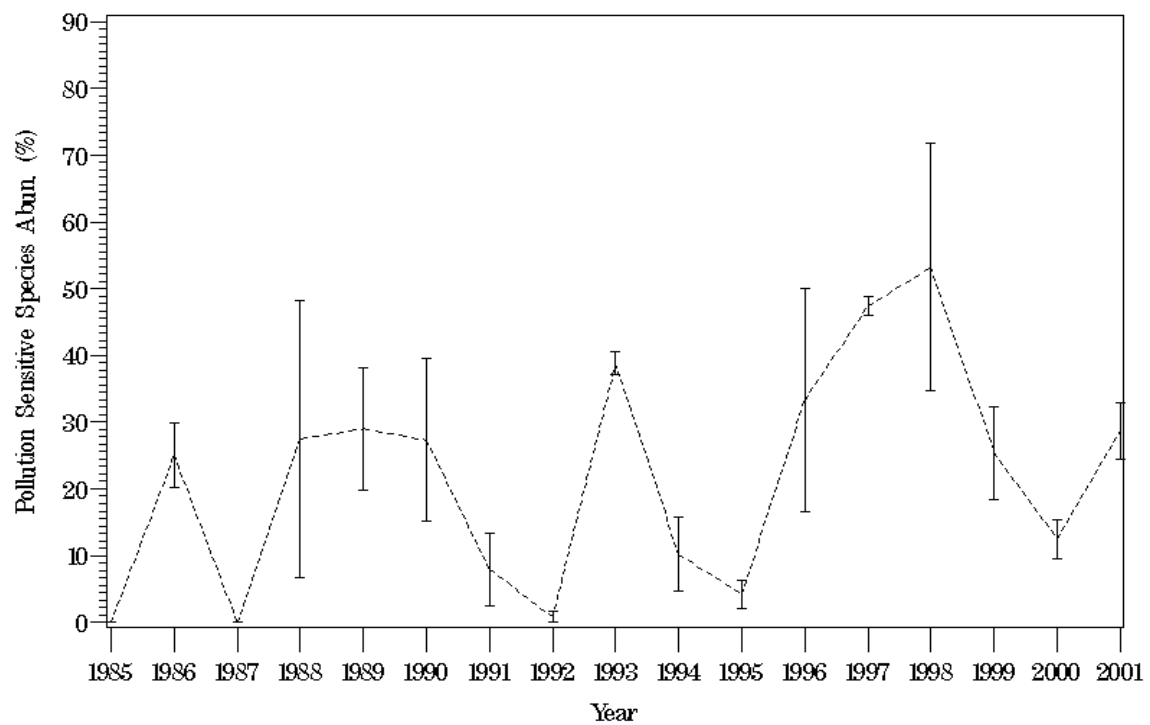


Figure 59. Plot of pollution sensitive species abundance against time at station TF4.2 for the period of 1985 through 2001.

TF4.2 (1-YP)

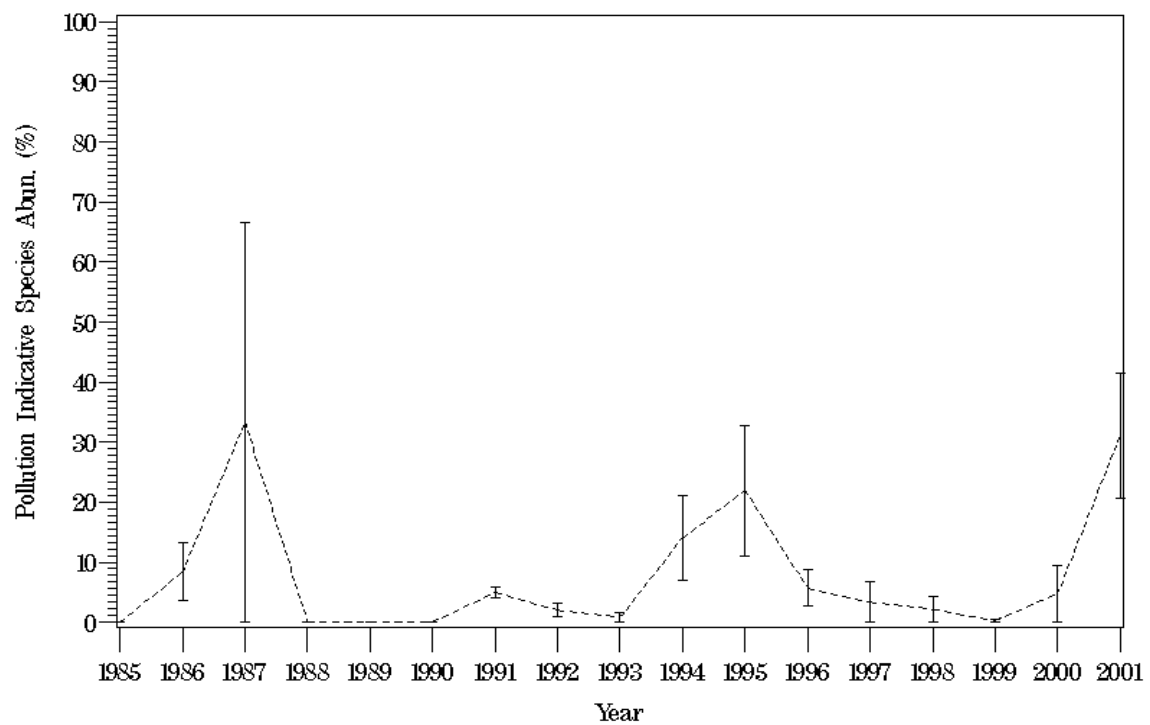


Figure 60. Plot of pollution indicative species abundance against time at station TF4.2 for the period of 1985 through 2001.

TF4.2 (1-YP)

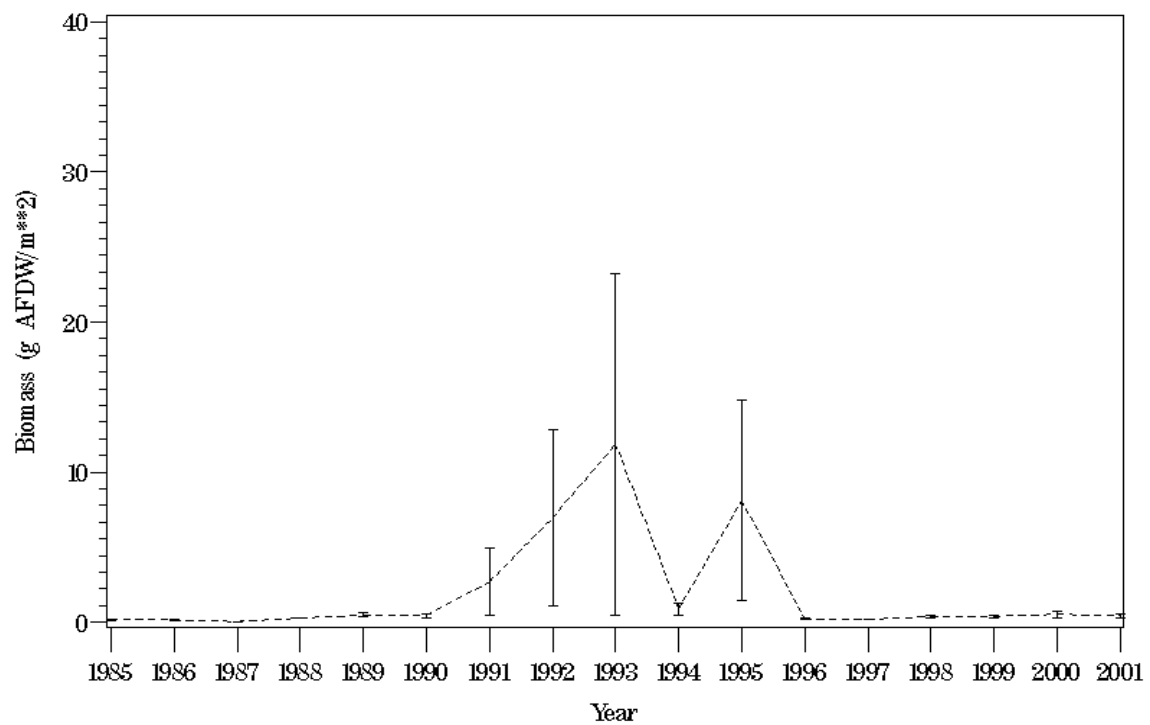


Figure 61. Plot of total benthic community biomass against time at station TF4.2 for the period of 1985 through 2001.

TF4.2 (1-YP)

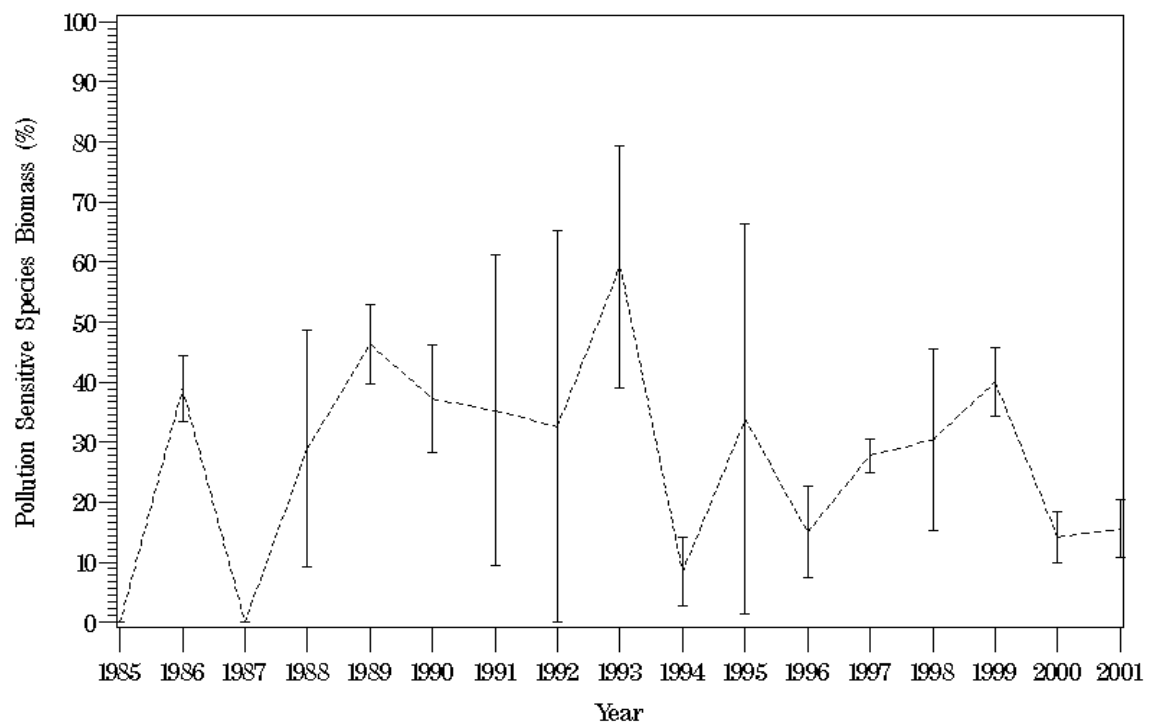


Figure 62. Plot of pollution sensitive species biomass against time at station TF4.2 for the period of 1985 through 2001.

TF4.2 (1-YP)

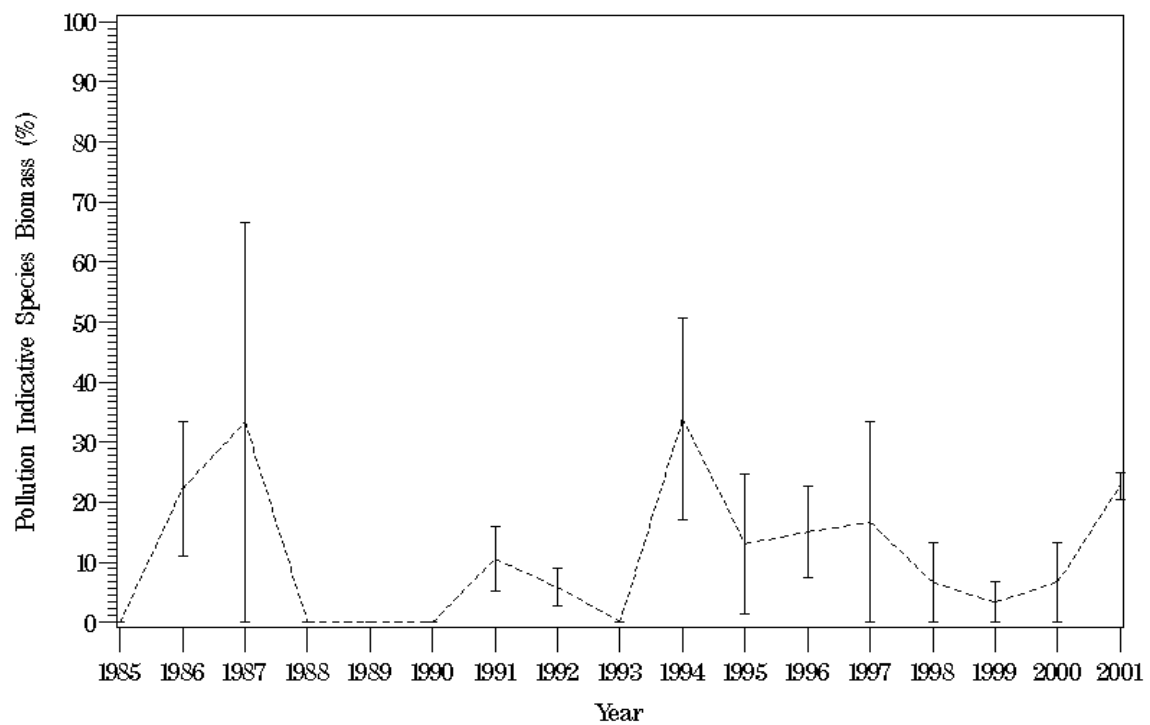


Figure 63. Plot of pollution indicative species biomass against time at station TF4.2 for the period of 1985 through 2001.

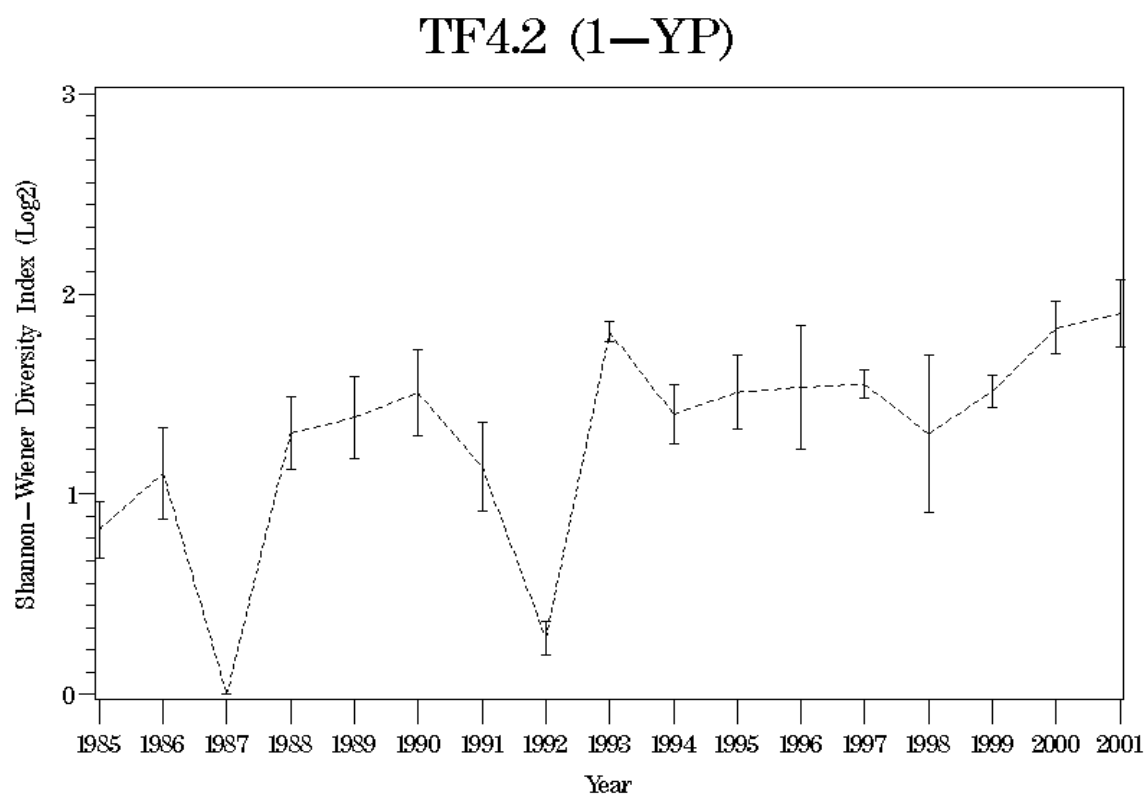


Figure 64. Plot of the Shannon-Weiner diversity index against time at station TF4.2 for the period of 1985 through 2001.

RET4.3 (2-YP)

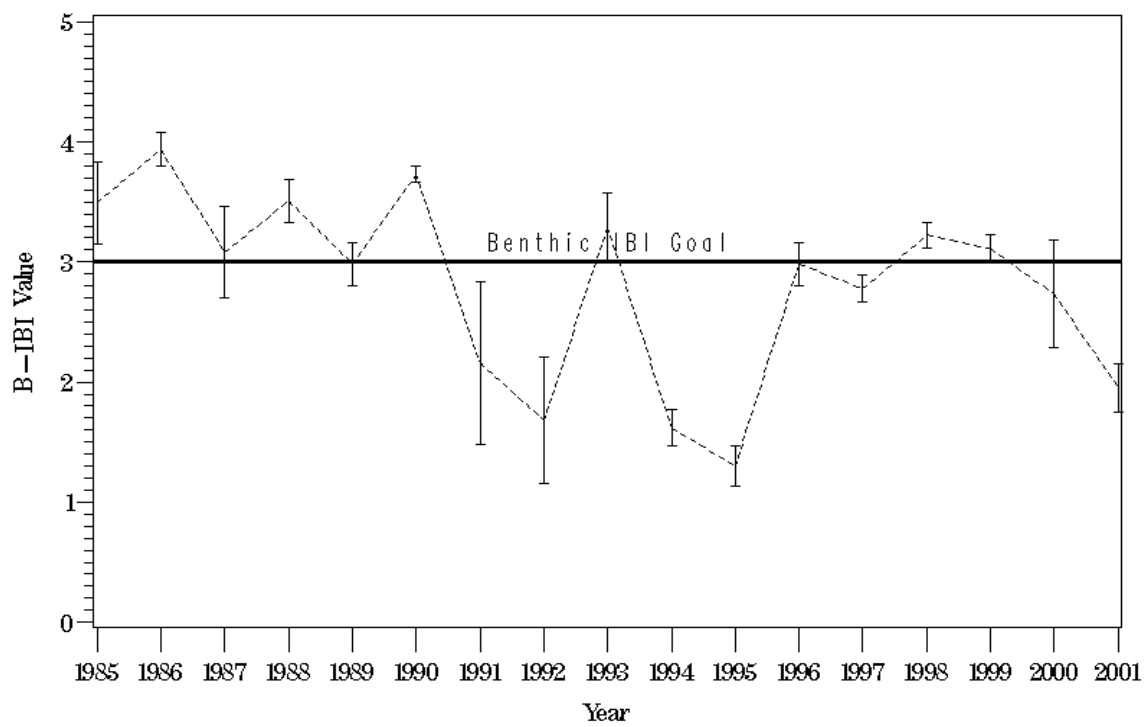


Figure 65. Plot of the benthic IBI against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

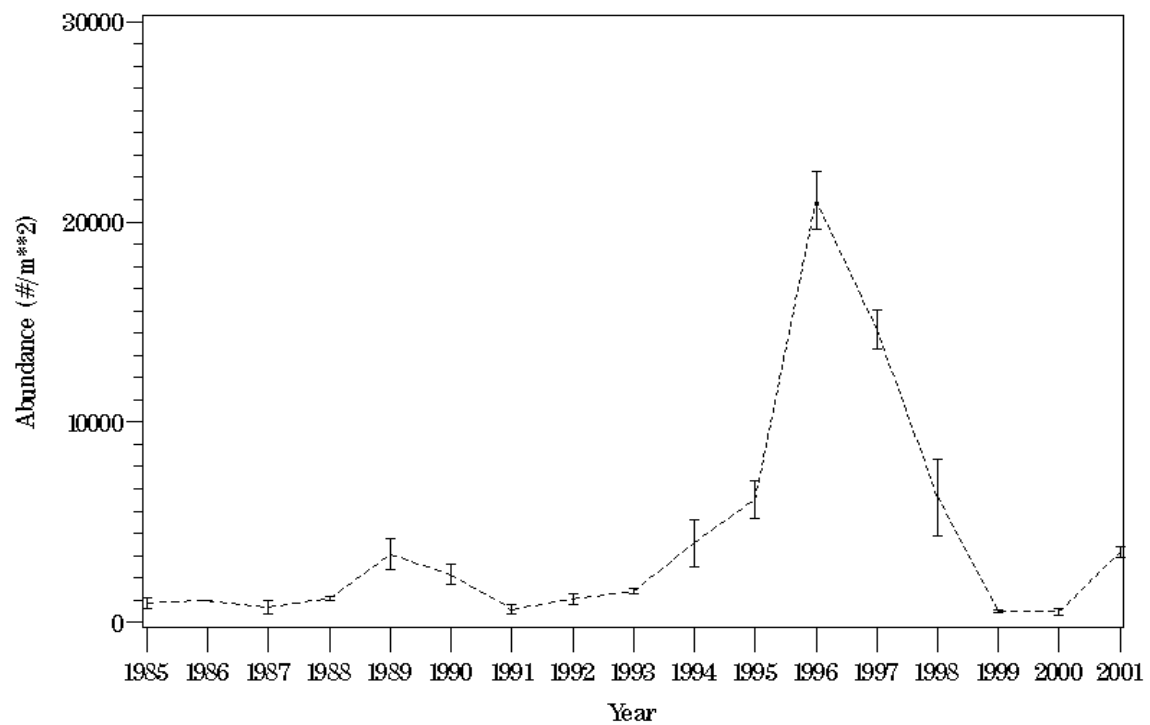


Figure 66. Plot of total benthic community abundance against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

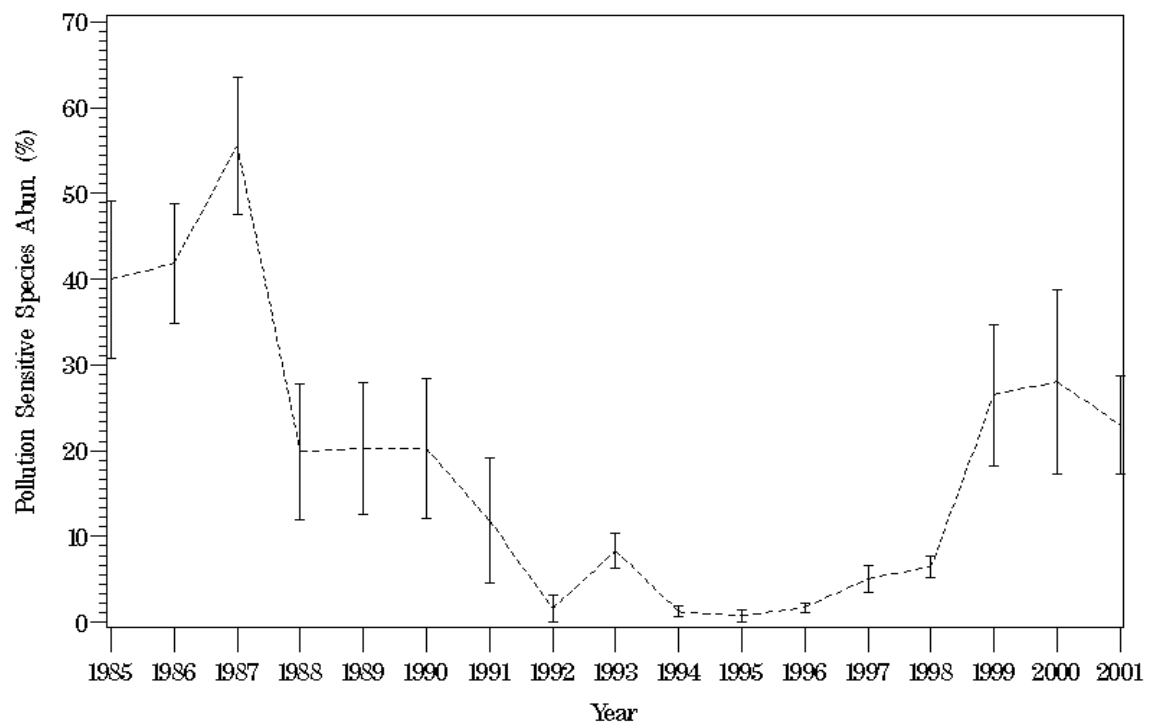


Figure 67. Plot of pollution sensitive species abundance against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

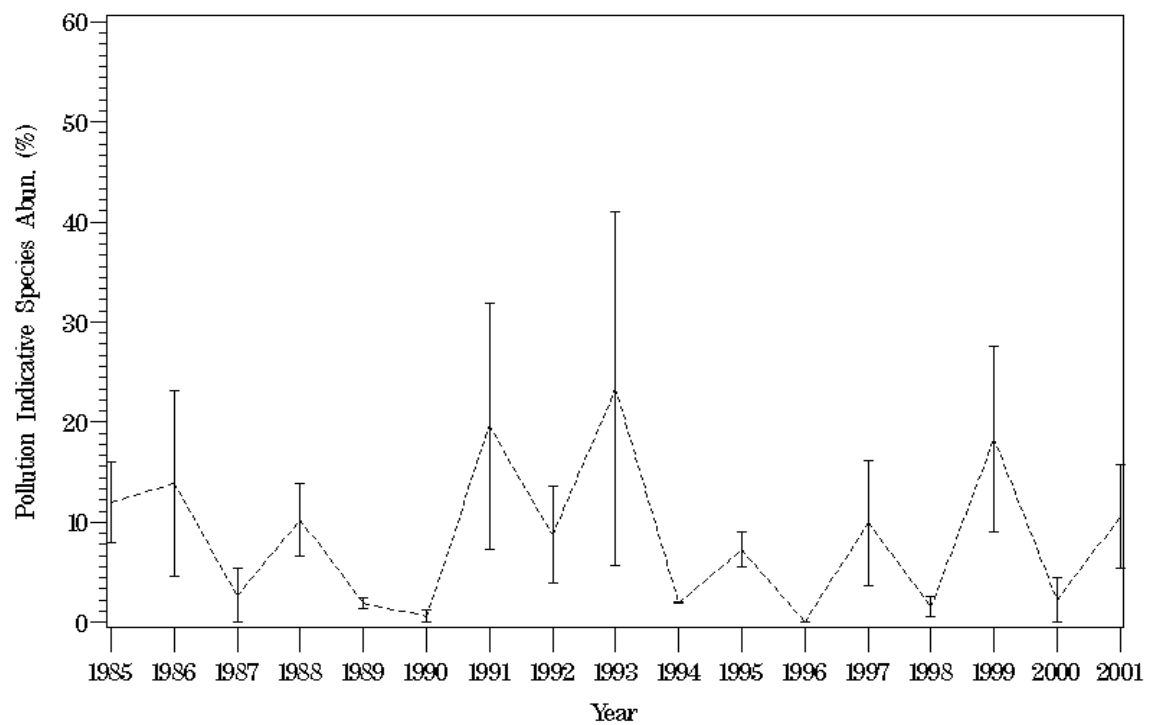


Figure 68. Plot of pollution indicative species abundance against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

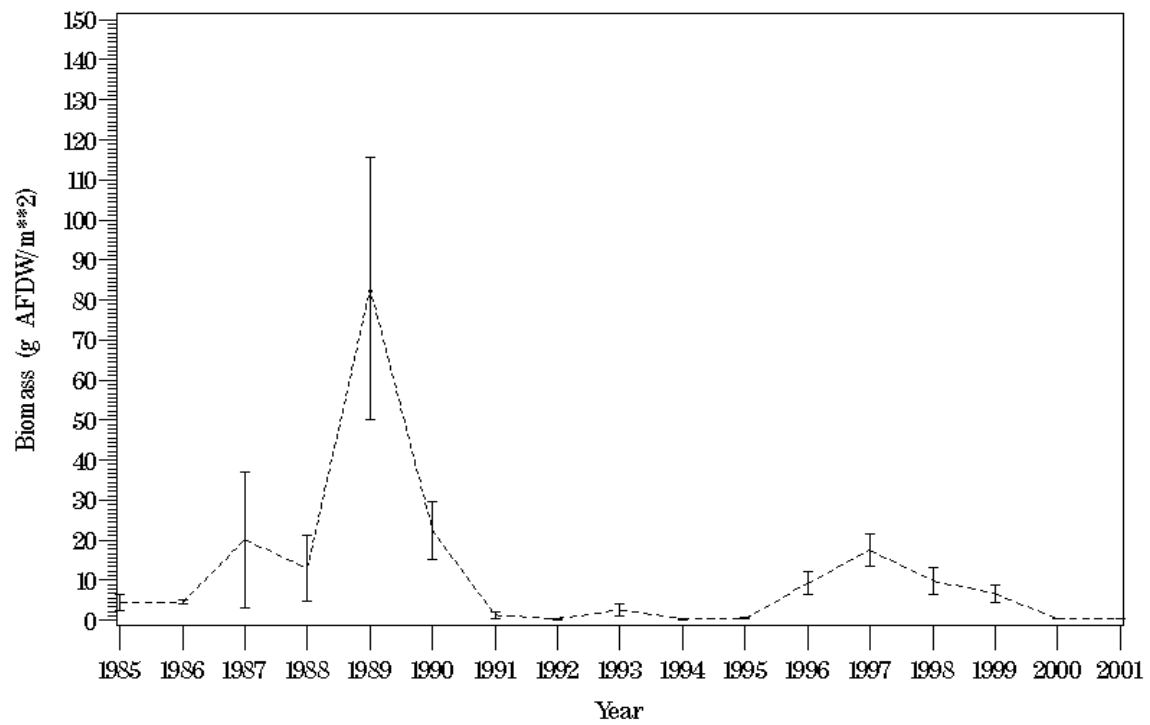


Figure 69. Plot of total benthic community biomass against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

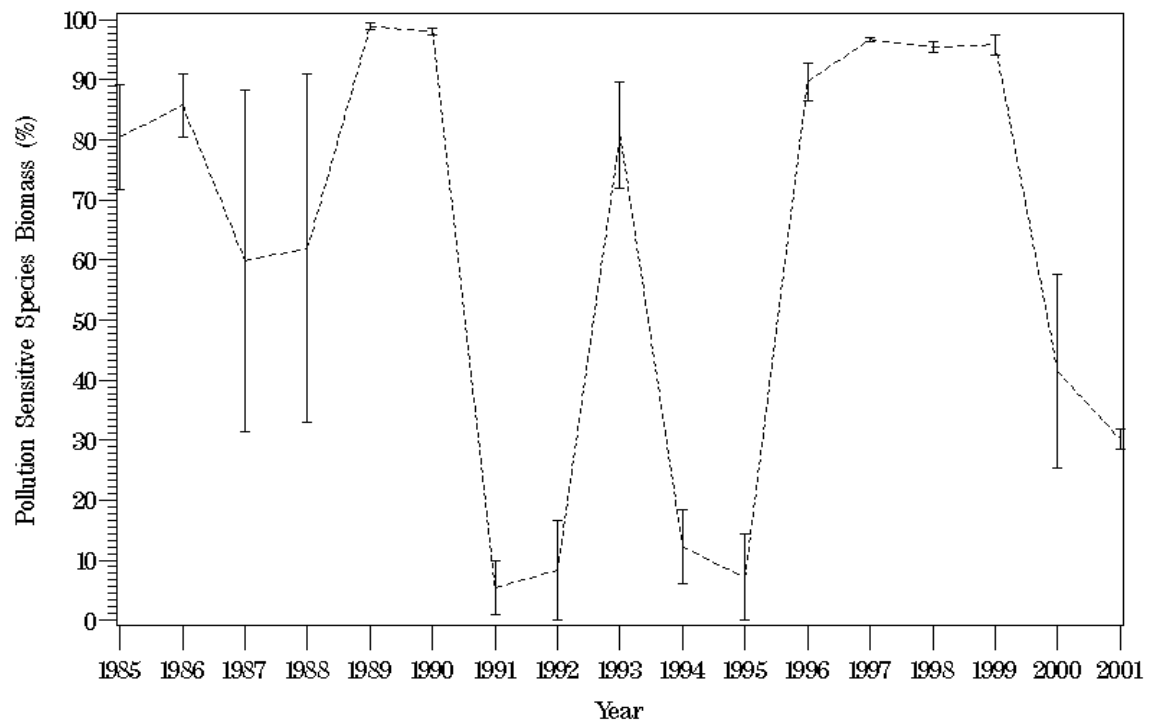


Figure 70. Plot of pollution sensitive species biomass against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

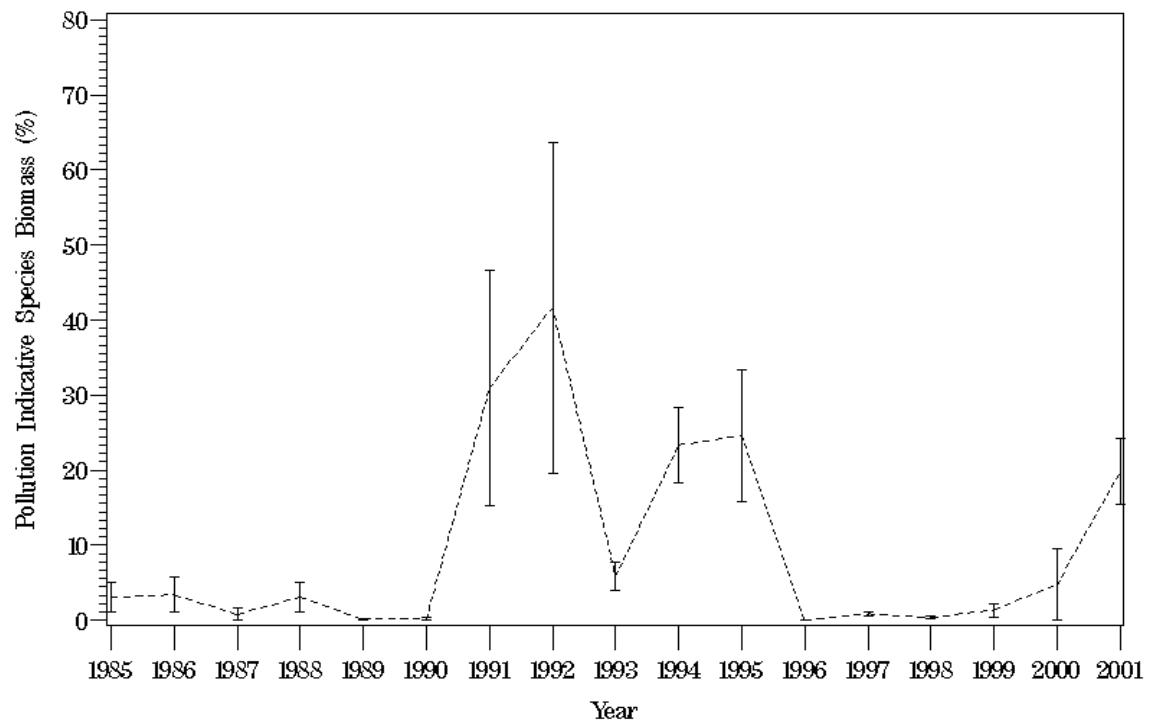


Figure 71. Plot of pollution indicative species biomass against time at station RET4.3 for the period of 1985 through 2001.

RET4.3 (2-YP)

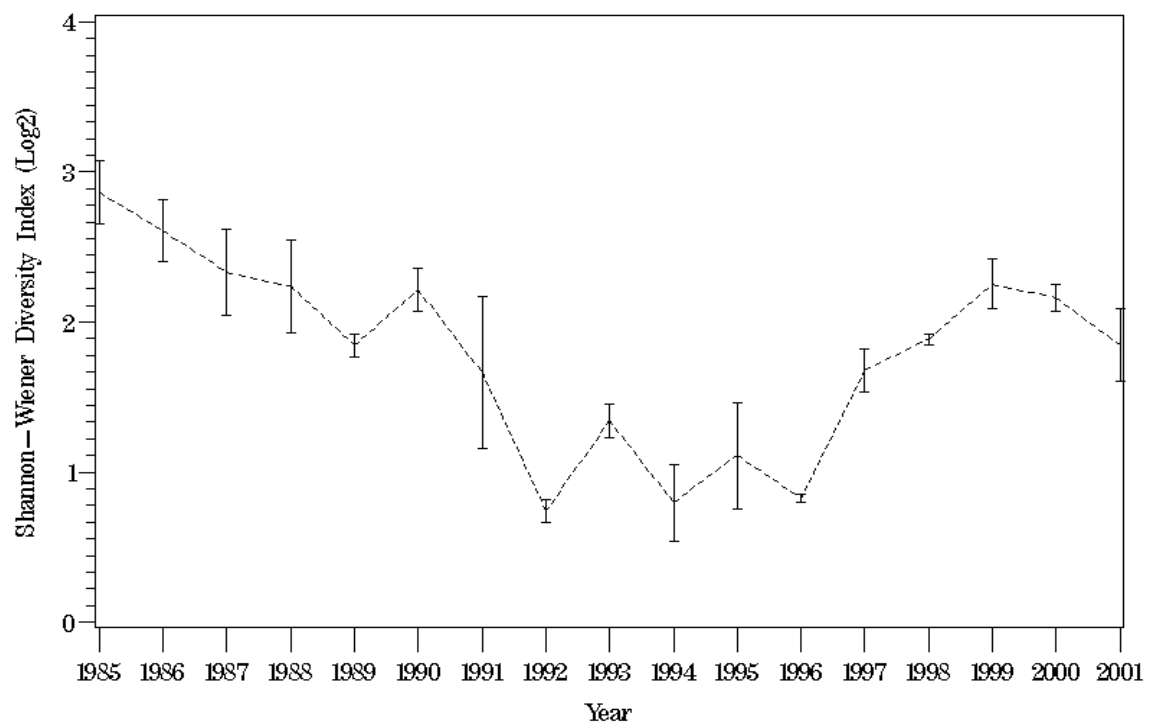


Figure 72. Plot of the Shannon-Weiner diversity index against time at station RET4.3 for the period of 1985 through 2001.

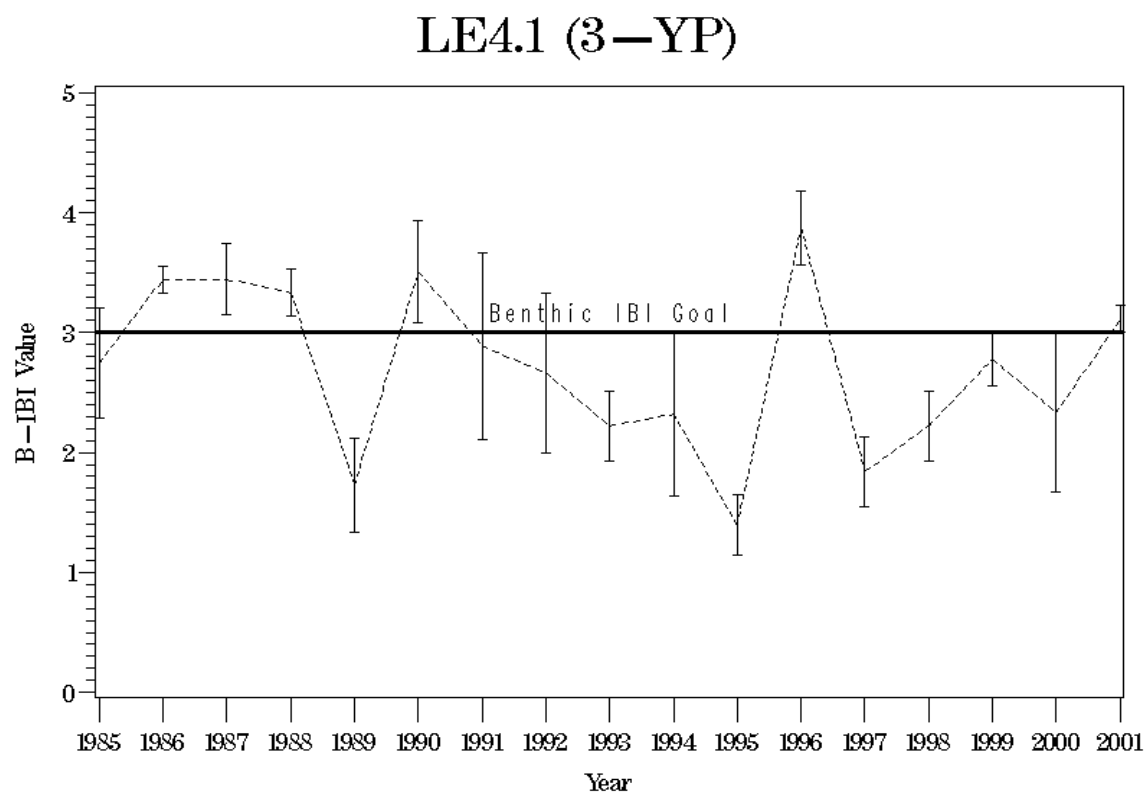


Figure 73. Plot of the benthic IBI against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

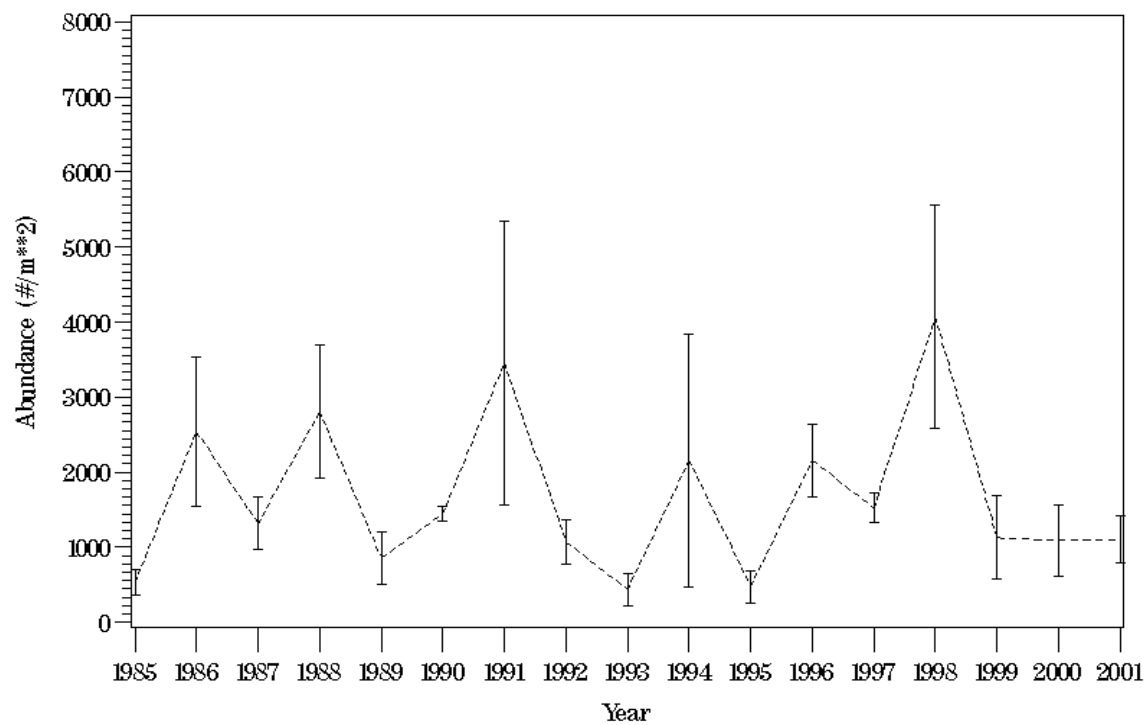


Figure 74. Plot of total benthic community abundance against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

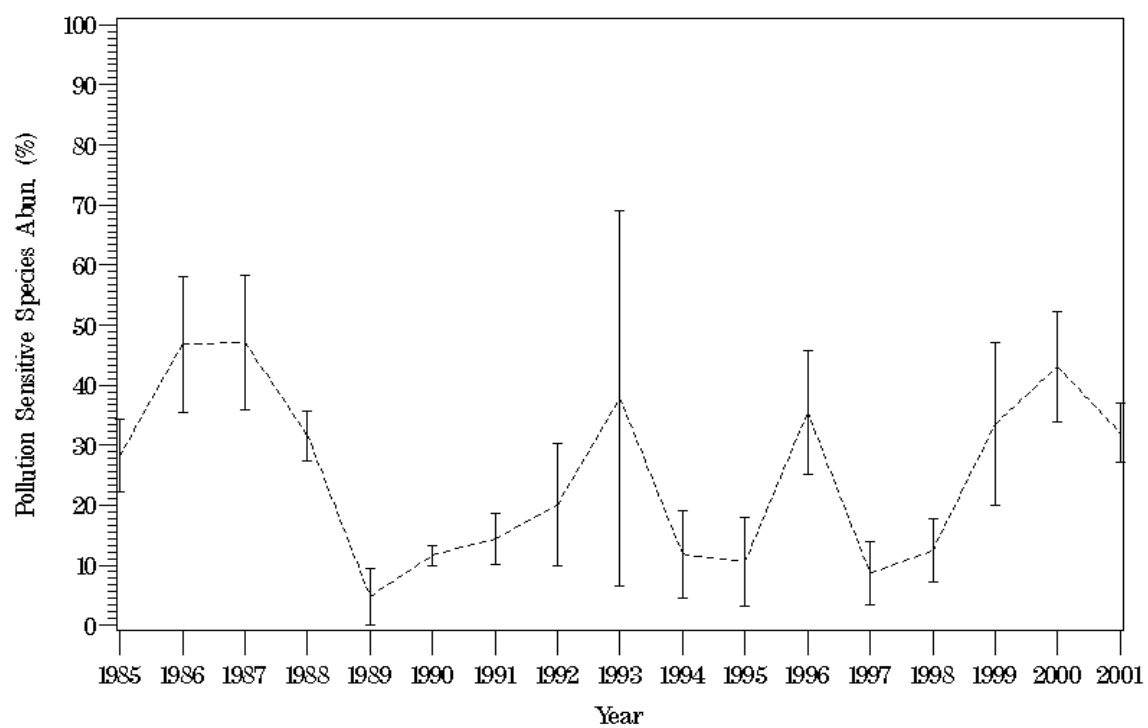


Figure 75. Plot of pollution sensitive species abundance against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

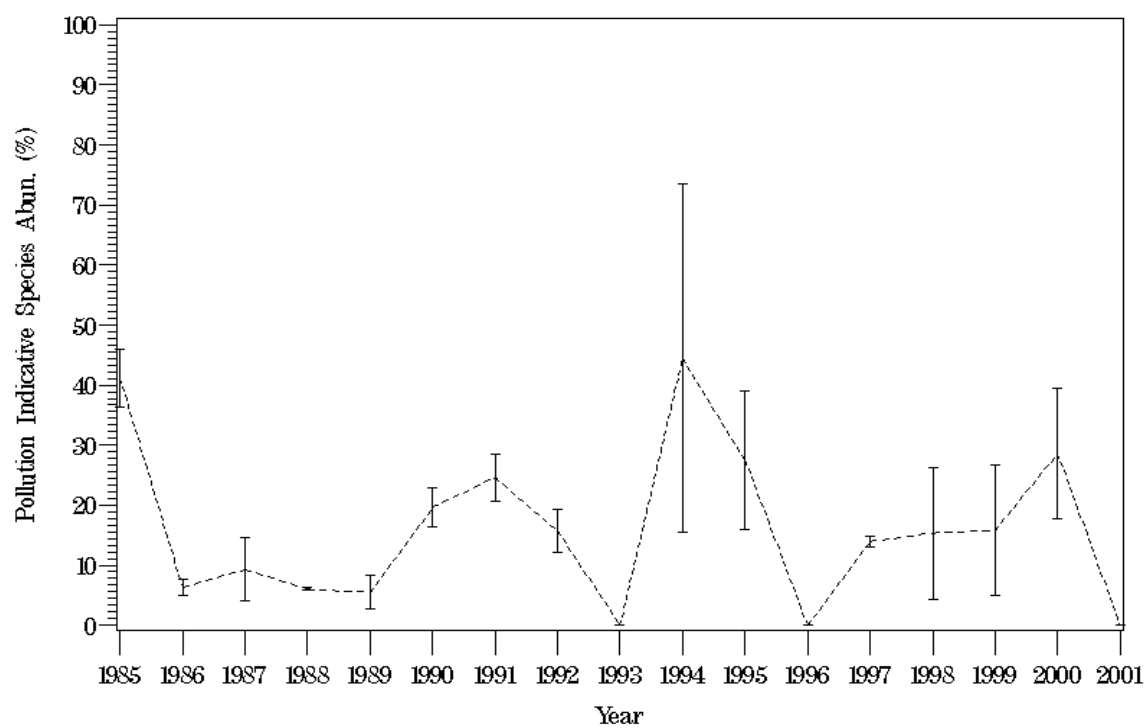


Figure 76. Plot of pollution indicative species abundance against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

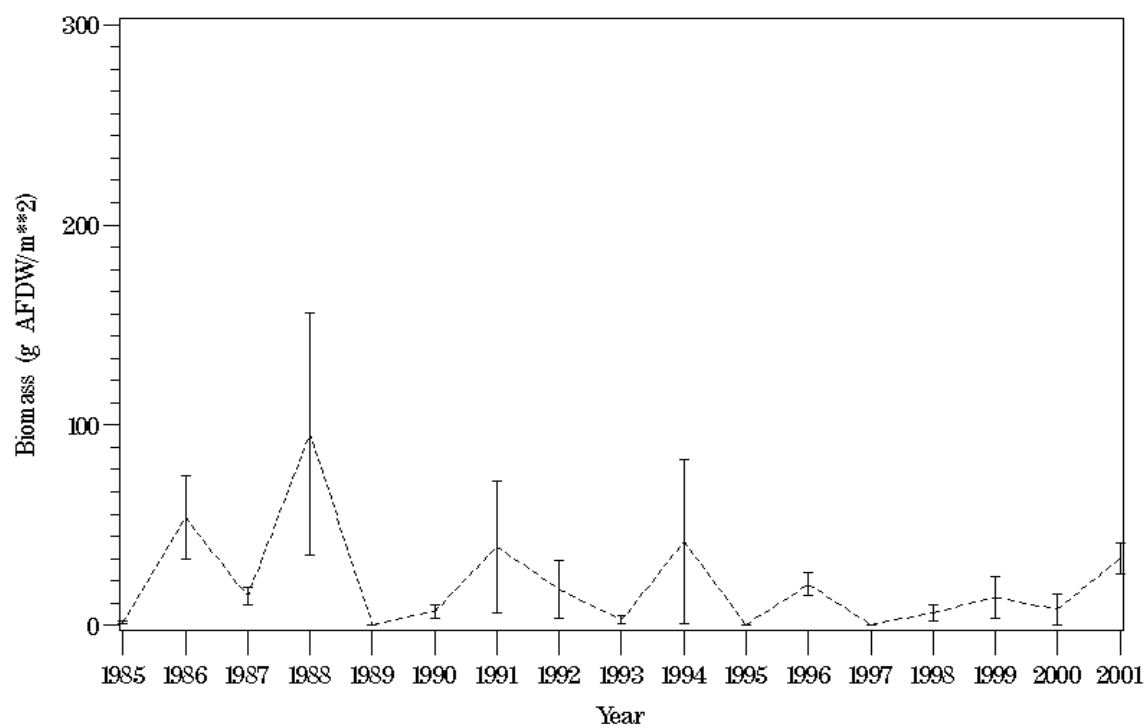


Figure 77. Plot of total benthic community biomass against time at station LE4.1 for the period of 1985 through 2001.

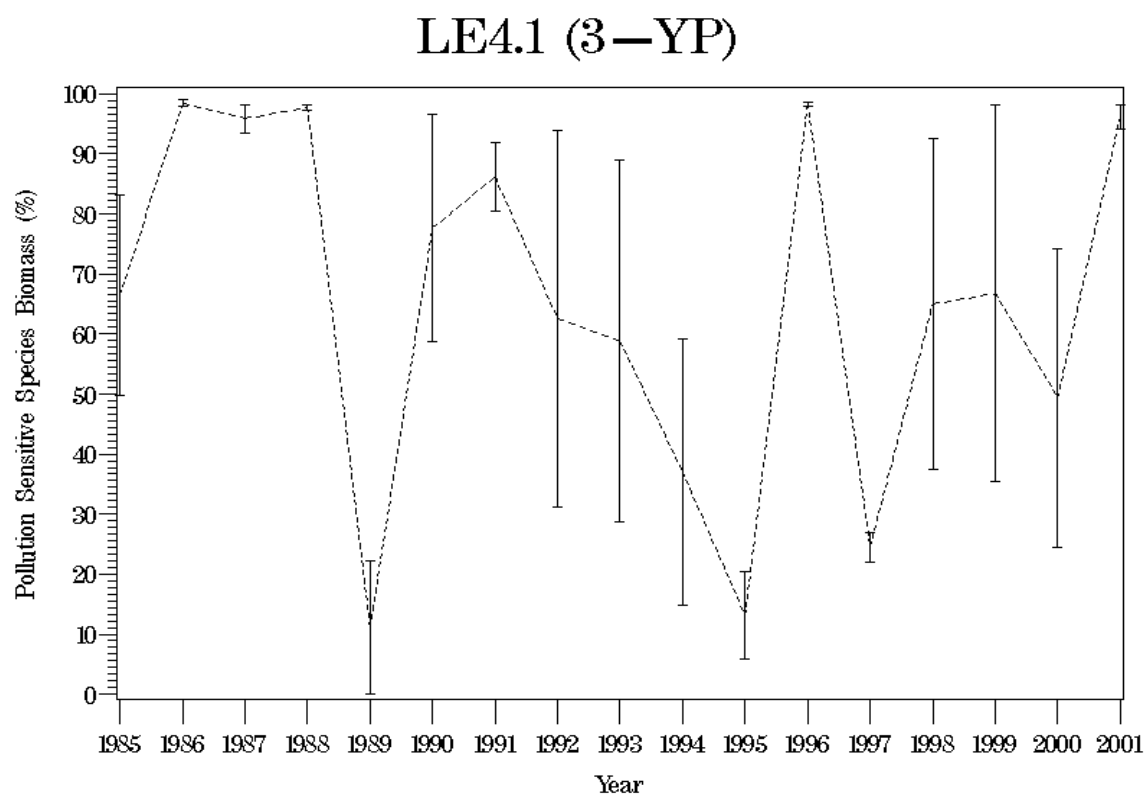


Figure 78. Plot of pollution sensitive species biomass against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

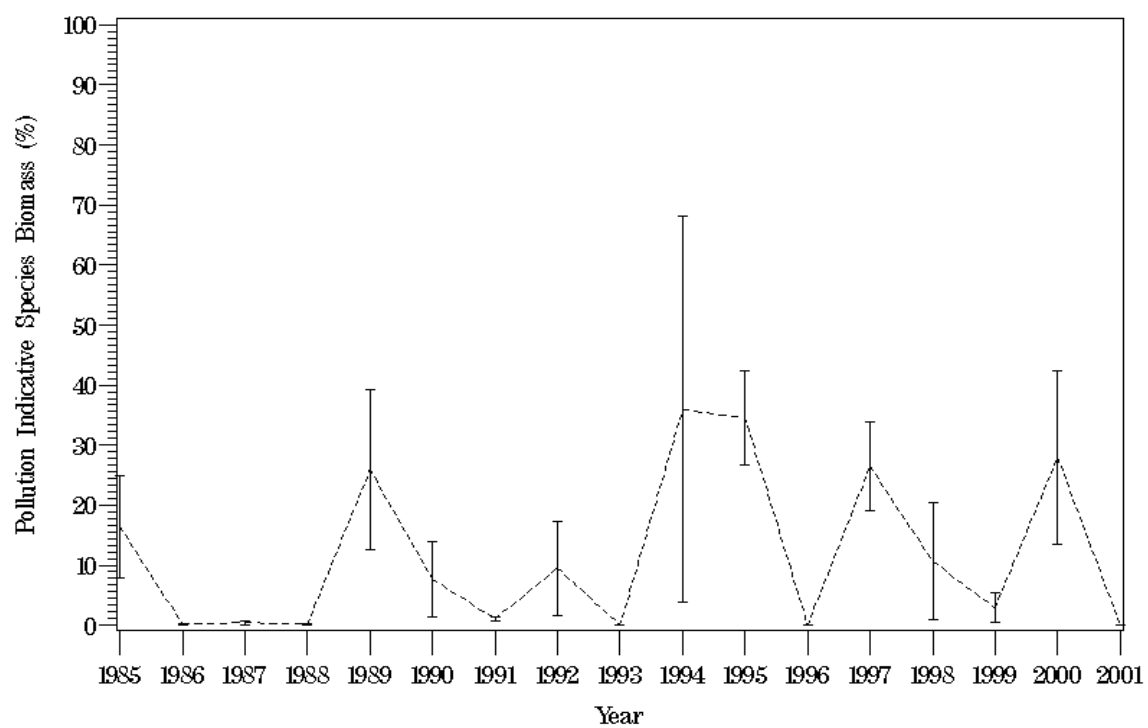


Figure 79. Plot of pollution indicative species biomass against time at station LE4.1 for the period of 1985 through 2001.

LE4.1 (3-YP)

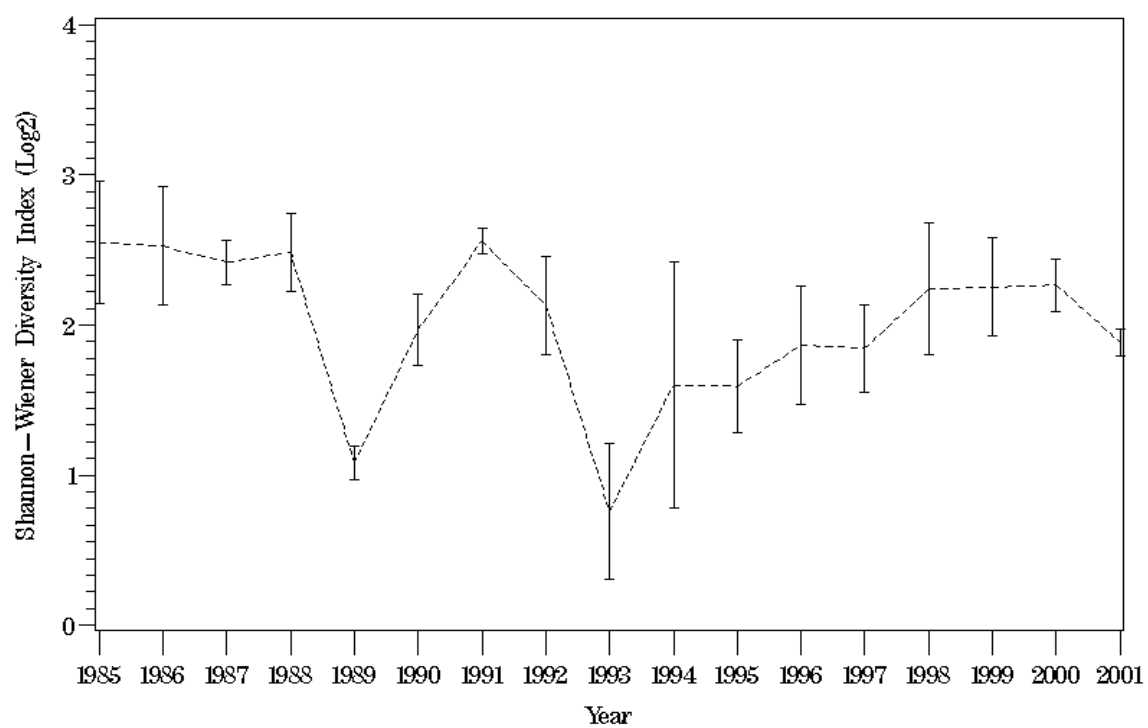


Figure 80. Plot of the Shannon-Weiner diversity index against time at station LE4.1 for the period of 1985 through 2001.

LE4.3 (4-YP)

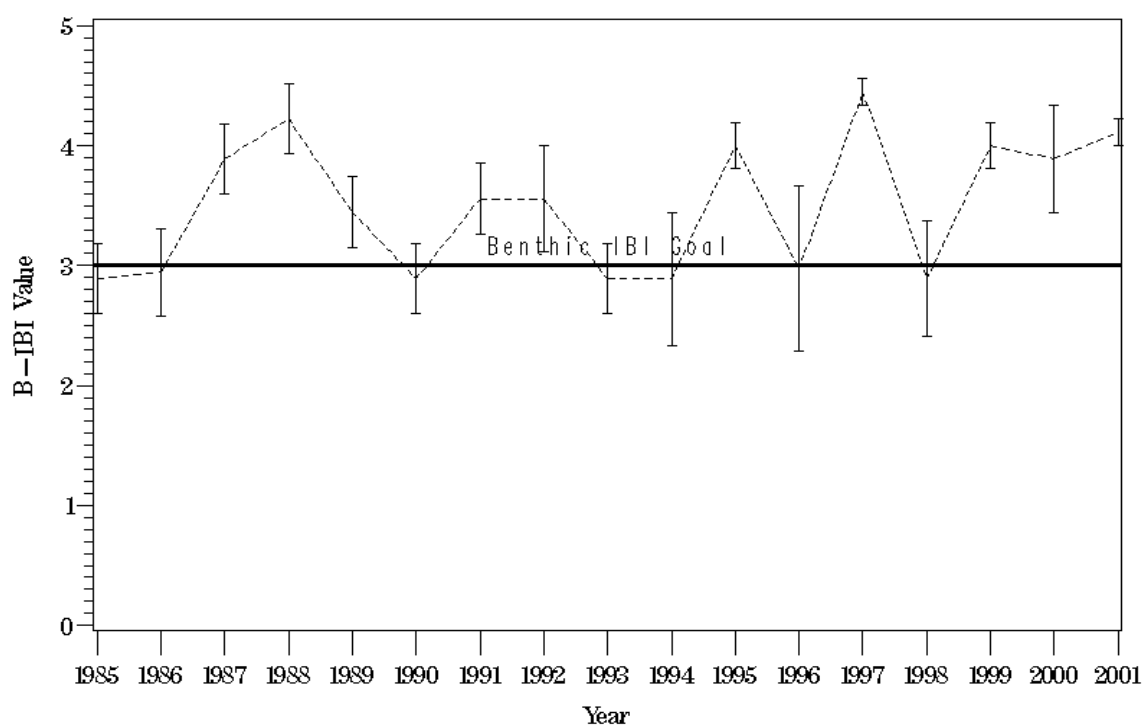


Figure 81. Plot of the benthic IBI against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

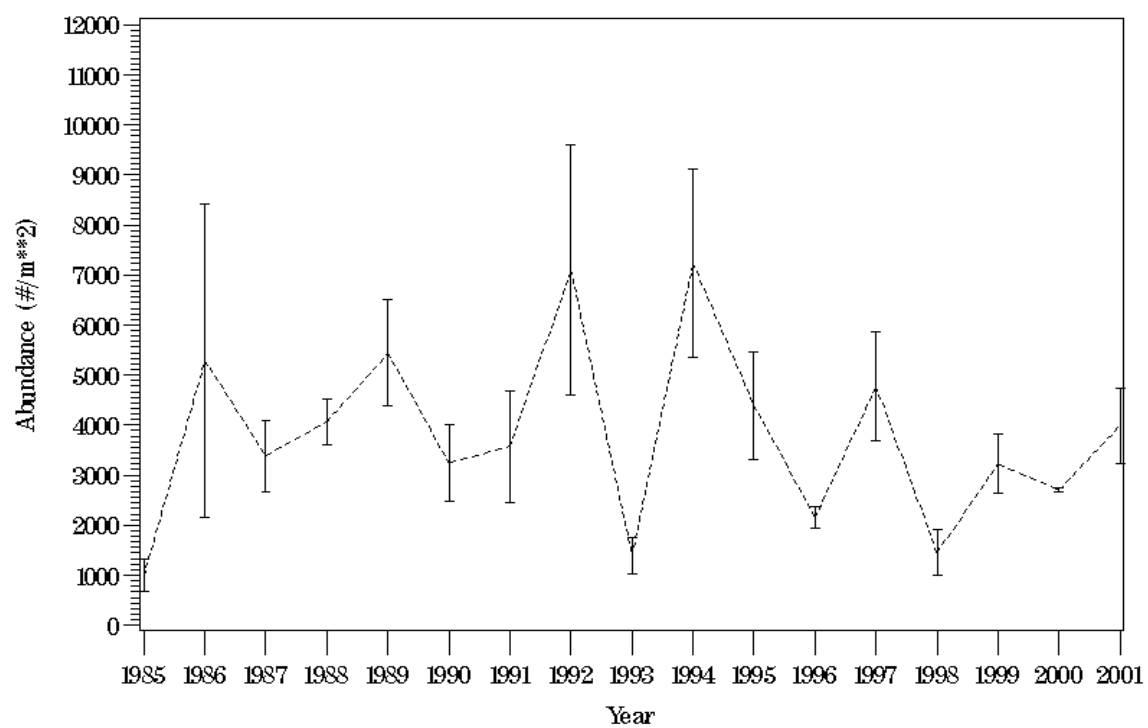


Figure 82. Plot of total benthic community abundance against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

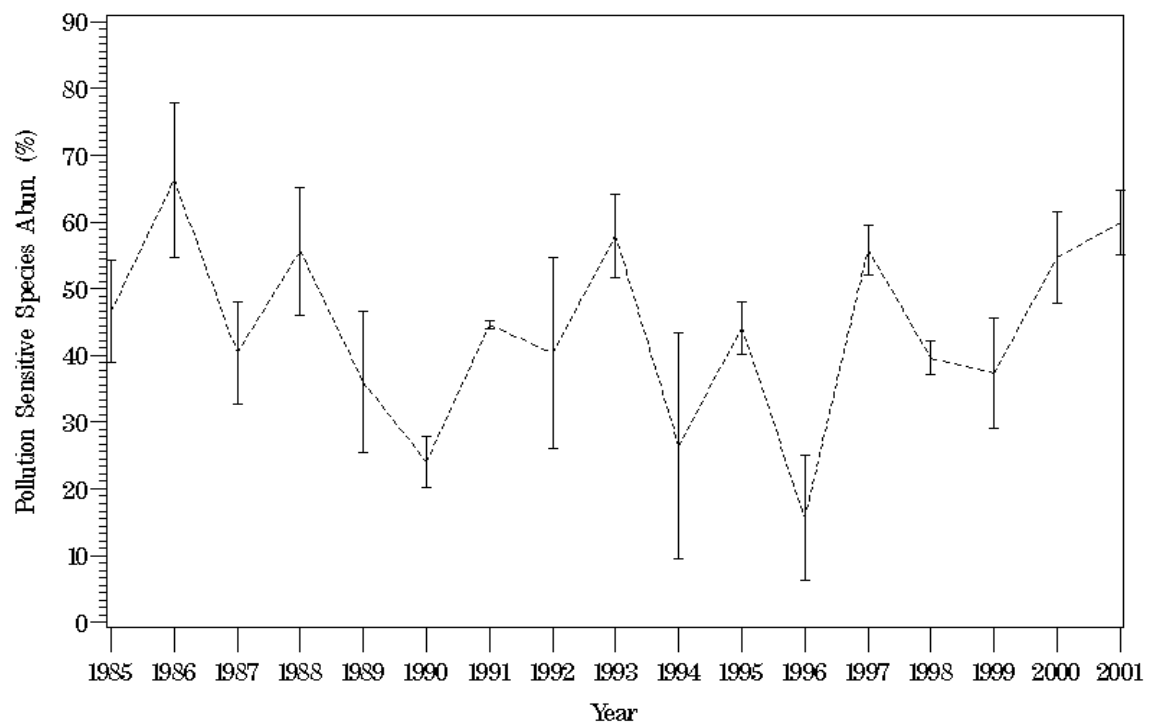


Figure 83. Plot of pollution sensitive species abundance against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

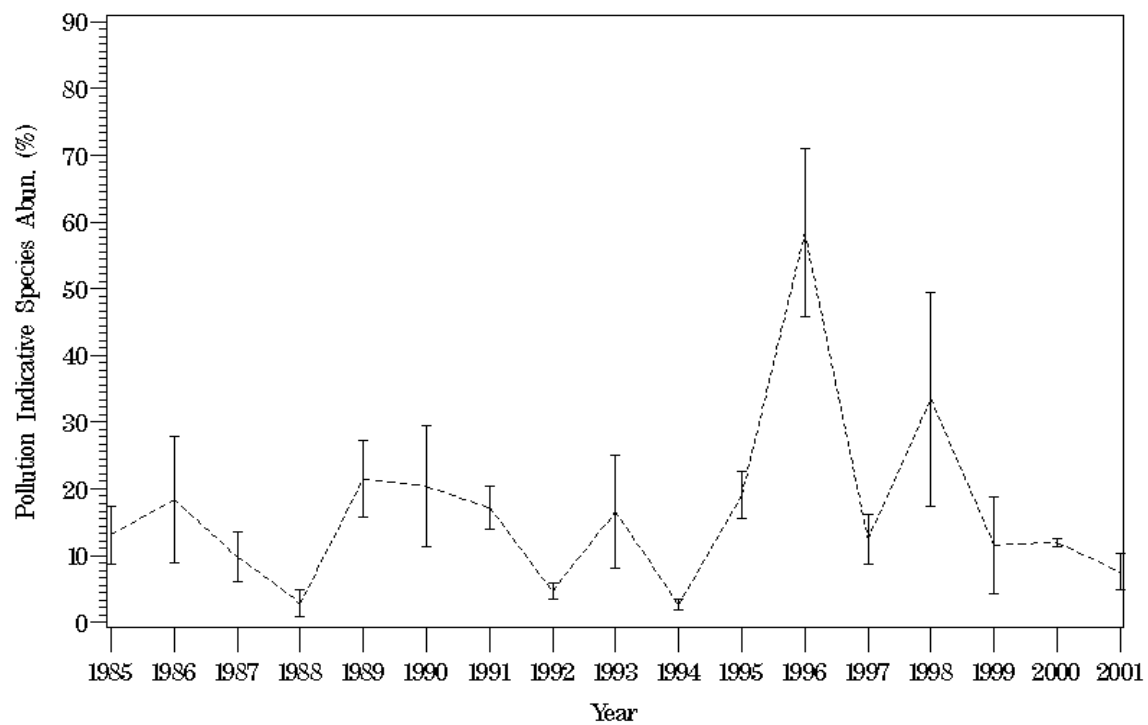


Figure 84. Plot of pollution indicative species abundance against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

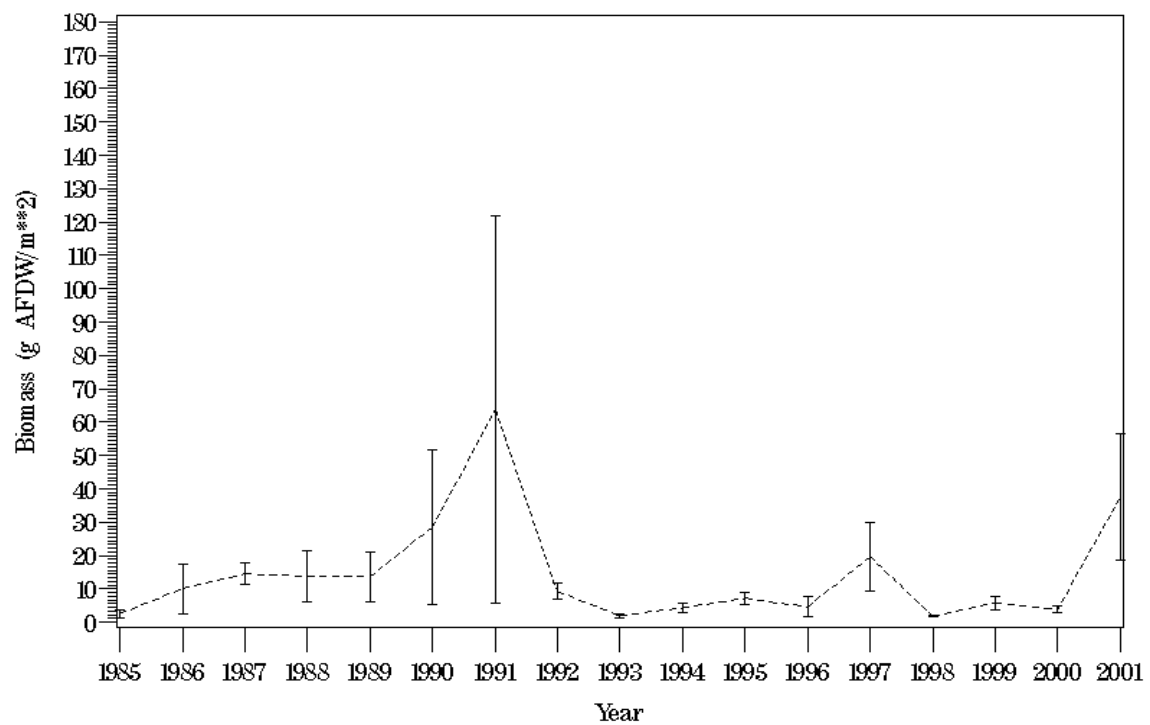


Figure 85. Plot of total benthic community biomass against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

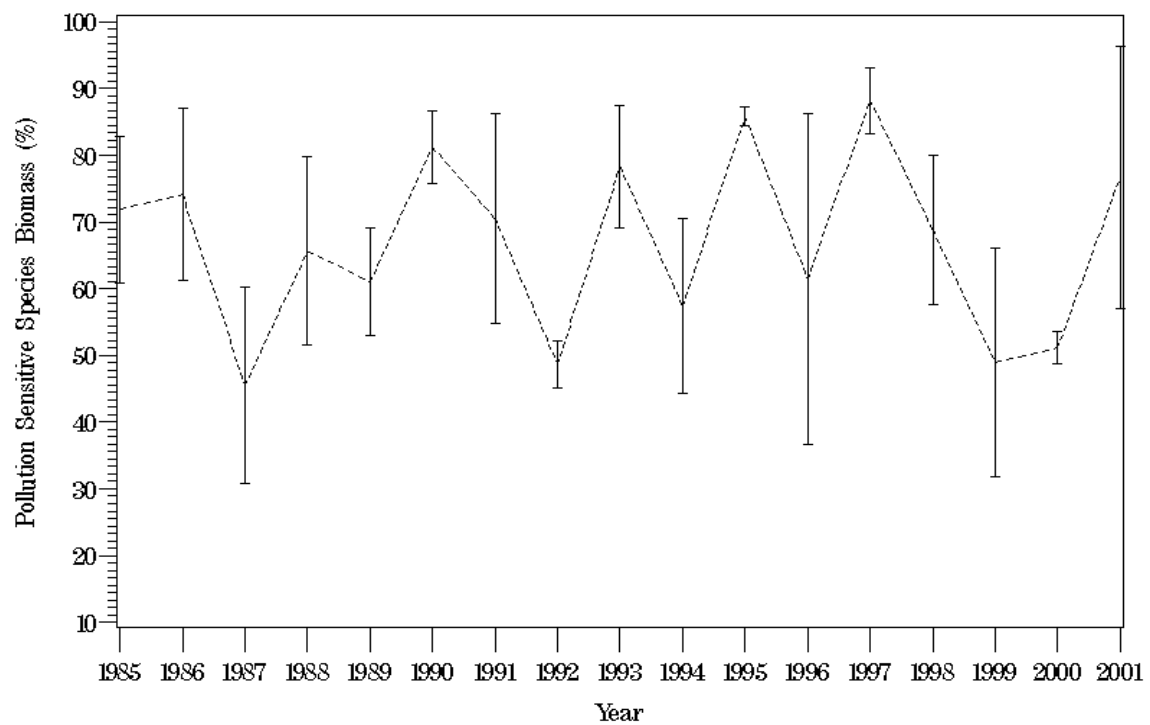


Figure 86. Plot of pollution sensitive species biomass against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

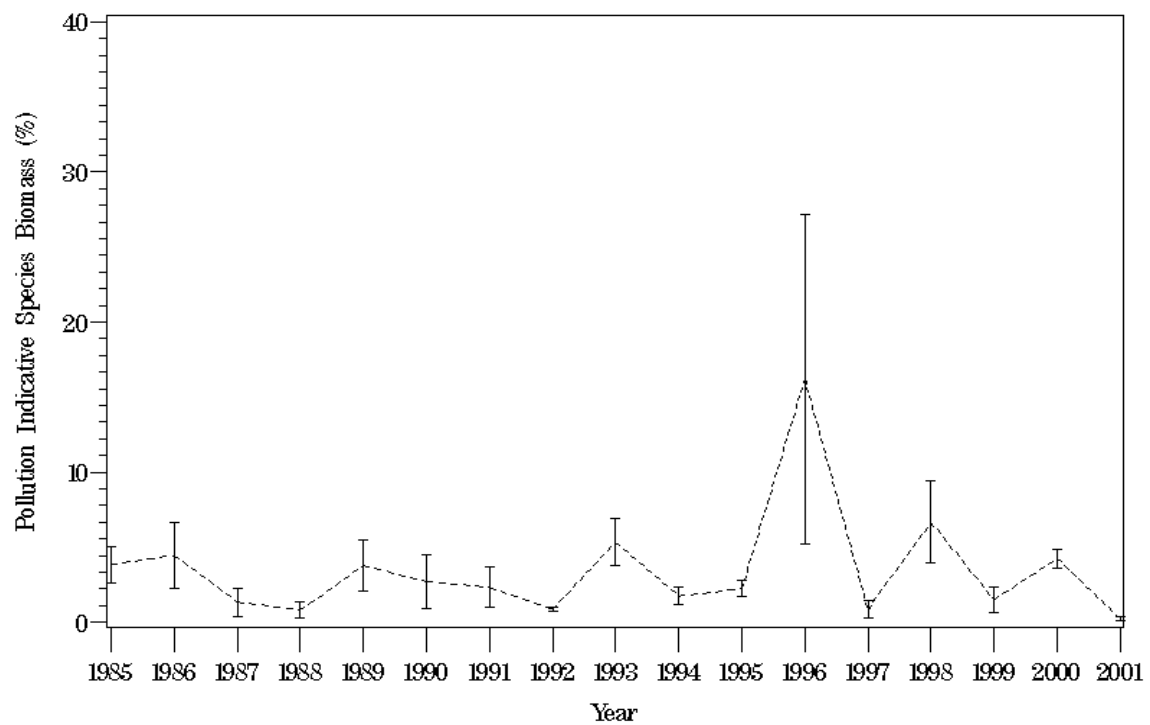


Figure 87. Plot of pollution indicative species biomass against time at station LE4.3 for the period of 1985 through 2001.

LE4.3 (4-YP)

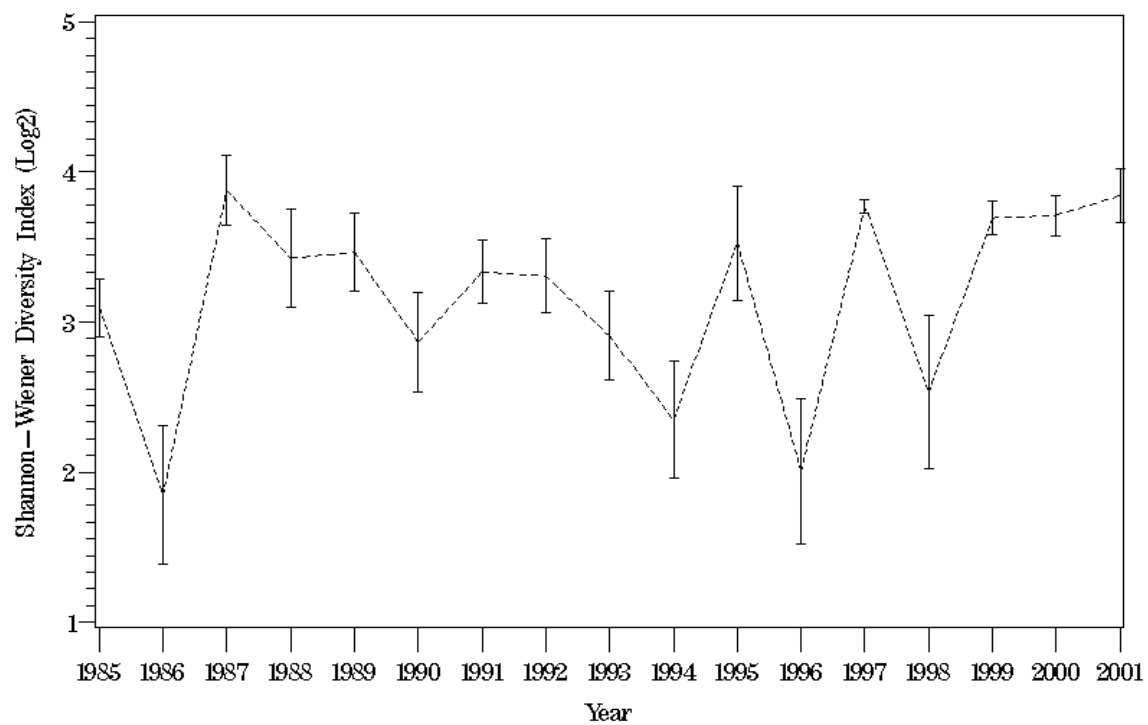


Figure 88. Plot of the Shannon-Weiner diversity index against time at station LE4.3 for the period of 1985 through 2001.

LE4.3B (5-YP)

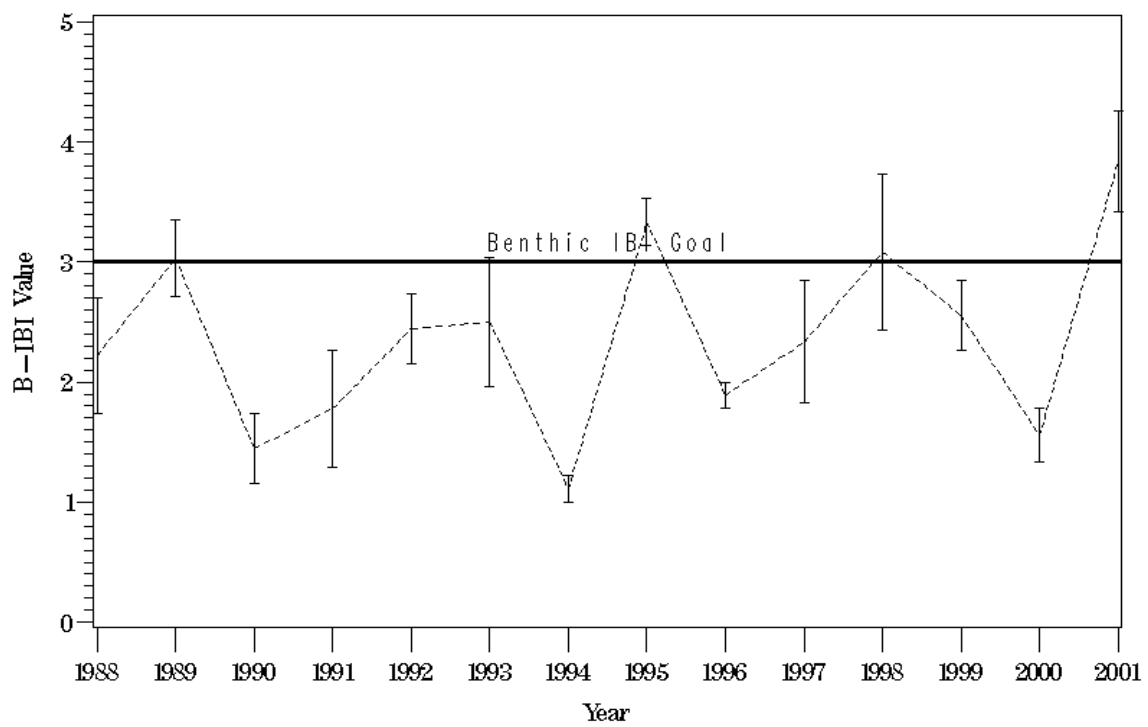


Figure 89. Plot of the benthic IBI against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

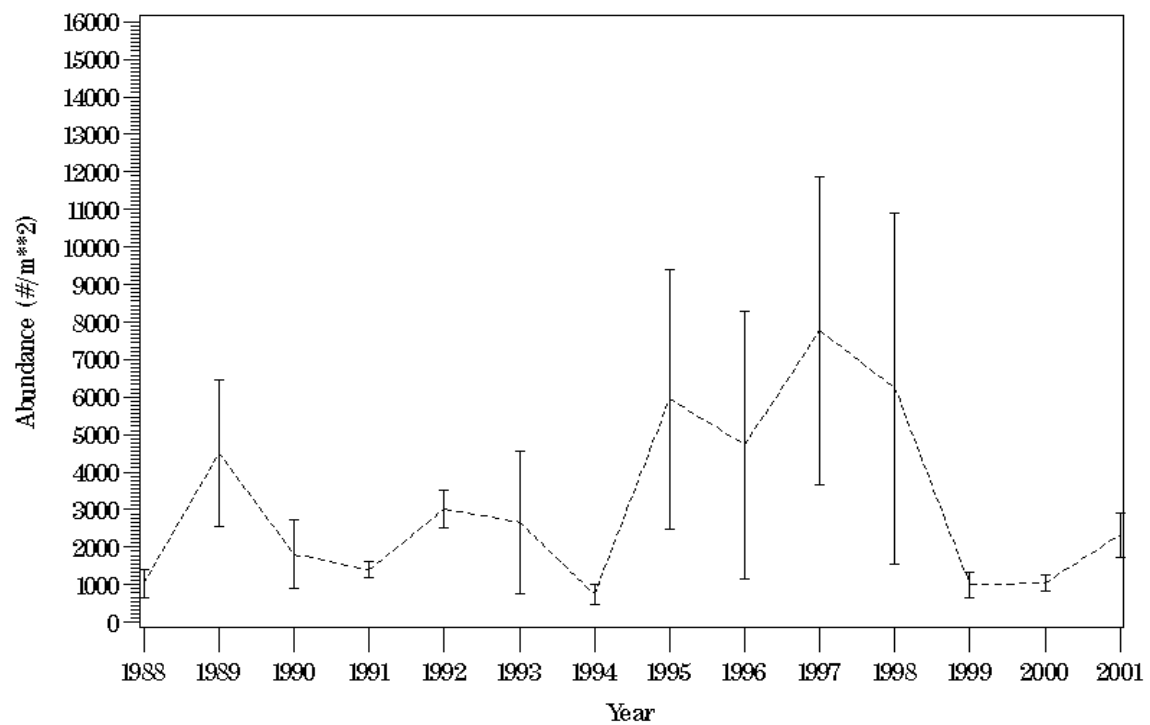


Figure 90. Plot of total benthic community abundance against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

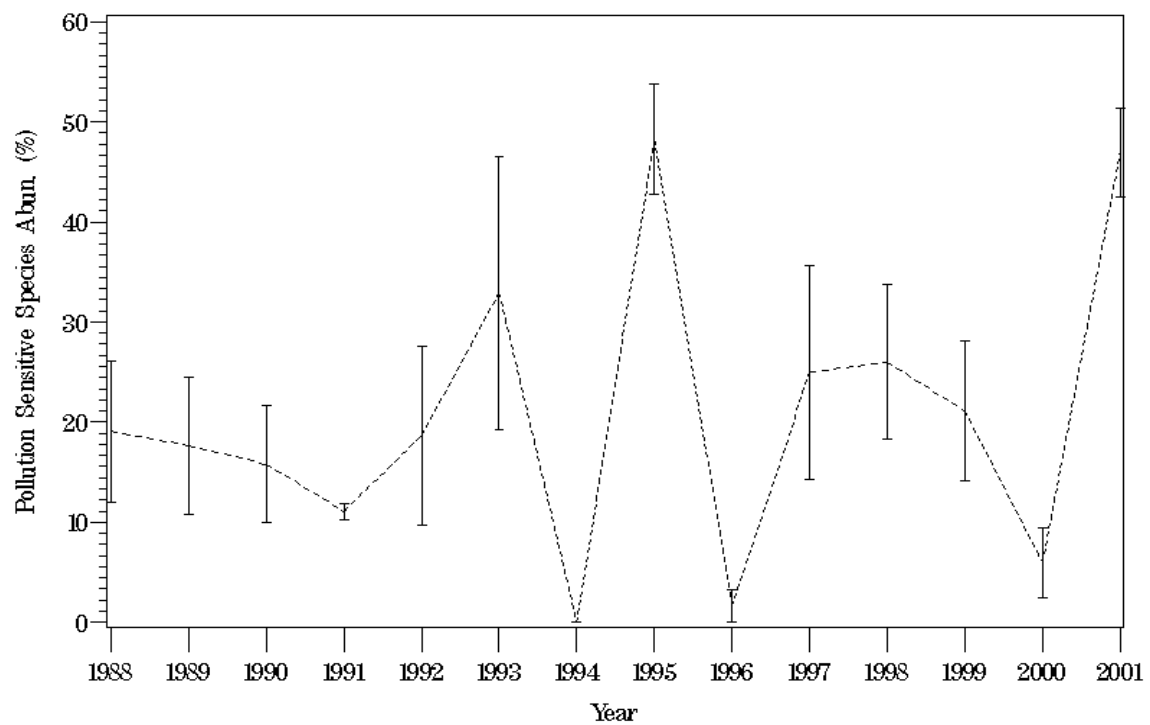


Figure 91. Plot of pollution sensitive species abundance against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

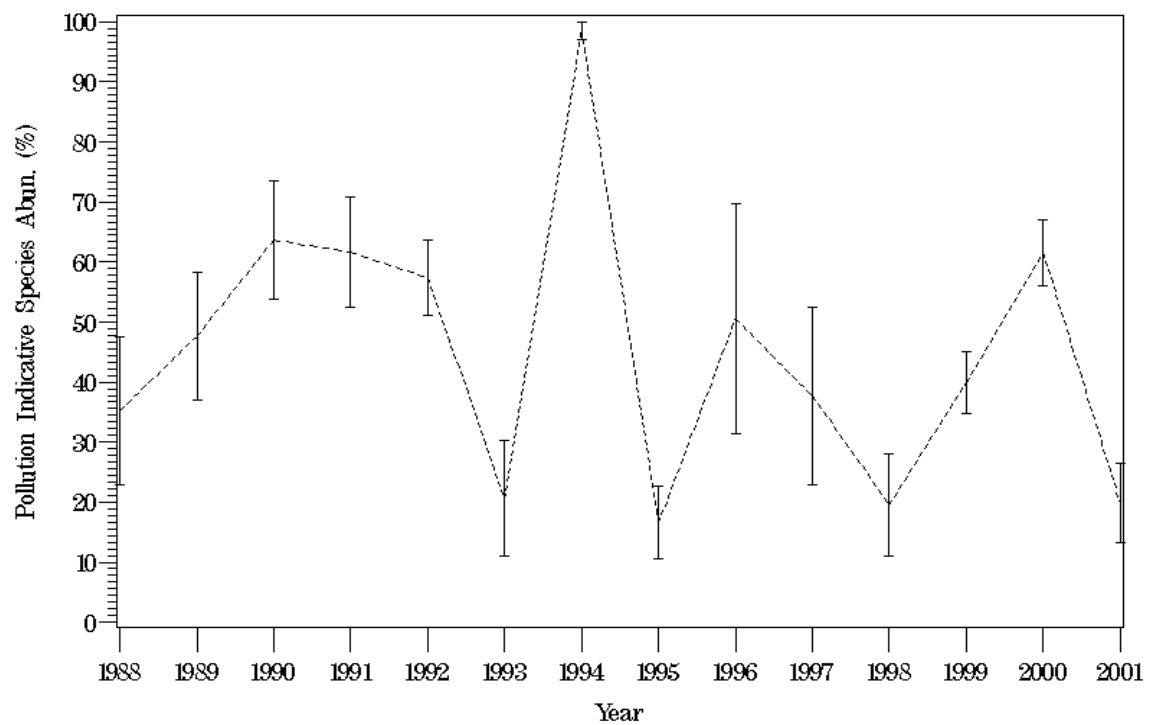


Figure 92. Plot of pollution indicative species abundance against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

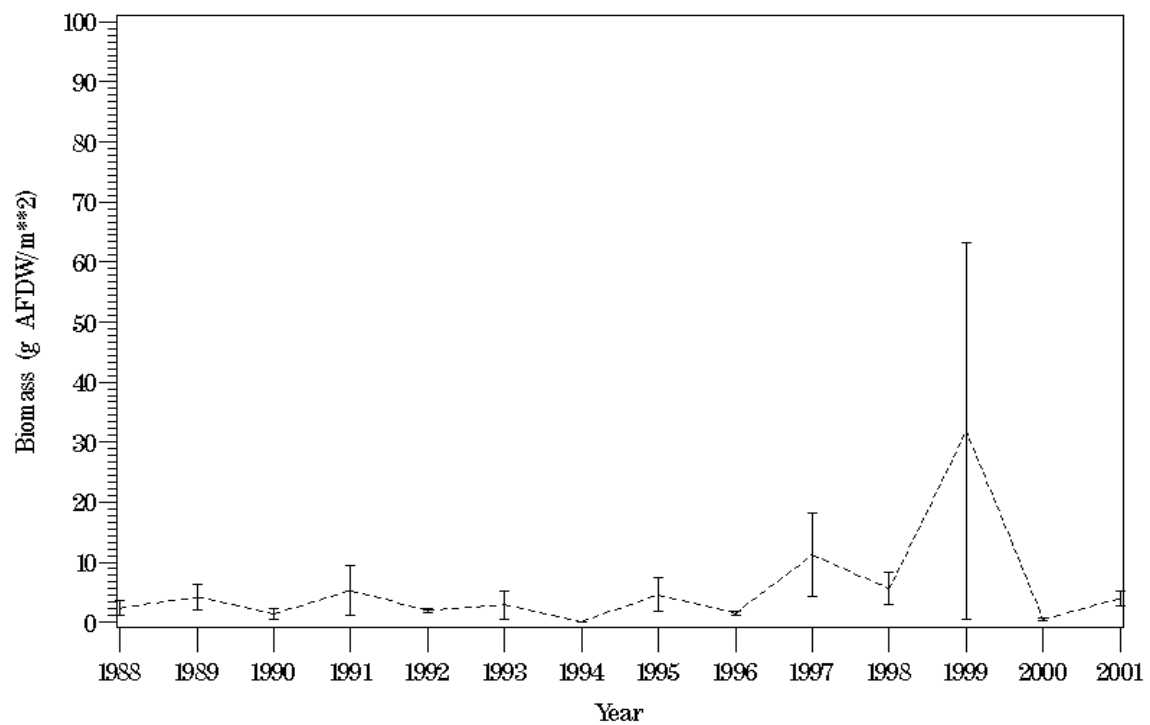


Figure 93. Plot of total benthic community biomass against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

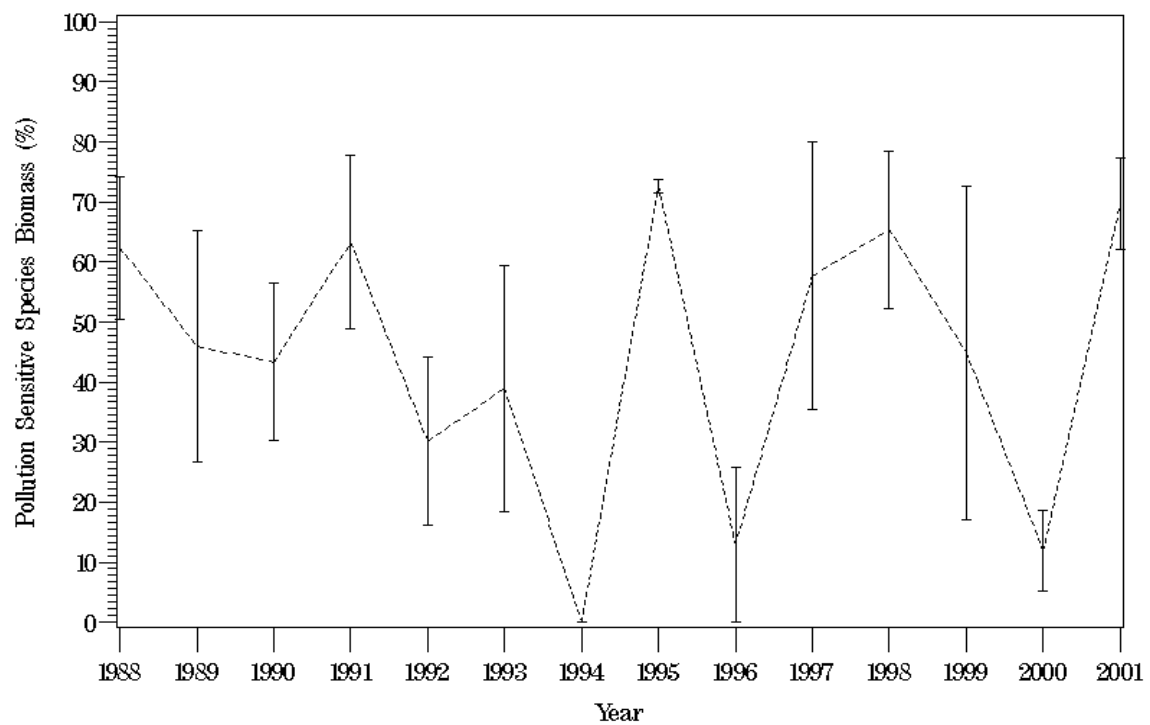


Figure 94. Plot of pollution sensitive species biomass against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

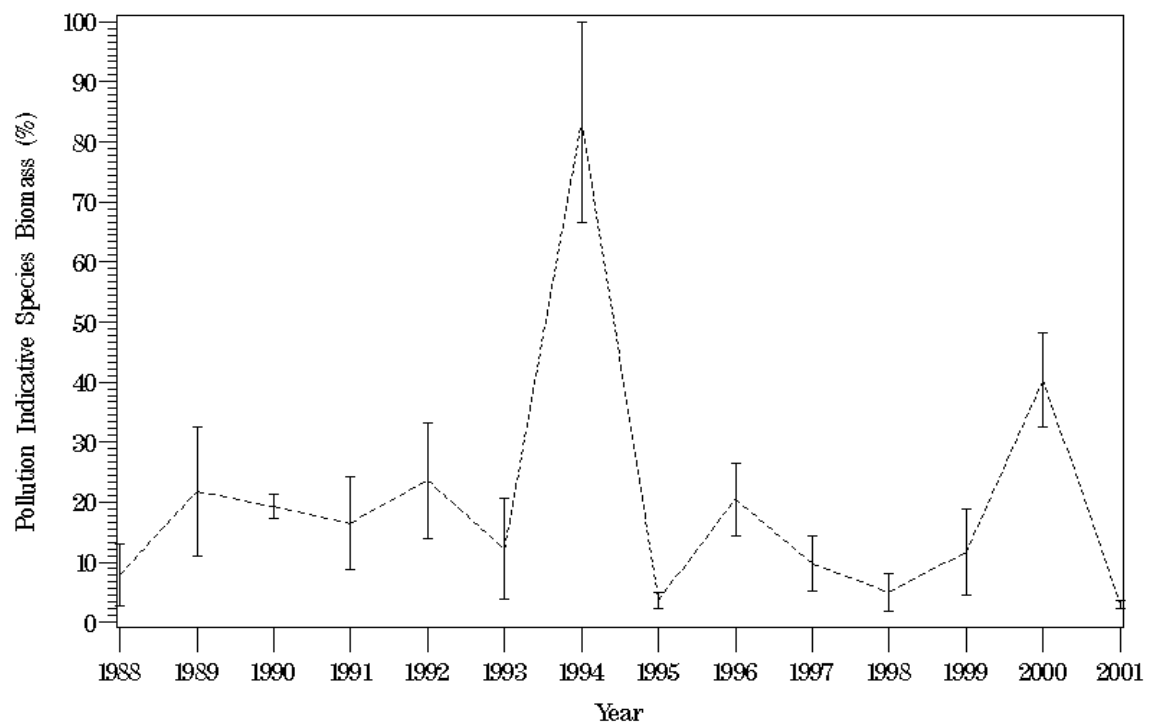


Figure 95. Plot of pollution indicative species biomass against time at station LE4.3B for the period of 1988 through 2001.

LE4.3B (5-YP)

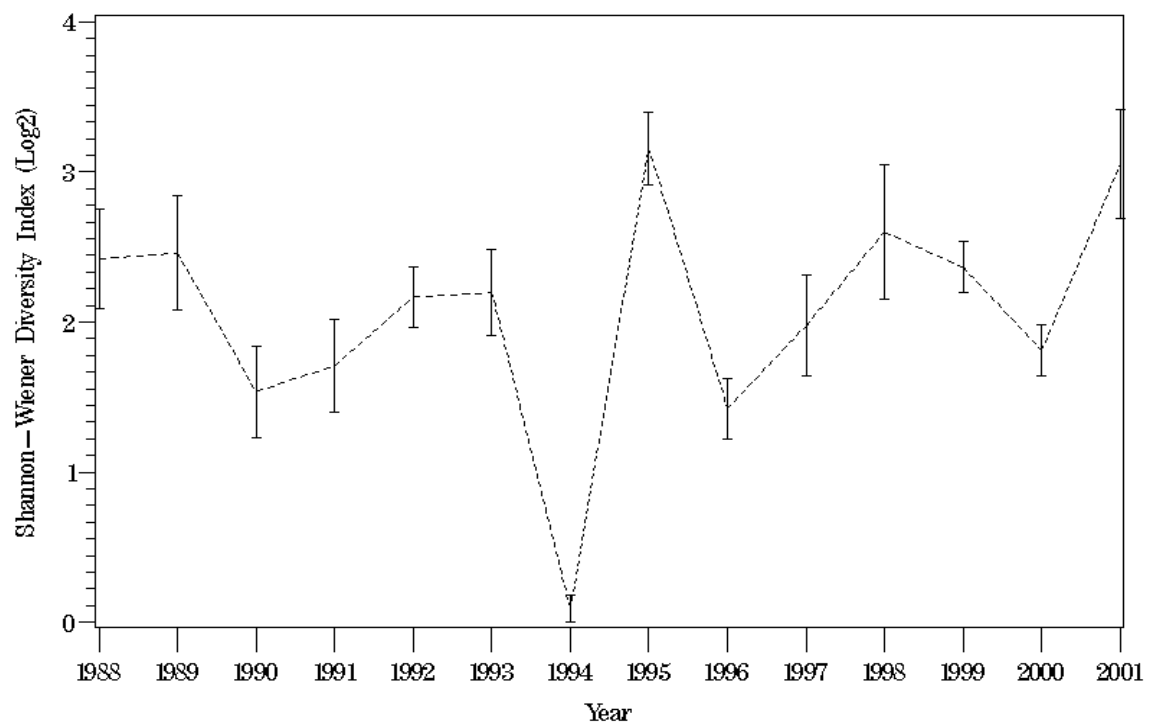


Figure 96. Plot of the Shannon-Weiner diversity index against time at station LE4.3B for the period of 1988 through 2001.

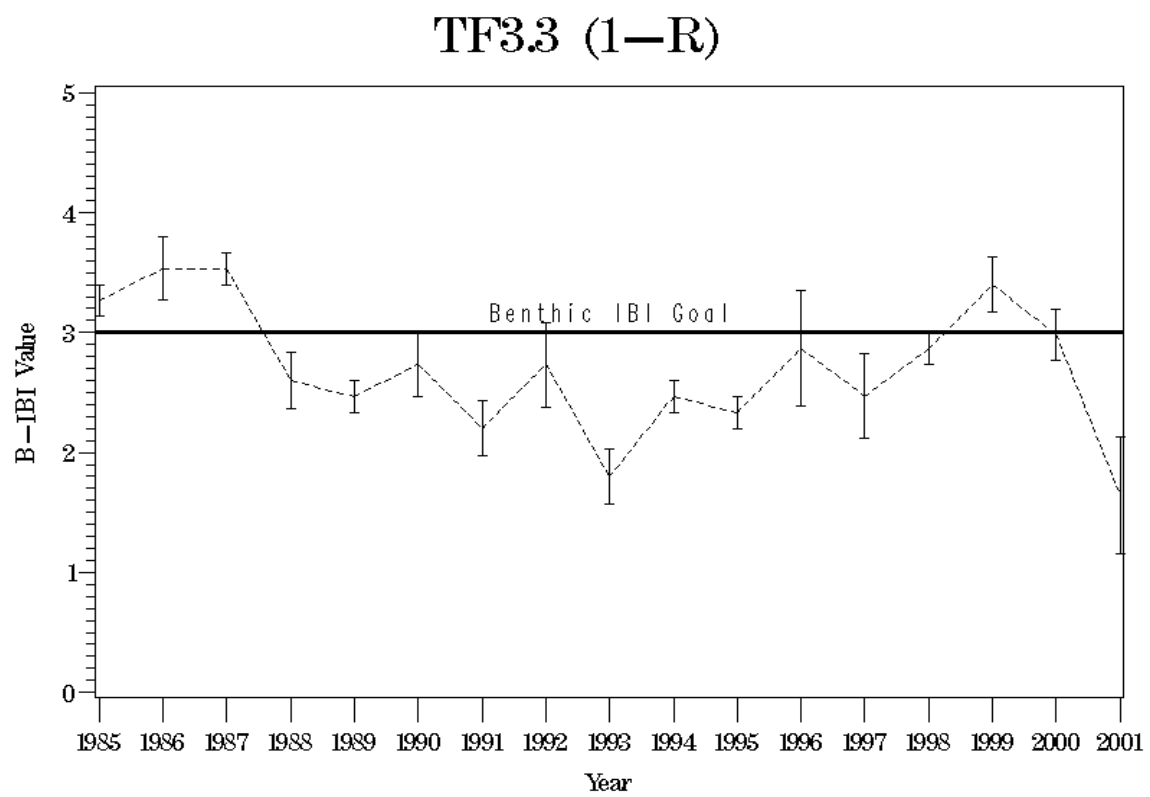


Figure 97. Plot of the benthic IBI against time at station TF3.3 for the period of 1985 through 2001.

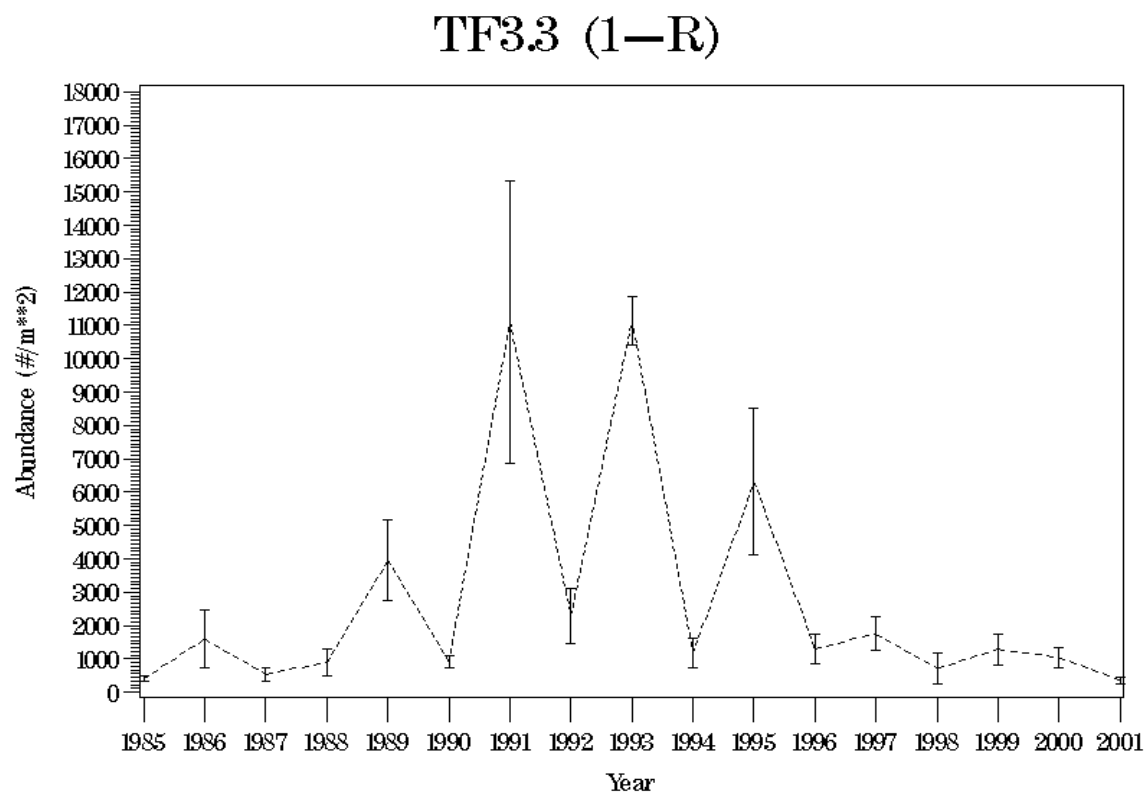


Figure 98. Plot of total benthic community abundance against time at station TF3.3 for the period of 1985 through 2001.

TF3.3 (1-R)

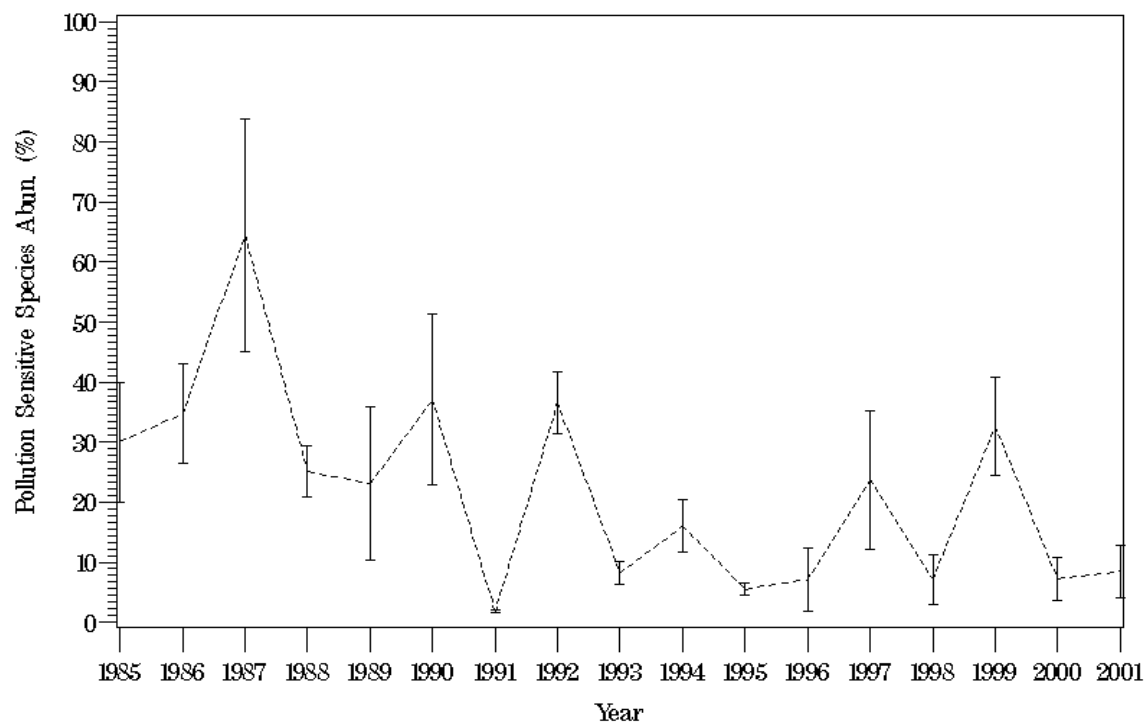


Figure 99. Plot of pollution sensitive species abundance against time at station TF3.3 for the period of 1985 through 2001.

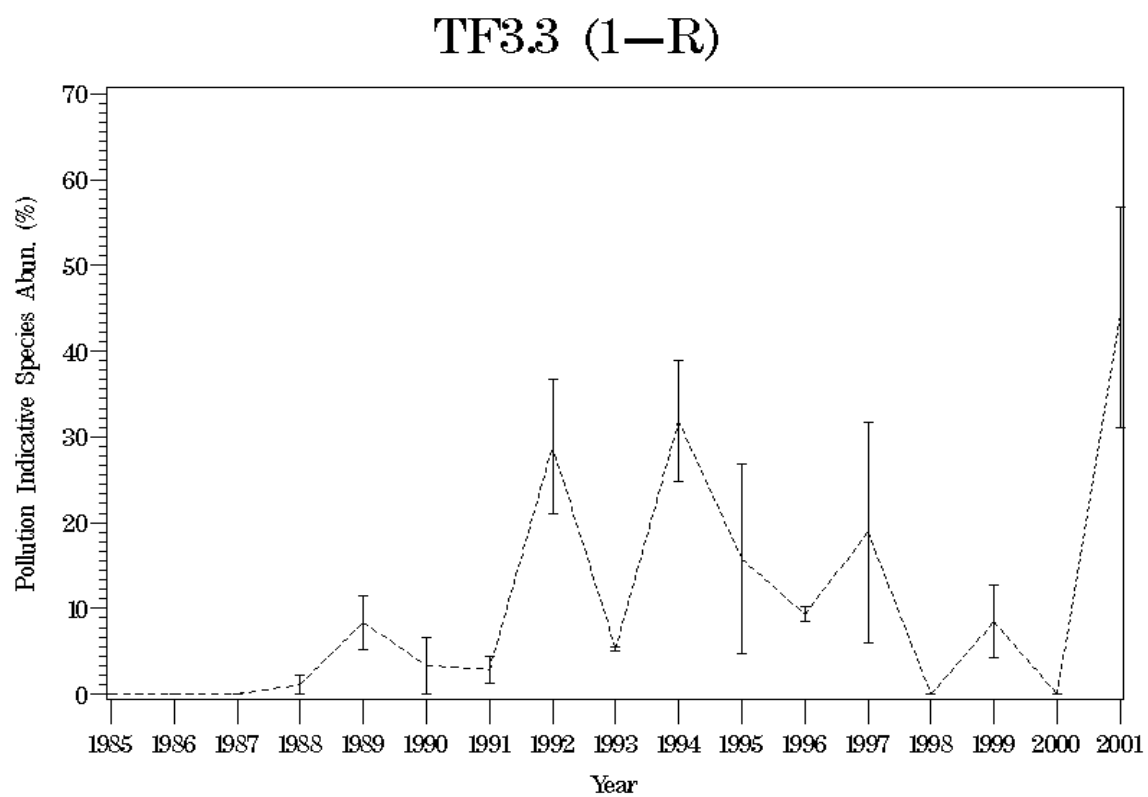


Figure 100. Plot of pollution indicative species abundance against time at station TF3.3 for the period of 1985 through 2001.

TF3.3 (1-R)

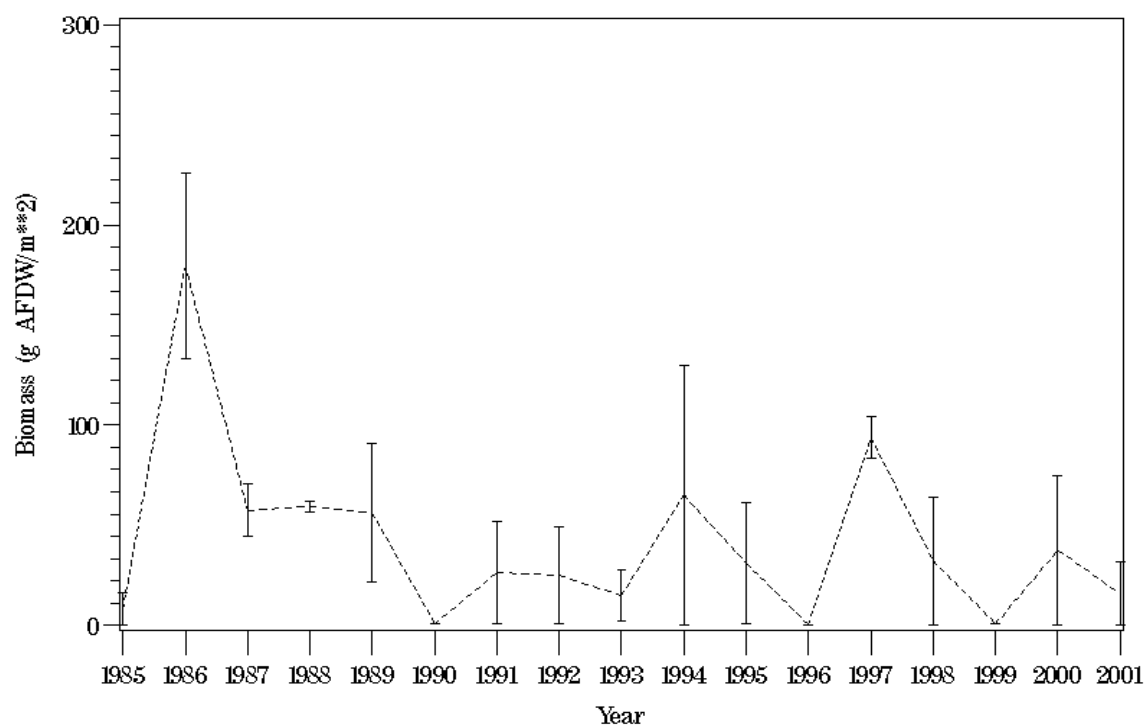


Figure 101. Plot of total benthic community biomass against time at station TF3.3 for the period of 1985 through 2001.

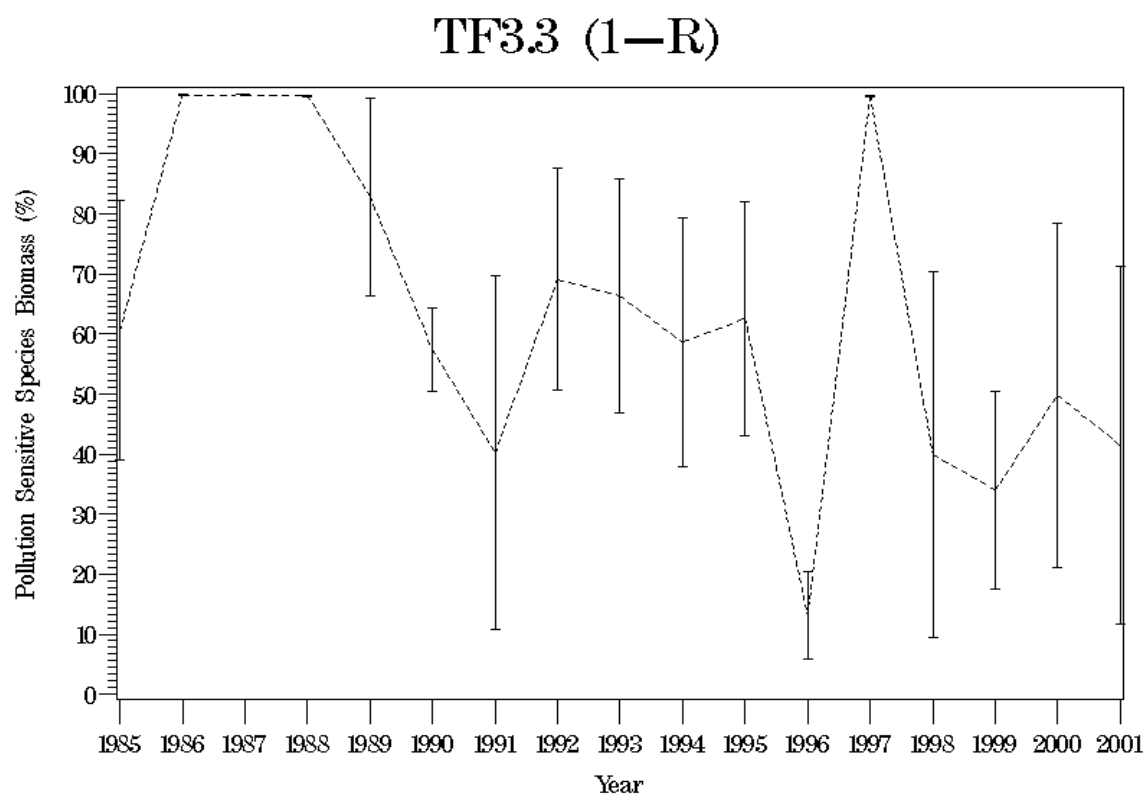


Figure 102. Plot of pollution sensitive species biomass against time at station TF3.3 for the period of 1985 through 2001.

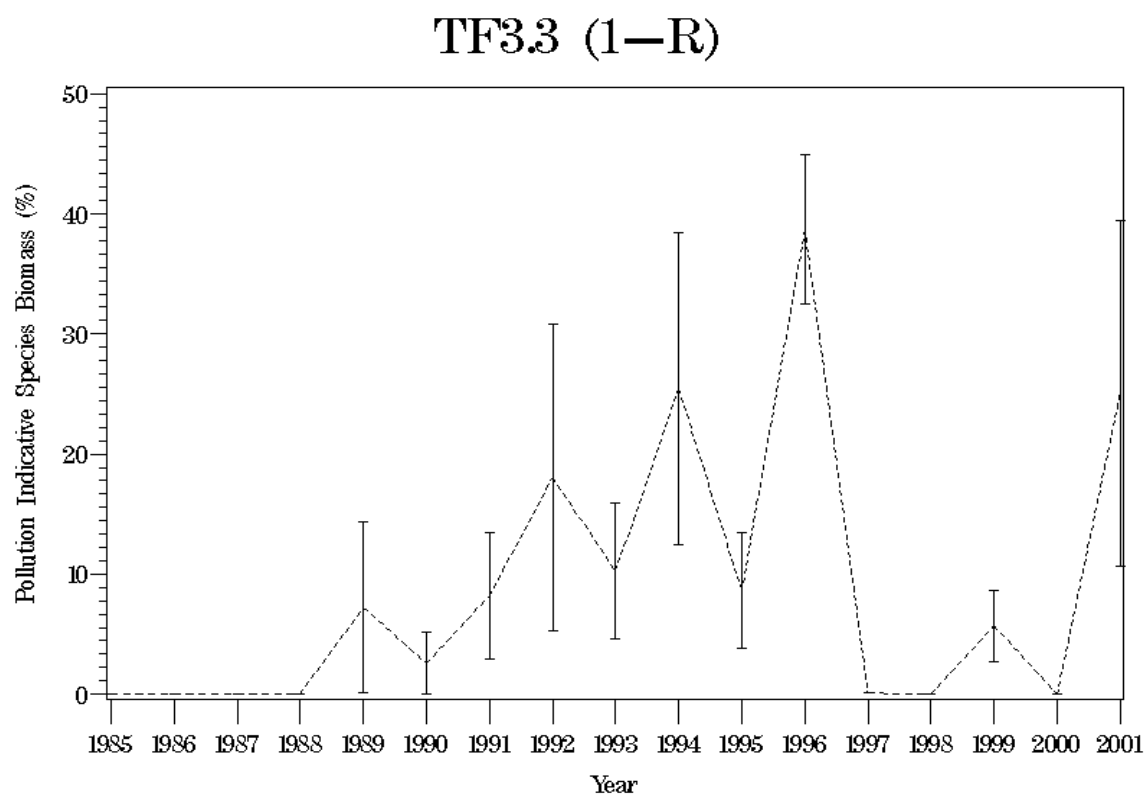


Figure 103. Plot of pollution indicative species biomass against time at station TF3.3 for the period of 1985 through 2001.

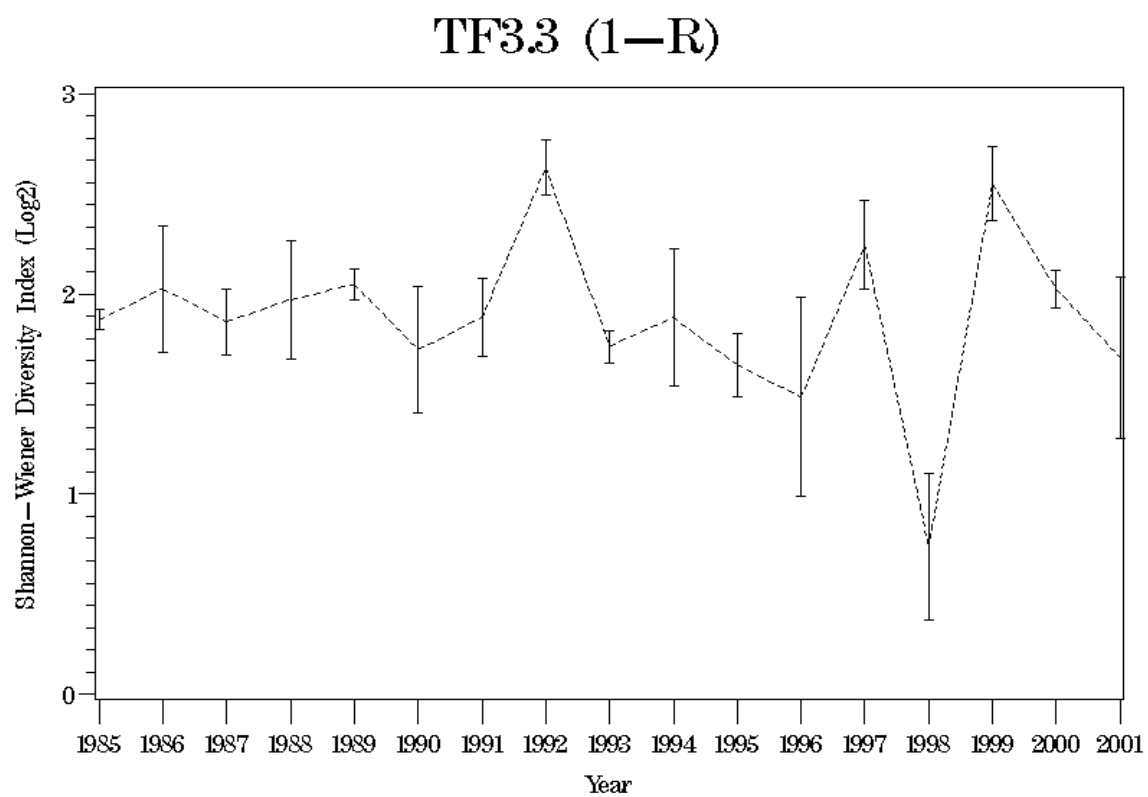


Figure 104. Plot of the Shannon-Weiner diversity index against time at station TF3.3 for the period of 1985 through 2001.

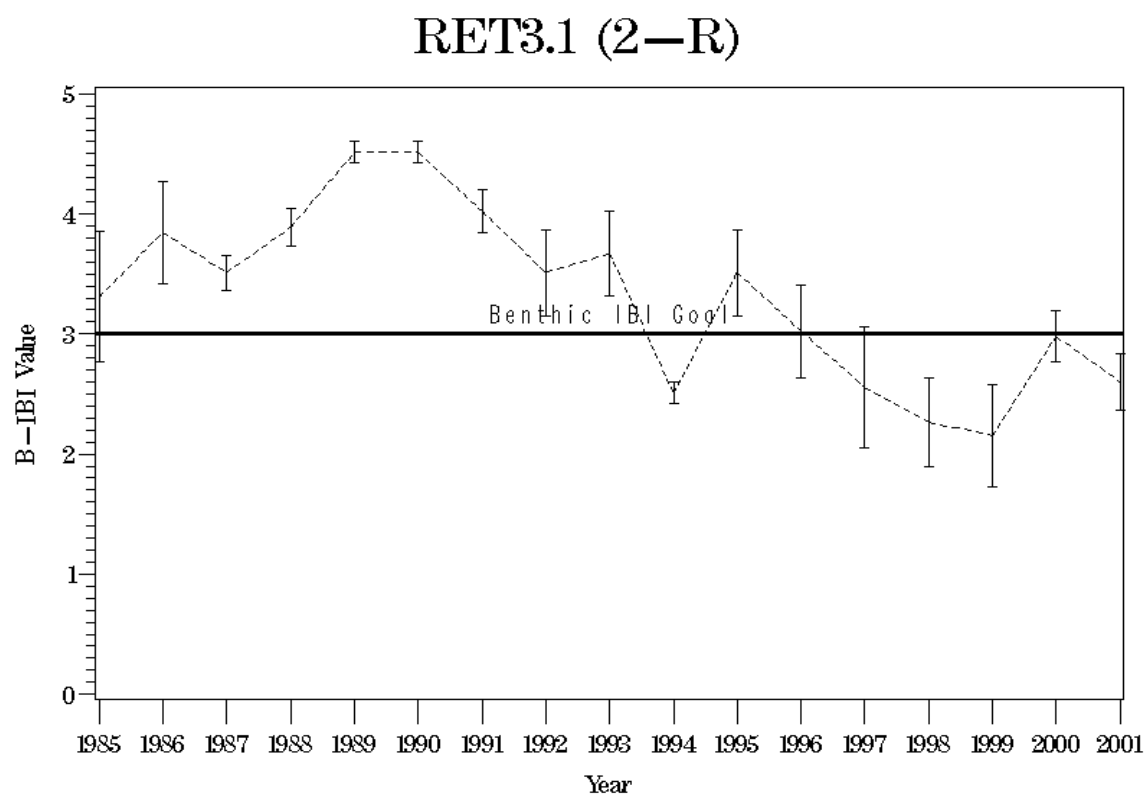


Figure 105. Plot of the benthic IBI against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

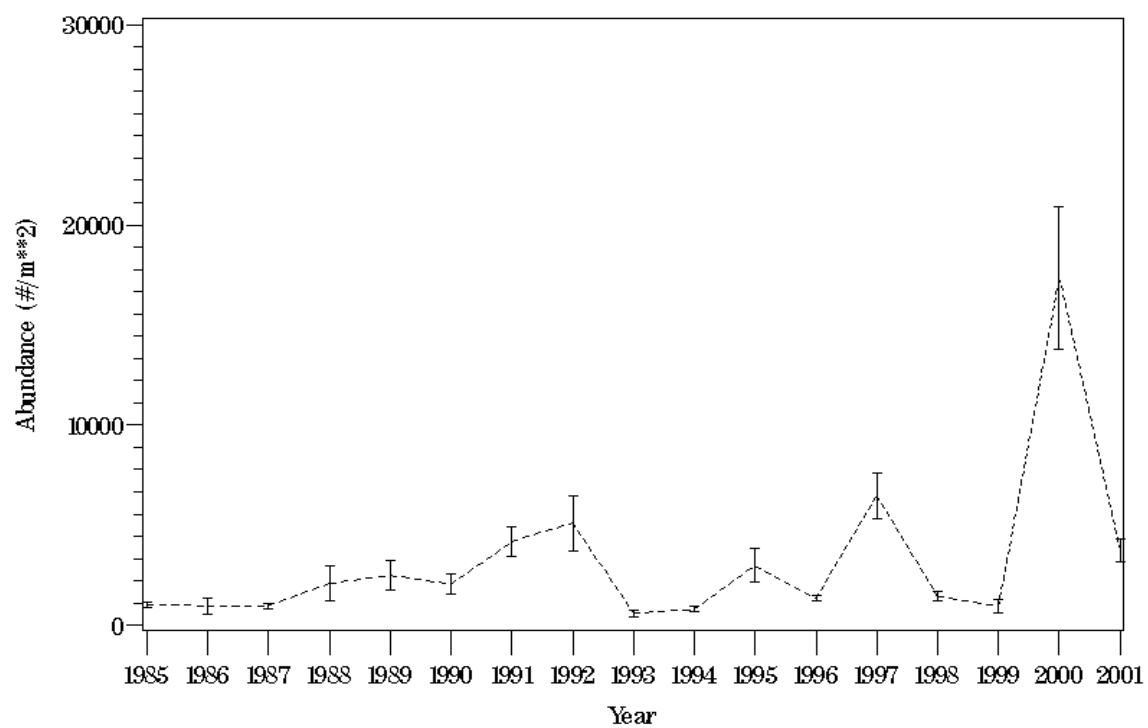


Figure 106. Plot of total benthic community abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

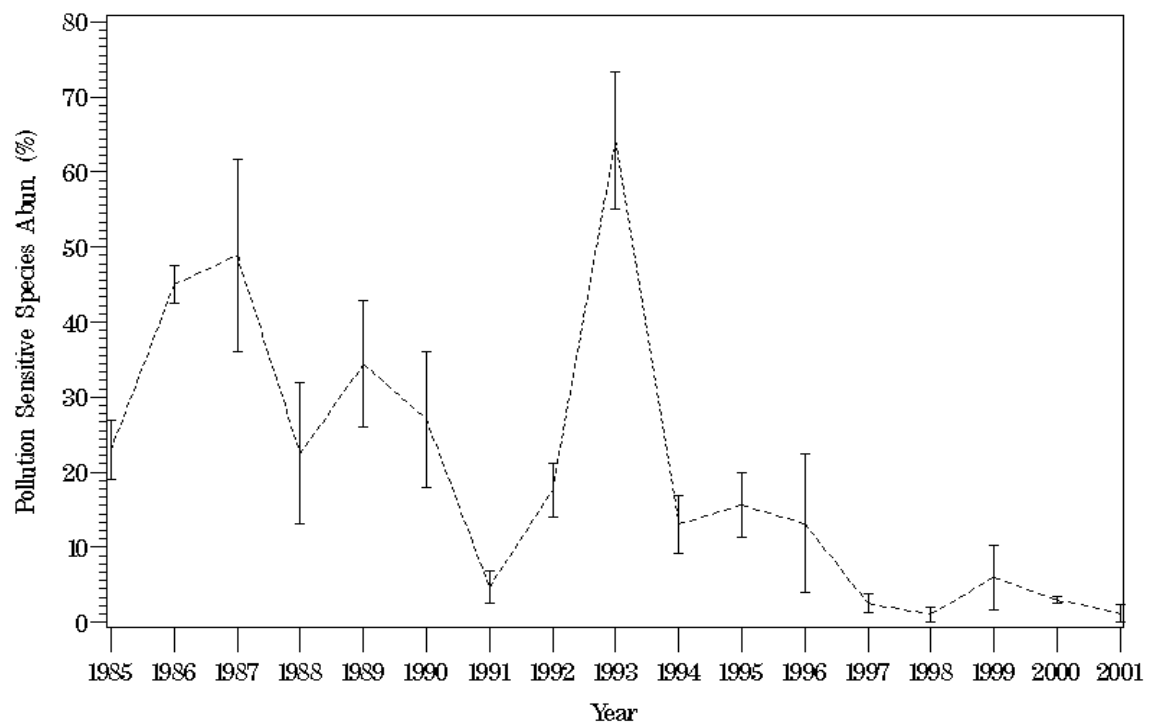


Figure 107. Plot of pollution sensitive species abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

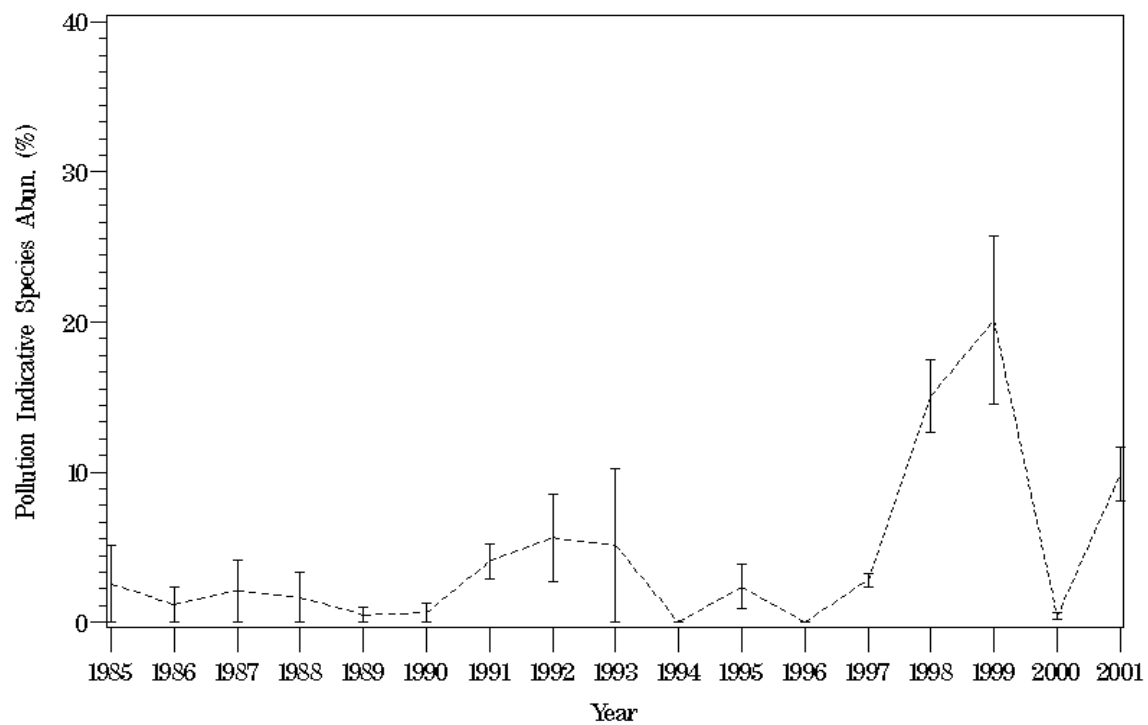


Figure 108. Plot of pollution indicative species abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

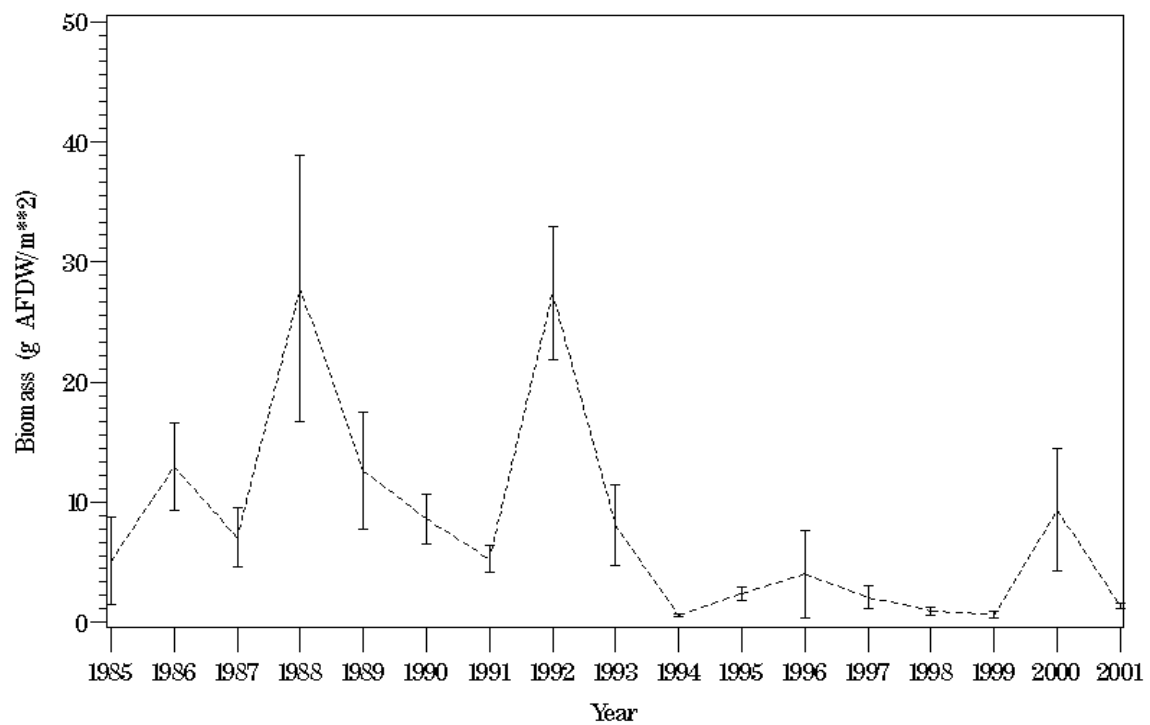


Figure 109. Plot of total benthic community biomass against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

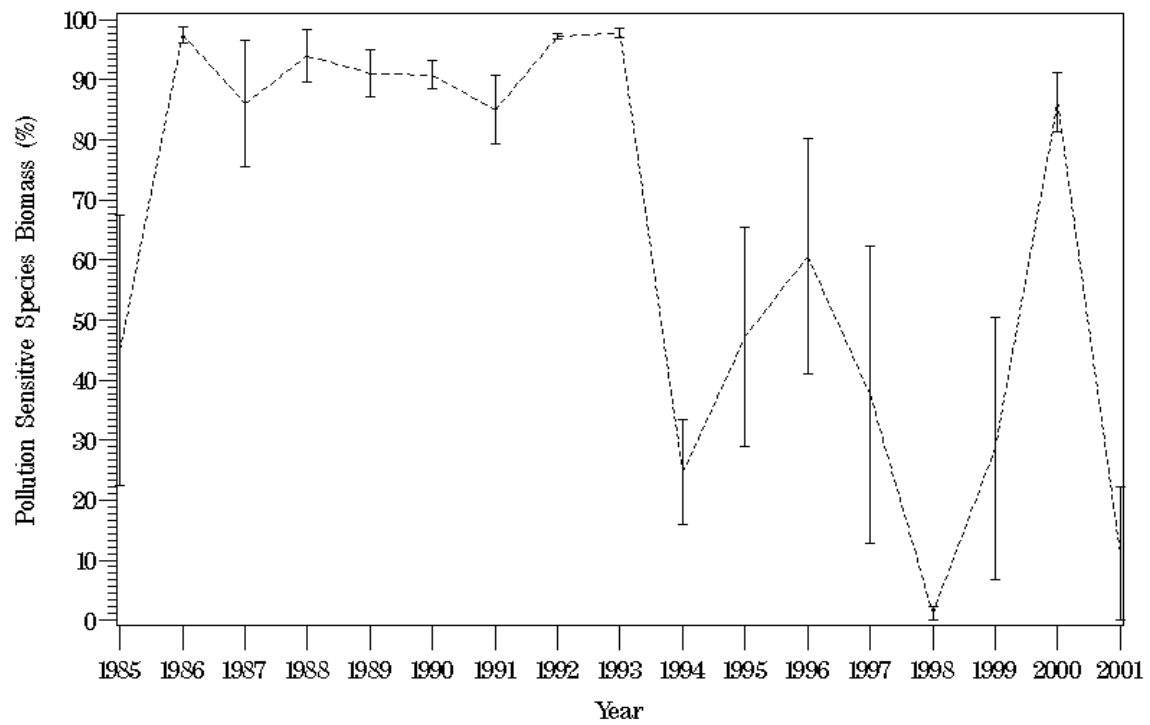


Figure 110. Plot of pollution sensitive species biomass against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

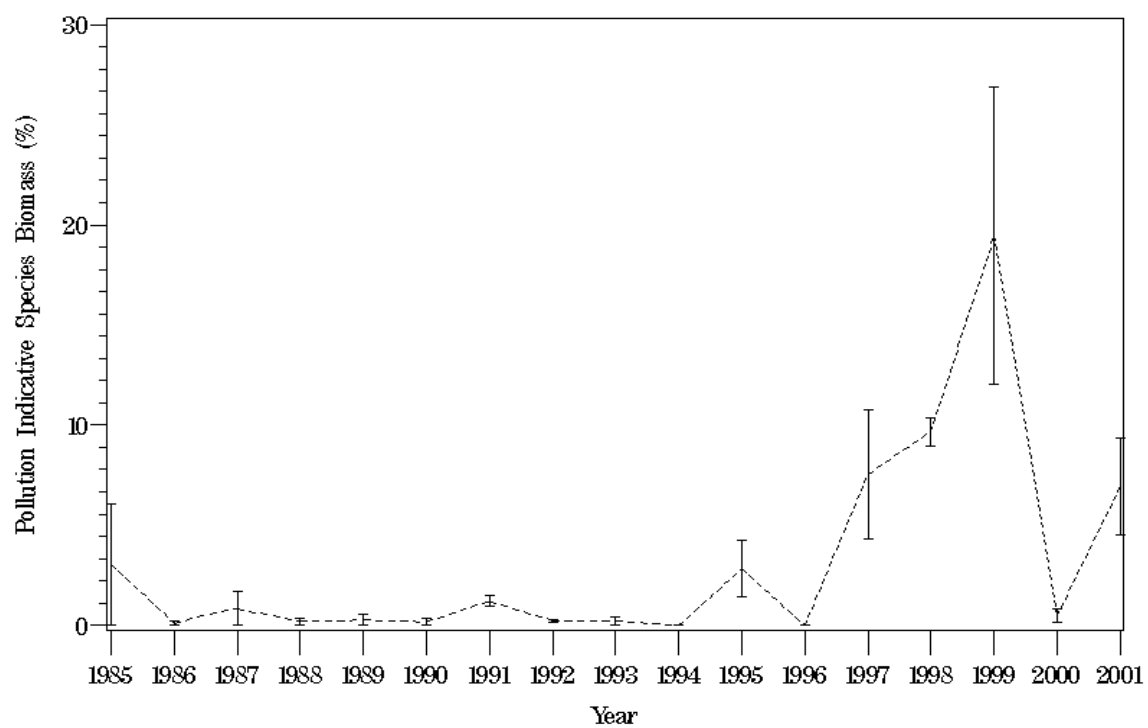


Figure 111. Plot of pollution indicative species biomass against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

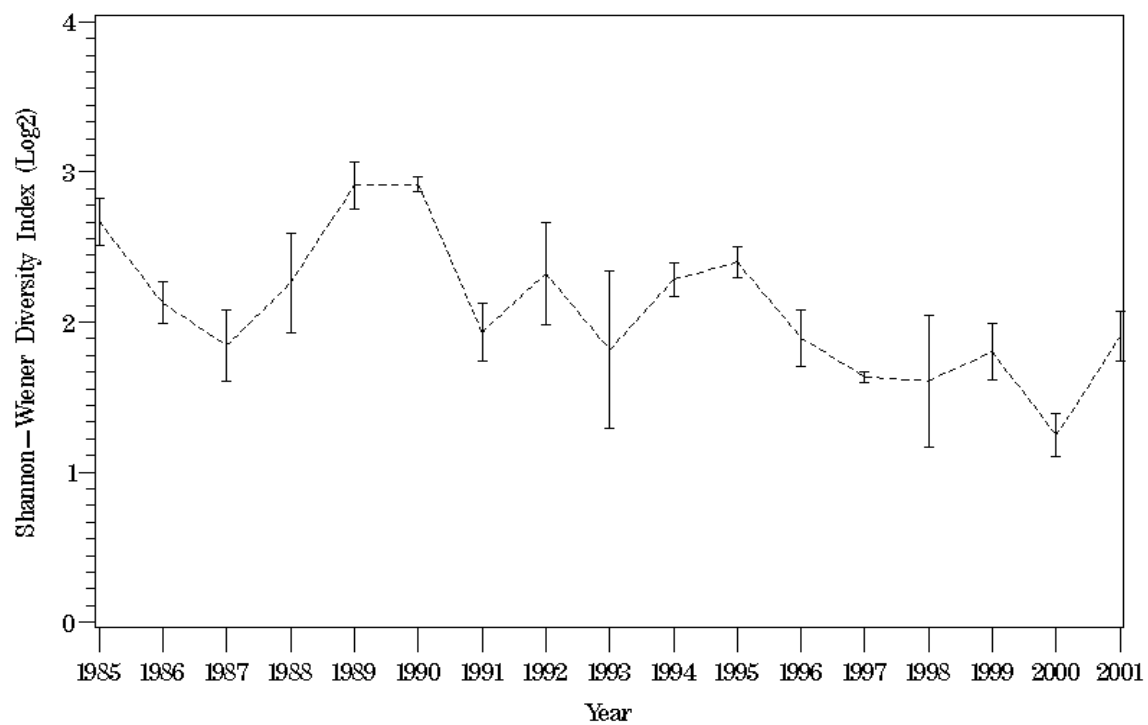


Figure 112. Plot of the Shannon-Weiner diversity index against time at station RET3.1 for the period of 1985 through 2001.

LE3.2 (3-R)

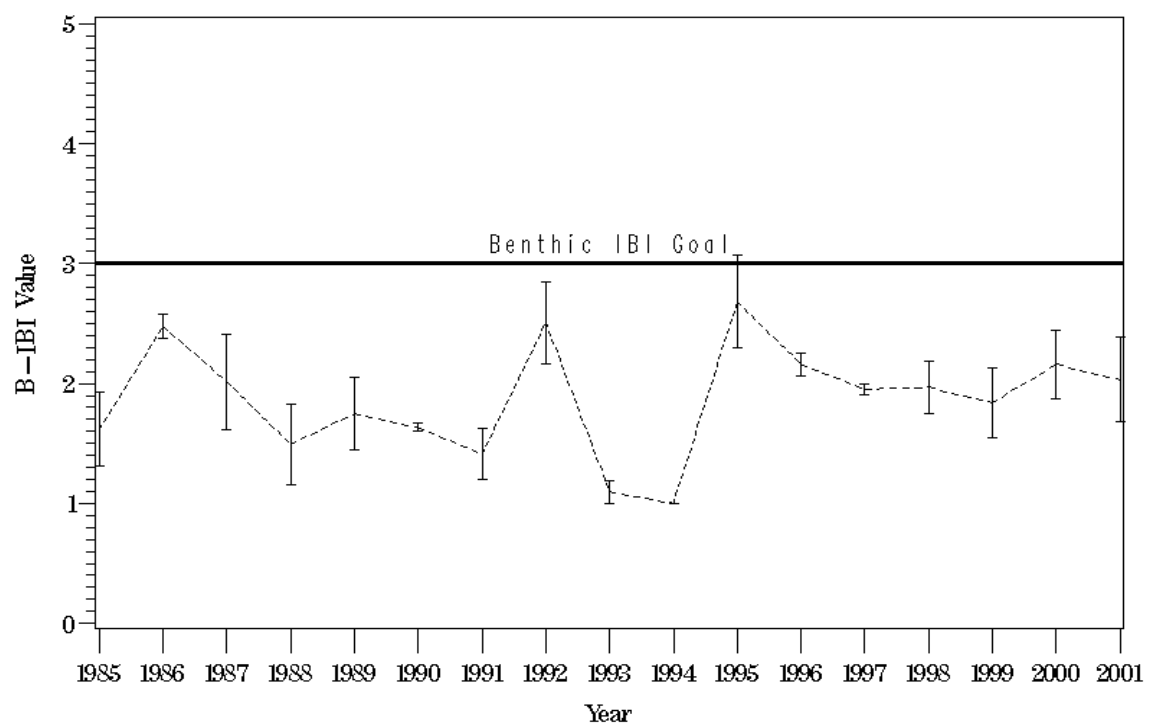


Figure 113. Plot of the benthic IBI against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

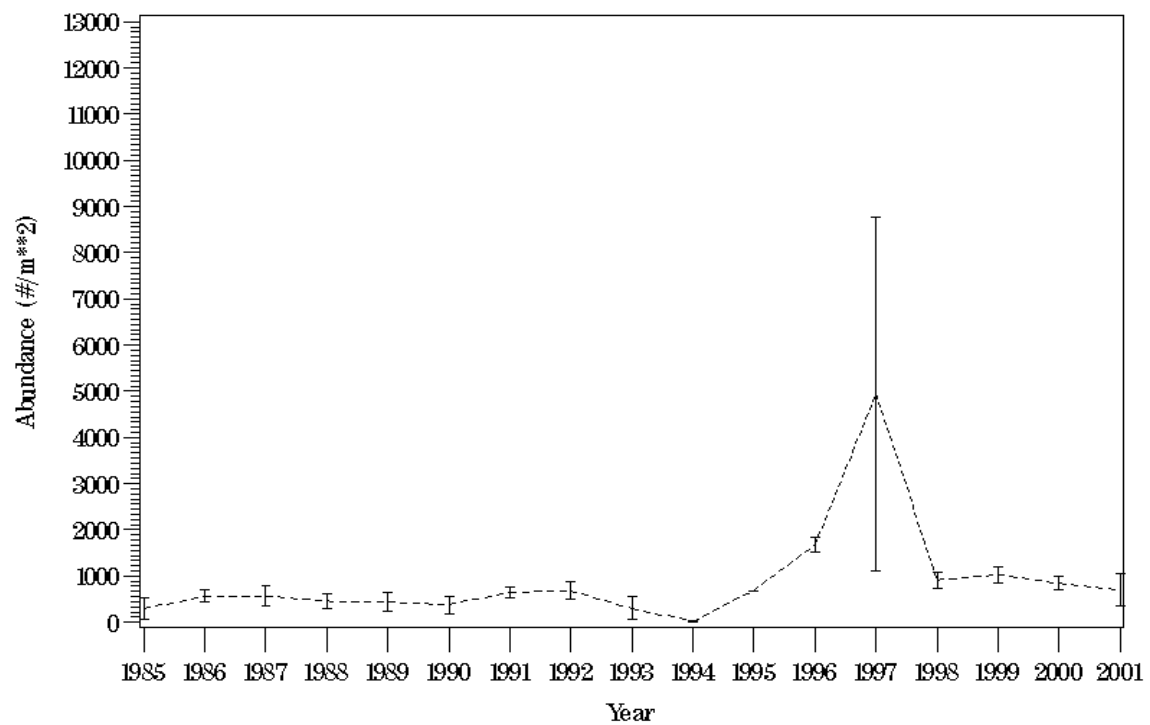


Figure 114. Plot of total benthic community abundance against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

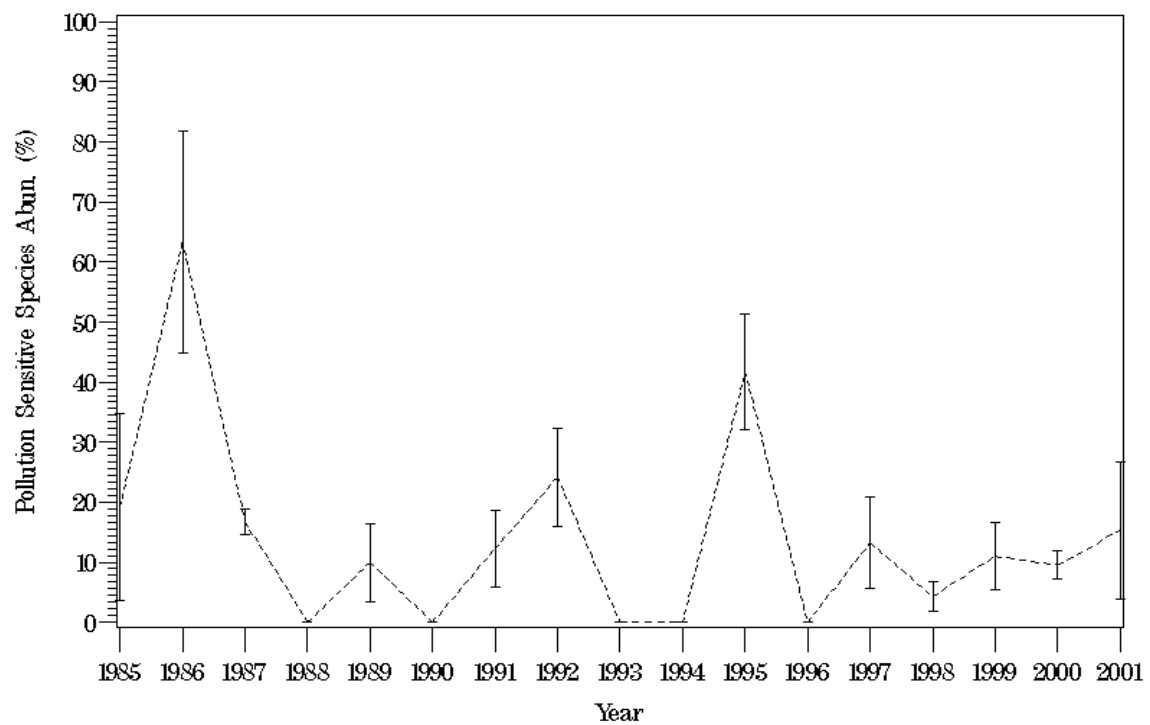


Figure 115. Plot of pollution sensitive species abundance against time at station LE3.2 for the period of 1985 through 2001.

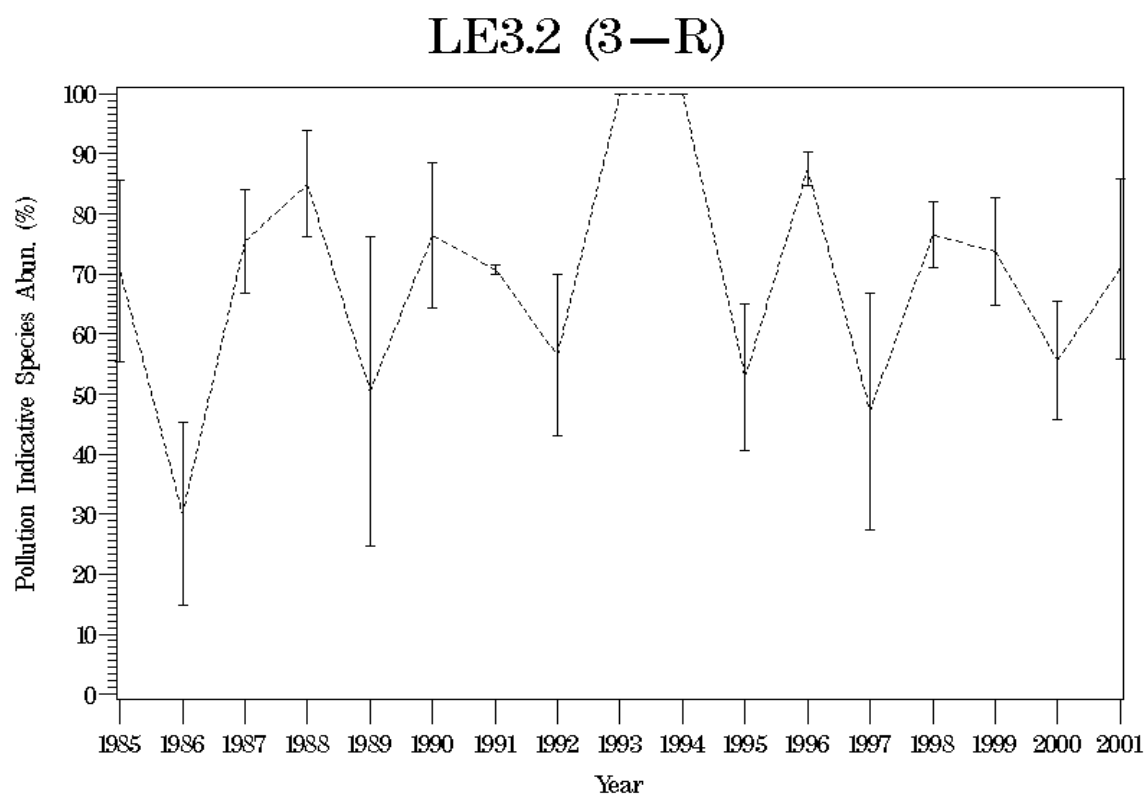


Figure 116. Plot of pollution indicative species abundance against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

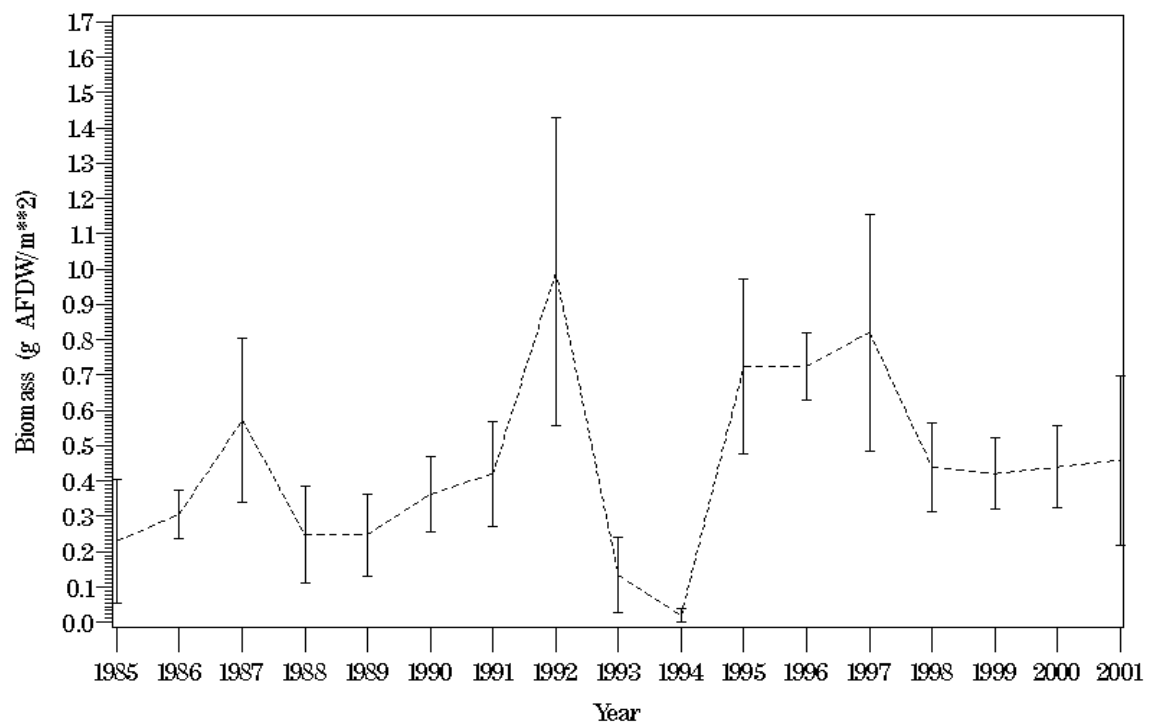


Figure 117. Plot of total benthic community biomass against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

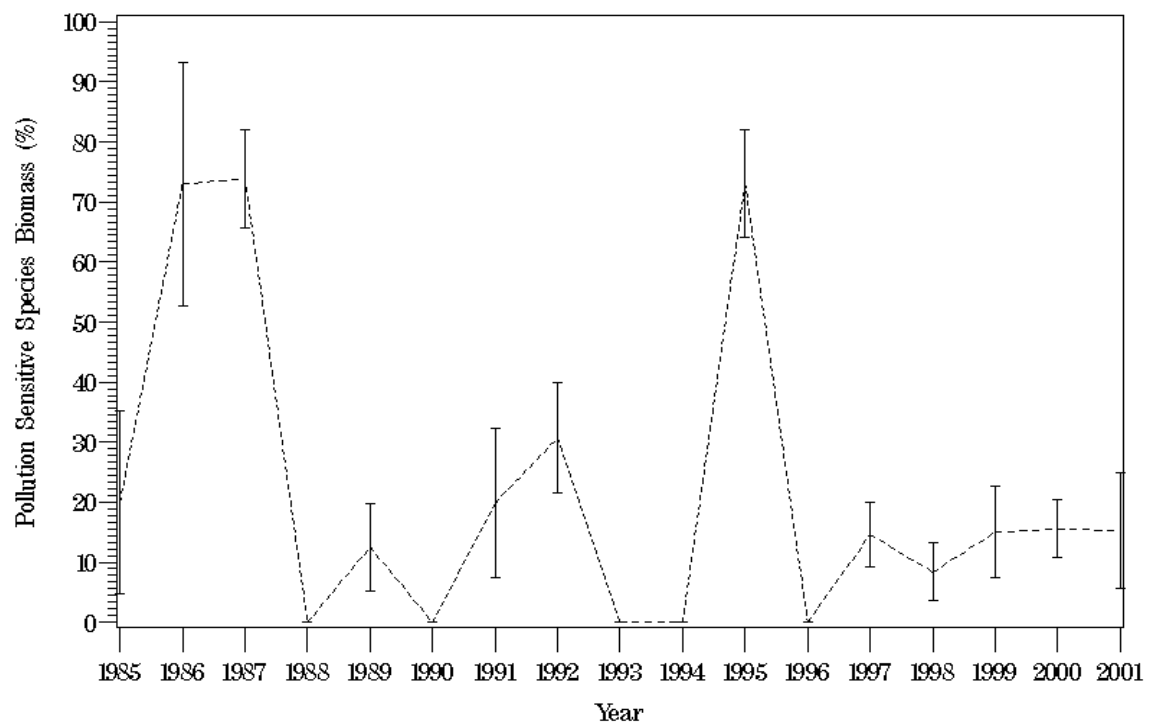


Figure 118. Plot of pollution sensitive species biomass against time at station LE3.2 for the period of 1985 through 2001.

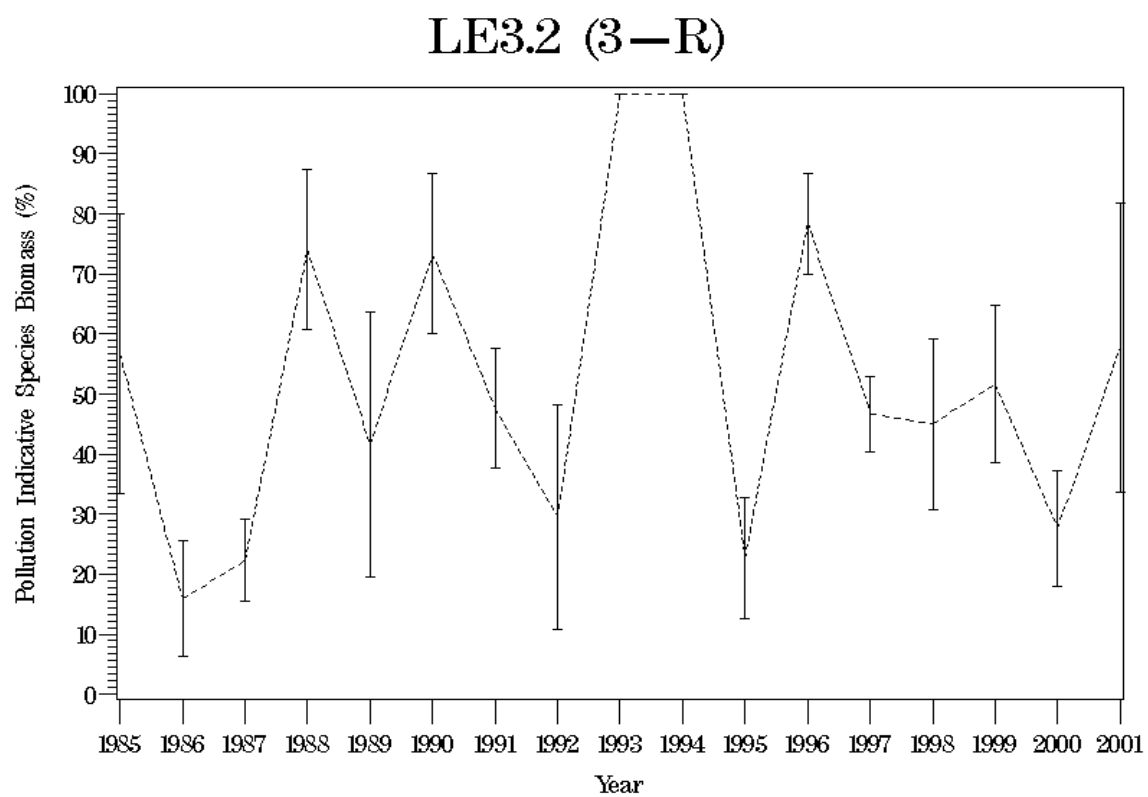


Figure 119. Plot of pollution indicative species biomass against time at station LE3.2 for the period of 1985 through 2001.

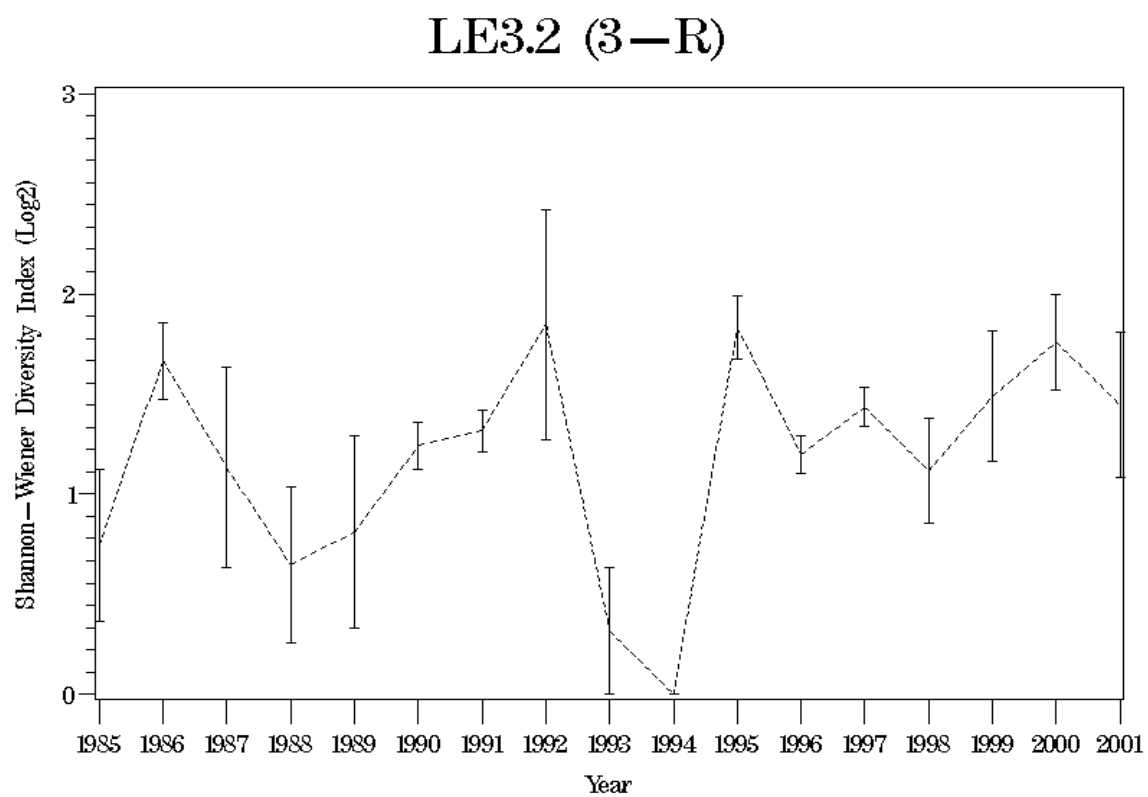


Figure 120. Plot of the Shannon-Weiner diversity index against time at station LE3.2 for the period of 1985 through 2001.

LE3.4 (4-R)

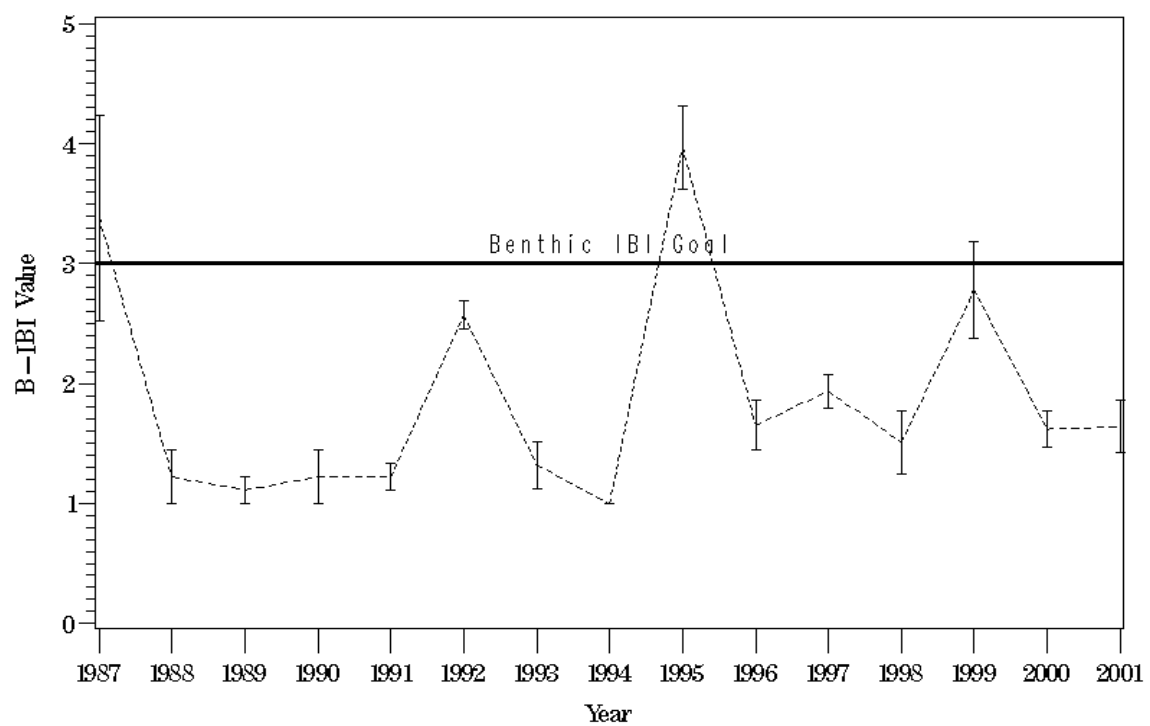


Figure 121. Plot of the benthic IBI against time at station LE3.4 for the period of 1985 through 2001.

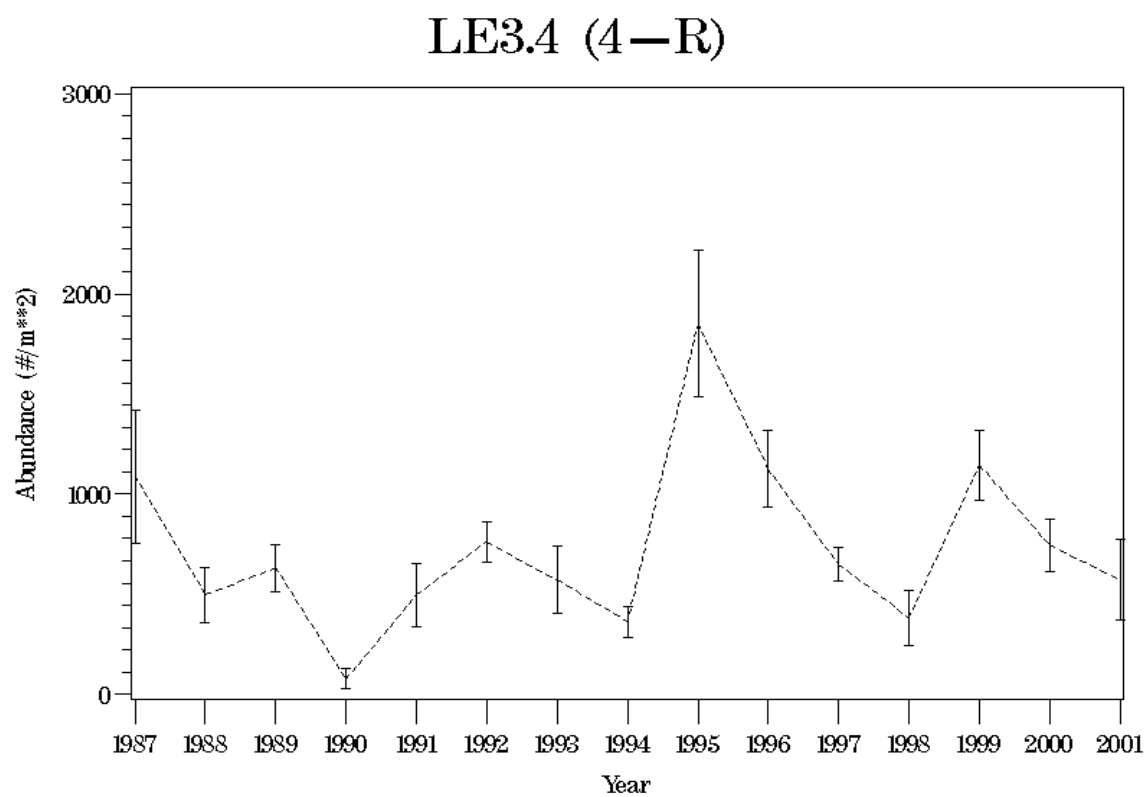


Figure 122. Plot of total benthic community abundance against time at station LE3.4 for the period of 1985 through 2001.

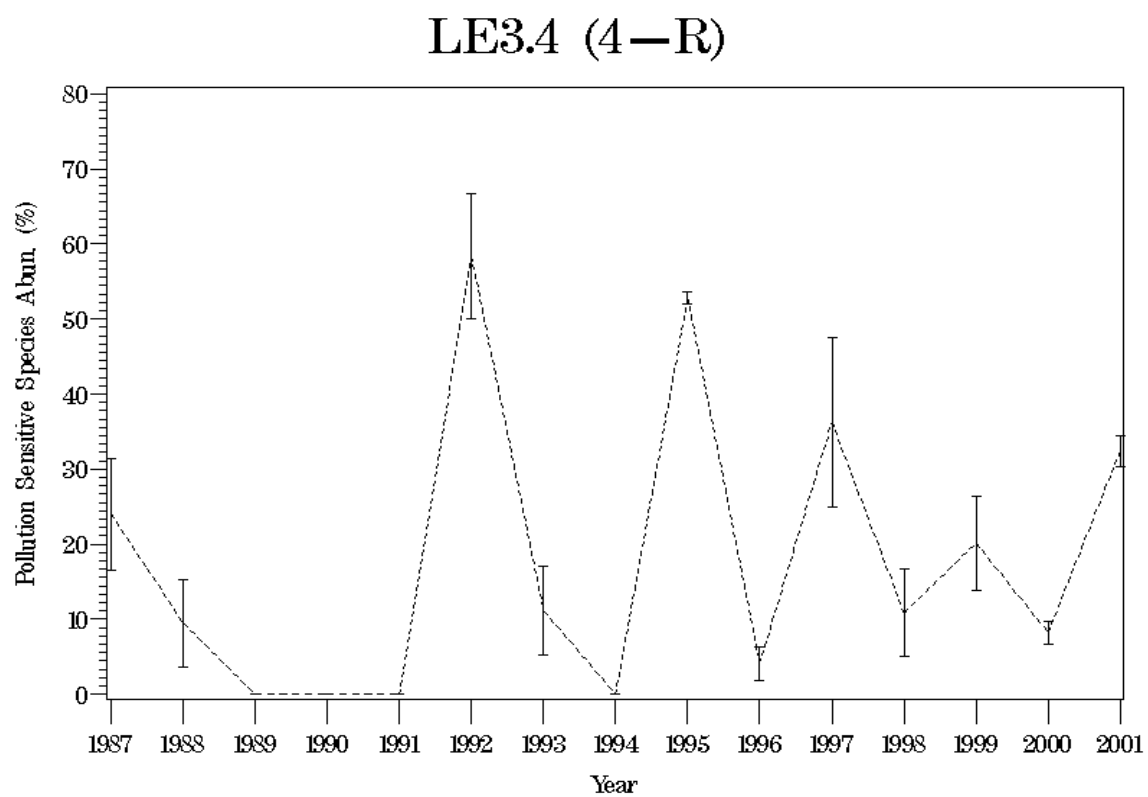


Figure 123. Plot of pollution sensitive species abundance against time at station LE3.4 for the period of 1985 through 2001.

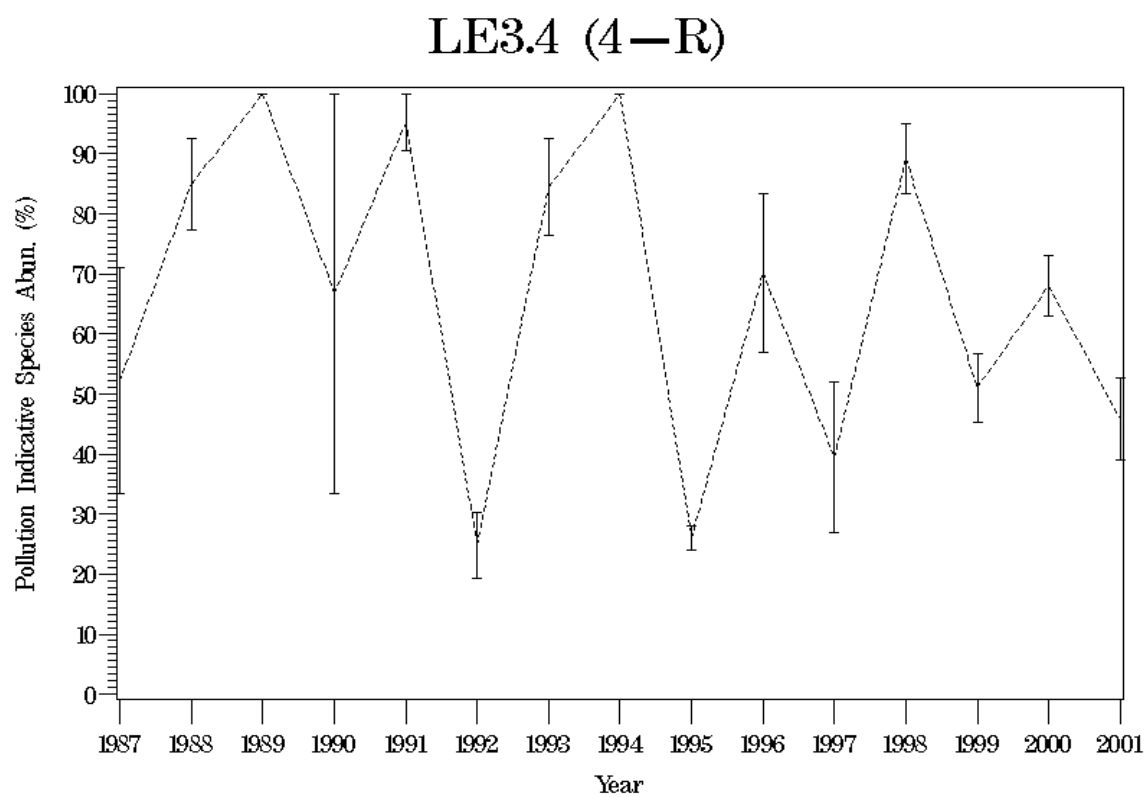


Figure 124. Plot of pollution indicative species abundance against time at station LE3.4 for the period of 1985 through 2001.

LE3.4 (4-R)

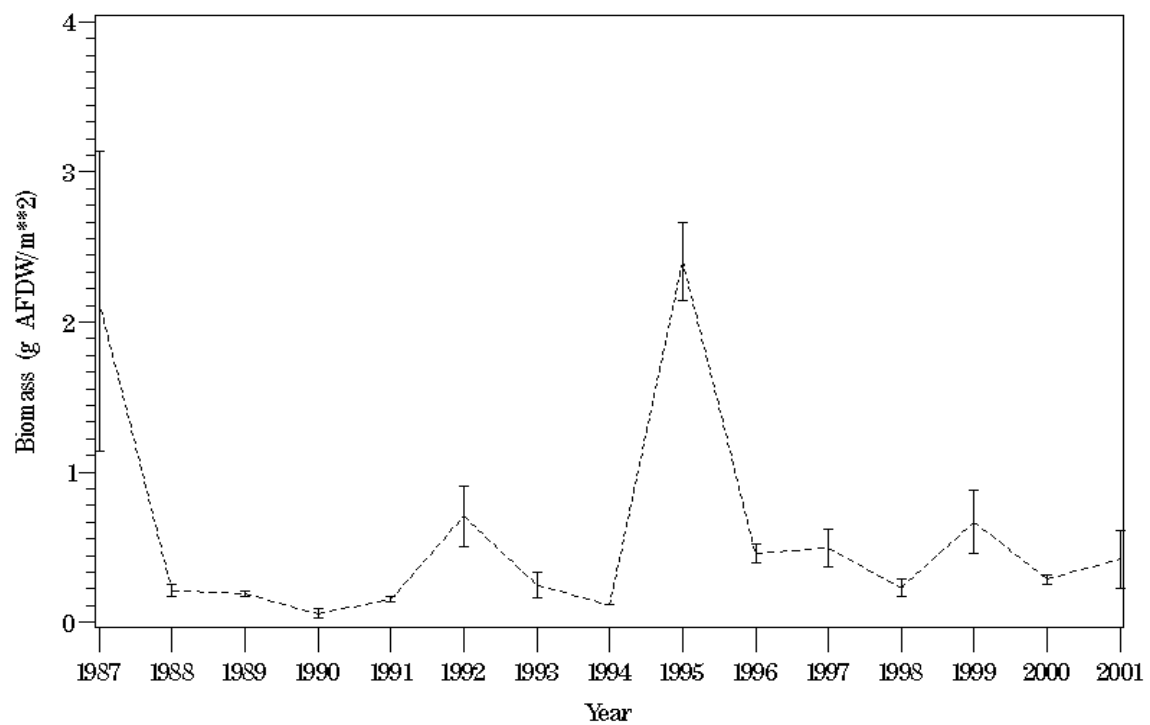


Figure 125. Plot of total benthic community biomass against time at station LE3.4 for the period of 1985 through 2001.

LE3.4 (4-R)

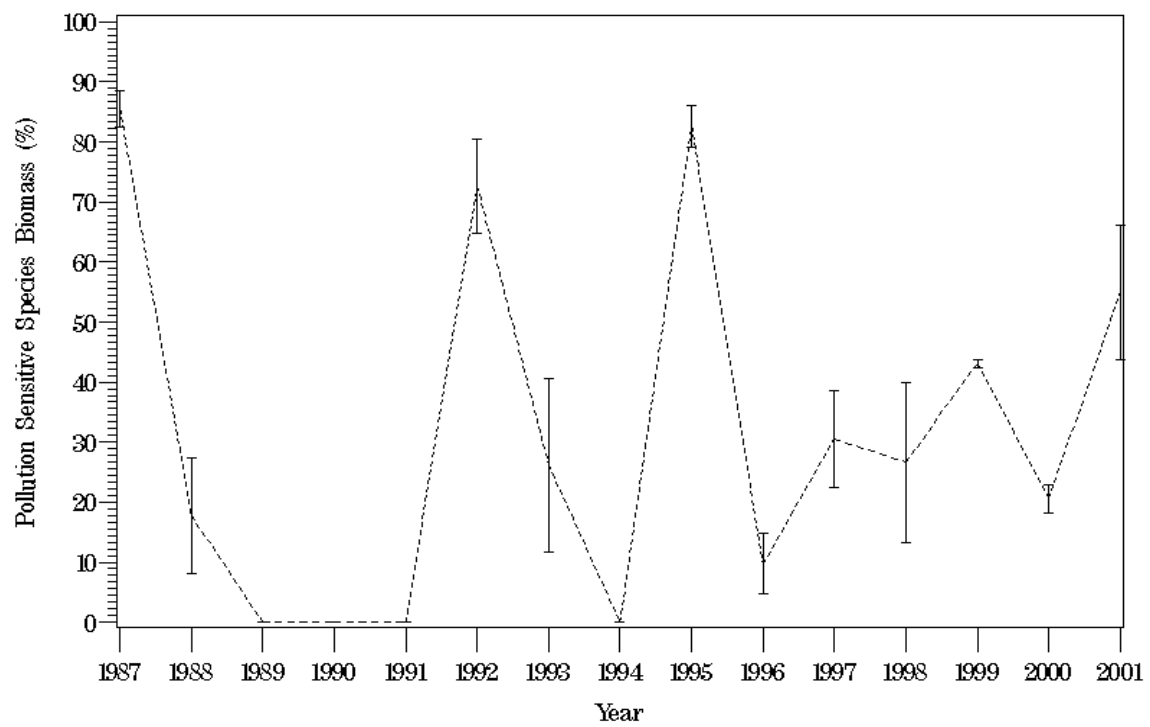


Figure 126. Plot of pollution sensitive species biomass against time at station LE3.4 for the period of 1985 through 2001.

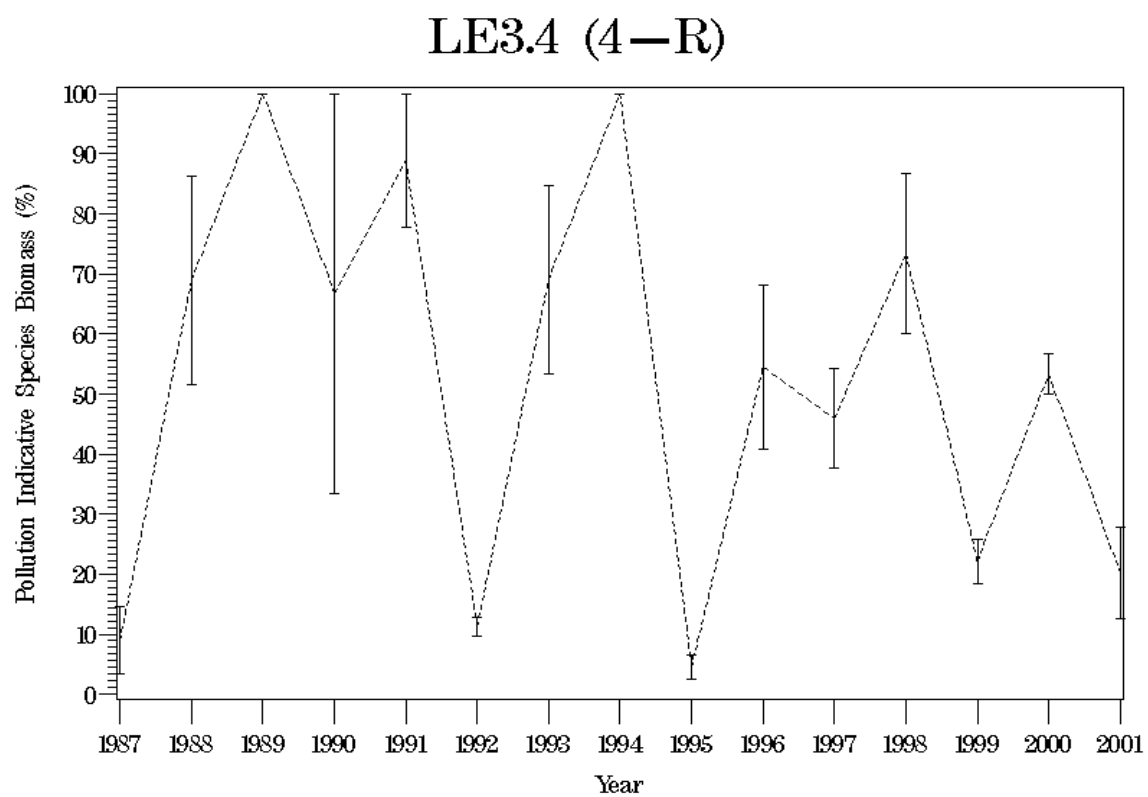


Figure 127. Plot of pollution indicative species biomass against time at station LE3.4 for the period of 1985 through 2001.

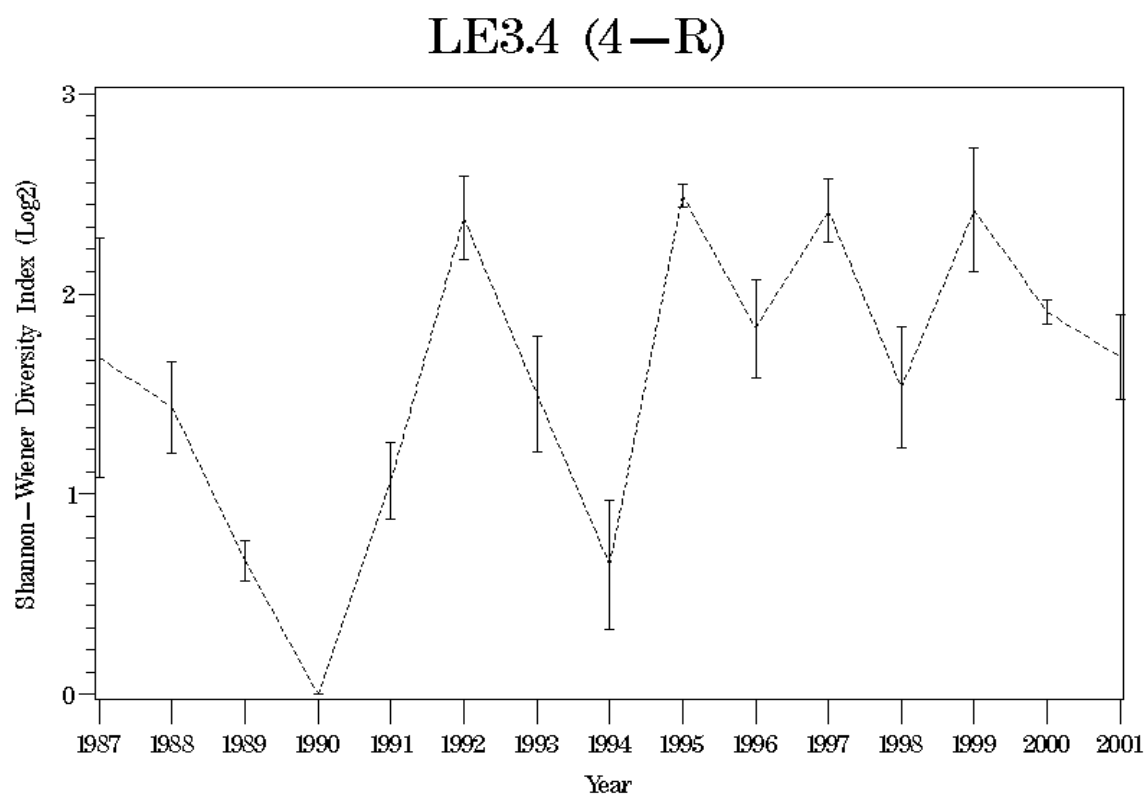


Figure 128. Plot of the Shannon-Weiner diversity index against time at station LE3.4 for the period of 1985 through 2001.

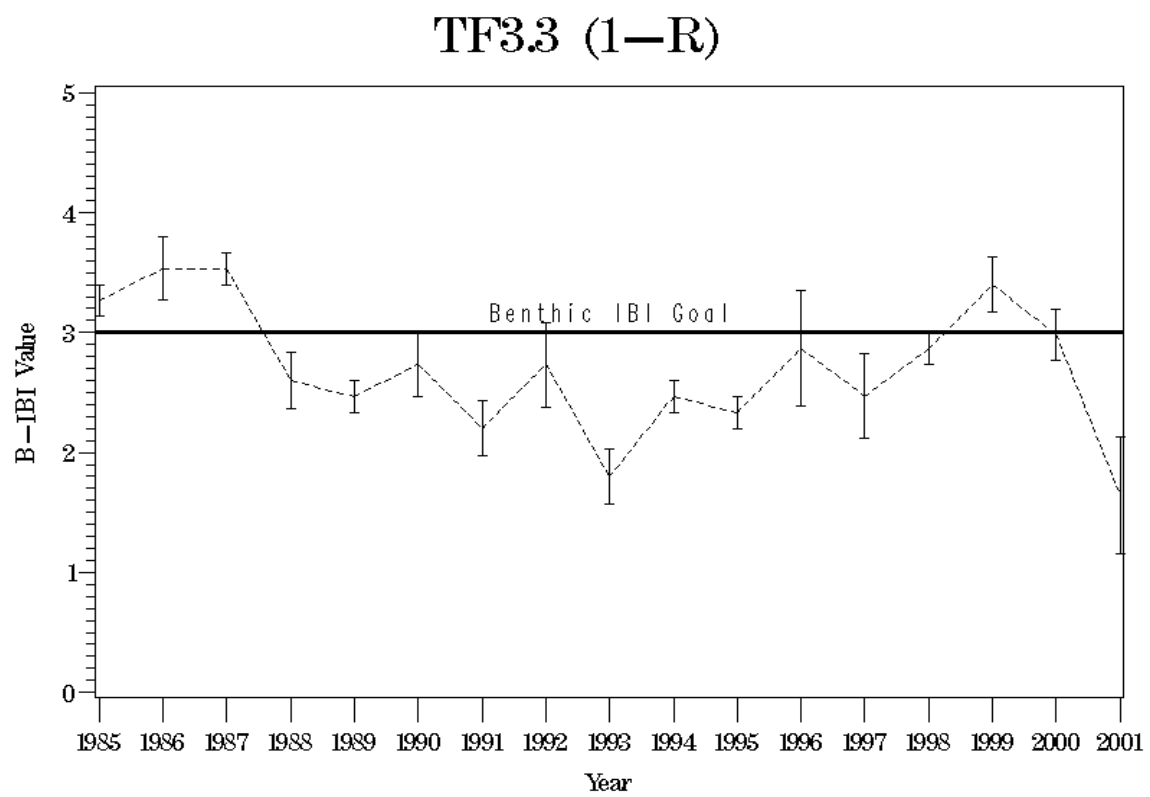


Figure 129. Plot of the benthic IBI against time at station TF3.3 for the period of 1985 through 2001.

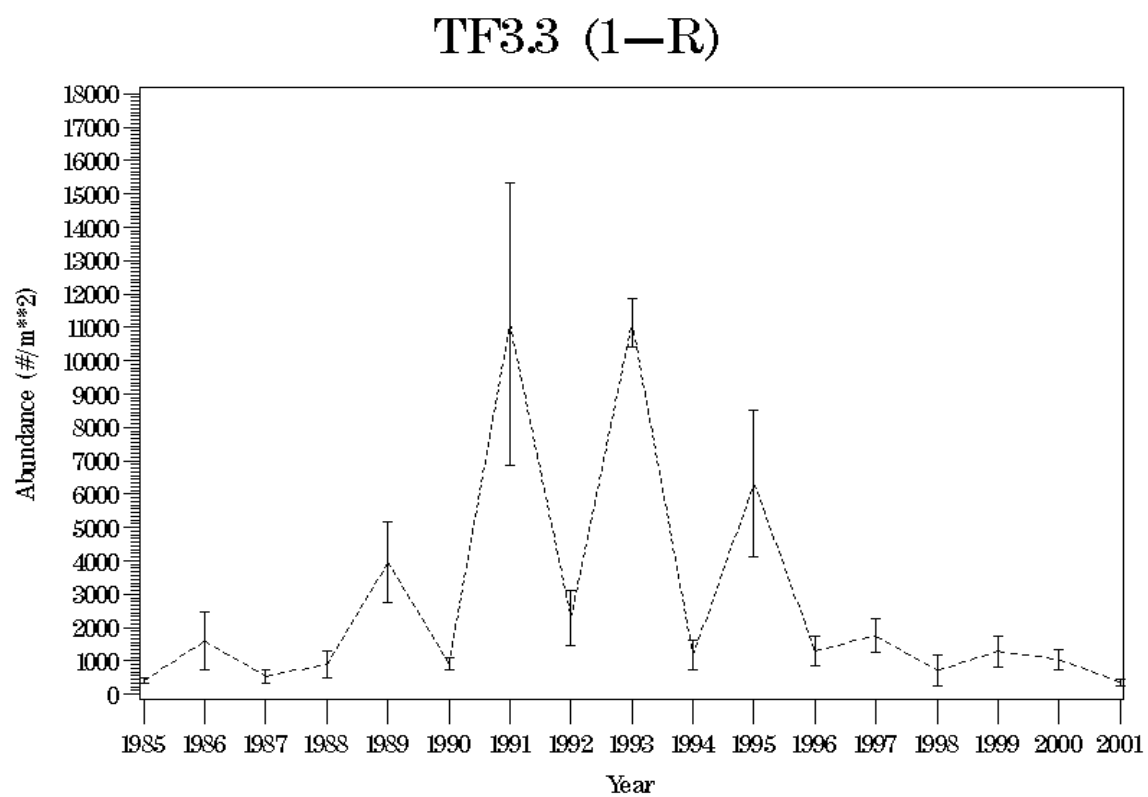


Figure 130. Plot of total benthic community abundance against time at station TF3.3 for the period of 1985 through 2001.

TF3.3 (1-R)

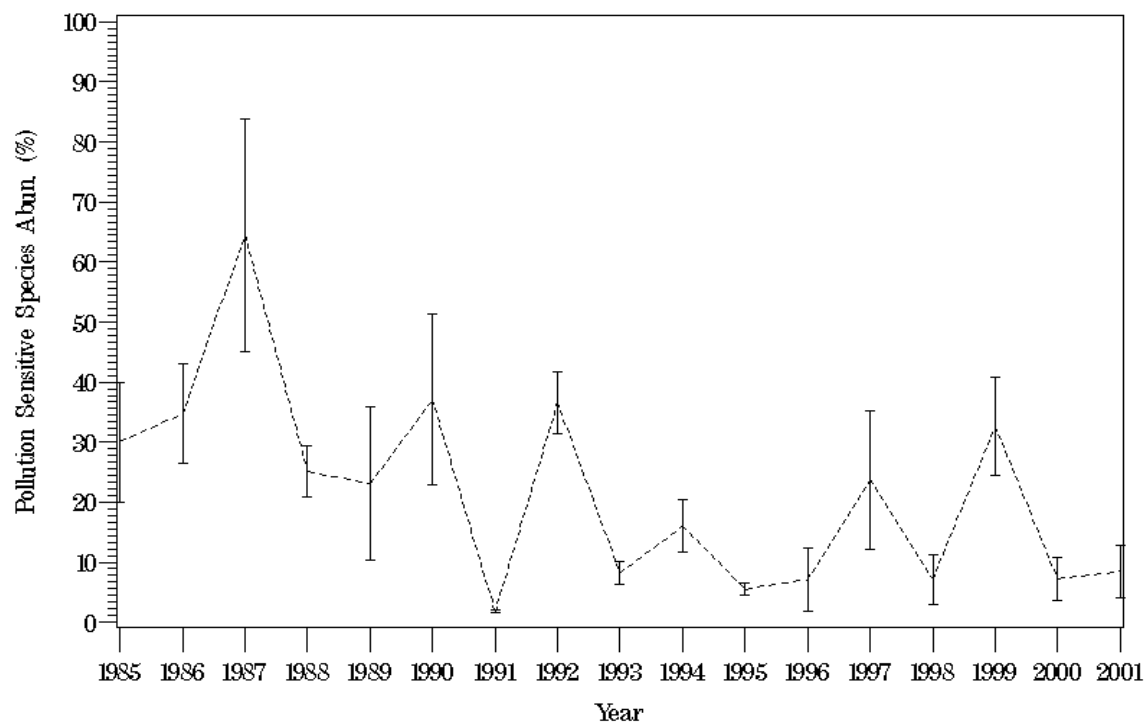


Figure 131. Plot of pollution sensitive species abundance against time at station TF3.3 for the period of 1985 through 2001.

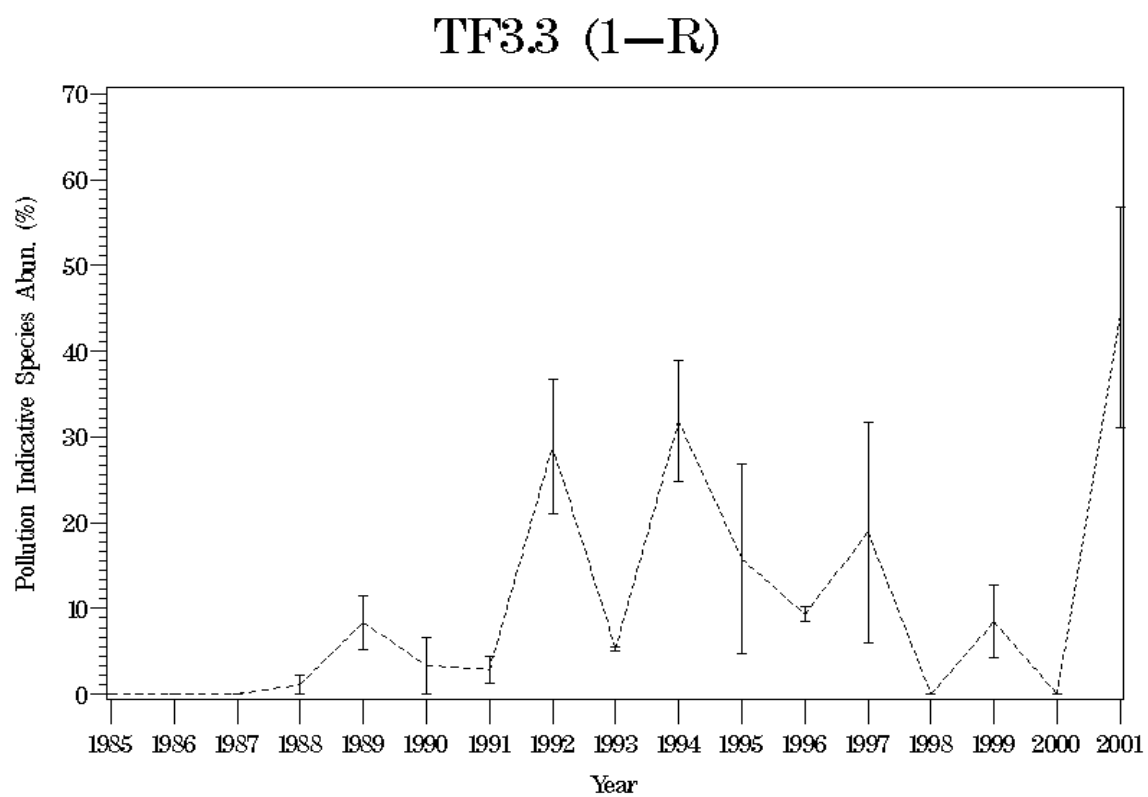


Figure 132. Plot of pollution indicative species abundance against time at station TF3.3 for the period of 1985 through 2001.

TF3.3 (1-R)

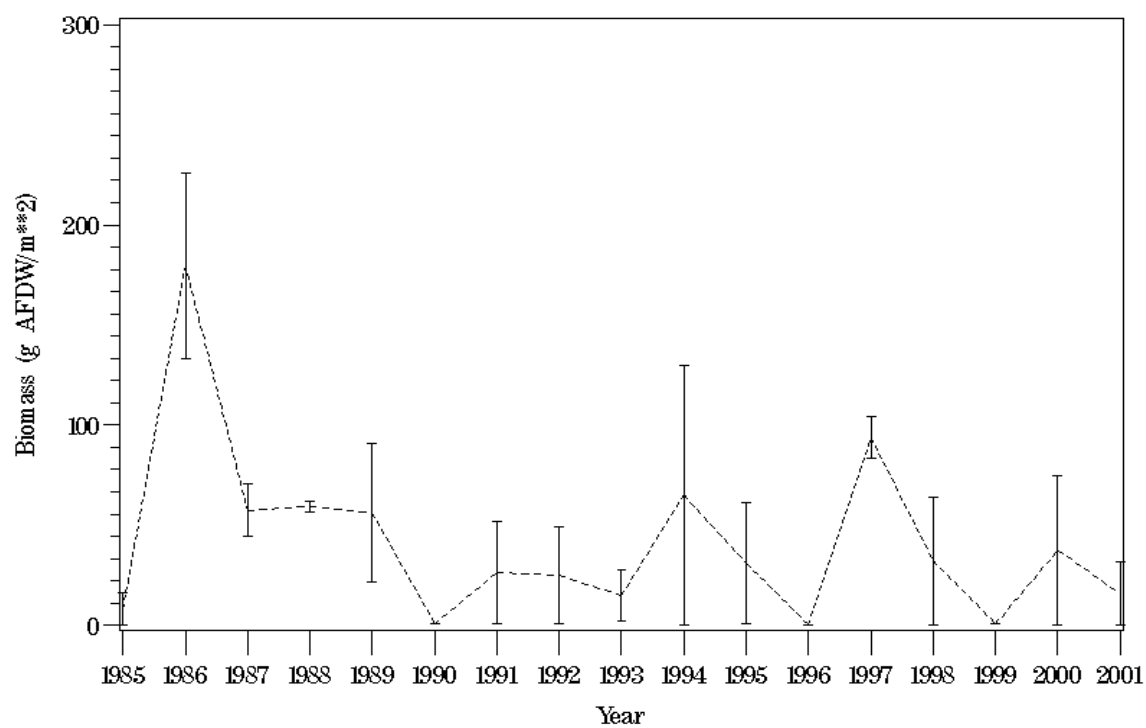


Figure 133. Plot of total benthic community biomass against time at station TF3.3 for the period of 1985 through 2001.

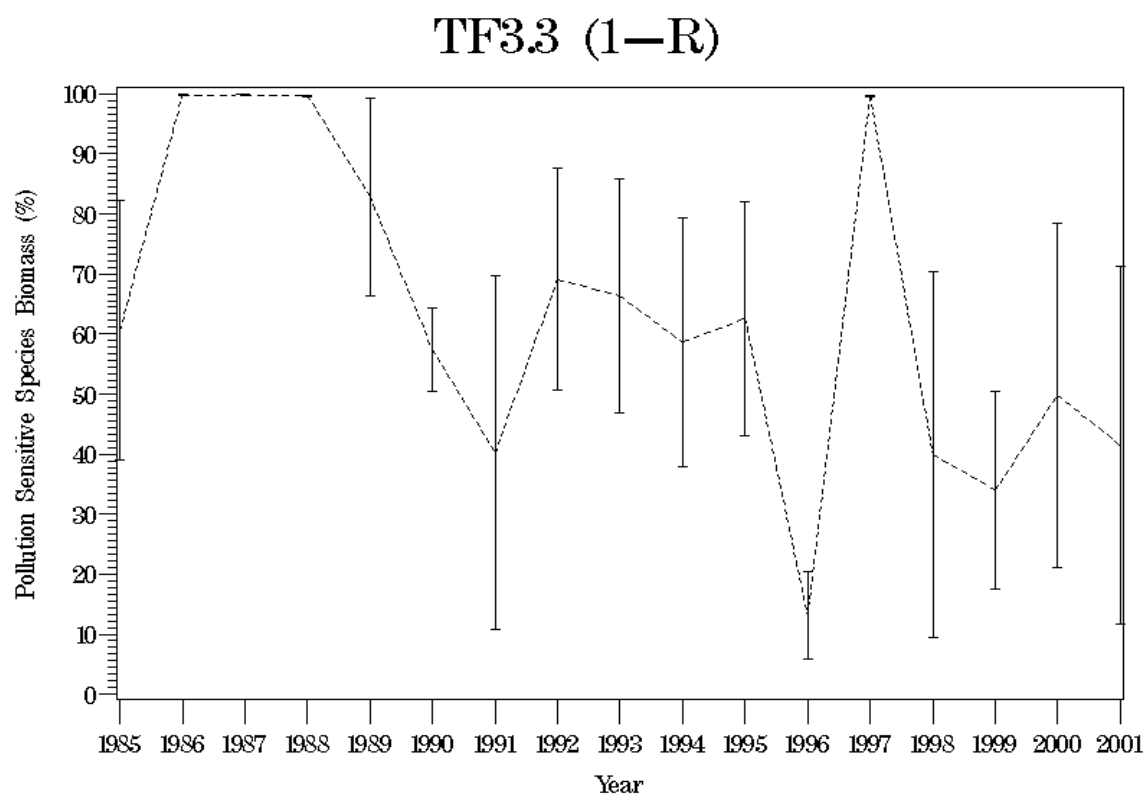


Figure 134. Plot of pollution sensitive species biomass against time at station TF3.3 for the period of 1985 through 2001.

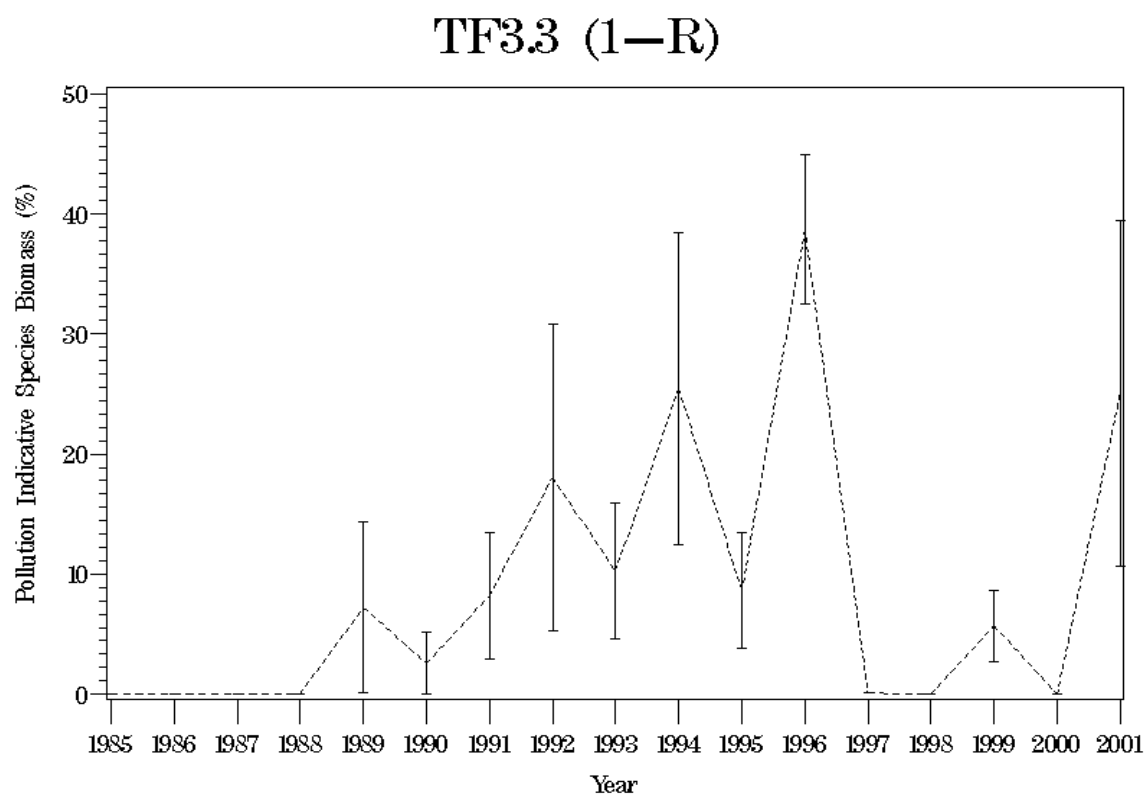


Figure 135. Plot of pollution indicative species biomass against time at station TF3.3 for the period of 1985 through 2001.

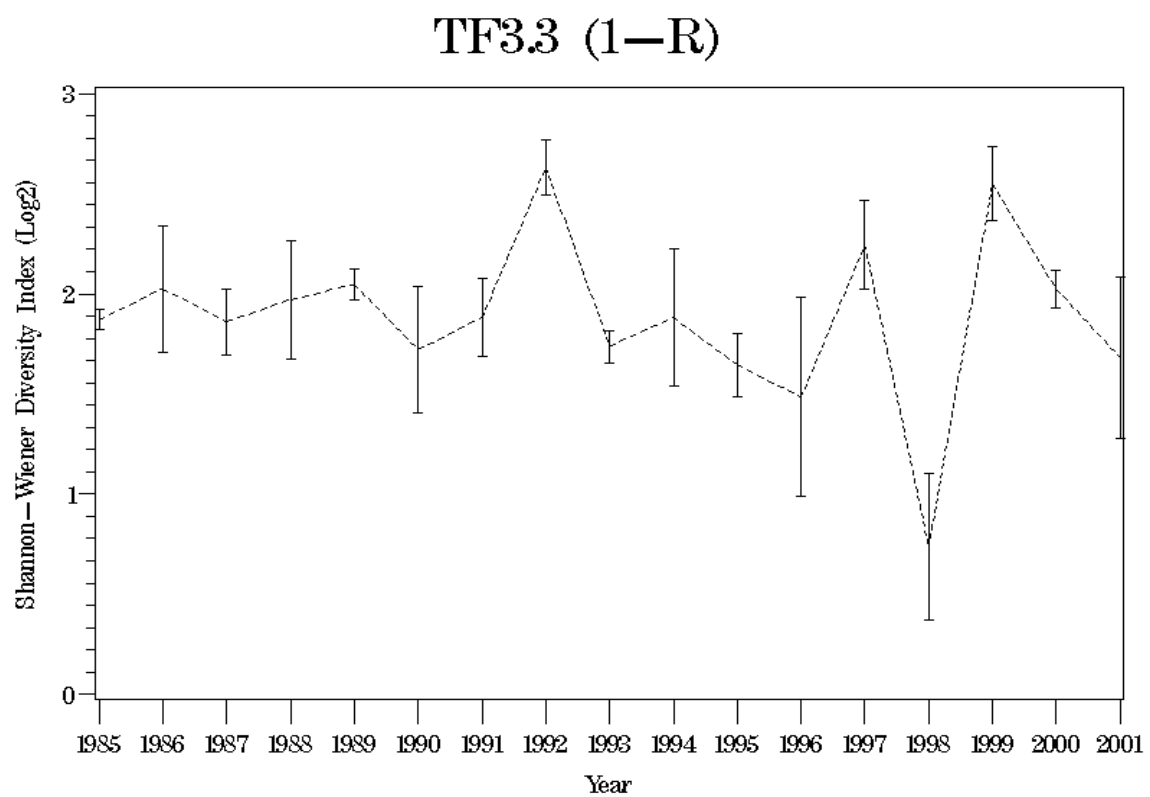


Figure 136. Plot of the Shannon-Weiner diversity index against time at station TF3.3 for the period of 1985 through 2001.

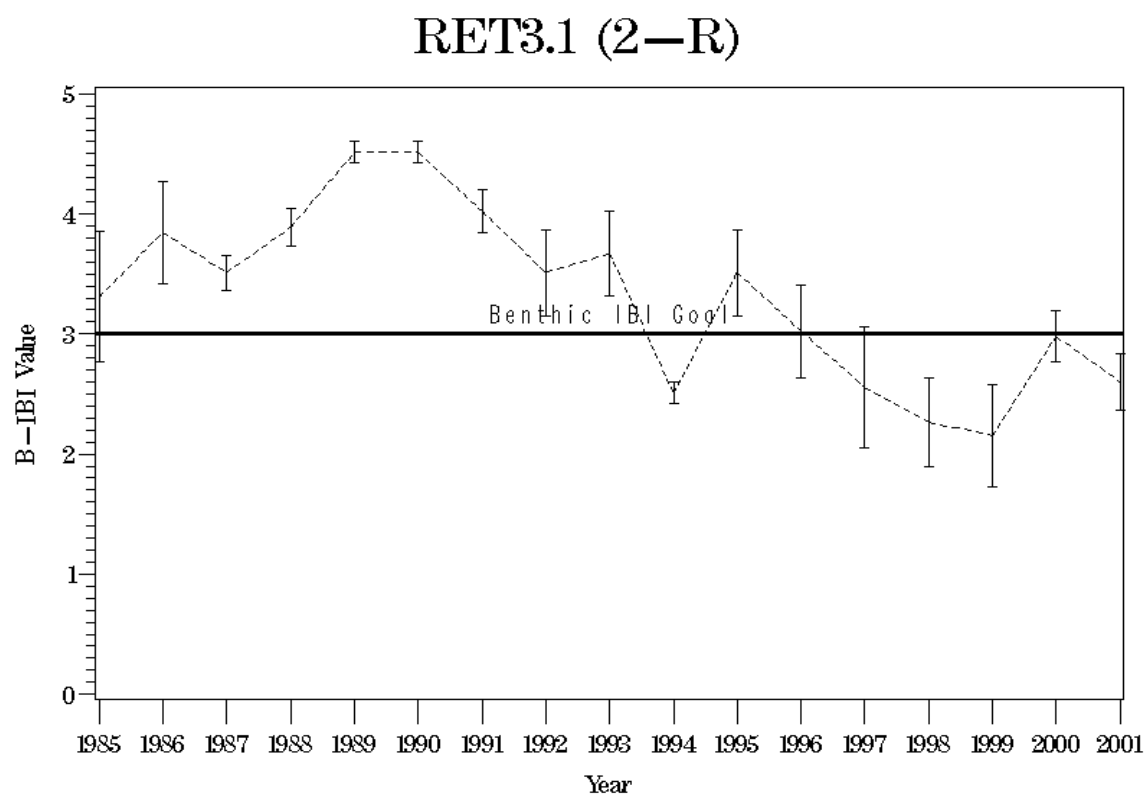


Figure 137. Plot of the benthic IBI against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

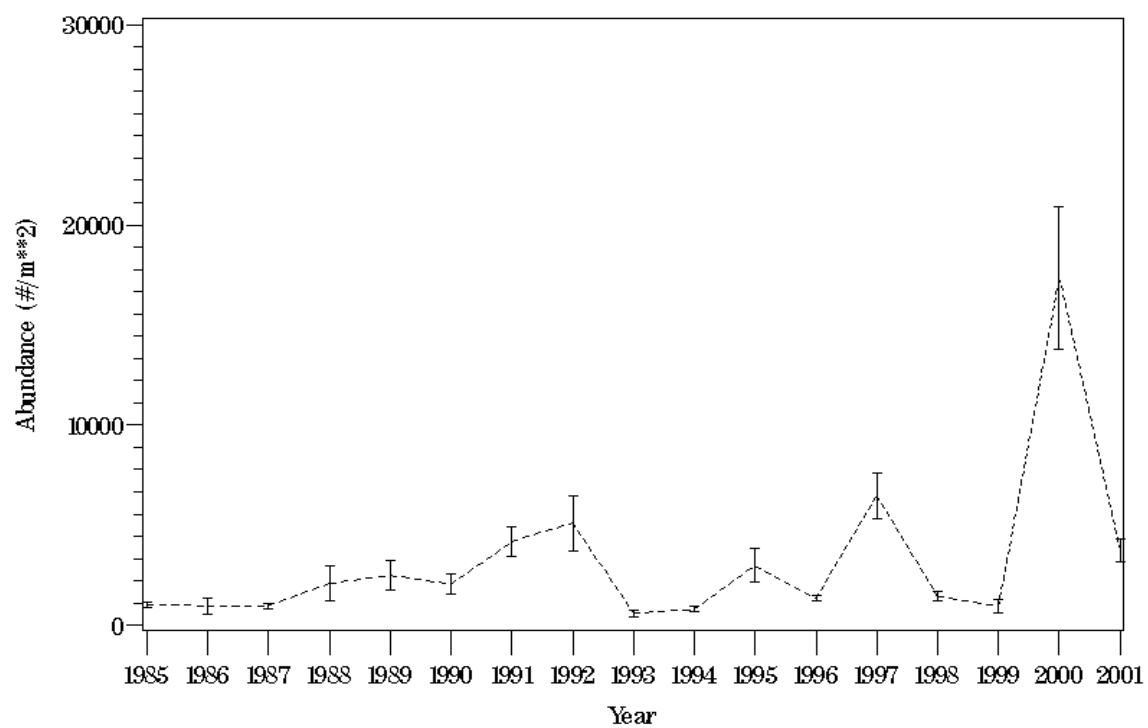


Figure 138. Plot of total benthic community abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

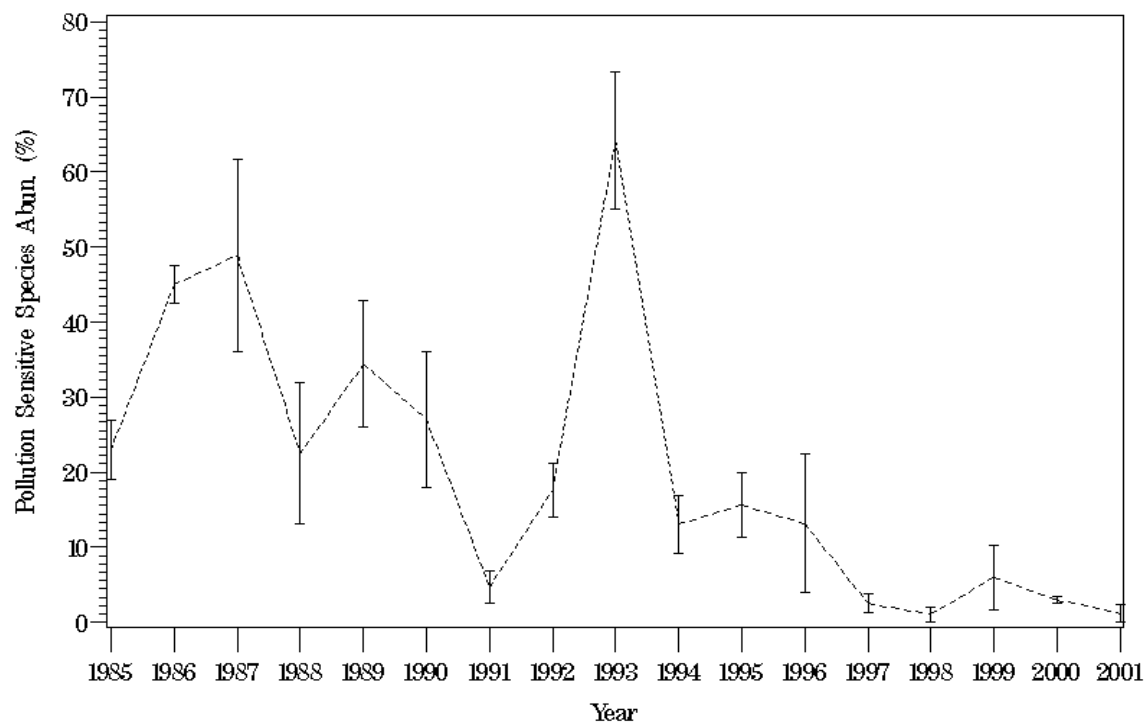


Figure 139. Plot of pollution sensitive species abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

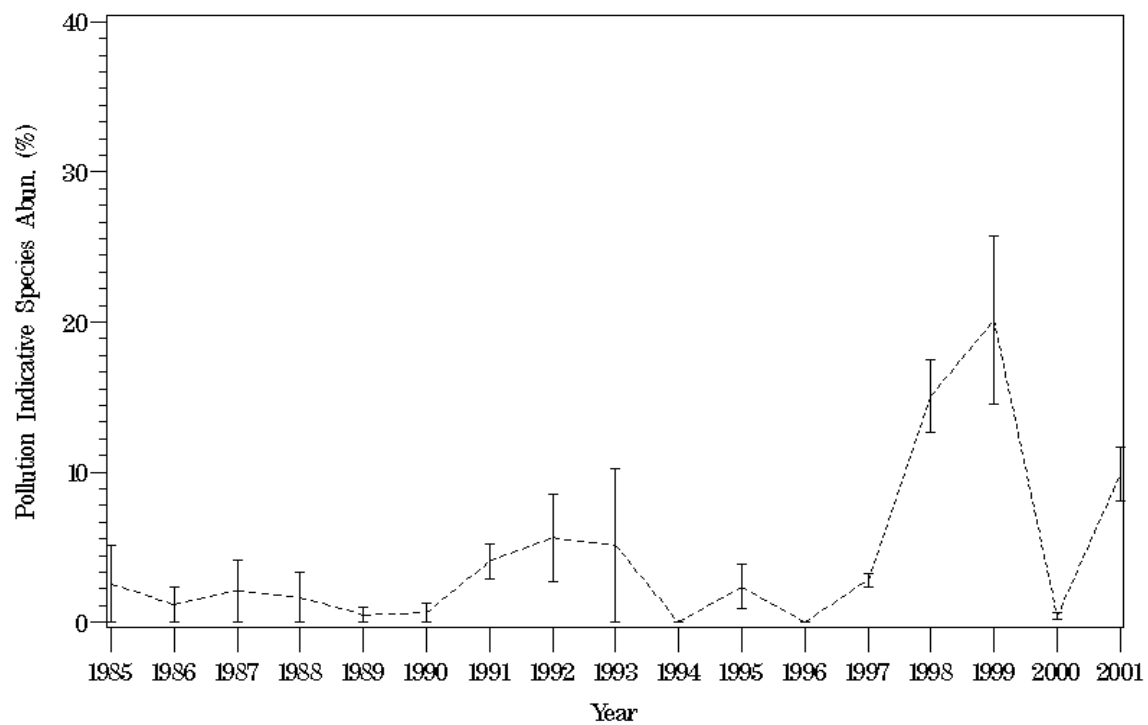


Figure 140. Plot of pollution indicative species abundance against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

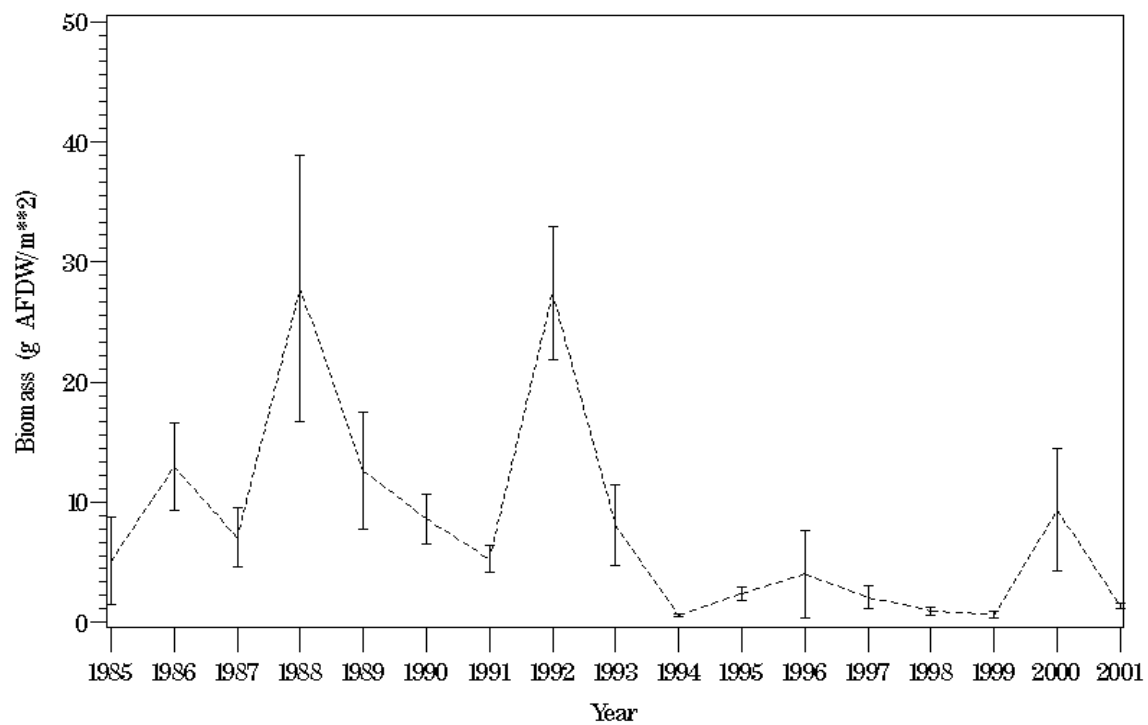


Figure 141. Plot of total benthic community biomass against time at station RET3.1 for the period of 1985 through 2001.

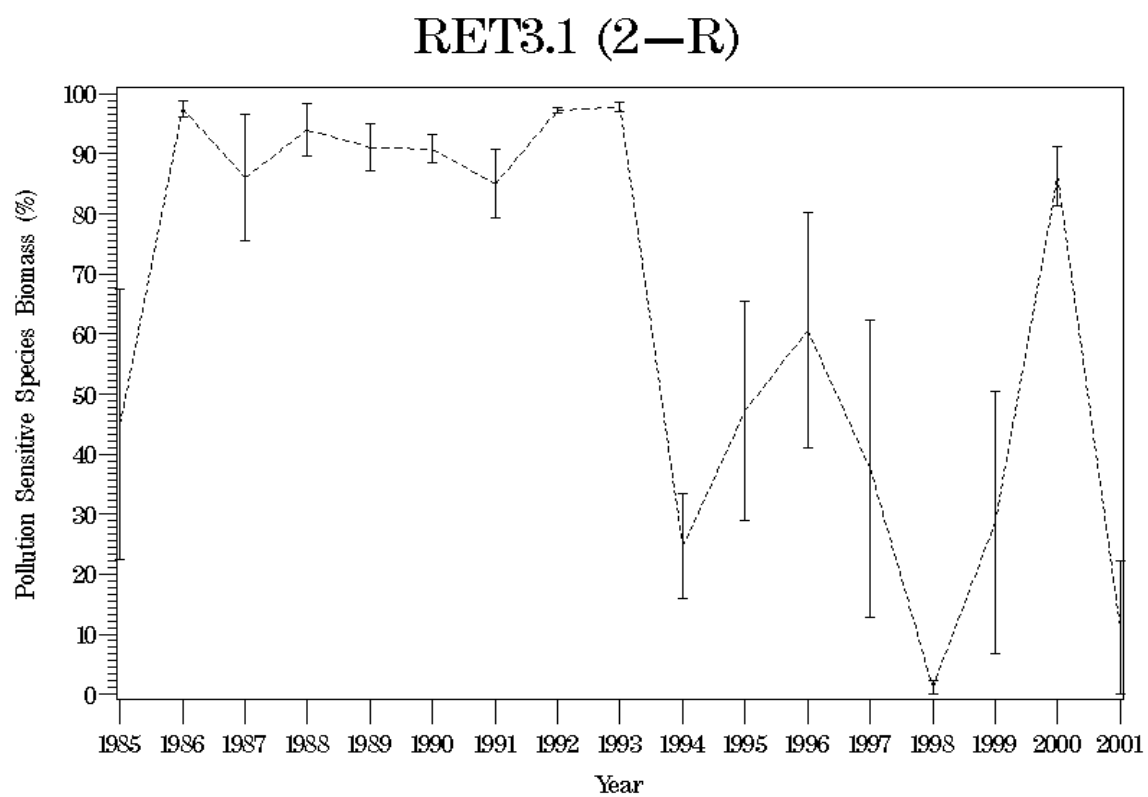


Figure 142. Plot of pollution sensitive species biomass against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

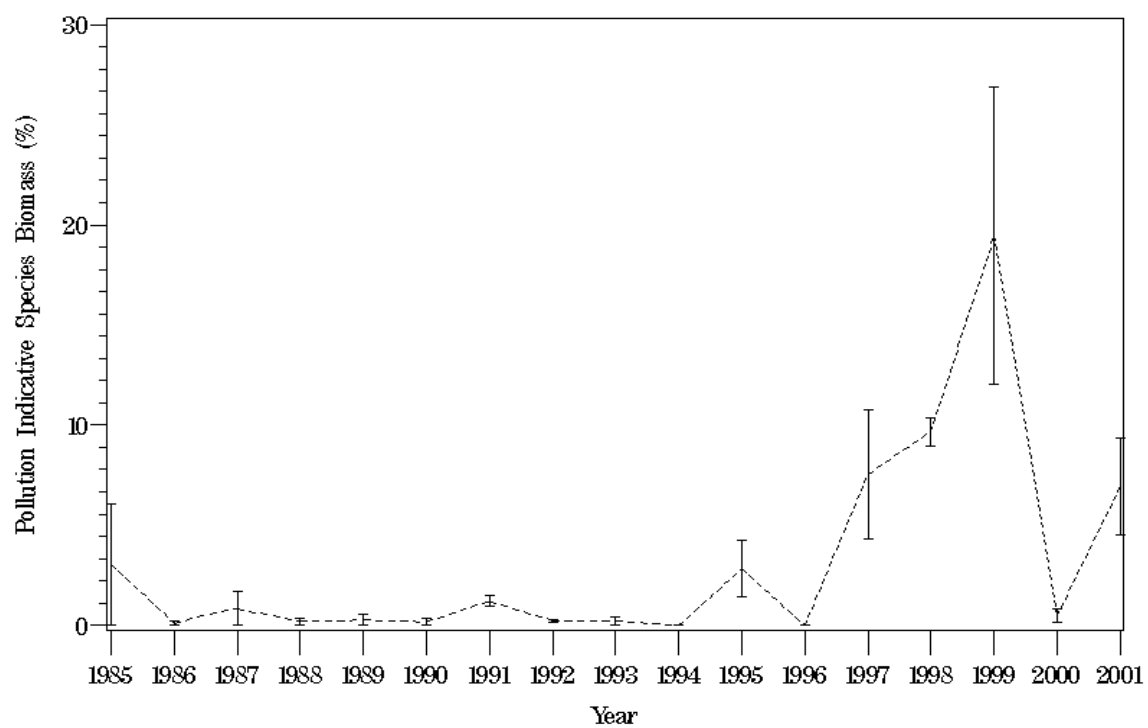


Figure 143. Plot of pollution indicative species biomass against time at station RET3.1 for the period of 1985 through 2001.

RET3.1 (2-R)

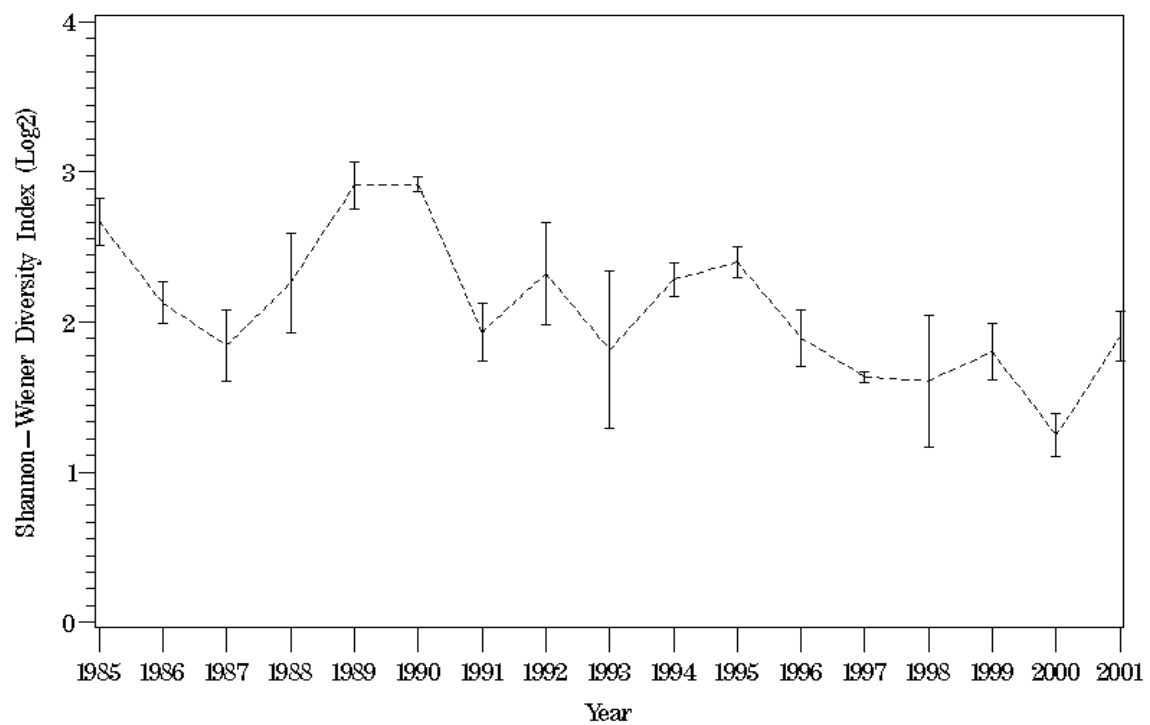


Figure 144. Plot of the Shannon-Weiner diversity index against time at station RET3.1 for the period of 1985 through 2001.

LE3.2 (3-R)

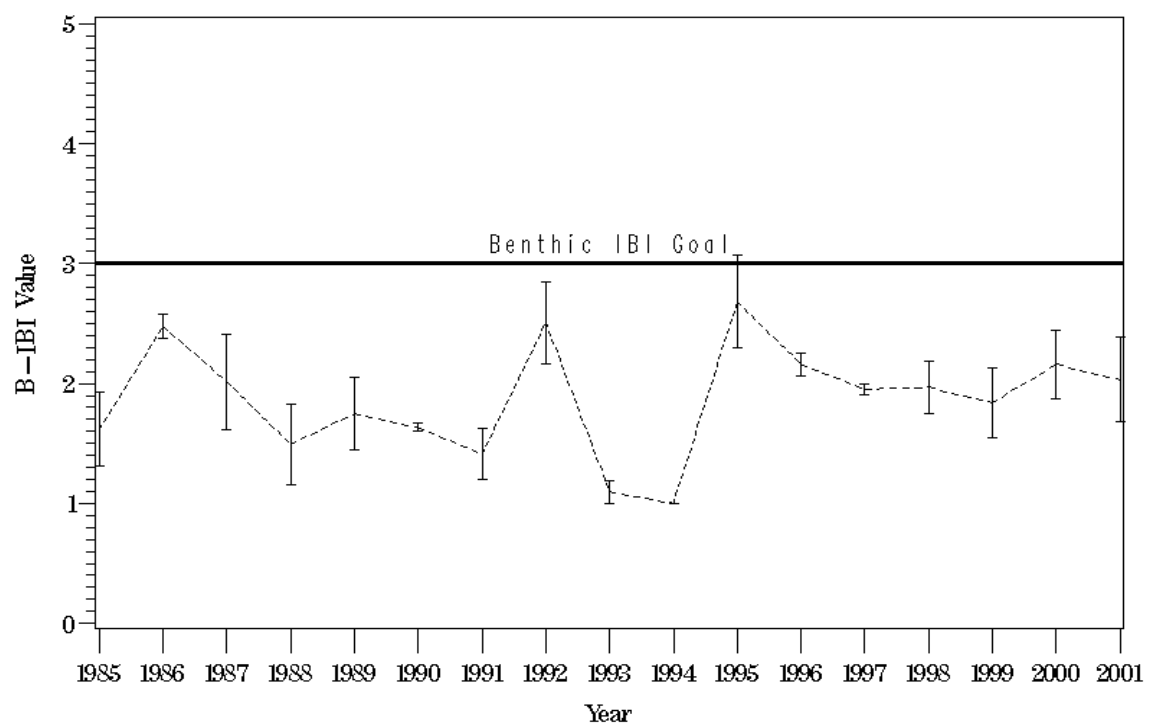


Figure 145. Plot of the benthic IBI against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

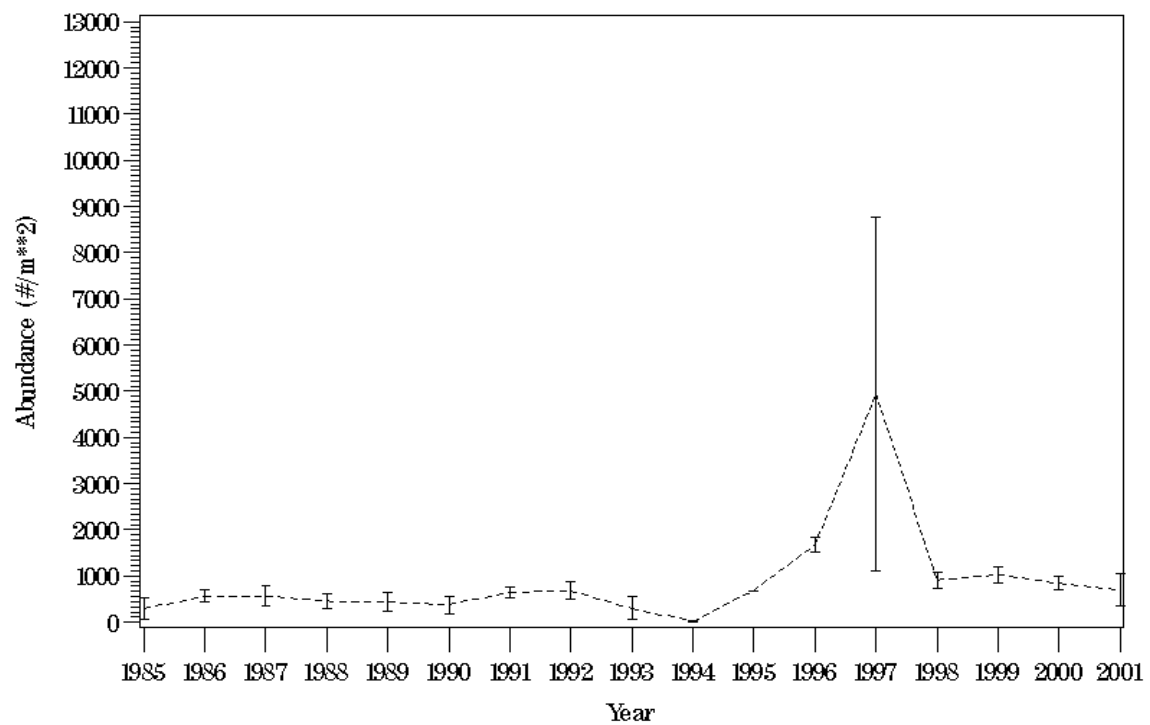


Figure 146. Plot of total benthic community abundance against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

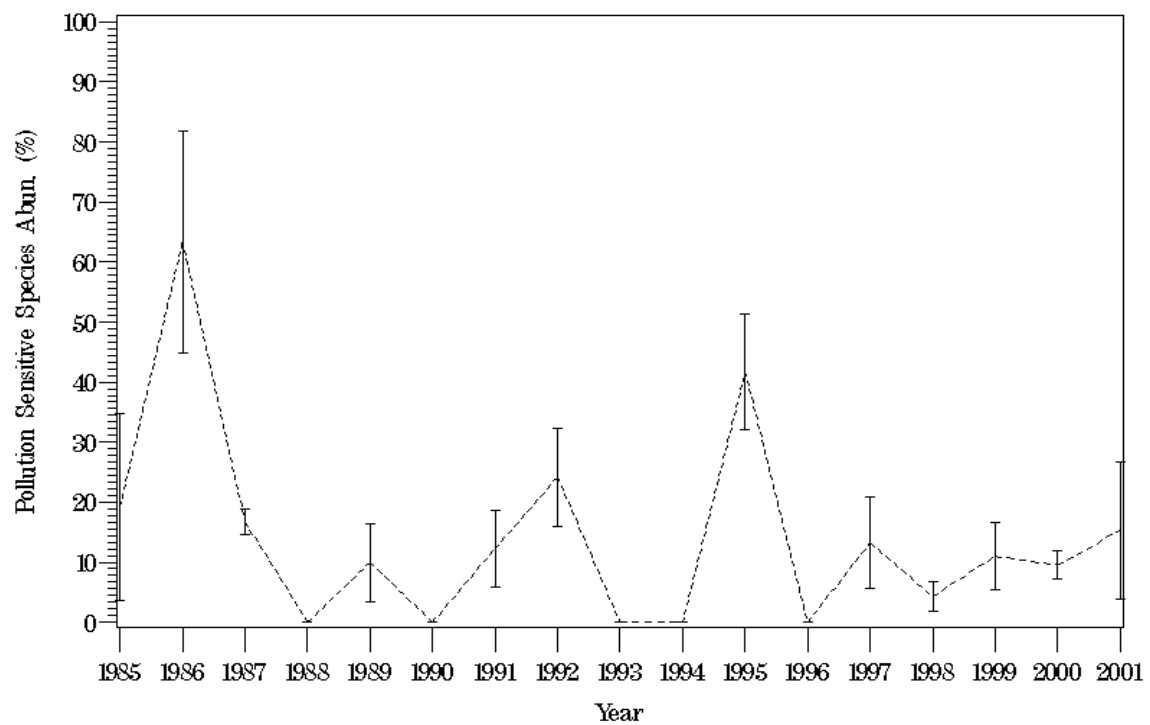


Figure 147. Plot of pollution sensitive species abundance against time at station LE3.2 for the period of 1985 through 2001.

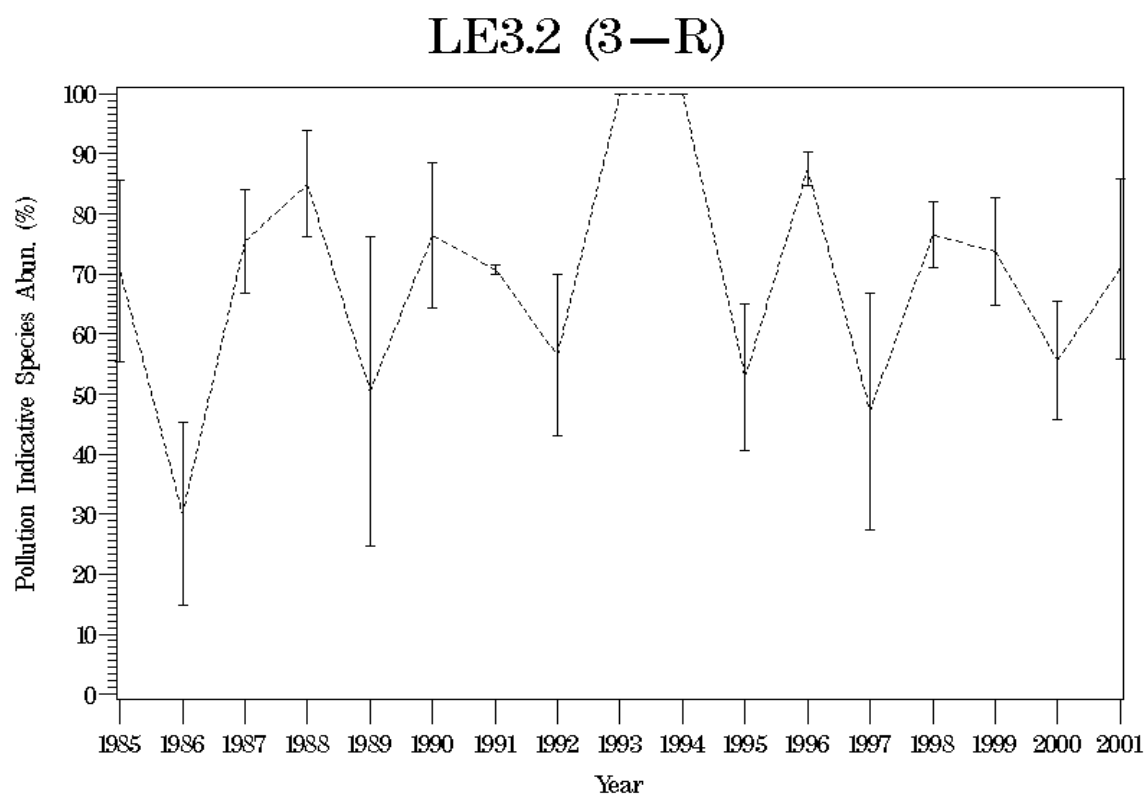


Figure 148. Plot of pollution indicative species abundance against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

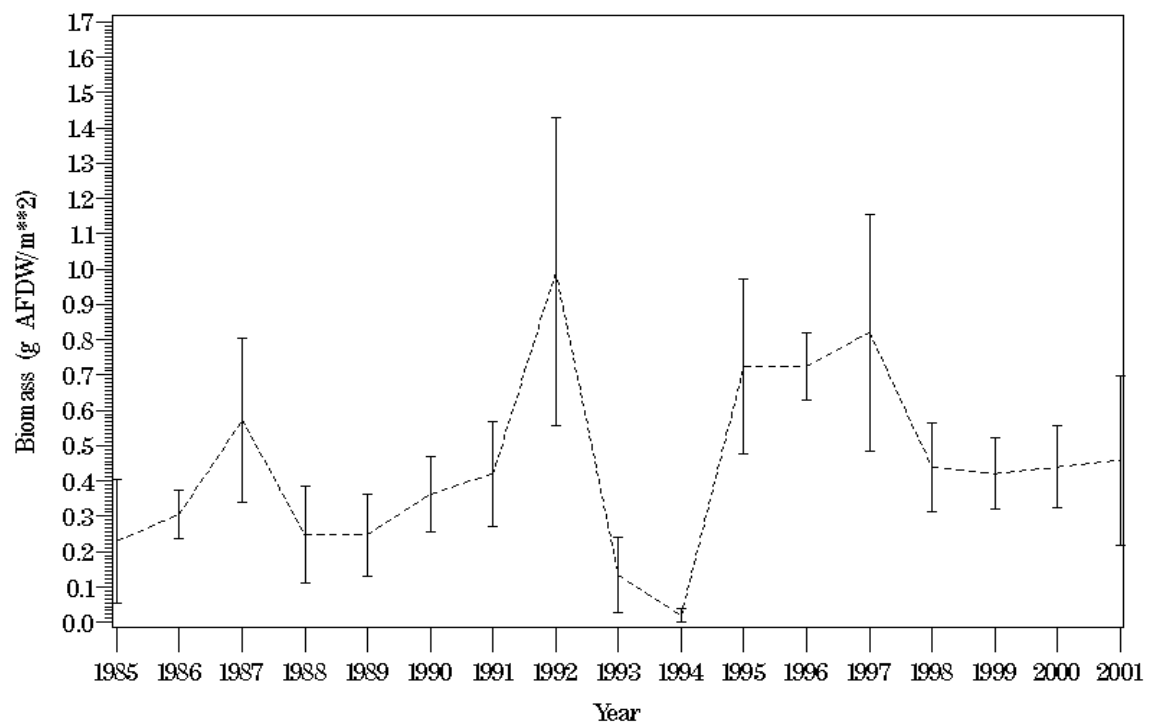


Figure 149. Plot of total benthic community biomass against time at station LE3.2 for the period of 1985 through 2001.

LE3.2 (3-R)

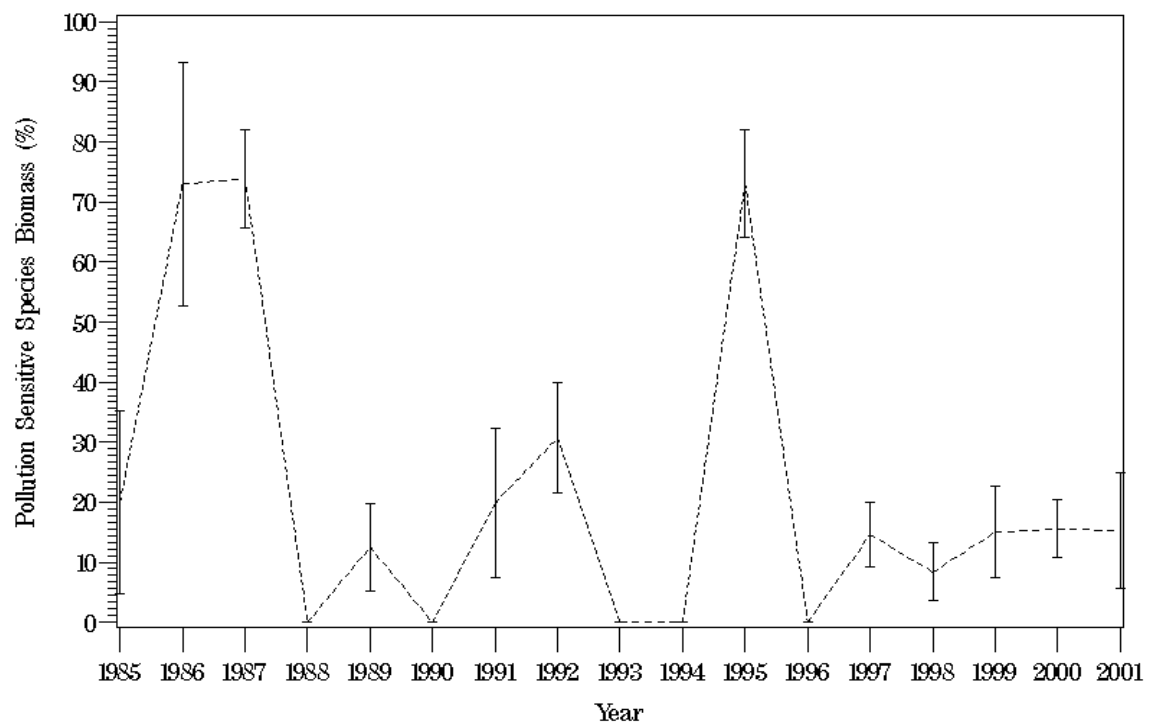


Figure 150. Plot of pollution sensitive species biomass against time at station LE3.2 for the period of 1985 through 2001.

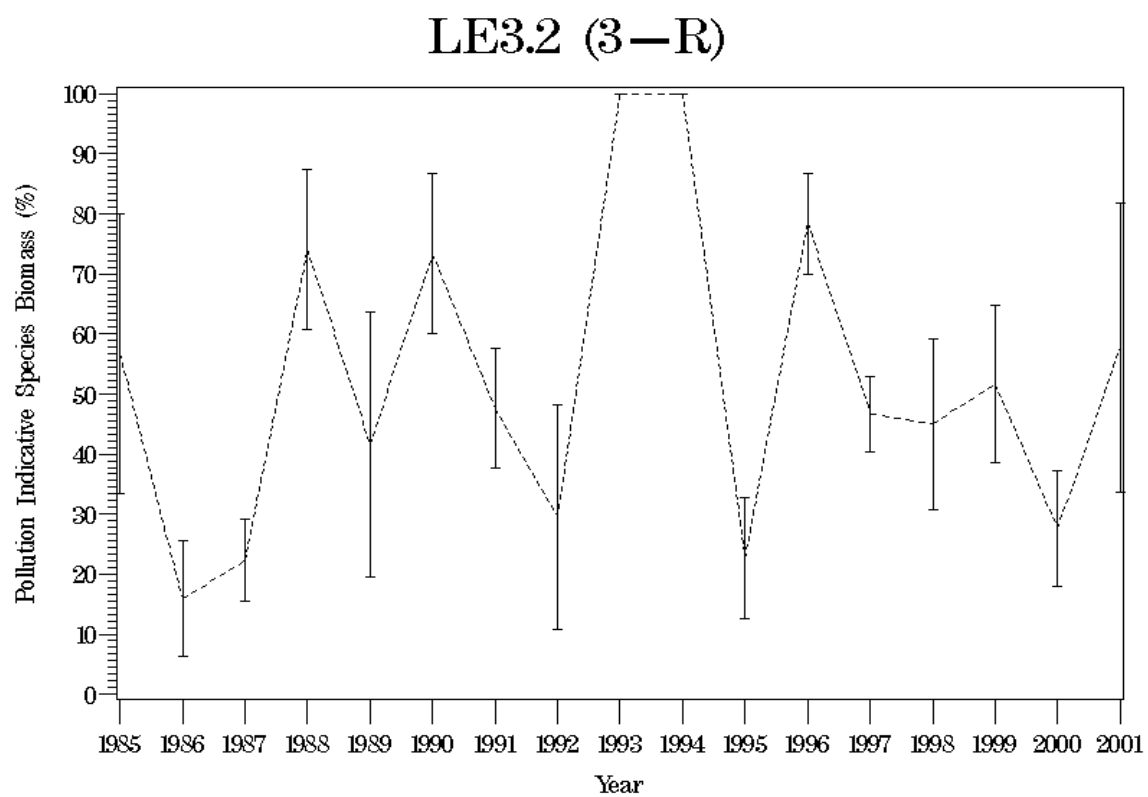


Figure 151. Plot of pollution indicative species biomass against time at station LE3.2 for the period of 1985 through 2001.

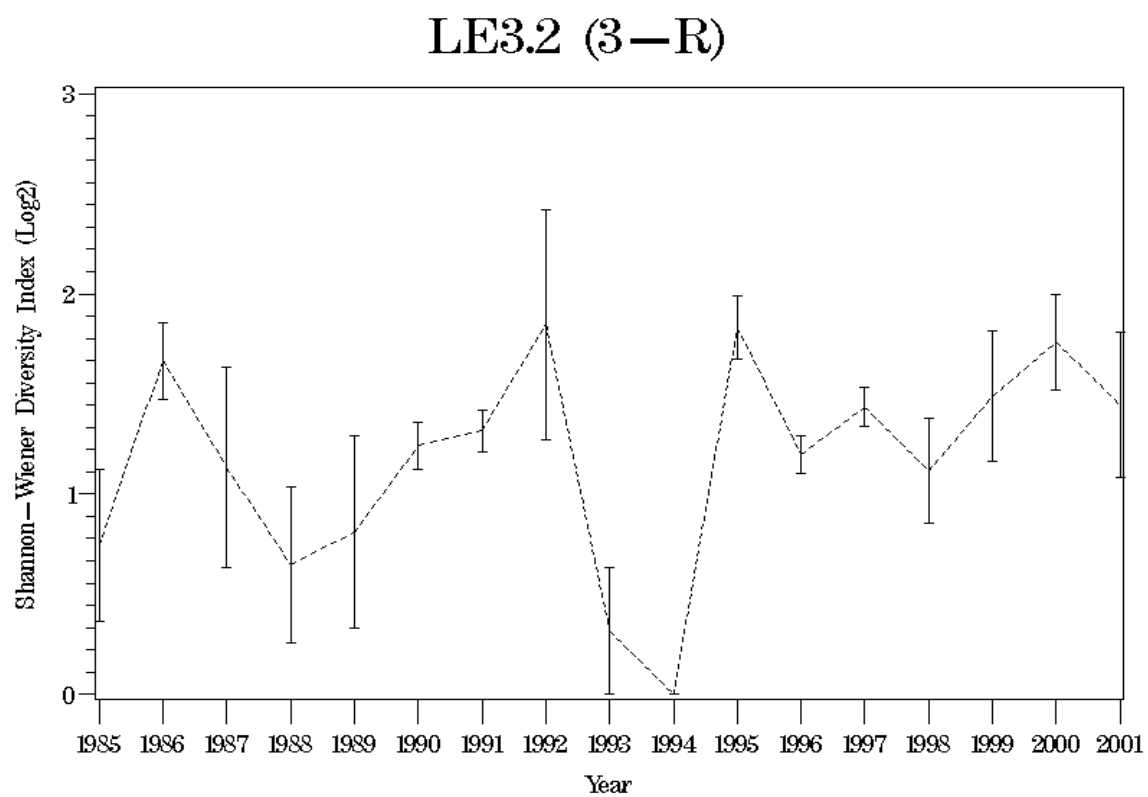


Figure 152. Plot of the Shannon-Weiner diversity index against time at station LE3.2 for the period of 1985 through 2001.

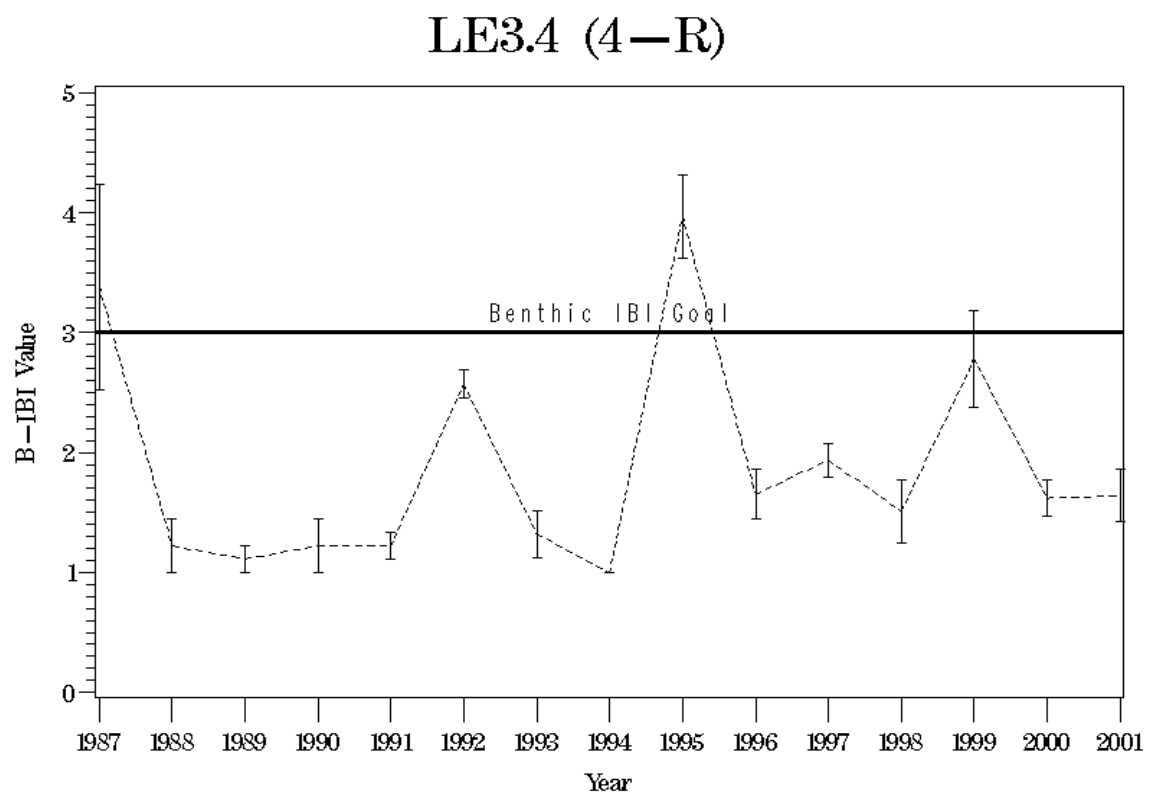


Figure 153. Plot of the benthic IBI against time at station LE3.4 for the period of 1985 through 2001.

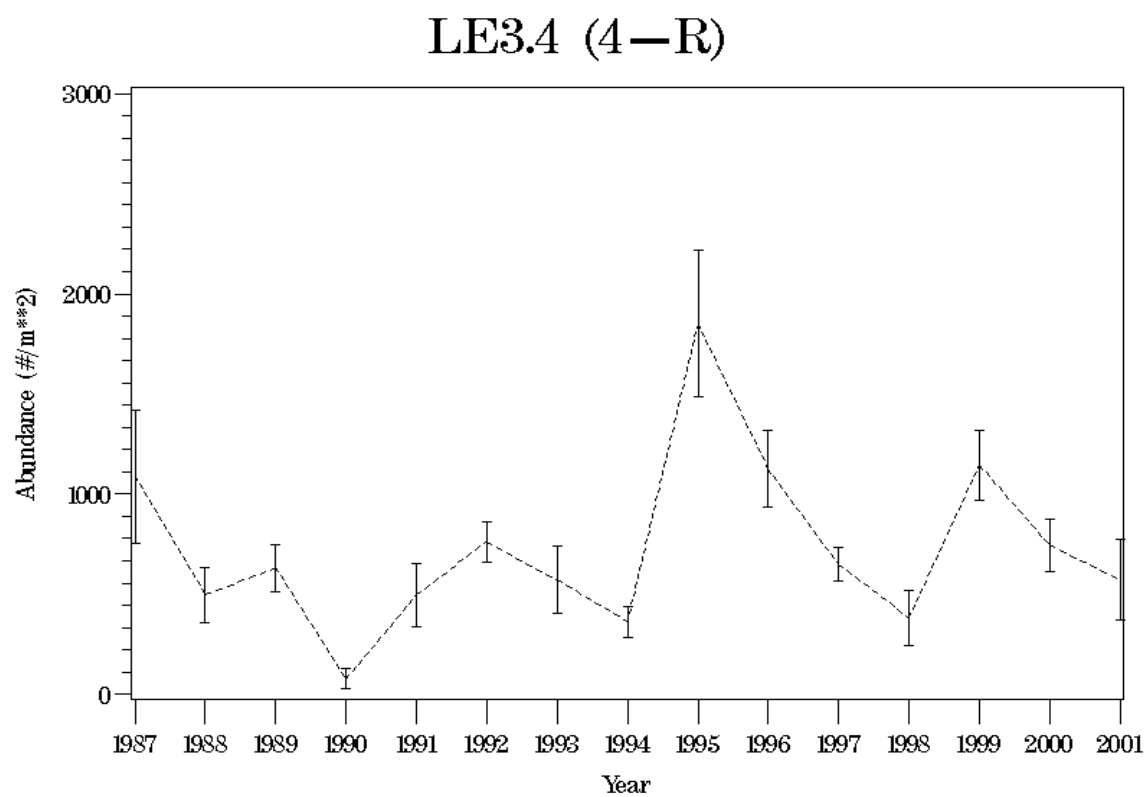


Figure 154. Plot of total benthic community abundance against time at station LE3.4 for the period of 1985 through 2001.

LE3.4 (4-R)

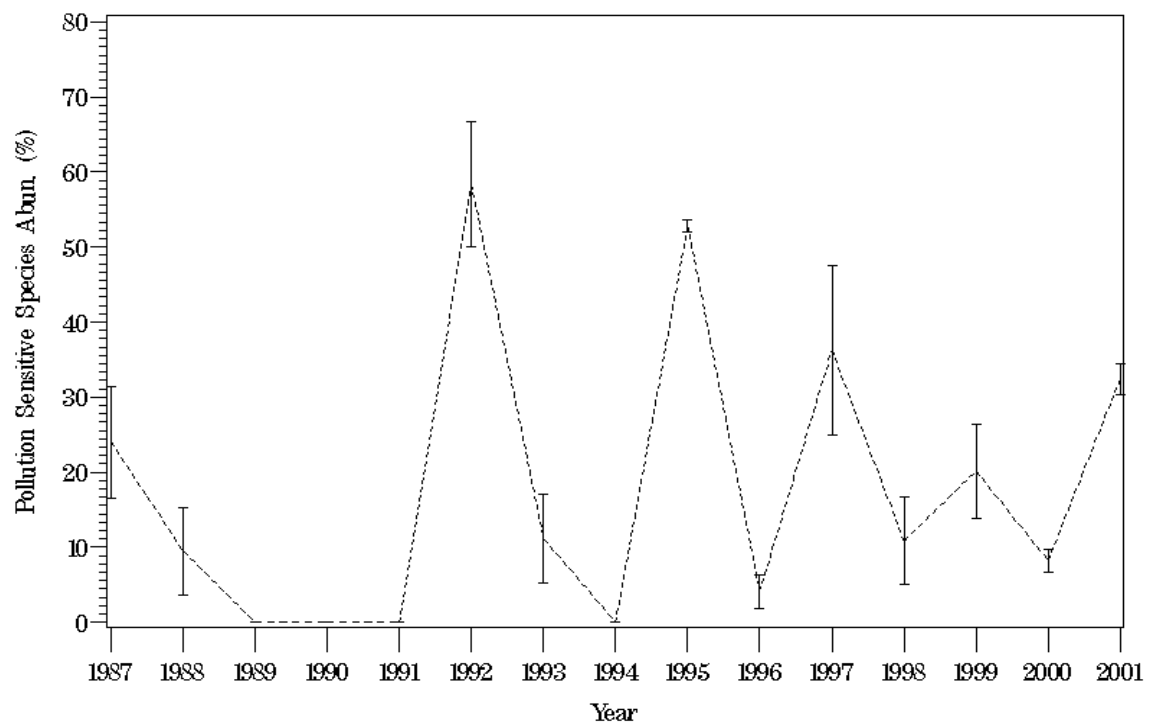


Figure 155. Plot of pollution sensitive species abundance against time at station LE3.4 for the period of 1985 through 2001.

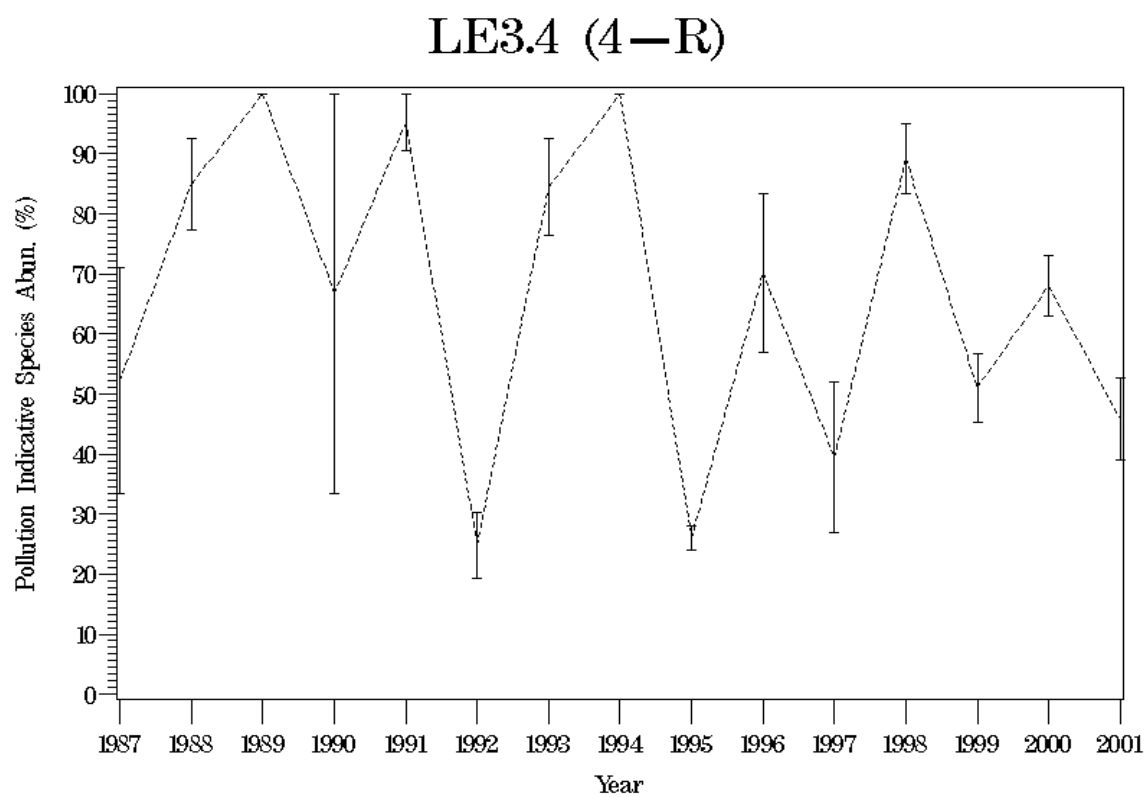


Figure 156. Plot of pollution indicative species abundance against time at station LE3.4 for the period of 1985 through 2001.

LE3.4 (4-R)

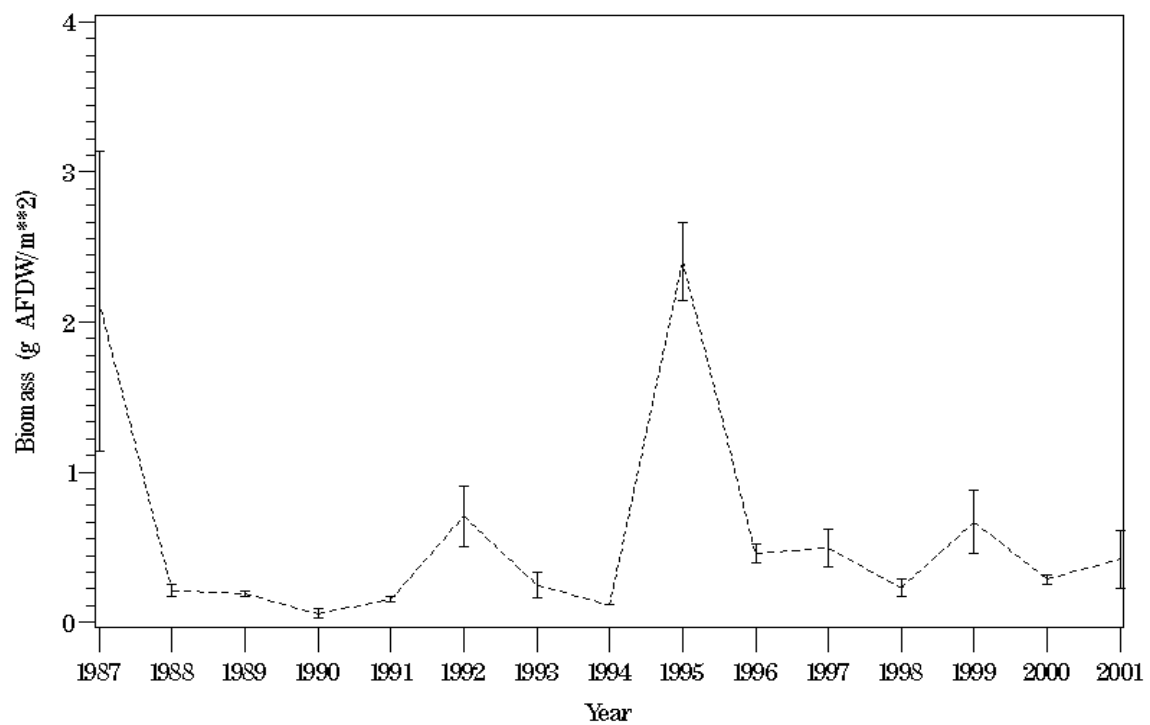


Figure 157. Plot of total benthic community biomass against time at station LE3.4 for the period of 1985 through 2001.

LE3.4 (4-R)

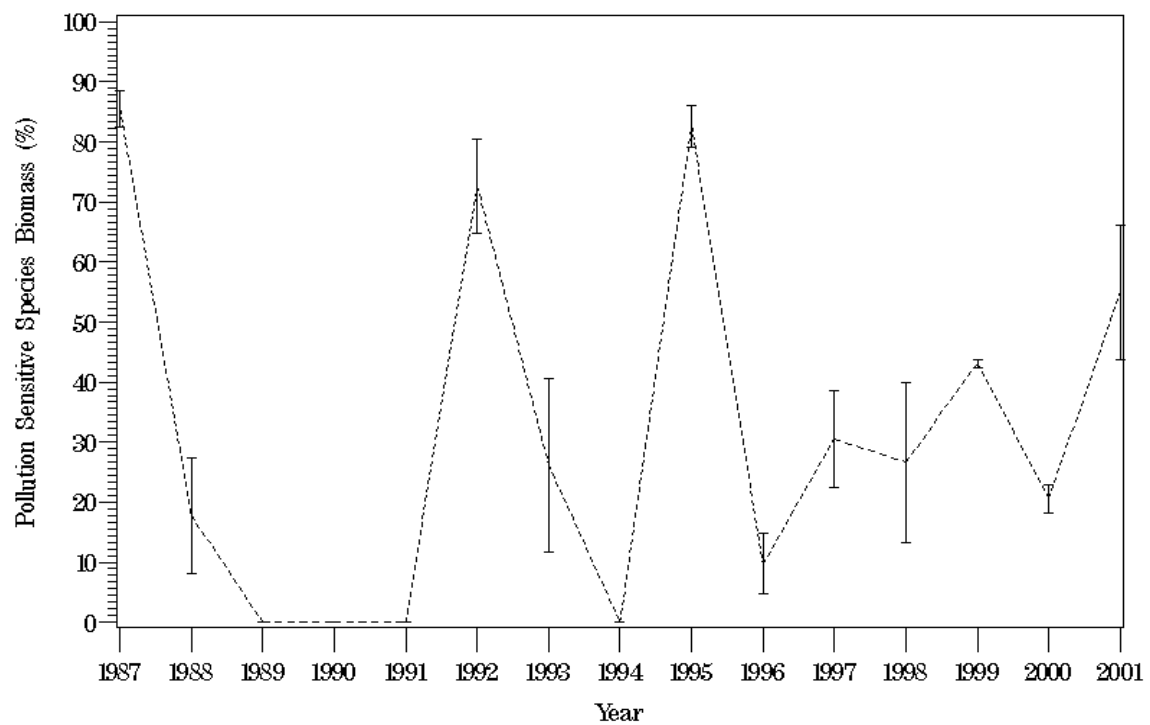


Figure 158. Plot of pollution sensitive species biomass against time at station LE3.4 for the period of 1985 through 2001.

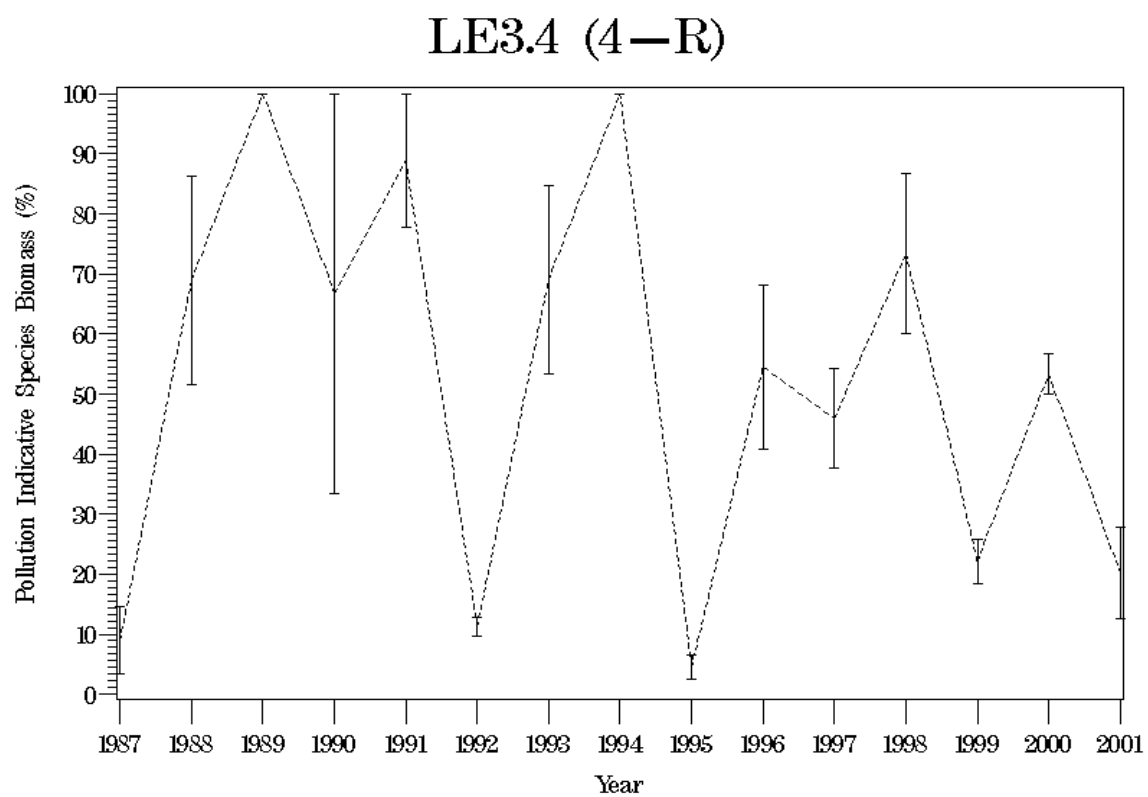


Figure 159. Plot of pollution indicative species biomass against time at station LE3.4 for the period of 1985 through 2001.

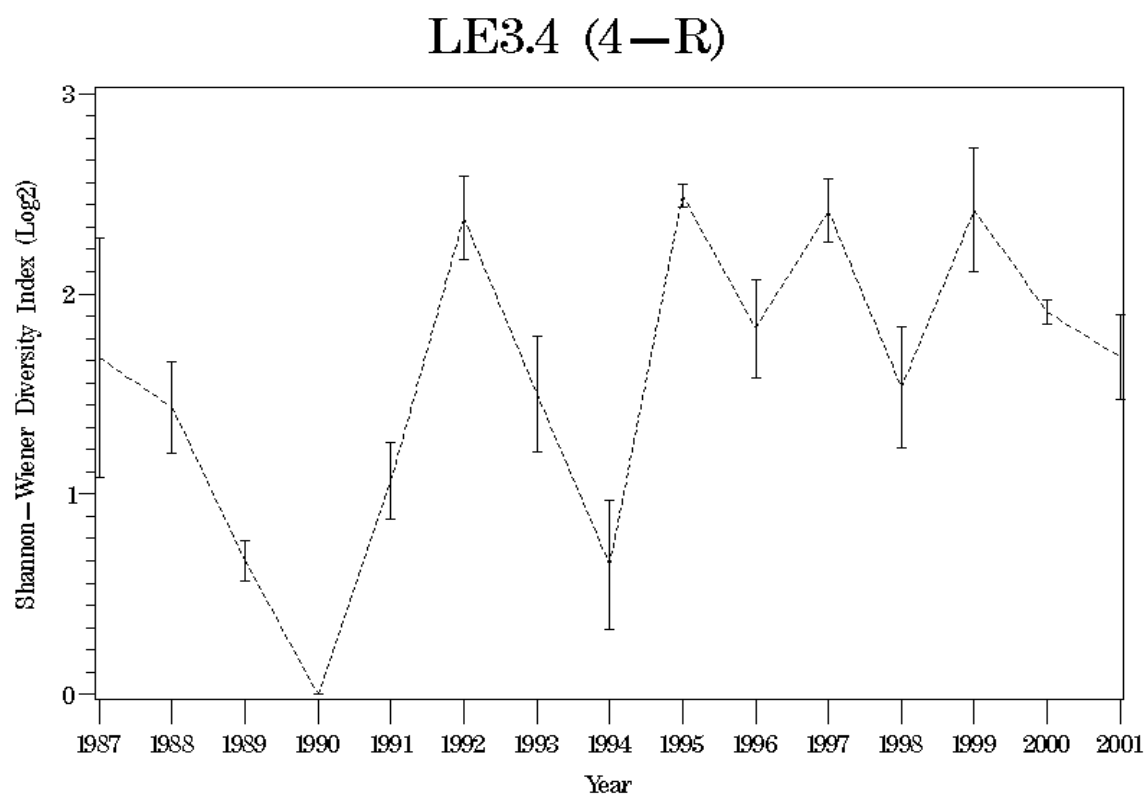


Figure 160. Plot of the Shannon-Weiner diversity index against time at station LE3.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

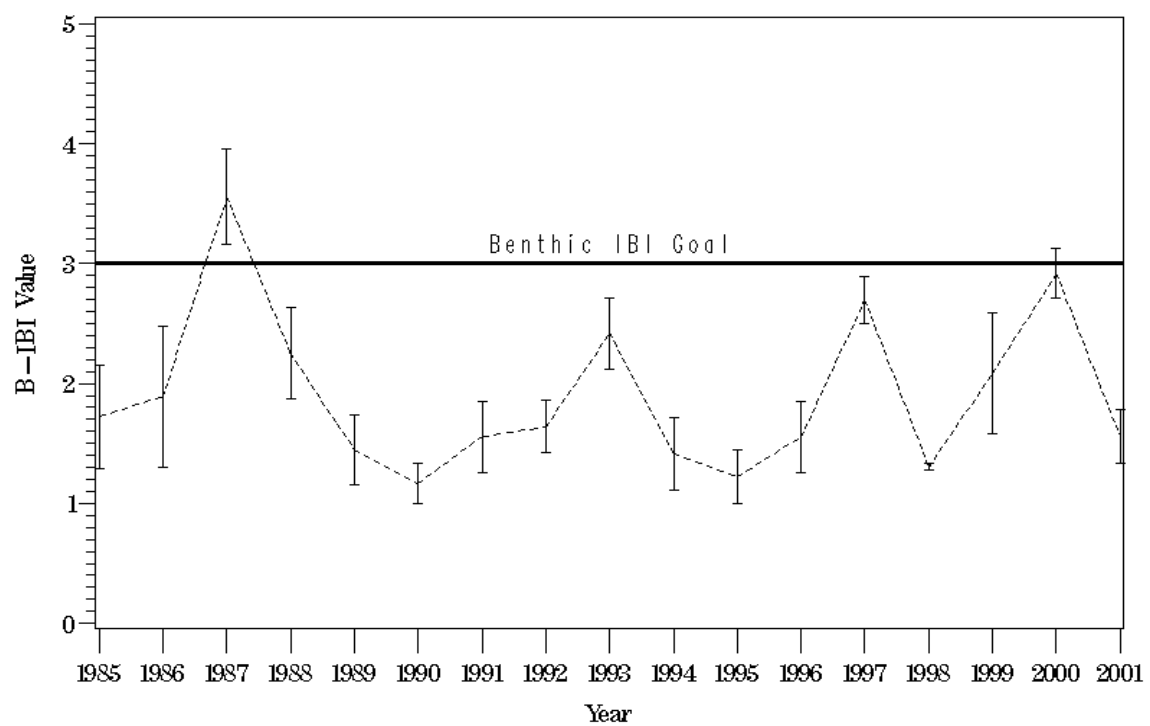


Figure 161. Plot of the benthic IBI against time at station CB5.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

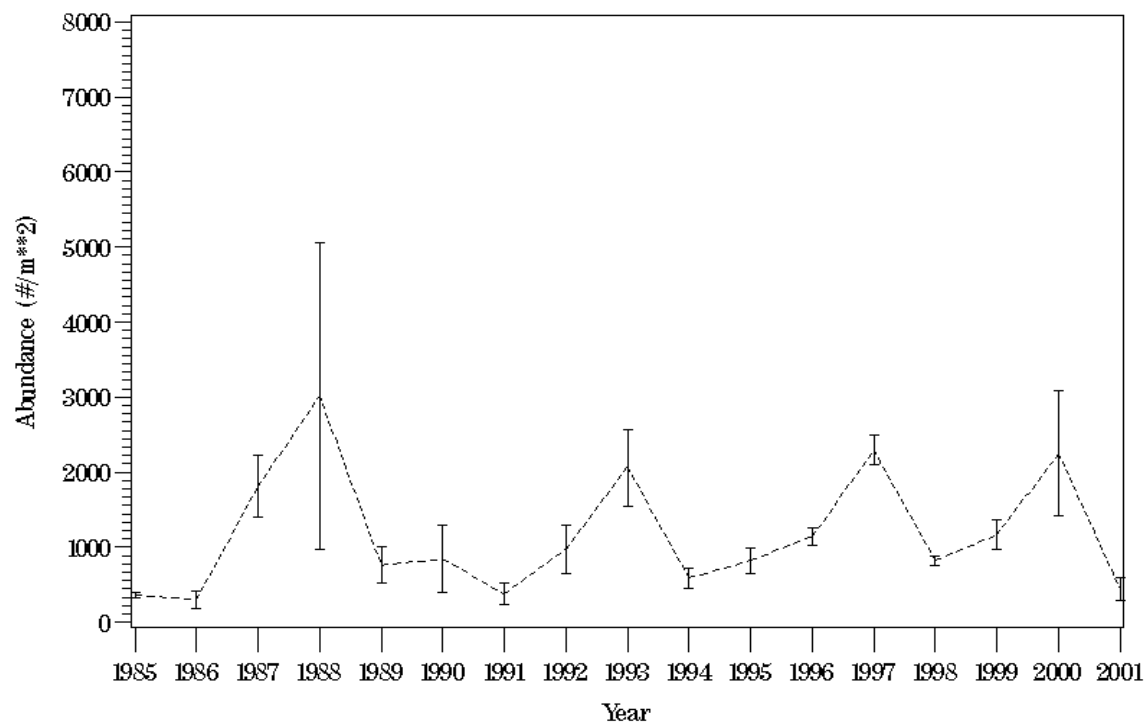


Figure 162. Plot of total benthic community abundance against time at station CB5.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

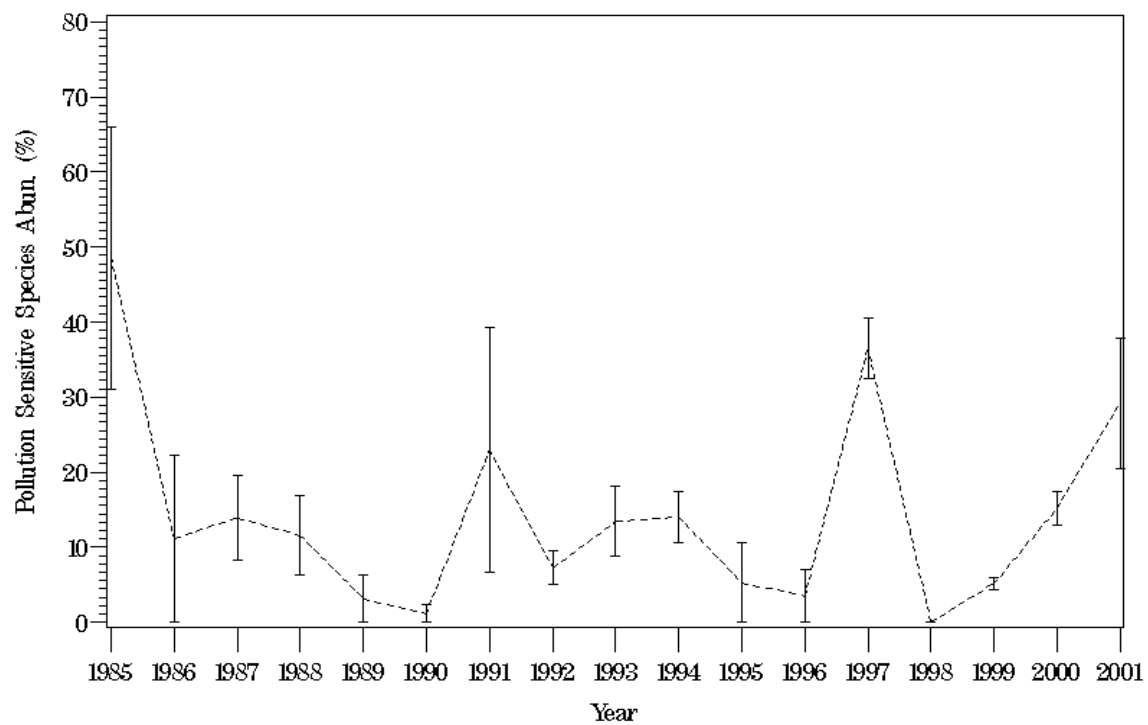


Figure 163. Plot of pollution sensitive species abundance against time at station CB5.4 for the period of 1985 through 2001.

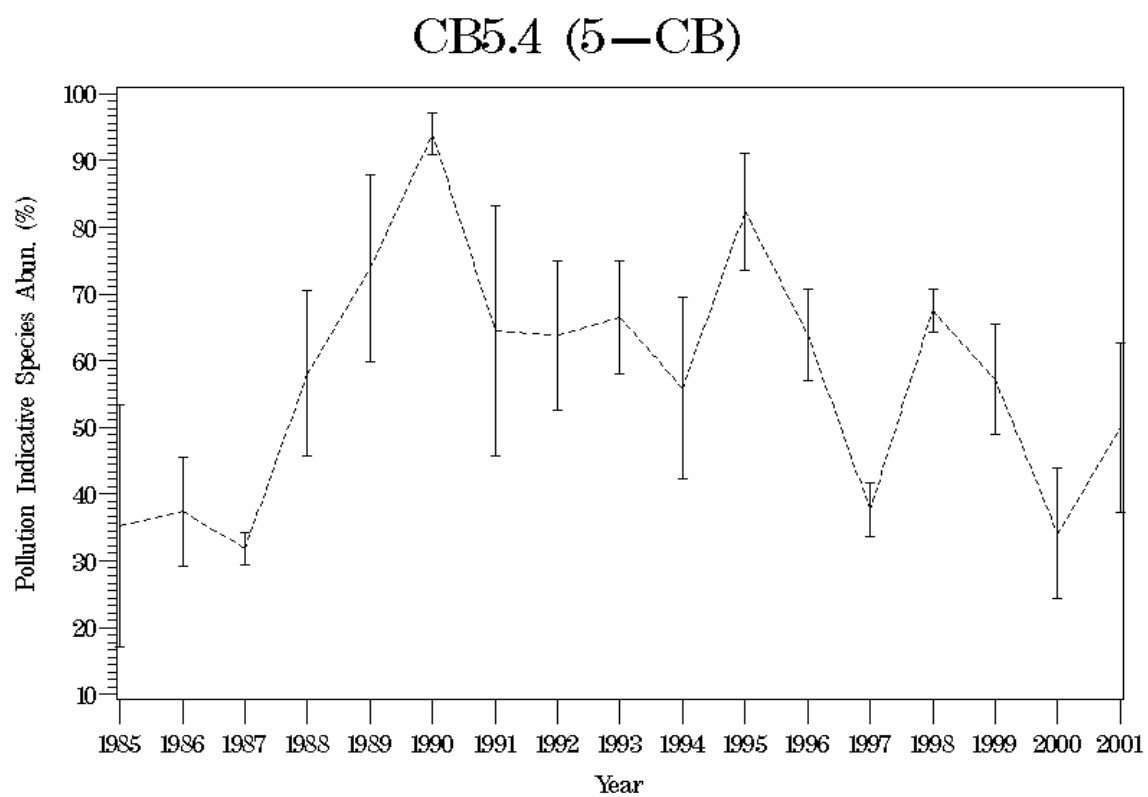


Figure 164. Plot of pollution indicative species abundance against time at station CB5.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

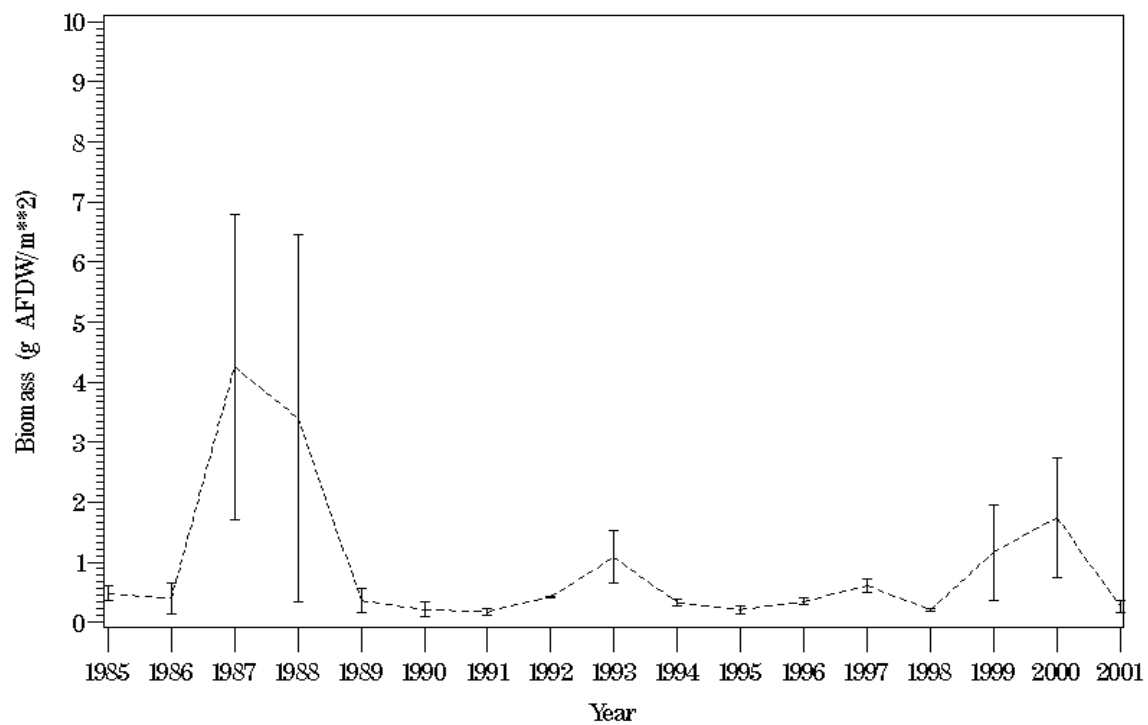


Figure 165. Plot of total benthic community biomass against time at station CB5.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

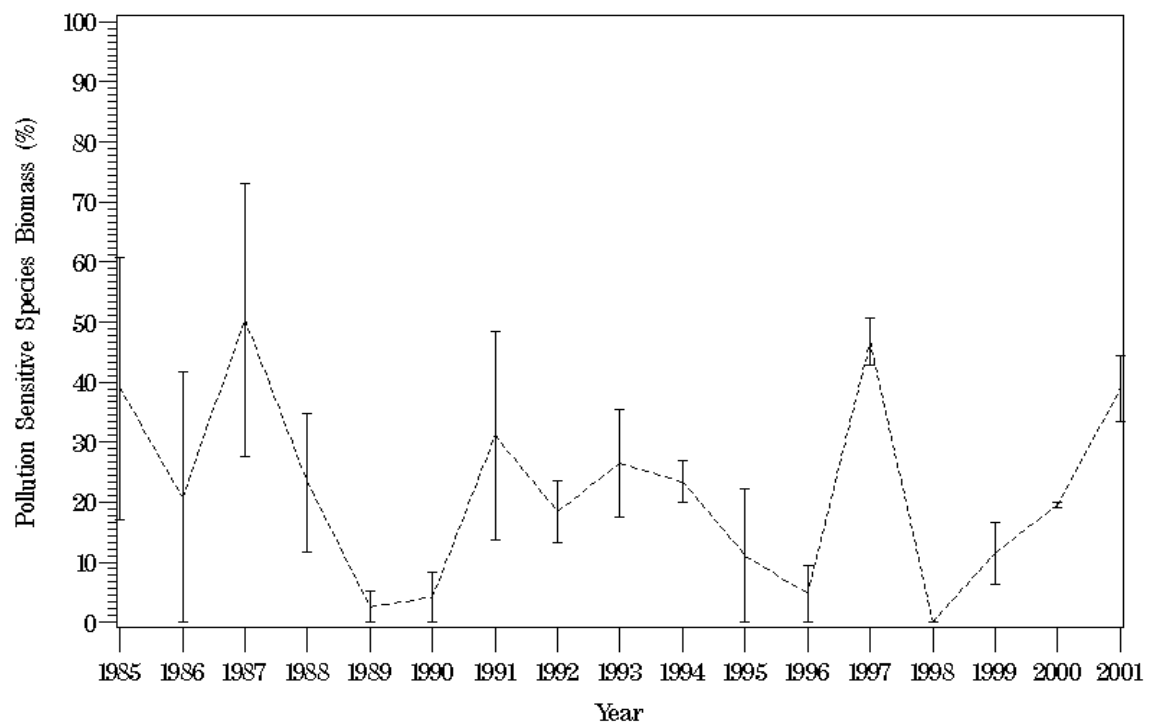


Figure 166. Plot of pollution sensitive species biomass against time at station CB5.4 for the period of 1985 through 2001.

CB5.4 (5—CB)

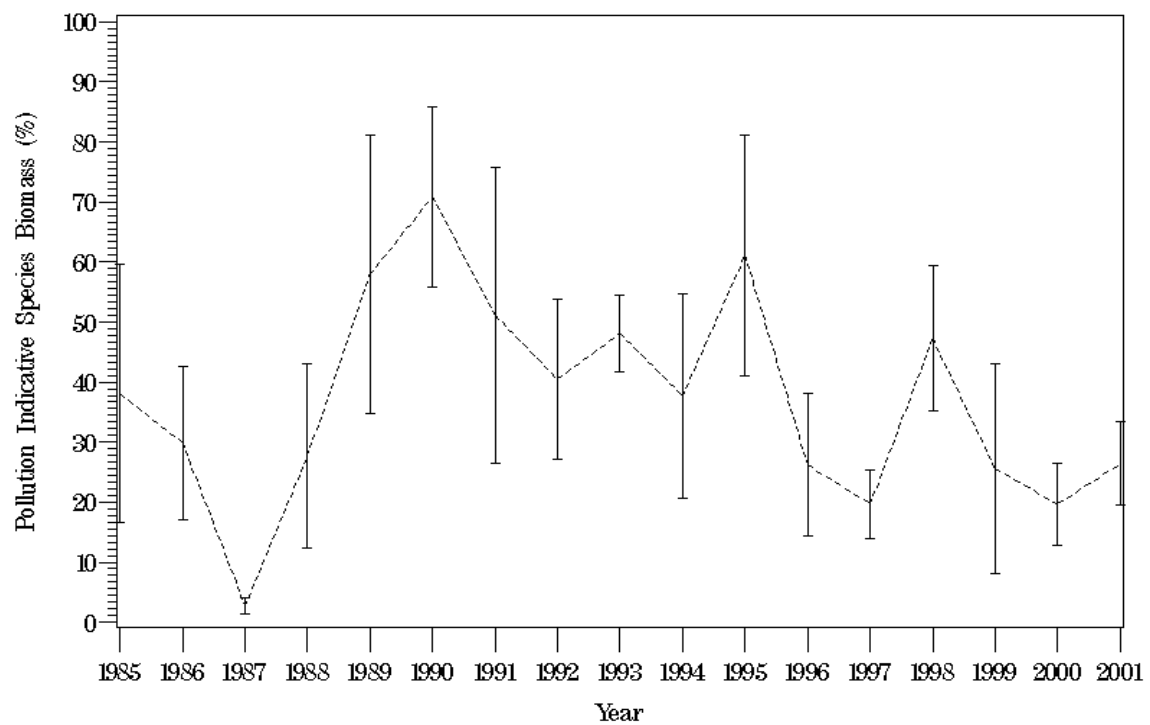


Figure 167. Plot of pollution indicative species biomass against time at station CB5.4 for the period of 1985 through 2001.

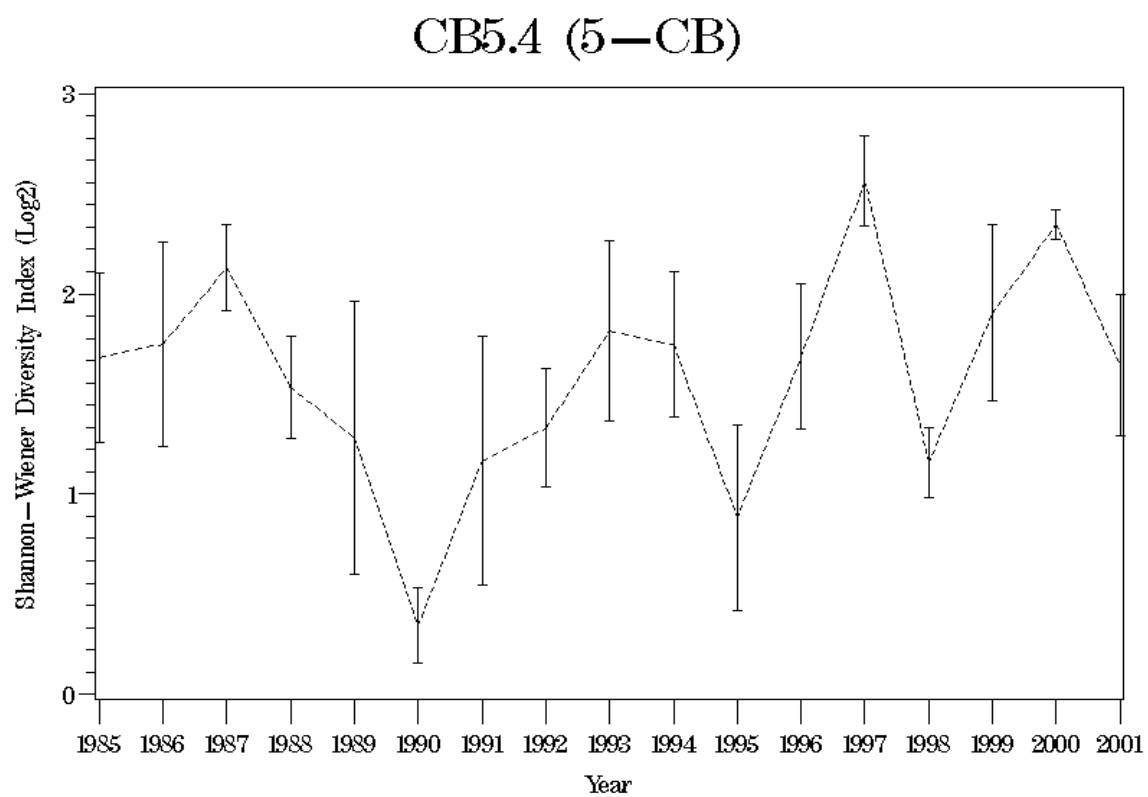


Figure 168. Plot of the Shannon-Weiner diversity index against time at station CB5.4 for the period of 1985 through 2001.

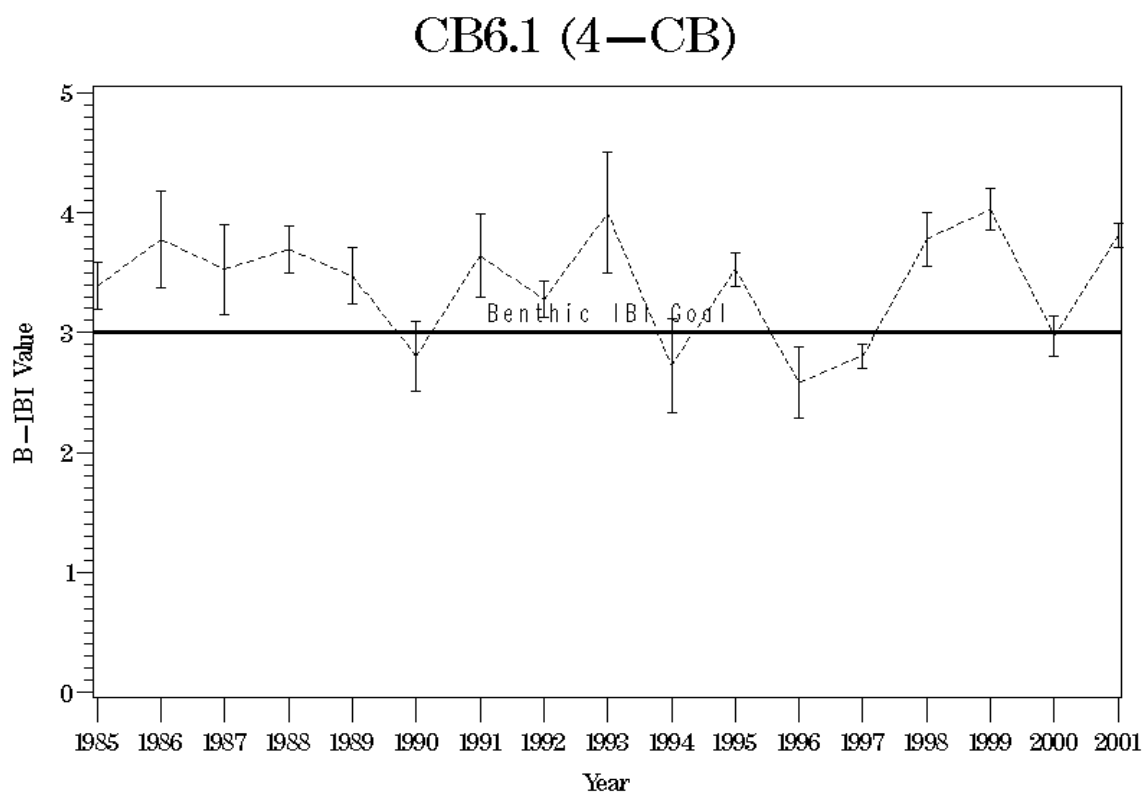


Figure 169. Plot of the benthic IBI against time at station CB6.1 for the period of 1985 through 2001.

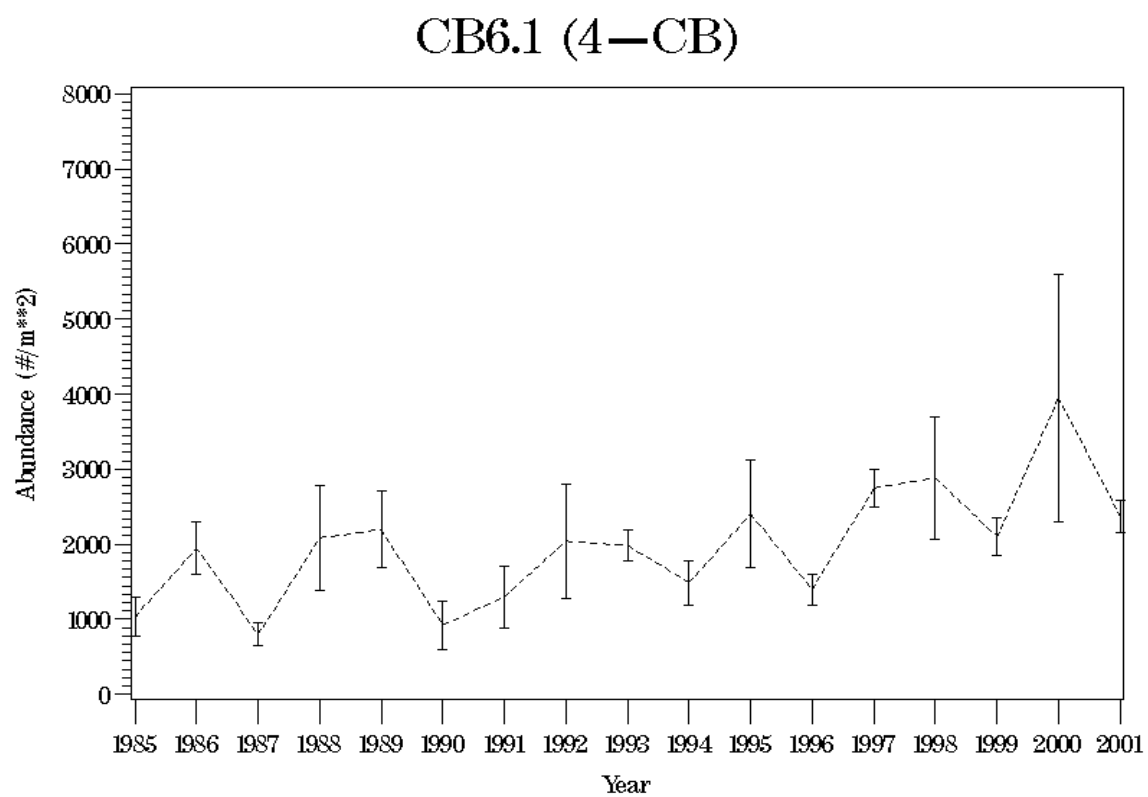


Figure 170. Plot of total benthic community abundance against time at station CB6.1 for the period of 1985 through 2001.

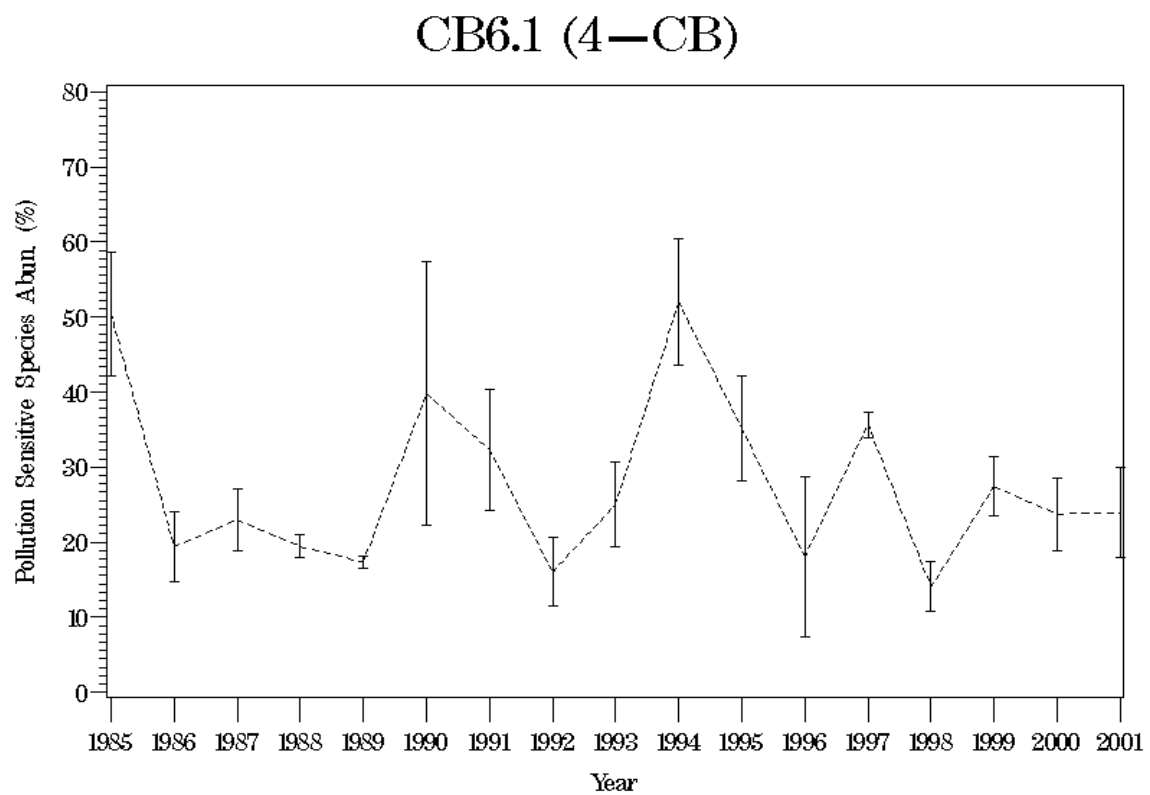


Figure 171. Plot of pollution sensitive species abundance against time at station CB6.1 for the period of 1985 through 2001.

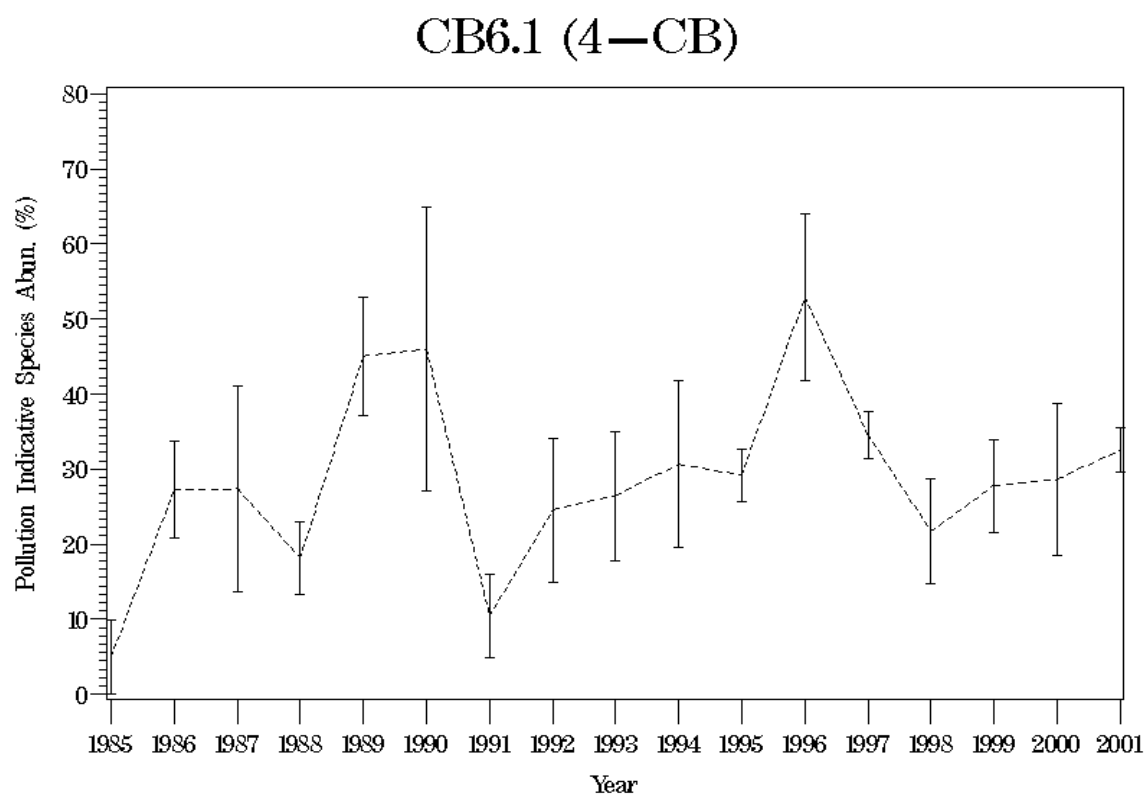


Figure 172. Plot of pollution indicative species abundance against time at station CB6.1 for the period of 1985 through 2001.

CB6.1 (4—CB)

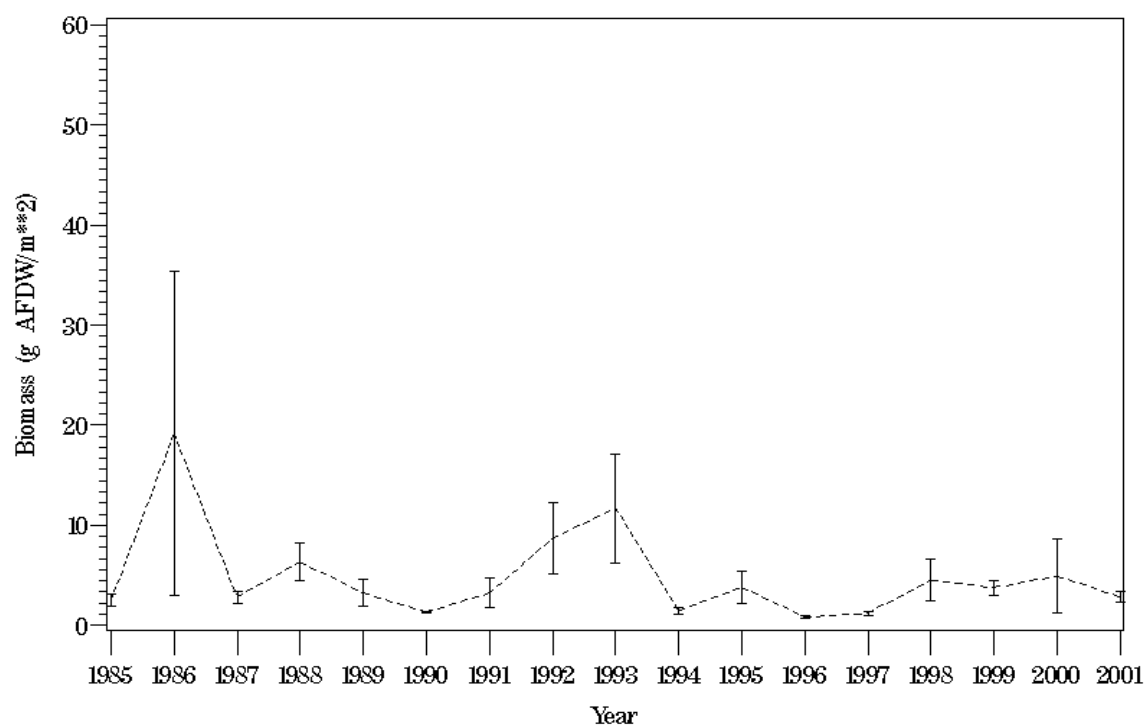


Figure 173. Plot of total benthic community biomass against time at station CB6.1 for the period of 1985 through 2001.

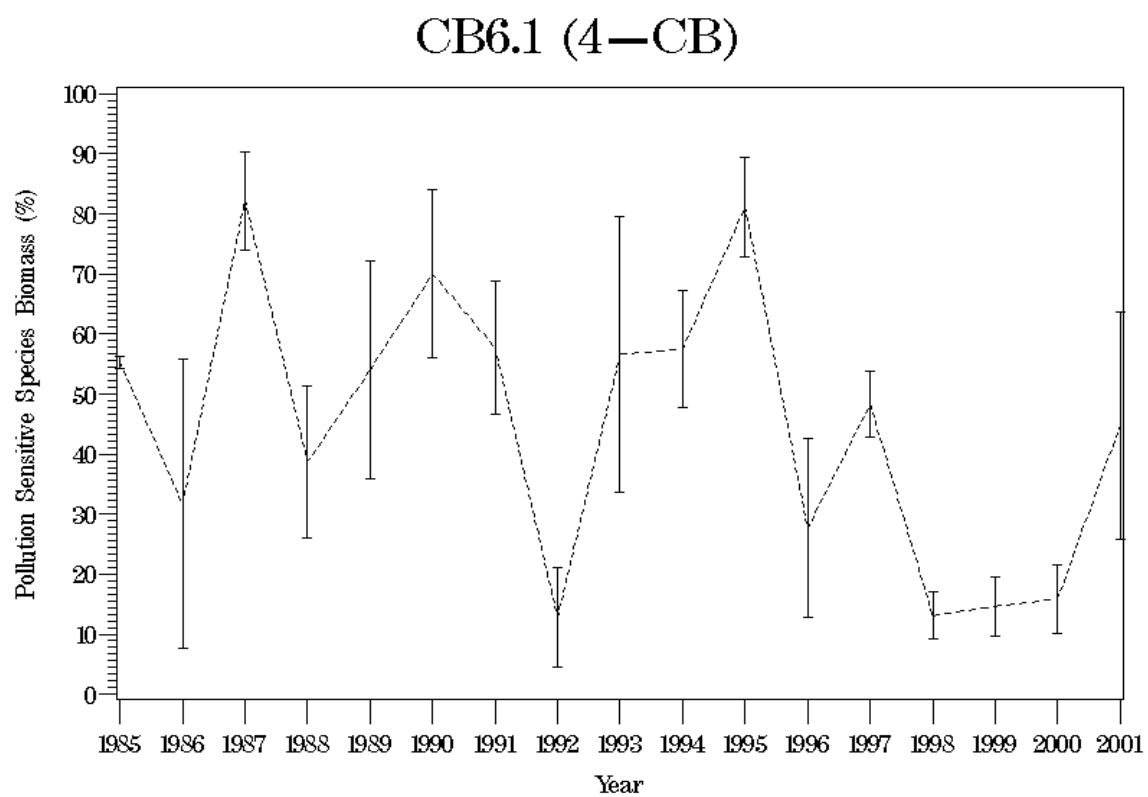


Figure 174. Plot of pollution sensitive species biomass against time at station CB6.1 for the period of 1985 through 2001.

CB6.1 (4—CB)

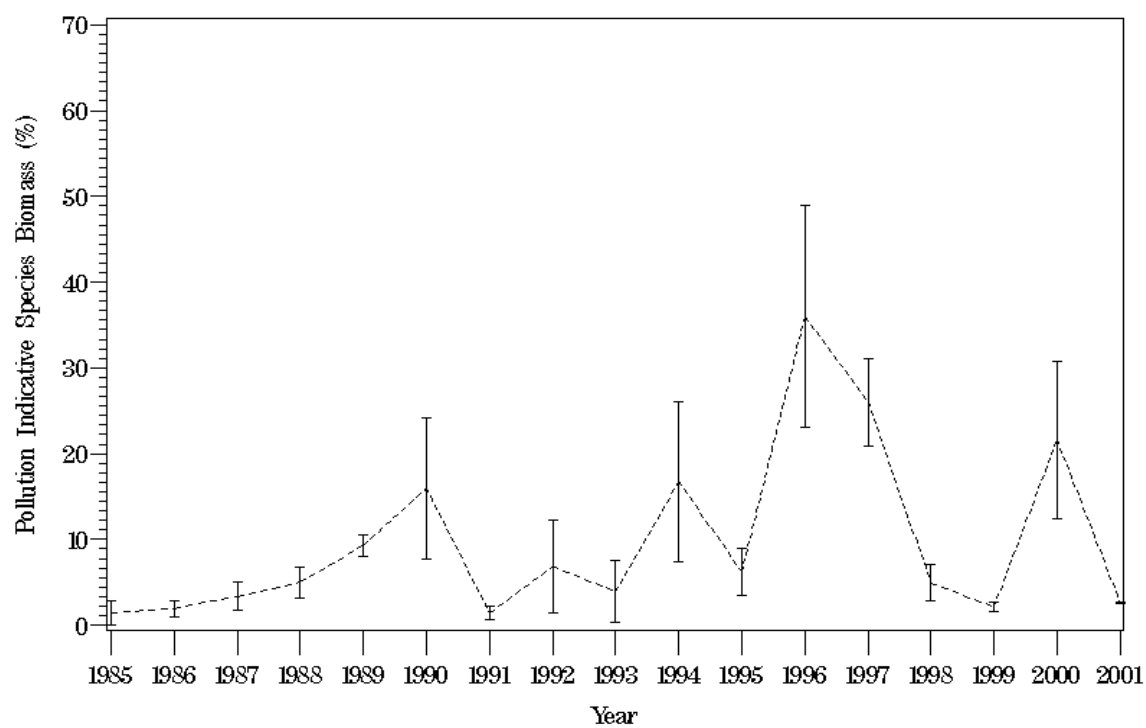


Figure 175. Plot of pollution indicative species biomass against time at station CB6.1 for the period of 1985 through 2001.

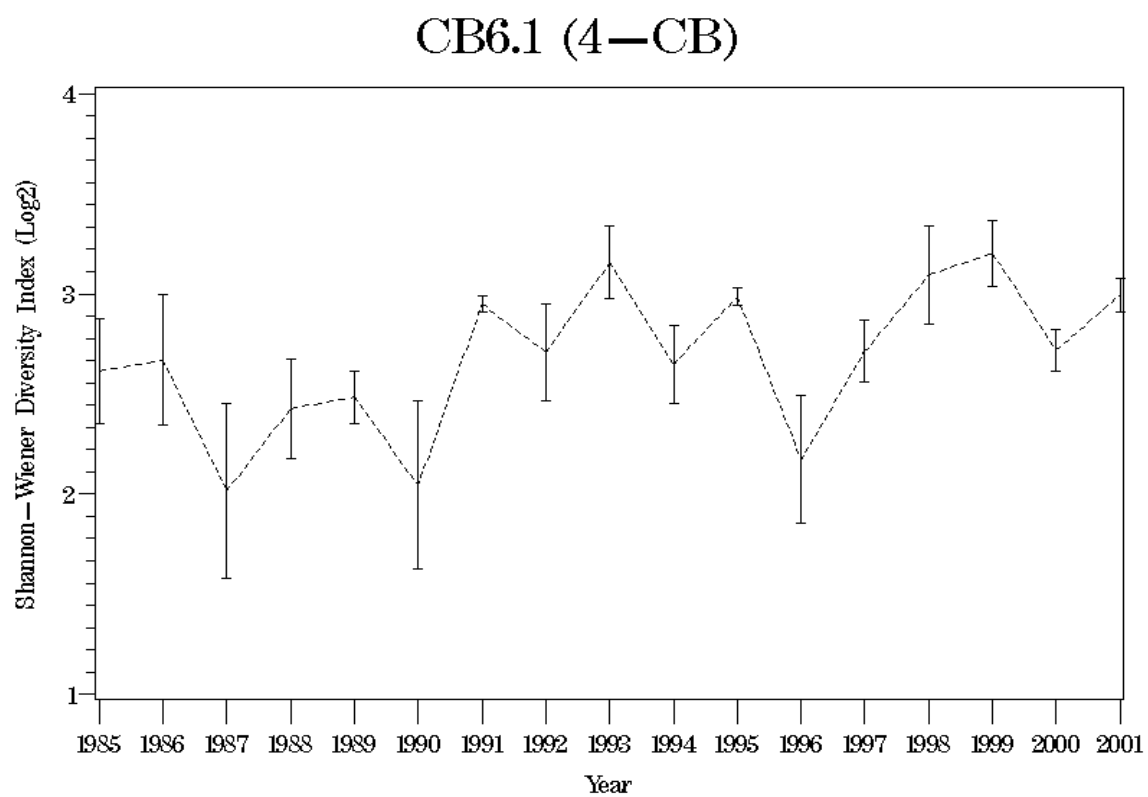


Figure 176. Plot of the Shannon-Weiner diversity index against time at station CB6.1 for the period of 1985 through 2001.

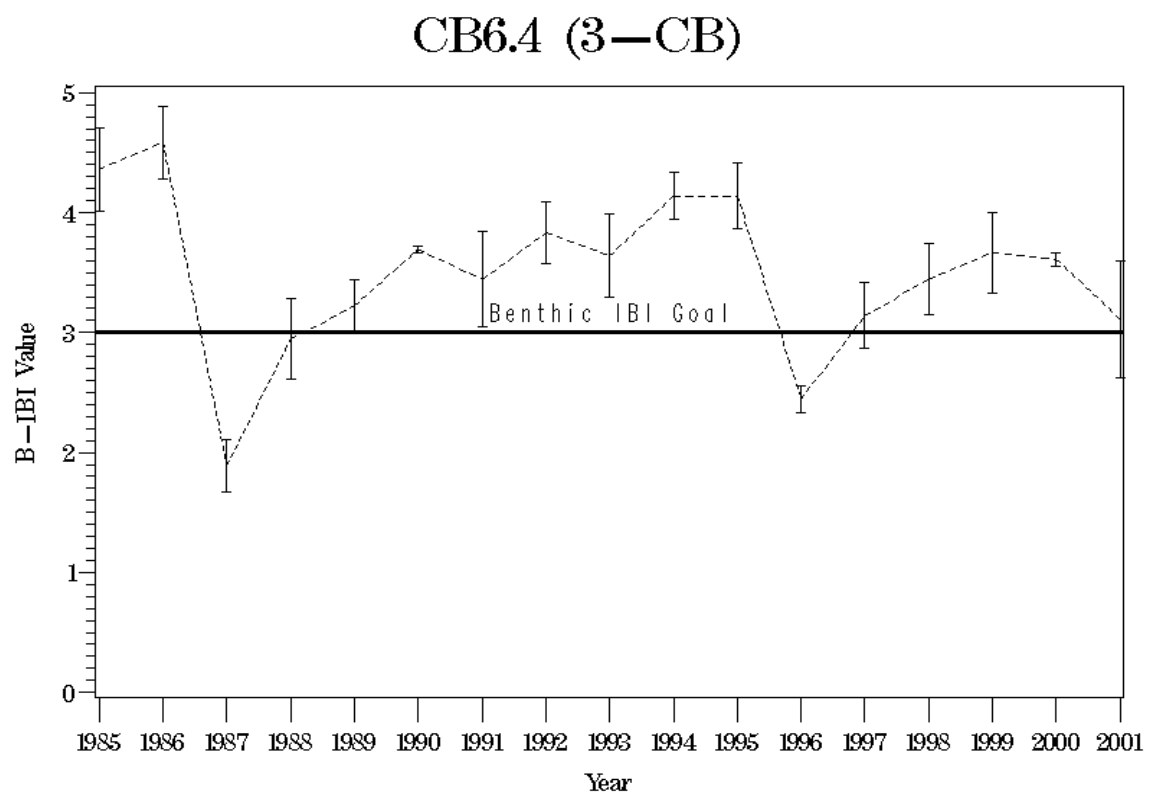


Figure 177. Plot of the benthic IBI against time at station CB6.4 for the period of 1985 through 2001.

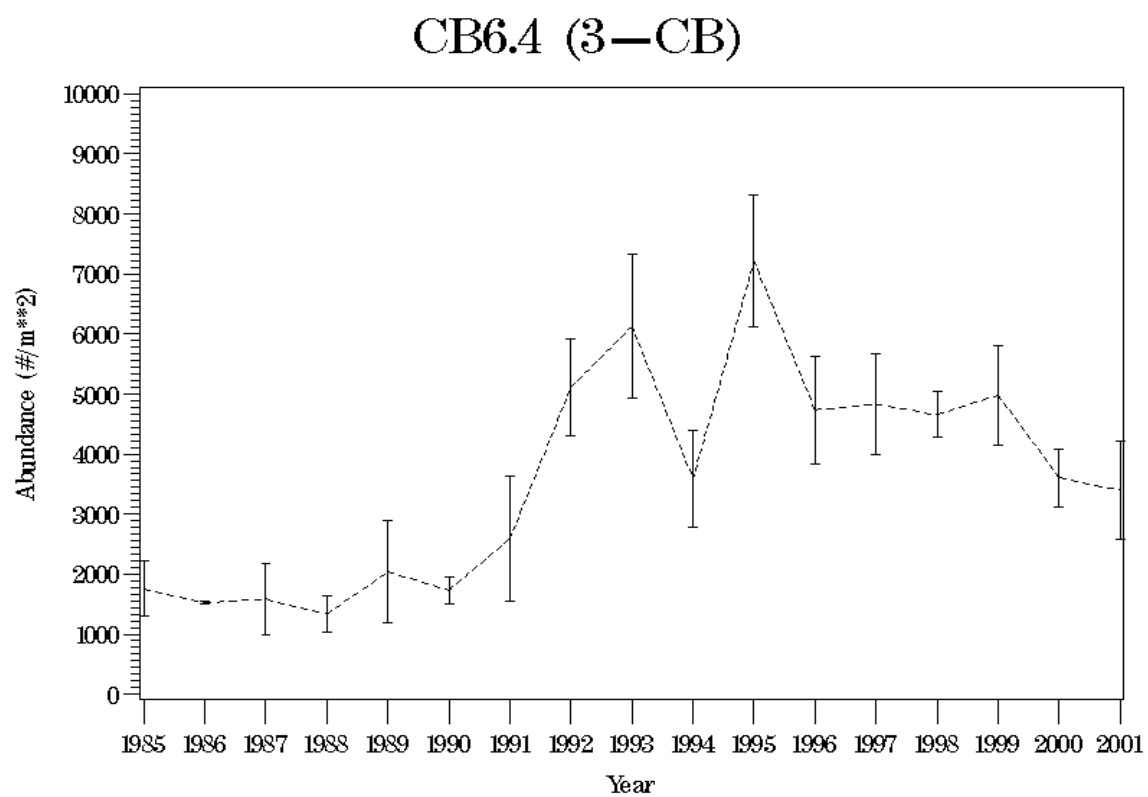


Figure 178. Plot of total benthic community abundance against time at station CB6.4 for the period of 1985 through 2001.

CB6.4 (3—CB)

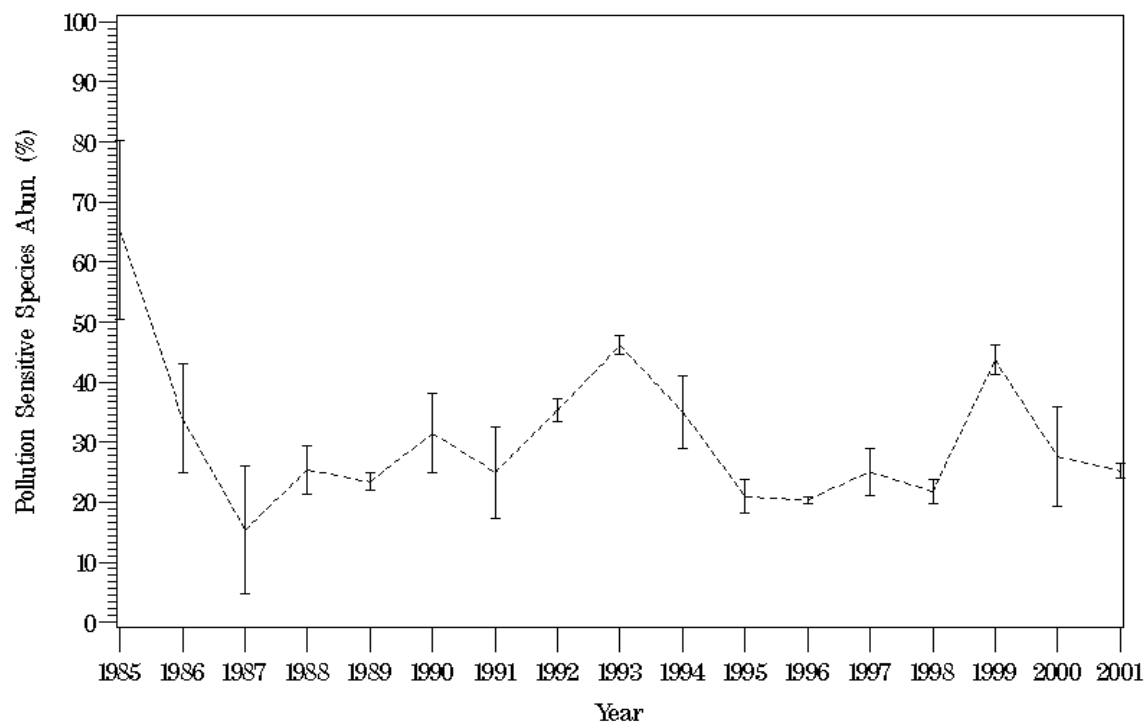


Figure 179. Plot of pollution sensitive species abundance against time at station CB6.4 for the period of 1985 through 2001.

CB6.4 (3—CB)

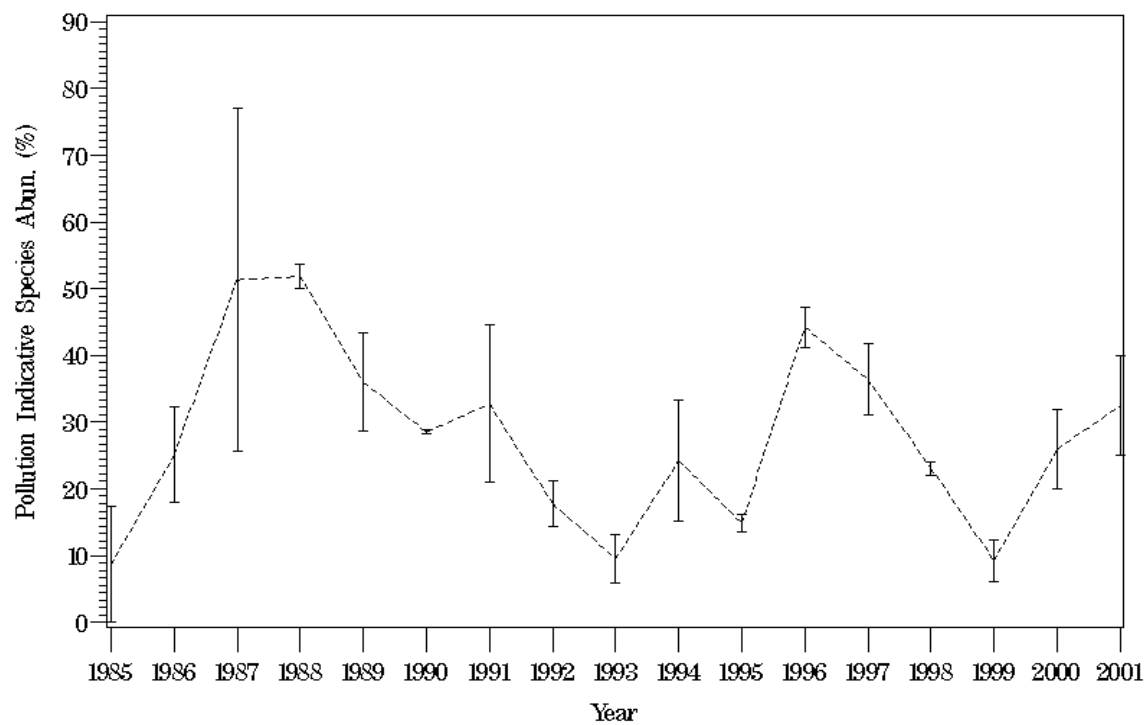


Figure 180. Plot of pollution indicative species abundance against time at station CB6.4 for the period of 1985 through 2001.

CB6.4 (3—CB)

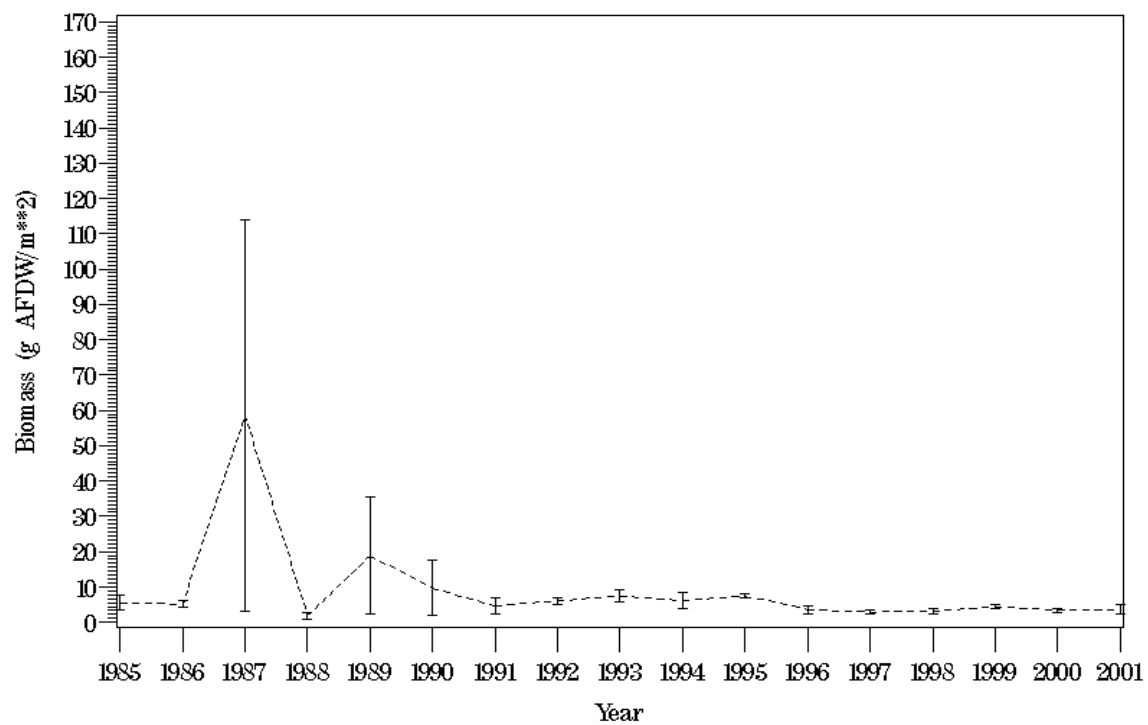


Figure 181. Plot of total benthic community biomass against time at station CB6.4 for the period of 1985 through 2001.

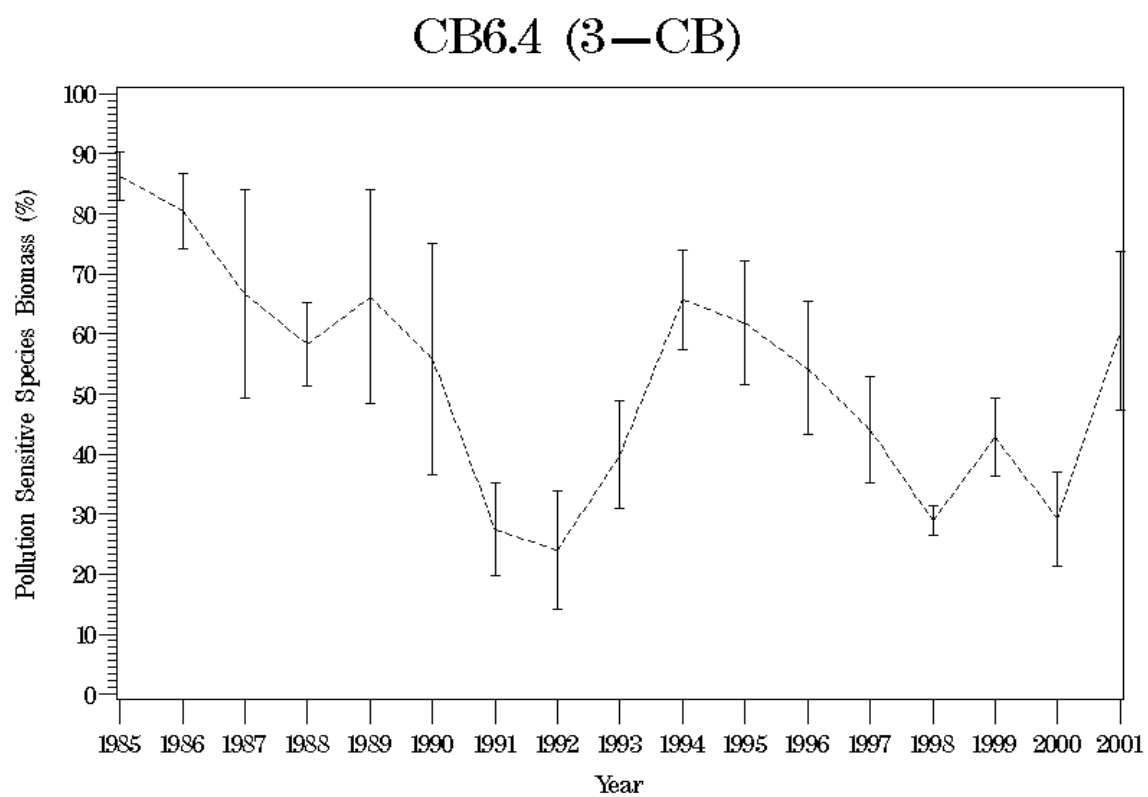


Figure 182. Plot of pollution sensitive species biomass against time at station CB6.4 for the period of 1985 through 2001.

CB6.4 (3—CB)

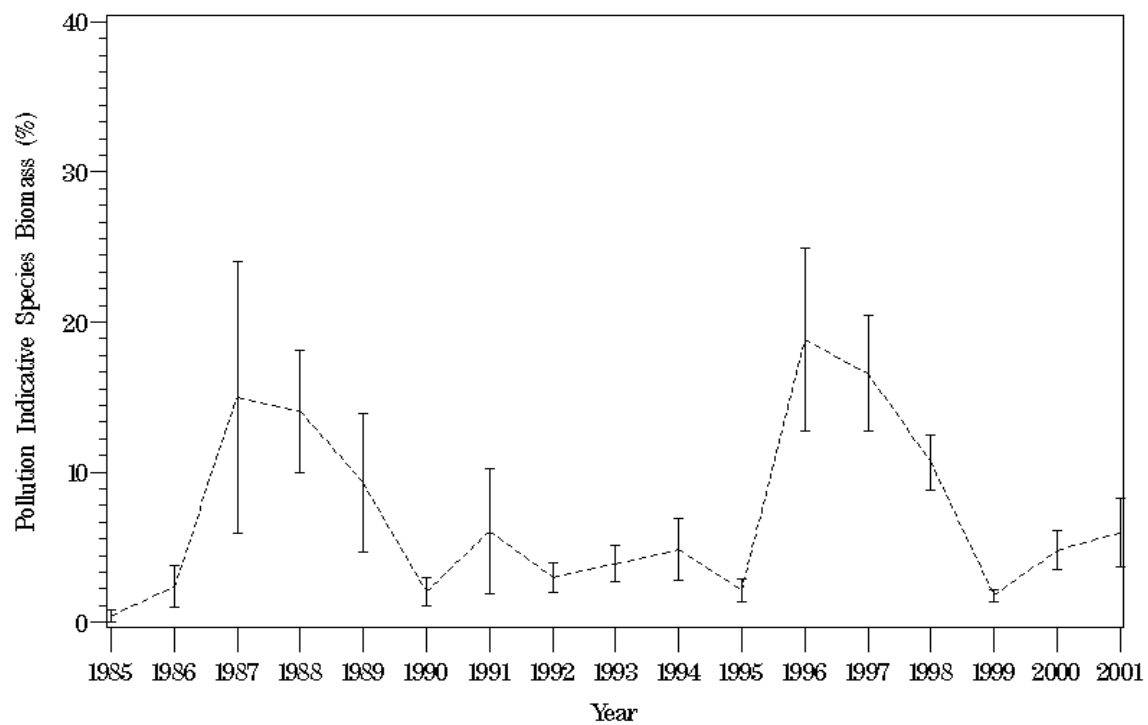


Figure 183. Plot of pollution indicative species biomass against time at station CB6.4 for the period of 1985 through 2001.

CB6.4 (3—CB)

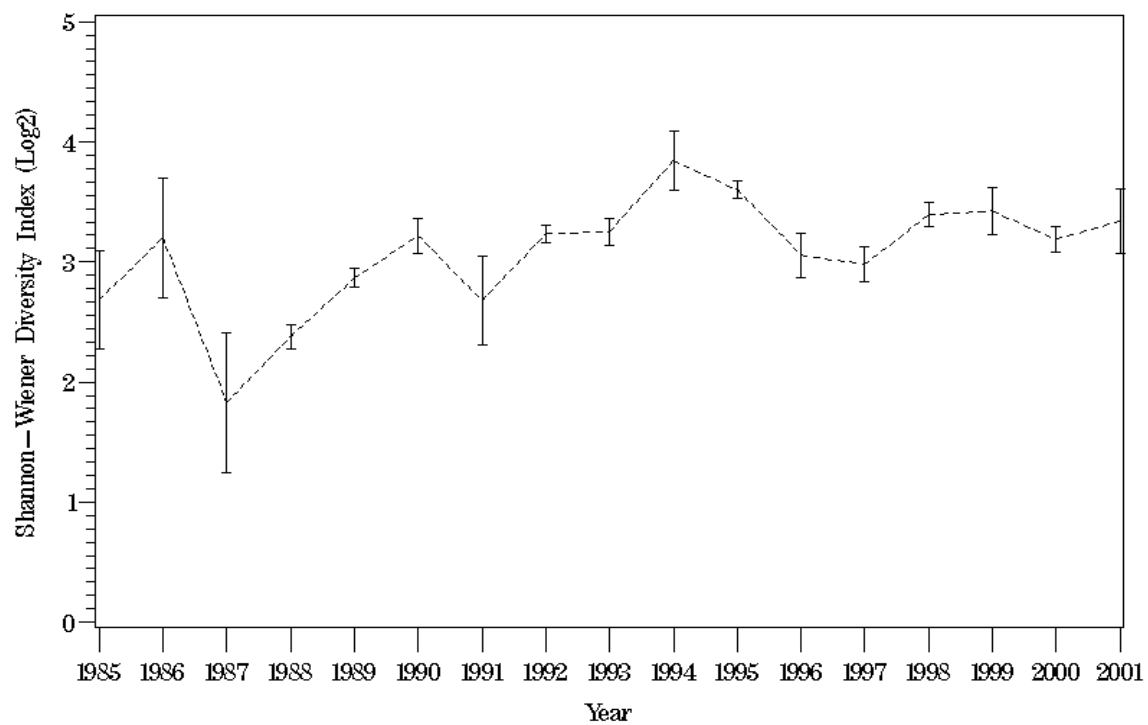


Figure 184. Plot of the Shannon-Weiner diversity index against time at station CB6.4 for the period of 1985 through 2001.

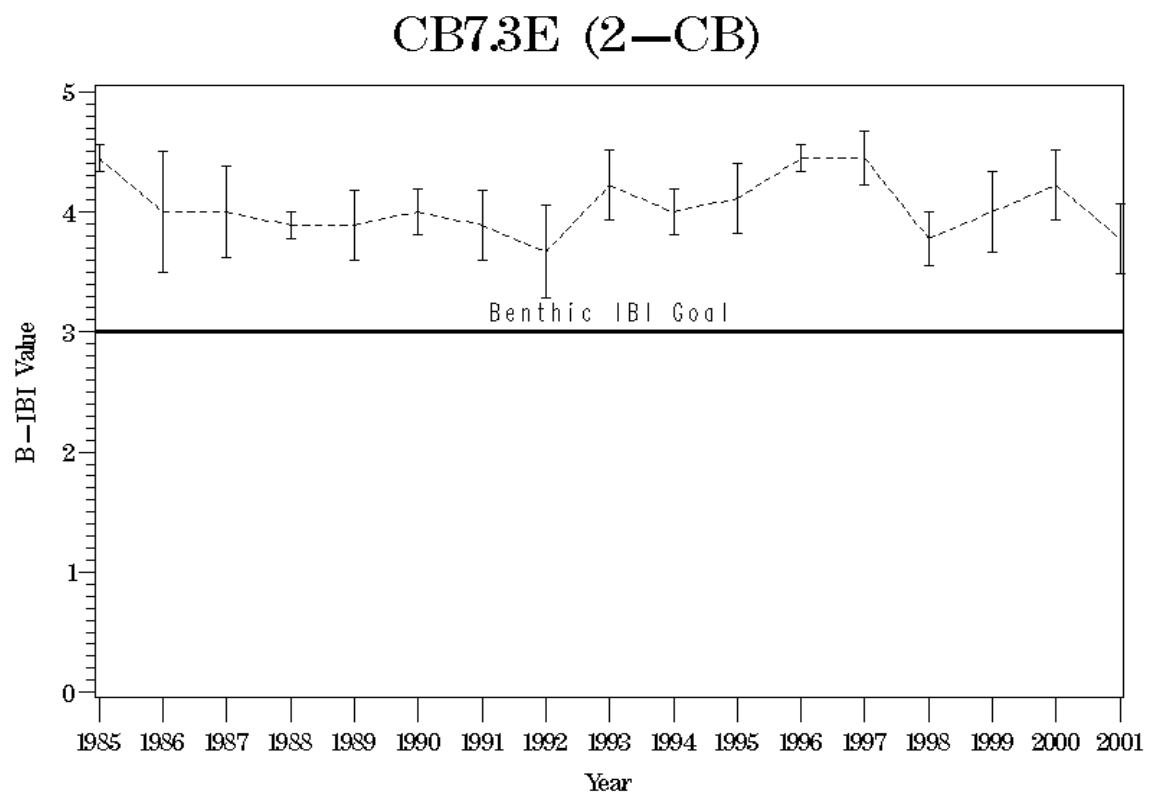


Figure 185. Plot of the benthic IBI against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

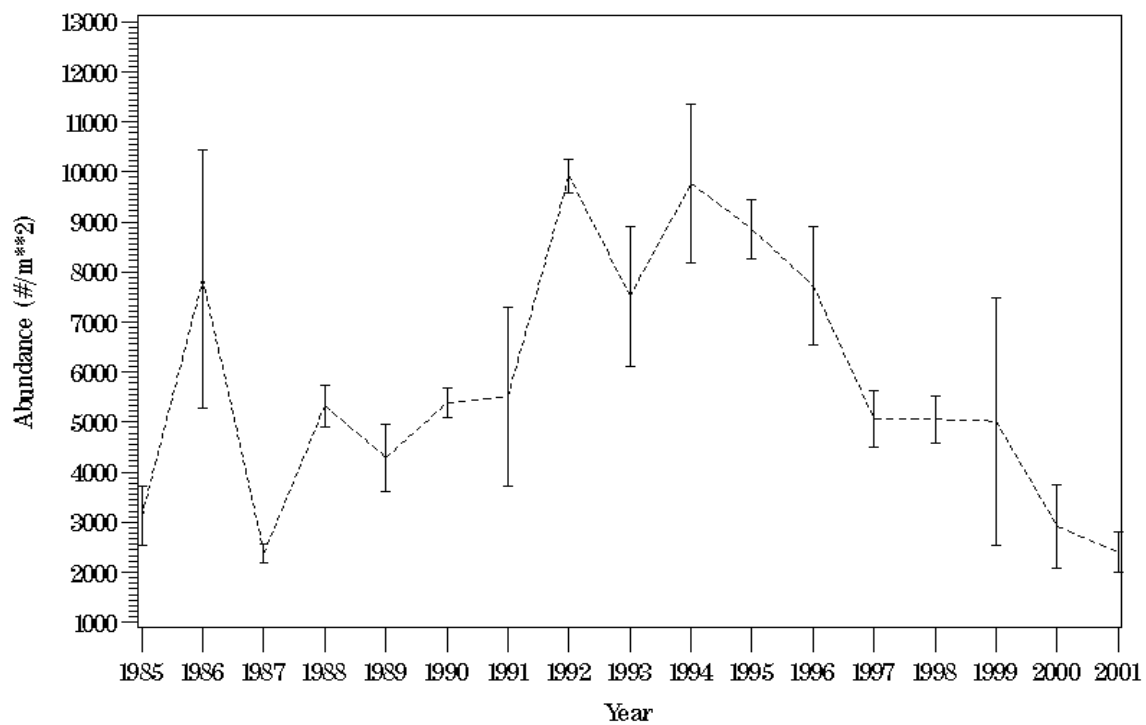


Figure 186. Plot of total benthic community abundance against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

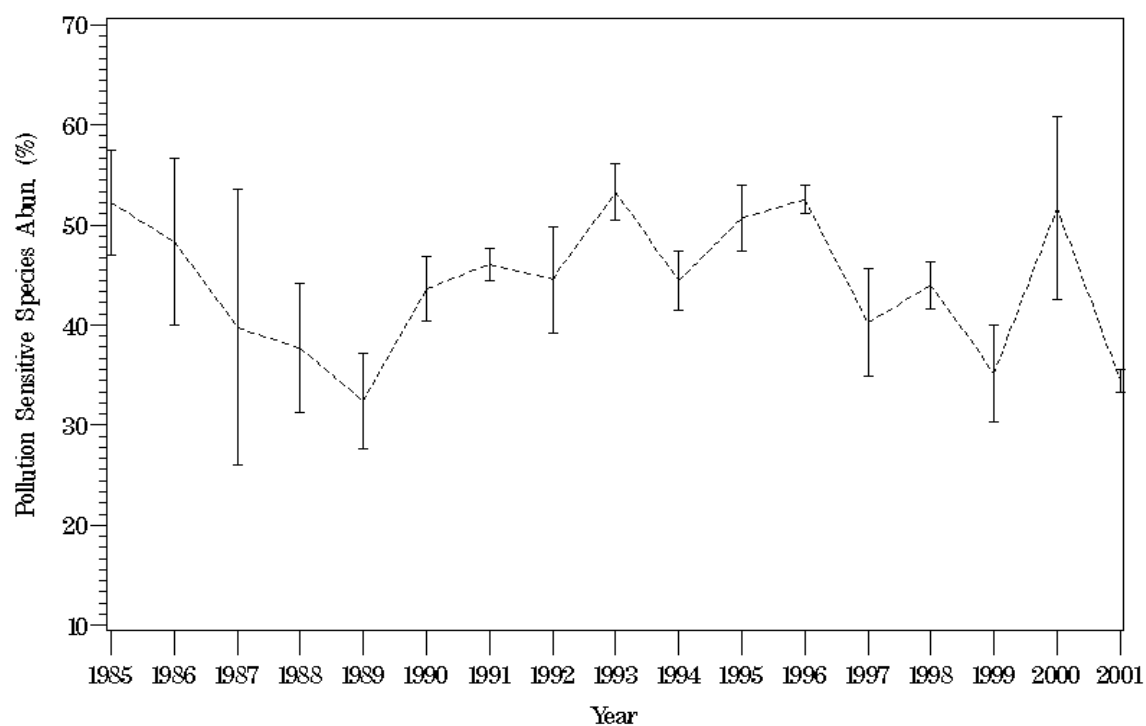


Figure 187. Plot of pollution sensitive species abundance against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

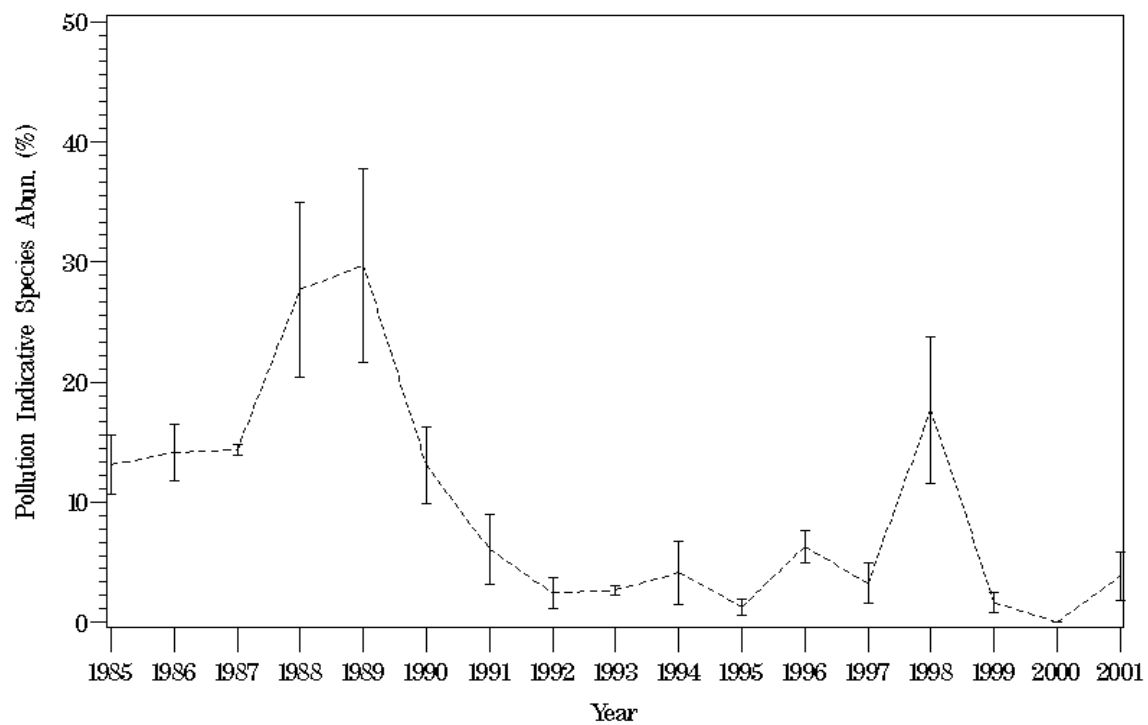


Figure 188. Plot of pollution indicative species abundance against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

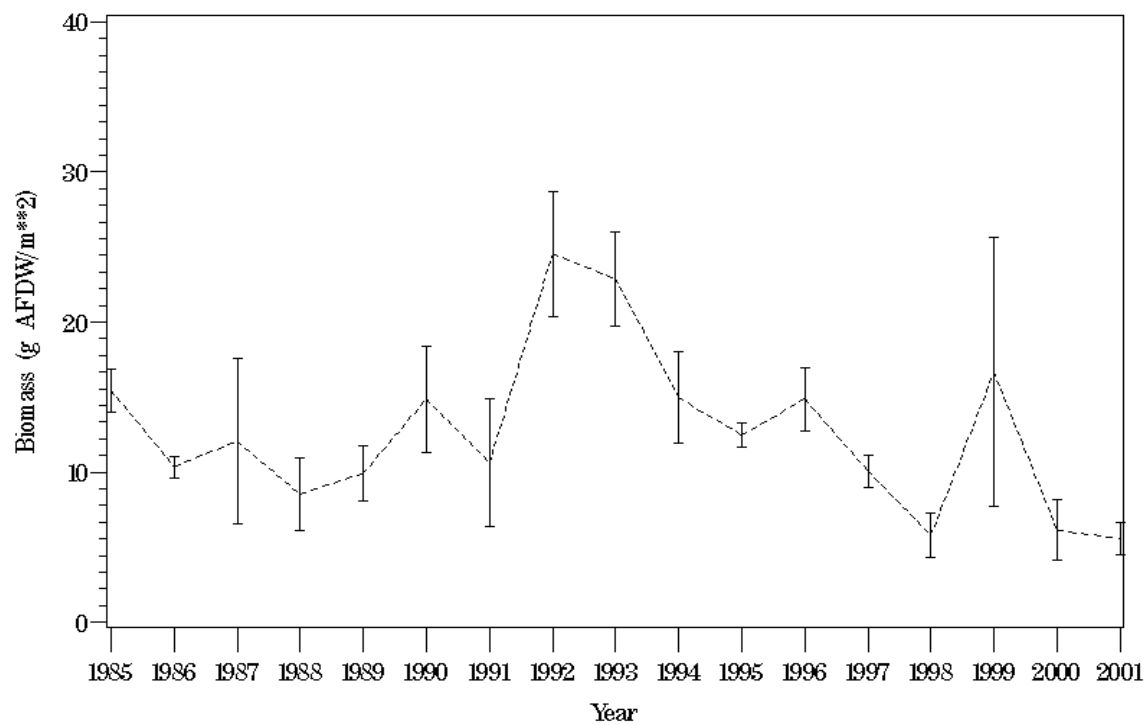


Figure 189. Plot of total benthic community biomass against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

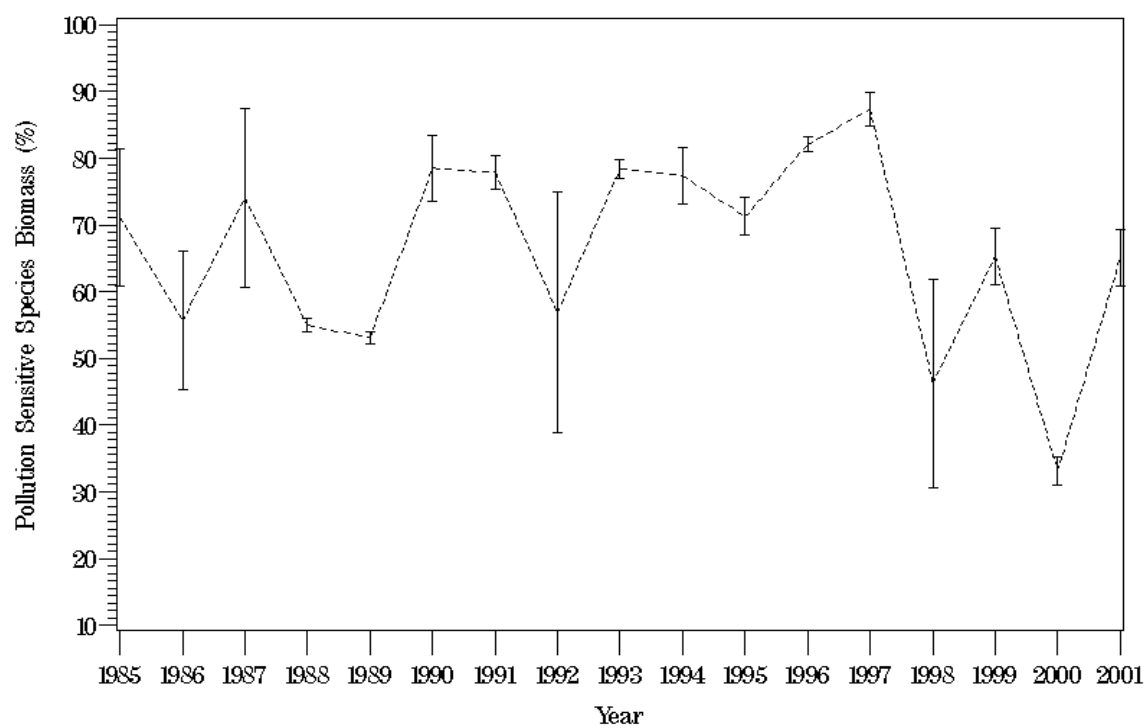


Figure 190. Plot of pollution sensitive species biomass against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2-CB)

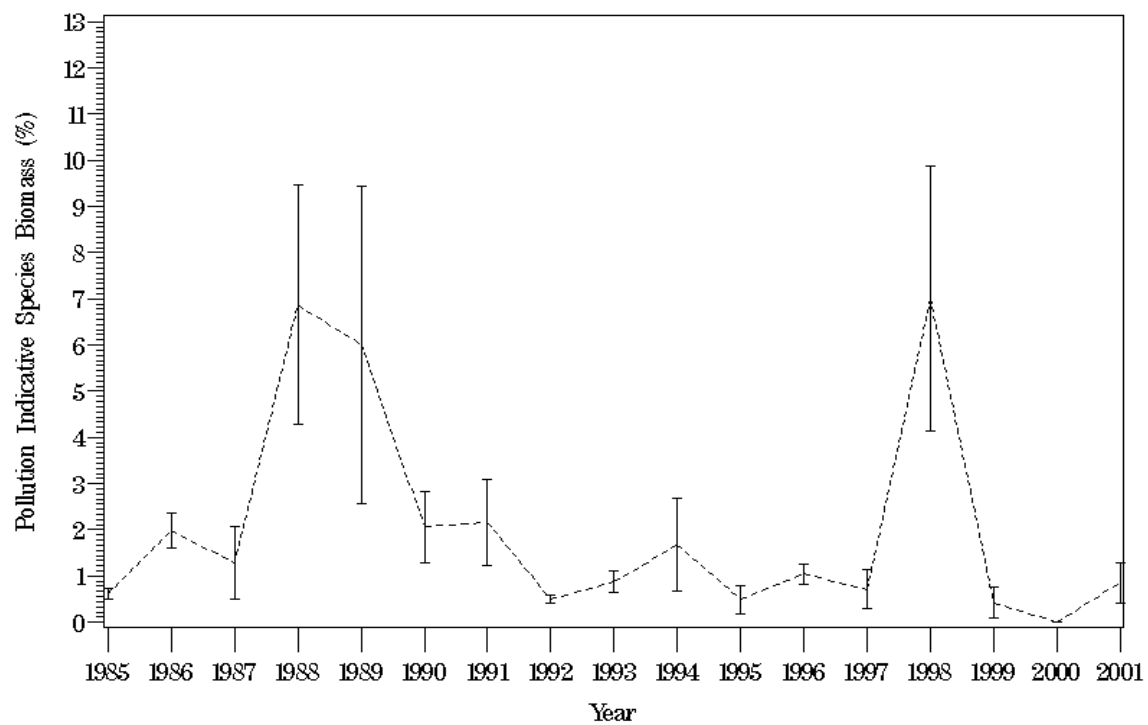


Figure 191. Plot of pollution indicative species biomass against time at station CB7.3E for the period of 1985 through 2001.

CB7.3E (2—CB)

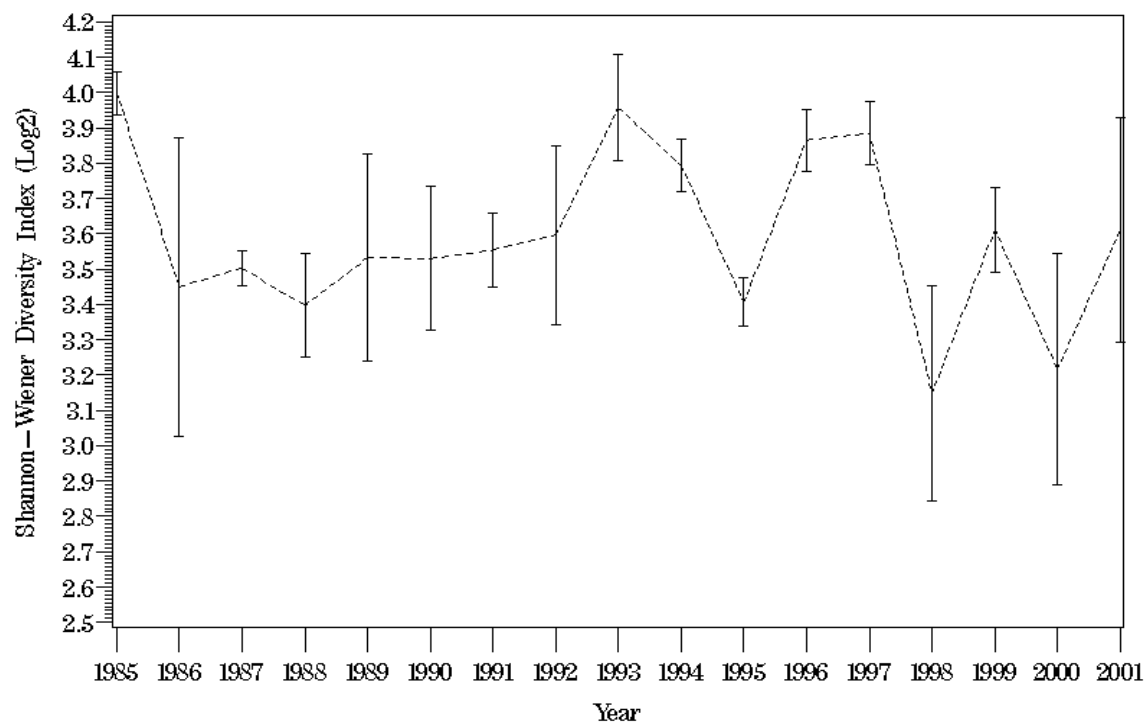


Figure 192. Plot of the Shannon-Weiner diversity index against time at station CB7.3E for the period of 1985 through 2001.

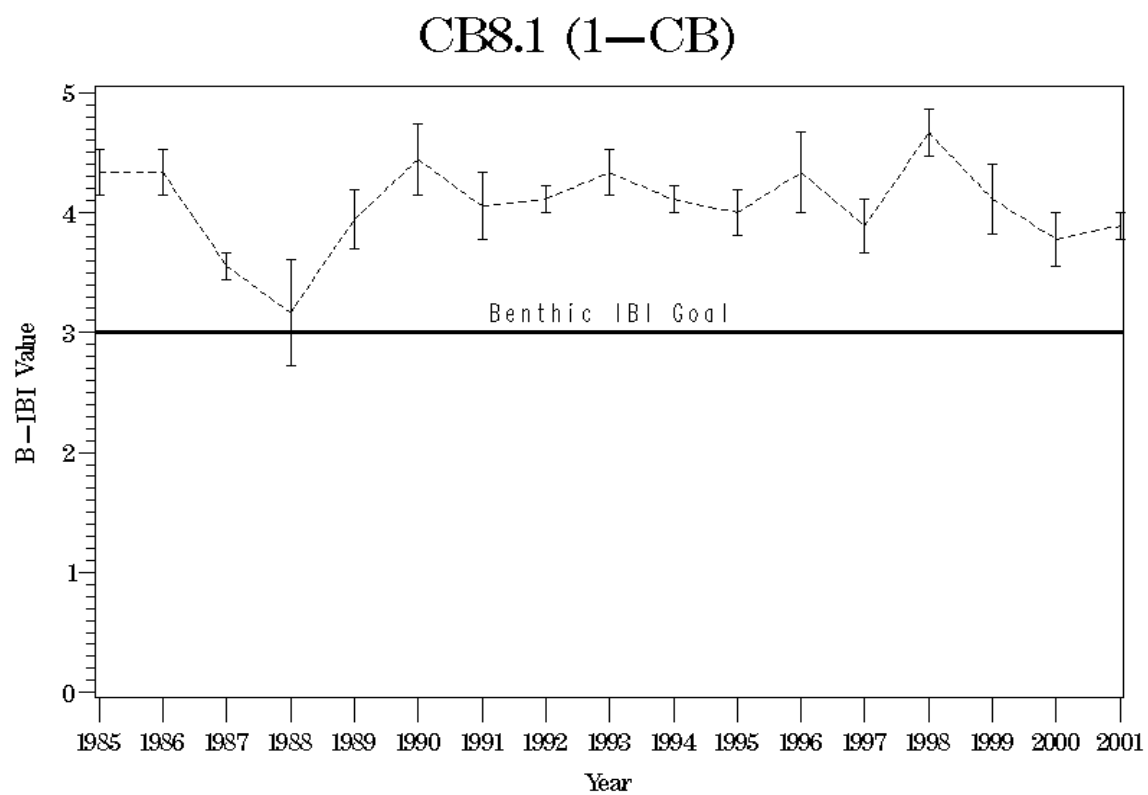


Figure 193. Plot of the benthic IBI against time at station CB8.1 for the period of 1985 through 2001.

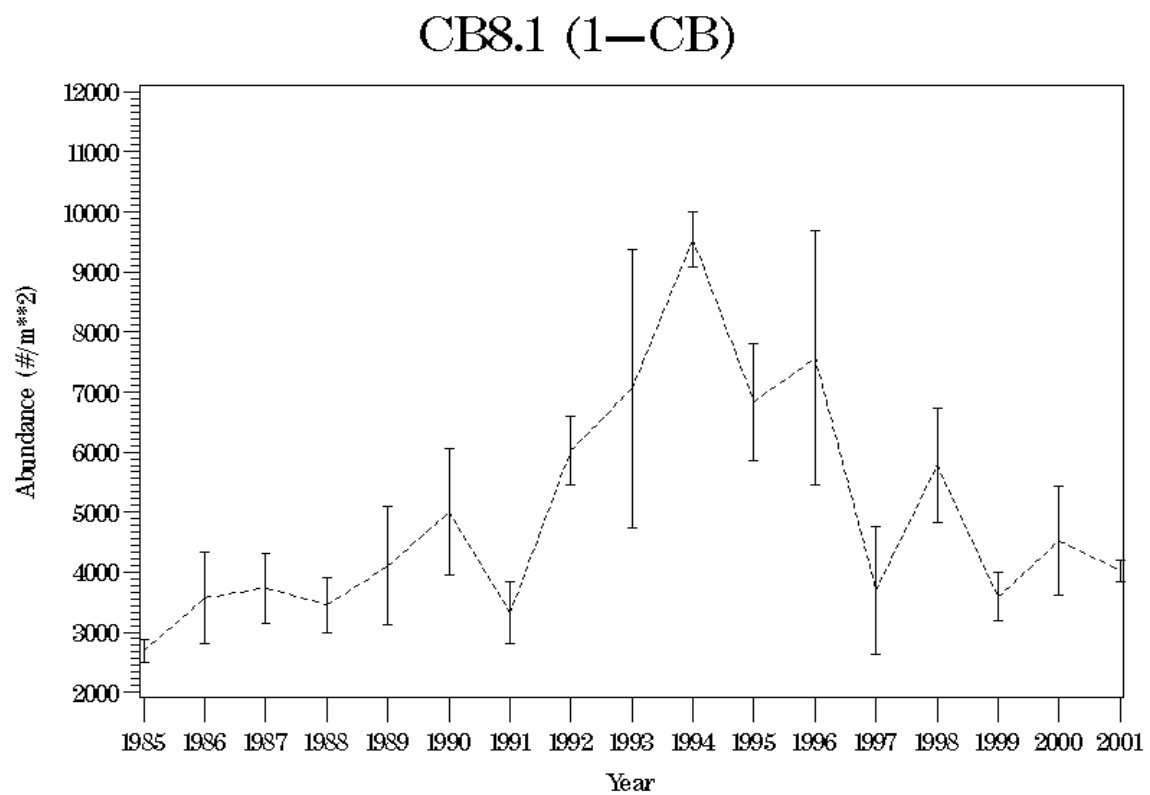


Figure 194. Plot of total benthic community abundance against time at station CB8.1 for the period of 1985 through 2001.

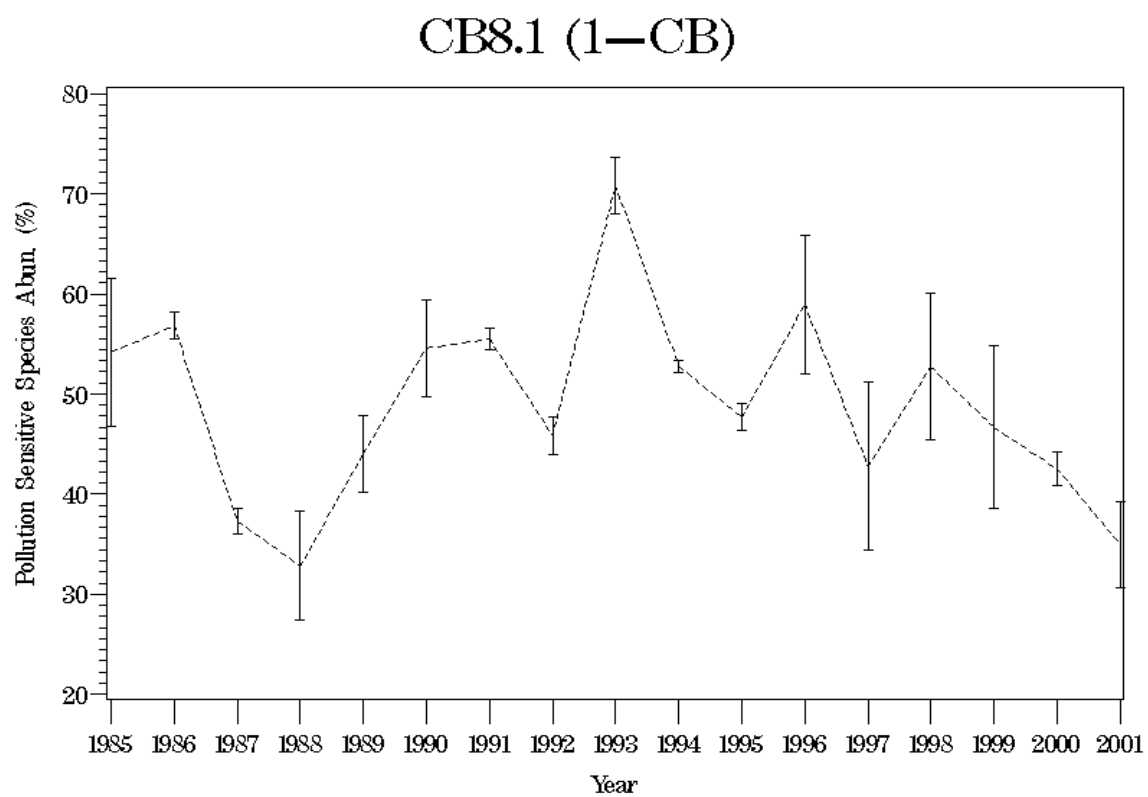


Figure 195. Plot of pollution sensitive species abundance against time at station CB8.1 for the period of 1985 through 2001.

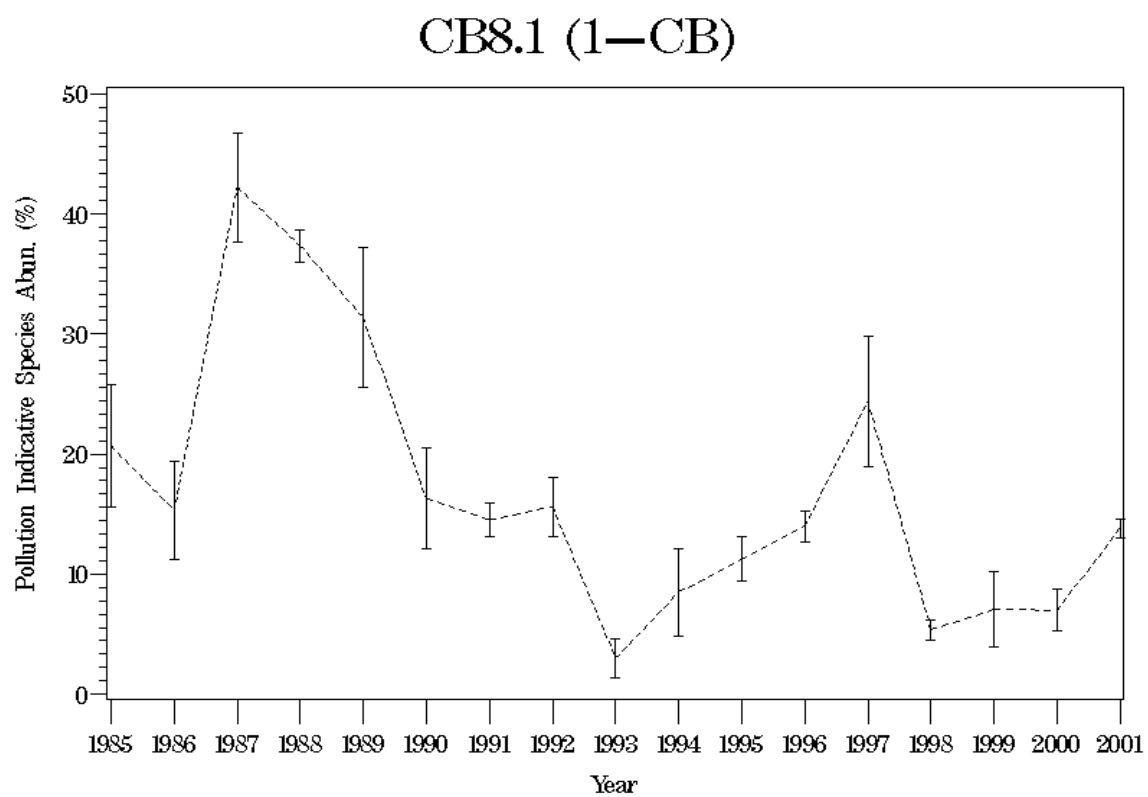


Figure 196. Plot of pollution indicative species abundance against time at station CB8.1 for the period of 1985 through 2001.

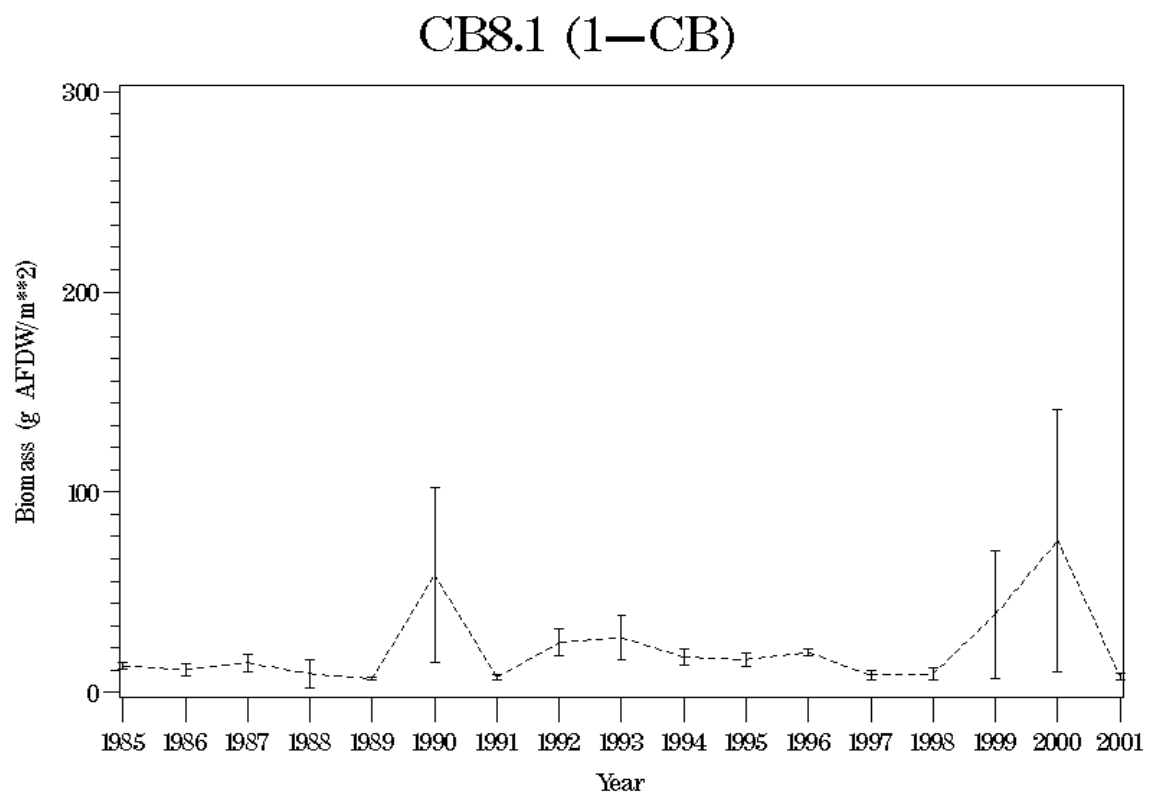


Figure 197. Plot of total benthic community biomass against time at station CB8.1 for the period of 1985 through 2001.

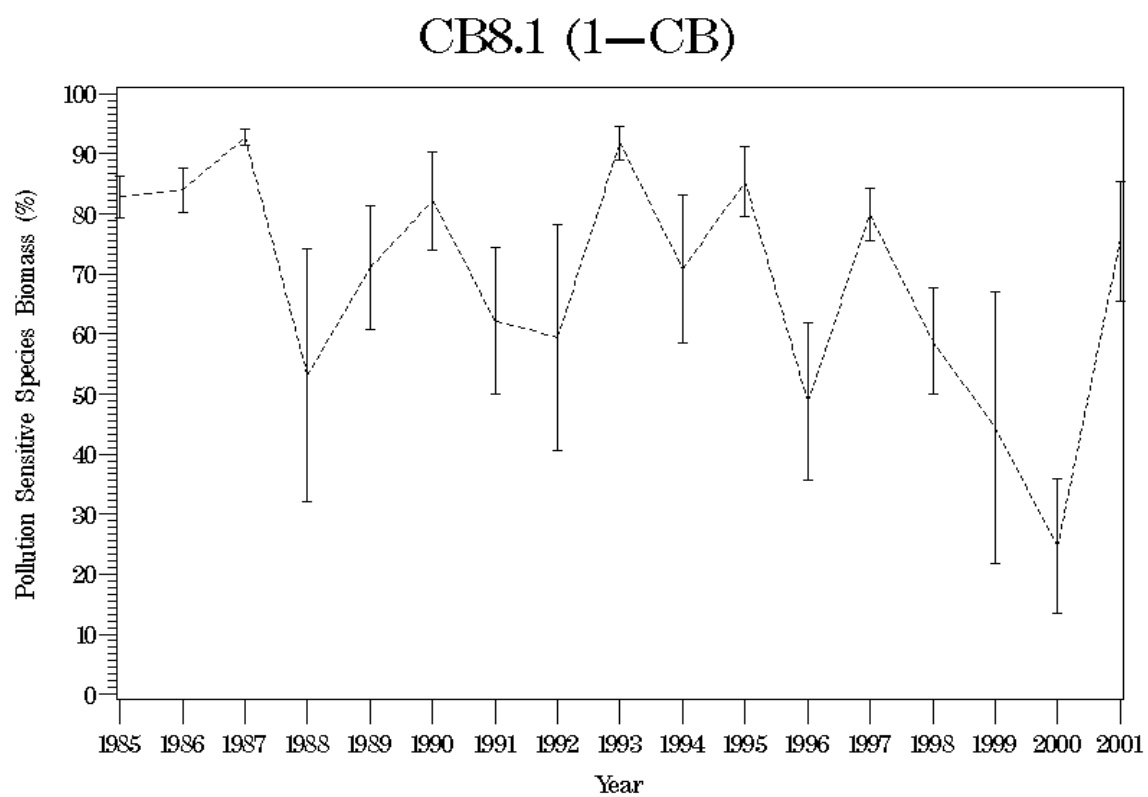


Figure 198. Plot of pollution sensitive species biomass against time at station CB8.1 for the period of 1985 through 2001.

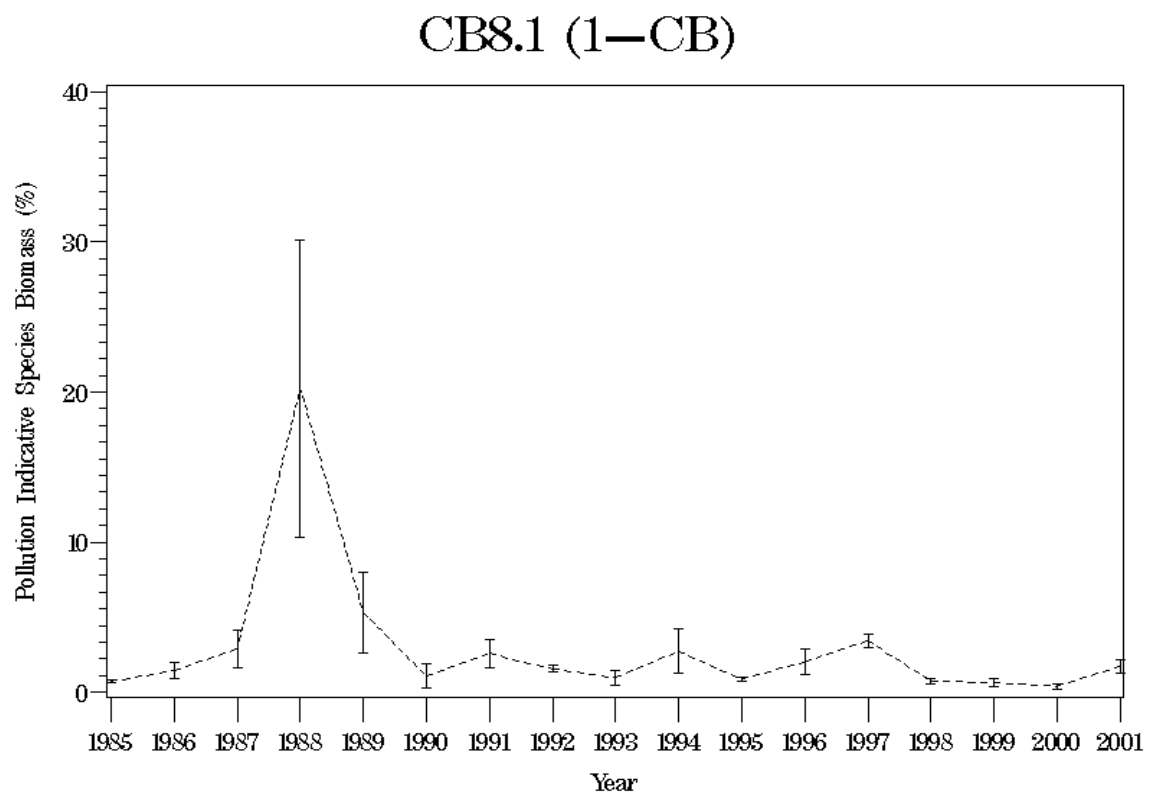


Figure 199. Plot of pollution indicative species biomass against time at station CB8.1 for the period of 1985 through 2001.

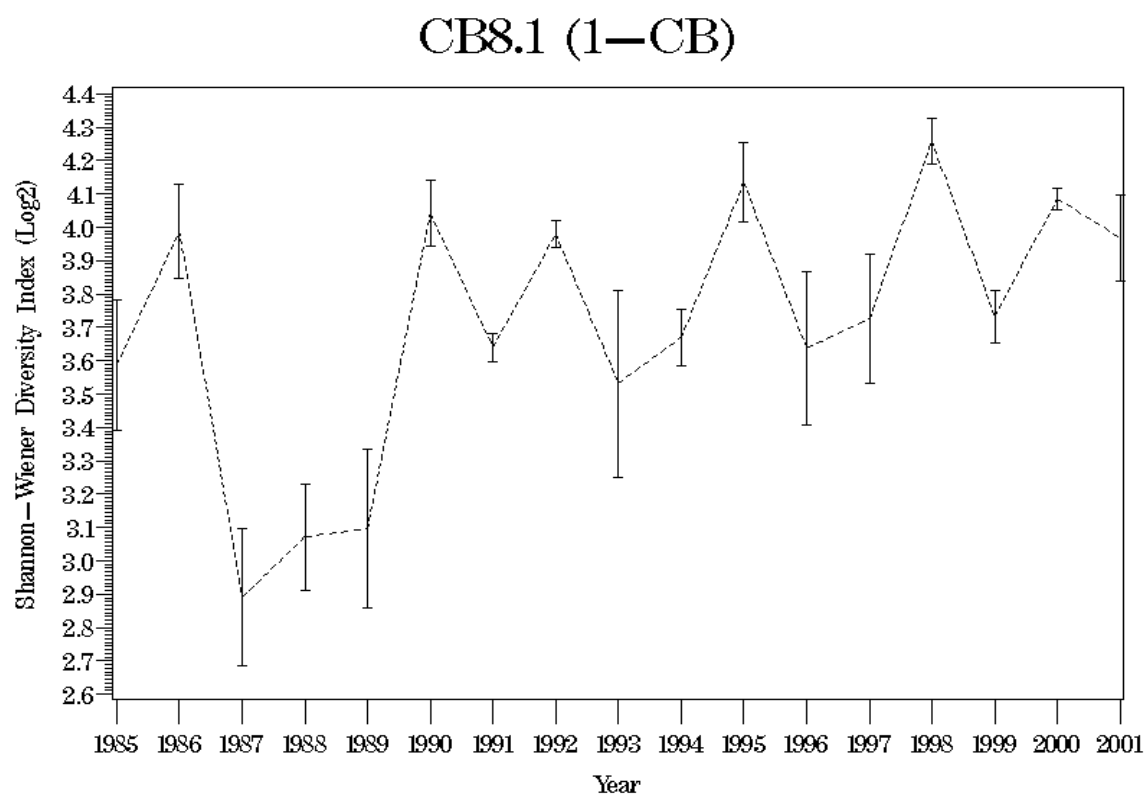


Figure 200. Plot of the Shannon-Weiner diversity index against time at station CB8.1 for the period of 1985 through 2001.