



UCL

Environmental Change Network Diatom Analysis and Archiving Project

Final Report to the ECN

ECRC Research Report No. 158

E. M. Shilland, A. Burgess, K. Roe & S. Goodrich

2013

**ENVIRONMENTAL CHANGE NETWORK DIATOM ANALYSIS AND
ARCHIVING PROJECT**

FINAL REPORT TO THE ECN

ECRC RESEARCH REPORT No. 158

Ewan M. Shilland, Amy Burgess, Kevin Roe & Stefanie Goodrich

2013

Cover photo: River Eden, Cumbria. © ECN Website/EA

1 Table of Contents

1	Table of Contents.....	2
2	List of Figures	2
3	List of Tables.....	3
4	Introduction	4
5	Site R01. River Eden, Cumbria	6
5.1	Site Description	6
5.2	Diatom Count Summary	8
6	Site R05. River Wye.....	16
6.1	Site Description	16
6.2	Diatom Count Summary	17
7	Site R08. River Frome.....	25
7.1	Site Description	25
7.2	Diatom Count Summary	26
8	References.....	35
9	Appendices	36

2 List of Figures

Figure 1	River Eden. Looking north from the bridge on the B6412. Image from Google Streetview	6
Figure 2	River Eden, Cumbria. Diatom Percentage Summary Abundances.....	10
Figure 3	River Eden, Cumbria. Diatom species and number of occurrences.	14
Figure 4	River Wye. Looking southwest from the the A466. Image from Google Streetview...	16
Figure 5	River Wye. Diatom Percentage Summary Abundances	19
Figure 6	River Wye. Diatom species and number of occurrences.	23
Figure 7	River Frome. Looking east from the bridge on the B3070. Image from Google Streetview	25
Figure 8	River Frome. Diatom Percentage Summary Abundances	28
Figure 9	River Frome. Diatom species and number of occurrences.....	32

3 List of Tables

Table 1 Trophic Diatom Index (TDI) calculation output field descriptions	5
Table 2 River Eden, Cumbria. Diatom samples analysed.....	8
Table 3 River Eden, Cumbria. Diatom species and number of occurrences.....	11
Table 4 River Eden, Cumbria. Trophic Diatom Index Scores	15
Table 5 River Wye. Diatom samples analysed.	18
Table 6 River Wye. Diatom species and number of occurrences.	20
Table 7 River Wye. Trophic Diatom Index Scores	24
Table 8 River Frome. Diatom samples analysed.....	26
Table 9 River Frome. Diatom species and number of occurrences.	29
Table 10 River Frome. Trophic Diatom Index Scores	33

4 Introduction

This report provides details of work performed on the Environmental Change Network (ECN) contract to ENSIS Ltd. involving the preparation of historic (March 2007 – March 2012) ECN diatom samples and the analysis of diatom time-series from three river sites; the River Eden, Cumbria, the River Wye and the River Frome.

Diatoms were collected from ECN sites and prepared for analysis following protocols described in the United Kingdom Environmental Change Network's "Protocols for Standard Measurements at Freshwater Sites" (Sykes *et al.*, 1999). The samples were taken on three occasions each year (Spring, Summer and Autumn) from three close-by but different sampling stations – coded S01, S02 and S03, and thus totaled a maximum of nine samples per year. For a variety of operational reasons not all samples were collected in all years at all sites.

Diatom samples prepared and archived for this project are listed in Appendix 1. Slides for the samples to be counted from the three rivers discussed above were prepared first. Subsequent preps started with the oldest samples and moved forward through time, finishing with samples dated up to the end of 2012. One sample from the River Esk, ESK076, could not be located. Full details of all samples received have been sent to the ECN data centre in electronic format.

For the time-series analysis component of the project it was decided to count a sub-set of all the available samples from each site. To keep time-series as long as possible, and to remove the potentially confounding effects of multiple sampling locations, a sample collected from location S01 on each discrete site visit (date) was chosen for diatom analysis. Approximately 500 diatom valves were counted per sample by Amy Burgess using a light microscope with phase contrast at 1000x magnification. Count data were recorded on spreadsheets and transferred to ENSIS where they have been added to the ECN diatom database. Full details of all diatom counts have subsequently been sent to the ECN data centre in electronic format.

The diatom count data was run through the DARLEQII program (Kelly *et al*, 2011) in order to generate Trophic Diatom Index (TDI), Ecological Quality Ratio (EQR) and status class values (high, good, moderate, poor, bad) for each sample at each of the three sites. Approximate mean alkalinity values for the calculations were provided by ECN as being 150 mg/l for the River Eden, Cumbria, 100 mg/l for the River Wye and 200 mg/l for the River Frome. Both TDI3 and TDI4 scores were calculated for all samples, but under advice from one of the program authors (Kelly, *pers comm.*) TDI4 scores were deemed more representative of the three sites and are the scores reported here. Table 1 is taken from the DARLEQII user guide (Kelly *et al*, 2011) and describes the output fields provided in the results section for each site below. Electronic copies of the full DARLEQII program output plus a copy of the DARLEQII program user manual have been provided to the ECN data centre.

Table 1 Trophic Diatom Index (TDI) calculation output field descriptions

Field name	Field description
Sample sum	Sum of the counts or percentages of all taxa in a sample
Sum TDI4	Sum of the counts or percentages for all taxa in a sample that are matched to taxa in the master taxon list and included in the TDI calculation. If all taxa are matched this will be the same as the Sample sum. Comparison of these two fields will indicate if there are important taxa present in the sample but not included in the status calculations
TDI4	TDI score for each sample using the revised TDI taxon scores for rivers.
eTDI4	Expected TDI score for each sample according to site-specific prediction (rivers)
EQR TDI4	Ecological Quality Ratio for each sample based on predicted TDI for observed alkalinity and season (rivers).
Class	Status class based on EQR
% Planktic	Percentage of planktic diatoms in the sample. These are excluded from the status calculations

Field name	Field description
% Motile	Percentage of the motile diatoms in the sample
%OrganicTolerant	Percentage of organic pollution tolerant diatoms in the sample
%Saline	Percentage of diatoms tolerant of slightly saline waters
Comments	List of any warning messages generated during calculations for individual samples.

5 Site R01. River Eden, Cumbria



Figure 1 River Eden. Looking north from the bridge on the B6412. Image from Google Streetview

5.1 Site Description

“The river rises south of Kirkby Stephen on the Cumbria /Yorkshire border and flows northwards to Carlisle before discharging to the Solway Firth. The eastern part of the catchment is drained by short, relatively steep streams from the Pennines; the western part includes tributaries of the Eamont system which arise in the eastern hills of the Lake District, and the major lakes, Ullswater and Haweswater. The catchment is largely rural,

with farming the main industry. There are significant settlements on the upper part of the river at Kirkby Stephen and Appleby-in-Westmorland. Water quality in the upper reaches is classified as good and drinking water is abstracted to supply the city of Carlisle. The river is excellent for salmon (*Salmo salar*) fishing and also supports a sea trout (*Salmo trutta*) run. Many other species of fish are also found, eg brown trout (*Salmo trutta fario*), grayling (*Thymallus thymallus*), chub (*Leuciscus cephalus*), dace (*Leuciscus leuciscus*), eel (*Anguilla anguilla*), minnow (*Phoxinus phoxinus*), loach (*Barbatula barbatula*), river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromygon marinus*), and brook lamprey (*Lampetra planeri*), stickleback (*Gasterosteus aculeatus*) and bullhead (*Cottus gobio*). Otters and native crayfish (*Austropotamobius pallipes*) are also found in the Eden catchment. The Eden at Temple Sowerby is within the "River Eden and Tributaries" SSSI, and the proposed Special Area of Conservation (SAC) under the EC Habitats and Species Directive.

The sampling site is in an upland farming area at an altitude of about 100 m AOD. The surrounding countryside is hilly, with some woodlands, rising to the bare slopes of the Pennine hills to the east. These have been mined for lead and silver in historic times, and gypsum is still extracted. The underlying bedrock is Permo-Triassic Penrith Sandstone, with smaller tributaries of the Eden draining from the surrounding Carboniferous Limestone. The market town of Appleby, with a population of about 3 000, is roughly 14 km away by road. Its primary influence on the river is the discharge from the Sewage Treatment Works 16 km upstream, which currently has secondary treatment and, since January 1999, phosphorus stripping of the wastewaters it receives.

The ECN site is at the Eden Bridge in Temple Sowerby, at NGR 3604 5282, where the A66 trunk road crosses the river." ([ECN website](#), 2013).

5.2 Diatom Count Summary

30 ECN diatom samples from the location S01 in the River Eden, Cumbria (Table 2.) were either retrieved from the UCL archive or prepared into diatom slides and counted using standard methods (Battarbee *et al.* 2001). Percentage abundance time-series plots of diatom species, generated using the program C2 (Juggins, 2007), are shown in Figure 2 and include all species occurring at abundances greater than two percent. Diatom species recorded and the number of samples in which they occurred are presented in Table 3. and Figure 3. Trophic Diatom Index (TDI) scores (Kelly *et al.*, 2008) were calculated for each sample and are provided in Table 4. Exact dates were not recorded for the three samples from the River Eden in 2006, so the mid-summer dummy date of 22/06/2006 has been used for the sample ECUM064. No samples were collected in 2001 due to foot and mouth disease restrictions.

Table 2 River Eden, Cumbria. Diatom samples analysed.

Sample Code	Sample Date	Season	ECN Sample Number
ECUM001	29/04/1998	1	S01
ECUM004	25/08/1998	2	S01
ECUM007	21/09/1998	3	S01
ECUM010	28/04/1999	1	S01
ECUM013	16/08/1999	2	S01
ECUM016	16/09/1999	3	S01
ECUM019	10/04/2000	1	S01
ECUM022	10/08/2000	2	S01
ECUM028	08/04/2002	1	S01
ECUM031	16/08/2002	2	S01
ECUM034	16/09/2002	3	S01
ECUM025	20/09/2002	3	S01
ECUM037	04/04/2003	1	S01
ECUM061	06/08/2003	2	S01
ECUM049	29/09/2003	3	S01
ECUM052	07/04/2004	1	S01
ECUM058	02/08/2004	2	S01
ECUM055	29/09/2004	3	S01
ECUM040	11/04/2005	1	S01
ECUM046	04/08/2005	2	S01
ECUM043	21/09/2005	3	S01

Sample Code	Sample Date	Season	ECN	Sample Number
ECUM064	22/06/2006 - Dummy date			S01
ECUM082	23/04/2007	1		S01
ECUM085	30/08/2007	2		S01
ECUM088	15/10/2007	3		S01
ECUM067	24/04/2008	1		S01
ECUM070	03/07/2008	2		S01
ECUM073	25/09/2008	3		S01
ECUM076	19/03/2009	1		S01
ECUM079	29/09/2009	3		S01

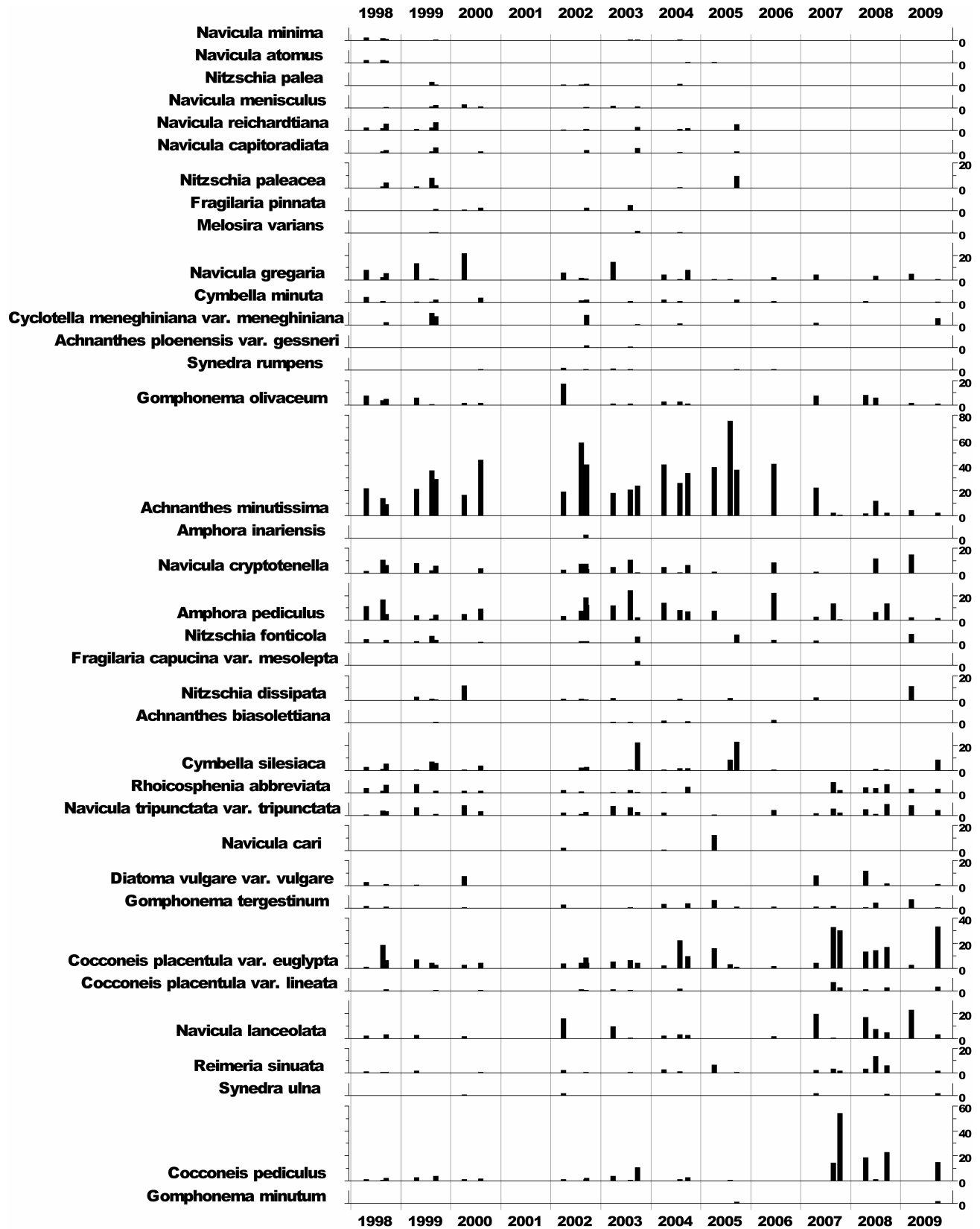


Figure 2 River Eden, Cumbria. Diatom Percentage Summary Abundances

Table 3 River Eden, Cumbria. Diatom species and number of occurrences.

Taxon	Taxon Code	Number of Occurrences (nmax = 30)
Achnanthes minutissima	AC013A	30
Amphora pediculus	AM012A	30
Cocconeis placentula var. euglypta	CO001B	30
Navicula tripunctata var. tripunctata	NA095A	29
Cocconeis pediculus	CO005A	28
Navicula cryptotenella	NA751A	28
Rhoicosphenia abbreviata	RC001A	28
Cocconeis placentula var. lineata	CO001C	26
Cymbella silesiaca	CM103A	26
Navicula gregaria	NA023A	26
Navicula lanceolata	NA009A	26
Cymbella minuta	CM031A	25
Gomphonema tergestinum	GO066A	24
Reimeria sinuata	RE001A	24
Nitzschia dissipata	NI015A	23
Nitzschia fonticola	NI002A	22
Cyclotella meneghiniana var. meneghiniana	CY003A	21
Diatoma vulgare var. vulgare	DT003A	21
Gomphonema olivaceum	GO001A	21
Navicula reichardtiana	NA768A	21
Achnanthes lanceolata	AC001A	17
Synedra rumpens	SY002A	17
Navicula atomus	NA084A	16
Navicula minima	NA042A	16
Fragilaria pinnata	FR001A	15
Nitzschia paleacea	NI033A	15
Cocconeis placentula var. pseudolineata	CO001E	14
Navicula capitoradiata	NA745A	14
Navicula menisculus	NA030A	14
Surirella brebissonii	SU073A	14
Gomphonema minutum	GO050A	13
Achnanthes lanceolata ssp. Frequentissima	AC001R	12
Achnanthes biasoletiana	AC037A	11
Denticula tenuis	DE001A	11
Gomphonema parvulum var. parvulum	GO013A	11
Nitzschia palea	NI009A	10
Synedra ulna	SY001A	10
Achnanthes ploenensis var. gessneri	AC049B	9
Fragilaria vaucheriae	FR007A	9
Amphora inariensis	AM013A	8
Amphora libyca	AM011A	8
Caloneis bacillum var. bacillum	CA002A	8
Diatoma elongatum	DT001A	8
Cocconeis placentula	CO001A	7

Taxon	Taxon Code	Number of Occurrences (nmax = 30)
Melosira varians	ME015A	7
Meridion circulare	MR001A	7
Navicula capitata	NA066A	6
Nitzschia linearis	NI031A	6
Achnanthes lauenburgiana	AC085A	5
Gyrosigma acuminatum	GY005A	5
Navicula cryptocephala	NA007A	5
Achnanthes lanceolata ssp. Dubia	AC001D	4
Eunotia sp.	EU9999	4
Navicula subminuscula	NA134A	4
Cymbella caespitosa	CM070A	3
Gomphonema pumilum	GO080A	3
Navicula cari	NA051A	3
Navicula subrotundata	NA114A	3
Synedra acus	SY003A	3
Brachysira vitrea	BR001A	2
Cymatopleura solea	CL001A	2
Cymbella cistula	CM006A	2
Fragilaria capucina var. mesolepta	FR009B	2
Gomphonema sp.	GO9999	2
Gomphonema truncatum	GO023A	2
Navicula cincta	NA021A	2
Navicula elginensis	NA057A	2
Navicula placentula	NA119A	2
Navicula protracta	NA047A	2
Nitzschia sp.	NI9999	2
Achnanthes clevei	AC006A	1
Aulacoseira ambigua	AU002A	1
Cyclotella comensis	CY010A	1
Cyclotella pseudostelligera	CY002A	1
Cymbella affinis	CM022A	1
Cymbella cesatii	CM015A	1
Cymbella gracilis	CM018A	1
Fragilaria brevistriata	FR006A	1
Fragilaria construens	FR002A	1
Fragilaria elliptica	FR018A	1
Gomphonema olivaceoides	GO052A	1
Navicula goeppertiana	NA747A	1
Navicula ignota var. acceptata	NA433D	1
Navicula pupula var. pupula	NA014A	1
Navicula reinhardtii	NA026A	1
Navicula sp.	NA9999	1
Navicula subhamulata	NA075A	1
Nitzschia acicularis	NI042A	1
Nitzschia amphibia var. amphibia	NI014A	1
Nitzschia graciliformis	NI201A	1
Nitzschia recta	NI025A	1
Nitzschia sigmoidea	NI046A	1

Taxon	Taxon Code	Number of Occurrences (nmax = 30)
Pinnularia sp.	PI9999	1
Stauroneis sp.	SA9999	1
Stephanodiscus hantzschii	ST001A	1
Tabellaria flocculosa	TA001A	1

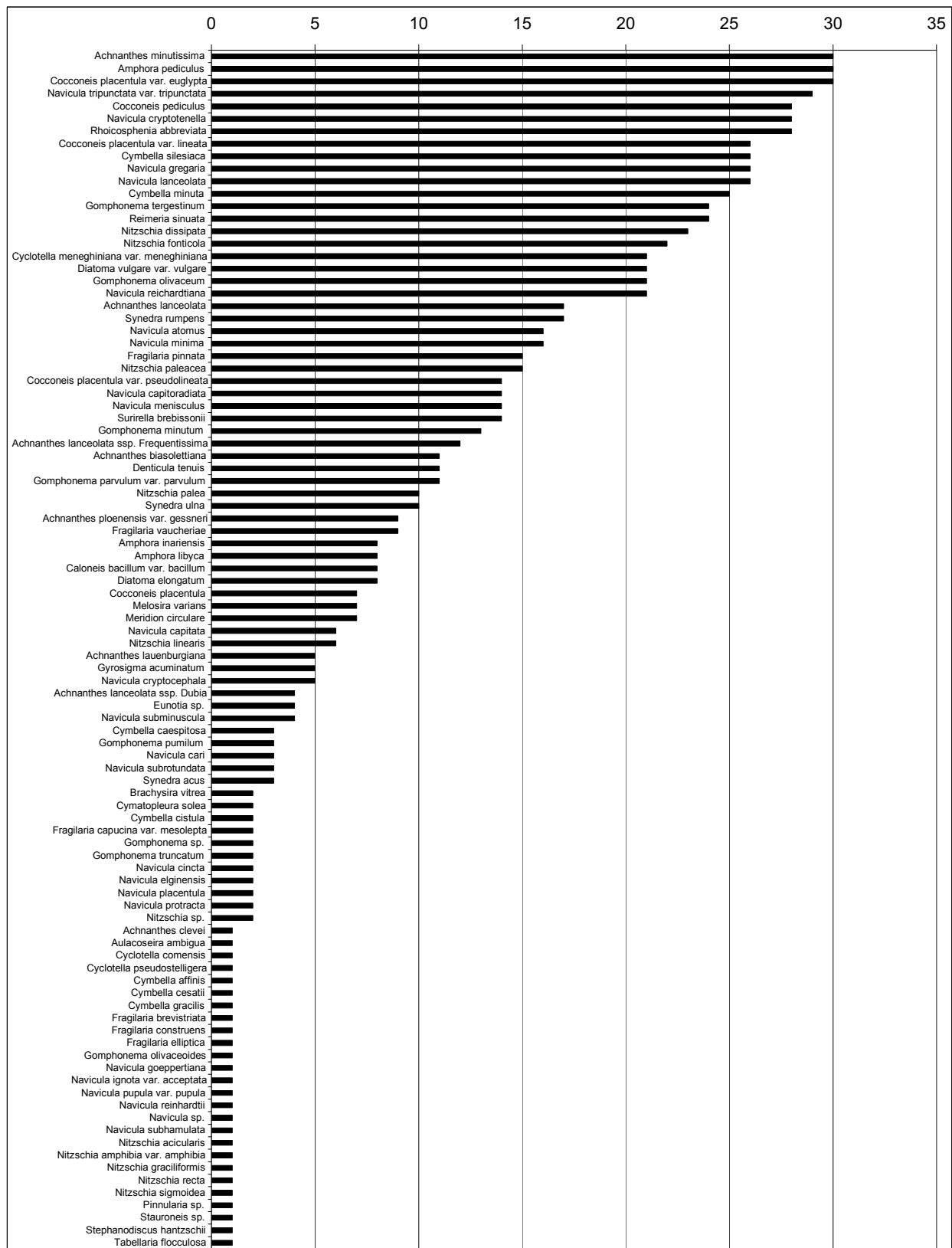


Figure 3 River Eden, Cumbria. Diatom species and number of occurrences.

Table 4 River Eden, Cumbria. Trophic Diatom Index Scores

Sample Date	ECRC SampleID	Alkalinity	ECN Section	Sample sum	Sum TDI4	TDI4	eTDI4	EQR TDI4	Class TDI4	% Planktic	% Motile	% Organic tolerant	% Saline	Comment TDI4
29/04/1998	ECUM001	150	S01	561.0	560.0	59.5	57.89	0.96	Good	0.18	29.23	20.86	0.53	
25/08/1998	ECUM004	150	S01	525.5	523.5	64.4	57.89	0.85	Good	0.38	33.49	10.66	0.00	
21/09/1998	ECUM007	150	S01	484.0	471.0	63.7	57.89	0.86	Good	2.69	45.14	23.14	0.21	
28/04/1999	ECUM010	150	S01	561.0	561.0	60.6	57.89	0.94	Good	0.00	41.98	20.50	0.36	
16/08/1999	ECUM013	150	S01	519.5	465.5	46.3	57.89	1.25	High	10.39	30.51	19.15	0.00	
16/09/1999	ECUM016	150	S01	525.5	486.5	54.0	57.89	1.09	High	7.23	32.16	9.61	0.38	
10/04/2000	ECUM019	150	S01	472.5	471.5	65.3	57.89	0.82	Good	0.21	51.96	26.35	0.00	
10/08/2000	ECUM022	150	S01	571.0	567.0	49.2	57.89	1.21	High	0.70	15.41	2.28	0.00	
08/04/2002	ECUM028	150	S01	553.0	551.0	56.6	57.89	1.03	High	0.36	36.53	24.23	0.00	
16/08/2002	ECUM031	150	S01	586.5	586.5	44.3	57.89	1.25	High	0.00	17.56	5.29	0.00	
16/09/2002	ECUM034	150	S01	549.5	548.5	57.3	57.89	1.02	High	0.18	18.93	3.64	0.00	
20/09/2002	ECUM025	150	S01	537.5	493.5	52.7	57.89	1.12	High	8.19	16.00	5.12	0.00	
04/04/2003	ECUM037	150	S01	495.0	493.0	64.7	57.89	0.84	Good	0.40	46.67	26.26	0.20	
06/08/2003	ECUM061	150	S01	465.5	460.5	65.9	57.89	0.81	Good	1.07	23.20	4.94	0.00	
29/09/2003	ECUM049	150	S01	497.0	491.0	50.7	57.89	1.17	High	1.21	21.33	7.24	0.40	
07/04/2004	ECUM052	150	S01	523.5	523.5	54.0	57.89	1.09	High	0.00	19.48	8.40	0.00	
02/08/2004	ECUM058	150	S01	459.5	451.5	51.7	57.89	1.15	High	1.74	15.89	10.23	0.44	
29/09/2004	ECUM055	150	S01	537.5	537.5	54.1	57.89	1.09	High	0.00	25.58	14.98	0.93	
11/04/2005	ECUM040	150	S01	466.0	466.0	51.1	57.89	1.16	High	0.00	18.24	2.79	0.00	
04/08/2005	ECUM046	150	S01	545.0	543.0	31.5	57.89	1.25	High	0.37	6.70	1.38	0.00	
21/09/2005	ECUM043	150	S01	624.0	623.0	43.0	57.89	1.25	High	0.16	25.64	18.59	0.00	
22/06/2006	ECUM064	150	S01	601.0	599.0	57.1	57.89	1.02	High	0.33	22.63	7.99	0.00	
23/04/2007	ECUM082	150	S01	541.5	530.5	59.9	57.89	0.95	Good	2.03	36.01	27.05	0.00	
30/08/2007	ECUM085	150	S01	259.5	258.5	67.6	57.89	0.77	Good	0.39	7.71	1.54	0.00	
15/10/2007	ECUM088	150	S01	208.0	208.0	67.0	57.89	0.78	Good	0.00	2.88	0.00	0.00	
24/04/2008	ECUM067	150	S01	528.5	528.5	69.3	57.89	0.73	Moderate	0.00	24.79	18.16	0.38	
03/07/2008	ECUM070	150	S01	382.0	380.0	61.0	57.89	0.93	Good	0.52	27.36	12.04	0.00	
25/09/2008	ECUM073	150	S01	396.5	394.5	71.8	57.89	0.67	Moderate	0.50	16.65	5.80	0.00	
19/03/2009	ECUM076	150	S01	500.0	500.0	69.9	57.89	0.71	Moderate	0.00	72.60	36.80	0.00	
29/09/2009	ECUM079	150	S01	482.5	455.5	60.4	57.89	0.94	Good	5.60	10.57	4.77	0.00	

6 Site R05. River Wye



Figure 4 River Wye. Looking southwest from the the A466. Image from Google Streetview

6.1 Site Description

“The River Wye is one of the largest rivers in Britain. It rises on the Plynlimon mountains at 741m AOD and flows through several towns including Rhayader, Builth Wells, Hay-on-Wye and Hereford before meeting the Severn Estuary at Chepstow. The total catchment area is 4136 km² and the population size of 226,000 is centred on the main towns. The River Wye catchment is one of idyllic beauty and unspoilt scenery. The River Wye itself is a Site of Special Scientific Interest and one of the most important rivers in Britain in nature conservation terms. Much of the lower valley is an Area of Outstanding Natural Beauty.

The surface water in the Wye and its tributaries is mostly unpolluted, so much of it is suitable as a source of drinking water and for supporting a salmon and trout fishery. Nevertheless, certain rivers and streams in the upper catchment suffer from acidification

and localised pollution problems from inadequate sewerage and agricultural sources also exist. The Wye is one of the best known salmon rivers in England and Wales. Shad and Sea Lamprey also migrate into the Wye. The river corridor supports a variety of plant communities, otters, water voles, several bat species, dippers, sandmartins, kingfishers and little ringed plovers. The biological quality of the river is generally good and supports several rare or scarce species including the mayfly *Potamanthus luteus*, the freshwater pearl mussel *Margaritifera margaritifera* and the native crayfish. The river also supports several rare species of non-aquatic invertebrates associated with gravel shoals.” ([ECN website](#), 2013).

6.2 Diatom Count Summary

28 ECN diatom samples from the location S01 in the River Wye (Table 5.) were either retrieved from the UCL archive or prepared into diatom slides and counted using standard methods (Battarbee *et al.* 2001). Percentage abundance time-series plots of diatom species, generated using the program C2 (Juggins, 2007), are shown in Figure 5 and include all species occurring at abundances greater than two percent. Diatom species recorded and the number of samples in which they occurred are presented in Table 6. and Figure 6. Trophic Diatom Index (TDI) scores (Kelly *et al.*, 2008) were calculated for each sample and are provided in Table 7. No samples were collected in 2001 due to foot and mouth disease access restrictions.

Table 5 River Wye. Diatom samples analysed.

Sample Code	Sample Date	Season	ECN Sample Number
WYE004	20/08/1998	2	S01
WYE006	07/05/1999	1	S01
WYE009	19/08/1999	2	S01
WYE013	18/05/2000	1	S01
WYE016	17/08/2000	2	S01
WYE019	14/08/2002	2	S01
WYE022	25/09/2002	3	S01
WYE025	08/05/2003	1	S01
WYE028	22/08/2003	2	S01
WYE031	25/09/2003	3	S01
WYE057	21/04/2004	1	S01
WYE045	11/08/2004	2	S01
WYE043	09/09/2004	3	S01
WYE034	09/05/2005	1	S01
WYE037	16/08/2005	2	S01
WYE040	01/09/2005	3	S01
WYE056	31/05/2006	1	S01
WYE060	27/07/2006	2	S01
WYE044	01/09/2006	3	S01
WYE063	10/04/2007	1	S01
WYE066	24/08/2007	2	S01
WYE069	13/09/2007	3	S01
WYE072	11/04/2008	1	S01
WYE075	30/07/2008	2	S01
WYE078	01/09/2008	3	S01
WYE081	30/03/2009	1	S01
WYE084	19/08/2009	2	S01
WYE087	02/09/2009	3	S01

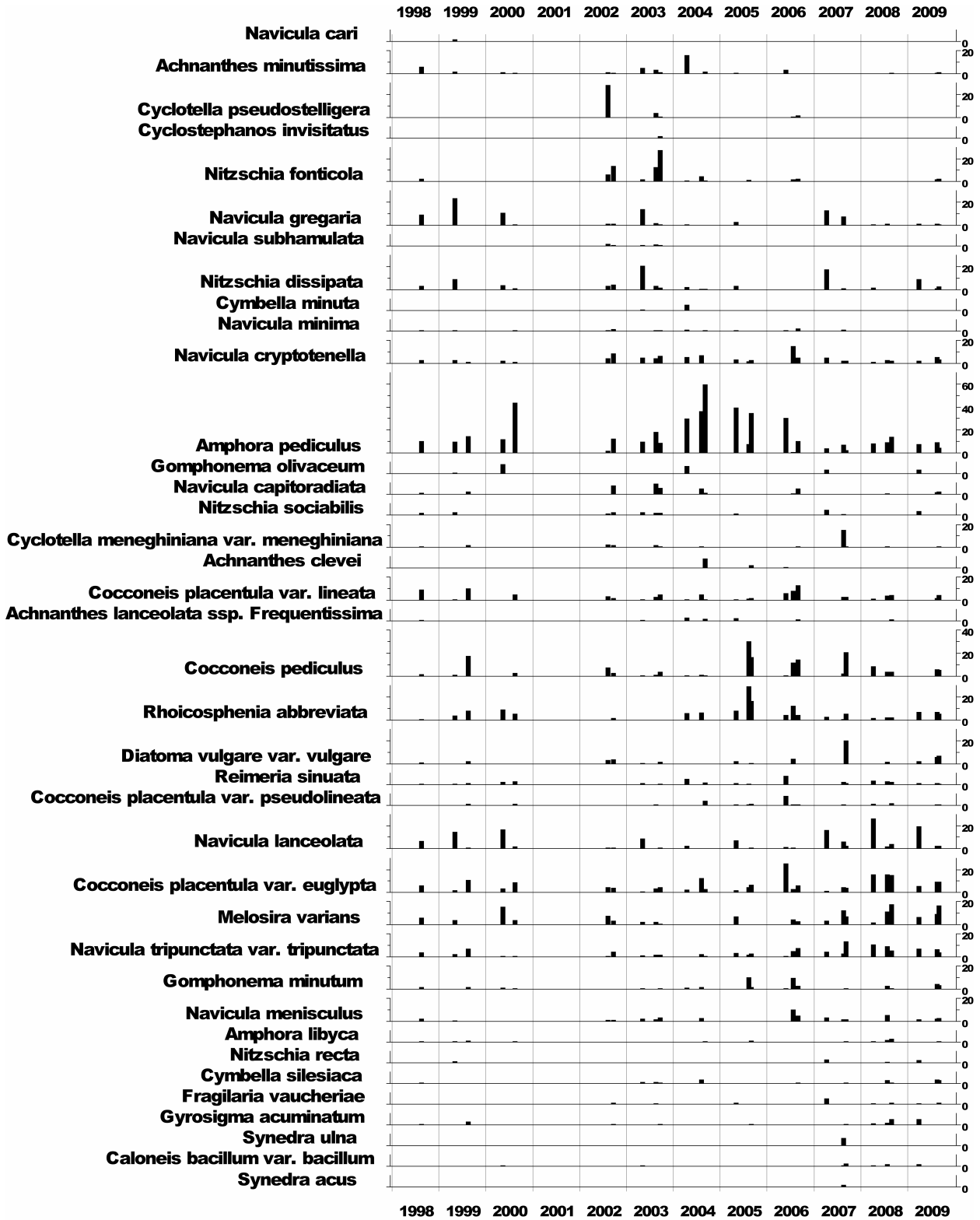


Figure 5 River Wye. Diatom Percentage Summary Abundances

Table 6 River Wye. Diatom species and number of occurrences.

Taxon	Taxon Code	Number of Occurrences (nmax = 31)
Amphora pediculus	AM012A	31
Navicula cryptotenella	NA751A	31
Navicula tripunctata var. tripunctata	NA095A	31
Cocconeis pediculus	CO005A	30
Cocconeis placentula var. euglypta	CO001B	30
Nitzschia dissipata	NI015A	30
Achnanthes minutissima	AC013A	29
Navicula gregaria	NA023A	29
Cocconeis placentula var. lineata	CO001C	28
Diatoma vulgare var. vulgare	DT003A	28
Melosira varians	ME015A	27
Navicula minima	NA042A	27
Reimeria sinuata	RE001A	27
Rhoicosphenia abbreviata	RC001A	27
Navicula lanceolata	NA009A	26
Navicula menisculus	NA030A	26
Cocconeis placentula var. pseudolineata	CO001E	25
Gomphonema minutum	GO050A	25
Amphora libyca	AM011A	23
Gyrosigma acuminatum	GY005A	23
Achnanthes lanceolata ssp. Frequentissima	AC001R	22
Cymbella silesiaca	CM103A	22
Gomphonema parvulum var. parvulum	GO013A	22
Navicula capitoradiata	NA745A	22
Nitzschia fonticola	NI002A	22
Nitzschia sociabilis	NI166A	22
Cyclotella meneghiniana var. meneghiniana	CY003A	21
Fragilaria vaucheriae	FR007A	21
Caloneis bacillum var. bacillum	CA002A	20
Gomphonema olivaceum	GO001A	19
Synedra ulna	SY001A	19
Navicula atomus	NA084A	17
Navicula subhamulata	NA075A	16
Nitzschia linearis	NI031A	16
Surirella brebissonii	SU073A	16
Cymbella prostrata	CM045A	14
Nitzschia palea	NI009A	14
Nitzschia sp.	NI9999	14
Navicula reichardtiana	NA768A	13
Nitzschia recta	NI025A	13
Achnanthes clevei	AC006A	11
Achnanthes lanceolata	AC001A	11
Amphora ovalis	AM001A	11
Surirella bifrons	SU074A	11

Taxon	Taxon Code	Number of Occurrences (nmax = 31)
Cymbella minuta	CM031A	10
Gomphonema pumilum	GO080A	10
Navicula cryptocephala	NA007A	10
Nitzschia amphibia var. amphibia	NI014A	10
Cyclotella pseudostelligera	CY002A	9
Gomphonema tergestinum	GO066A	9
Gomphonema truncatum	GO023A	8
Navicula subminuscula	NA134A	7
Nitzschia constricta	NI083A	7
Nitzschia delognei	NI090A	7
Navicula subrotundata	NA114A	6
Nitzschia paleacea	NI033A	6
Surirella angustata	SU001A	6
Amphora veneta	AM004A	5
Cocconeis placentula	CO001A	5
Cyclostephanos invisitatus	CC002A	5
Meridion circulare	MR001A	5
Nitzschia acicularis	NI042A	5
Stephanodiscus parvus	ST010A	5
Cymatopleura solea	CL001A	4
Gomphonema clavatum	GO029A	4
Navicula cari	NA051A	4
Navicula pupula var. pupula	NA014A	4
Navicula sp.	NA9999	4
Navicula striolata	NA792A	4
Stephanodiscus hantzschii	ST001A	4
Synedra acus	SY003A	4
Tryblionella levidensis	TF005A	4
Cymbella caespitosa	CM070A	3
Diatoma mesodon	DT021A	3
Fragilaria bidens	FR026A	3
Fragilaria capucina var. mesolepta	FR009B	3
Navicula goeppertiana	NA747A	3
Navicula radiosa var. radiosa	NA003A	3
Navicula radiosa var. tenella	NA003B	3
Nitzschia capitellata	NI028A	3
Brachysira vitrea	BR001A	2
Diatoma tenue	DT004A	2
Diploneis elliptica	DP009A	2
Diploneis marginestriata	DP012A	2
Encyonema minutum	EY011A	2
Fragilaria pinnata	FR001A	2
Fragilaria sp.	FR9999	2
Hannaea arcus	HN001A	2
Navicula capitata	NA066A	2
Navicula ignota var. acceptata	NA433D	2
Navicula joubardii	NA462A	2
Navicula lenzii	NA761A	2

Taxon	Taxon Code	Number of Occurrences (nmax = 31)
Nitzschia inconspicua	NI043A	2
Rhoicosphenia abbreviata	RC002A	2
Surirella brebisonii var. kuetzingii	SU073B	2
Surirella minuta	SU016A	2
Synedra rumpens	SY002A	2
Tabellaria flocculosa	TA001A	2
Achnanthes lauenburgiana	AC085A	1
Achnanthes ploenensis var. gessneri	AC049B	1
Aulacoseira granulata	AU003A	1
Cyclotella comensis	CY010A	1
Cyclotella radiosa	CY019A	1
Cymatopleura elliptica	CL002A	1
Cymbella microcephala	CM004A	1
Cymbella naviculiformis	CM009A	1
Cymbella sp.	CM9999	1
Diploneis ovalis	DP001A	1
Encyonema reichardtii	EY015A	1
Eunotia sp.	EU9999	1
Fragilaria brevistriata	FR006A	1
Fragilaria capucina var. capucina	FR009A	1
Fragilaria capucina var. gracilis	FR009H	1
Fragilaria constricta	FR010A	1
Fragilaria construens var. venter	FR002C	1
Frustulia rhomboides var. saxonica	FU002B	1
Frustulia sp.	FU9999	1
Gomphoneis olivaceum	GM001A	1
Gomphonema angustatum agg.	GO003A	1
Gyrosigma sp.	GY9999	1
Navicula rhyncocephala	NA008A	1
Neidium ampliatum	NE036A	1
Pinnularia divergens	PI008A	1
Sellaphora minima	SL003A	1
Staurosirella pinnata	SS002A	1
Surirella sp.	SU9999	1

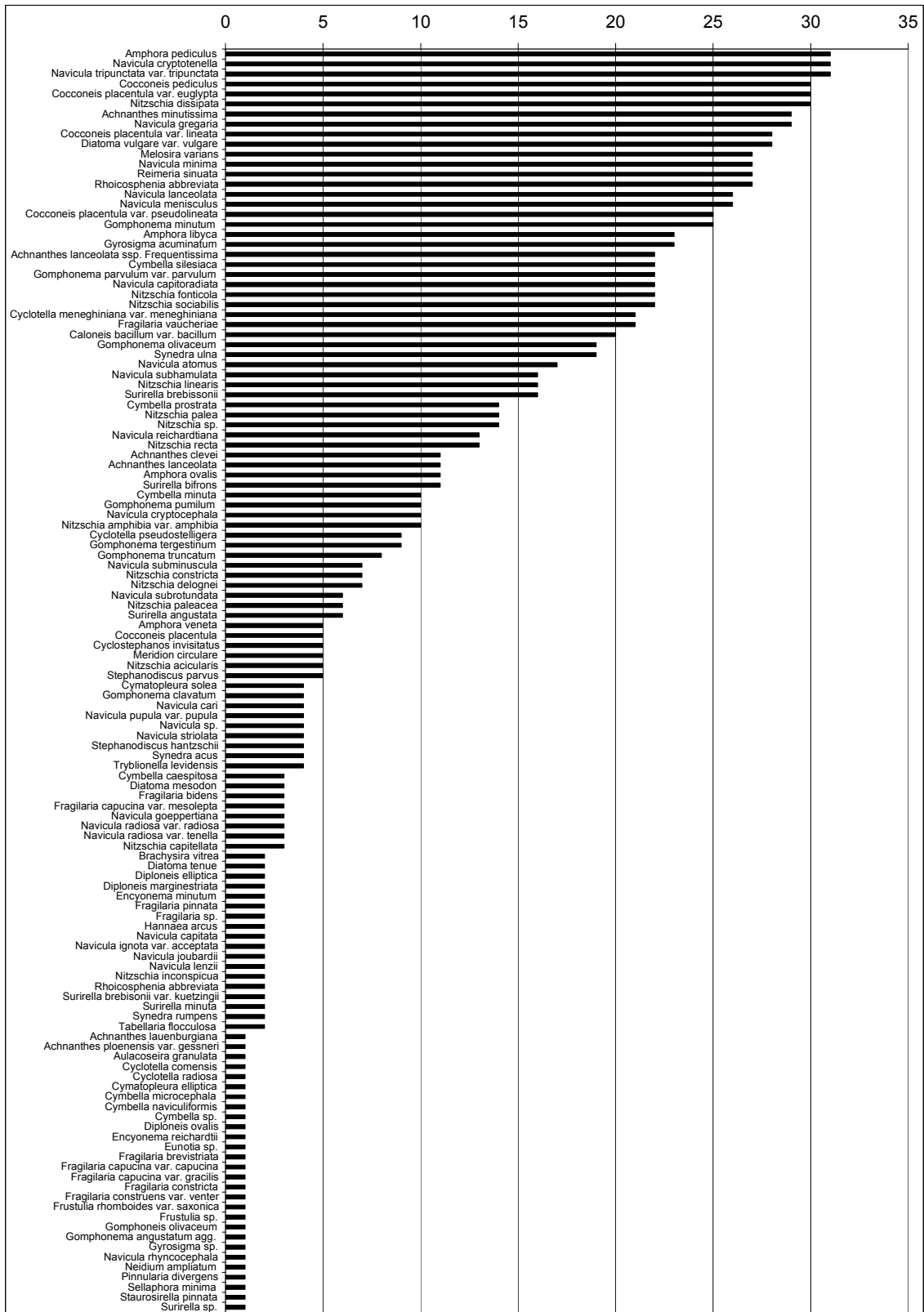


Figure 6 River Wye. Diatom species and number of occurrences.

Table 7 River Wye. Trophic Diatom Index Scores

Sample Date	ECRC SampleID	Alkalinity	ECN Section	Sample sum	Sum TDI4	TDI4	eTDI4	EQR TDI4	Class TDI4	% Planktic	% Motile	% Organic tolerant	% Saline	Comment TDI4
20/08/1998	WYE004	100	S01	573.5	553.5	69.3	50.19	0.62	Moderate	1.74	43.94	25.54	0.00	
07/05/1999	WYE006	100	S01	497.0	493.0	72.7	50.19	0.55	Moderate	0.40	67.40	45.98	0.20	
19/08/1999	WYE009	100	S01	278.5	266.0	76.0	50.19	0.48	Poor	2.51	19.21	1.08	0.00	
18/05/2000	WYE013	100	S01	506.0	500.5	72.1	50.19	0.56	Moderate	0.59	40.61	29.45	0.00	
17/08/2000	WYE016	100	S01	531.0	519.5	80.5	50.19	0.39	Poor	0.56	14.03	6.21	0.00	
14/08/2002	WYE019	100	S01	567.5	376.5	70.6	50.19	0.59	Moderate	31.89	31.01	15.33	0.00	
25/09/2002	WYE022	100	S01	556.0	528.0	75.0	50.19	0.5	Moderate	2.70	56.21	23.92	0.00	
08/05/2003	WYE025	100	S01	484.0	477.0	67.3	50.19	0.66	Moderate	1.24	68.39	31.51	0.00	
22/08/2003	WYE028	100	S01	514.5	470.0	73.5	50.19	0.53	Moderate	6.22	47.81	22.55	0.00	
25/09/2003	WYE031	100	S01	476.0	446.0	72.1	50.19	0.56	Moderate	4.62	58.93	35.40	0.00	
21/04/2004	WYE057	100	S01	555.5	554.5	66.6	50.19	0.67	Moderate	0.00	18.27	7.38	0.36	
11/08/2004	WYE045	100	S01	546.0	538.5	77.8	50.19	0.45	Poor	0.92	26.74	7.69	0.00	
09/09/2004	WYE043	100	S01	538.0	511.0	89.3	50.19	0.21	Bad	0.93	9.85	4.09	0.37	
09/05/2005	WYE034	100	S01	555.0	544.0	82.0	50.19	0.36	Poor	0.36	26.49	13.96	0.00	
16/08/2005	WYE037	100	S01	633.0	626.0	74.1	50.19	0.52	Moderate	0.00	9.08	3.87	0.00	
01/09/2005	WYE040	100	S01	578.5	567.0	83.0	50.19	0.34	Poor	0.35	11.58	2.16	0.00	
31/05/2006	WYE056	100	S01	413.5	378.5	70.7	50.19	0.59	Moderate	0.24	6.65	3.14	0.24	
27/07/2006	WYE060	100	S01	544.0	527.5	73.4	50.19	0.53	Moderate	1.84	37.50	5.33	0.00	
01/09/2006	WYE044	100	S01	418.5	400.0	72.4	50.19	0.55	Moderate	3.11	32.74	7.89	0.00	
10/04/2007	WYE063	100	S01	548.0	547.0	67.6	50.19	0.65	Moderate	0.18	75.00	40.42	0.00	
24/08/2007	WYE066	100	S01	602.5	502.0	67.3	50.19	0.66	Moderate	15.44	34.19	20.17	0.25	
13/09/2007	WYE069	100	S01	582.5	573.5	81.1	50.19	0.38	Poor	0.86	26.35	3.86	0.17	
11/04/2008	WYE072	100	S01	591.5	580.5	73.1	50.19	0.54	Moderate	0.00	48.86	30.09	0.00	
30/07/2008	WYE075	100	S01	538.5	530.5	72.2	50.19	0.56	Moderate	1.30	32.31	6.13	0.19	
01/09/2008	WYE078	100	S01	497.5	480.0	73.3	50.19	0.54	Moderate	0.00	23.12	6.03	0.00	
30/03/2009	WYE081	100	S01	518.5	516.0	74.9	50.19	0.5	Moderate	0.00	59.31	29.22	0.00	
19/08/2009	WYE084	100	S01	552.0	542.5	73.7	50.19	0.53	Moderate	0.54	29.26	8.97	0.54	
02/09/2009	WYE087	100	S01	518.5	506.5	71.9	50.19	0.56	Moderate	1.16	28.54	9.64	0.58	

7 Site R08. River Frome



Figure 7 River Frome. Looking east from the bridge on the B3070. Image from Google Streetview

7.1 Site Description

“The River Frome is essentially a rural catchment of high amenity and ecological value. The upper part of the catchment lies within the Dorset Area of Outstanding Natural Beauty and is characterised by steep-sided valleys. The only large urban area within the catchment is Dorchester (population 15,104). In the upper reaches the river is dependent on springs and groundwater levels for flows. Many of the streams are Winterbournes and the streams cease to flow in the Summer or are perched where the River goes underground for part of its length. All stretches of river above Holme Bridge fit into the Environment Agency's River Objective classes 1 & 2. These classes describe water of very good, or good quality suitable for all fish species. The majority of the catchment fits into the Environment Agency's Biological Classification class A. Land use in the catchment is typically permanent grassland with dairying or stock rearing, with some cereals and natural wetland habitats. The majority of the upper reaches lies on

chalk which produces the high groundwater component of flow. The lower reaches are dominated by sands, gravels and clays. Rainfall in the catchment varies between 850-1100 mm a year. The Q95 is 34% of the mean annual flow reflecting how much of the flow depends on groundwater and how slowly the River responds to rainfall events.” ([ECN website](#), 2013).

7.2 Diatom Count Summary

39 ECN diatom samples from the location S01 in the River Frome (Table 8.) were either retrieved from the UCL archive or prepared into diatom slides and counted using standard methods (Battarbee *et al.* 2001). Percentage abundance time-series plots of diatom species, generated using the program C2 (Juggins, 2007), are shown in Figure 8 and include all species occurring at abundances greater than two percent. Diatom species recorded and the number of samples in which they occurred are presented in Table 9. and Figure 9. Trophic Diatom Index (TDI) scores (Kelly *et al.*, 2008) were calculated for each sample and are provided in Table 10.

Table 8 River Frome. Diatom samples analysed.

Sample Code	Sample Date	Season	ECN Sample Number
FROM001	16/04/1997	1	S01
FROM007	15/05/1997	1	S01
FROM008	08/07/1997	2	S01
FROM010	28/08/1997	2	S01
FROM013	17/10/1997	3	S01
FROM016	02/06/1998	2	S01
FROM017	13/08/1998	2	S01
FROM020	17/09/1998	3	S01
FROM023	17/11/1998	3	S01
FROM024	29/04/1999	1	S01
FROM036	13/05/1999	1	S01
FROM038	15/06/1999	2	S01
FROM025	22/07/1999	2	S01
FROM041	07/09/1999	3	S01

Sample Code	Sample Date	Season	ECN	Sample Number
FROM044	03/11/1999	3		S01
FROM047	07/06/2000	2		S01
FROM048	24/10/2000	3		S01
FROM051	10/07/2001	2		S01
FROM054	10/10/2001	3		S01
FROM057	29/04/2002	1		S01
FROM060	28/08/2002	2		S01
FROM063	29/04/2003	1		S01
FROM066	20/08/2003	2		S01
FROM069	11/11/2003	3		S01
FROM093	14/04/2004	1		S01
FROM096	27/07/2004	2		S01
FROM086	23/09/2004	3		S01
FROM080	16/05/2005	1		S01
FROM090	25/07/2005	2		S01
FROM074	05/10/2005	3		S01
FROM072	05/05/2006	1		S01
FROM077	25/07/2006	2		S01
FROM083	11/09/2006	3		S01
FROM099	10/04/2007	1		S01
FROM102	06/08/2007	2		S01
FROM105	24/09/2007	3		S01
FROM108	04/04/2008	1		S01
FROM111	20/08/2008	2		S01
FROM114	01/10/2008	3		S01

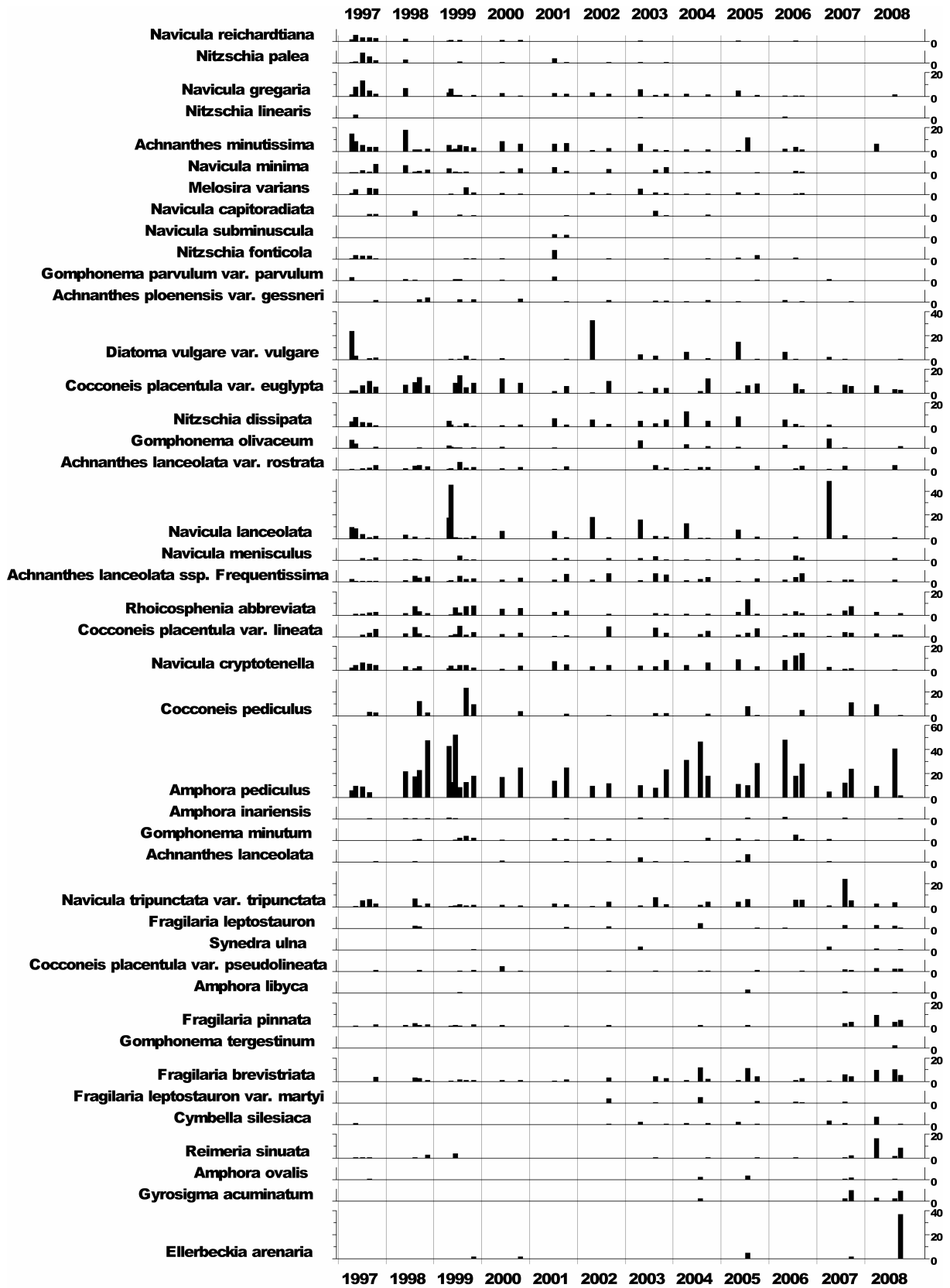


Figure 8 River Frome. Diatom Percentage Summary Abundances

Table 9 River Frome. Diatom species and number of occurrences.

Taxon	Taxon Code	Number of Occurrences (nmax = 39)
Amphora pediculus	AM012A	38
Cocconeis placentula var. euglypta	CO001B	38
Rhoicosphenia abbreviata	RC001A	38
Navicula tripunctata var. tripunctata	NA095A	37
Achnanthes lanceolata ssp. Frequentissima	AC001R	36
Achnanthes lanceolata var. rostrata	AC001B	36
Fragilaria brevistriata	FR006A	36
Navicula cryptotenella	NA751A	36
Cocconeis placentula var. lineata	CO001C	35
Navicula lanceolata	NA009A	35
Achnanthes minutissima	AC013A	34
Diatoma vulgare var. vulgare	DT003A	34
Navicula minima	NA042A	34
Gomphonema olivaceum	GO001A	33
Navicula gregaria	NA023A	33
Nitzschia dissipata	NI015A	33
Amphora inariensis	AM013A	32
Fragilaria pinnata	FR001A	32
Navicula menisculus	NA030A	32
Achnanthes clevei	AC006A	30
Achnanthes ploenensis var. gessneri	AC049B	30
Cymbella silesiaca	CM103A	29
Fragilaria leptostauron	FR014A	29
Navicula atomus	NA084A	29
Reimeria sinuata	RE001A	29
Achnanthes lanceolata	AC001A	28
Nitzschia fonticola	NI002A	28
Amphora libyca	AM011A	27
Cocconeis placentula var. pseudolineata	CO001E	27
Gomphonema parvulum var. parvulum	GO013A	27
Gyrosigma acuminatum	GY005A	27
Synedra ulna	SY001A	27
Cocconeis pediculus	CO005A	26
Navicula capitoradiata	NA745A	26
Nitzschia palea	NI009A	26
Gomphonema minutum	GO050A	25
Melosira varians	ME015A	25
Navicula reichardtiana	NA768A	24
Caloneis bacillum var. bacillum	CA002A	23
Navicula subhamulata	NA075A	22
Nitzschia amphibia var. amphibia	NI014A	22
Nitzschia linearis	NI031A	22
Nitzschia recta	NI025A	22
Achnanthes lauenburgiana	AC085A	20

Taxon	Taxon Code	Number of Occurrences (nmax = 39)
Surirella brebissonii	SU073A	20
Navicula subrotundata	NA114A	15
Synedra rumpens	SY002A	14
Fragilaria elliptica	FR018A	13
Fragilaria leptostauron var. martyi	FR065A	12
Navicula capitata	NA066A	12
Amphora ovalis	AM001A	11
Navicula elginensis	NA057A	11
Navicula ignota var. acceptata	NA433D	11
Ellerbeckia arenaria	EL001A	10
Gomphonema pumilum	GO080A	10
Meridion circulare	MR001A	10
Navicula capitata var. luenebergensis	NA066C	10
Nitzschia sp.	NI9999	10
Cyclotella meneghiniana var. meneghiniana	CY003A	9
Cymbella prostrata	CM045A	9
Nitzschia sigmoidea	NI046A	9
Stephanodiscus hantzschii	ST001A	9
Cymatopleura solea	CL001A	8
Navicula subminuscula	NA134A	8
Gomphonema lateripunctatum	GO086A	7
Navicula clementis	NA050A	7
Navicula sp.	NA9999	7
Nitzschia sociabilis	NI166A	7
Surirella sp.	SU9999	7
Fragilaria fasciculata	FR057A	6
Gomphonema angustatum agg.	GO003A	6
Aulacoseira ambigua	AU002A	5
Fragilaria construens	FR002A	5
Fragilaria construens var. venter	FR002C	5
Fragilaria vaucheriae	FR007A	5
Navicula cryptocephala	NA007A	5
Navicula pupula var. pupula	NA014A	5
Achnanthes conspicua	AC023A	4
Cymbella cistula	CM006A	4
Fragilaria capucina var. mesolepta	FR009B	4
Nitzschia paleacea	NI033A	4
Surirella angustata	SU001A	4
Synedra acus	SY003A	4
Amphora veneta	AM004A	3
Cyclotella cyclopuncta	CY059A	3
Gomphonema tergestinum	GO066A	3
Gomphonema truncatum	GO023A	3
Navicula bacillum	NA071A	3
Achnanthes lanceolata ssp. Dubia	AC001D	2
Cocconeis placentula	CO001A	2
Cyclostephanos dubius	CC001A	2
Cyclotella comensis	CY010A	2

Taxon	Taxon Code	Number of Occurrences (nmax = 39)
Cyclotella distinguenda var. unipunctata	CY028B	2
Cyclotella radiosa	CY019A	2
Diploneis marginestriata	DP012A	2
Fragilaria parasitica var. subconstricta	FR045E	2
Gomphonema pseudoauger	GO055A	2
Navicula constans	NA171A	2
Navicula reinhardtii	NA026A	2
Navicula veneta	NA054A	2
Nitzschia capitellata	NI028A	2
Nitzschia inconspicua	NI043A	2
Nitzschia intermedia	NI044A	2
Achnanthes biasoletiana	AC037A	1
Aulacoseira granulata	AU003A	1
Brachysira vitrea	BR001A	1
Cocconeis thumensis	CO009A	1
Cyclotella atomus	CY011A	1
Cymbella gracilis	CM018A	1
Cymbella naviculiformis	CM009A	1
Diatoma mesodon	DT021A	1
Didymosphenia geminata	DD001A	1
Diploneis elliptica	DP009A	1
Eunotia exigua	EU009A	1
Fragilaria parasitica	FR045A	1
Hannaea arcus	HN001A	1
Navicula costulata	NA299A	1
Navicula gastrum	NA065A	1
Navicula protracta	NA047A	1
Navicula rhyncocephala	NA008A	1
Nitzschia constricta	NI083A	1
Nitzschia hungarica	NI007A	1
Pinnularia sp.	PI9999	1
Stauroneis anceps	SA001A	1
Surirella minuta	SU016A	1
Synedra tenera	SY013A	1
Tabellaria flocculosa	TA001A	1
Tryblionella sp.	TF9999	1

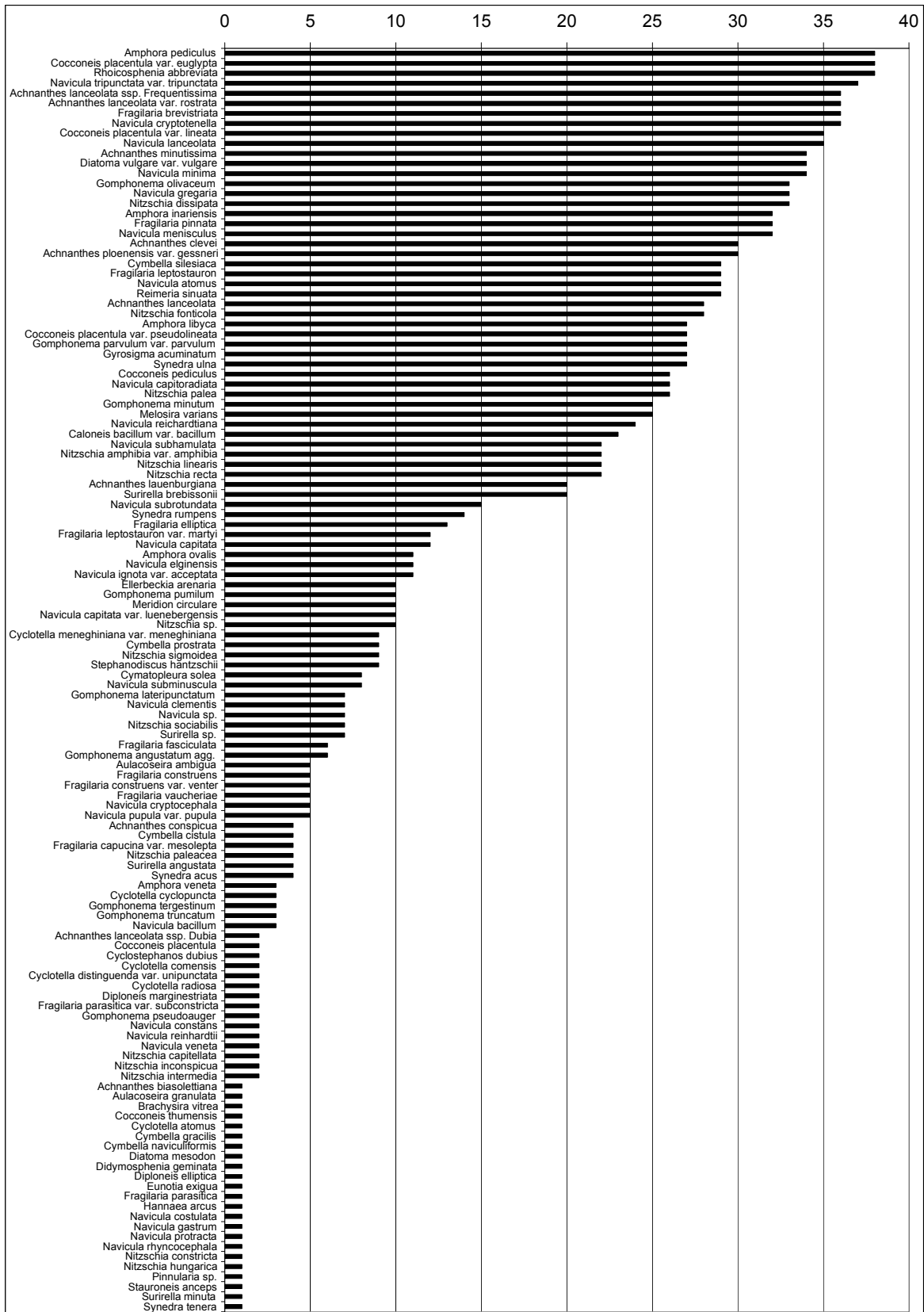


Figure 9 River Frome. Diatom species and number of occurrences.

Table 10 River Frome. Trophic Diatom Index Scores

Sample Date	ECRC SampleID	Alkalinity	ECN Section	Sample sum	Sum TDI4	TDI4	eTDI4	EQR TDI4	Class TDI4	% Planktic	% Motile	% Organic tolerant	% Saline	Comment TDI4
16/04/1997	FROM001	200	S01	619.0	615.0	69.5	64.05	0.85	Good	0.65	27.63	19.39	0.00	Alkalinity > 150, value set to 150 mg/l
15/05/1997	FROM007	200	S01	558.5	558.5	68.9	64.05	0.86	Good	0.00	54.43	29.99	0.54	Alkalinity > 150, value set to 150 mg/l
08/07/1997	FROM008	200	S01	554.5	554.5	72.1	64.05	0.78	Good	0.00	62.31	37.24	0.36	Alkalinity > 150, value set to 150 mg/l
28/08/1997	FROM010	200	S01	318.5	313.5	71.7	64.05	0.79	Good	1.57	48.35	20.72	0.94	Alkalinity > 150, value set to 150 mg/l
17/10/1997	FROM013	200	S01	563.5	561.5	67.6	64.05	0.90	Good	0.35	42.32	21.47	0.35	Alkalinity > 150, value set to 150 mg/l
02/06/1998	FROM016	200	S01	559.5	558.5	67.0	64.05	0.92	Good	0.18	34.23	24.84	0.00	Alkalinity > 150, value set to 150 mg/l
13/08/1998	FROM017	200	S01	612.0	612.0	74.9	64.05	0.70	Moderate	0.00	23.12	5.47	0.00	Alkalinity > 150, value set to 150 mg/l
17/09/1998	FROM020	200	S01	594.0	592.0	76.4	64.05	0.66	Moderate	0.00	14.65	3.96	0.67	Alkalinity > 150, value set to 150 mg/l
17/11/1998	FROM023	200	S01	508.0	508.0	83.5	64.05	0.46	Poor	0.00	10.83	5.51	0.00	Alkalinity > 150, value set to 150 mg/l
29/04/1999	FROM024	200	S01	555.0	551.0	79.9	64.05	0.56	Moderate	0.72	38.38	28.29	0.18	Alkalinity > 150, value set to 150 mg/l
13/05/1999	FROM036	200	S01	555.0	552.0	75.7	64.05	0.68	Moderate	0.54	67.84	56.13	0.00	Alkalinity > 150, value set to 150 mg/l
15/06/1999	FROM038	200	S01	490.0	490.0	83.1	64.05	0.47	Poor	0.00	11.84	6.84	0.51	Alkalinity > 150, value set to 150 mg/l
22/07/1999	FROM025	200	S01	544.5	542.5	68.4	64.05	0.88	Good	0.37	29.02	8.54	0.73	Alkalinity > 150, value set to 150 mg/l
07/09/1999	FROM041	200	S01	494.0	494.0	73.7	64.05	0.73	Moderate	0.00	19.43	6.48	0.20	Alkalinity > 150, value set to 150 mg/l
03/11/1999	FROM044	200	S01	619.5	618.5	74.5	64.05	0.71	Moderate	0.16	18.08	6.62	0.00	Alkalinity > 150, value set to 150 mg/l
07/06/2000	FROM047	200	S01	492.5	489.5	68.8	64.05	0.87	Good	0.41	26.29	16.45	0.61	Alkalinity > 150, value set to 150 mg/l
24/10/2000	FROM048	200	S01	569.0	564.0	73.9	64.05	0.73	Moderate	0.70	21.35	8.96	0.09	Alkalinity > 150, value set to 150 mg/l
10/07/2001	FROM051	200	S01	614.5	612.5	70.4	64.05	0.82	Good	0.33	56.88	36.78	0.65	Alkalinity > 150, value set to 150 mg/l
10/10/2001	FROM054	200	S01	475.5	475.5	74.3	64.05	0.71	Moderate	0.00	26.81	11.04	0.21	Alkalinity > 150, value set to 150 mg/l
29/04/2002	FROM057	200	S01	516.5	512.5	82.4	64.05	0.49	Poor	0.77	41.63	25.94	0.10	Alkalinity > 150, value set to 150 mg/l
28/08/2002	FROM060	200	S01	465.5	464.5	70.0	64.05	0.83	Good	0.21	29.75	11.71	0.43	Alkalinity > 150, value set to 150 mg/l

29/04/2003	FROM063	200	S01	517.0	514.0	68.3	64.05	0.88	Good	0.39	42.75	27.37	0.39	Alkalinity > 150, value set to 150 mg/l
20/08/2003	FROM066	200	S01	453.0	453.0	73.4	64.05	0.74	Moderate	0.00	39.74	8.61	1.55	Alkalinity > 150, value set to 150 mg/l
11/11/2003	FROM069	200	S01	498.0	498.0	74.6	64.05	0.71	Moderate	0.00	38.35	13.05	1.61	Alkalinity > 150, value set to 150 mg/l
14/04/2004	FROM093	200	S01	495.0	495.0	77.6	64.05	0.62	Moderate	0.00	40.30	18.08	0.61	Alkalinity > 150, value set to 150 mg/l
27/07/2004	FROM096	200	S01	489.5	486.5	87.3	64.05	0.35	Poor	0.61	7.97	2.04	0.00	Alkalinity > 150, value set to 150 mg/l
23/09/2004	FROM086	200	S01	536.5	535.5	73.4	64.05	0.74	Moderate	0.19	30.38	7.83	0.00	Alkalinity > 150, value set to 150 mg/l
16/05/2005	FROM080	200	S01	518.0	517.0	76.8	64.05	0.65	Moderate	0.19	45.95	16.22	1.35	Alkalinity > 150, value set to 150 mg/l
25/07/2005	FROM090	200	S01	58.0	58.0	71.8	64.05	0.79	Good	0.00	8.62	0.00	0.00	Alkalinity > 150, value set to 150 mg/l
05/10/2005	FROM074	200	S01	481.0	476.0	77.9	64.05	0.62	Moderate	1.04	21.41	11.12	1.46	Alkalinity > 150, value set to 150 mg/l
05/05/2006	FROM072	200	S01	380.5	379.5	84.9	64.05	0.42	Poor	0.00	22.21	4.99	0.00	Alkalinity > 150, value set to 150 mg/l
25/07/2006	FROM077	200	S01	547.0	547.0	73.8	64.05	0.73	Moderate	0.00	38.39	8.87	0.18	Alkalinity > 150, value set to 150 mg/l
11/09/2006	FROM083	200	S01	495.0	495.0	79.5	64.05	0.57	Moderate	0.00	31.01	4.55	0.40	Alkalinity > 150, value set to 150 mg/l
10/04/2007	FROM099	200	S01	573.5	572.5	70.1	64.05	0.83	Good	0.17	59.90	51.70	0.00	Alkalinity > 150, value set to 150 mg/l
06/08/2007	FROM102	200	S01	526.5	525.5	81.9	64.05	0.50	Moderate	0.19	36.85	3.89	0.95	Alkalinity > 150, value set to 150 mg/l
24/09/2007	FROM105	200	S01	254.0	254.0	81.5	64.05	0.51	Moderate	0.00	19.49	0.79	0.00	Alkalinity > 150, value set to 150 mg/l
04/04/2008	FROM108	200	S01	29.5	29.5	64.6	64.05	0.99	Good	0.00	6.78	0.00	0.00	Alkalinity > 150, value set to 150 mg/l
20/08/2008	FROM111	200	S01	215.5	213.5	84.1	64.05	0.44	Poor	0.46	13.69	3.25	0.00	Alkalinity > 150, value set to 150 mg/l
01/10/2008	FROM114	200	S01	153.5	153.5	70.1	64.05	0.83	Good	0.00	14.33	1.30	0.65	Alkalinity > 150, value set to 150 mg/l

8 References

Battarbee, R. W., Jones, V. J., Flower, R. J., Cameron, N. G., Bennion, H., Carvalho, L. & Juggins, S. (2001) Diatoms. In: Tracking Environmental Change Using Lake Sediments: Volume 3. Terrestrial, Algal and Siliceous Indicators, 155-202, Kluwer Academic Publishers, Dordrecht, The Netherlands.

Juggins, S. (2007) C2 Version 1.5 User guide. Software for ecological and palaeoecological data analysis and visualisation. Newcastle University, Newcastle upon Tyne, UK. 73pp.

Kelly, M.G., Juggins, S., Bennion, H., Burgess, A., Yallop, M., Hirst, H., King, L., Jamieson, J., Guthrie, R., Rippey, B. (2011). DARLEQII: Diatom Assessment of River and Lake Ecological Quality. Version 2.0.11. Software for Freshwater Status Classification using benthic diatoms. User Guide. The DARLEQ consortium, UK. 9pp.

Sykes, J. M., Lane, A. M. J., & George, D. G. (editors). (1999). The United Kingdom Environmental Change Network: Protocols for Standard Measurements at Freshwater Sites. ISBN 187039349X. Centre for Ecology and Hydrology, Grange-over-Sands. 134pp.

9 Appendices

Appendix 1. ECN DiatomSamples Prepared and Archived.

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
BIRNB019	25/04/2007	S01	R27	AV	C4.22	
BIRNB020	25/04/2007	S02	R27	AV	C4.23	
BIRNB021	25/04/2007	S03	R27	AV	C4.24	
BIRNB022	15/08/2007	S01	R27	AZ	C3:91	
BIRNB023	15/08/2007	S02	R27	AZ	C3:92	
BIRNB024	15/08/2007	S03	R27	AZ	C3:93	
BIRNB025	24/10/2007	S01	R27	AZ	C4:107	
BIRNB026	24/10/2007	S02	R27	AZ	C4:108	
BIRNB027	24/10/2007	S03	R27	AZ	C4:109	
BIRNB028	24/04/2008	S01	R27	BB	D1:15	
BIRNB029	24/04/2008	S02	R27	BB	D1:16	
BIRNB030	24/04/2008	S03	R27	BB	D1:17	
BIRNB031	29/07/2008	S01	R27	BC	D1:45	
BIRNB032	29/07/2008	S02	R27	BC	D1:46	
BIRNB033	29/07/2008	S03	R27	BC	D1:47	
BIRNB034	22/10/2008	S01	R27	AX	D1:98	
BIRNB035	22/10/2008	S02	R27	AX	D1:99	
BIRNB036	22/10/2008	S03	R27	AX	D1:100	
BRBR079	10/07/2007	S01	R09	AV	C4.39	
BRBR080	10/07/2007	S02	R09	AV	C4.40	
BRBR081	10/07/2007	S03	R09	AV	C4.41	
BRBR082	23/10/2007	S01	R09	AZ	C4:104	
BRBR083	23/10/2007	S02	R09	AZ	C4:105	
BRBR084	23/10/2007	S03	R09	AZ	C4:106	
BRBR085	28/05/2008	S01	R09	BB	D1:33	
BRBR086	28/05/2008	S02	R09	BB	D1:34	
BRBR087	28/05/2008	S03	R09	BB	D1:35	
BRBR088	12/08/2008	S01	R09	AX	D1:56	
BRBR089	12/08/2008	S02	R09	AX	D1:57	
BRBR090	12/08/2008	S03	R09	AX	D1:58	
BRBR091	13/11/2008	S01	R09	AX	D1:106	
BRBR092	13/11/2008	S02	R09	AX	D1:107	
BRBR093	13/11/2008	S03	R09	AX	D1:108	
BRBR094	24/04/2009	S01	R09	BF	D4:44	
BRBR095	24/04/2009	S02	R09	BF	D4:45	
BRBR096	24/04/2009	S03	R09	BF	D4:46	
BRBR097	18/08/2009	S01	R09	BF	D4:47	
BRBR098	18/08/2009	S02	R09	BF	D4:48	
BRBR099	18/08/2009	S03	R09	BF	D4:49	
BRBR100	19/10/2009	S01	R09	BF	D4:50	
BRBR101	19/10/2009	S02	R09	BF	D4:51	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
BRBR102	19/10/2009	S03	R09	BF	D4:52	
BRBR103	29/04/2010	S01	R09	BF	D4:53	
BRBR104	29/04/2010	S02	R09	BF	D4:54	
BRBR105	29/04/2010	S03	R09	BF	D4:55	
BRBR106	21/07/2010	S01	R09	BF	D4:56	
BRBR107	21/07/2010	S02	R09	BF	D4:57	
BRBR108	21/07/2010	S03	R09	BF	D4:58	
BRBR109	07/10/2010	S01	R09			Sample back to EA.
BRBR110	07/10/2010	S02	R09	BF	D4:59	
BRBR111	07/10/2010	S03	R09	BF	D4:60	
BUSHM001	09/04/2008	S01	R21	BB	D1:04	F10449
BUSHM002	12/06/2008	S01	R21	BC	D1:36	F10449
BUSHM003	11/06/2009	S01	R21	AY	D2:18	F10449
BUSHM004	05/10/2010	S01	R21	BC	D3:17	F10449
BUSHM005	20/04/2011	S01	R21	BC	D3:47	F10449
CLYD025	30/08/2007	S01	R13	AZ	C3:111	Only 1 sample
CLYD026	29/08/2008	S01	R13	AX	D1:69	Only 1 sample
CLYD027	27/08/2009	S01	R13	AY	D2:52	Only 1 sample Only 1 sample .
CLYD028	19/08/2010	S01	R13	BC	D3:09	Sample dried out and was re-wetted. Only 1 sample per visit - S01. Sample prepped by mistake - slide and vial provided
COLL021	01/05/2007	S01	R23	AV	C4.27	Only 1 sample per visit - S01
COLL022	23/08/2007	S01	R23	AZ	C3:100	Only 1 sample per visit - S01
COLL023	31/10/2007	S01	R23	AZ	C4:110	Only 1 sample per visit - S01
COLL024	14/05/2008	S01	R23	BB	D1:28	Only 1 sample per visit - S01
COLL025	18/09/2008	S01	R23	AX	D1:83	Only 1 sample per visit - S01
COLL026	25/11/2008	S01	R23	AX	D1:109	Only 1 sample per visit - S01
COLL027	22/05/2009	S01	R23	AY	D2:09	Only 1 sample per visit - S01
COLL028	03/09/2009	S01	R23	AY	D2:55	Only 1 sample per visit - S01
COLL029	17/11/2009	S01	R23	BA	D2:92	Only 1 sample per visit - S01
COQT018	22/07/2007	S01	R03	AZ	C3:81	Bottom of site Labelled S01. S01-S03 allocated according to grid refs provided for COQT001-003 ie S01 downstream.
COQT019	22/07/2007	S02	R03	AZ	C3:82	Middle of site Labelled S01
COQT020	22/07/2007	S03	R03	AZ	C3:83	Top end of site. Labelled S01
COQT021	09/05/2008	S03	R03	BB	D1:27	S01 and S02 missing'

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
COQT022	27/08/2008	S01	R03	AX	D1:67	S02 missing
COQT023	27/08/2008	S03	R03	AX	D1:68	S02 missing
COQT024	30/10/2008	S01	R03	AX	D1:102	
COQT025	30/10/2008	S02	R03	AX	D1:103	
COQT026	30/10/2008	S03	R03	AX	D1:104	
COQT027	25/03/2009	S01	R03	AX	D1:110	Bottom of site Labelled S01.
COQT028	25/03/2009	S02	R03	AX	D1:111	Middle of site Labelled S02
COQT029	25/03/2009	S03	R03	AX	D1:112	Top of site. Labelled S03
COQT030	03/08/2009	S01	R03	AY	D2:37	Bottom of site Labelled S01.
COQT031	03/08/2009	S02	R03	AY	D2:38	Middle of site Labelled S02
COQT032	03/08/2009	S03	R03	AY	D2:39	Top of site. Labelled S03
COQT033	19/10/2009	S01	R03	AY	D2:79	Bottom of site Labelled S01.
COQT034	19/10/2009	S02	R03	AY	D2:80	Middle of site Labelled S02
COQT035	19/10/2009	S03	R03	AY	D2:81	Top of site. Labelled S03
CRNG025	20/08/2007	S01	R07	AO	4.01	Thunder Bridge
CRNG026	20/08/2007	S02	R07	AO	4.02	2nd Bridge
CRNG027	20/08/2007	S03	R07	AO	4.03	3rd Bridge
CRNG034	08/09/2008	S01	R07	AX	D1:76	Thunder Bridge
CRNG035	08/09/2008	S02	R07	AX	D1:77	2nd Bridge
CRNG036	08/09/2008	S03	R07	AX	D1:78	3rd Bridge
CRNG037	13/08/2009	S01	R07	AY	D2:45	Thunder Bridge
CRNG038	13/08/2009	S02	R07	AY	D2:46	2nd Bridge
CRNG039	13/08/2009	S03	R07	AY	D2:47	3rd Bridge
DAVA028	24/09/2009	S02	L13	AY	D2:63	350m left of Monandavan Burn, Aboyne.
DAVA029	24/09/2009	S03	L13	AY	D2:64	nr shore of SW bay, Aboyne
DAVA030	24/09/2009	S05	L13	AY	D2:65	NE of Boat House, nr shore, Aboyne
DAVA031	07/10/2010	S02	L13	BC	D3:18	350m left of Monandavan Burn, Aboyne.
DAVA032	07/10/2010	S03	L13	BC	D3:19	nr shore of SW bay, Aboyne
DAVA033	07/10/2010	S05	L13	BC	D3:20	NE of Boat House, nr shore, Aboyne
DAVA034	22/09/2011	S02	L13	BC	D3:84	350m left of Monandavan Burn, Aboyne.
DAVA035	22/09/2011	S03	L13	BC	D3:85	nr shore of SW bay, Aboyne
DAVA036	22/09/2011	S05	L13	BC	D3:86	NE of Boat House, nr

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
DAVA037	20/09/2012	S02	L13	BA	D4:05	shore, Aboyne
DAVA038	20/09/2012	S03	L13	BA	D4:06	350m left of
DAVA039	20/09/2012	S05	L13	BA	D4:07	Monandavan Burn, (SE).
DAVA046	20/09/2008	S02	L13	BF	D4:84	nr SW bay (SW)
DAVA047	20/09/2008	S03	L13	BF	D4:85	Boat House (N)
DAVA048	20/09/2008	S05	L13	BF	D4:86	350m left of
ECUM067	24/04/2008	S01	R01	BE		Monandavan Burn, (SE).
ECUM068	24/04/2008	S02	R01	BE		nr SW bay (SW)
ECUM069	24/04/2008	S03	R01	BE		Boat House (N)
ECUM070	03/07/2008	S01	R01	BE		
ECUM071	03/07/2008	S02	R01	BE		
ECUM072	03/07/2008	S03	R01	BE		
ECUM073	25/09/2008	S01	R01	BE		
ECUM074	25/09/2008	S02	R01	BE		
ECUM075	25/09/2008	S03	R01	BE		
ECUM076	19/03/2009	S01	R01	BE		
ECUM077	19/03/2009	S02	R01	BE		
ECUM078	19/03/2009	S03	R01	BE		
ECUM079	29/09/2009	S01	R01	BE		
ECUM080	29/09/2009	S02	R01	BE		
ECUM081	29/09/2009	S03	R01	BE		
ECUM082	23/04/2007	S01	R01	BE		
ECUM083	23/04/2007	S02	R01	BE		
ECUM084	23/04/2007	S03	R01	BE		
ECUM085	30/08/2007	S01	R01	BE		
ECUM086	30/08/2007	S02	R01	BE		
ECUM087	30/08/2007	S03	R01	BE		
ECUM088	15/10/2007	S01	R01	BE		
ECUM089	15/10/2007	S02	R01	BE		
ECUM090	15/10/2007	S03	R01	BE		
EDEK028	11/09/2007	S01	R25	AZ	C3:113	u/s
EDEK029	11/09/2007	S02	R25	AZ	C3:114	centre
EDEK030	11/09/2007	S03	R25	AZ	C3:115	d/s
EDEK031	11/09/2008	S01	R25	AX	D1:79	u/s
EDEK032	11/09/2008	S02	R25	AX	D1:80	centre
EDEK033	11/09/2008	S03	R25	AX	D1:81	d/s
EDEK034	01/10/2009	S01	R25	AY	D2:73	u/s
EDEK035	01/10/2009	S02	R25	AY	D2:74	centre
EDEK036	01/10/2009	S03	R25	AY	D2:75	d/s
EDEK037	06/09/2010	S01	R25	BC	D3:12	u/s
EDEK038	06/09/2010	S02	R25	BC	D3:13	centre
EDEK039	06/09/2010	S03	R25	BC	D3:14	d/s
ESK071	22/05/2007	S01	R02	AV	C4.35	
ESK072	22/05/2007	S02	R02	AV	C4.36	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
ESK073	22/05/2007	S03	R02	AV	C4:37	
ESK074	29/08/2007	S02	R02	AZ	C3:104	No S01 or S03 due to 'lack of Diatoms'
ESK075	08/11/2007	S02	R02	AZ	C4:111	No S01 or S03 due to 'lack of Diatoms'
ESK076	07/05/2009	S01	R02			No S02 or supporting documentation. Sample missing
ESK077	07/05/2009	S03	R02	AY	D2:08	No S02 or supporting documentation
ESTH052	11/04/2007	S01	L05	AV	C4.13	South East corner
ESTH053	11/04/2007	S02	L05	AV	C4.14	North West Corner
ESTH054	11/04/2007	S03	L05	AV	C4.15	East shore
ESTH055	12/07/2007	S01	L05	AV	C4.45	South East corner
ESTH056	12/07/2007	S02	L05	AV	C4.46	North West Corner
ESTH057	12/07/2007	S03	L05	AZ	C3:77	East shore
ESTH058	12/10/2007	S01	L05	AZ	C3:121	South East corner
ESTH059	12/10/2007	S02	L05	AZ	C3:122	North West Corner
ESTH060	12/10/2007	S03	L05	AZ	C3:123	East shore
ESTH061	16/04/2008	S01	L05	BB	D1:08	South East corner
ESTH062	16/04/2008	S02	L05	BB	D1:09	North West Corner
ESTH063	16/04/2008	S03	L05	BB	D1:10	East shore
ESTH064	30/07/2008	S01	L05	BC	D1:48	South East corner
ESTH065	30/07/2008	S02	L05	BC	D1:49	North West Corner
ESTH066	30/07/2008	S03	L05	BC	D1:50	East shore
ESTH067	15/04/2009	S01	L05	AX	D1:116	South East corner
ESTH068	15/04/2009	S02	L05	AX	D1:117	North West Corner
ESTH069	15/04/2009	S03	L05	AX	D1:118	East shore
ESTH070	14/07/2009	S01	L05	AY	D2:21	South East corner
ESTH071	14/07/2009	S02	L05	AY	D2:22	North West Corner
ESTH072	14/07/2009	S03	L05	AY	D2:23	East shore
ESTH073	22/10/2009	S01	L05	BA	D2:83	South East corner
ESTH074	22/10/2009	S02	L05	BA	D2:84	North West Corner
ESTH075	22/10/2009	S03	L05	BA	D2:85	East shore
ESTH076	14/04/2010	S01	L05	BC	D2:98	South East corner
ESTH077	14/04/2010	S02	L05	BC	D2:99	North West Corner
ESTH078	14/04/2010	S03	L05	BC	D2:100	East shore
ESTH079	07/07/2010	S01	L05	BC	D2:117	South East corner
ESTH080	07/07/2010	S02	L05	BC	D2:118	North West Corner
ESTH081	07/07/2010	S03	L05	BC	D2:119	East shore
ESTH082	13/10/2010	S01	L05	BD	D3:30	South East corner
ESTH083	13/10/2010	S02	L05	BD	D3:31	North West Corner
ESTH084	13/10/2010	S03	L05	BD	D3:32	East shore
ESTH086	20/04/2011	S01	L05	BC	D3:48	South East corner. ESTH085 missed out by accident.
ESTH087	20/04/2011	S02	L05	BC	D3:49	North West Corner
ESTH088	20/04/2011	S03	L05	BC	D3:50	East shore
ESTH089	22/07/2011	S01	L05	BC	D3:64	South East corner
ESTH090	22/07/2011	S02	L05	BC	D3:65	North West Corner

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
ESTH091	22/07/2011	S03	L05	BC	D3:66	East shore
ESTH092	21/10/2011	S01	L05	BC	D3:91	South East corner
ESTH093	21/10/2011	S02	L05	BD	D3:92	North West Corner
ESTH094	21/10/2011	S03	L05	BD	D3:93	East shore
ESTH095	18/04/2012	S01	L05	BA	D3:100	South East corner
ESTH096	18/04/2012	S02	L05	BA	D3:101	North West Corner
ESTH097	18/04/2012	S03	L05	BA	D3:102	East shore
ESTH098	18/07/2012	S01	L05	BA	D3:114	South East corner
ESTH099	18/07/2012	S02	L05	BA	D3:115	North West Corner
ESTH100	18/07/2012	S03	L05	BA	D3:116	East shore
ESTH101	18/10/2012	S01	L05	BA	D4:20	South East corner
ESTH102	18/10/2012	S02	L05	BA	D4:21	North West Corner
ESTH103	18/10/2012	S03	L05	BA	D4:22	East shore
EWE014	12/09/2007	S01	R26	AO	4.04	
EWE015	12/09/2007	S02	R26	AO	4.05	
EWE016	12/09/2007	S03	R26	AO	4.06	
EWE017	03/07/2008	S01	R26	BC	D1:37	
EWE018	03/07/2008	S03	R26	BC	D1:38	
EWE019	16/04/2009	S01	R26	AX	D2:01	
EWE020	16/04/2009	S03	R26	AX	D2:02	
EWE021	09/07/2009	S01	R26	AY	D2:19	
EWE022	09/07/2009	S03	R26	AY	D2:20	
EWE023	23/09/2009	S01	R26	AY	D2:61	
EWE024	23/09/2009	S03	R26	AY	D2:62	
EWE025	18/05/2010	S01	R26	BC	D2:105	
EWE026	18/05/2010	S02	R26	BC	D2:106	
EWE027	15/07/2010	S01	R26	BC	D3:05	
EWE028	15/07/2010	S03	R26	BC	D3:06	
EWE029	30/09/2010	S01	R26	BC	D3:15	
EWE030	30/09/2010	S03	R26	BC	D3:16	
FOCH018	03/04/2007	S01	R15	AV	C4.01	Fochabers 50m u/s bridge
FOCH019	03/04/2007	S02	R15	AV	C4.02	Fochabers 25m u/s bridge
FOCH020	03/04/2007	S03	R15	AV	C4.03	Fochabers 0m u/s bridge
FOCH021	29/08/2007	S01	R15	AZ	C3:105	Fochabers 50m u/s bridge
FOCH022	29/08/2007	S02	R15	AZ	C3:106	Fochabers 25m u/s bridge
FOCH023	29/08/2007	S03	R15	AZ	C3:107	Fochabers 0m u/s bridge
FOCH024	17/10/2007	S01	R15	AZ	C4:98	Fochabers 50m u/s bridge
FOCH025	17/10/2007	S02	R15	AZ	C4:99	Fochabers 25m u/s bridge
FOCH026	17/10/2007	S03	R15	AZ	C4:100	Fochabers 0m u/s bridge
FOCH030	07/05/2008	S01	R15	BB	D1:21	u/s Fochabers
FOCH031	07/05/2008	S02	R15	BB	D1:22	R. Spey u/s Fochabers

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
FOCH032	07/05/2008	S03	R15	BB	D1:23	STW (HM/ECN) u/s Fochabers No location info - assigned S01 at random. Only 1 samp from date
FOCH033	13/08/2008	S01	R15	AX	D1:59	R. Spey u/s Fochabers STW (HM/ECN)
FOCH034	01/06/2009	S01	R15	AY	D2:15	R. Spey u/s Fochabers STW (HM/ECN)
FOCH035	01/06/2009	S02	R15	AY	D2:16	R. Spey u/s Fochabers STW (HM/ECN) R. Spey u/s Fochabers STW (HM/ECN) no location info -assigned S03
FOCH036	01/06/2009	S03	R15	AY	D2:17	R. Spey u/s Fochabers STW (HM/ECN) Only 1 samp from date. No S01 or S03
FOCH037	16/07/2009	S02	R15	AY	D2:27	
FOCH038	29/07/2009	S01	R15	AY	D2:34	u/s centre, R. Spey u/s Fochabers STW (HM/ECN)
FOCH039	29/07/2009	S02	R15	AY	D2:35	d/s
FOCH040	29/07/2009	S03	R15	AY	D2:36	
FOCH041	16/09/2009	S01	R15	AY	D2:56	upstream No S02
FOCH042	16/09/2009	S03	R15	AY	D2:57	downstream No S02 R. Spey u/s Fochabers STW (HM/ECN)
FOCH043	20/05/2010	S01	R15	BC	D2:107	
FOCH044	20/05/2010	S02	R15	BC	D2:108	
FOCH045	20/05/2010	S03	R15	BC	D2:109	
FOCH046	14/07/2010	S01	R15	BC	D2:123	R. Spey u/s Fochabers STW (HM/ECN)
FOCH047	14/07/2010	S02	R15	BC	D2:124	R. Spey u/s Fochabers STW (HM/ECN)
FOCH048	14/07/2010	S03	R15	BC	D3:01	
FOCH049	14/07/2010	S02	R15			R. Spey u/s Fochabers STW (HM/ECN) Duplicate of S02 Do not prep.
FOCH050	13/10/2010	S01	R15	BD	D3:33	
FOCH051	13/10/2010	S02	R15	BD	D3:34	R. Spey u/s Fochabers STW (HM/ECN)
FOCH052	13/10/2010	S03	R15	BD	D3:35	
FOCH053	19/04/2011	S02	R15	BC	D3:42	No location data and no date. Assigned S02 and 19/04/11 after email to SEPA u/s, R. Spey u/s Fochabers STW (HM/ECN)
FOCH054	18/07/2011	S01	R15	BC	D3:58	mid, R. Spey u/s Fochabers STW (HM/ECN)
FOCH055	18/07/2011	S02	R15	BC	D3:59	R. Spey u/s Fochabers STW (HM/ECN)

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
FOCH056	18/07/2011	S03	R15	BC	D3:60	d/s, R. Spey u/s Fochabers STW (HM/ECN)
FOCH057	05/09/2011	S01	R15	BC	D3:78	u/s, R. Spey u/s Fochabers STW (HM/ECN)
FOCH058	05/09/2011	S02	R15	BC	D3:79	mid, R. Spey u/s Fochabers STW (HM/ECN)
FOCH059	05/09/2011	S03	R15	BC	D3:80	d/s, R. Spey u/s Fochabers STW (HM/ECN)
FOCH060	24/05/2012	S01	R15	BA	D3:111	Fochabers 50m u/s bridge
FOCH061	24/05/2012	S02	R15	BA	D3:112	Fochabers 25m u/s bridge
FOCH062	24/05/2012	S03	R15	BA	D3:113	Fochabers 0m u/s bridge
FOCH063	09/08/2012	S01	R15	BA	D4:02	Fochabers 50m u/s bridge
FOCH064	09/08/2012	S02	R15	BA	D4:03	Fochabers 25m u/s bridge
FOCH065	09/08/2012	S03	R15	BA	D4:04	Fochabers 0m u/s bridge
FOCH066	09/10/2012	S01	R15	BA	D4:11	Fochabers 50m u/s bridge
FOCH067	09/10/2012	S02	R15	BA	D4:12	Fochabers 25m u/s bridge
FOCH068	09/10/2012	S03	R15	BA	D4:13	Fochabers 0m u/s bridge
FROM099	10/04/2007	S01	R08	AV	C4.07	
FROM100	10/04/2007	S02	R08	AV	C4.08	
FROM101	10/04/2007	S03	R08	AV	C4.09	
FROM102	06/08/2007	S01	R08	BE		
FROM103	06/08/2007	S02	R08	BE		
FROM104	06/08/2007	S03	R08	BE		
FROM105	24/09/2007	S01	R08	BE		Low diatom count.
FROM106	24/09/2007	S02	R08	BE		
FROM107	24/09/2007	S03	R08	BE		
FROM108	04/04/2008	S01	R08	BE		No S01/S02/S03 details on bottles & no supporting documentation. S01/S02/S03 allocated by EMS at random
FROM109	04/04/2008	S02	R08	BE		No S01/S02/S03 details on bottles & no supporting documentation. S01/S02/S03 allocated by EMS at random
FROM110	04/04/2008	S03	R08	BE		No S01/S02/S03 details on bottles & no

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
						supporting documentation. S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM111	20/08/2008	S01	R08	BE		S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM112	20/08/2008	S02	R08	BE		S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM113	20/08/2008	S03	R08	BE		S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM114	01/10/2008	S01	R08	BE		S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM115	01/10/2008	S02	R08	BE		S01/S02/S03 allocated by EMS at random No S01/S02/S03 details on bottles & no supporting documentation.
FROM116	01/10/2008	S03	R08	BE		S01/S02/S03 allocated by EMS at random
KEMB081	16/04/2007	S01	R17	AV	C4.19	
KEMB082	16/04/2007	S02	R17	AV	C4.20	
KEMB083	16/04/2007	S03	R17	AV	C4.21	
KEMB084	08/08/2007	S01	R17	AZ	C3:88	
KEMB085	08/08/2007	S02	R17	AZ	C3:89	
KEMB086	08/08/2007	S03	R17	AZ	C3:90	
KEMB087	01/04/2008	S01	R17	BB	D1:02	
KEMB089	01/04/2008	S03	R17	BB	D1:03	
KEMB090	17/07/2008	S01	R17	BC	D1:39	
KEMB091	17/07/2008	S02	R17	BC	D1:40	
KEMB092	17/07/2008	S03	R17	BC	D1:41	
KEMB094	25/09/2008	S02	R17	AX	D1:84	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
KEMB095	25/09/2008	S03	R17	AX	D1:85	
KEMB096	15/04/2009	S01	R17	AX	D1:119	
KEMB097	15/04/2009	S02	R17	AX	D1:120	
KEMB098	15/04/2009	S03	R17	AX	D1:121	
KEMB099	07/08/2009	S01	R17	AY	D2:42	
KEMB100	07/08/2009	S02	R17	AY	D2:43	
KEMB101	07/08/2009	S03	R17	AY	D2:44	
KEMB102	30/10/2009	S01	R17	BA	D2:89	
KEMB103	30/10/2009	S02	R17	BA	D2:90	
KEMB104	30/10/2009	S03	R17	BA	D2:91	
KINO026	20/10/2008	S01	L14	AX	D1:95	Between walls. (N) Bay S. of Lilly Bay (NE).
KINO027	20/10/2008	S02	L14	AX	D1:96	Meikle Kinord (SW).
KINO028	20/10/2008	S03	L14	AX	D1:97	North Shore, N of Crannog Island, Dinnet, Aboyne
KINO029	24/09/2009	S01	L14	AY	D2:66	East shore, E of Crannog Island, Dinnet, Aboyne
KINO030	24/09/2009	S02	L14	AY	D2:67	NW of Meikle Kinord, Dinnet, Aboyne
KINO031	24/09/2009	S03	L14	AY	D2:68	North Shore, N of Crannog Island, Dinnet, Aboyne
KINO032	07/10/2010	S01	L14	BC	D3:21	East shore, E of Crannog Island, Dinnet, Aboyne
KINO033	07/10/2010	S02	L14	BD	D3:22	NW of Meikle Kinord, Dinnet, Aboyne
KINO034	07/10/2010	S03	L14	BD	D3:23	North Shore, N of Crannog Island, Dinnet, Aboyne
KINO035	22/09/2011	S01	L14	BC	D3:87	East shore, E of Crannog Island, Dinnet, Aboyne
KINO036	22/09/2011	S02	L14	BC	D3:88	NW of Meikle Kinord, Dinnet, Aboyne
KINO037	22/09/2011	S03	L14	BC	D3:89	N of Crannog (N) E of Crannog Island,(NE)
KINO038	20/09/2012	S01	L14	BA	D4:08	Meikle Kinord (SW)
KINO039	20/09/2012	S02	L14	BA	D4:09	Only 1 sample per visit - S01
KINO040	20/09/2012	S03	L14	BA	D4:10	Only 1 sample per visit - S01
LAMB022	16/05/2007	S01	R24	AV	C4:31	Only 1 sample per visit - S01
LAMB023	06/09/2007	S01	R24	AZ	C3:112	Only 1 sample per visit - S01
LAMB024	29/11/2007	S01	R24	BB	C4:115	Only 1 sample per visit - S01
LAMB025	26/03/2008	S01	R24	BB	D1:01	Only 1 sample per visit - S01
LAMB026	11/09/2008	S01	R24	AX	D1:82	Only 1 sample per visit - S01

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
LAMB027	12/11/2008	S01	R24	AX	D1:105	Only 1 sample per visit - S01
LAMB028	27/05/2009	S01	R24	AY	D2:14	Only 1 sample per visit - S01
LAMB029	13/08/2009	S01	R24	AY	D2:48	Only 1 sample per visit - S01
LAMB030	19/10/2009	S01	R24	BA	D2:82	Only 1 sample per visit - S01. Prepped slide provided
LARK037	14/05/2008	S01	R20	BB	D1:29	F10663
LARK038	06/08/2008	S01	R20	AX	D1:55	F10663
LARK039	26/05/2009	S01	R20	AY	D2:10	F10663
LARK040	05/08/2009	S01	R20	AY	D2:41	F10663
LARK041	03/12/2009	S01	R20	BA	D2:93	F10663
LARK042	14/04/2010	S01	R20	BC	D2:101	F10663
LARK043	17/06/2010	S01	R20	BC	D2:113	F10663
LARK044	05/08/2010	S01	R20	BC	D3:08	F10663
LARK045	20/10/2010	S01	R20	BD	D3:39	F10663
LARK046	20/04/2011	S01	R20	BC	D3:51	F10663
LARK047	08/08/2011	S01	R20	BC	D3:70	F10663
LARK048	09/05/2007	S01	R20	BB	C4:117	
LARK049	06/08/2007	S01	R20	BB	C4:118	
LARK050	31/10/2007	S01	R20	BB	C4:120	
LATH082	31/07/2007	S01	R06	AZ	C3:84	
LATH083	31/07/2007	S02	R06	AZ	C3:85	
LATH084	31/07/2007	S03	R06	AZ	C3:86	
LATH085	31/07/2007	S0?	R06	AZ	C3:87	Mystery extra sample - no S01/2/3
LATH086	13/11/2007	S01	R06	AZ	C4:112	
LATH087	13/11/2007	S02	R06	BB	C4:113	
LATH088	13/11/2007	S03	R06	BB	C4:114	
LATH089	02/05/2008	S01	R06	BB	D1:18	
LATH090	02/05/2008	S02	R06	BB	D1:19	
LATH091	02/05/2008	S03	R06	BB	D1:20	
LATH092	22/08/2008	S01	R06	AX	D1:61	
LATH093	22/08/2008	S02	R06	AX	D1:62	
LATH094	22/08/2008	S03	R06	AX	D1:63	
LATH095	03/10/2008	S01	R06	AX	D1:89	
LATH096	03/10/2008	S02	R06	AX	D1:90	
LATH097	03/10/2008	S03	R06	AX	D1:91	
LATH098	05/04/2009	S01	R06	BF	D4:61	
LATH099	05/04/2009	S02	R06	BF	D4:62	
LATH100	05/04/2009	S03	R06	BF	D4:63	
LATH101	30/08/2009	S01	R06	BF	D4:64	
LATH102	30/08/2009	S02	R06	BF	D4:65	
LATH103	30/08/2009	S03	R06	BF	D4:66	
LATH104	16/12/2009	S01	R06	BF	D4:67	
LATH105	16/12/2009	S02	R06	BF	D4:68	
LATH106	16/12/2009	S03	R06	BF	D4:69	
LATH107	29/04/2010	S01	R06	BF	D4:70	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
LATH108	29/04/2010	S02	R06	BF	D4:71	
LATH109	29/04/2010	S03	R06	BF	D4:72	
LATH110	01/09/2010	S01	R06	BF	D4:73	
LATH111	01/09/2010	S02	R06	BF	D4:74	
LATH112	01/09/2010	S03	R06	BF	D4:75	
LATH114	06/10/2010	S02	R06	BF	D4:76	
LATH115	06/10/2010	S03	R06	BF	D4:77	
LEVE075	03/04/2007	S01	L06	AV	C4.04	South shore nr outlet.
LEVE076	03/04/2007	S02	L06	AV	C4.05	Castle Island
LEVE077	03/04/2007	S03	L06	AV	C4.06	Kirkgate Pier
LEVE078	10/07/2007	S01	L06	AV	C4.42	South shore nr outlet.
LEVE079	10/07/2007	S02	L06	AV	C4.43	Castle Island
LEVE080	10/07/2007	S03	L06	AV	C4.44	Kirkgate Pier
LEVE081	16/10/2007	S01	L06	AZ	C4:95	South shore nr outlet.
LEVE082	16/10/2007	S02	L06	AZ	C4:96	Castle Island
LEVE083	16/10/2007	S03	L06	AZ	C4:97	Kirkgate Pier
LEVE084	15/04/2008	S01	L06	BB	D1:05	South shore nr outlet.
LEVE085	15/04/2008	S02	L06	BB	D1:06	Castle Island
LEVE086	15/04/2008	S03	L06	BB	D1:07	Kirkgate Pier
LEVE087	22/07/2008	S01	L06	BC	D1:42	South shore nr outlet.
LEVE088	22/07/2008	S02	L06	BC	D1:43	Castle Island
LEVE089	22/07/2008	S03	L06	BC	D1:44	Kirkgate Pier
LEVE090	14/10/2008	S01	L06	AX	D1:92	South shore nr outlet.
LEVE091	14/10/2008	S02	L06	AX	D1:93	Castle Island
LEVE092	14/10/2008	S03	L06	AX	D1:94	Kirkgate Pier
LEVE093	14/04/2009	S01	L06	AX	D1:113	South shore nr outlet.
LEVE094	14/04/2009	S02	L06	AX	D1:114	Castle Island
LEVE095	14/04/2009	S03	L06	AX	D1:115	Kirkgate Pier
LEVE096	21/07/2009	S01	L06	AY	D2:28	South shore nr outlet.
LEVE097	21/07/2009	S02	L06	AY	D2:29	Castle Island
LEVE098	21/07/2009	S03	L06	AY	D2:30	Kirkgate Pier
LEVE099	13/10/2009	S01	L06	AY	D2:76	South shore nr outlet.
LEVE100	13/10/2009	S02	L06	AY	D2:77	Castle Island
LEVE101	13/10/2009	S03	L06	AY	D2:78	Kirkgate Pier
LEVE102	13/04/2010	S02	L06	BC	D2:96	Castle Island
LEVE103	13/04/2010	S03	L06	BC	D2:97	Kirkgate Pier
LEVE104	06/07/2010	S01	L06	BC	D2:114	South shore nr outlet.
LEVE105	06/07/2010	S02	L06	BC	D2:115	Castle Island
LEVE106	06/07/2010	S03	L06	BC	D2:116	Kirkgate Pier
LEVE107	12/10/2010	S01	L06	BD	D3:27	South shore nr outlet.
LEVE108	12/10/2010	S02	L06	BD	D3:28	Castle Island
LEVE109	12/10/2010	S03	L06	BD	D3:29	Kirkgate Pier
LEVE110	19/04/2011	S01	L06	BC	D3:43	South shore nr outlet.
LEVE111	19/04/2011	S02	L06	BC	D3:44	Castle Island
LEVE112	19/04/2011	S03	L06	BC	D3:45	Kirkgate Pier
LEVE113	12/07/2011	S01	L06	BC	D3:55	South shore nr outlet.
LEVE114	12/07/2011	S02	L06	BC	D3:56	Castle Island
LEVE115	12/07/2011	S03	L06	BC	D3:57	Kirkgate Pier

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
LEVE116	25/10/2011	S01	L06	BD	D3:97	South shore nr outlet.
LEVE117	25/10/2011	S02	L06	BD	D3:98	Castle Island
LEVE118	25/10/2011	S03	L06	BD	D3:99	Kirkgate Pier
LEVE119	19/04/2012	S01	L06	BA	D3:106	South shore nr outlet. No S02
LEVE120	19/04/2012	S03	L06	BA	D3:107	Kirkgate Pier. No S02
LEVE121	24/07/2012	S01	L06	BA	D3:123	South shore nr outlet.
LEVE122	24/07/2012	S02	L06	BA	D3:124	Castle Island
LEVE123	24/07/2012	S03	L06	BA	D4:01	Kirkgate Pier.
LEVE124	16/10/2012	S01	L06	BA	D4:17	South shore nr outlet.
LEVE125	16/10/2012	S02	L06	BA	D4:18	Castle Island
LEVE126	16/10/2012	S03	L06	BA	D4:19	Kirkgate Pier.
LMHA015	29/04/2007	S01	R14	AV	C4.25	u/s Lagganlia 50m u/s invert site Sample not sent. SEPA countsheets. u/s
LMHA016	29/04/2007	S02	R14			Lagganlia 25m u/s invert site
LMHA017	29/04/2007	S03	R14	AV	C4.26	u/s Lagganlia 0m u/s invert site
LMHA018	29/08/2007	S01	R14	AZ	C3:108	u/s Lagganlia 50m u/s invert site
LMHA019	29/08/2007	S02	R14	AZ	C3:109	u/s Lagganlia 25m u/s invert site
LMHA020	29/08/2007	S03	R14	AZ	C3:110	u/s Lagganlia 0m u/s invert site
LMHA021	11/10/2007	S01	R14	AZ	C3:119	u/s Lagganlia 50m u/s invert site
LMHA023	11/10/2007	S03	R14	AZ	C3:120	u/s Lagganlia 0m u/s invert site
LMHA027	08/05/2008	S01	R14	BB	D1:24	
LMHA028	08/05/2008	S02	R14	BB	D1:25	
LMHA029	08/05/2008	S03	R14	BB	D1:26	
LMHA030	13/08/2008	S02	R14	AX	D1:60	No location info - assigned S02 as most likely. Only 1 samp from date
LMHA031	26/05/2009	S01	R14	AY	D2:11	
LMHA032	26/05/2009	S02	R14	AY	D2:12	
LMHA033	26/05/2009	S03	R14	AY	D2:13	
LMHA034	23/07/2009	S01	R14	AY	D2:31	u/s
LMHA035	23/07/2009	S02	R14	AY	D2:32	centre
LMHA036	23/07/2009	S03	R14	AY	D2:33	no location info - assigned S03
LMHA037	16/09/2009	S01	R14	AY	D2:58	upstream
LMHA038	16/09/2009	S02	R14	AY	D2:59	middle
LMHA039	16/09/2009	S03	R14	AY	D2:60	downstream
LMHA040	20/05/2010	S01	R14	BC	D2:110	U/S of conf with Allt Coire Follais
LMHA041	20/05/2010	S02	R14	BC	D2:111	
LMHA042	20/05/2010	S03	R14	BC	D2:112	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
LMHA043	14/07/2010	S01	R14	BC	D3:02	U/S of conf with Allt Coire Follais
LMHA044	14/07/2010	S02	R14	BC	D3:03	U/S of conf with Allt Coire Follais
LMHA045	14/07/2010	S03	R14	BC	D3:04	
LMHA046	14/07/2010	S02	R14			U/S of conf with Allt Coire Follais. Duplicate of S02. Do not prep.
LMHA047	11/10/2010	S01	R14	BD	D3:24	
LMHA048	11/10/2010	S02	R14	BD	D3:25	U/S of conf with Allt Coire Follais
LMHA049	11/10/2010	S03	R14	BD	D3:26	
LMHA050	19/04/2011	S02	R14	BC	D3:46	U/S of conf with Allt Coire Follais No location data. Assigned S02 after SEPA email . See FOCH053
LMHA051	18/07/2011	S01	R14	BC	D3:61	U/S of conf with Allt Coire Follais S01 and S03 u/s and d/s mislabelled and swapped by EMS
LMHA052	18/07/2011	S02	R14	BC	D3:62	U/S of conf with Allt Coire Follais mid
LMHA053	18/07/2011	S03	R14	BC	D3:63	U/S of conf with Allt Coire Follais S01 and S03 u/s and d/s mislabelled and swapped by EMS
LMHA054	06/09/2011	S01	R14	BC	D3:81	U/S of conf with Allt Coire Follais u/s
LMHA055	06/09/2011	S02	R14	BC	D3:82	U/S of conf with Allt Coire Follais centre
LMHA056	06/09/2011	S03	R14	BC	D3:83	U/S of conf with Allt Coire Follais d/s
LMHA057	09/05/2012	S01	R14	BA	D3:108	u/s Lagganlia 50m u/s invert site
LMHA058	09/05/2012	S02	R14	BA	D3:109	u/s Lagganlia 25m u/s invert site
LMHA059	09/05/2012	S03	R14	BA	D3:110	u/s Lagganlia 0m u/s invert site
LMHA060	19/07/2012	S01	R14	BA	D3:120	u/s Lagganlia 50m u/s invert site
LMHA061	19/07/2012	S02	R14	BA	D3:121	u/s Lagganlia 25m u/s invert site
LMHA062	19/07/2012	S03	R14	BA	D3:122	u/s Lagganlia 0m u/s invert site
LMHA063	10/10/2012	S01	R14	BA	D4:14	u/s Lagganlia 50m u/s invert site
LMHA064	10/10/2012	S02	R14	BA	D4:15	u/s Lagganlia 25m u/s invert site
LMHA065	10/10/2012	S03	R14	BA	D4:16	u/s Lagganlia 0m u/s invert site

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
LOMA038	17/08/2007	S01	L10	AZ	C3:94	
LOMA039	17/08/2007	S02	L10	AZ	C3:95	
LOMA040	17/08/2007	S03	L10	AZ	C3:96	
LOMA041	08/06/2007	S01	L10	AV	C4:38	Only 1 sample from this date - extra
LOMA042	29/08/2008	S01	L10	AX	D1:70	
LOMA043	29/08/2008	S02	L10	AX	D1:71	
LOMA044	29/08/2008	S03	L10	AX	D1:72	
LOMA045	27/08/2009	S01	L10	AY	D2:53	Only 1 sample due to high water levels
LOMA046	20/08/2010	S01	L10	BC	D3:10	
LOMA047	24/08/2011	S01	L10	BC	D3:72	Only 1 sample See sheet for exact loations
LOMA048	24/08/2011	S02	L10	BC	D3:73	
LOMA049	24/08/2011	S03	L10	BC	D3:74	
LOMB039	17/08/2007	S01	L10	AZ	C3:97	
LOMB040	17/08/2007	S02	L10	AZ	C3:98	
LOMB041	17/08/2007	S03	L10	AZ	C3:99	
LOMB042	29/08/2008	S01	L10	AX	D1:73	
LOMB043	29/08/2008	S02	L10	AX	D1:74	
LOMB044	29/08/2008	S03	L10	AX	D1:75	
LOMB045	27/08/2009	S01	L10	AY	D2:54	Only 1 sample due to high water levels
LOMB046	20/08/2010	S01	L10	BC	D3:11	
LOMB047	24/08/2011	S01	L10	BC	D3:75	Only 1 sample See sheet for exact loations
LOMB048	24/08/2011	S02	L10	BC	D3:76	
LOMB049	24/08/2011	S03	L10	BC	D3:77	
NANTY013	01/09/2010	S01	R29	BB	D4:122	
NANTY014	01/09/2010	S02	R29	BB	D4:123	
NANTY015	01/09/2010	S03	R29	BB	D4:124	
NANTY016	10/11/2010	S01	R29	BB	D4:101	
NANTY017	10/11/2010	S02	R29	BB	D4:102	
NANTY018	10/11/2010	S03	R29	BB	D4:103	
NANTY019	04/10/2011	S01	R29	BB	D4:104	
NANTY020	04/10/2011	S02	R29	BB	D4:105	
NANTY021	04/10/2011	S03	R29	BB	D4:106	
NANTY022	20/06/2012	S01	R29	BB	D4:107	
NANTY023	20/06/2012	S02	R29	BB	D4:108	
NANTY024	20/06/2012	S03	R29	BB	D4:109	
NANTY025	28/11/2012	S01	R29	BB	D4:110	
NANTY026	28/11/2012	S02	R29	BB	D4:111	
NANTY027	28/11/2012	S03	R29	BB	D4:112	
OWENK007	21/04/2008	S01	R28	BB	D1:14	F10077
OWENK008	05/08/2008	S01	R28	AX	D1:54	F10077
OWENK009	27/10/2008	S01	R28	AX	D1:101	F10077

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
OWENK010	22/04/2009	S01	R28	AX	D2:03	F10077
OWENK011	04/08/2009	S01	R28	AY	D2:40	F10077
OWENK012	30/09/2009	S01	R28	AY	D2:72	F10077
OWENK013	29/03/2010	S01	R28	BC	D2:95	F10077
OWENK014	21/07/2010	S01	R28	BC	D3:07	F10077
OWENK015	27/10/2010	S01	R28	BD	D3:40	F10077
OWENK016	30/03/2011	S01	R28	BC	D3:41	F10077
OWENK017	08/08/2011	S01	R28	BC	D3:71	F10077
OWENK018	28/09/2011	S01	R28	BC	D3:90	F10077
OWENK019	02/05/2007	S01	R28	BB	C4:116	
OWENK020	06/08/2007	S01	R28	BB	C4:119	
OWENK021	31/10/2007	S01	R28	BB	C4.121	
THOR072	21/05/2007	S01	R04	AV	C4.32	top
THOR073	21/05/2007	S02	R04	AV	C4.33	mid
THOR074	21/05/2007	S03	R04	AV	C4.34	bottom
THOR075	28/08/2007	S01	R04	AZ	C3:101	
THOR076	28/08/2007	S02	R04	AZ	C3:102	
THOR077	28/08/2007	S03	R04	AZ	C3:103	
THOR078	01/10/2007	S01	R04	AZ	C3:116	top
THOR079	01/10/2007	S02	R04	AZ	C3:117	mid
THOR080	01/10/2007	S03	R04	AZ	C3:118	bottom
THOR081	14/05/2008	S01	R04	BB	D1:30	
THOR082	14/05/2008	S02	R04	BB	D1:31	
THOR083	14/05/2008	S03	R04	BB	D1:32	
THOR084	26/08/2008	S01	R04	AX	D1:64	
THOR085	26/08/2008	S02	R04	AX	D1:65	
THOR086	26/08/2008	S03	R04	AX	D1:66	
THOR087	30/09/2008	S01	R04	AX	D1:86	
THOR088	30/09/2008	S02	R04	AX	D1:87	
THOR089	30/09/2008	S03	R04	AX	D1:88	
THOR090	29/04/2009	S01	R04	AX	D2:04	
THOR091	29/04/2009	S02	R04	AX	D2:05	
THOR092	29/04/2009	S03	R04	AX	D2:06	
THOR093	19/08/2009	S01	R04	AY	D2:49	
THOR094	19/08/2009	S02	R04	AY	D2:50	
THOR095	19/08/2009	S03	R04	AY	D2:51	
THOR096	29/09/2009	S01	R04	AY	D2:69	
THOR097	29/09/2009	S02	R04	AY	D2:70	
THOR098	29/09/2009	S03	R04	AY	D2:71	
THOR099	21/04/2010	S01	R04	BF	D4:26	
THOR100	21/04/2010	S02	R04	BF	D4:27	
THOR101	21/04/2010	S03	R04	BF	D4:28	
THOR102	17/08/2010	S01	R04	BF	D4:29	
THOR103	17/08/2010	S02	R04	BF	D4:30	
THOR104	17/08/2010	S03	R04	BF	D4:31	
THOR105	19/10/2010	S01	R04	BF	D4:32	
THOR106	19/10/2010	S02	R04	BF	D4:33	
THOR107	19/10/2010	S03	R04	BF	D4:34	

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
TWED060	15/05/2007	S01	R16	AV	C4.28	upstream
TWED061	15/05/2007	S02	R16	AV	C4.29	mid
TWED062	15/05/2007	S03	R16	AV	C4.30	downstream
TWED063	18/10/2007	S01	R16	AZ	C4:101	upstream
TWED064	18/10/2007	S02	R16	AZ	C4:102	mid
TWED065	18/10/2007	S03	R16	AZ	C4:103	downstream
WIND052	11/04/2007	S01	L04	AV	C4.16	Nr Rawlinson Nab
WIND053	11/04/2007	S02	L04	AV	C4.17	Red Nab
WIND054	11/04/2007	S03	L04	AV	C4.18	South of YMCA
WIND055	12/07/2007	S01	L04	AZ	C3:78	Nr Rawlinson Nab
WIND056	12/07/2007	S02	L04	AZ	C3:79	Red Nab
WIND057	12/07/2007	S03	L04	AZ	C3:80	South of YMCA
WIND058	12/10/2007	S01	L04	AZ	C3:124	Nr Rawlinson Nab
WIND059	12/10/2007	S02	L04	AZ	C4:93	Red Nab
WIND060	12/10/2007	S03	L04	AZ	C4:94	South of YMCA
WIND061	16/04/2008	S01	L04	BB	D1:11	Nr Rawlinson Nab
WIND062	16/04/2008	S02	L04	BB	D1:12	Red Nab
WIND063	16/04/2008	S03	L04	BB	D1:13	South of YMCA
WIND064	30/07/2008	S01	L04	BC	D1:51	Nr Rawlinson Nab
WIND065	30/07/2008	S02	L04	BC	D1:52	Red Nab
WIND066	30/07/2008	S03	L04	BC	D1:53	South of YMCA. No Oct samples due to high water levels.
WIND067	15/04/2009	S01	L04	AX	D1:122	Nr Rawlinson Nab
WIND068	15/04/2009	S02	L04	AX	D1:123	Red Nab
WIND069	15/04/2009	S03	L04	AX	D1:124	South of YMCA.
WIND070	14/07/2009	S01	L04	AY	D2:24	Nr Rawlinson Nab
WIND071	14/07/2009	S02	L04	AY	D2:25	Red Nab
WIND072	14/07/2009	S03	L04	AY	D2:26	South of YMCA.
WIND073	22/10/2009	S01	L04	BA	D2:86	Nr Rawlinson Nab
WIND074	22/10/2009	S02	L04	BA	D2:87	Red Nab
WIND075	22/10/2009	S03	L04	BA	D2:88	South of YMCA.
WIND076	14/04/2010	S01	L04	BC	D2:102	Nr Rawlinson Nab
WIND077	14/04/2010	S02	L04	BC	D2:103	Red Nab
WIND078	14/04/2010	S03	L04	BC	D2:104	South of YMCA.
WIND079	07/07/2010	S01	L04	BC	D2:120	Nr Rawlinson Nab
WIND080	07/07/2010	S02	L04	BC	D2:121	Red Nab
WIND081	07/07/2010	S03	L04	BC	D2:122	South of YMCA.
WIND082	13/10/2010	S01	L04	BD	D3:36	Nr Rawlinson Nab
WIND083	13/10/2010	S02	L04	BD	D3:37	Red Nab
WIND084	13/10/2010	S03	L04	BD	D3:38	South of YMCA.
WIND085	20/04/2011	S01	L04	BC	D3:52	Nr Rawlinson Nab
WIND086	20/04/2011	S02	L04	BC	D3:53	Red Nab
WIND087	20/04/2011	S03	L04	BC	D3:54	South of YMCA.
WIND088	22/07/2011	S01	L04	BC	D3:67	Nr Rawlinson Nab
WIND089	22/07/2011	S02	L04	BC	D3:68	Red Nab
WIND090	22/07/2011	S03	L04	BC	D3:69	South of YMCA.
WIND091	21/10/2011	S01	L04	BD	D3:94	Nr Rawlinson Nab
WIND092	21/10/2011	S02	L04	BD	D3:95	Red Nab

ECRC sample name	Sampling date	ECN samp no	ECN site number	Vial Drawer	Archive Slide Drawer	Remarks
WIND093	21/10/2011	S03	L04	BD	D3:96	South of YMCA.
WIND094	18/04/2012	S01	L04	BA	D3:103	Nr Rawlinson Nab
WIND095	18/04/2012	S02	L04	BA	D3:104	Red Nab
WIND096	18/04/2012	S03	L04	BA	D3:105	South of YMCA.
WIND097	18/07/2012	S01	L04	BA	D3:117	Nr Rawlinson Nab
WIND098	18/07/2012	S02	L04	BA	D3:118	Red Nab
WIND099	18/07/2012	S03	L04	BA	D3:119	South of YMCA.
WIND100	18/10/2012	S01	L04	BA	D4:23	Nr Rawlinson Nab
WIND101	18/10/2012	S02	L04	BA	D4:24	Red Nab
WIND102	18/10/2012	S03	L04	BA	D4:25	South of YMCA.
WYE063	10/04/2007	S01	R05	AV	C4.10	u/s on LHB
WYE064	10/04/2007	S02	R05	AV	C4.11	RHB at fishing platform
WYE065	10/04/2007	S03	R05	AV	C4.12	d/s on LHB
WYE066	24/08/2007	S01	R05	BE		u/s on LHB
WYE067	24/08/2007	S02	R05	BE		RHB at fishing platform
WYE068	24/08/2007	S03	R05	BE		d/s on LHB
WYE069	13/09/2007	S01	R05	BE		u/s on LHB
WYE070	13/09/2007	S02	R05	BE		RHB at fishing platform
WYE071	13/09/2007	S03	R05	BE		d/s on LHB
WYE072	11/04/2008	S01	R05	BE		u/s on LHB
WYE073	11/04/2008	S02	R05	BE		RHB at fishing platform
WYE074	11/04/2008	S03	R05	BE		d/s on LHB
WYE075	30/07/2008	S01	R05	BE		u/s on LHB
WYE076	30/07/2008	S02	R05	BE		RHB at fishing platform
WYE077	30/07/2008	S03	R05	BE		d/s on LHB
WYE078	01/09/2008	S01	R05	BE		u/s on LHB
WYE079	01/09/2008	S02	R05	BE		RHB at fishing platform
WYE080	01/09/2008	S03	R05	BE		d/s on LHB
WYE081	30/03/2009	S01	R05	BE		u/s on LHB
WYE082	30/03/2009	S02	R05	BE		RHB at fishing platform
WYE083	30/03/2009	S03	R05	BE		d/s on LHB
WYE084	19/08/2009	S01	R05	BE		u/s on LHB
WYE085	19/08/2009	S02	R05	BF		RHB at fishing platform
WYE086	19/08/2009	S03	R05	BF		d/s on LHB
WYE087	02/09/2009	S01	R05	BF		u/s on LHB
WYE088	02/09/2009	S02	R05	BF		RHB at fishing platform
WYE089	02/09/2009	S03	R05	BF		d/s on LHB
WYE090	23/04/2010	S01	R05	BF	D4:35	u/s on LHB
WYE091	23/04/2010	S02	R05	BF	D4:36	RHB at fishing platform
WYE092	23/04/2010	S03	R05	BF	D4:37	d/s on LHB
WYE093	19/08/2010	S01	R05	BF	D4:38	u/s on LHB
WYE094	19/08/2010	S02	R05	BF	D4:39	RHB at fishing platform
WYE095	19/08/2010	S03	R05	BF	D4:40	d/s on LHB
WYE096	13/10/2010	S01	R05	BF	D4:41	u/s on LHB
						RHB at fishing platform. Strange date
WYE097	06/09/2010	S02	R05	BF	D4:42	as per sheet/bottle.
WYE098	13/10/2010	S03	R05	BF	D4:43	d/s on LHB