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AUTHORSHIP

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ABSTRACT — Presented in this report are some physical and biological characteristics of the L'Etang Inlet complete to December 1972. Early in 1971 a semi-chemical sulphite pulp mill began operating and some effects are documented.

Little mixing occurs in Upper L'Etang and pulp effluent of high B.O.D. passes through in a surface layer. A hydrogen sulphide smell is caused by anaerobic microorganisms in stagnant bottom water and sediment.

Species diversity of sublittoral macro-benthos in Lower L'Etang was reduced for a mile below the causeway by the pulp effluent.

INTRODUCTION

The L'Etang survey of which this is a second report (see also Wildish et al. 1972) was begun in December 1970, to determine the effects of a mixed hardwood pulpmill effluent on the L'Etang Inlet as a multi-use resource. The strategy employed in the study has been to monitor temporal changes in sublittoral macrobenthos as well as physical and chemical characteristics of the water.

Results obtained up to 1972 are presented in this report.

METHODS

The stations and sampling methods were the same as previously used (Wildish et al. 1972) except as specifically changed below or when new methods were used.

Both M.V. *MALLOTUS* and *PANDALUS* were used in 1972, the latter having similar winch and sampling facilities as the *MALLOTUS*.

Biological method changes

Identification, counting of individuals and wet weight determination of all collections up to December 1972 were completed, based on an identification strategy presented elsewhere (Wildish and Phillips 1974), using the same precedent for inclusion of species and numbers of individuals as previously (Wildish et al. 1972). Previously used computations (Numbers 3-9 in Wildish et al. 1972) have been omitted and data presented here have been analyzed by other methods (Mawson et al. 1972), and semi-log S versus N plots (Fisher et al. 1943).

In addition the following new methods were used in 1972 work:

1. Biological oxygen demand (BOD) - BOD was determined in a five-unit Hach apparatus which determined the uptake of oxygen by micro-organisms manometrically. CO_2 produced during respiration is absorbed in a KOH absorbent wick carried above the solution surface. Final volumes of samples used were 94 or 157 mℓ. They were continually stirred with a magnetic stirrer and kept at 20±1°C in a controlled temperature cabinet. Dilutions used were generally 1 volume sample: 1 volume of boiled seawater (S = 29-30°/$_{oo}$). Controls, consisting of boiled seawater only or 1 volume inlet sample: 1 volume outlet sample were also run. Two sampling locations were used as follows:

    1. Inlet sample. Collected from the pulp mill inlet ditch at the top of Upper L'Etang.

2. Outlet sample. Collected from the landward side of the causeway just before Upper L'Etang water drains into Lower L'Etang in the causeway pipe.

Collection times and temperatures were recorded and the sample carried to the laboratory in a 2-liter plastic container. Dilutions were made and apparatus closed within 2 hours of sampling. After adjustment of the manometric scale (in ppm BOD) to zero, increases were recorded on graph paper as BOD on the X and time on the Y axis for 5 days. Generally, hyperbolic curves were obtained. In some cases departures from such curves after 3 or more days indicated the presence of nitrifying bacteria. Corrections were made by extrapolating the hyperbolic form to 5 days. A further source of error was thought to be due to the absence of pertinent micro-organisms. It was shown by large increases of BOD of the inlet:outlet sample over the inlet:seawater sample. Attempts to "seed" the culture with a standard dried preparation (commercially available compost activator) were unsuccessful and a correction was made by averaging the two results.

2. Bioassay tests with winter flounder (*Pseudopleuronectes americanus* - Winter flounders obtained by trawling from Clam Cove Head were held in a flowing seawater tank in the laboratory for at least 1 week before bioassay. Tests were static, aerated in 60 liters of test water with 5 fish/tank. The sample water was obtained from the seaward side of the causeway at the top of Lower L'Etang. Control water was from the St. Croix estuary. Test temperatures were not regulated during the tests and ranged from 13-16°C.

3. Scuba diving - Diving was carried out with standard equipment at 5 stations with the following aims:

    1. Visual appraisal of sediment and epibenthic fauna.

    2. Establishment of a permanent fixed station (#4) for diving observations.

Divers involved were D. Wildish, D. Scarratt, A. Wilson and R. Phillips.

4. Shrimp trawls - A half-inch mesh shrimp trawl was towed for 10-minute intervals in the Lower L'Etang. The contents of each haul were brought back to the laboratory, identified (Leim and Scott 1966) and weighed wet.

RESULTS AND DISCUSSION

Hydrography

Tidal observations at Back Bay wharf and near Station 11 showed that the tidal curve was symmetrical at these two locations (Appendix 1).

Climate

Wind records from an anemomograph and anemometer at Pea Point Lighthouse (45°02'N, 66°48'30"W) for the period from March 1971 to March 1973 are shown in Appendix 2. During this period prevailing winds were northwesterly, mean hourly velocity ranged from 8.5 (July) to 18.1 (February) mph with a maximum winter velocity of 54 mph.

Water quality

Chemical and physical data are shown in Appendix 3. Comparison with 1971 data (Wildish et al. 1972) shows no large differences and supports the view of a steady-state system by late 1971. Model experiments with sodium lignosulfonate (Aldrich Chemical Co.) in distilled water added to local sea water gave recoveries much lower than expected based on dilution calculations. This observation may indicate that lignosulfonate concentrations are not a stable or conservative indicator of pulpmill effluent dilution in sea water and should be investigated further.

Biological

1. Biological Oxygen Demand. The results of an analysis limited to the Upper L'Etang are shown in Table 1.

   BOD concentrations were not related to the sampling temperature but for the outlet sample were related to the mean freshwater leaving Lower L'Etang (calculation in Wildish et al. 1972, Appendix 2). The relationship was a semi-logarithmic inverse one (Fig. 1). The regression equation of the form:

$$Y = C \log X \text{ or } \log X = \frac{Y}{C}$$

   where X = BOD in ppm

   Y = Mean monthly freshwater flow entering Lower L'Etang in 10^6 U.S. gal/day.

   C = 1.3387 (Standard Deviation = 0.50676)

   calculated from the data ($r = 0.76$, $N = 8$) can be used to estimate runoff or BOD when effluent volume = 1.25×10^6 U.S. gal/day. These observations indicate that little

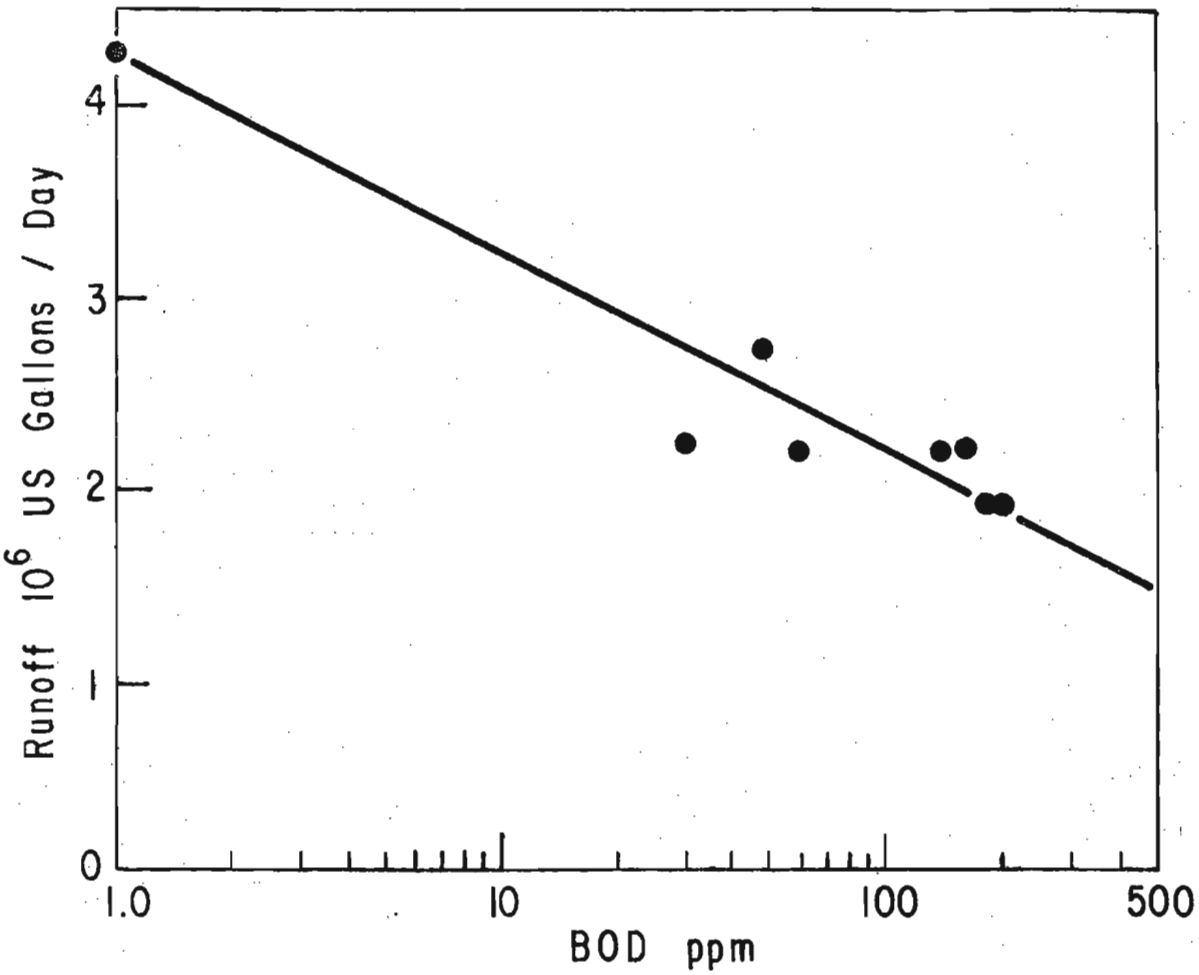

Fig. 1. Effect of freshwater runoff from Lower L'Etang on BOD. Runoff data from Wildish et al. 1972.

reduction of BOD occurs in Upper L'Etang and that incoming effluent is rapidly transported, via a surface layer, to Lower L'Etang.

Table 1. BOD analysis of Upper L'Etang.

Date 1972	Inlet Time A.S.T.	Inlet Temp. °C	Inlet BOD mg/ℓ	Outlet Time A.S.T.	Outlet Temp. °C	Outlet BOD mg/ℓ
18/8	-	-	-	-	-	30
24/8	-	-	+320	-	-	-
5/9	1040	-	220	1025	-	182
18/9	1120	20.0	880	1100	16.5	200
2/10	1405	17.5	1020*	1350	14.0	60
17/10	1400	22.5	560	1345	11.0	140
31/10	1340	11.5	800*	1320	11.0	160
14/11	1340	12.5	880*	1335	5.0	0
19/12	1400	3.0	832*	1350	2.0	48

+Corrected for presence of nitrifying bacteria.
*Corrected for absence of pertinent micro-organisms.

2. Bioassay tests - Results are shown in Table 2 and indicate that no residual acutely toxic materials were present in Upper L'Etang effluent after purging with air.

Table 2. Bioassay tests with winter flounder in Upper L'Etang effluent (S = 16-27°/₀₀) and St. Andrews sea water (S = 29-30°/₀₀).

% Upper L'Etang effluent	Percent Mortality 2 days	4 days	10 days	N	pH
1 100	0	0	0	5	7.4
2 50	0	0	-	5	7.4
3 0	0	0	0	5	8.0

Dissolved oxygen levels remained above 45% throughout the tests.

3. Scuba diving

28/6/1971 - Station 11 - An "etoproct forest" with hydroids, large echinoderms, winter flounders, cottids, shrimps, Holothurians, *Buccinum*, *Littorina* and *Placopecten*.

Station 9 - On mud surface a unicellular green algae giving off gas bubbles. *Fucus* and *Ascophyllum* present attached to rocks with *Littorina*, winter flounders and shrimps.

26/8/1971 - Station 4 - Attempted to put in place 2 buoys with about 2 m of rope weighted with concrete slabs to establish a fixed diving station. Visibility was so poor neither could be located on the bottom. The two problems were the strong currents and poor visibility. At 10 m there is present a reverse bottom current up to 2 m deep going away from the shore characterized by heavy sediment load and poor visibility.

Above a sharp discontinuity is relatively clear water making a strong flood current parallel with the shore. It was difficult to observe surface sediment because of low visibility.

1972 - Station 15 - Visibility less than 15 cm.

Stations 8 and 9 - Visibility 1-2 m, below which it was impossible to observe the bottom.

Station 11 - Winter flounders, shrimps and burrows in the substrate. Trails in the mud led to clusters of sea urchins.

Station 6 - Very little visible life except many burrows.

Station 4 - Variety of invertebrates, including many burrowers, winter flounders, sculpins, shrimps, small decapods and nudibranchs on large rocks.

4. Neckton

Ten species were found in shrimp trawls (Table 3) taken either on 20/12/1972 or 24/1/1973. The data shown as replicate tows for numbers of individuals (N) and biomass (B in g) are shown in Table 4.

Table 3. List of fish species taken in Lower L'Etang.

1. *Osmerus mordax*
2. *Microgadus tomcod*
3. *Clupea harengus*
4. *Pseudopleuronectes americanus*
5. *Myoxocephalus scorpius*
6. *Myoxocephalus octodecemspinosus*
7. *Pandalus montaqui*
8. *Crago septemspinosus*
9. *Lumpenus lumpretaeformis*
10. *Raja ocellata*

Table 4. Fish numbers and biomass taken in replicate 10-minute tows: A. 20/12/1972 near Goat Island.

	1		2		3		4		5		6		7	
S	N	B	N	B	N	B	N	B	N	B	N	B	N	B
1	149	7,294.4	131	6509.0	19	6743.0	95	4790.2	278	15,063.1	172	8880.9	34	1722.2
2	1	96.6	5	307.1	4	446.6	1	243.0	32	2,955.7	8	1218.9	6	417.7
3	2	50.9	1	2.0										
4					1	39.2			5	300.6	2	57.2		
5											2	518.7		
6														
7									1	1.8				
8					2	3.9							3	5.4
9														
10														

B. 20/12/1972 between King's Point and L'Etang Head.

	1		2		3	
S	N	B	N	B	N	B
1	74		192	7146.3	181	10,162.3
2			1	70.2	6	476.5
3	6		51	533.0		
4	31		24	1203.5	1	40.7
5			1	1174.4		
6	49		19	4540.7		
7	1		7	14.6		
8	5		3	6.8	2	5.0
9	1					
10	5		4	3718.4		

(Cont'd)

Table 4 (Cont'd)

C. 24/1/1973 between King's Point and L'Etang Head.

	1		2		3		4		5		6		7	
S	N	B	N	B	N	B	N	B	N	B	N	B	N	B
1	3	128.2	2	40.1	6	121.9	2	46.3			1	52.6		
2	1	78.1												
3									3	210.4	2	221.3		
4														
5	1	578.6					2	1186.5			1	54.5		
6														
7														
8							1	1.0			3	4.5		
9														
10			1	87.0										

The trawls were frequently damaged during operation and the planned monthly sampling cancelled.

Herring catch statistics were investigated in the Lower L'Etang by visits to owners of the three weirs nearest Upper L'Etang (Table 5) and from Fishery Officers' statistics for the area.

Table 5. Catch data for herring in L'Etang weirs in thousands of pounds.

Weir and Owner	1969	1970	1971	1972	1973
Watts Head (C. Cook)	123	82½	30	117½	49
Speed Bar, Goat Island (C. Hatt)	81½	24	11	117	33
Finger Bay (C. Hatt)	38½	18	9	0*	0*
Total Fishery District 53 (57 weirs)	32,975	25,155	17,438	23,189	-

*Late completion of weir.

Fishery District 53 includes an area from the west of Frye Island to Point Lepreau outside L'Etang. The three weirs follow the catch trend for the whole area and do not suggest any specific deleterious effect of the pulpmill effluent.

5. Macrobenthos

An intertidal survey on 18/9/72 at the causeway showed that on the landward side, which was a steep, artificial cliff of loose stones, no biota was present except a few barnacles and littorinids limited to the high-water mark.

On the seaward side a similar substrate carried attached algae, *Fucus* and *Ascophyllum* some of which, particularly on the lower shore, was dead. Littorinids and barnacles were also present on suitable rocks of the upper shore.

Results for sublittoral surveys in 1970 and 1971 are shown in Appendix 4 and in 1972 in Appendix 5. A key to the species names corresponding to the numbers used in the two appendices is given by Wildish and Phillips (1974, Appendix 1). Names not appearing in this reference are given in Appendix 6.

In the S x N matrices of Appendices 4 and 5, numbers at the top represent sample months. Each sample is a lumped, triplicated 0.1 m^2 Smith-McIntyre grab sample. Sample 100 is a 10x replicate at station 10.

Diversity indices are shown in Appendices 7A and 7B. The index or sampling characteristic is abbreviated as in Mawson and Godfrey (1971).

Plots of species number (y axis arithmetic) against cumulative numbers of individuals ($\propto$ axis logarithmic) gave straight line plots with correlation coefficients between 0.80 and 0.96 (not shown). The slope of the line in randomly sampled collections from the same sample site can be used to predict the number of species continued sampling would produce from the same population. Fisher et al. (1943) also give the variance of this value. The data for the most upriver stations are shown below.

Table 6. Species numbers and total numbers of individuals for all 1971 and all 1972 data.

	1971			1972		
Station	S	N	Slope±2.S.E.	S	N	Slope±2.S.E.
15	20	207	5.5 ± 28%	10	94	2.5 ± 40%
10	43	271	14.0 ± 20%	19	86	7.0 ± 36%
9	13	295	2.5 ± 30%	13	182	3.0 ± 32%
8	25	513	4.5 ± 22%	12	198	2.5 ± 32%
11	35	699	7.5 ± 18%	31	309	8.0 ± 22%
4	53	840	12.5 ± 14%	38	222	13.0 ± 24%

The higher standard errors for 1972 reflect the fewer sampling times (5) than in 1971 (up to 12). Differences, significant at the 95% confidence interval, were found in the slopes of 1971 and 1972 data for stations 15, 10, and 8 but not for stations 9, 11, and 4.

CONCLUSIONS

The data presented show the following:

1. By the time pulp effluent reaches the causeway and Upper L'Etang it does not contain conservative toxic compounds as evidenced by the bioassay tests with winter flounder.

2. It does, however, carry high BOD loads (pulp fibres and degradation products) which are diluted in Upper L'Etang but undergo little bacterial attack because of rapid surface transport.

3. Upper L'Etang is an anoxic body of water which is very poorly mixed due to the poor tidal exchange at the causeway. The hydrogen sulphide smell from this system is caused by anaerobic micro-organisms in stagnant bottom water and sediment reducing sulphur containing compounds.

4. By the end of 1972 chemical and physical conditions in Lower L'Etang were stabilized with evidence that dissolved oxygen values were reduced by aerobic micro-organisms at least to station 11.

5. By the end of 1972, sublittoral macrobenthos had been reduced at all stations (except 9, where pre-operation samples showed a low diversity value) for more than a mile below the causeway. Low water oxygen conditions were probably the limiting factor, but physical factors (pulp fibre smothering, reduced light) could also be involved.

In order to reverse the trend of worsening environmental conditions (shell fisheries on the east shore and top end of Lower L'Etang were closed in 1973), it will be necessary to:

1) remove much of the B.O.D. load at the mill site,
2) remove the concentrated bed of pulp fibres at the inlet point in Upper L'Etang,
3) remove pulp fibres at the mill site, and
4) allow full tidal exchange across the causeway, possibly replacing it with a bridge.

ACKNOWLEDGMENTS

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A P P E N D I C E S

Appendix 1. Observed times (D.S.T.) and tidal heights (feet) in L'Etang on May 3, 1972.

Station 1. Back Bay, Government Wharf 45°06.0'N, 66°52.0'W.

Station 2. Near Station 11 45°06.0'N, 66°47.7'W.

Stations are not related to benchmarks.

Time	Station 1	Station 2
1000	7.40	-
1015	7.80	-
1030	8.25	-
1045	8.60	-
1100	9.35	0.6
1115	9.85	1.15
1130	10.50	1.40
1145	11.25	2.20
1200	11.95	3.45
1215	13.00	4.20
1230	13.95	4.90
1245	14.95	6.00
1300	15.85	7.20
1315	16.75	8.05
1330	17.65	8.85
1345	18.55	9.65
1400	19.55	10.70
1415	20.15	11.75
1430	20.90	12.25
1445	21.15	12.60
1500	21.95	13.10
1515	22.30	13.85
1530	22.60	14.25
1545	22.55	13.80
1600	22.60	13.50
1615	22.40	-
1630	22.15	-

Appendix 2. Wind direction and speed at Pea Point Lighthouse, from 12 March 1971 to 28 March 1973.

Month	Mean daily number of miles								No. days recorded	Hourly velocity, mph	
	N	NE	E	SE	S	SW	W	NW		mean	maximum
1971											
March	8.8	20.9	17.6	8.9	23.9	69.6	48.6	130.5	20	13.7	40
April	15.0	53.6	32.1	30.9	33.3	21.2	26.5	68.4	30	11.7	34
May	7.5	12.4	77.1	23.3	55.5	15.6	7.8	43.7	31	10.1	38
June	9.2	9.7	28.1	15.0	73.0	36.3	11.7	42.2	30	9.4	28
July	3.1	0.6	41.4	25.9	69.5	24.6	8.3	31.5	31	8.5	29
August	3.7	12.0	46.2	14.9	44.0	47.9	32.0	23.3	31	9.3	32
September	5.7	11.4	60.0	10.5	38.4	28.1	31.2	39.0	30	9.3	28
October	8.5	26.4	18.1	17.2	61.6	55.1	37.5	36.7	31	10.7	37
November	30.8	34.4	31.0	9.7	40.2	13.9	29.8	139.3	30	13.7	50
December	37.6	28.0	2.0	34.5	31.3	32.7	36.7	172.5	31	15.9	46
1972											
January	23.6	16.1	15.6	27.7	33.7	48.5	91.2	117.5	31	15.6	51
February	22.1	33.8	73.0	11.5	31.0	32.2	102.3	129.4	29	18.1	54
March	37.5	59.8	46.3	10.1	30.4	16.8	53.6	91.2	19	14.4	35
April	20.5	22.9	50.2	6.5	29.7	26.4	41.2	67.9	30	11.1	31
May	4.1	23.8	80.1	11.8	70.4	31.9	16.4	31.9	31	11.3	29
June	2.2	4.1	107.3	26.9	61.6	22.7	4.9	12.6	30	10.1	38
July	-	-	-	-	-	-	-	-	-	-	-
August	10.5	1.7	21.2	12.6	93.4	25.2	20.6	32.3	31	9.1	26
September	9.2	16.5	31.0	17.9	83.2	30.3	18.5	56.1	30	10.9	47
October	32.7	14.1	26.1	8.8	66.6	61.4	39.1	75.5	31	13.5	43
November	33.1	62.2	28.5	24.6	21.9	39.8	30.5	108.1	30	14.5	44
December	37.5	71.4	18.1	16.9	14.8	8.9	70.9	102.1	29	15.2	40
1973											
January	7.3	12.8	14.3	16.6	16.9	33.3	62.2	223.1	31	16.5	44
February	29.7	53.0	30.3	13.7	30.0	20.5	56.1	126.4	28	15.0	42
March	21.1	57.5	52.7	15.9	53.0	15.5	9.1	74.6	28	12.5	44

N.B. Complete daily and hourly records for this period are available on request.

Appendix 3. Physical and chemical data for L'Etang Inlet (all times as Atlantic Standard Time and High Water (H.W.) as predicted for Saint John, New Brunswick.

January 28, 1972 H.W. = 0955

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/₀₀	CH mg/ℓ	CL mg/ℓ
15	-	I c e					
10	-	I c e					
9	1.0	1012	0	-1.2	30.26	10.4	10.4
11	2.0	1022	0	-1.0	31.17	5.0	3.3
4	4.0	1045	0	1.7	31.94	1.9	0.5
			10.0	1.4	32.01	1.6	0.3
6	3.0	1100	0	1.8	31.78	3.2	0.7
			3	1.4	31.91	2.3	0.4
			4	1.3	31.92	1.8	0.3
12	4.5	1116	0	1.1	32.07	1.6	0.1
			9	2.1	32.03	1.4	0.1
			18	2.2	32.01	1.4	0.2
14	5.0	1130	0	2.1	32.03	1.6	0.2
			10	2.2	32.05	1.5	0.1

Appendix 3 (cont'd) 28 February 1972 H.W. = 1115

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/₀₀	CH mg/ℓ	CL mg/ℓ
15)							
)							
10)							
)	I C E						
9)							
)							
8)							
11	3.0	1118	0	-0.4	31.58	3.3	1.1
			5	-0.5	31.52	3.1	1.2
4	4.5	1130	0	-0.1	31.61	1.8	0.4
			10	0.2	31.65	1.6	0.1
6	4.0	1145	0	0.7	31.70	1.6	0.2
			5	0.2	31.70	1.2	0.1
12	5.0	1200	0	1.1	31.70	1.4	0.1
			9	0.6	31.70	1.1	0.0
14	5.0	1215	0	0.9	31.70	1.5	0.1
			10	0.4	31.70	1.1	0.0

Appendix 3 (cont'd) March 3, 1972 H.W.=1010

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/₀₀	CH mg/ℓ	CL mg/ℓ
15	0.5	1000	0	0.4	24.51	45.8	29.0
10	1.0	1015	0	0.5	27.32	34.3	16.0
9	1.3	1030	0	0.6	25.95	36.6	21.0
8	1.3	1045	0	0.6	28.08	21.7	11.5
11	2.3	1100	0	0.6	30.07	8.7	2.6
			5	0.5	30.37	6.4	2.0
4	3.0	1115	0	0.5	30.72	5.5	1.0
			10	0.4	31.02	4.3	0.6
6	2.5	1120	0	0.7	29.33	7.3	1.9
		1125	5	0.4	30.99	3.7	0.6
12	4.0	1145	0	0.6	31.38	3.4	0.4
		1150	10	0.4	31.33	3.7	0.2
			20	0.4	31.40	3.4	0.2
14	3.8	1200	0	0.6	30.99	5.0	0.6
		1205	10	0.6	31.17	5.0	0.3
			20	0.4	31.27	2.7	0.3

Appendix 3 (cont'd) April 27, 1972 H.W. = 1110

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	Humic acid (mg/ℓ) D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	Lignosulfonates (mg/ℓ) CL
15	0.5	1055	0	4.7	16.87	100.8	68	(Winkler)	62.0
			4	3.7	28.64	12.8	90		4.2
10	0.8	1115	0	3.8	26.65	27.5	80		15.0
			4	3.8	29.29	9.8	90		4.0
9	0.8	1145	0	5.2	27.21	24.0	83		16.0
			2	3.9	29.11	11.5	92	9.0	5.0
8	0.5	1135	0	4.1	29.31	12.4	86		60.0
			3	3.7	29.74	7.3	94		4.6
11	2.0	1210	0	5.6	28.73	6.8	97		3.0
			3	3.7	30.25	5.0	100	10.6	2.1
4	3.5	1350	0	4.8	30.61	2.8	100		0.9
			7	3.5	30.77	2.4	-		0.4
			15	3.2	30.99	2.0	100	10.8	0
6	2.5	1335	0	4.4	30.50	3.3	100		1.5
			9	3.2	31.00	3.4	100	10.6	0.3
12	4.2	1415	0	3.4	31.04	2.2	-		0.4
			10	3.2	31.00	1.8	-		0
			21	3.1	31.08	1.7	-		0.2
14	-	1427	0	3.6	30.90	2.2	-		0
			14	3.2	31.09	1.9	-		0

Appendix 3 (cont'd) May 29, 1972 H.W. = 1230

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	Humic acid (mg/ℓ) D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	Lignosulfonates (mg/ℓ) CL
15	-	1155	0	12.2	18.10	100.8	20	1.9	64.0
			5	9.6	27.92	13.7	75	7.2	5.0
10	-	-	-	-	-	-	-	-	-
9	1.5	1228	0	10.0	28.46	9.2	90	8.5	3.6
			2.0	9.6	28.49	8.7	95	9.1	3.0
8	1.0	1215	0	11.0	28.13	9.2	87	8.1	5.0
			3.5	9.7	28.49	8.7	90	8.7	3.0
11	2.5	1248	0	10.9	28.64	8.0	95	9.3	2.9
			4.0	7.8	29.14	3.7	97	9.8	1.4
4	3.0	1310	0	8.7	29.29	3.9	97	9.4	0.9
			10.0	5.3	30.30	2.1	99	10.4	0.1
6	3.5	1322	0	8.0	29.54	2.0	-	-	0.8
			6.0	6.0	29.97	2.3	-	-	0.2

Appendix 3 (cont'd) June 26, 1972 H.W. = 1130

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	CL
15	0.25	1135	0	15.6	17.6	120.0		0.8	90.0
10	0.50		0	13.2	28.2	20.5		4.0	10.5
9	0.5		0	15.2	20.14	100.8		6.7	50.9
			2	12.2	28.80	14.6		6.6	5.5
8	0.5		0	13.2	28.42	24.0		6.0	13.0
			4	10.9	28.96	8.6		7.2	3.1
11	1.5		0	12.1	28.98	18.8		7.0	2.3
			4	11.2	29.02	5.9		6.0	1.7
4	2.5		0	10.9	29.45	3.7		8.4	0.8
			10	9.8	29.65	2.1		8.2	0.3
6	2.2		0	11.1	29.20	3.9		8.4	0.8
			10	9.2	29.67	2.3		8.4	0.16

Appendix 3 (cont'd) July 25, 1972 H.W. = 1105

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	Humic acid (mg/ℓ) D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	Lignosulfonates (mg/ℓ) CL
15	0.25	1030	0	17.8	25.84	71.4	27	2.2	39.2
			2	16.2	26.20	56.7	32	2.7	24.2
			5	15.4	29.92	25.1	60	5.0	8.0
10	1.0	1045	0	17.1	28.33	38.9	52	4.3	16.0
			2	15.5	29.92	16.9	52	4.4	5.0
9	1.0	1215	0	15.8	30.37	13.5	69	5.7	3.8
			2	14.0	30.52	10.0	75	5.7	2.6
8	1.7	1100	0	16.0	30.34	12.1	68	6.2	3.3
			4	13.8	30.57	9.6	80	6.7	2.7
11	1.5	1245	0	15.0	30.81	7.5	84	7.0	2.0
			4	14.0	30.81	6.6	95	7.8	1.9
4	2.5	1310	0	15.0	31.08	4.4	100	8.4	1.0
			10	11.5	31.17	2.4	95	8.0	0.3
6	3.0	1325	0	13.7	31.09	4.3	95	8.0	1.0
			10	12.0	31.17	2.4	100	8.8	0.2

Appendix 3 (cont'd) August 21, 1972 H.W. = 0905

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	Humic acid (mg/ℓ) D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	Lignosulfonates (mg/ℓ) CL
15	0.2	0845	0	17.3	24.16	98.0	10	0.8	62.5
			2	15.5	30.46	16.0	20	1.9	6.5
10	1.25	0855	0	17.5	26.35	63.0	20	1.6	4.0
			2	14.5	30.99	9.6	50	4.3	4.0
9	1.25	0905	0	15.0	30.57	15.6	50	4.3	6.0
			2	14.2	30.88	11.5	53	4.6	3.5
8	1.50	0920	0	15.5	30.53	17.0	62	5.2	4.0
			2	14.5	31.08	9.2	62	5.3	3.0
11	1.75	0940	0	15.0	31.20	9.4	75	6.2	2.2
			4	12.9	31.47	5.5	88	7.2	1.1
4	2.5	1000	0	15.0	31.36	6.7	85	7.1	1.5
			10	12.3	31.69	3.2	95	8.4	0.2
6	2.5	1045	0	14.5	31.56	6.2	85	7.2	1.1
			10	12.3	31.76	3.7	95	8.4	0.2

Appendix 3 (cont'd) September 25, 1972 H.W. = 1250

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ)	Lignosulfonates (mg/ℓ)
15	0.25	1140	0	14.7	27.01	137.4	80.9
			2	13.0	30.39	45.8	20.4
10	0.8	1145	0	13.5	31.40	12.8	4.7
			2	12.9	31.51	9.6	3.8
9	1.2	1115	0	13.2	31.58	8.7	3.0
			2	12.8	31.58	8.7	3.4
8	1.0	1120	0	13.6	30.97	19.2	6.0
			2	12.9	31.38	11.5	4.7
11	2.0	1100	0	13.2	31.94	3.9	1.0
			4	12.5	31.98	3.6	1.0
4	3.0	1040	0	13.1	32.03	2.7	0.4
			10	12.0	32.07	1.8	0.2
6	3.5	1025	0	13.1	32.12	2.1	0.2
			10	11.9	32.14	1.6	0.1

Appendix 3 (cont'd) October 25, 1972 H.W. = 1320

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/₀₀	Humic acid (mg/ℓ) CH	D.O.%	Lignosulfonates Winkler (mg/ℓ) O_2ppm	CL
15	0.3	1234	0	8.0	24.18	78.0	25	-	54.0
			2	8.2	27.48	39.0	40	-	26.0
10	0.5	1220	0	7.8	24.76	68.0	42	1.8	42.0
			2	8.9	30.75	13.6	50	4.2	7.3
9	1.0	1056	0	9.3	31.26	9.7	60	5.2	4.4
			2	8.9	31.46	9.0	65	5.4	4.4
8	1.0	1040	0	9.0	31.20	11.1	53	5.0	5.6
			2	8.9	31.35	10.7	60	5.0	5.6
11	1.5	1016	0	8.9	31.82	6.1	74	6.6	5.7
			4	9.2	31.85	6.2	78	6.4	7.3
4	2.0	0933	0	9.2	32.29	2.4	100	-	0.6
			10	9.2	32.20	3.2	100	-	0.5
6	2.5	0953	0	9.2	32.03	3.9	90	-	1.6
			10	9.3	32.23	3.2	97	7.6	0.4

Appendix 3 (cont'd) December 20, 1972 H.W. predicted = 1105

Station	Time (hr)	Depth (m)	Temp. (°C)	Salinity °/oo	Humic acid (mg/ℓ)	Lignosulfonates (mg/ℓ)
15	1125	0	-0.4	26.27	46.0	38.0
		6	-0.2	30.08	9.2	8.0
10	1132	0	-0.2	24.49	63.0	55.0
		5	0.5	30.46	8.2	5.0
9	1140	0	-0.1	28.75	26.7	16.0
		4	0.8	30.43	9.7	7.0
8	1145	0	0.2	29.70	18.2	7.0
		4	1.0	30.70	8.0	6.0
11	1200	0	1.8	31.09	6.1	3.0
		3	0.8	31.09	4.5	2.0
6	1255	0	2.8	31.58	2.4	0.6
		11	2.0	31.76	1.7	0.2
4	1305	0	3.2	31.71	2.4	0.3
		10	4.2	31.76	1.8	0.3

Appendix 3 (cont'd) November 22, 1972 H.W. = 1210

Station	Secchi disc (m)	Time (hr)	Depth (m)	Temp. (°C)	S °/oo	Humic acid (mg/ℓ) CH	D.O.%	Lignosulfonates (mg/ℓ) O_2ppm	CL
15	0.25	1100	0	2.4	22.70	21.3	45	5.3	23.0
			2	4.2	27.30	14.9	80	8.7	9.2
10	0.25	1120	0	2.9	23.86	17.3	45	5.2	9.3
			2	5.2	30.17	16.9	82	8.7	3.3
9	0.50	1200	0	4.6	28.73	13.7	92	9.8	7.5
			2	6.0	30.53	5.8	98	10.2	2.7
8	1.75	1140	0	5.5	30.75	5.1	95	9.9	2.3
			2	5.4	30.84	5.6	95	9.9	2.4
11	2.00	1330	0	5.7	31.35	3.3	100	10.2	1.2
			4	5.6	31.35	2.9	100	10.2	1.1
4	3.00	1355	0	6.5	31.82	2.0	100	10.1	Trace
			10	6.1	31.89	1.4	100	10.1	0
6	3.50	1415	0	6.3	31.96	1.7	100	10.1	0
			10	6.1	31.96	1.9	100	10.1	0

Appendix 4. S x N matrix and biomass (grams including mollusc shell) for Dec. 1970-Nov. 1971.

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
4	1	0	0	0	0	0	0	0	0	0	0	1	0
4	2	0	0	0	1	0	0	0	0	0	0	1	0
4	10	0	0	0	0	1	0	0	0	0	0	0	0
4	14	0	0	0	0	1	0	1	1	0	0	0	0
4	17	0	0	0	1	0	1	2	1	0	0	0	0
4	18	0	0	0	0	0	1	1	0	0	2	0	1
4	21	0	0	0	0	2	0	0	0	0	0	0	0
4	24	0	0	0	0	1	0	0	0	0	0	0	0
4	26	0	0	0	0	0	0	0	1	0	0	0	0
4	102	0	5	0	1	0	0	2	2	0	0	0	1
4	103	1	0	3	0	0	2	0	0	0	0	0	3
4	106	0	0	0	0	0	1	0	1	0	0	0	0
4	108	0	0	1	0	2	0	14	6	0	6	0	0
4	111	0	1	0	8	30	2	32	2	0	37	1	2
4	112	0	0	0	6	0	0	0	0	0	0	0	0
4	113	0	0	0	0	7	1	0	42	0	0	0	2
4	115	0	0	0	0	0	0	0	1	0	0	0	1
4	116	0	0	0	1	0	0	0	1	0	1	0	0
4	117	0	2	1	0	0	0	0	0	0	0	0	0
4	122	0	0	0	0	0	3	0	0	0	0	0	9
4	122	0	0	0	0	0	0	0	0	3	0	0	0
4	174	0	0	3	7	9	6	14	28	1	16	1	1
4	201	2	4	0	0	0	0	0	0	0	0	0	0
4	203	0	0	1	0	0	3	2	0	1	1	0	6
4	204	2	0	0	2	0	0	1	0	0	0	1	0
4	209	0	0	0	0	1	0	0	1	0	0	0	0
4	213	0	0	0	0	4	0	0	0	0	0	0	0
4	215	0	0	0	0	6	0	1	0	0	0	0	0
4	216	0	0	0	0	0	0	0	0	0	0	0	1
4	265	0	0	0	0	0	0	1	0	0	0	0	1
4	268	0	0	0	0	0	0	0	1	0	0	0	0
4	269	0	0	0	0	5	1	1	1	0	0	1	0
4	273	0	0	0	0	0	1	0	0	1	0	0	1
4	274	0	0	6	0	0	0	1	0	0	0	0	1
4	275	0	0	0	0	0	0	0	0	0	0	1	1
4	281	0	0	0	2	11	3	2	5	2	4	2	4
4	282	0	7	2	4	3	3	3	3	2	0	0	1
4	283	0	0	0	0	1	0	0	0	0	0	0	0
4	340	0	0	0	0	0	0	2	0	0	0	0	0
4	346	0	0	0	0	1	0	0	0	0	0	0	0
4	353	0	0	0	0	0	4	0	0	0	0	0	0
4	356	2	4	0	0	0	0	0	0	0	0	0	0
4	357	0	0	9	0	0	11	0	0	5	0	0	17
4	480	0	0	0	0	0	0	0	1	0	0	0	0
4	503	0	0	0	0	3	3	6	3	0	2	0	5
4	505	0	0	0	0	0	0	0	1	6	0	0	0
4	506	0	1	0	0	0	0	0	0	0	0	0	0
4	508	20	44	0	31	10	59	27	32	19	3	2	12
4	630	0	0	0	0	2	0	0	1	0	0	1	1
4	650	0	0	0	0	0	0	0	1	0	0	0	0
4	751	0	0	0	0	1	0	0	0	0	1	0	0
4	801	0	0	0	0	5	0	0	6	0	1	0	0
4	873	0	0	1	0	0	0	0	0	1	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
5	17	0	3	0	0	0	0	0	0	0	0	0	0
5	18	0	0	0	1	0	1	0	0	0	0	0	0
5	19	1	0	0	0	0	0	0	0	0	0	0	0
5	22	0	0	0	0	0	0	1	0	0	0	0	0
5	30	0	4	0	0	0	0	0	0	0	0	0	0
5	100	0	2	0	0	0	1	0	0	0	0	0	0
5	102	0	0	0	0	0	0	1	0	0	0	0	0
5	103	2	4	0	0	0	1	0	0	0	0	0	0
5	106	0	0	0	0	0	1	0	0	0	0	0	0
5	108	0	1	0	1	0	0	0	0	0	0	0	0
5	111	4	5	0	1	0	7	0	0	0	0	0	0
5	113	0	0	0	0	0	0	0	0	0	0	0	0
5	114	2	1	0	3	0	3	1	0	0	0	0	0
5	115	0	0	0	0	0	0	1	0	0	0	0	0
5	116	0	0	0	0	0	0	1	0	0	0	0	0
5	117	0	6	0	0	0	0	0	0	0	0	0	0
5	121	0	0	0	0	0	3	0	0	0	0	0	0
5	125	1	0	0	0	0	0	0	0	0	0	0	0
5	201	1	0	0	6	0	0	0	0	0	0	0	0
5	203	0	0	0	1	0	3	6	0	0	0	0	0
5	204	0	0	0	0	0	0	1	0	0	0	0	0
5	209	0	0	0	1	0	0	1	0	0	0	0	0
5	212	1	0	0	0	0	0	0	0	0	0	0	0
5	213	0	0	0	1	0	0	0	0	0	0	0	0
5	273	0	0	0	0	0	1	0	0	0	0	0	0
5	274	0	6	0	0	0	2	0	0	0	0	0	0
5	275	0	0	0	0	0	4	1	0	0	0	0	0
5	281	0	0	0	4	0	7	2	0	0	0	0	0
5	282	0	6	0	3	0	1	2	0	0	0	0	0
5	283	0	0	0	1	0	0	0	0	0	0	0	0
5	345	0	0	0	0	0	2	0	0	0	0	0	0
5	346	0	0	0	1	0	0	7	0	0	0	0	0
5	353	0	0	0	0	0	1	0	0	0	0	0	0
5	356	0	0	0	0	0	0	1	0	0	0	0	0
5	357	0	0	0	1	0	11	3	0	0	0	0	0
5	451	0	3	0	0	0	0	0	0	0	0	0	0
5	503	2	3	0	1	0	0	0	0	0	0	0	0
5	503	0	0	0	1	0	1	6	0	0	0	0	0
5	505	0	0	0	1	0	1	0	0	0	0	0	0
5	506	0	2	0	0	0	0	0	0	0	0	0	0
5	507	0	0	0	1	0	0	0	0	0	0	0	0
5	508	60	72	0	61	0	24	60	0	0	0	0	0
5	604	0	1	0	0	0	0	0	0	0	0	0	0
5	801	0	0	0	0	0	0	1	0	0	0	0	0
6	2	0	0	0	0	2	0	0	0	0	0	0	0
6	18	0	0	0	0	0	0	0	0	0	0	0	1
6	24	0	0	0	0	1	0	0	0	0	0	0	0
6	27	0	0	0	0	0	0	0	1	0	2	2	0
6	100	0	3	0	1	0	2	1	6	0	3	2	2
6	102	0	0	0	0	0	0	0	0	0	1	0	0
6	103	0	0	2	0	0	0	1	1	0	0	2	2
6	108	0	0	1	0	0	0	0	0	0	0	0	0
6	111	0	2	2	1	0	2	0	2	0	1	2	0
6	114	2	0	0	0	0	0	0	0	0	0	0	1
6	115	0	0	0	0	0	0	30	1	0	1	2	3
6	117	15	16	5	0	0	0	0	0	0	0	0	0

3

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
6	120	0	0	0	0	0	0	0	0	0	0	0	1
6	122	0	0	0	0	0	7	25	14	0	3	34	20
6	201	1	1	1	1	0	0	0	1	0	1	0	0
6	203	0	1	4	1	0	0	0	0	2	0	4	2
6	209	0	0	0	0	0	0	0	1	0	0	1	0
6	210	0	0	1	1	0	0	0	0	0	0	1	0
6	215	0	1	0	1	0	1	5	0	2	0	0	0
6	262	0	0	0	0	0	0	1	0	0	0	0	0
6	269	1	0	0	0	0	0	0	0	0	0	0	0
6	273	1	1	0	0	0	1	2	0	0	0	1	1
6	274	0	0	0	0	0	3	0	0	0	0	3	1
6	275	0	0	11	0	0	4	1	0	0	0	3	2
6	281	0	0	2	1	0	3	6	1	0	1	3	2
6	282	3	6	6	3	0	2	2	2	0	0	1	1
6	346	0	0	0	0	0	4	1	0	0	0	1	0
6	347	0	0	0	0	0	0	1	0	0	0	0	0
6	353	0	0	0	0	0	0	0	1	0	0	0	0
6	357	0	6	0	0	0	2	7	8	0	0	11	1
6	503	0	1	0	0	0	0	0	0	1	2	6	3
6	505	0	0	0	0	0	4	0	6	1	0	0	0
6	506	0	3	2	0	0	0	0	0	0	0	0	0
6	508	0	1	0	1	0	0	0	1	19	2	0	0
6	604	0	1	1	1	0	0	2	1	0	0	1	1
6	630	0	0	0	0	2	0	0	0	0	0	0	0
6	810	0	0	0	0	0	1	0	2	0	0	0	0
6	872	0	0	0	1	0	1	0	0	0	0	0	1
7	2	9	0	0	0	0	0	0	0	0	0	0	0
7	14	0	0	0	0	0	21	0	0	0	0	0	0
7	15	0	0	0	0	0	0	0	1	0	0	0	0
7	22	1	0	0	0	0	0	0	0	0	0	0	0
7	106	0	0	0	0	0	0	1	0	0	0	0	0
7	107	1	0	0	0	0	0	0	0	0	0	0	0
7	111	1	0	0	0	0	0	3	0	0	0	0	0
7	117	0	0	0	0	0	0	0	20	0	0	0	0
7	118	1	0	0	0	0	0	1	51	0	0	0	0
7	201	0	0	0	0	0	0	1	4	0	0	0	0
7	203	10	0	0	0	0	0	1	0	0	0	0	0
7	204	0	0	0	0	0	16	20	0	0	0	0	0
7	265	0	0	0	0	0	8	0	0	0	0	0	0
7	281	0	0	0	0	0	1	0	0	0	0	0	0
7	340	0	0	0	0	0	1	0	0	0	0	0	0
7	357	0	0	0	0	0	1	0	0	0	0	0	0
7	504	0	0	0	0	0	2	0	0	0	0	0	0
7	603	0	0	0	0	0	12	0	0	0	0	0	0
7	630	2	0	0	0	0	0	0	0	0	0	0	0
8	10	0	0	1	0	0	0	0	0	0	0	0	0
8	14	1	0	2	0	0	3	0	0	0	0	0	0
8	17	1	0	0	0	0	0	0	0	0	0	0	0
8	18	0	0	0	0	0	2	0	0	0	0	0	0
8	22	1	0	0	0	0	0	0	0	0	0	2	0
8	29	0	0	0	0	0	0	0	0	0	0	1	0
8	104	0	0	0	0	0	0	0	0	0	0	0	1
8	117	0	0	0	0	2	0	0	4	0	0	0	17
8	118	6	0	0	3	126	2	34	88	0	2	0	53
8	201	0	0	0	1	19	0	5	9	4	1	0	7
8	203	17	0	21	0	0	1	0	0	0	0	0	0
8	204	0	0	0	7	0	60	19	6	6	2	12	7

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
8	209	0	0	0	0	0	0	0	1	1	0	0	0
8	215	0	0	0	7	0	0	0	0	7	5	0	0
8	281	0	0	0	0	0	1	0	0	0	0	0	0
8	282	0	0	0	0	0	1	0	0	0	0	0	0
8	343	0	0	0	0	0	0	0	1	0	0	0	0
8	402	1	0	0	0	0	0	0	0	0	0	0	0
8	430	1	0	0	0	0	0	0	0	0	0	0	0
8	503	5	0	0	0	0	0	0	0	0	0	0	0
8	504	2	0	0	0	0	0	0	0	0	0	0	0
8	505	0	0	0	0	0	5	0	0	0	0	0	0
8	506	0	0	1	0	0	0	0	0	0	0	0	0
8	508	0	0	0	1	0	1	7	8	0	0	0	0
8	872	0	0	0	0	0	0	0	0	0	0	1	0
9	10	1	0	0	0	0	0	0	0	0	0	0	0
9	14	0	0	0	0	0	0	1	0	0	0	0	0
9	18	0	0	0	0	0	1	0	0	1	0	0	1
9	118	0	0	11	7	0	0	73	0	2	0	0	0
9	201	0	0	3	5	21	5	23	0	3	9	1	1
9	203	38	0	10	0	0	0	0	0	0	0	0	0
9	204	0	0	0	2	0	13	6	0	1	0	29	16
9	215	0	0	0	0	1	0	0	0	0	0	0	0
9	265	0	0	0	0	2	0	1	0	0	0	0	0
9	269	0	0	0	0	0	0	0	0	0	0	1	0
9	341	0	0	0	0	0	0	0	0	0	0	1	0
9	343	0	0	0	0	1	0	0	0	0	0	0	1
9	508	0	0	0	1	0	1	0	0	0	0	0	0
10	2	0	0	0	3	0	1	3	0	0	0	0	0
10	10	0	0	0	0	1	0	0	0	0	0	0	0
10	14	5	0	0	1	0	3	2	0	0	0	9	0
10	17	1	0	0	0	0	0	0	0	0	0	0	0
10	18	0	0	0	0	0	0	1	0	0	0	0	0
10	22	0	0	0	2	1	0	2	1	0	0	0	0
10	29	0	0	0	1	0	0	0	0	0	0	1	0
10	30	0	0	0	0	1	0	0	0	0	0	0	0
10	100	1	0	0	0	0	0	0	0	0	0	0	0
10	104	2	0	0	0	0	0	0	0	0	0	0	0
10	104	0	0	0	0	0	0	0	0	0	1	0	0
10	106	0	0	0	0	1	0	0	0	0	0	1	0
10	107	0	0	0	1	0	4	0	0	0	1	2	0
10	111	0	0	0	2	0	0	0	0	0	0	0	0
10	114	0	0	0	1	0	0	0	0	0	0	0	0
10	117	0	0	0	1	0	0	0	0	0	0	0	0
10	118	0	0	0	0	3	0	0	0	0	0	0	0
10	120	0	0	0	1	0	0	0	0	0	0	0	0
10	201	0	0	0	7	10	1	6	4	0	3	0	0
10	204	12	0	0	4	0	17	3	0	0	19	21	0
10	207	0	0	0	0	0	2	1	0	0	0	1	0
10	208	0	0	0	1	0	1	1	0	0	0	0	0
10	209	0	0	0	0	0	0	1	0	0	0	0	0
10	211	0	0	0	0	1	0	0	0	0	0	0	0
10	215	0	0	0	1	0	0	0	1	0	3	5	0
10	265	0	0	0	0	5	0	1	0	0	0	0	0
10	274	0	0	0	0	0	1	0	1	0	0	0	0
10	276	1	0	0	0	0	0	0	0	0	0	0	0
10	340	0	0	0	1	1	1	1	0	0	0	0	0
10	342	0	0	0	0	0	1	0	0	0	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
10	343	0	0	0	0	0	0	0	1	0	0	0	0
10	348	0	0	0	0	0	0	0	0	0	1	0	0
10	349	0	0	0	2	0	0	1	0	0	0	0	0
10	350	0	0	0	0	0	0	1	0	0	0	0	0
10	351	0	0	0	0	0	0	0	0	0	0	1	0
10	355	0	0	0	1	0	0	0	0	0	0	0	0
10	500	0	0	0	0	0	1	0	0	0	0	0	0
10	503	0	0	0	2	1	5	1	0	0	0	0	0
10	505	4	0	0	0	0	0	0	0	0	0	0	0
10	508	0	0	0	4	0	1	0	0	0	1	0	0
10	603	19	0	0	2	0	7	1	0	0	0	12	0
10	630	0	0	0	1	0	0	0	0	0	0	0	0
10	650	0	0	0	1	0	0	0	0	0	0	0	0
11	13	0	0	0	0	1	0	0	0	0	0	0	0
11	17	0	3	9	0	0	0	0	0	0	0	0	1
11	18	0	0	0	2	0	0	4	0	1	1	2	4
11	26	0	0	1	0	0	0	0	0	0	0	0	0
11	100	3	0	0	0	0	0	0	0	0	0	0	0
11	111	2	0	0	0	0	0	2	0	0	0	0	0
11	114	5	0	0	0	0	3	28	0	2	0	0	17
11	118	0	0	0	0	2	0	5	0	0	0	0	0
11	120	0	0	0	1	0	0	1	0	0	0	0	0
11	124	2	0	0	0	0	0	0	0	0	0	0	0
11	201	0	0	4	11	6	0	9	4	0	18	6	0
11	203	9	8	53	0	0	0	1	0	1	0	1	0
11	204	0	8	12	1	8	2	9	7	5	0	5	3
11	215	0	0	0	0	0	0	0	11	0	4	4	3
11	261	0	0	0	0	2	0	0	0	0	0	0	0
11	265	0	0	0	1	0	0	0	2	0	0	1	0
11	274	4	0	0	0	0	0	0	0	0	0	0	0
11	276	0	0	2	10	0	1	5	0	0	0	0	0
11	281	0	0	1	0	0	0	0	0	0	0	0	0
11	282	0	0	1	0	0	0	0	0	1	0	0	0
11	285	1	0	2	0	0	0	0	0	0	0	0	0
11	340	18	2	0	0	0	0	1	0	0	0	0	0
11	342	0	0	1	0	0	0	0	0	0	0	0	0
11	351	0	0	2	0	0	0	0	0	0	0	0	0
11	357	0	1	0	2	0	0	3	0	0	0	0	3
11	401	0	0	7	1	0	0	0	0	0	0	0	0
11	503	17	1	1	0	0	6	0	0	0	0	0	0
11	505	0	2	0	0	0	0	0	0	0	0	0	0
11	506	0	1	2	0	0	0	0	0	0	0	0	0
11	508	91	1	0	0	0	50	3	0	0	0	2	5
11	509	0	0	11	0	0	0	0	0	0	0	0	0
11	603	35	36	0	0	0	0	0	0	30	0	0	12
11	605	0	0	0	0	0	1	0	0	0	0	0	0
11	752	0	0	0	0	0	0	0	0	1	0	0	0
11	801	0	1	0	0	0	0	0	0	0	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
12	2	0	1	1	0	0	0	1	0	0	0	2	1
12	10	0	0	0	0	1	0	1	0	0	0	0	0
12	11	0	0	0	0	0	0	0	0	0	0	1	0
12	12	0	0	0	0	4	0	0	0	0	0	1	0
12	18	0	0	0	0	0	0	0	0	0	0	0	1
12	20	0	0	0	0	1	0	1	0	0	0	0	0
12	22	0	0	0	0	1	0	0	0	0	0	0	0
12	25	0	0	0	0	0	1	0	0	0	0	0	0
12	26	0	0	0	0	0	1	0	2	0	0	0	0
12	28	2	0	0	0	0	0	0	0	0	0	0	0
12	29	0	0	1	0	1	0	0	0	0	0	0	0
12	30	2	0	0	0	0	0	0	0	0	0	0	0
12	103	1	0	0	0	0	0	0	0	0	0	0	0
12	105	0	0	0	0	0	0	0	24	0	0	0	0
12	106	0	0	0	2	2	0	0	0	0	0	0	0
12	108	0	1	3	0	5	0	0	1	0	0	0	1
12	109	0	0	0	0	0	0	0	1	0	0	0	0
12	110	0	0	1	0	0	0	0	0	0	0	0	0
12	111	3	3	19	15	29	5	4	0	0	4	13	0
12	113	0	0	0	0	1	1	0	0	0	0	0	0
12	114	6	5	5	0	1	8	7	1	0	0	0	18
12	116	0	0	2	1	0	0	0	0	0	0	0	3
12	117	0	0	0	0	0	0	0	0	0	0	0	1
12	119	0	0	0	0	0	0	0	7	0	0	0	0
12	120	0	0	0	0	1	0	0	0	0	0	0	1
12	123	0	0	0	0	0	0	0	2	0	0	0	0
12	201	0	0	0	0	0	0	1	0	0	1	0	0
12	203	1	0	0	1	0	1	0	0	0	0	0	0
12	204	0	0	0	1	0	5	0	0	0	0	0	1
12	205	0	0	0	0	0	1	0	0	0	0	0	0
12	206	0	0	0	0	0	0	3	0	0	0	0	1
12	207	0	0	0	0	0	0	0	0	2	0	1	0
12	208	0	1	0	0	0	0	0	0	0	0	0	2
12	209	0	0	0	1	1	0	1	0	0	0	2	0
12	213	0	0	0	3	0	0	0	0	0	0	0	0
12	215	1	0	0	0	0	0	0	0	0	0	0	0
12	220	0	0	0	0	0	0	1	0	0	0	0	0
12	260	0	0	0	0	0	0	0	0	0	0	0	1
12	268	1	0	0	0	0	0	0	0	0	0	0	0
12	269	0	0	0	1	2	0	1	0	0	0	0	0
12	281	0	0	1	5	0	0	0	1	0	0	0	0
12	282	0	1	0	2	21	0	1	0	0	0	5	1
12	346	0	0	0	0	0	0	0	0	0	0	1	0
12	347	0	0	0	0	0	0	1	0	0	0	0	0
12	349	0	0	0	0	0	0	0	0	0	0	0	1
12	353	0	0	0	0	0	0	0	0	1	0	0	0
12	354	0	0	0	0	1	0	0	5	0	0	0	0
12	356	2	0	0	0	1	0	0	0	0	0	0	0
12	401	0	0	0	0	1	0	0	0	0	0	0	0
12	420	0	0	0	0	0	0	0	1	0	0	0	0
12	450	0	0	0	0	0	0	0	0	0	1	0	0
12	452	0	0	0	0	0	0	0	1	0	0	0	0
12	503	0	0	0	2	4	0	0	0	0	0	4	0
12	508	2	1	12	29	42	8	0	0	15	84	76	29
12	509	0	0	0	0	0	0	0	0	0	0	0	1
12	580	0	0	0	0	0	0	0	1	0	0	0	0
12	601	0	0	0	0	3	0	0	0	0	0	0	0
12	630	0	1	2	0	0	0	3	0	0	0	0	1
12	680	0	0	0	0	0	0	1	1	0	0	0	0
12	701	0	0	0	0	0	1	0	0	0	0	0	0
12	751	0	0	3	0	1	0	0	0	0	0	0	0
12	801	1	0	0	0	2	2	0	0	0	0	0	0
12	830	0	0	0	0	0	0	1	0	0	0	0	1
12	831	0	0	0	0	0	0	0	1	0	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
13	17	0	0	0	0	0	0	0	0	0	0	0	0
13	18	0	0	0	1	1	0	0	0	0	0	0	0
13	23	0	0	0	0	1	0	0	0	0	0	0	0
13	23	0	0	0	0	0	0	1	0	0	0	0	0
13	25	0	0	0	0	0	0	0	0	0	0	0	0
13	26	1	0	0	0	0	0	1	0	0	0	0	0
13	27	0	1	0	0	0	0	1	0	0	0	0	0
13	28	4	0	2	0	0	0	0	0	0	0	0	0
13	29	0	0	0	0	0	0	1	0	0	0	0	0
13	30	0	2	2	0	0	0	0	0	0	0	0	0
13	100	0	3	0	0	0	0	1	0	0	0	0	0
13	102	0	0	0	0	4	0	0	0	0	0	0	0
13	103	0	1	1	0	0	0	0	0	0	0	0	0
13	106	0	0	0	0	2	0	0	0	0	0	0	0
13	108	0	0	2	1	13	0	0	0	0	0	0	0
13	111	12	0	35	6	65	0	0	0	0	0	0	0
13	113	0	0	0	0	1	0	0	0	0	0	0	0
13	114	2	0	14	7	14	2	2	0	0	0	0	0
13	116	0	1	0	0	1	2	4	0	0	0	0	0
13	124	0	0	0	0	1	0	0	0	0	0	0	0
13	125	1	0	4	0	0	0	0	0	0	0	0	0
13	203	0	0	2	3	15	2	6	0	0	0	0	0
13	204	0	0	0	0	0	0	2	0	0	0	0	0
13	208	0	3	0	0	0	1	0	0	0	0	0	0
13	209	0	0	0	0	0	0	0	0	0	0	0	0
13	211	0	0	0	0	1	0	0	0	0	0	0	0
13	266	0	0	0	0	0	1	0	0	0	0	0	0
13	268	1	0	0	0	0	0	0	0	0	0	0	0
13	269	0	0	1	1	3	0	0	0	0	0	0	0
13	273	0	0	0	0	1	0	0	0	0	0	0	0
13	276	0	0	0	0	0	0	1	0	0	0	0	0
13	277	0	0	0	0	0	0	1	0	0	0	0	0
13	281	0	0	11	2	5	0	0	0	0	0	0	0
13	282	1	10	0	7	9	1	1	0	0	0	0	0
13	283	0	0	0	0	2	0	0	0	0	0	0	0
13	284	0	1	0	0	0	0	0	0	0	0	0	0
13	340	0	0	0	0	1	0	2	0	0	0	0	0
13	342	0	0	0	1	0	0	0	0	0	0	0	0
13	351	0	0	0	0	2	0	0	0	0	0	0	0
13	352	0	0	0	0	0	1	0	0	0	0	0	0
13	353	1	0	1	0	0	0	0	0	0	0	0	0
13	354	0	0	0	0	0	0	1	0	0	0	0	0
13	357	1	0	0	0	1	0	0	0	0	0	0	0
13	401	0	0	0	0	0	0	1	0	0	0	0	0
13	451	0	0	1	0	0	0	0	0	0	0	0	0
13	502	0	0	0	3	0	0	0	0	0	0	0	0
13	503	9	1	48	12	27	1	7	0	0	0	0	0
13	506	1	0	0	0	0	0	0	0	0	0	0	0
13	507	0	0	0	0	0	1	0	0	0	0	0	0
13	508	0	4	15	4	21	7	6	0	0	0	0	0
13	602	0	0	0	0	0	0	1	0	0	0	0	0
13	701	0	0	0	0	0	0	0	0	0	0	0	0
13	751	0	0	0	0	6	0	1	0	0	0	0	0
13	801	5	0	0	0	22	1	5	0	0	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
14	17	0	0	1	0	0	0	0	0	0	0	0	0
14	28	0	0	1	0	0	1	0	0	0	0	0	0
14	100	0	0	0	0	1	0	1	3	0	0	6	1
14	101	1	0	0	0	0	0	0	0	0	0	0	0
14	102	0	0	1	0	1	0	0	0	0	0	0	0
14	103	0	4	5	2	3	0	3	0	0	1	5	2
14	108	0	0	1	0	0	0	0	0	1	0	0	0
14	111	0	0	0	0	0	0	0	0	3	3	0	0
14	113	0	0	0	2	2	0	0	0	0	0	2	0
14	114	0	1	0	0	0	0	0	0	1	2	0	1
14	115	0	0	0	0	0	0	9	3	0	5	4	9
14	117	0	0	3	0	0	0	0	0	0	0	0	0
14	118	0	0	0	6	0	0	0	0	0	1	0	0
14	121	0	0	0	0	3	0	0	0	0	0	0	0
14	122	0	0	0	4	0	0	4	0	1	8	2	7
14	125	0	0	4	0	0	0	0	0	0	0	0	7
14	201	1	0	0	2	0	0	0	0	0	0	0	0
14	203	0	0	3	2	2	0	0	0	1	0	1	2
14	210	1	3	3	4	0	0	0	0	0	0	4	3
14	212	0	0	0	0	0	0	1	2	0	0	0	0
14	215	0	0	0	1	0	0	0	0	0	0	0	0
14	217	0	0	0	1	0	0	0	0	0	0	0	0
14	268	1	0	0	0	0	0	0	0	0	0	0	0
14	269	0	0	0	0	1	0	0	0	0	0	0	0
14	273	0	0	0	0	0	0	0	0	0	0	0	1
14	274	1	0	0	0	0	0	0	0	0	0	0	0
14	275	0	0	0	2	0	0	0	0	0	0	2	4
14	276	1	0	0	0	0	0	0	0	0	0	0	0
14	281	7	0	6	7	4	2	0	2	0	1	14	7
14	282	0	5	0	0	4	3	0	0	2	0	1	3
14	342	0	0	0	0	1	0	0	0	0	0	0	0
14	344	0	0	0	0	0	0	0	0	0	0	0	1
14	353	0	0	0	1	0	0	0	0	1	0	0	1
14	357	3	0	0	1	7	2	0	0	0	1	4	10
14	451	0	0	0	2	0	0	0	0	0	0	0	0
14	501	0	0	0	0	0	0	1	0	0	0	0	0
14	503	0	0	2	3	4	0	0	0	0	0	2	2
14	508	0	2	1	0	0	35	0	0	153	32	3	2
14	604	0	1	0	1	0	0	0	1	0	0	1	0
14	752	0	0	0	0	0	0	2	0	0	0	0	0
14	801	0	0	0	0	0	1	0	0	0	0	1	0
14	810	1	0	0	0	0	0	0	0	0	0	0	1
14	820	0	0	0	0	0	0	15	0	0	0	0	0
14	820	0	0	3	4	0	0	0	0	0	0	12	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
15	14	0	0	0	0	0	1	0	1	0	0	0	1
15	18	0	0	0	0	0	1	0	0	0	0	0	0
15	22	0	0	0	0	1	1	0	0	0	0	0	0
15	22	0	0	0	0	0	0	0	1	0	0	0	2
15	105	0	0	0	0	0	0	0	0	0	0	0	2
15	107	0	0	0	0	3	0	0	0	0	0	0	1
15	119	0	0	0	0	0	0	0	0	0	0	0	1
15	201	0	0	0	0	8	14	0	1	4	4	4	2
15	204	0	0	0	0	0	2	0	0	7	0	6	3
15	207	0	0	0	0	0	6	0	0	0	0	0	0
15	208	0	0	0	0	0	1	0	0	0	0	0	0
15	209	0	0	0	0	1	3	0	0	3	1	0	0
15	215	0	0	0	0	1	0	0	6	0	15	0	0
15	343	0	0	0	0	1	44	0	0	15	4	10	1
15	349	0	0	0	0	0	0	0	0	1	0	0	0
15	402	0	0	0	0	2	0	0	0	0	0	0	0
15	451	0	0	0	0	0	0	0	1	0	0	0	0
15	490	0	0	0	0	2	0	0	0	0	0	0	0
15	630	0	0	0	0	0	0	0	0	0	0	0	1
15	830	0	0	0	0	0	0	0	0	0	0	0	7
100	2	0	2	0	1	0	0	0	5	0	0	0	0
100	14	0	5	1	0	1	0	0	3	0	0	0	0
100	22	0	3	1	0	0	2	0	0	0	0	0	0
100	29	0	0	0	0	1	0	0	0	0	0	0	0
100	107	0	3	4	7	0	0	0	6	0	0	0	0
100	111	0	2	3	3	1	0	1	4	0	1	1	0
100	114	0	0	1	0	0	0	0	0	0	0	0	0
100	117	0	0	1	0	0	0	0	0	0	0	0	0
100	118	0	0	0	0	0	0	0	0	0	0	1	0
100	120	0	0	0	0	0	0	0	1	0	0	0	0
100	201	0	2	0	1	3	1	0	0	4	1	0	0
100	204	0	6	3	2	3	3	1	3	2	2	3	0
100	209	0	1	4	2	0	1	0	5	0	0	4	0
100	210	0	0	0	0	0	0	0	0	1	1	0	0
100	282	0	0	0	0	0	0	0	1	0	0	0	0
100	340	0	0	3	0	0	0	0	7	0	0	0	0
100	342	0	1	1	0	0	0	0	0	0	0	0	0
100	343	0	0	1	0	0	0	0	0	0	0	0	0
100	343	0	0	0	0	0	0	0	0	1	1	0	0
100	503	0	0	1	0	0	0	1	0	0	0	0	0
100	508	0	1	0	1	3	0	0	0	0	0	0	0
100	603	0	7	0	0	2	2	0	2	0	2	0	0
100	604	0	1	0	0	0	0	0	0	0	0	0	0
100	630	0	0	0	0	0	1	0	1	0	0	0	0
100	631	0	0	0	0	0	0	0	2	0	0	0	0

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
4	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
4	2	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
4	10	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	14	0.00	0.00	0.00	0.00	1.80	0.00	0.03	6.15	0.00	0.00	0.00	0.00
4	17	0.00	0.00	0.00	0.72	0.00	0.11	0.40	0.06	0.00	0.00	0.00	0.00
4	18	0.00	0.00	0.00	0.00	0.00	0.11	0.80	0.00	0.00	0.40	0.00	0.07
4	21	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	24	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
4	102	0.00	0.70	0.00	0.17	0.00	0.00	0.25	0.34	0.00	0.00	0.00	0.10
4	103	0.00	0.00	1.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.20
4	106	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.04	0.00	0.00	0.00	0.00
4	108	0.00	0.00	0.10	0.00	0.90	0.00	0.80	0.40	0.00	0.34	0.00	0.00
4	111	0.00	0.00	0.00	12.78	24.90	0.60	11.20	6.74	0.00	12.04	0.22	0.12
4	112	0.00	0.00	0.00	21.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	113	0.00	0.00	0.00	0.00	0.27	0.05	0.00	4.64	0.00	0.00	0.00	0.64
4	115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.09
4	116	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.00	0.21	0.00	0.00
4	117	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	122	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.98
4	122	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00
4	174	0.00	0.00	5.20	36.07	19.25	4.40	12.15	33.30	0.32	29.91	8.75	0.00
4	201	1.40	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	203	0.00	0.00	0.70	0.00	0.00	0.61	0.08	0.00	2.25	0.01	0.00	0.47
4	204	1.40	0.00	0.00	0.62	0.00	0.00	0.07	0.00	0.00	0.00	0.07	0.00
4	209	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.05	0.00	0.00	0.00	0.00
4	213	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	215	0.00	0.00	0.00	0.00	1.07	0.00	0.05	0.00	0.00	0.00	0.00	0.00
4	216	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.46
4	265	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.14
4	268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
4	269	0.00	0.00	0.00	0.00	0.18	0.04	0.06	0.02	0.00	0.00	0.04	0.00
4	273	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.24	0.00	0.00	0.01
4	274	0.00	0.00	0.30	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.02
4	275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
4	281	0.00	0.00	0.00	0.06	0.29	0.11	0.09	0.17	0.12	0.12	0.11	0.24
4	282	0.00	1.60	0.30	0.38	7.40	0.82	0.67	0.21	0.41	0.00	0.00	0.09
4	283	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	340	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00
4	346	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	353	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00
4	356	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	357	0.00	0.00	1.20	0.00	0.00	1.44	0.00	0.00	0.41	0.00	0.00	2.13
4	480	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00
4	503	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	505	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.39	0.00	0.00	0.00
4	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	508	2.10	4.70	0.00	0.00	0.08	0.00	0.00	0.01	0.00	0.00	0.00	0.12
4	630	0.00	0.00	0.00	0.00	28.60	0.00	0.00	14.33	0.00	0.00	8.64	42.55
4	650	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00
4	751	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
4	801	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.50	0.00	0.05	0.00	0.00
4	873	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
5	17	0.00	2.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	18	0.00	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
5	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	22	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
5	30	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	100	0.00	13.10	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
5	102	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00
5	103	0.60	0.80	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00
5	106	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
5	108	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	111	2.30	0.60	0.00	0.07	0.00	3.30	0.00	0.00	0.00	0.00	0.00	0.00
5	113	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	114	0.00	0.00	0.00	7.29	0.00	1.70	3.10	0.00	0.00	0.00	0.00	0.00
5	115	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
5	116	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
5	117	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	121	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00
5	125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	201	0.00	0.00	0.00	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	203	0.00	0.00	0.00	0.61	0.00	0.32	1.98	0.00	0.00	0.00	0.00	0.00
5	204	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00
5	209	0.00	0.00	0.00	0.10	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
5	212	11.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	213	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	273	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00
5	274	0.00	2.40	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
5	275	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00
5	281	0.00	0.00	0.00	0.22	0.00	0.34	0.03	0.00	0.00	0.00	0.00	0.00
5	282	0.00	0.70	0.00	0.12	0.00	1.23	0.29	0.00	0.00	0.00	0.00	0.00
5	283	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	345	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
5	346	0.00	0.00	0.00	0.15	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
5	353	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
5	356	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00
5	357	0.00	0.00	0.00	0.06	0.00	1.20	0.28	0.00	0.00	0.00	0.00	0.00
5	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	503	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	505	0.00	0.00	0.00	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
5	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	507	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	508	4.40	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	801	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
6	2	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
6	24	0.00	0.00	0.00	0.00	17.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.07	0.05	0.00
6	100	0.00	0.00	0.00	0.15	0.00	0.09	0.13	0.45	0.00	0.29	0.34	0.22
6	102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
6	103	0.00	0.00	0.70	0.00	0.00	0.00	0.30	0.65	0.00	0.00	0.34	0.28
6	108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	111	0.00	0.20	0.50	0.15	0.00	0.60	0.00	0.76	0.00	0.14	0.26	0.00
6	114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
6	115	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.02	0.00	0.02	0.04	0.08
6	117	1.60	2.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
6	122	0.00	0.00	0.00	0.00	0.00	0.90	2.60	1.59	0.00	0.07	5.38	3.20
6	201	0.40	0.00	0.00	0.03	0.00	0.00	0.00	0.05	0.00	0.12	0.00	0.00
6	203	0.00	0.00	1.10	0.08	0.00	0.00	0.00	0.00	0.42	0.00	1.05	0.27
6	209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.24	0.00
6	210	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
6	215	0.00	0.00	0.00	0.13	0.00	0.03	1.48	0.00	0.23	0.00	0.00	0.00
6	262	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
6	269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	273	0.00	0.00	0.00	0.00	0.00	0.15	0.18	0.00	0.00	0.00	0.03	0.12
6	274	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.11	0.02
6	275	0.00	0.00	2.60	0.00	0.00	0.14	0.05	0.00	0.00	0.00	0.08	0.05
6	281	0.00	0.00	0.00	0.05	0.00	0.10	0.12	0.03	0.00	0.03	0.22	0.08
6	282	1.00	2.90	1.40	1.25	0.00	0.21	0.27	0.12	0.00	0.00	0.09	0.44
6	346	0.00	0.00	0.00	0.00	0.00	0.14	0.01	0.00	0.00	0.00	0.03	0.00
6	347	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
6	353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00
6	357	0.00	0.00	0.00	0.00	0.00	0.07	0.61	0.69	0.00	0.00	1.15	0.07
6	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	505	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.36	0.04	0.00	0.00	0.00
6	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
6	604	0.00	1.10	0.00	20.44	0.00	0.00	26.69	3.07	0.00	0.00	1.70	6.30
6	630	0.00	0.00	0.00	0.00	23.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	810	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.36	0.00	0.00	0.00	0.00
6	872	0.00	0.00	0.00	0.00	0.00	5.12	0.00	0.00	0.00	0.00	0.00	3.99
7	2	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	14	0.00	0.00	0.00	0.00	0.00	153.80	0.00	0.00	0.00	0.00	0.00	0.00
7	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	22	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	106	0.00	0.00	0.00	0.00	0.00	0.00	4.40	0.00	0.00	0.00	0.00	0.00
7	107	3.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	111	0.00	0.00	0.00	0.00	0.00	0.00	9.50	0.00	0.00	0.00	0.00	0.00
7	117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.49	0.00	0.00	0.00	0.00
7	118	0.00	0.00	0.00	0.00	0.00	0.00	3.20	62.95	0.00	0.00	0.00	0.00
7	201	0.00	0.00	0.00	0.00	0.00	0.00	3.25	1.10	0.00	0.00	0.00	0.00
7	203	1.10	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
7	204	0.00	0.00	0.00	0.00	0.00	1.61	3.43	0.00	0.00	0.00	0.00	0.00
7	265	0.00	0.00	0.00	0.00	0.00	0.35	0.30	0.00	0.00	0.00	0.00	0.00
7	281	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
7	340	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
7	357	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
7	504	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00
7	603	0.00	0.00	0.00	0.00	0.00	20.20	0.00	0.00	0.00	0.00	0.00	0.00
7	630	23.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	14	1.90	0.00	18.60	0.00	0.00	17.20	0.00	0.00	0.00	0.00	0.00	0.00
8	17	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	18	0.00	0.00	0.00	0.00	0.00	9.10	0.00	0.00	0.00	0.00	0.00	0.00
8	22	12.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.10	0.00
8	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
8	104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59
8	117	0.00	0.00	0.00	0.00	0.20	0.00	0.00	1.41	0.00	0.00	0.00	4.98
8	118	12.50	0.00	0.00	3.51	194.70	0.11	78.70	146.54	0.00	2.59	0.00	106.75
8	201	0.00	0.00	0.00	0.35	5.14	0.00	4.68	5.76	0.87	0.19	0.00	5.12
8	203	1.60	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	204	0.00	0.00	0.00	1.62	0.00	5.99	1.60	0.45	0.59	0.03	1.14	0.96
8	209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.07	0.00	0.00	0.00
8	215	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.20	0.13	0.00	0.00
8	281	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
8	282	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00
8	343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
8	402	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	430	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	503	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	504	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	505	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00
8	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	872	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.02	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
9	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	14	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00
9	18	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.00	0.34	0.00	0.00	2.06
9	118	0.00	0.00	20.00	11.70	0.00	0.00	163.90	0.00	1.24	0.00	0.00	0.00
9	201	0.00	0.00	0.00	1.20	2.58	3.11	4.37	0.00	2.24	3.23	1.44	0.15
9	203	3.70	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	204	0.00	0.00	0.00	0.00	0.00	1.13	0.50	0.00	0.04	0.00	3.95	1.99
9	215	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	265	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
9	269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
9	341	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
9	343	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.23
9	508	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00
10	2	0.00	0.00	0.00	0.30	0.00	0.12	0.38	0.00	0.00	0.00	0.00	0.00
10	10	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	14	24.70	0.00	0.00	5.81	0.00	21.80	9.50	0.00	0.00	0.00	48.60	0.00
10	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	18	0.00	0.00	0.00	0.00	0.00	0.00	3.10	0.00	0.00	0.00	0.00	0.00
10	20	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	22	0.00	0.00	0.00	1.50	0.96	0.00	1.40	10.52	0.00	0.00	0.00	0.00
10	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00
10	30	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	100	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
10	106	0.00	0.00	0.00	0.00	3.85	0.00	0.00	0.00	0.00	0.00	5.47	0.00
10	107	0.00	0.00	0.00	21.95	0.00	105.80	0.00	0.00	0.00	30.95	59.70	0.00
10	111	0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	114	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	117	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	118	0.00	0.00	0.00	0.00	4.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	201	0.00	0.00	0.00	2.52	1.61	2.29	2.92	3.21	0.00	1.46	0.00	0.00
10	204	1.70	0.00	0.00	1.24	0.00	1.61	0.20	0.00	0.00	1.79	2.63	0.00
10	207	0.00	0.00	0.00	0.00	0.00	0.17	0.07	0.00	0.00	0.00	0.12	0.00
10	208	0.00	0.00	0.00	0.36	0.00	0.10	0.22	0.00	0.00	0.00	0.00	0.00
10	209	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00
10	211	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	215	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.08	0.00	0.12	0.36	0.00
10	265	0.00	0.00	0.00	0.00	0.09	0.00	0.03	0.00	0.00	0.00	0.00	0.00
10	274	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.00	0.00	0.00
10	276	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	340	0.00	0.00	0.00	0.10	0.17	0.09	0.15	0.00	0.00	0.00	0.00	0.00
10	342	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
10	343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
10	348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00
10	349	0.00	0.00	0.00	0.05	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
10	350	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
10	351	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
10	355	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	500	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
10	503	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00
10	505	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
10	603	15.10	0.00	0.00	1.96	0.00	15.03	1.16	0.00	0.00	0.00	20.05	0.00
10	630	0.00	0.00	0.00	24.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	650	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
11	13	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	17	0.00	5.70	6.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
11	18	0.00	0.00	0.00	0.59	0.00	0.00	2.30	0.00	2.00	0.03	2.53	3.32
11	26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	111	0.00	0.00	0.00	0.00	0.00	0.00	8.40	0.00	0.00	0.00	0.00	0.00
11	114	26.26	0.00	0.00	0.00	0.00	10.20	79.10	0.00	8.94	0.00	0.00	64.85
11	118	0.00	0.00	0.00	0.00	0.06	0.00	0.32	0.00	0.00	0.00	0.00	0.00
11	120	0.00	0.00	0.00	0.06	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
11	124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	201	0.00	0.00	3.70	3.36	0.00	0.00	1.87	3.25	0.00	10.48	1.23	0.00
11	203	1.20	2.30	10.50	0.00	0.00	0.00	0.31	0.00	0.18	0.00	0.34	0.00
11	204	0.00	2.30	1.20	0.05	0.12	1.15	4.14	0.47	3.01	0.00	0.37	0.88
11	215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.11	0.00	0.13	0.15	1.56
11	261	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	265	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.05	0.00	0.00	0.03	0.00
11	274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	276	0.00	0.00	1.70	0.35	0.00	0.09	0.91	0.00	0.00	0.00	0.00	0.00
11	281	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	282	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00
11	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	340	4.40	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00
11	342	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	351	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	357	0.00	0.20	0.00	0.31	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.65
11	401	0.00	0.00	0.50	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	503	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	505	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
11	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	508	8.05	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.06	0.00
11	509	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	603	16.00	47.00	0.00	0.00	0.00	0.00	12.33	0.00	20.92	0.00	0.00	9.74
11	605	0.00	0.00	0.00	0.00	0.00	107.12	0.00	0.00	0.00	0.00	0.00	0.00
11	752	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00
11	801	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	2	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.06	0.05
12	10	0.00	0.00	0.00	0.00	0.10	0.00	0.03	0.00	0.00	0.00	0.00	0.00
12	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
12	12	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.14	0.00
12	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
12	20	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00
12	22	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	25	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00
12	26	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00
12	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	29	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	103	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00
12	106	0.00	0.00	0.00	0.52	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	108	0.00	0.00	0.20	0.00	0.30	0.00	0.00	0.06	0.00	0.00	0.00	0.08
12	109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00
12	110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	111	9.00	0.60	15.80	21.64	19.80	17.20	7.00	0.00	0.00	8.73	14.69	0.00
12	113	0.00	0.00	0.00	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00
12	114	29.00	5.70	1.30	0.00	3.00	34.80	11.30	0.07	0.00	0.00	0.00	36.50
12	116	0.00	0.00	0.20	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
12	117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	119	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
12	120	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.07
12	123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	0.00	0.00	0.00	0.00
12	201	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.00
12	203	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
12	204	0.00	0.00	0.00	0.02	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.32
12	205	0.00	0.00	0.00	0.00	0.00	2.67	0.00	0.00	0.00	0.00	0.00	0.00
12	206	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.05
12	207	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.06	0.00
12	208	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34
12	209	0.00	0.00	0.00	0.11	0.01	0.00	0.14	0.00	0.00	0.00	0.11	0.00
12	213	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	220	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
12	260	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
12	268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	269	0.00	0.00	0.00	0.03	0.06	0.00	0.01	0.00	0.00	0.00	0.00	0.00
12	281	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
12	282	0.00	0.00	0.00	0.06	0.34	0.00	0.05	0.00	0.00	0.00	0.44	0.09
12	346	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00
12	347	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
12	349	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
12	353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00
12	354	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
12	356	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	401	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	420	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00
12	452	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00
12	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	508	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	509	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
12	580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	601	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	630	0.00	36.20	0.00	0.00	0.00	0.00	23.49	0.00	0.00	0.00	0.00	34.05
12	680	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
12	701	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
12	751	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	801	0.00	0.00	0.00	0.00	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00
12	830	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.00	0.00	0.00	0.00	10.74
12	831	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00
13	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	18	0.00	0.00	0.00	0.11	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	23	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	23	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
13	25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	26	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00
13	27	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
13	28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	29	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00
13	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	100	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
13	102	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	106	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	108	0.00	0.00	0.00	0.10	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	111	0.00	0.00	3.10	2.79	8.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	113	0.00	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	114	0.00	0.00	13.70	1.47	2.30	21.90	5.30	0.00	0.00	0.00	0.00	0.00
13	116	0.00	0.00	0.00	0.00	0.05	0.15	0.20	0.00	0.00	0.00	0.00	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
13	124	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	125	0.00	0.00	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	203	0.00	0.00	0.00	1.06	1.27	0.07	0.78	0.00	0.00	0.00	0.00	0.00
13	204	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00
13	208	0.00	1.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
13	209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	211	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	266	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
13	268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	269	0.00	0.00	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	273	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	276	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
13	277	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
13	281	0.00	0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	282	0.00	2.50	0.00	0.87	0.65	0.03	0.09	0.00	0.00	0.00	0.00	0.00
13	283	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	284	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	340	0.00	0.00	0.00	0.00	0.87	0.00	0.19	0.00	0.00	0.00	0.00	0.00
13	342	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	351	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	352	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
13	353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	354	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
13	357	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	401	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
13	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	502	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	503	0.00	0.00	3.20	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	506	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	507	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
13	508	0.00	0.50	1.80	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	602	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
13	701	0.00	0.00	0.00	0.00	0.00	0.13	0.86	0.00	0.00	0.00	0.00	0.00
13	751	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
13	801	0.00	0.00	0.00	0.00	0.59	0.03	0.27	0.00	0.00	0.00	0.00	0.00
14	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	28	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
14	100	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.13	0.00	0.00	0.43	0.03
14	101	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	102	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	103	0.00	0.50	1.00	0.35	0.09	0.00	0.29	0.00	0.00	0.13	1.12	0.28
14	108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
14	111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.89	0.00	0.00
14	113	0.00	0.00	0.00	0.38	2.90	0.00	0.00	0.00	0.00	0.14	0.00	
14	114	0.00	4.70	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.10
14	115	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.04	0.00	0.06	0.07	0.18
14	117	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	118	0.00	0.00	0.00	10.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	121	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	122	0.00	0.00	0.00	0.79	0.00	0.00	0.70	0.00	0.10	0.74	0.27	0.73
14	125	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
14	201	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	203	0.00	0.00	0.00	4.40	0.21	0.00	0.00	0.00	0.17	0.00	0.07	0.26
14	210	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.19
14	212	0.00	0.00	0.00	0.00	0.00	0.00	5.15	0.59	0.00	0.00	0.00	0.00
14	215	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	217	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	268	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	269	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
14	273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
14	274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	275	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.13
14	276	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	281	0.00	0.00	0.90	0.21	0.08	0.09	0.00	0.06	0.00	0.04	0.43	0.31
14	282	0.00	2.40	0.00	0.00	0.20	0.86	0.00	0.00	0.46	0.00	0.03	1.90
14	342	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	344	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
14	353	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.12
14	357	0.00	0.00	0.00	0.07	0.47	0.08	0.00	0.00	0.00	0.02	0.31	0.71
14	451	0.00	0.00	0.00	1.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	501	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
14	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	508	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	604	0.00	43.40	0.00	15.76	0.00	0.00	0.00	14.38	0.00	0.00	18.77	0.00
14	752	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
14	801	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.02	0.00
14	810	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99
14	820	0.00	0.00	0.00	0.00	0.00	0.00	1.88	0.00	0.00	0.00	0.00	0.00
14	820	0.00	0.00	0.60	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.00
15	14	0.00	0.00	0.00	0.00	0.00	6.10	0.00	5.99	0.00	0.00	0.00	5.87
15	18	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00
15	22	0.00	0.00	0.00	0.00	7.10	3.20	0.00	0.00	0.00	0.00	0.00	0.00
15	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.07	0.00	0.00	0.00	8.28
15	105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	107	0.00	0.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00	50.07
15	119	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	201	0.00	0.00	0.00	0.00	2.90	6.66	0.00	0.38	2.53	2.29	3.46	0.92
15	204	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	1.12	0.00	0.38	0.25
15	207	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00
15	208	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00
15	209	0.00	0.00	0.00	0.00	0.11	0.43	0.00	0.00	0.45	0.15	0.00	0.00
15	215	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.52	0.00	0.59	0.00	0.00
15	343	0.00	0.00	0.00	0.00	3.19	10.15	0.00	0.00	4.18	1.83	2.04	0.19
15	349	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00
15	402	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	451	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00
15	490	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	630	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.25
15	830	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.45

Appendix 4 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
100	2	0.00	0.35	0.00	0.10	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00
100	14	0.00	22.80	6.10	0.00	4.70	0.00	0.00	18.50	0.00	0.00	0.00	0.00
100	22	0.00	11.60	3.50	0.00	0.00	12.60	0.00	0.00	0.00	0.00	0.00	0.00
100	29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	107	0.00	164.00	123.40	189.90	0.00	0.00	0.00	180.20	0.00	0.00	0.00	0.00
100	111	0.00	1.40	9.90	14.10	1.50	0.00	1.50	5.30	0.00	2.70	2.20	0.00
100	114	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	117	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	118	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	201	0.00	2.10	0.00	0.00	1.10	1.30	0.00	0.00	1.60	0.90	0.00	0.00
100	204	0.00	1.00	0.50	0.10	0.40	0.50	0.20	0.50	0.10	0.10	0.30	0.00
100	209	0.00	0.70	1.80	0.10	0.00	0.40	0.00	1.60	0.00	0.00	1.30	0.00
100	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
100	282	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	340	0.00	0.00	1.00	0.00	0.00	0.00	0.00	3.80	0.00	0.00	0.00	0.00
100	342	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.20	0.00	0.00
100	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	603	0.00	7.10	0.00	0.00	1.20	2.30	0.00	0.90	0.00	2.50	0.00	0.00
100	604	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	630	0.00	0.00	0.00	0.00	0.00	28.50	0.00	0.40	0.00	0.00	0.00	0.00
100	631	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00

Appendix 5. S x N matrix and biomass (grams including mollusc shell) for 1972.

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
4	17	0	0	0	0	1	0	0	0	0	0	0	0
4	18	0	0	0	0	0	0	1	0	1	0	0	0
4	21	0	0	0	0	0	0	0	0	1	0	0	0
4	24	0	0	0	0	0	0	1	0	0	0	0	0
4	25	0	0	0	0	1	0	1	0	0	0	0	0
4	27	0	0	0	0	0	0	1	0	0	0	0	0
4	100	0	0	0	0	0	0	20	2	0	0	0	0
4	101	0	0	0	0	0	0	0	2	0	0	0	0
4	102	0	0	0	0	0	0	2	1	0	0	0	0
4	103	0	0	0	0	0	2	0	0	4	0	0	0
4	105	0	0	0	0	0	0	2	1	0	0	0	0
4	108	0	0	0	0	1	0	0	0	0	0	0	0
4	111	0	0	0	0	5	1	8	2	7	0	0	0
4	112	0	0	0	0	2	0	14	0	3	0	0	0
4	113	0	0	0	0	0	0	2	0	0	0	0	0
4	114	0	0	0	0	5	3	7	8	19	0	0	0
4	115	0	0	0	0	0	0	2	0	1	0	0	0
4	116	0	0	0	0	1	0	0	4	0	0	0	0
4	119	0	0	0	0	0	1	0	0	0	0	0	0
4	203	0	0	0	0	6	3	1	0	0	0	0	0
4	215	0	0	0	0	1	0	0	0	0	0	0	0
4	218	0	0	0	0	0	0	0	0	1	0	0	0
4	265	0	0	0	0	3	0	0	0	0	0	0	0
4	269	0	0	0	0	0	0	1	1	0	0	0	0
4	281	0	0	0	0	3	3	3	0	0	0	0	0
4	282	0	0	0	0	6	3	6	0	1	0	0	0
4	340	0	0	0	0	0	2	0	0	0	0	0	0
4	345	0	0	0	0	2	0	0	0	0	0	0	0
4	346	0	0	0	0	0	0	0	0	1	0	0	0
4	351	0	0	0	0	0	0	1	0	0	0	0	0
4	353	0	0	0	0	0	0	1	0	0	0	0	0
4	357	0	0	0	0	0	0	1	0	0	0	0	0
4	503	0	0	0	0	1	0	1	0	0	0	0	0
4	508	0	0	0	0	3	1	3	9	6	0	0	0
4	630	0	0	0	0	0	1	0	0	0	0	0	0
4	753	0	0	0	0	0	3	0	0	0	0	0	0
4	801	0	0	0	0	0	0	1	1	0	0	0	0
4	871	0	0	0	0	2	0	0	0	0	0	0	0
6	27	0	0	0	0	0	0	2	0	0	0	0	0
6	100	0	0	0	0	1	3	7	3	1	0	0	0
6	101	0	0	0	0	0	0	14	11	0	0	0	0
6	103	0	0	0	0	0	1	1	1	0	0	0	0
6	111	0	0	0	0	0	0	2	1	0	0	0	0
6	114	0	0	0	0	0	1	6	0	1	0	0	0
6	115	0	0	0	0	0	9	48	32	1	0	0	0
6	122	0	0	0	0	0	17	36	28	0	0	0	0
6	201	0	0	0	0	0	0	0	0	1	0	0	0
6	203	0	0	0	0	1	0	1	0	3	0	0	0
6	215	0	0	0	0	0	0	0	1	0	0	0	0
6	273	0	0	0	0	0	0	0	4	0	0	0	0
6	274	0	0	0	0	0	0	0	2	0	0	0	0
6	275	0	0	0	0	0	0	0	1	0	0	0	0
6	276	0	0	0	0	0	3	0	0	0	0	0	0
6	281	0	0	0	0	2	6	5	1	1	0	0	0
6	282	0	0	0	0	1	1	3	1	3	0	0	0
6	283	0	0	0	0	1	0	0	0	0	0	0	0

Appendix 5 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
6	285	0	0	0	0	0	0	0	4	0	0	0	0
6	353	0	0	0	0	0	0	0	1	0	0	0	0
6	357	0	0	0	0	0	5	7	2	0	0	0	0
6	450	0	0	0	0	0	0	0	0	1	0	0	0
6	506	0	0	0	0	0	1	0	3	1	0	0	0
6	508	0	0	0	0	0	0	0	1	1	0	0	0
6	604	0	0	0	0	0	1	0	0	0	0	0	0
6	872	0	0	0	0	1	2	0	0	1	0	0	0
8	10	0	0	0	0	0	0	1	0	0	0	0	0
8	14	0	0	0	0	2	0	2	0	0	0	0	0
8	18	0	0	0	0	1	0	2	0	8	0	0	0
8	103	0	0	0	0	1	0	0	0	0	0	0	0
8	117	0	0	0	0	0	0	0	0	4	0	0	0
8	118	0	0	0	0	1	19	9	3	41	0	0	0
8	201	0	0	0	0	1	9	0	9	14	0	0	0
8	203	0	0	0	0	1	0	0	0	1	0	0	0
8	204	0	0	0	0	18	2	28	8	8	0	0	0
8	343	0	0	0	0	0	0	0	0	1	0	0	0
8	508	0	0	0	0	0	0	0	2	0	0	0	0
8	872	0	0	0	0	0	1	0	1	0	0	0	0
9	18	0	0	0	0	1	1	0	2	4	0	0	0
9	104	0	0	0	0	0	1	0	0	0	0	0	0
9	117	0	0	0	0	0	0	0	3	13	0	0	0
9	118	0	0	0	0	0	0	1	38	66	0	0	0
9	201	0	0	0	0	6	9	2	7	5	0	0	0
9	202	0	0	0	0	0	0	1	0	0	0	0	0
9	203	0	0	0	0	0	0	0	0	1	0	0	0
9	204	0	0	0	0	8	4	0	1	0	0	0	0
9	215	0	0	0	0	0	0	0	1	0	0	0	0
9	215	0	0	0	0	0	0	0	0	3	0	0	0
9	343	0	0	0	0	0	1	1	0	0	0	0	0
9	503	0	0	0	0	0	0	0	0	1	0	0	0
9	512	0	0	0	0	0	0	0	0	1	0	0	0
10	10	0	0	0	0	0	0	16	4	2	0	0	0
10	13	0	0	0	0	0	0	1	0	0	0	0	0
10	14	0	0	0	0	0	0	9	2	4	0	0	0
10	18	0	0	0	0	0	0	3	3	0	0	0	0
10	22	0	0	0	0	0	0	0	1	0	0	0	0
10	30	0	0	0	0	0	0	0	0	2	0	0	0
10	104	0	0	0	0	0	0	0	0	1	0	0	0
10	107	0	0	0	0	2	0	0	0	3	0	0	0
10	108	0	0	0	0	0	0	1	0	0	0	0	0
10	201	0	0	0	0	2	0	5	0	0	0	0	0
10	201	0	0	0	0	0	0	0	2	9	0	0	0
10	202	0	0	0	0	0	0	1	1	2	0	0	0
10	204	0	0	0	0	0	0	0	1	1	0	0	0
10	209	0	0	0	0	0	0	0	1	0	0	0	0
10	269	0	0	0	0	0	0	0	0	1	0	0	0
10	340	0	0	0	0	0	0	1	0	0	0	0	0
10	351	0	0	0	0	0	0	0	1	0	0	0	0
10	357	0	0	0	0	1	0	0	0	0	0	0	0
10	870	0	0	0	0	0	0	0	0	1	0	0	0

Appendix 5 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
11	17	0	0	0	0	1	0	0	0	1	0	0	0
11	18	0	0	0	0	6	1	2	7	1	0	0	0
11	22	0	0	0	0	0	0	0	0	2	0	0	0
11	111	0	0	0	0	0	0	0	0	1	0	0	0
11	112	0	0	0	0	0	0	0	1	0	0	0	0
11	114	0	0	0	0	0	2	0	4	0	0	0	0
11	114	0	0	0	0	0	0	0	0	2	0	0	0
11	115	0	0	0	0	0	1	0	31	19	0	0	0
11	118	0	0	0	0	0	0	1	0	0	0	0	0
11	201	0	0	0	0	2	1	14	0	0	0	0	0
11	203	0	0	0	0	1	2	3	7	3	0	0	0
11	215	0	0	0	0	6	0	0	0	0	0	0	0
11	265	0	0	0	0	0	1	0	0	0	0	0	0
11	273	0	0	0	0	0	0	0	0	3	0	0	0
11	274	0	0	0	0	1	3	0	0	1	0	0	0
11	275	0	0	0	0	0	0	0	1	0	0	0	0
11	276	0	0	0	0	0	1	0	0	0	0	0	0
11	282	0	0	0	0	0	1	0	0	1	0	0	0
11	340	0	0	0	0	0	0	0	2	1	0	0	0
11	346	0	0	0	0	0	1	0	0	0	0	0	0
11	357	0	0	0	0	33	19	0	12	8	0	0	0
11	503	0	0	0	0	1	0	0	0	0	0	0	0
11	505	0	0	0	0	2	0	0	0	0	0	0	0
11	506	0	0	0	0	1	1	0	0	0	0	0	0
11	509	0	0	0	0	0	0	0	0	2	0	0	0
11	508	0	0	0	0	1	0	0	0	0	0	0	0
11	603	0	0	0	0	0	27	0	32	22	0	0	0
11	630	0	0	0	0	0	1	0	0	0	0	0	0
11	902	0	0	0	0	0	0	0	0	1	0	0	0
11	871	0	0	0	0	1	1	0	0	4	0	0	0
11	872	0	0	0	0	0	0	0	0	1	0	0	0
15	18	0	0	0	0	1	1	0	0	2	0	0	0
15	22	0	0	0	0	1	1	0	0	3	0	0	0
15	107	0	0	0	0	1	0	0	5	0	0	0	0
15	111	0	0	0	0	1	1	0	0	0	0	0	0
15	201	0	0	0	0	4	2	2	2	3	0	0	0
15	204	0	0	0	0	4	2	0	4	2	0	0	0
15	215	0	0	0	0	5	0	0	0	2	0	0	0
15	343	0	0	0	0	10	14	7	7	4	0	0	0
15	508	0	0	0	0	0	0	0	0	1	0	0	0
15	902	0	0	0	0	0	0	0	2	0	0	0	0

Appendix 5 [cont'd]

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
4	17	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	18	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.00
4	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
4	24	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
4	25	0.00	0.00	0.00	0.00	0.40	0.00	0.24	0.00	0.00	0.00	0.00	0.00
4	27	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
4	100	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.05	0.00	0.00	0.00	0.00
4	101	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
4	102	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.20	0.00	0.00	0.00	0.00
4	103	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.50	0.00	0.00	0.00
4	105	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.00	0.00	0.00	0.00
4	108	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	111	0.00	0.00	0.00	0.00	2.85	0.10	1.01	0.76	0.91	0.00	0.00	0.00
4	112	0.00	0.00	0.00	0.00	0.26	0.00	1.80	0.00	0.32	0.00	0.00	0.00
4	113	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.00	0.00
4	114	0.00	0.00	0.00	0.00	4.82	5.63	20.89	25.61	15.27	0.00	0.00	0.00
4	115	0.00	0.00	0.00	0.00	0.00	0.06	0.03	0.00	0.02	0.00	0.00	0.00
4	116	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.18	0.00	0.00	0.00	0.00
4	119	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
4	203	0.00	0.00	0.00	0.00	1.82	0.40	0.02	0.00	0.00	0.00	0.00	0.00
4	215	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	218	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00
4	265	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	269	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
4	281	0.00	0.00	0.00	0.00	0.19	0.10	0.09	0.00	0.00	0.00	0.00	0.00
4	282	0.00	0.00	0.00	0.00	0.85	0.11	0.22	0.00	0.01	0.00	0.00	0.00
4	340	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00
4	345	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	346	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00
4	351	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
4	353	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
4	357	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
4	503	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00
4	508	0.00	0.00	0.00	0.00	0.38	0.05	0.10	0.40	0.25	0.00	0.00	0.00
4	630	0.00	0.00	0.00	0.00	0.00	5.91	0.00	0.00	0.00	0.00	0.00	0.00
4	753	0.00	0.00	0.00	0.00	0.00	99.70	0.00	0.00	0.00	0.00	0.00	0.00
4	831	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00
4	871	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	27	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
6	100	0.00	0.00	0.00	0.00	0.16	0.30	0.47	0.28	0.06	0.00	0.00	0.00
6	101	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.50	0.00	0.00	0.00	0.00
6	103	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.16	0.00	0.00	0.00	0.00
6	111	0.00	0.00	0.00	0.00	0.00	0.00	3.23	0.08	0.00	0.00	0.00	0.00
6	114	0.00	0.00	0.00	0.00	0.00	1.08	2.14	0.00	0.49	0.00	0.00	0.00
6	115	0.00	0.00	0.00	0.00	0.00	0.17	0.59	0.47	0.02	0.00	0.00	0.00
6	122	0.00	0.00	0.00	0.00	0.00	2.81	1.67	2.17	0.00	0.00	0.00	0.00
6	201	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	203	0.00	0.00	0.00	0.00	0.08	0.00	0.04	0.00	0.99	0.00	0.00	0.00
6	215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00
6	274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
6	275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
6	276	0.00	0.00	0.00	0.00	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00
6	281	0.00	0.00	0.00	0.00	0.38	0.16	0.17	0.02	0.03	0.00	0.00	0.00
6	282	0.00	0.00	0.00	0.00	0.23	0.05	0.68	0.10	0.66	0.00	0.00	0.00
6	283	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix 5 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
6	283	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
6	353	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
6	357	0.00	0.00	0.00	0.00	0.00	0.35	0.37	0.02	0.00	0.00	0.00	0.00
6	450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
6	506	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.30	0.02	0.00	0.00	0.00
6	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00
6	604	0.00	0.00	0.00	0.00	0.00	4.16	0.00	0.00	0.00	0.00	0.00	0.00
6	872	0.00	0.00	0.00	0.00	1.52	0.20	0.00	0.00	0.05	0.00	0.00	0.00
8	10	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
8	14	0.00	0.00	0.00	0.00	6.49	0.00	14.73	0.00	0.00	0.00	0.00	0.00
8	18	0.00	0.00	0.00	0.00	0.30	0.00	0.16	0.00	0.55	0.00	0.00	0.00
8	103	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00	0.00
8	118	0.00	0.00	0.00	0.00	4.45	55.78	0.27	0.10	92.49	0.00	0.00	0.00
8	201	0.00	0.00	0.00	0.00	0.93	2.99	0.00	1.58	1.90	0.00	0.00	0.00
8	203	0.00	0.00	0.00	0.00	0.15	0.00	0.00	2.30	0.07	0.00	0.00	0.00
8	204	0.00	0.00	0.00	0.00	3.25	0.20	2.30	0.68	1.20	0.00	0.00	0.00
8	343	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00
8	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00
8	872	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.30	0.00	0.00	0.00	0.00
9	18	0.00	0.00	0.00	0.00	0.10	0.09	0.00	0.08	0.30	0.00	0.00	0.00
9	104	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00
9	117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	6.31	0.00	0.00	0.00
9	118	0.00	0.00	0.00	0.00	0.00	0.00	0.02	81.07	60.29	0.00	0.00	0.00
9	201	0.00	0.00	0.00	0.00	1.89	2.80	0.63	0.76	0.39	0.00	0.00	0.00
9	202	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.00	0.00	0.00
9	203	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
9	204	0.00	0.00	0.00	0.00	0.85	0.42	0.00	0.05	0.00	0.00	0.00	0.00
9	213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
9	215	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00
9	343	0.00	0.00	0.00	0.00	0.00	0.21	0.79	0.00	0.00	0.00	0.00	0.00
9	503	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
9	512	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
10	10	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.19	0.12	0.00	0.00	0.00
10	13	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
10	14	0.00	0.00	0.00	0.00	0.00	0.00	36.45	11.61	17.99	0.00	0.00	0.00
10	18	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.11	0.00	0.00	0.00	0.00
10	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.93	0.00	0.00	0.00	0.00
10	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00
10	104	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.01	0.00	0.00	0.00
10	107	0.00	0.00	0.00	0.00	46.02	0.00	0.00	0.00	68.05	0.00	0.00	0.00
10	108	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00
10	201	0.00	0.00	0.00	0.00	0.71	0.00	1.42	0.00	0.00	0.00	0.00	0.00
10	201	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	1.48	0.00	0.00	0.00
10	202	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.41	1.40	0.00	0.00	0.00
10	204	0.00	0.00	0.00	0.00	1.30	0.00	0.00	0.01	0.12	0.00	0.00	0.00
10	209	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
10	269	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
10	340	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
10	351	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	357	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	870	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00

Appendix 5 (cont'd)

STN NO	SPECIES NO	1	2	3	4	5	6	7	8	9	10	11	12
11	17	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	1.06	0.00	0.00	0.00
11	18	0.00	0.00	0.00	0.00	2.68	0.92	0.35	0.51	0.26	0.00	0.00	0.00
11	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00
11	111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
11	112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
11	114	0.00	0.00	0.00	0.00	0.00	0.02	0.00	4.47	0.00	0.00	0.00	0.00
11	114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52	0.00	0.00	0.00
11	115	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.85	0.59	0.00	0.00	0.00
11	118	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
11	201	0.00	0.00	0.00	0.00	1.28	0.27	2.82	0.00	0.00	0.00	0.00	0.00
11	203	0.00	0.00	0.00	0.00	0.20	2.00	0.33	1.80	1.03	0.00	0.00	0.00
11	215	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	265	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
11	273	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00
11	274	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.04	0.00	0.00	0.00
11	275	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
11	276	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
11	282	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.10	0.00	0.00	0.00
11	340	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.15	0.00	0.00	0.00
11	346	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
11	357	0.00	0.00	0.00	0.00	5.15	2.83	0.00	1.04	0.93	0.00	0.00	0.00
11	503	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	505	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	506	0.00	0.00	0.00	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00
11	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
11	508	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	603	0.00	0.00	0.00	0.00	0.00	11.17	0.00	15.87	13.52	0.00	0.00	0.00
11	630	0.00	0.00	0.00	0.00	0.00	46.19	0.00	0.00	0.00	0.00	0.00	0.00
11	802	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.07	0.00	0.00	0.00
11	871	0.00	0.00	0.00	0.00	0.38	1.50	0.00	0.00	1.70	0.00	0.00	0.00
11	872	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00
15	18	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.05	0.00	0.00	0.00
15	22	0.00	0.00	0.00	0.00	0.00	8.24	0.00	0.00	10.91	0.00	0.00	0.00
15	107	0.00	0.00	0.00	0.00	56.41	0.00	0.00	156.57	0.15	0.00	0.00	0.00
15	111	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00
15	201	0.00	0.00	0.00	0.00	1.62	1.51	0.50	1.22	1.05	0.00	0.00	0.00
15	204	0.00	0.00	0.00	0.00	0.78	1.10	0.00	0.32	0.10	0.00	0.00	0.00
15	215	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	343	0.00	0.00	0.00	0.00	5.37	12.40	3.60	4.97	3.41	0.00	0.00	0.00
15	508	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00
15	802	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00

Appendix 6. List of species names not found in Wildish and Phillips (1974).

030 *Lora bicarinata*

031 *Nucella lapillus*

124 *Mulina lateralis*

125 *Pitar morrhuana*

420 *Harpacticus uniremis*

430 *Balanus crenatus*

512 *Gammarus mucronatus*

580 *Diastylis goodsiri*

605 *Cucumaria frondosa*

651 *Asterias vulgaris*

753 *Metridium senile*

802 Unidentified Sipuncula

Appendix 7A. Species and dominance diversity data for 1970-1971 in L'Etang Inlet.

Station	D Bar	H	H Max	H/Max	DSQ	VARDSP	DELTA	EVDELTA
15	2.94	1.90	2.76	0.69	0.80	.0004	0.55	0.71
14	3.66	2.42	3.60	0.67	0.82	.0002	0.58	0.68
13	3.87	2.55	3.71	0.69	0.89	.0001	0.66	0.77
12	3.45	2.25	3.96	0.57	0.77	.0002	0.52	0.59
11	3.76	2.52	3.44	0.73	0.89	.0000	0.67	0.80
10	3.91	2.50	3.46	0.72	0.88	.0002	0.64	0.76
9	2.31	1.53	2.47	0.62	0.77	.0001	0.51	0.71
8	2.43	1.62	3.12	0.52	0.69	.0003	0.44	0.55
6	4.24	2.80	3.47	0.81	0.92	.0001	0.71	0.84
4	3.90	2.60	3.81	0.68	0.87	.0001	0.63	0.73

Appendix 7B. Species and dominance diversity data for 1972 in L'Etang Inlet.

15	2.55	1.61	2.12	0.76	0.76	.0014	0.50	0.73
11	3.29	2.14	3.18	0.67	0.84	.0001	0.60	0.73
10	3.21	1.99	2.59	0.77	0.86	.0003	0.61	0.80
9	2.06	1.33	2.35	0.57	0.63	.0013	0.39	0.55
8	2.26	1.48	2.36	0.63	0.73	.0003	0.48	0.67
6	3.22	2.11	3.05	0.69	0.82	.0002	0.58	0.72
4	4.17	2.66	3.34	0.80	0.92	.0001	0.71	0.84

N.B. The computer abbreviations are given fully in Mawson & Godfrey 1971.