

# United Kingdom Acid Waters Monitoring Network

## Summary of Data for Year 13 (2000-2001)



**THE UNITED KINGDOM ACID WATERS  
MONITORING NETWORK  
DATA REPORT FOR 2000 - 2001 (YEAR 13)**

Report to the Department Environment, Food and Rural Affairs  
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## INTRODUCTION

The UK Acid Waters Monitoring Network (UKAWMN) has been in continuous operation since 1988. For the first ten years biological and chemical data were summarised in an annual series of printed reports and these were followed by a detailed analysis of data in an interpretative report (Monteith and Evans, 2000), which is available on the [UKAWMN](#) web page. From this year annual data reports will be solely available from the [UKAWMN](#) web page. These will be of a similar format to earlier annual reports but will primarily concentrate on graphical representations of time trends in raw data and diagnostic statistics (e.g. species richness and diversity indices).

A full description of sampling methods and analytical procedures, together with site descriptions, is presented in Patrick *et al.* (1991).

## THE MONITORING NETWORK

The UKAWMN originally consisted of 10 stream sites and 10 lakes, situated in those parts of the country most susceptible to acidification (see map, page 15). In 1990, two additional sites, Blue Lough and Coneyglen Burn, were added to the Network with funding from the Department of Environment (Northern Ireland). In January 1991 site 18, the Nant y Gronwen, was withdrawn from the Network at the request of the landowner and was replaced by a nearby moorland stream, the Afon Gwy.

All sites are monitored chemically and biologically. At lake sites, water samples are collected monthly. Epilithic diatoms and benthic invertebrates are sampled annually at stream sites and bi-annually at lake sites between June and September. Stream sites and the outflow streams of lake sites are electro-fished annually in the autumn. Sediment traps have been deployed in all lake sites since around 1990. The contents of sediment traps are analysed for diatom species composition and the flux of carbonaceous particles, derived from the combustion of fossil fuels (Rose *et al.* 1995).

In addition to the annual surveys, sediment cores have been taken from all lake sites during the first five years of monitoring. The cores have been radiometrically dated and analysed for diatoms, carbonaceous particles and trace metals and results are presented in Patrick *et al.* (1995).

For the first time since the onset of monitoring, water chemistry and macroinvertebrate sampling was prevented at several sites in the spring of 2001 by foot-and-mouth related access restrictions. Sampling was resumed across the Network in June 2001 and there have been no further problems at any site.

All chemical, physical and biological data are stored in a database managed by the Centre for Ecology and Hydrology and ENSIS. Summary data are available to scientific and other interested organisations on request. Further information on the UKAWMN, including site descriptions and photographs, is available via the Internet at the address: <http://www.geog.ucl.ac.uk/ukawmn>

## DATA FORMAT

The chemical and biological data are presented in a series of sections, summarised below, on a site-by-site basis.

- Section 1: Time series graphs of key spot sampled chemical determinands for individual samples. (Current year - filled circles; previous years - open circles).  
Summary table of all chemical determinands (mean, maximum, minimum and standard deviation values) recorded for the current year. The expected number of observations per year is 4 for lakes and 12 for streams.  
Summary table of past records for all chemical determinands presented in the same format as the current year table.
- Section 2: Macroinvertebrates. Time series of macroinvertebrate taxon % abundance in annual aggregated samples (5 kick samples from lake littoral habitats or from riffle areas in streams), and annual total number of individual animals. Some species occurring at less than 1% relative abundance are omitted.  
Macroinvertebrate summary statistic time series:
- 1) total number of individuals;
  - 2) number of individuals identified at Genus level only (excludes some ubiquitous groups such as the chironomids and oligochaetes);
  - 3) total number of taxa;
  - 4) Diversity Indices. Although we have observed a general between-site relationship between acidity and the total number of macroinvertebrate species found, it is difficult to predict how chemical recovery might influence measures of diversity at specific sites. However, trends in the diversity scores described below should provide an indication of directional changes in community structure.
    - a) Hill's  $N_1$ , the exponent of Shannon's Index and a measure of the number of abundant species in a sample (Hill, 1973).
    - b) Hill's  $N_2$ , the reciprocal of Simpson's Index and a measure of the number of very abundant species in a sample (Hill, 1973).
    - c)  $E_5$ , a measure of evenness based on the ratio  $(N_2-1):(N_1-1)$ . As a single species becomes more and more dominant,  $E_5$  tends to zero.
- Section 3: Salmonids. Summary histogram of mean density of trout and salmon, if present, in three 50m reaches (number of individuals caught per 100m<sup>2</sup> survey area) for each year of the monitoring period. (0+ = new recruits, >0+ = all fish over one year of age).
- Section 4: Epilithic diatoms. Time series of annual mean percentage frequency (from 3-4 replicate samples) of taxa occurring at greater than 2 % abundance in any one sample.  
Epilithic diatom summary statistic time series. Mean, maximum and minimum for:
- a) Hill's  $N_1$  (see above)
  - b) Hill's  $N_2$  (see above)
  - c)  $E_5$  (see above)
  - d) Diatom inferred pH (Di pH), based on the weighted average of species pH optima in the surface sediments of the 167 lake Surface Water Acidification

Project dataset (Stevenson *et al.* 1991).

pH reconstructions are intended only for application to sedimentary diatoms but directional trends in inferred pH of epilithic assemblages should provide an indication of the direction of a response to changing acidity.

Section 5: Aquatic macrophytes. For lakes relative species abundance was determined on a five point scale (comparable to the DAFOR scoring system, Palmer *et al.* 1992) following shoreline survey, shore transects and deep water grapnel trawls, as follows:

1. rare/infrequent
2. occasional but not abundant
3. widespread but not abundant
4. locally abundant
5. widespread and abundant

For streams, total macrophyte cover was estimated for 5m sections of a 50m survey stretch and each was then partitioned into proportional species abundance to provide percentage cover for each species. Data analysed for this report are the mean species cover estimates for the 50m stretches.

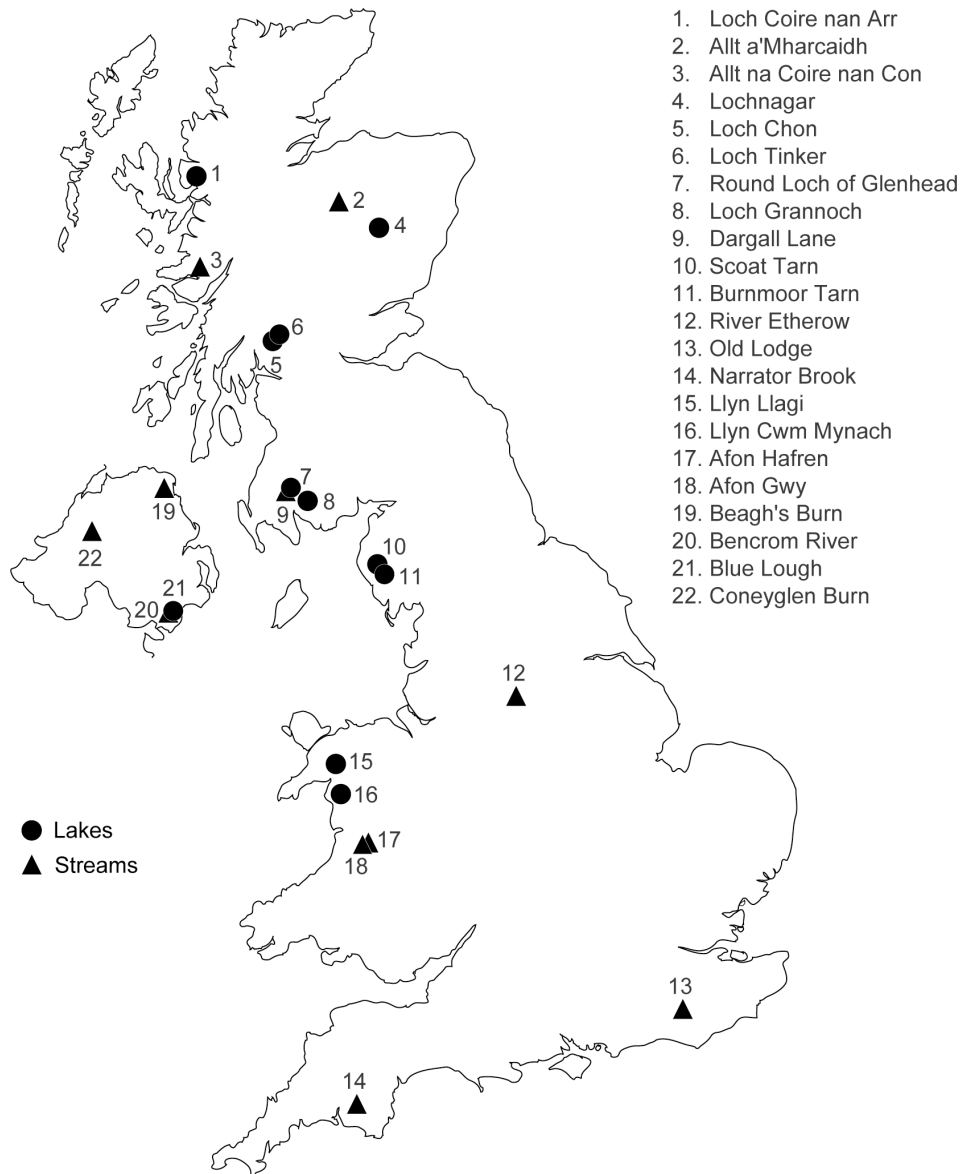
Section 6: For lake sites only. Histogram of diatom species composition and carbonaceous particle flux estimated from annually retrieved sediment traps. Species occurring at less than 1% abundance in all years are omitted. Carbonaceous particle flux data presented in units of number of particles accumulated per trap (uniform trap size for all sites) per day.

## REFERENCES

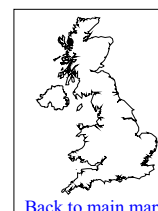
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# LOCATION OF UKAWMN SITES

[Click on individual sites to navigate to data](#)



# 1. Loch Coire nan Arr



[Back to main map](#)

Lake altitude: 125 m  
 Maximum depth: 12.0 m  
 Mean depth: 4.8 m  
 Volume:  $0.56 \times 10^6 \text{ m}^3$

Lake area: 12 ha  
 Catchment area: 897 ha  
 Catchment:lake ratio: 77.3  
 Net relief: 771 m

Grid Ref: NG 808422

Soils: Peat

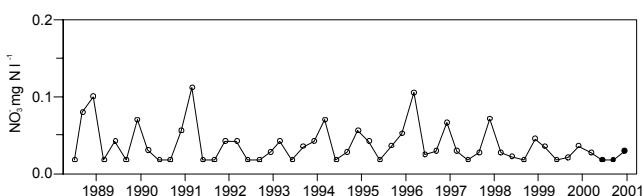
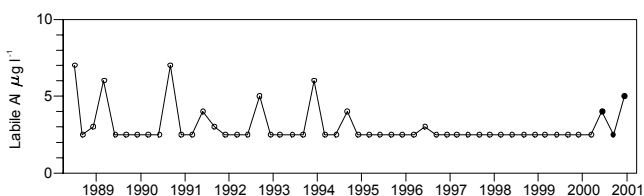
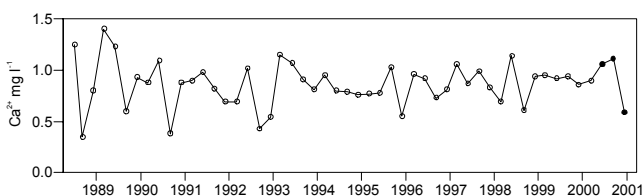
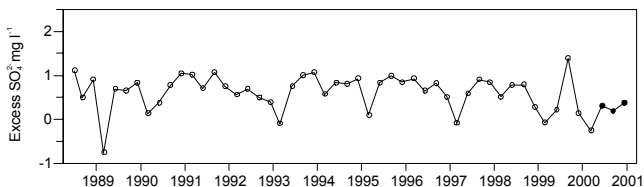
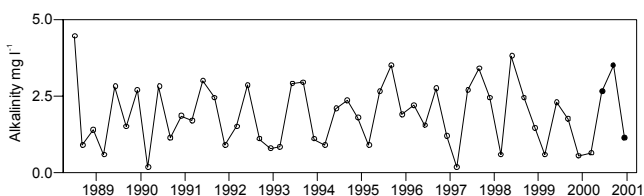
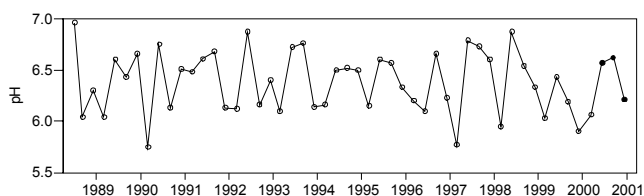
Geology: Torridonian sandstone

Vegetation: 99 % Moorland  
 1 % Conifers

## 1.1. Spot sampled chemistry data

### Time series data

○ 04Jul1988 to 31Mar2000    ● 01Apr2000 to Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N %
pH	6.47	6.62	6.21	0.22	75.0
Alk(CaCO <sub>3</sub> )	2.43	3.50	1.15	1.19	75.0
Cond	37.0	41.0	32.0	4.6	75.0
Ca	0.92	1.11	0.59	0.29	75.0
Mg	0.77	1.10	0.50	0.31	75.0
Na	5.10	5.60	4.60	0.50	75.0
K	0.34	0.47	0.25	0.12	75.0
Ba	0.01	0.01	0.01	0.00	75.0
Sr	0.01	0.01	0.01	0.00	75.0
Fe	0.05	0.06	0.04	0.02	50.0
Mn	0.00	0.01	0.00	0.00	75.0
Sol.Al	28.0	38.0	18.0	10.0	75.0
Sol.lab.Al	3.8	5.0	2.5	1.3	75.0
Cl	8.73	9.80	7.90	0.97	75.0
SO <sub>4</sub>	1.53	1.70	1.40	0.15	75.0
XSO <sub>4</sub>	0.29	0.38	0.19	0.09	75.0
NO <sub>3</sub>	0.02	0.03	0.02	0.01	75.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.02	0.02	0.01	0.00	50.0
F	No recorded data.				
Si	0.47	0.70	0.30	0.21	75.0
DOC	3.83	4.70	3.20	0.78	75.0

N% is the percentage of the expected number of values.  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

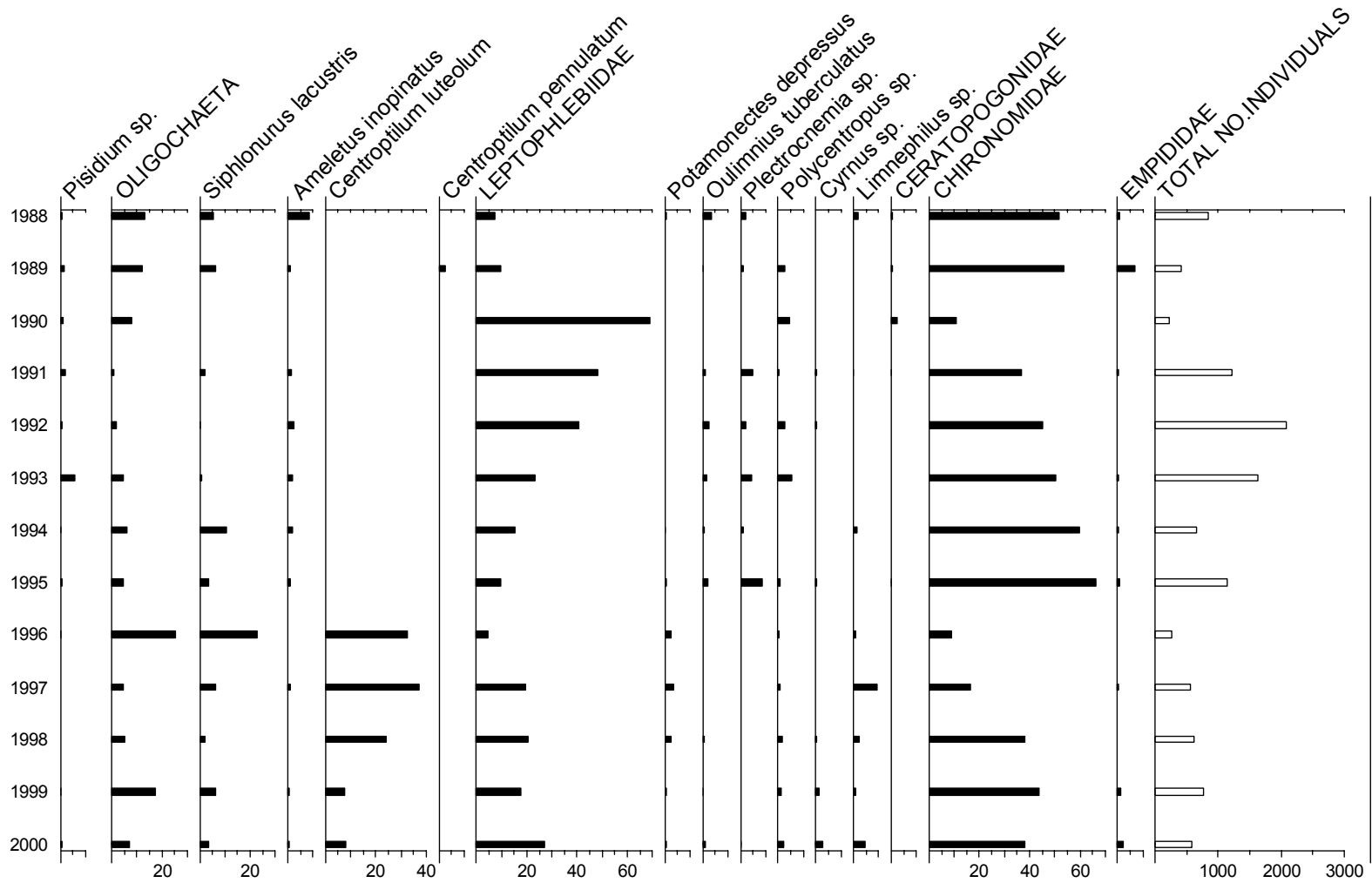
Chemistry statistics for period April 1998 to March 2000

	Mean	Max.	Min.	Std. Dev.	N %
pH	6.38	6.96	5.75	0.31	100.0
Alk(CaCO <sub>3</sub> )	1.86	4.45	0.20	1.02	100.0
Cond	39.8	85.0	21.0	13.6	100.0
Ca	0.86	1.40	0.35	0.22	100.0
Mg	0.75	1.90	0.30	0.29	100.0
Na	5.43	11.40	3.00	1.80	100.0
K	0.39	0.60	0.15	0.06	100.0
Ba	0.01	0.03	0.01	0.00	100.0
Sr	0.01	0.02	0.00	0.00	100.0
Fe	0.04	0.23	0.01	0.03	100.0
Mn	0.00	0.03	0.00	0.00	100.0
Sol.Al	15.0	40.0	2.5	8.2	100.0
Sol.lab.Al	3.0	7.0	2.5	1.2	100.0
Cl	9.40	23.60	4.30	4.34	100.0
SO <sub>4</sub>	1.95	2.70	1.30	0.35	100.0
XSO <sub>4</sub>	0.62	1.39	-0.75	0.41	100.0
NO <sub>3</sub>	0.04	0.11	0.02	0.02	100.0
PO <sub>4</sub>	0.00	0.01	0.00	0.00	100.0
Br	0.02	0.05	0.00	0.01	100.0
F	0.01	0.12	0.00	0.02	93.8
Si	0.49	0.80	0.20	0.13	100.0
DOC	2.28	5.80	0.10	1.27	100.0

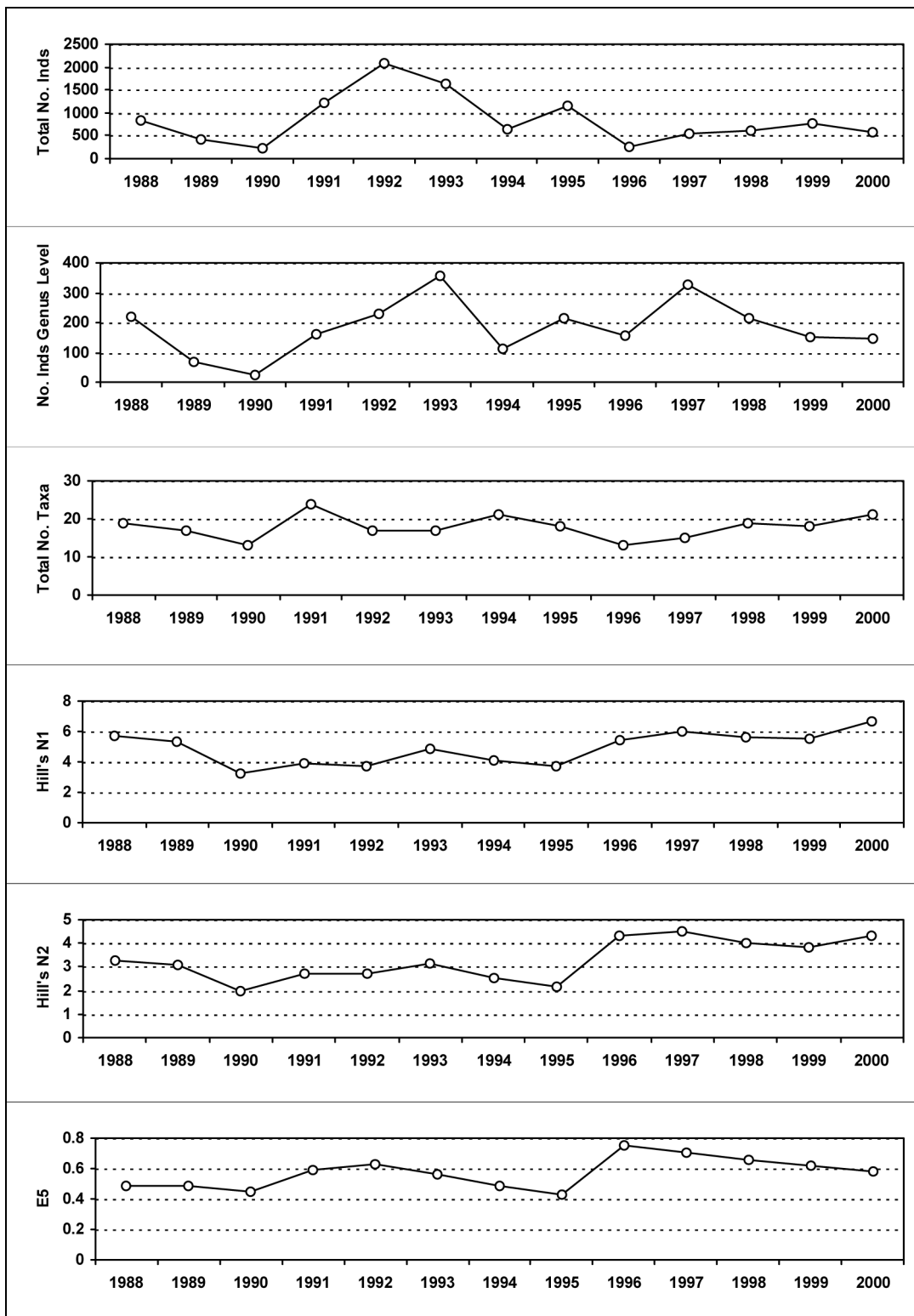
N% is the percentage of the expected number of values.  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 1.2. Macroinvertebrate data

### 1.2.1. Percentage abundance summary, Loch Coire nan Arr



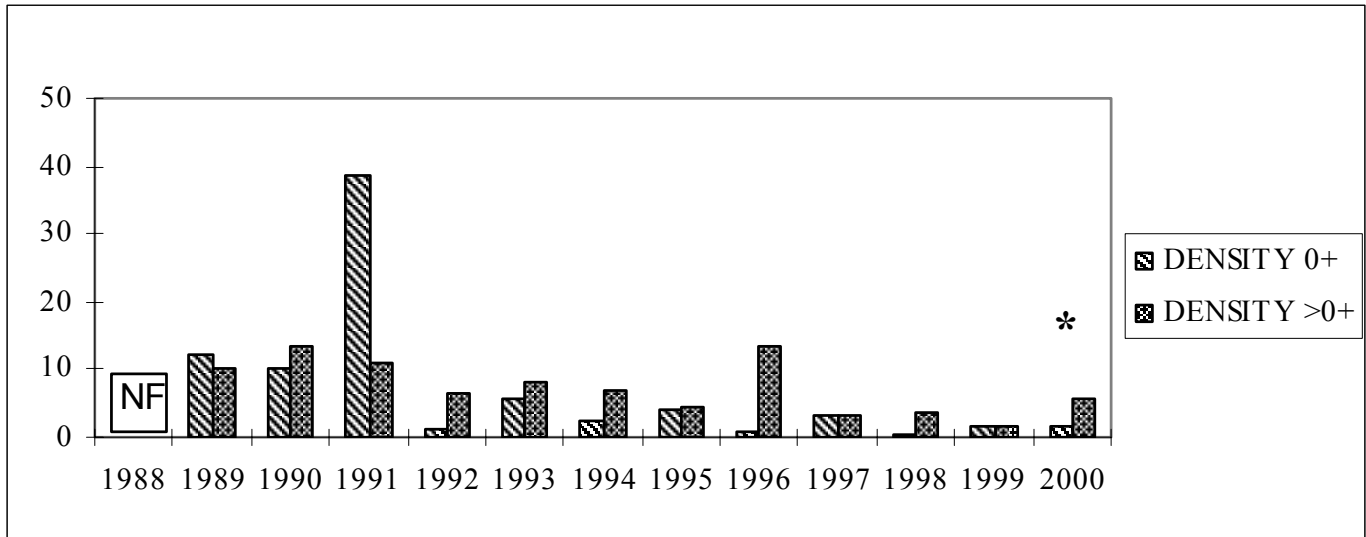
## 1.2.2. Summary statistics, Loch Coire nan Arr





### 1.3. Fish data (for outflow stream)

#### 1.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Loch Coire nan Arr

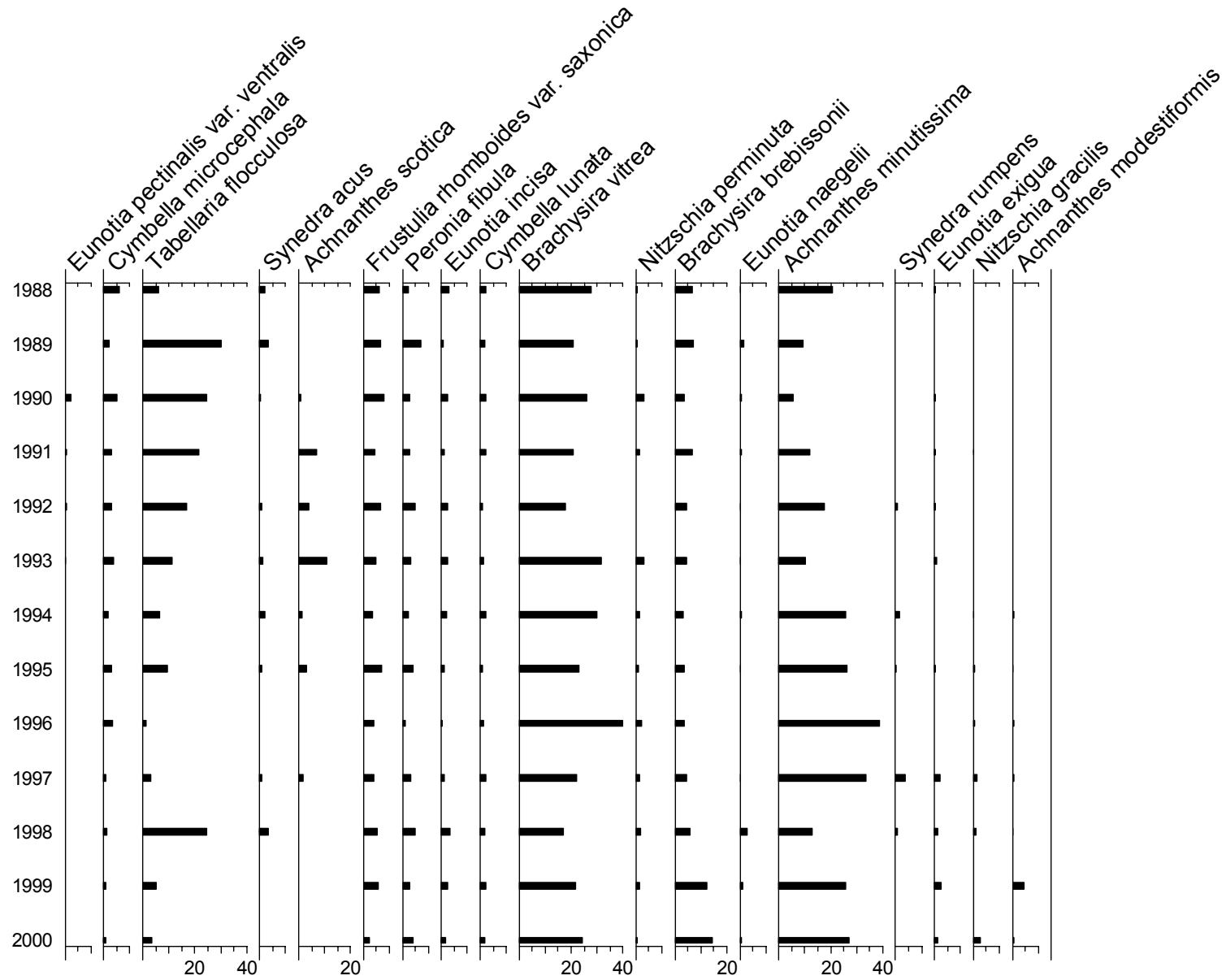


NF = Not fished

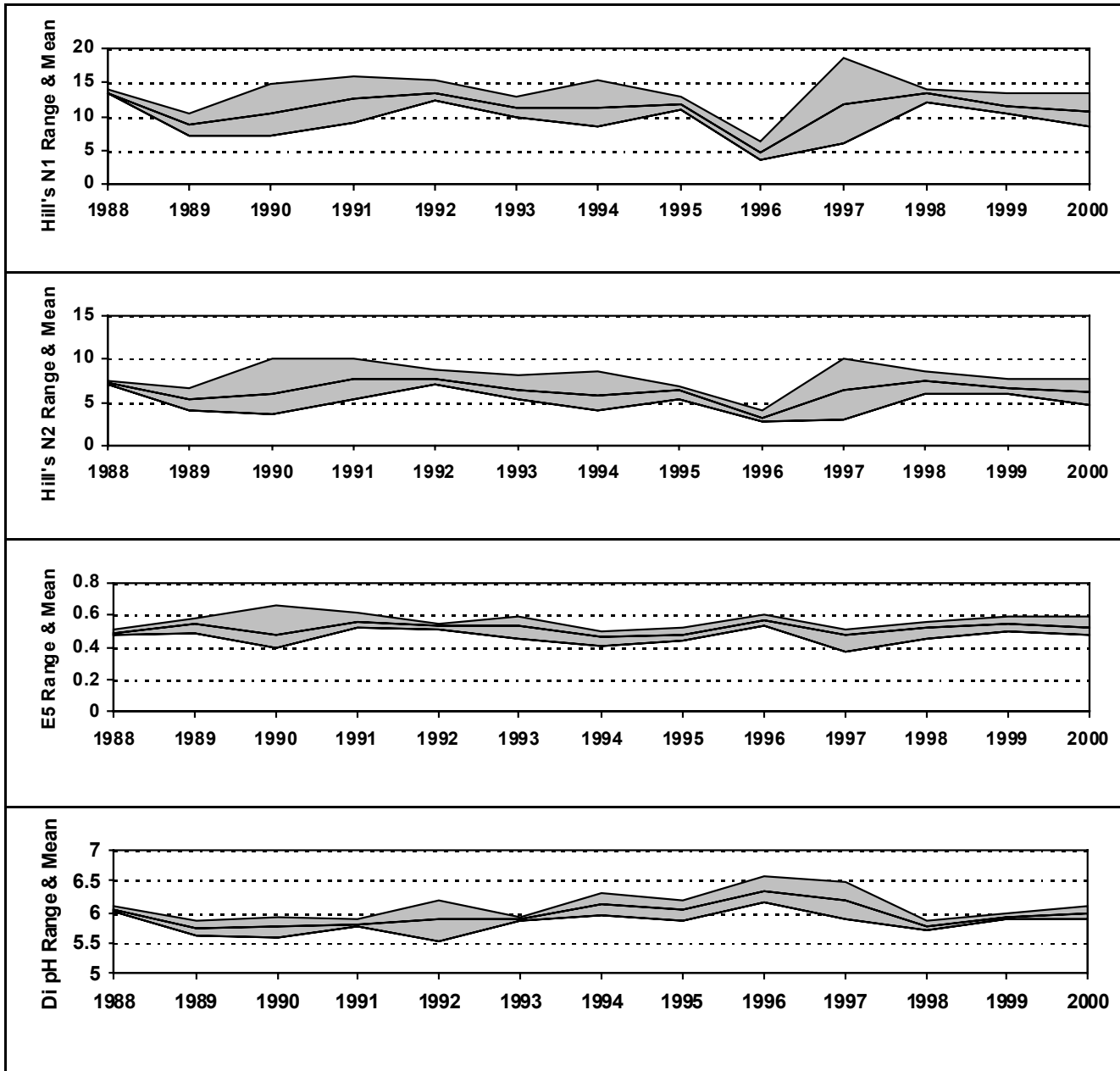
\* Not all 3 reaches fished

## 1.4. Epilithic diatom data

### 1.4.1. Percentage abundance summary, Loch Coire nan Arr

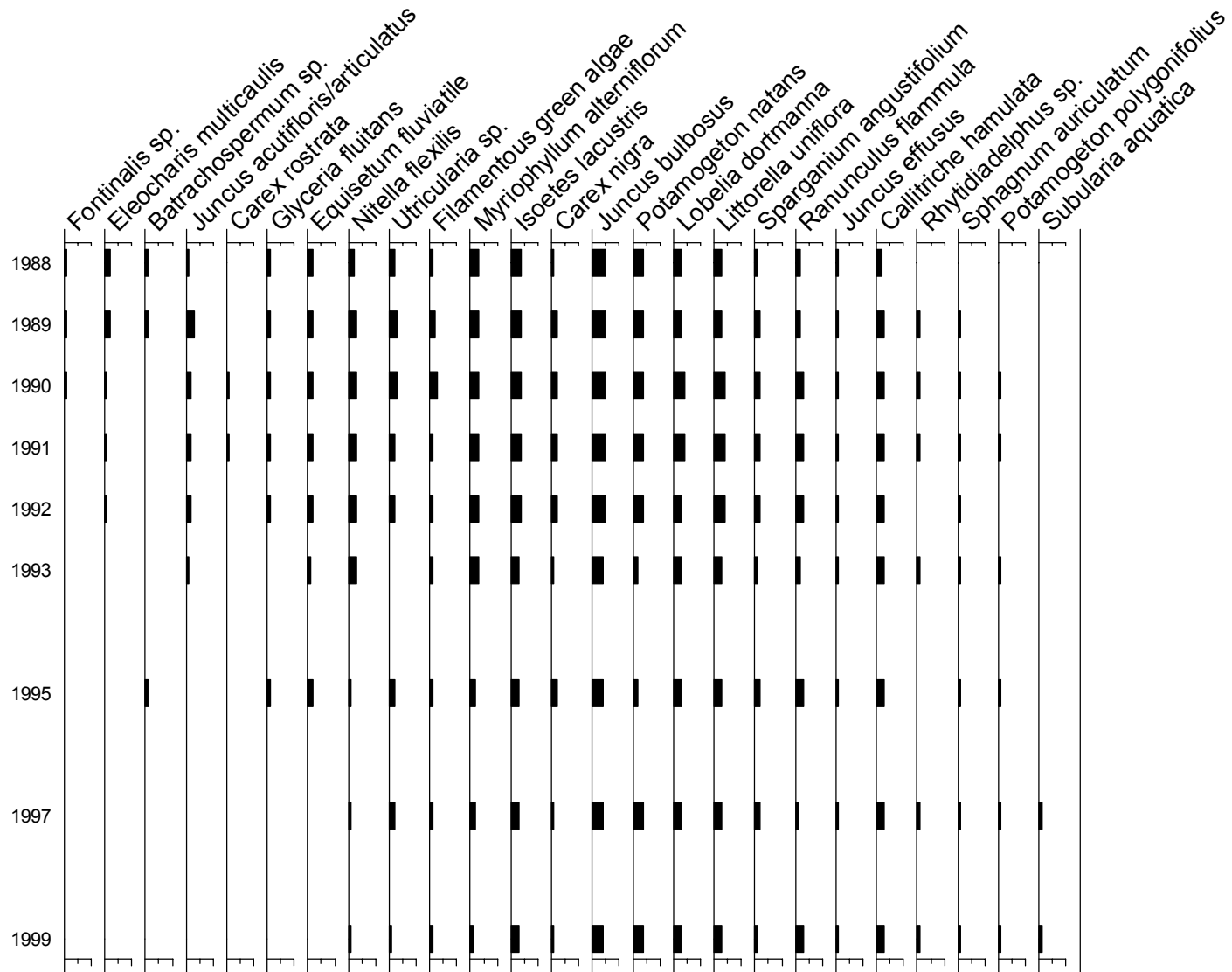


### 1.4.2. Summary statistics, Loch Coire nan Arr



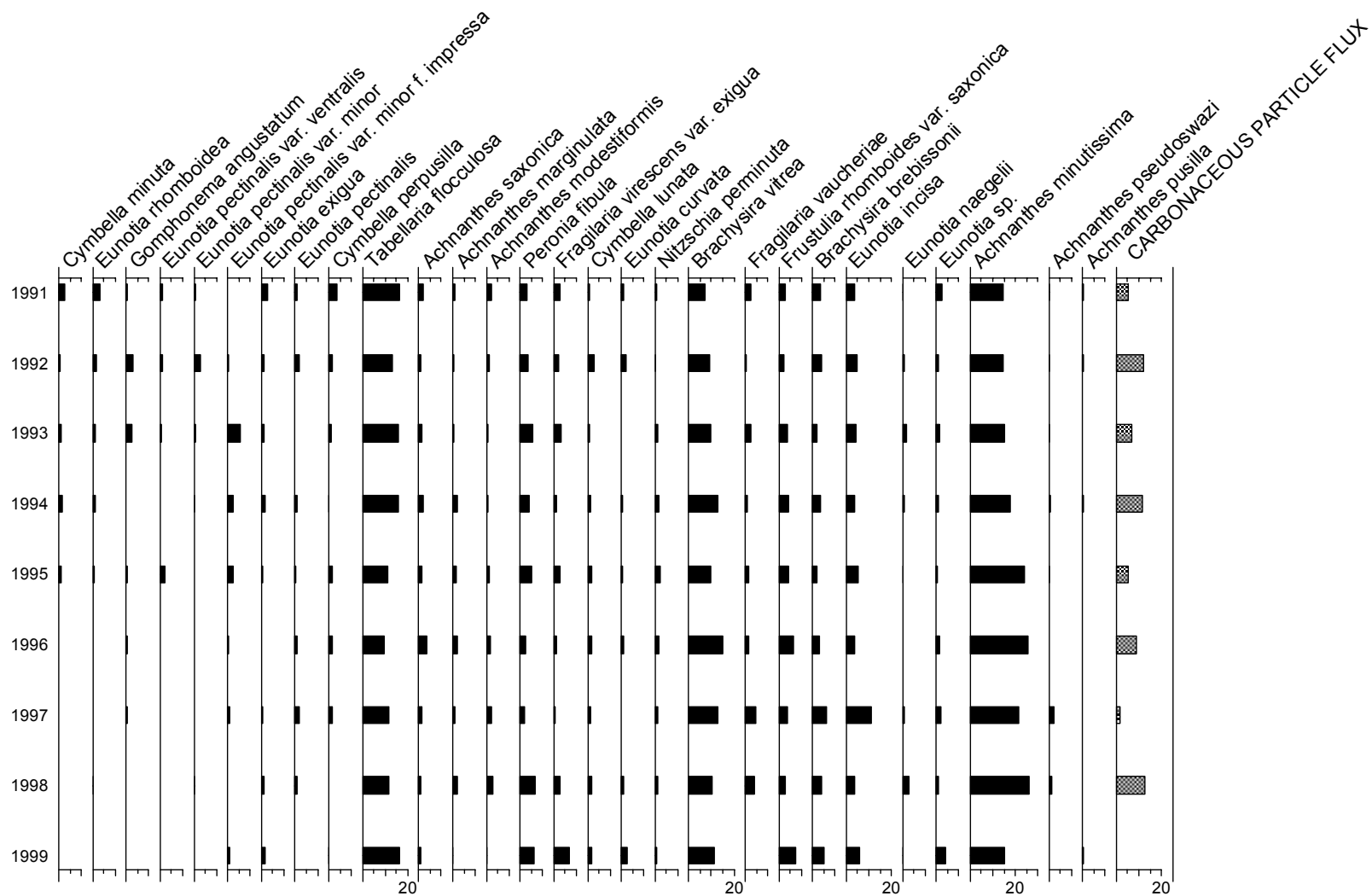
# 1.5. Aquatic macrophyte data, Loch Coire nan Arr

## Species Scores (1-5)

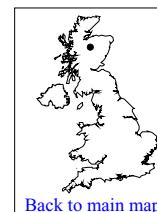


## 1.6. Sediment trap data, Loch Coire nan Arr

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



## 2. Allt a'Mharcaidh



[Back to main map](#)

Catchment area: 998 ha  
 Minimum catchment altitude: 325 m  
 Maximum catchment altitude: 1111 m

Grid Ref: NH 881045

Soils: Alpine pod sols  
 Peaty podsol  
 Blanket peat

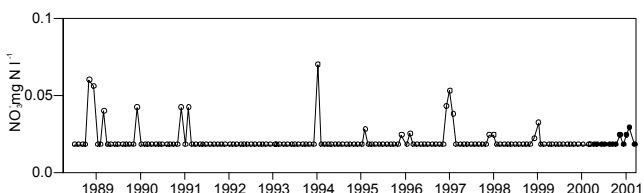
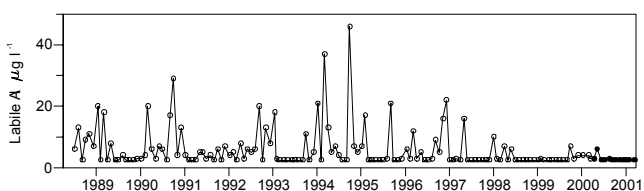
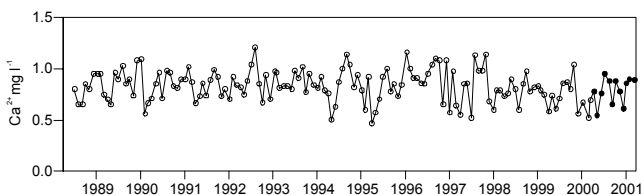
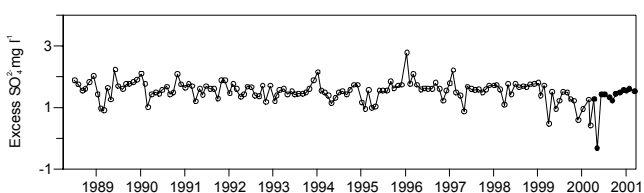
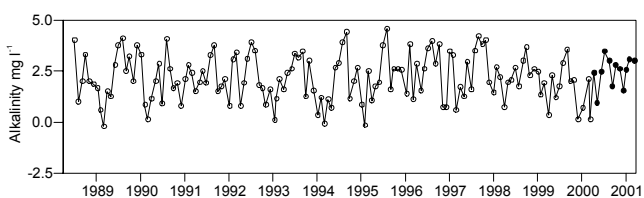
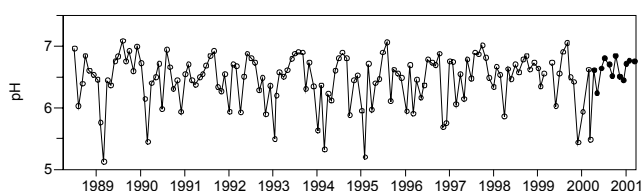
Geology: Granite

Vegetation: 90% Moorland  
 10% Conifers

### 2.1 Spot sampled chemistry data

#### Time series data

○ 04Jul1988 to 31Mar2000    ● 01Apr2000 to 19Mar2001



#### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.62	684	6.23	0.18	100.0
Alk(CaCO <sub>3</sub> )	2.46	3.45	0.95	0.72	100.0
Cond	22.4	27.0	18.0	2.6	100.0
Ca	0.79	0.95	0.54	0.13	100.0
Mg	0.43	0.80	0.30	0.19	100.0
Na	2.97	3.50	2.40	0.31	100.0
K	0.22	0.26	0.17	0.03	100.0
Ba	0.00	0.00	0.00	0.00	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.01	0.02	0.00	0.01	83.3
Mn	0.00	0.01	0.00	0.00	41.7
Sol.Al	18.6	41.0	5.0	10.8	100.0
Sol.lab.Al	2.9	6.0	2.5	1.0	100.0
Cl	3.90	5.90	3.10	0.75	100.0
SO <sub>4</sub>	1.84	2.10	0.50	0.44	100.0
XSO <sub>4</sub>	1.29	1.59	-0.34	0.52	100.0
NO <sub>3</sub>	0.02	0.03	0.02	0.00	100.0
PO <sub>4</sub>	0.00	0.00	0.00	0.00	100.0
Br	No recorded data.				
F	0.09	0.12	0.04	0.02	100.0
Si	2.68	4.00	1.60	0.72	100.0
DOC	2.11	3.10	1.30	0.52	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

#### Past record statistics

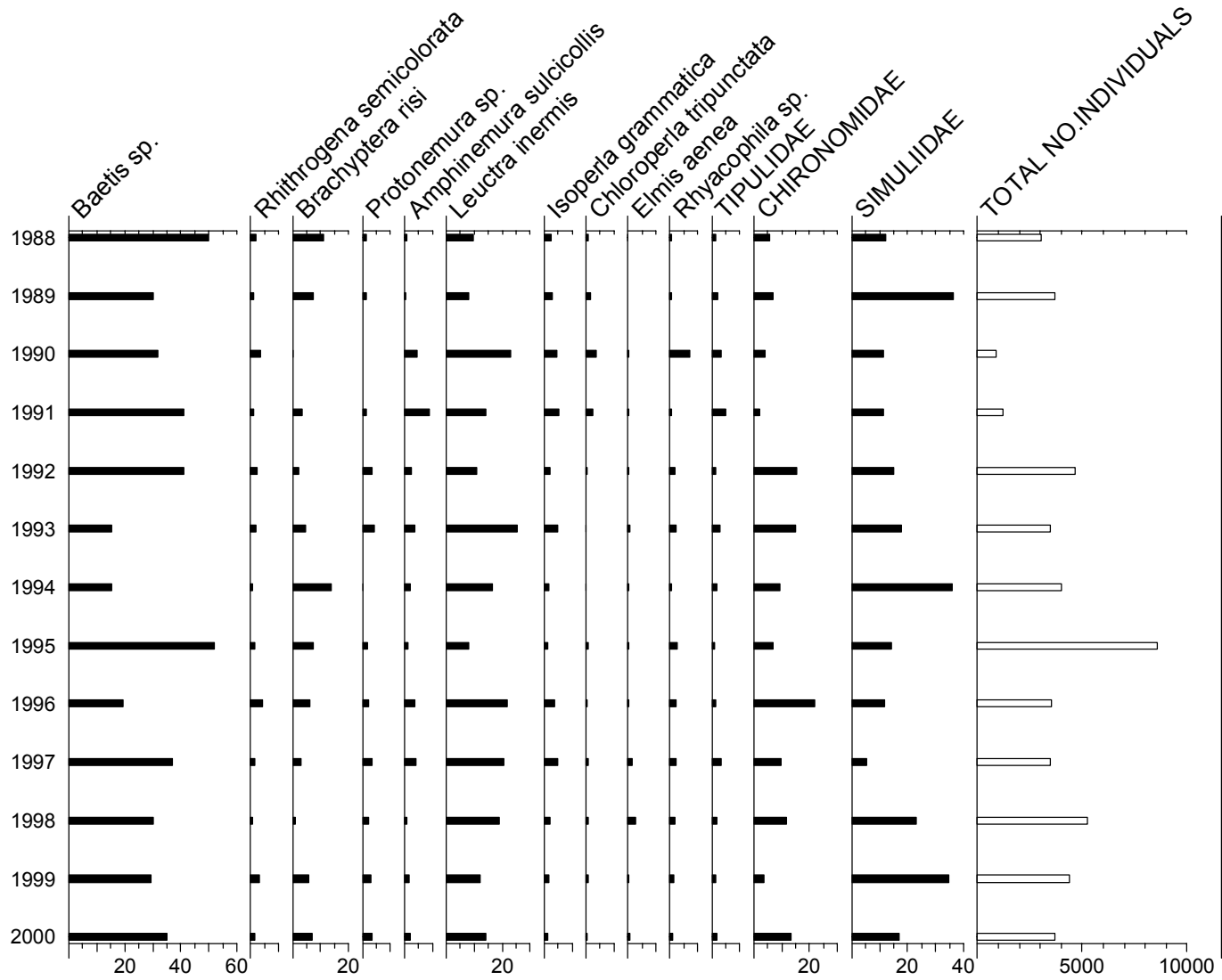
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.45	7.08	5.12	0.41	100.0
Alk(CaCO <sub>3</sub> )	2.16	4.55	-0.20	1.12	100.0
Cond	23.8	38.0	14.0	3.3	100.0
Ca	0.83	1.21	0.47	0.15	100.0
Mg	0.35	0.60	0.20	0.07	100.0
Na	3.10	4.90	2.10	0.41	100.0
K	0.36	0.50	0.15	0.05	100.0
Ba	0.00	0.01	0.00	0.00	90.3
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.02	0.07	0.01	0.01	93.8
Mn	0.00	0.01	0.00	0.00	91.7
Sol.Al	36.0	166.0	2.5	31.9	100.0
Sol.lab.Al	6.2	46.0	2.5	6.8	100.0
Cl	3.94	9.20	2.00	0.93	100.0
SO <sub>4</sub>	2.10	3.50	1.00	0.32	100.0
XSO <sub>4</sub>	1.54	2.78	0.42	0.32	100.0
NO <sub>3</sub>	0.02	0.07	0.02	0.01	100.0
PO <sub>4</sub>	0.00	0.03	0.00	0.00	100.0
Br	0.01	0.02	0.00	0.00	89.6
F	0.09	0.14	0.00	0.03	100.0
Si	2.42	3.50	0.70	0.61	100.0
DOC	2.39	12.10	0.10	1.74	100.0

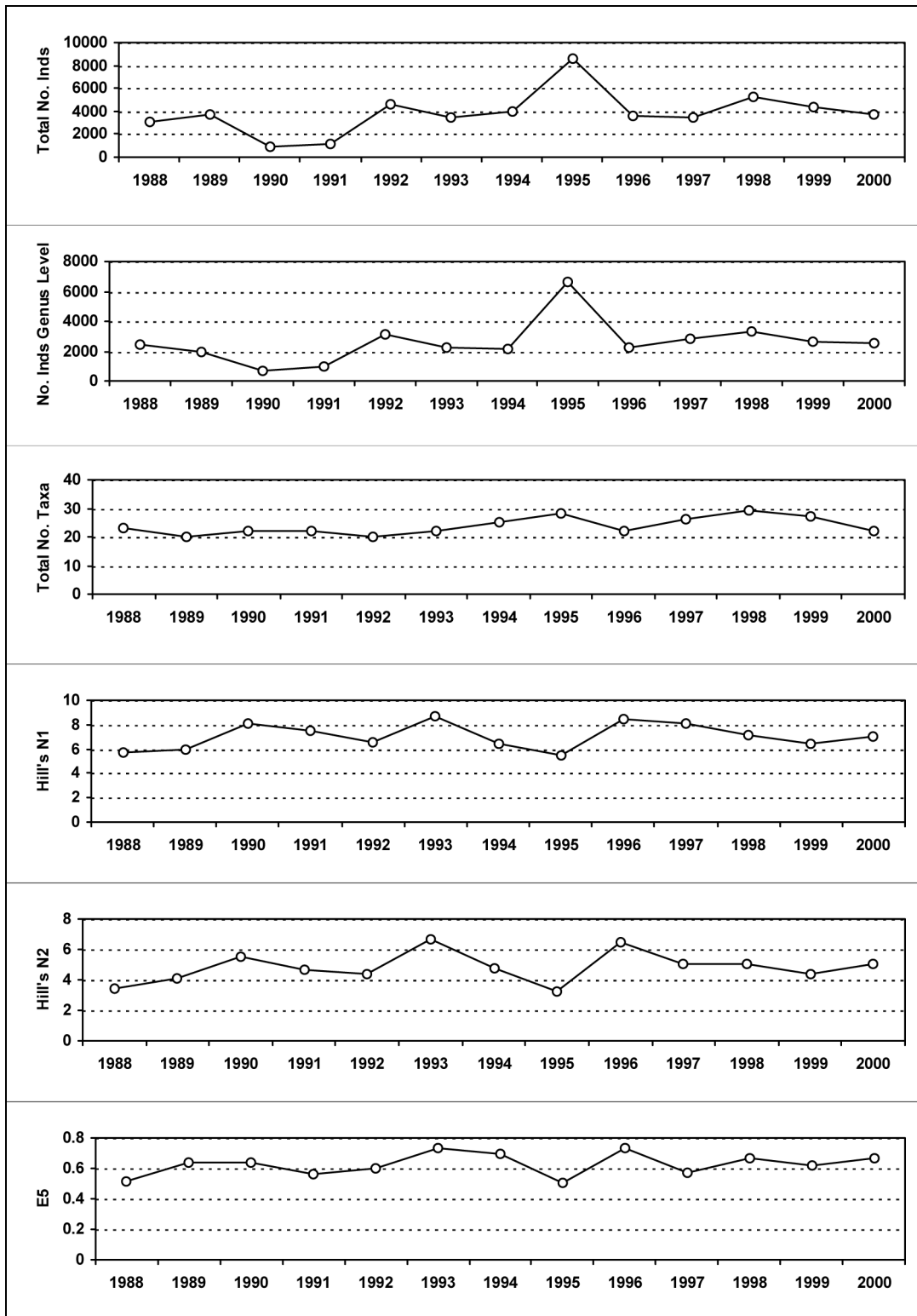
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

## 2.2. Macroinvertebrate data

### 2.2.1. Percentage abundance summary, Allt a'Mharcaidh



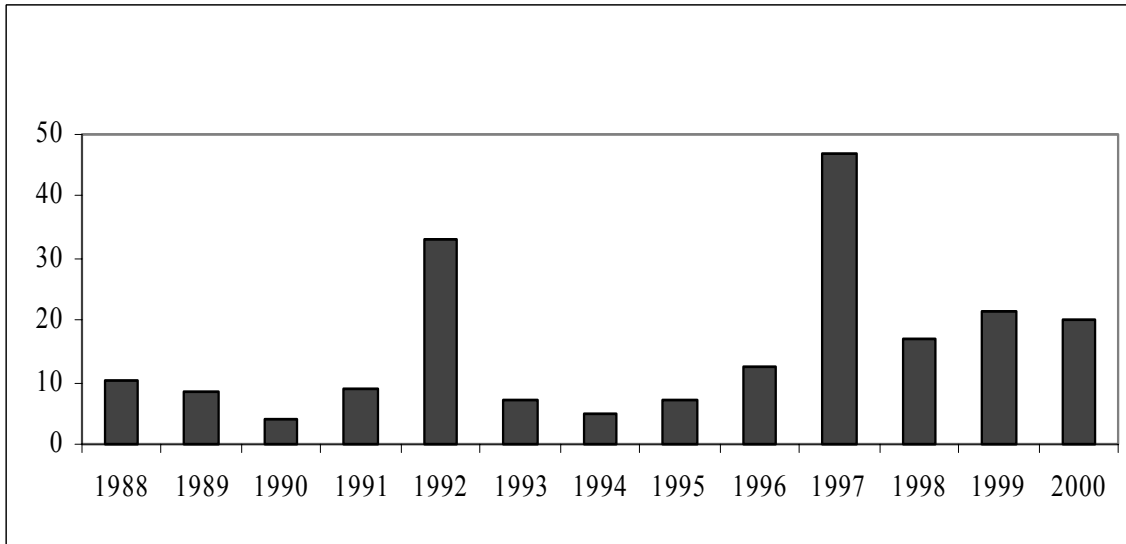
## 2.2.2. Summary statistics, Allt a'Mharcaidh



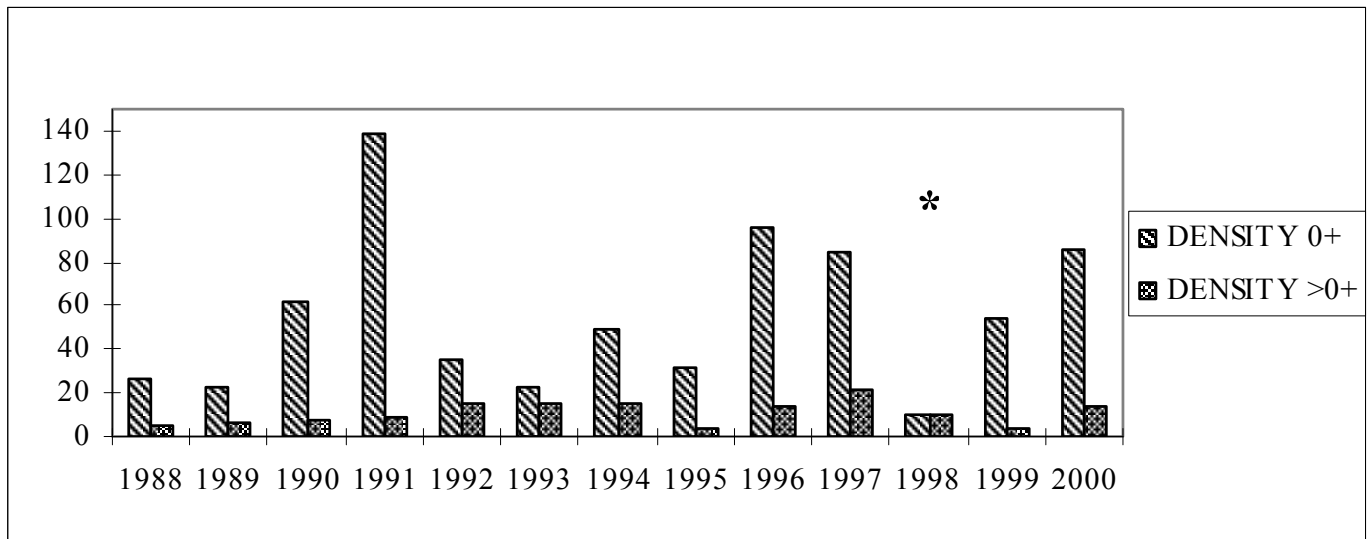


## 2.3. Fish data

### 2.3.1. Summary of mean Salmon density (total numbers 100m<sup>-2</sup>), Allt a'Mharcaidh



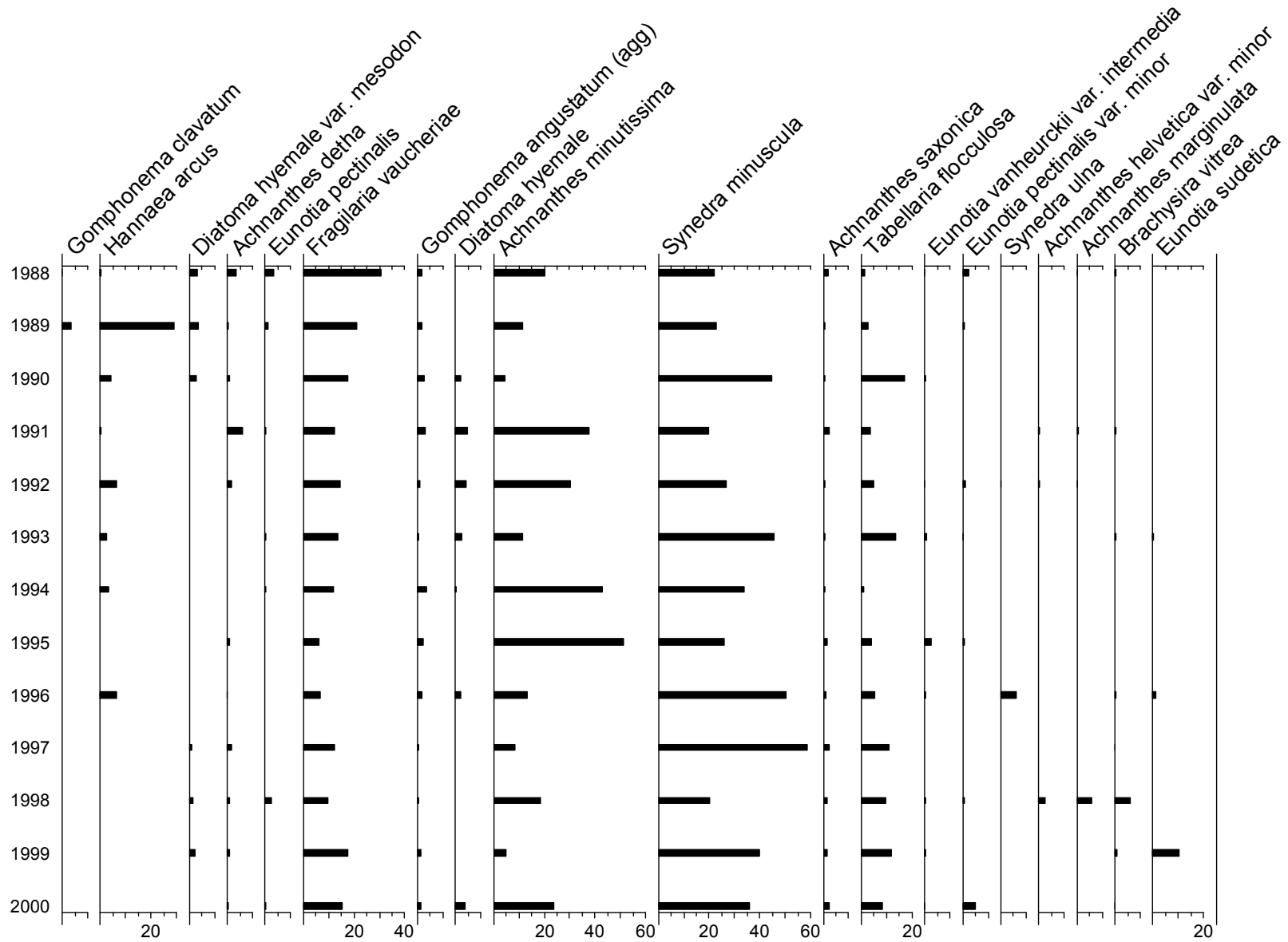
### 2.3.2. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Allt a'Mharcaidh



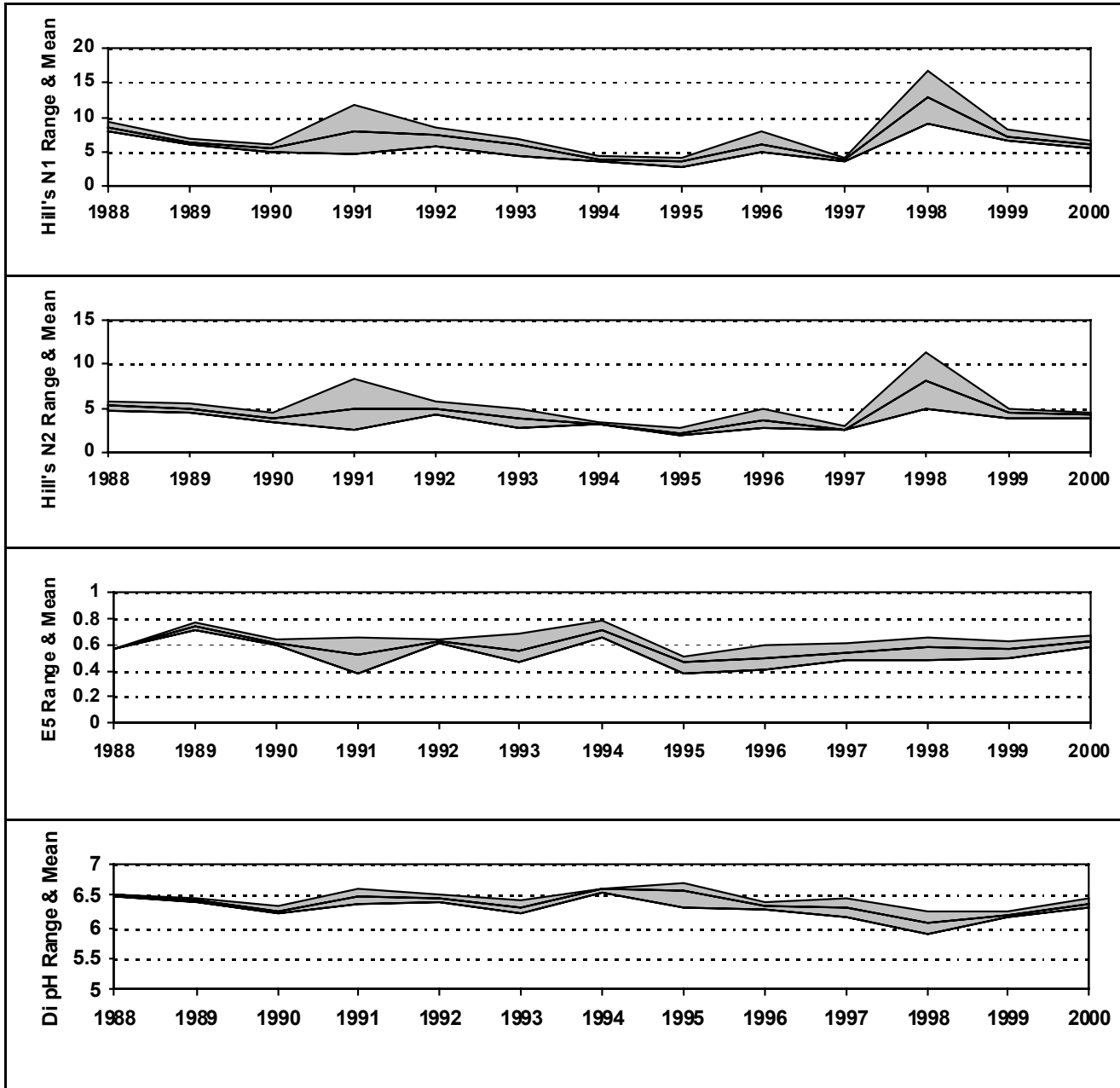
\* Not all 3 reaches fished

## 2.4. Epilithic diatom data

### 2.4.1. Percentage abundance summary, Allt a'Mharcaidh

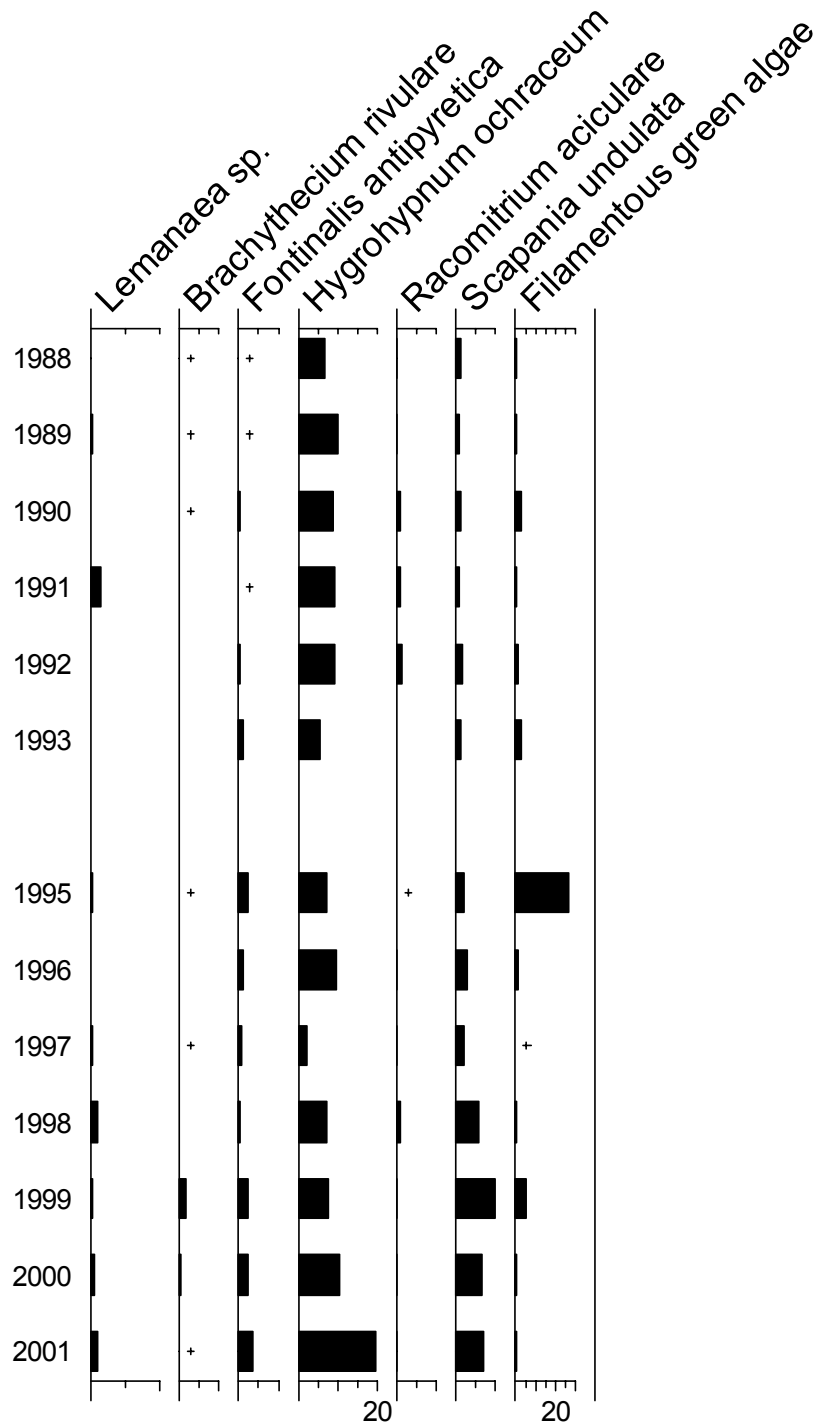


## 2.4.2. Summary statistics, Allt a'Mharcaidh



## 2.5. Aquatic macrophyte data, Allt a'Mharcaidh

### Percentage Species Cover



+ Represents <0.1% abundance

### 3. Allt na Coire nan Con



[Back to main map](#)

Catchment area: 790 ha  
 Minimum catchment altitude: 10 m  
 Maximum catchment altitude: 756 m

Grid Ref: NM 793688

Soils: Peaty podsol  
 Peaty gley  
 Peat

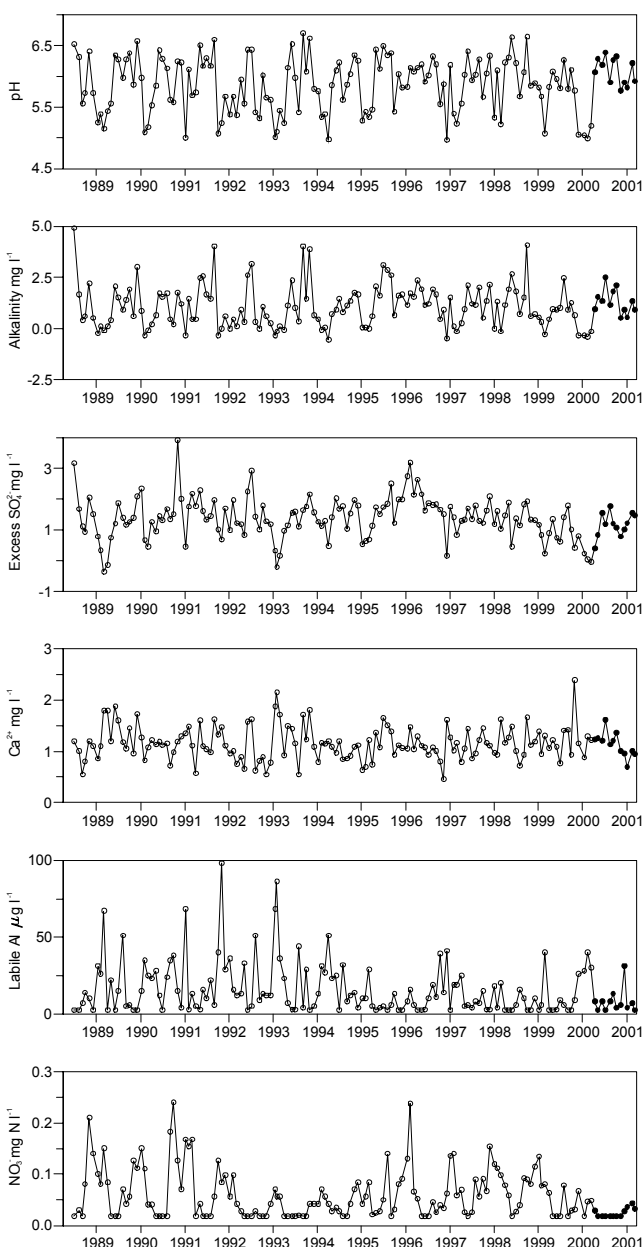
Geology: Schists  
 Gneiss

Vegetation: 58 % Moorland  
 42 % Conifers

### 3.1. Spot sampled chemistry data

#### Time series data

○ 29Jun1988 to 31Mar2000    ● 01Apr 2000 to 12Mar2001



#### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.08	6.38	5.76	0.22	100.0
Alk(CaCO <sub>3</sub> )	1.30	2.50	0.50	0.61	100.0
Cond	43.6	53.0	31.0	6.1	100.0
Ca	1.14	1.61	0.70	0.23	100.0
Mg	0.84	1.30	0.50	0.28	100.0
Na	5.78	6.80	4.30	0.78	100.0
K	0.24	0.31	0.16	0.04	100.0
Ba	0.00	0.00	0.00	0.00	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.12	0.23	0.02	0.06	91.7
Mn	0.00	0.01	0.00	0.00	100.0
Sol.Al	60.5	106.0	35.0	20.4	100.0
Sol.lab.Al	8.0	31.0	2.5	7.9	100.0
Cl	10.19	14.20	6.90	2.08	100.0
SO <sub>4</sub>	2.61	3.10	2.20	0.30	100.0
XSO <sub>4</sub>	1.16	1.76	0.38	0.39	100.0
NO <sub>3</sub>	0.02	0.04	0.02	0.01	100.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.02	0.03	0.01	0.01	75.0
F	0.02	0.02	0.01	0.00	100.0
Si	1.02	1.50	0.30	0.35	100.0
DOC	5.33	9.10	3.40	1.72	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

#### Past record statistics

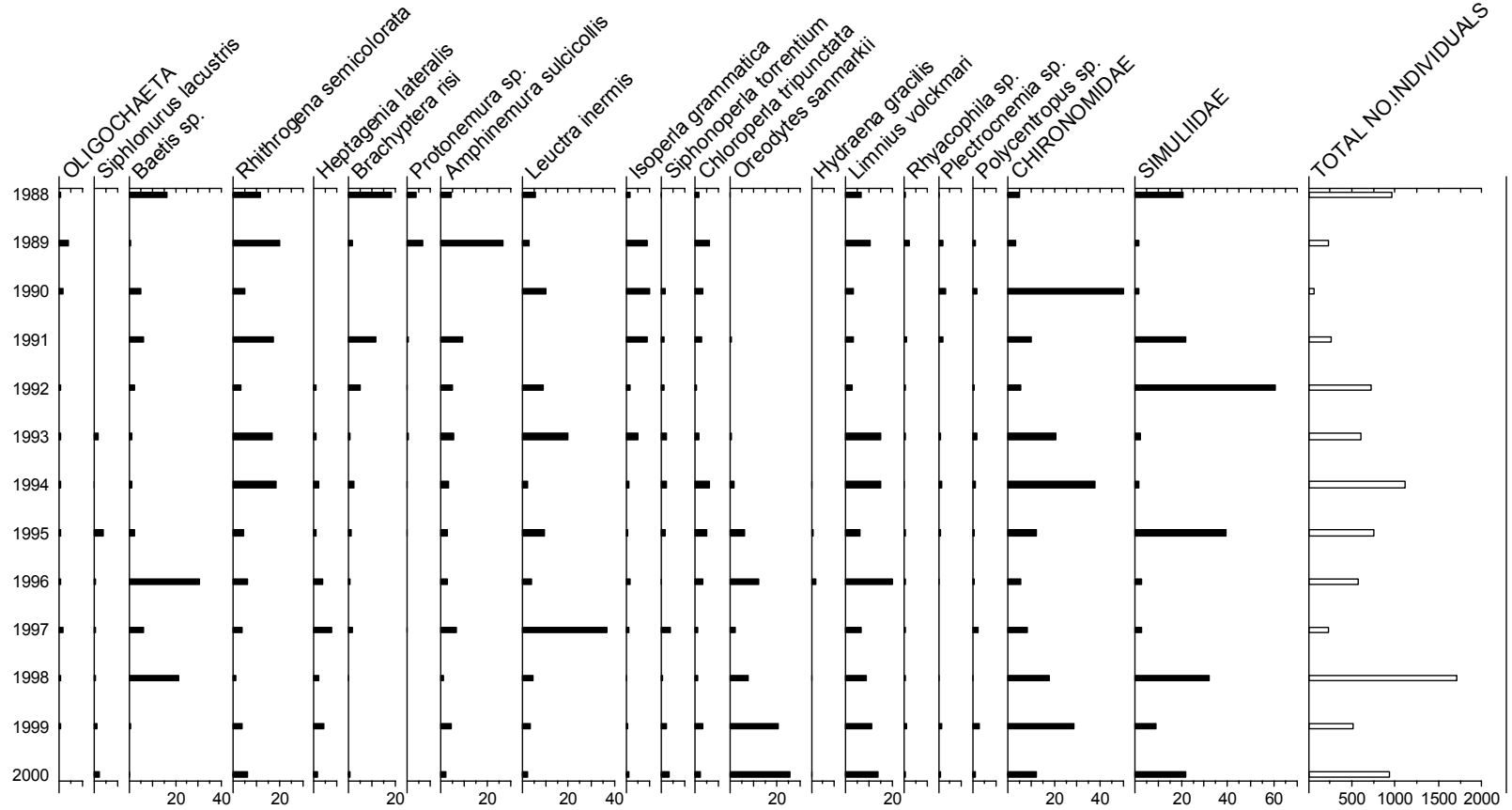
Chemistry statistics for period April 1988 to march 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.85	6.70	4.96	0.45	100.0
Alk(CaCO <sub>3</sub> )	1.06	4.90	-0.55	1.06	100.0
Cond	46.6	108.0	20.0	14.8	100.0
Ca	1.16	2.39	0.45	0.33	100.0
Mg	0.82	2.10	0.30	0.30	100.0
Na	6.06	13.10	3.40	1.78	100.0
K	0.39	1.08	0.13	0.09	100.0
Ba	0.01	0.05	0.00	0.00	93.8
Sr	0.01	0.04	0.00	0.00	100.0
Fe	0.09	0.27	0.02	0.06	100.0
Mn	0.01	0.03	0.00	0.00	100.0
Sol.Al	65.0	131.0	12.0	27.8	100.0
Sol.lab.Al	16.3	98.0	2.5	17.3	100.0
Cl	10.64	29.00	4.50	4.63	100.0
SO <sub>4</sub>	2.89	5.30	1.40	0.62	100.0
XSO <sub>4</sub>	1.37	3.91	-0.37	0.68	100.0
NO <sub>3</sub>	0.06	0.24	0.02	0.05	100.0
PO <sub>4</sub>	0.00	0.03	0.00	0.00	100.0
Br	0.02	0.10	0.00	0.01	100.0
F	0.02	0.10	0.00	0.01	100.0
Si	1.00	2.10	0.40	0.35	100.0
DOC	4.05	11.00	0.10	2.13	100.0

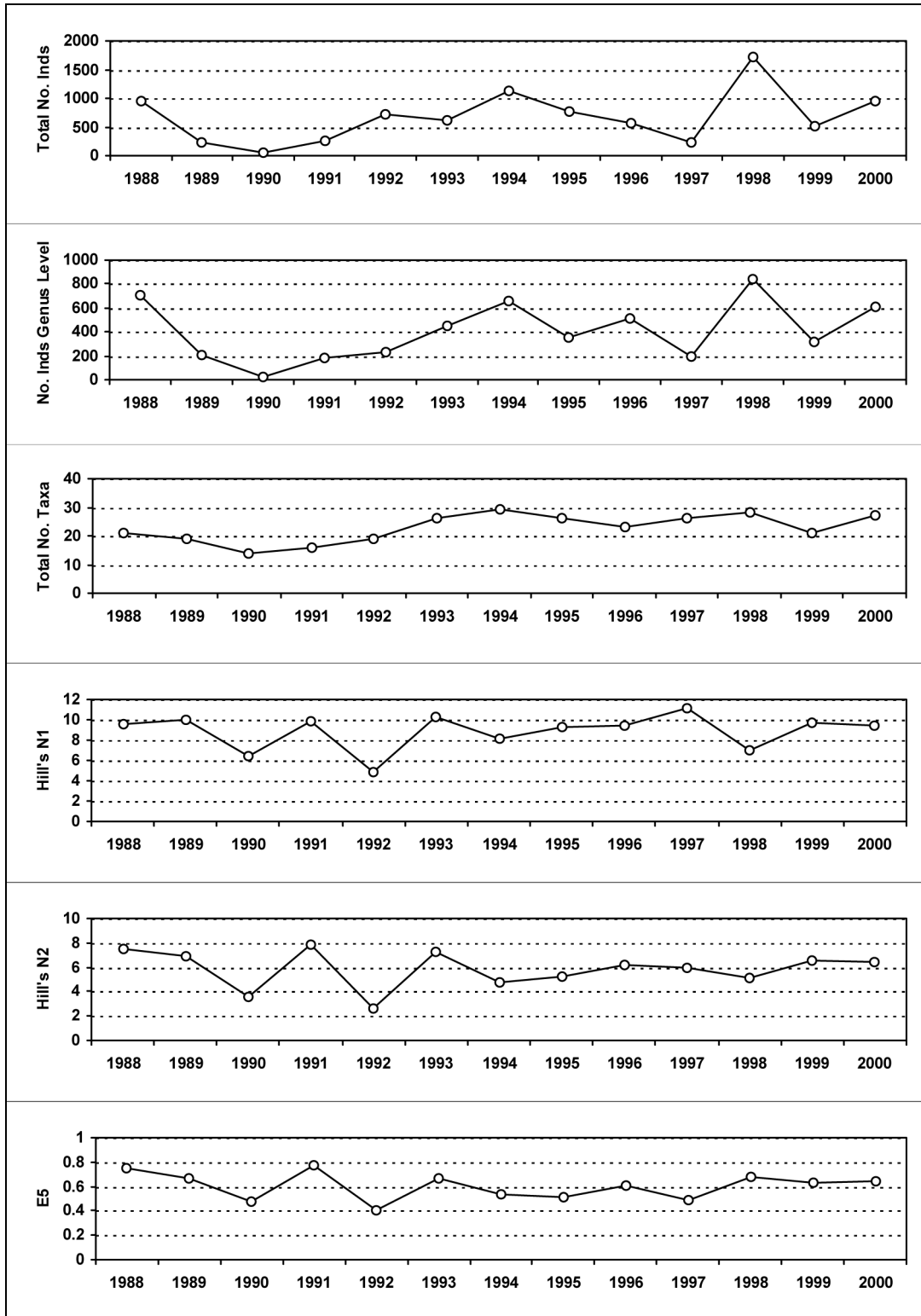
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### 3.2. Macroinvertebrate data

#### 3.2.1. Percentage abundance summary, Allt na Coire nan Con

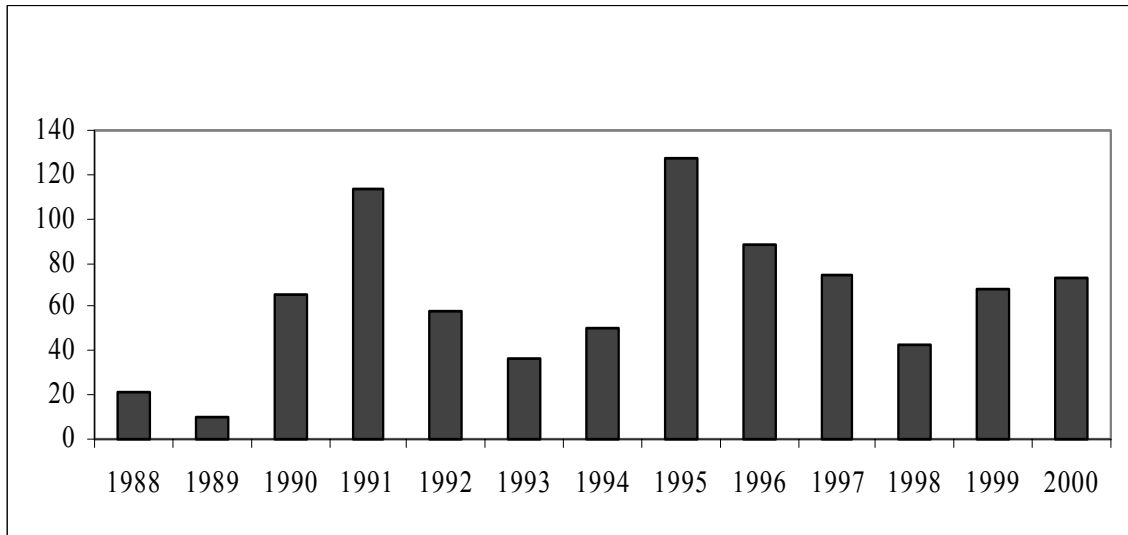


### 3.2.2. Summary statistics, Allt na Coire nan Con

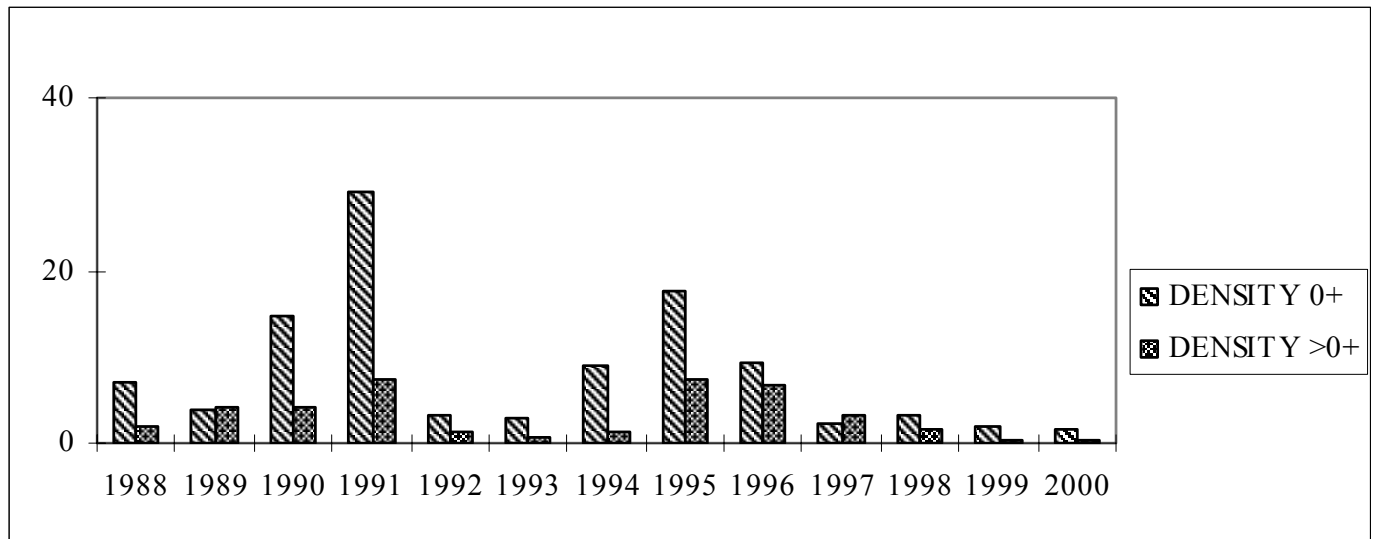


### 3.3. Fish data

#### 3.3.1. Summary of mean Salmon density (total numbers 100m<sup>-2</sup>), Allt na Coire nan Con



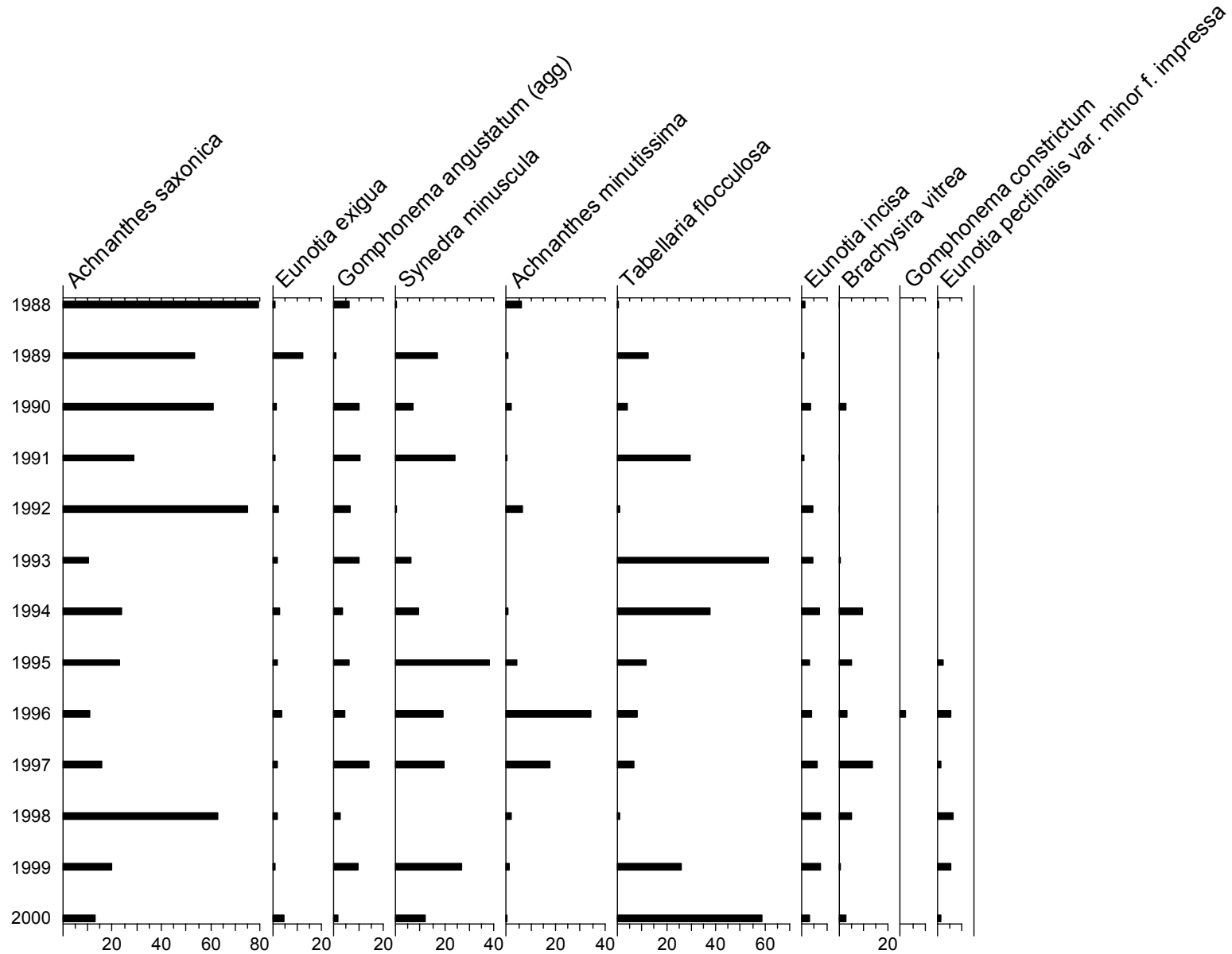
#### 3.3.2. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Allt na Coire nan Con



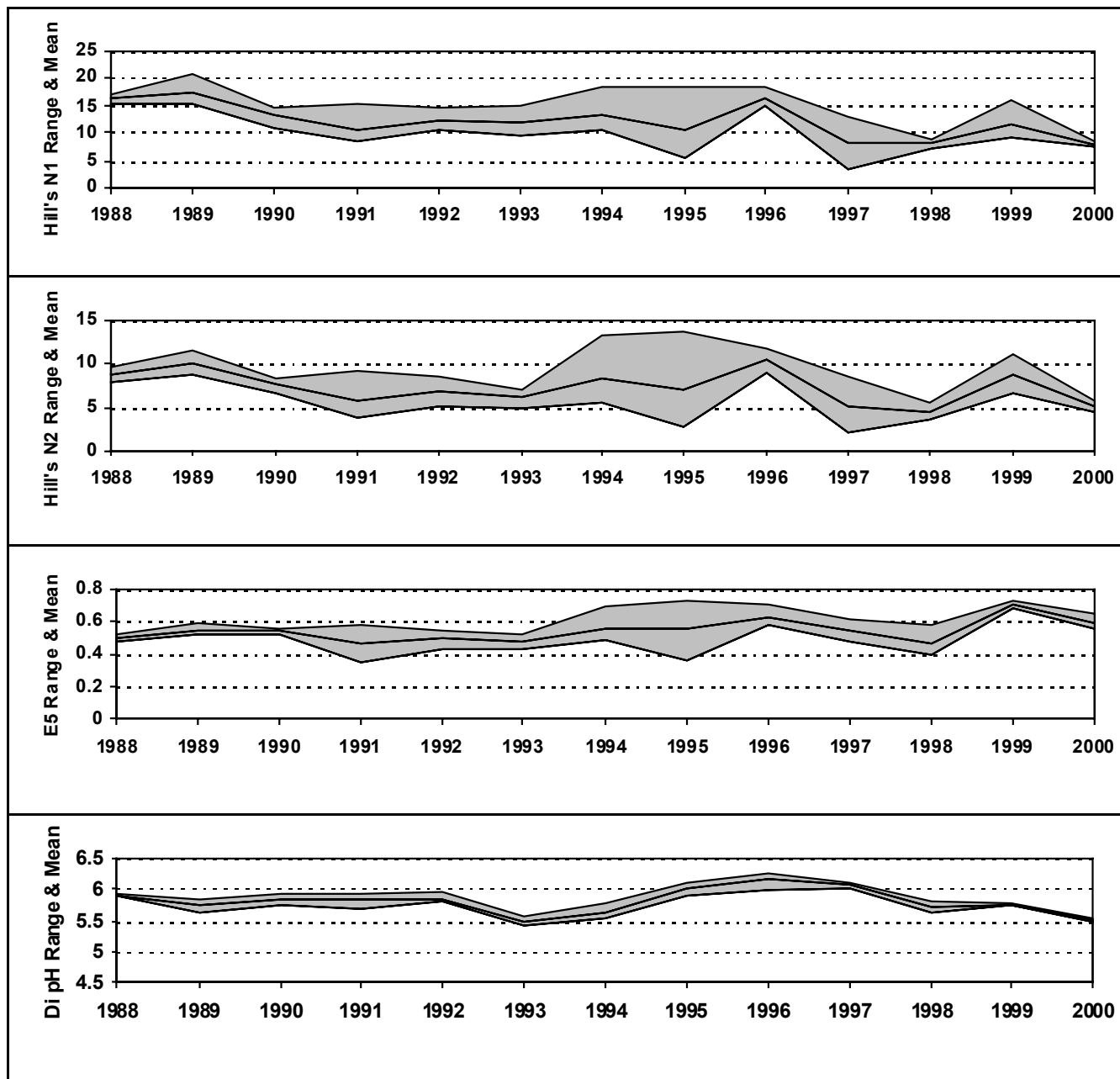


### 3.4. Epilithic diatom data

#### 3.4.1. Percentage abundance summary, Allt na Coire nan Con

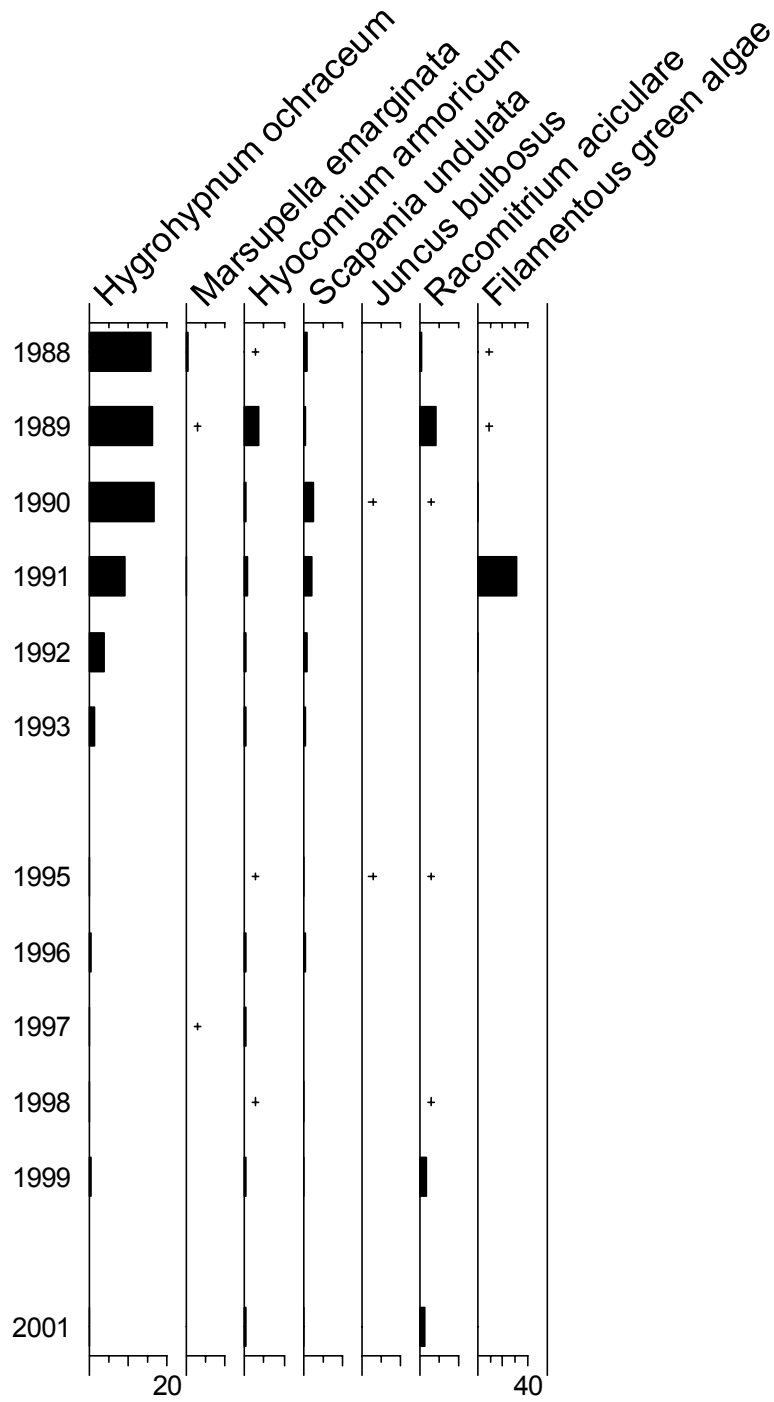


### 3.4.2. Summary statistics, Allt na Coire nan Con



### 3.5. Aquatic macrophyte data, Allt na Coire nan Con

Percentage Species Cover



+ Represents <math><0.1\%</math> abundance

# 4. Lochnagar



[Back to main map](#)

Lake altitude: 785 m  
 Maximum depth: 24.0 m  
 Mean depth: 8.4 m  
 Volume:  $0.82 \times 10^6 \text{ m}^3$

Lake area: 10 ha  
 Catchment area: 92 ha  
 Catchment:lake ratio: 9.4  
 Net relief: 370 m

Grid Ref: NO 252859

Soils: Peat

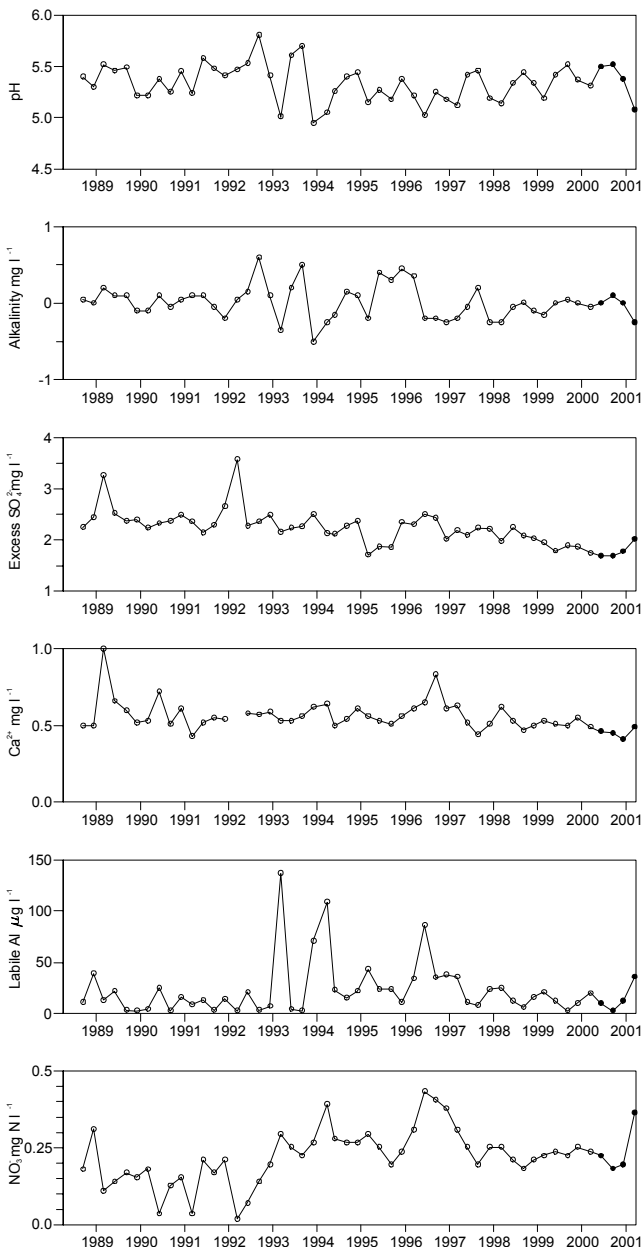
Geology: Granite

Vegetation: 100 % Moorland

## 4.1. Spot sampled chemistry data

### Time series data

○ 09Sep1988 to 31Mar2000    ● 01Apr2000 to 20Mar2001



### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.37	5.52	5.08	0.20	100.0
Alk(CaCO <sub>3</sub> )	-0.04	0.10	-0.25	0.15	100.0
Cond	19.2	23.0	17.0	2.6	100.0
Ca	0.45	0.49	0.41	0.03	100.0
Mg	0.38	0.50	0.30	0.10	100.0
Na	1.90	2.00	1.80	0.08	100.0
K	0.17	0.20	0.16	0.02	100.0
Ba	0.02	0.02	0.02	0.00	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.02	0.04	0.01	0.01	100.0
Mn	0.01	0.01	0.01	0.00	100.0
Sol.Al	33.8	54.0	15.0	17.2	100.0
Sol.lab.Al	15.1	36.0	2.5	14.5	100.0
Cl	2.70	2.90	2.30	0.28	100.0
SO <sub>4</sub>	2.17	2.40	2.10	0.15	100.0
XSO <sub>4</sub>	1.79	2.02	1.69	0.16	100.0
NO <sub>3</sub>	0.24	0.36	0.18	0.08	100.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	No recorded data.				
F	<b>All recorded data below detection limit.</b>				
Si	1.05	1.30	0.80	0.29	100.0
DOC	1.52	1.90	0.90	0.45	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

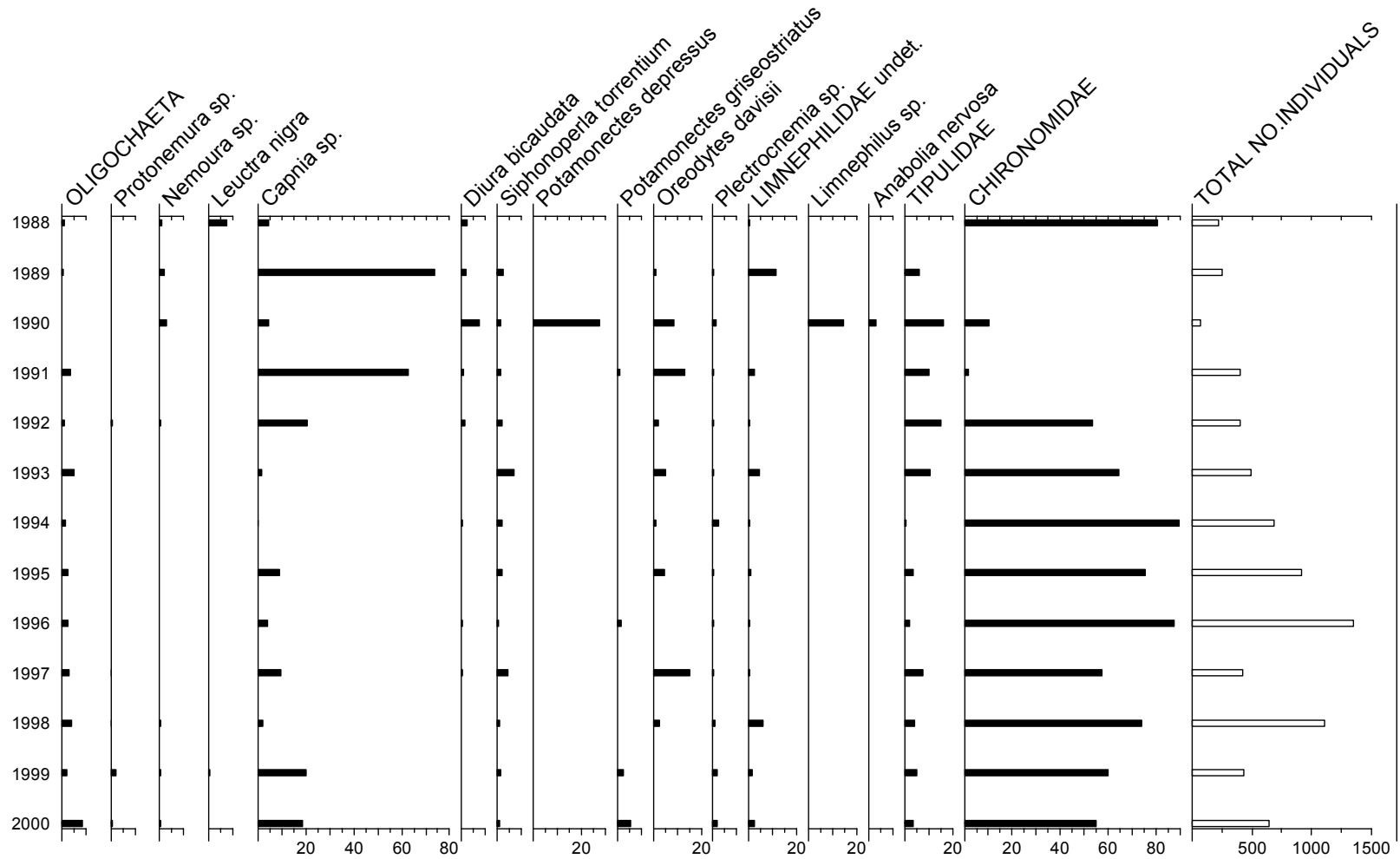
Chemistry statistics for period Sept 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.34	5.81	4.95	0.18	100.0
Alk(CaCO <sub>3</sub> )	0.02	0.60	-0.50	0.23	100.0
Cond	21.8	35.0	4.0	4.5	100.0
Ca	0.57	1.00	0.43	0.10	100.0
Mg	0.40	0.70	0.30	0.07	100.0
Na	2.15	4.00	1.60	0.36	100.0
K	0.36	0.50	0.16	0.06	100.0
Ba	0.03	0.10	0.01	0.01	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.02	0.05	0.01	0.01	87.5
Mn	0.01	0.01	0.00	0.00	100.0
Sol.Al	39.5	147.0	4.0	29.4	100.0
Sol.lab.Al	23.2	137.0	2.5	27.3	100.0
Cl	3.19	5.90	1.80	0.68	100.0
SO <sub>4</sub>	2.71	4.10	2.20	0.36	100.0
XSO <sub>4</sub>	2.26	3.57	1.70	0.33	100.0
NO <sub>3</sub>	0.22	0.43	0.02	0.09	100.0
PO <sub>4</sub>	0.00	0.03	0.00	0.00	93.8
Br	0.02	0.31	0.00	0.05	87.5
F	0.02	0.03	0.00	0.00	100.0
Si	1.02	1.50	0.30	0.18	100.0
DOC	1.13	3.40	0.20	0.59	100.0

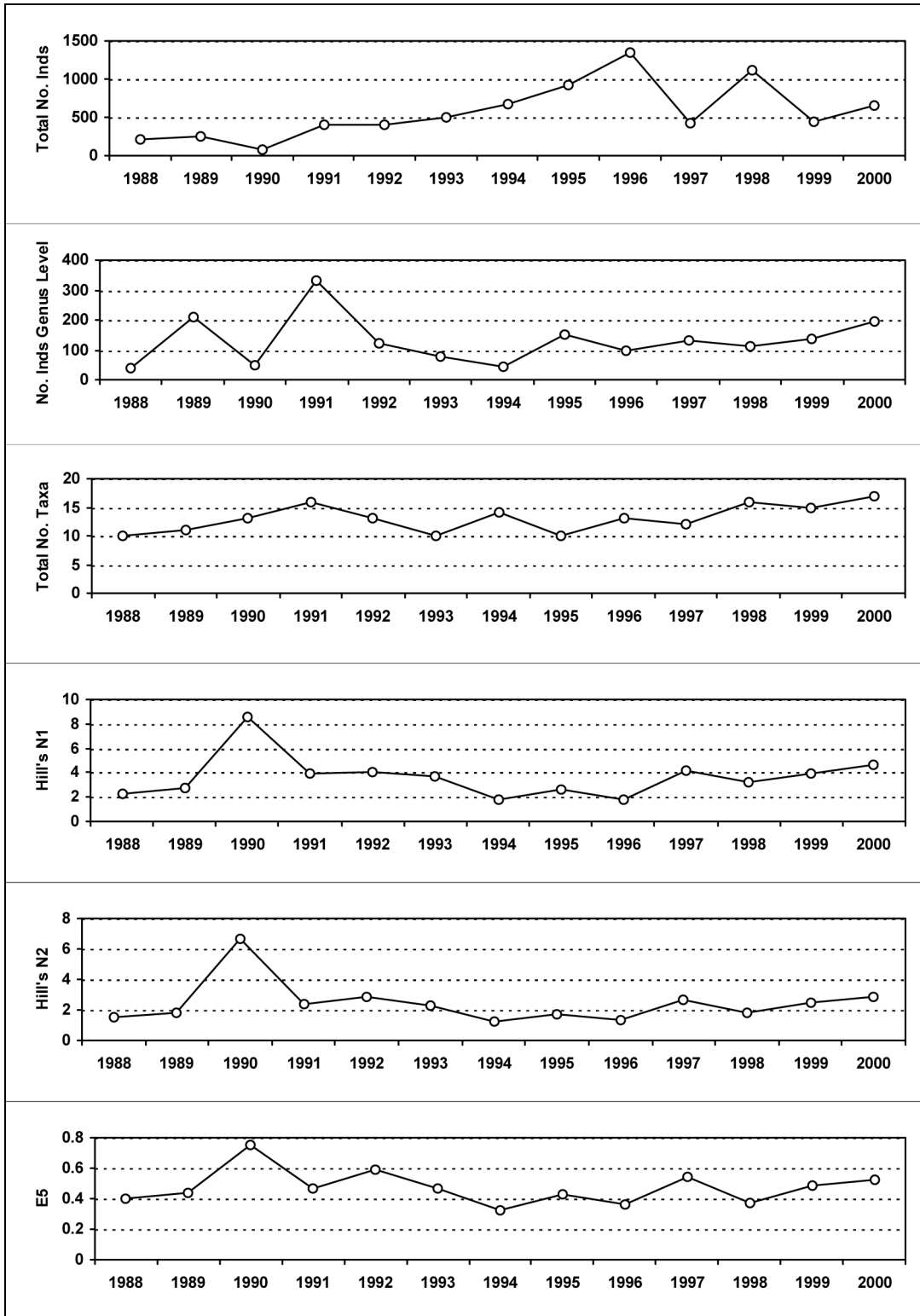
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

## 4.2. Macroinvertebrate data

### 4.2.1. Percentage abundance summary, Lochnagar

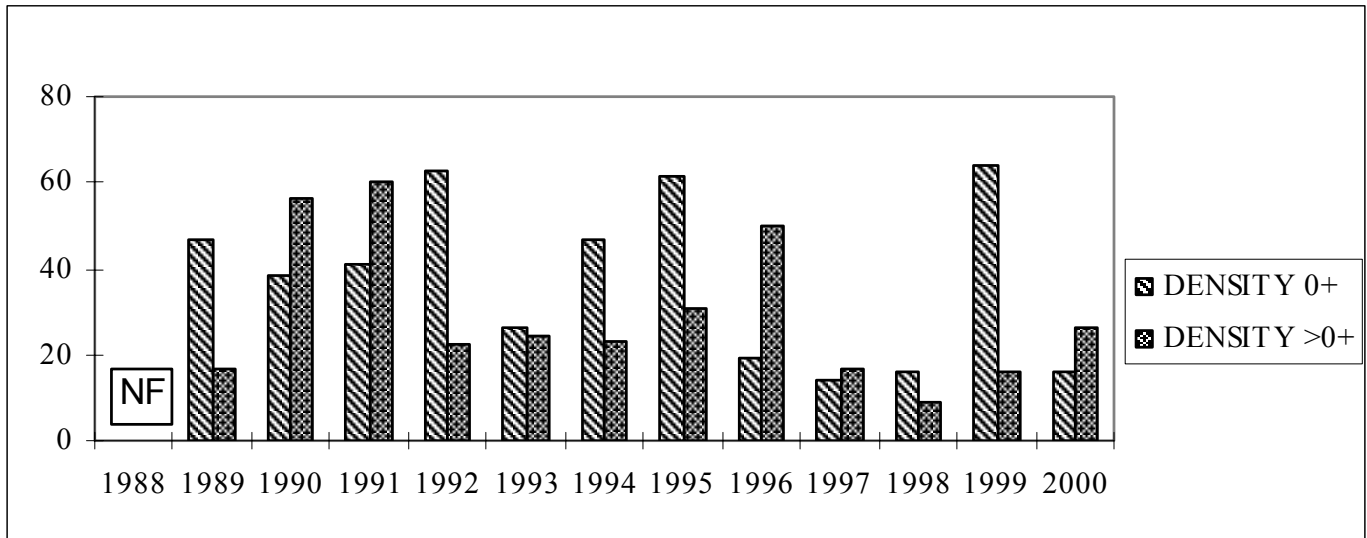


## 4.2.2. Summary statistics, Lochnagar



### 4.3. Fish data (for outflow stream)

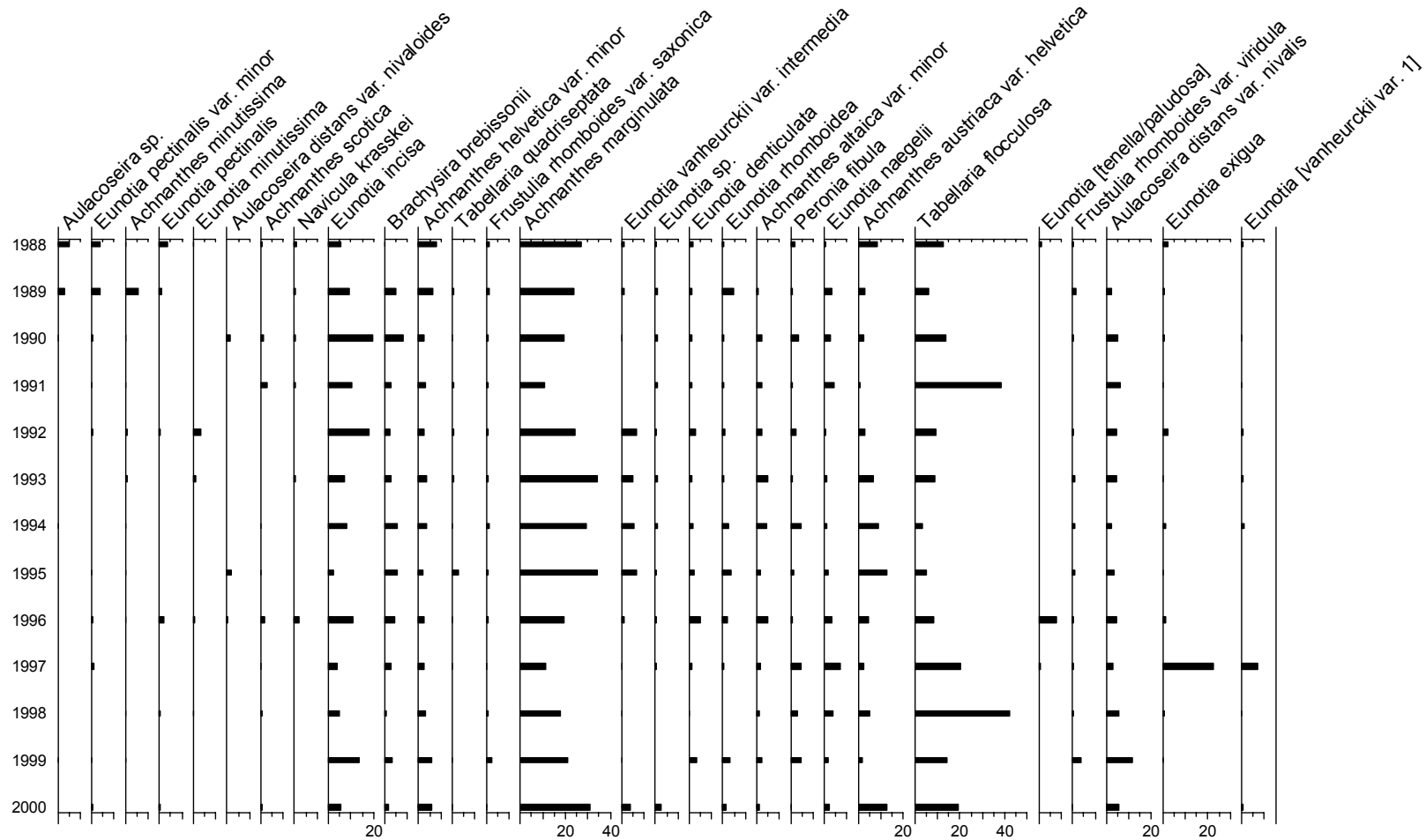
#### 4.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Lochnagar



NF = Not fished

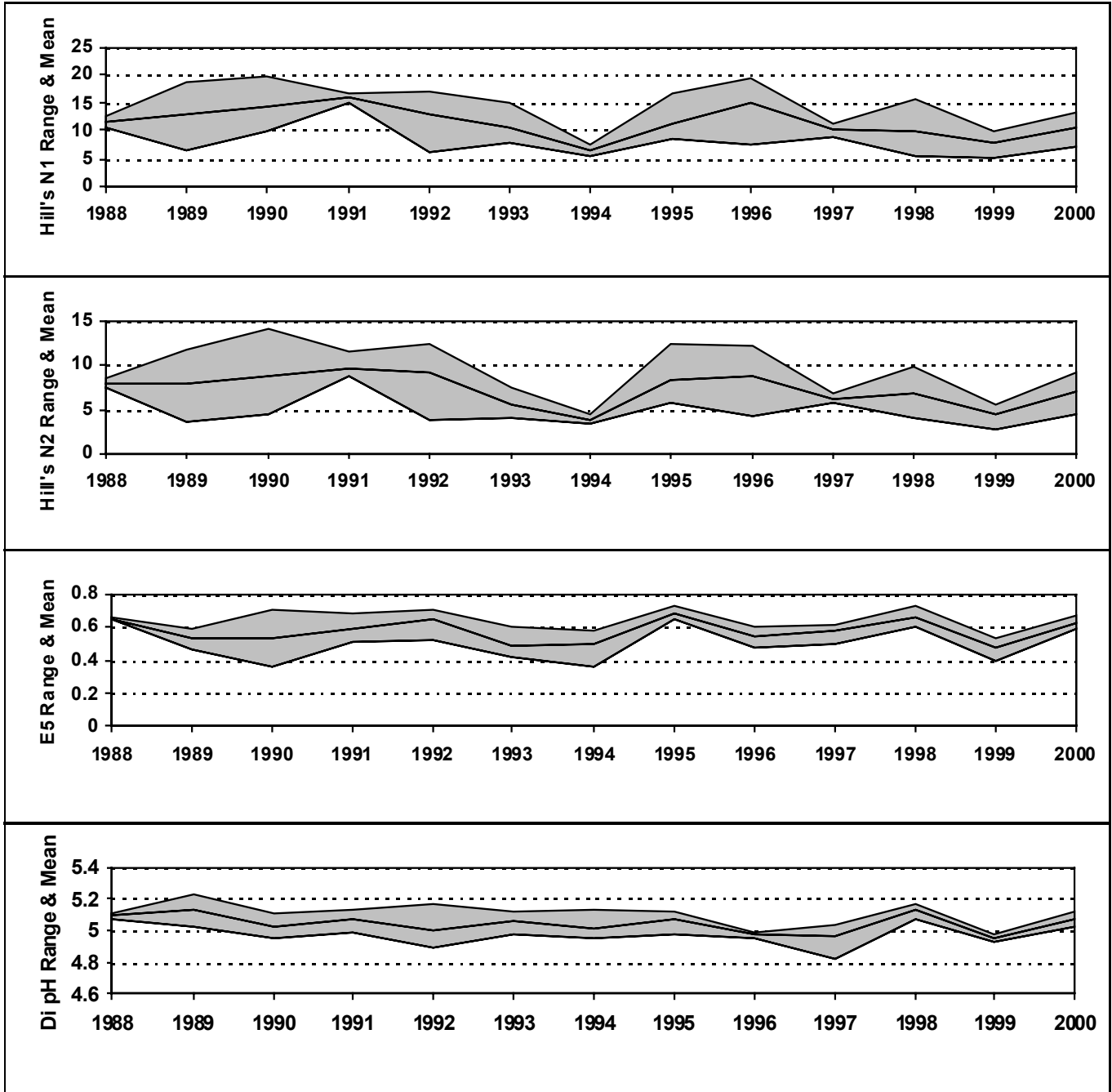
## 4.4. Epilithic diatom data

### 4.4.1. Percentage abundance summary, Lochnagar



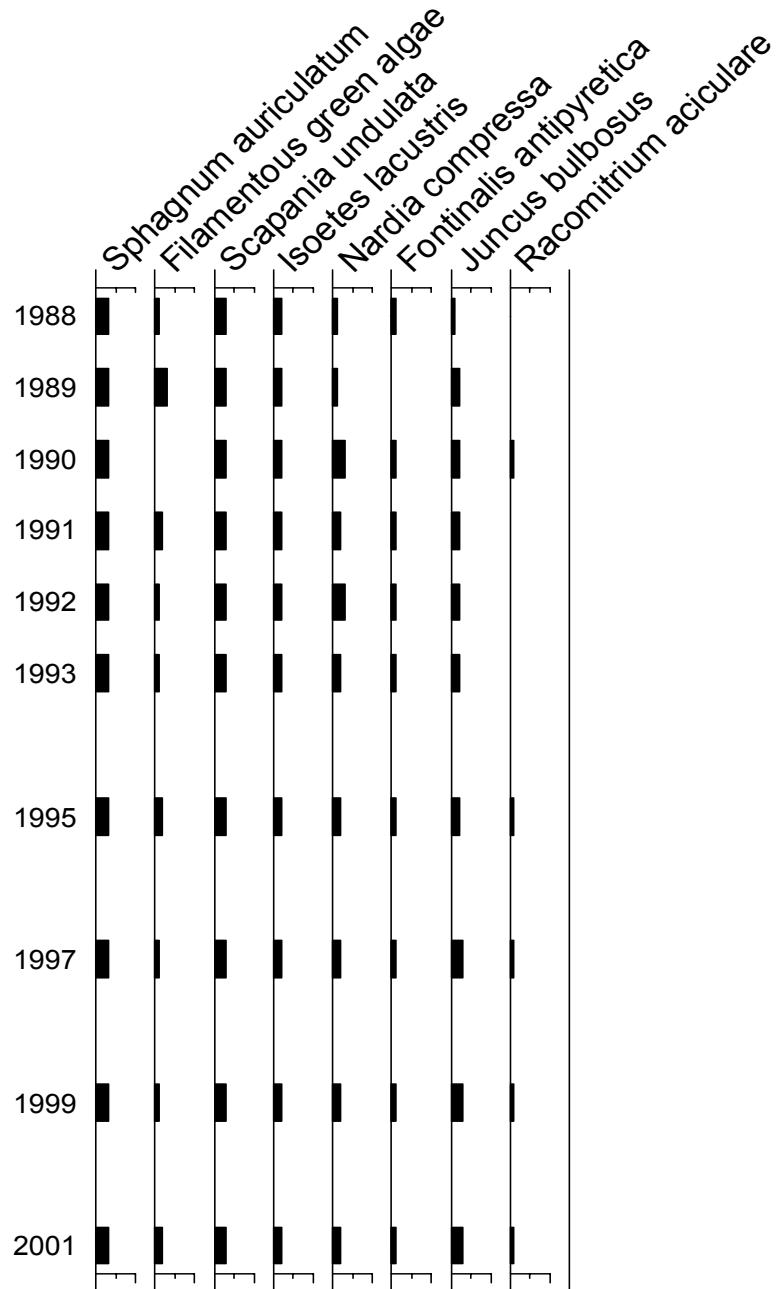


### 4.4.2. Summary statistics, Lochnagar



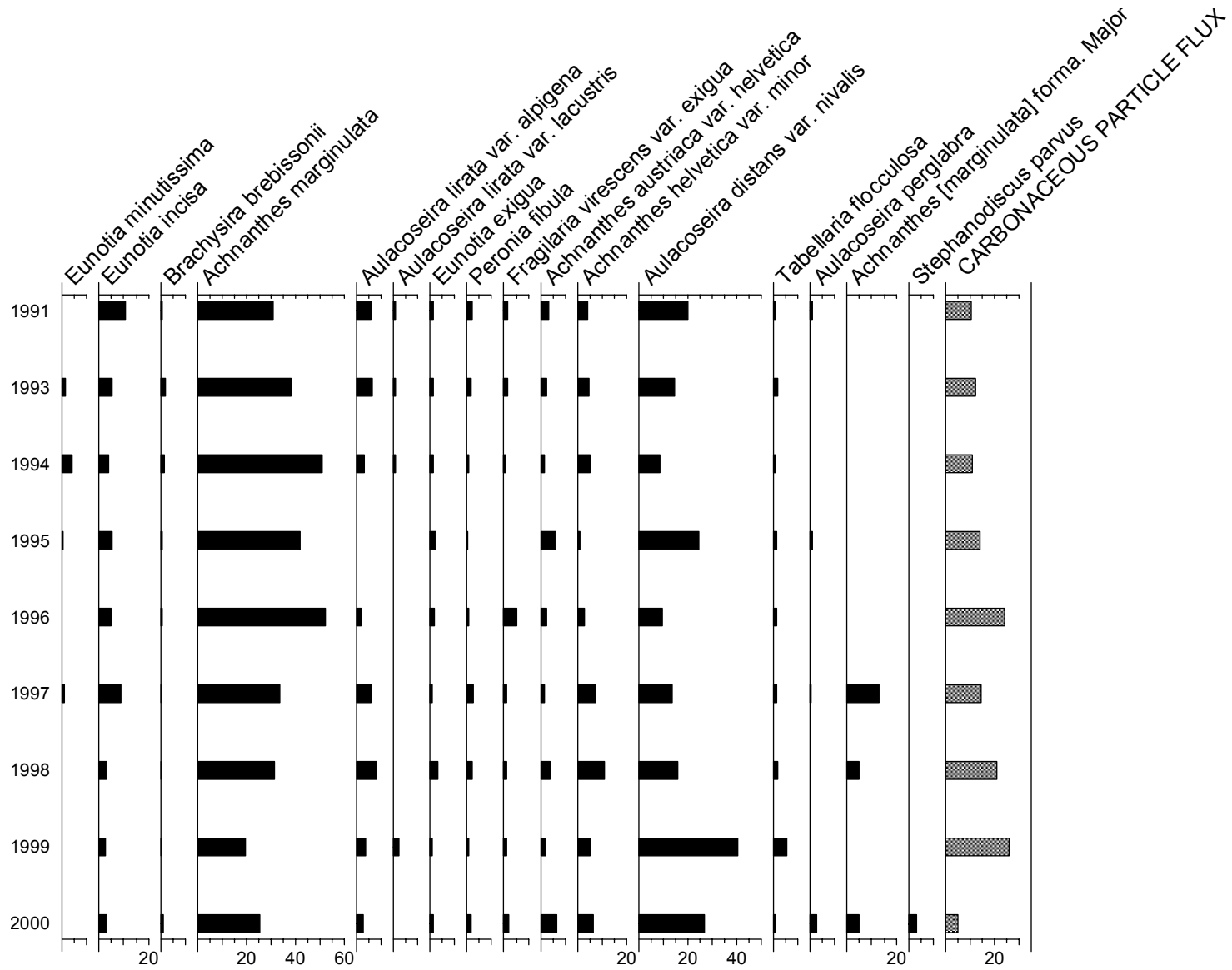
## 4.5. Aquatic macrophyte data, Lochnagar

### Species Scores (1-5)



### 4.6. Sediment trap data, Lochnagar

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 5. Loch Chon



[Back to main map](#)

Grid Ref: NN 421051

Lake altitude: 100 m  
 Maximum depth: 25.0 m  
 Mean depth: 7.6 m  
 Volume:  $7.34 \times 10^6 \text{ m}^3$

Lake area: 100 ha  
 Catchment area: 1470 ha  
 Catchment:lake ratio: 15.7  
 Net relief: 500 m

Soils: Peaty gley  
 Peaty podsol  
 Humic iron podsol

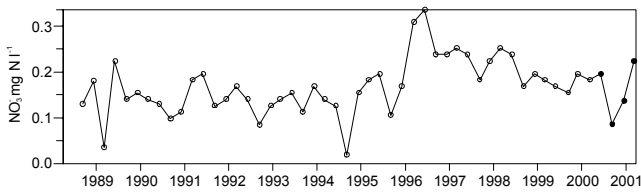
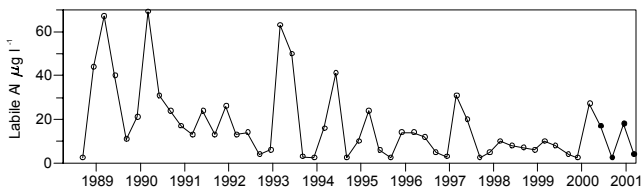
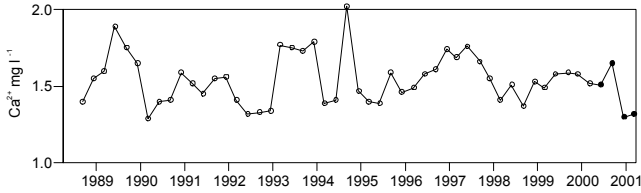
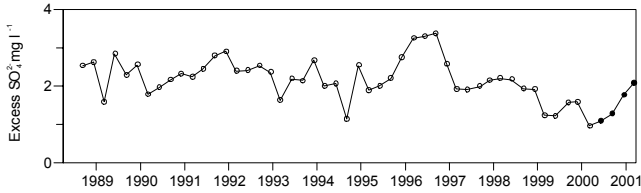
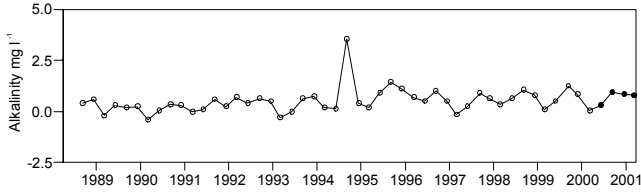
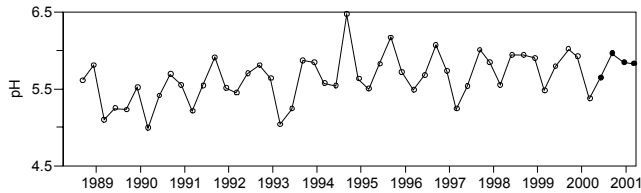
Geology: Mica schists  
 Grits

Vegetation: 29 % Moorland  
 71 % Conifers

## 5.1. Spot sampled chemistry data

### Time series data

○ 07Sep1988to 31Mar2000 ● 01Apr2000 to 14Mar2001



### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.82	5.96	5.65	0.13	100.0
Alk(CaCO <sub>3</sub> )	0.73	0.95	0.30	0.29	100.0
Cond	39.2	44.0	32.0	5.5	100.0
Ca	1.45	1.65	1.30	0.17	100.0
Mg	0.77	1.50	0.50	0.49	100.0
Na	4.47	5.30	3.70	0.79	100.0
K	0.24	0.26	0.22	0.02	100.0
Ba	0.01	0.01	0.01	0.00	100.0
Sr	0.01	0.01	0.01	0.00	100.0
Fe	0.13	0.27	0.06	0.10	100.0
Mn	0.06	0.08	0.04	0.02	100.0
Sol.Al	44.2	59.0	23.0	15.3	100.0
Sol.lab.Al	10.4	18.0	2.5	8.3	100.0
Cl	8.23	10.60	5.80	2.43	100.0
SO <sub>4</sub>	2.72	2.90	2.60	0.13	100.0
XSO <sub>4</sub>	1.56	2.08	1.10	0.45	100.0
NO <sub>3</sub>	0.16	0.22	0.09	0.06	100.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.05	0.12	0.01	0.06	75.0
F	0.02	0.02	0.01	0.00	100.0
Si	0.47	0.70	0.20	0.26	100.0
DOC	4.22	5.50	2.50	1.26	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

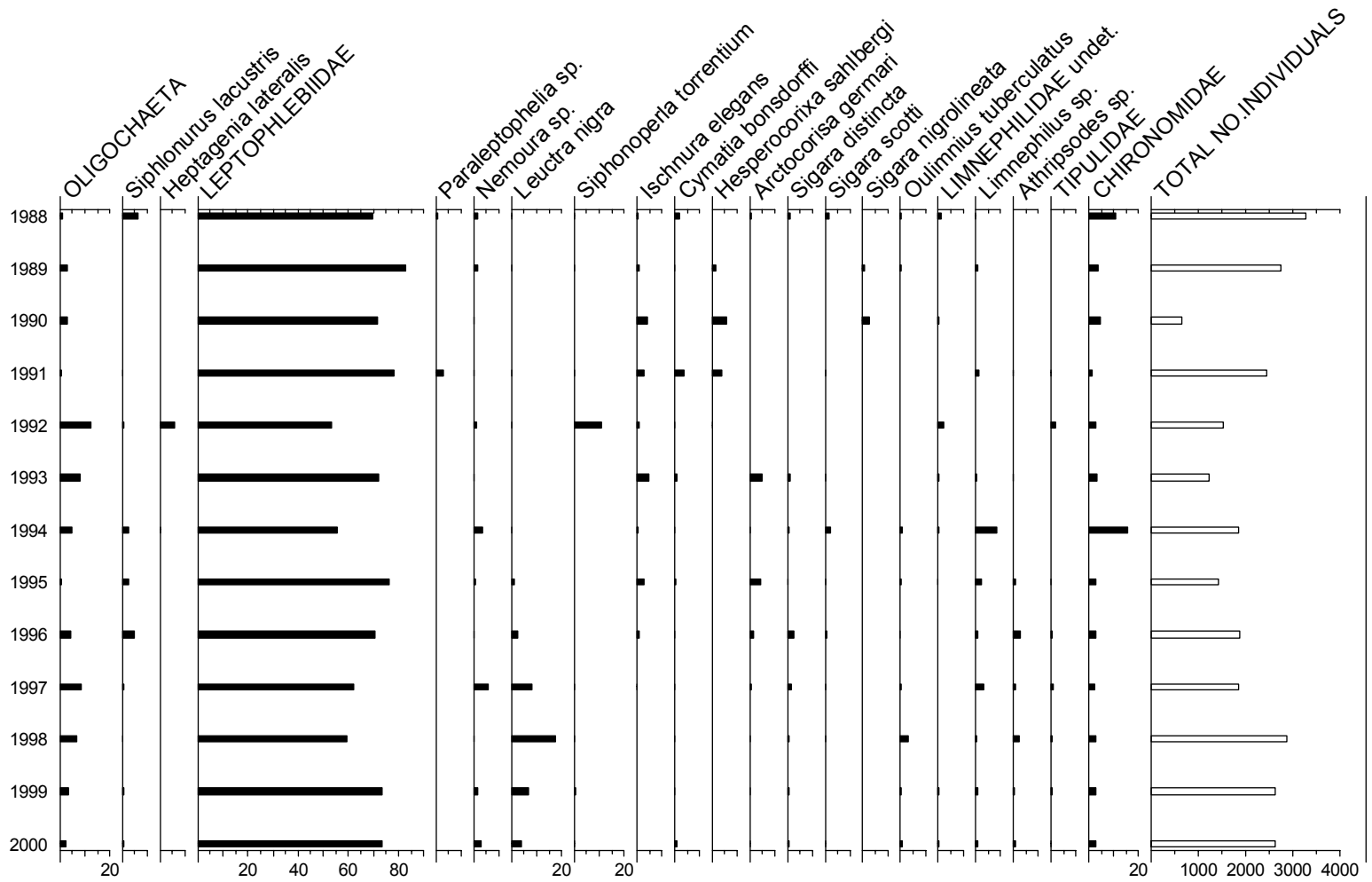
Chemistry statistics for period Sept 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.64	6.47	4.99	0.31	100.0
Alk(CaCO <sub>3</sub> )	0.51	3.55	-0.40	0.60	100.0
Cond	39.2	61.0	23.0	6.6	100.0
Ca	1.55	2.02	1.29	0.16	100.0
Mg	0.61	0.90	0.50	0.09	100.0
Na	4.38	7.00	2.70	0.80	100.0
K	0.36	0.47	0.20	0.04	100.0
Ba	0.01	0.12	0.00	0.02	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.12	0.22	0.05	0.05	100.0
Mn	0.07	0.14	0.02	0.02	100.0
Sol.Al	58.7	126.0	14.0	21.3	100.0
Sol.lab.Al	18.1	69.0	2.5	17.5	100.0
Cl	7.95	14.60	4.00	2.00	100.0
SO <sub>4</sub>	3.33	4.40	1.90	0.50	100.0
XSO <sub>4</sub>	2.20	3.38	0.97	0.54	100.0
NO <sub>3</sub>	0.17	0.34	0.02	0.06	100.0
PO <sub>4</sub>	0.00	0.02	0.00	0.00	100.0
Br	0.02	0.05	0.00	0.01	100.0
F	0.02	0.03	0.00	0.00	100.0
Si	0.44	0.70	0.10	0.11	100.0
DOC	3.44	6.60	1.70	1.20	100.0

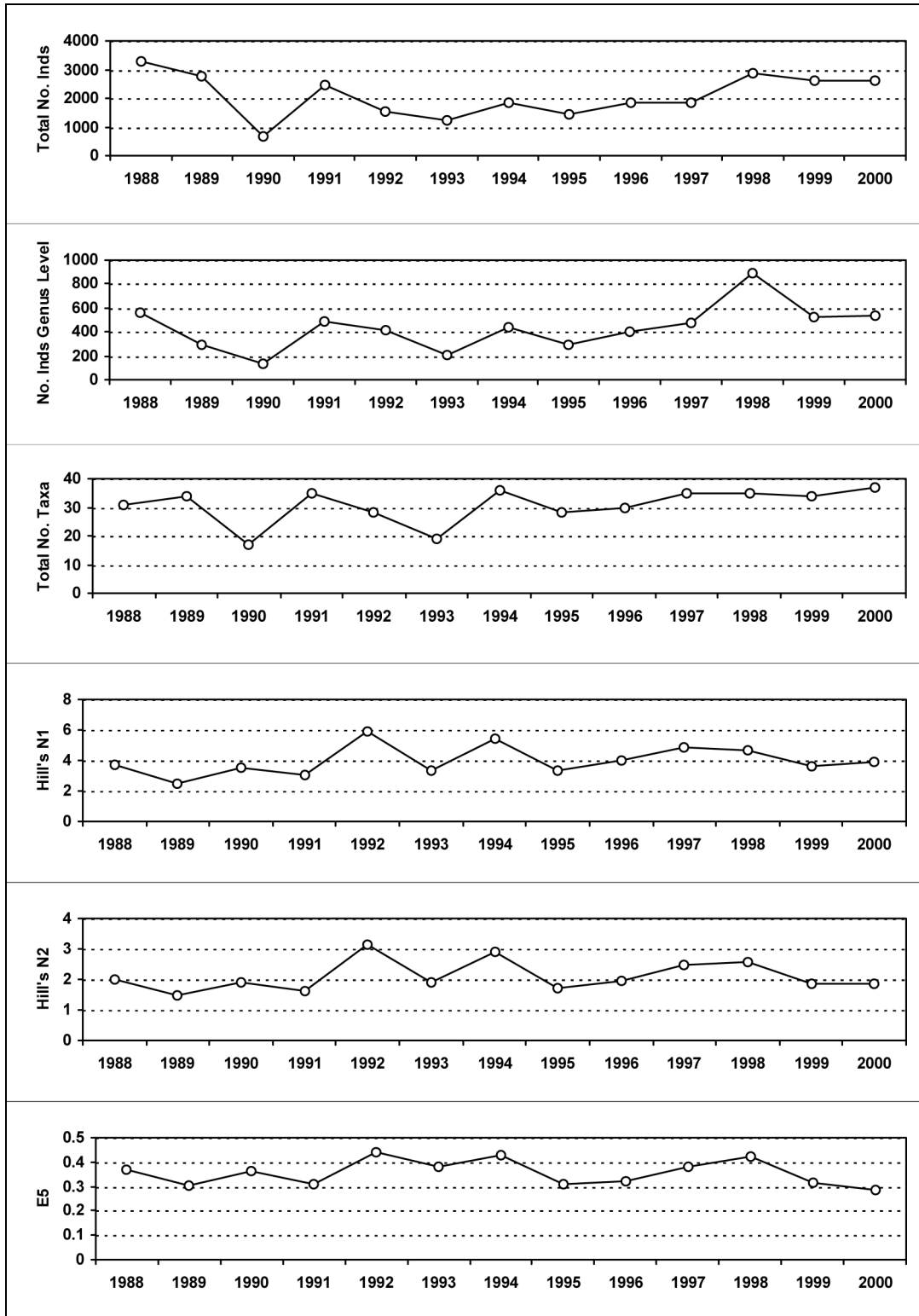
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 5.2. Macroinvertebrate data

### 5.2.1. Percentage abundance summary, Loch Chon

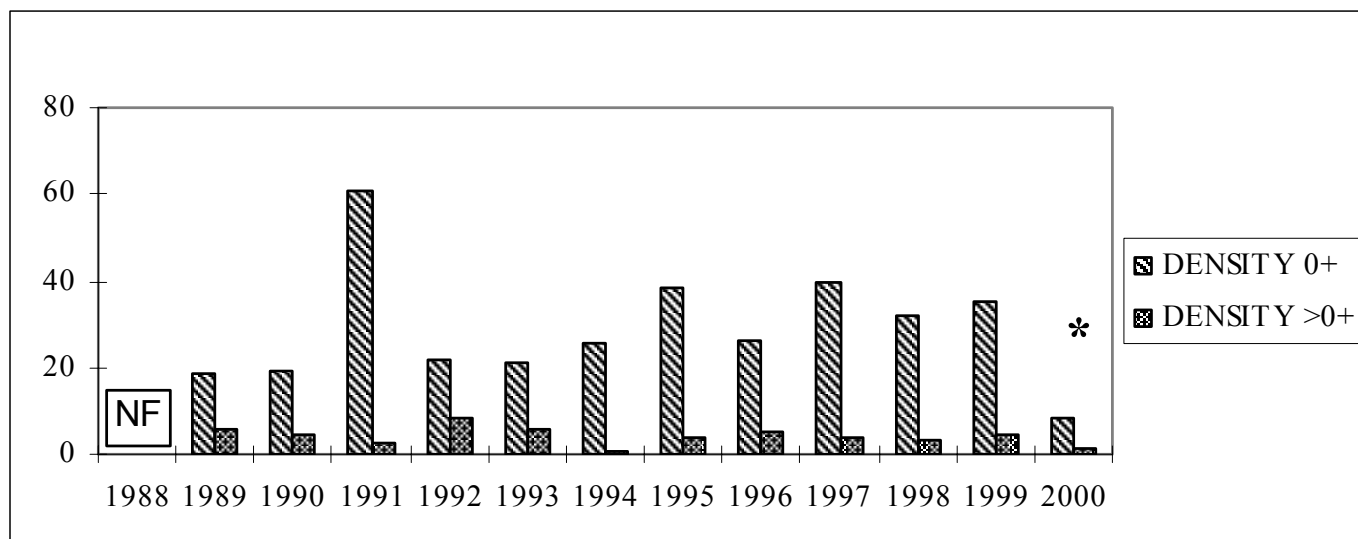


## 5.2.2. Summary statistics, Loch Chon



### 5.3. Fish data (for outflow stream)

#### 5.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Loch Chon

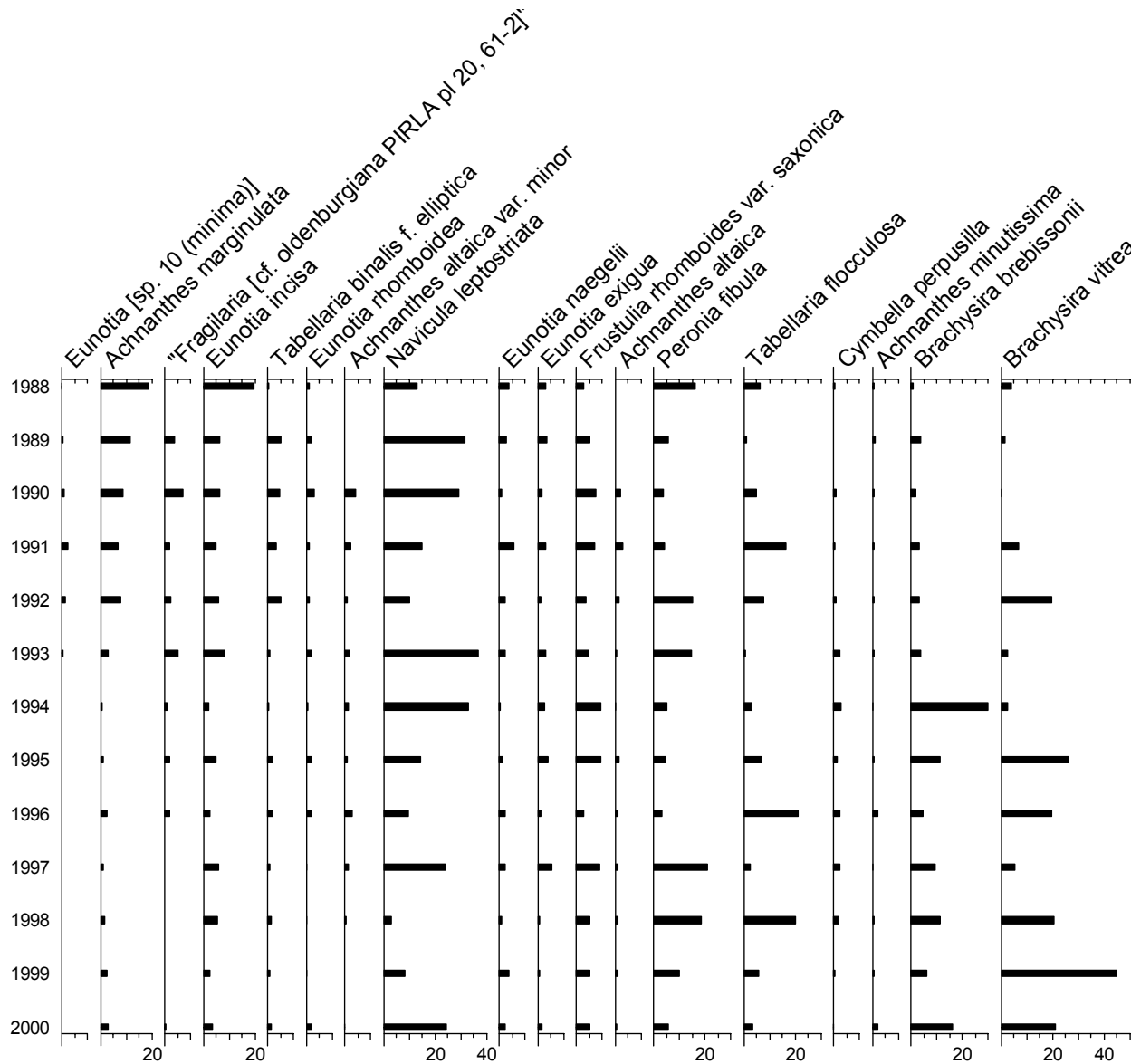


NF = Not fished

\* Not all 3 reaches fished

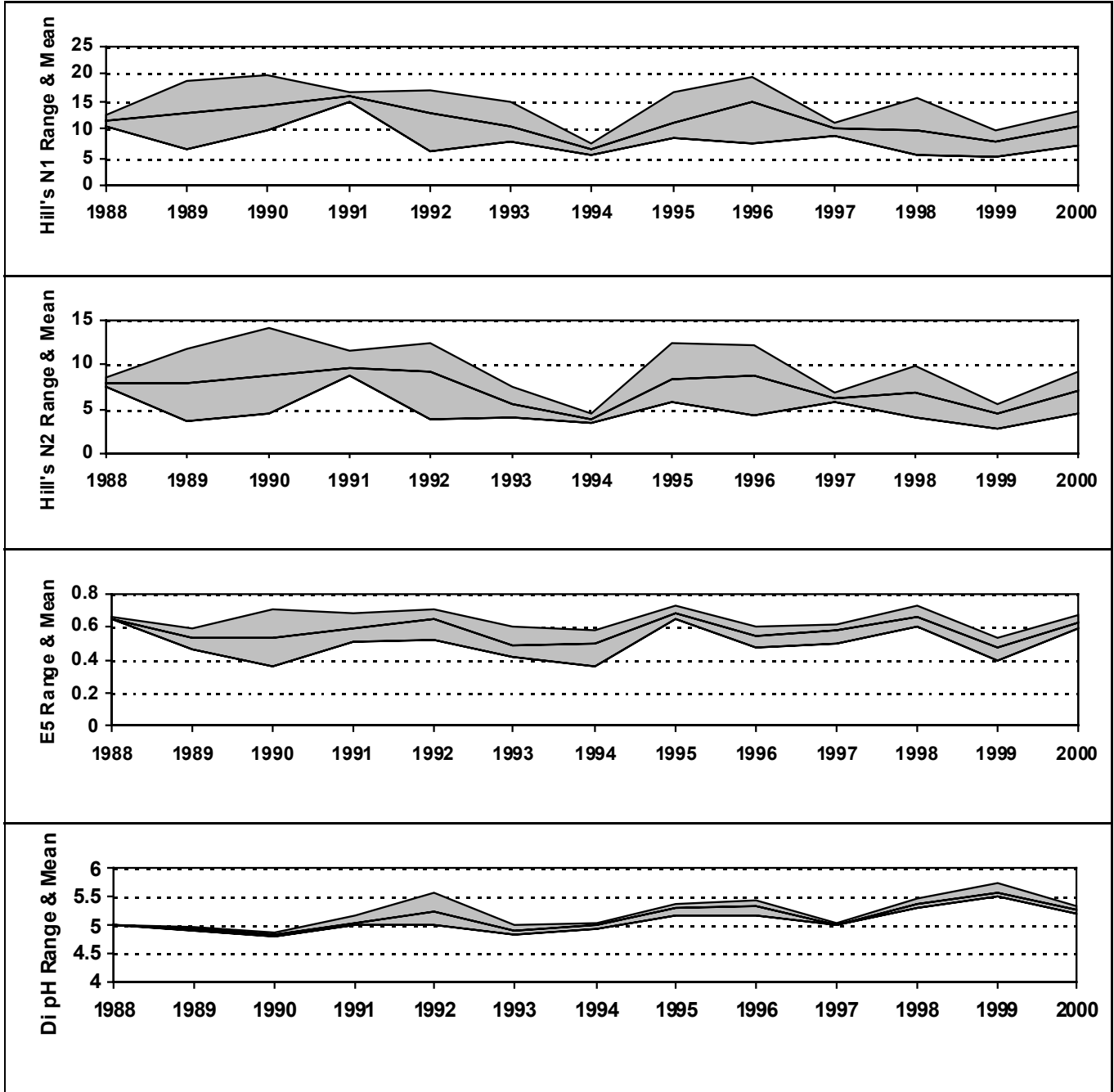
## 5.4. Epilithic diatom data

### 5.4.1. Percentage abundance summary, Loch Chon



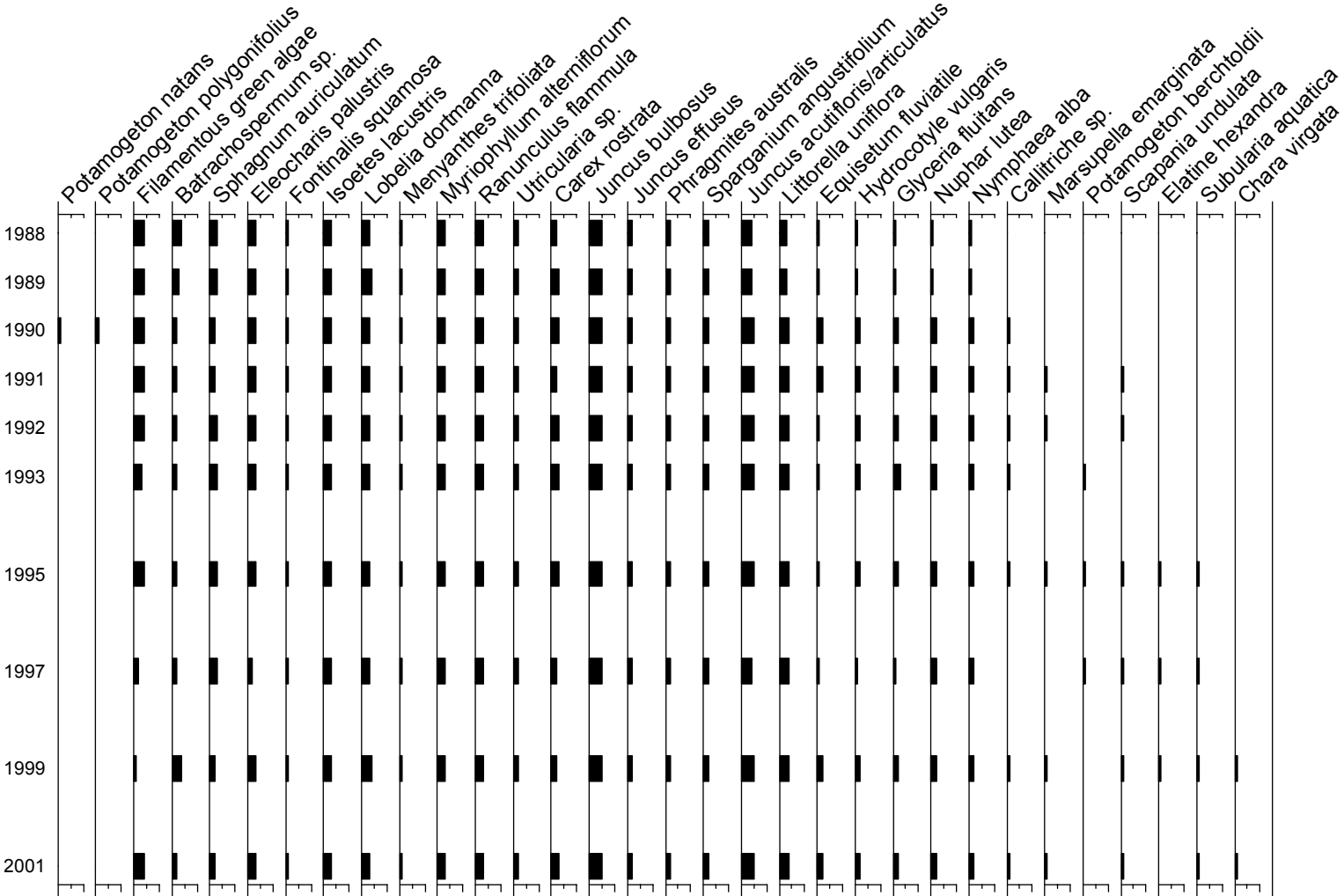


### 5.4.2. Summary statistics, Loch Chon



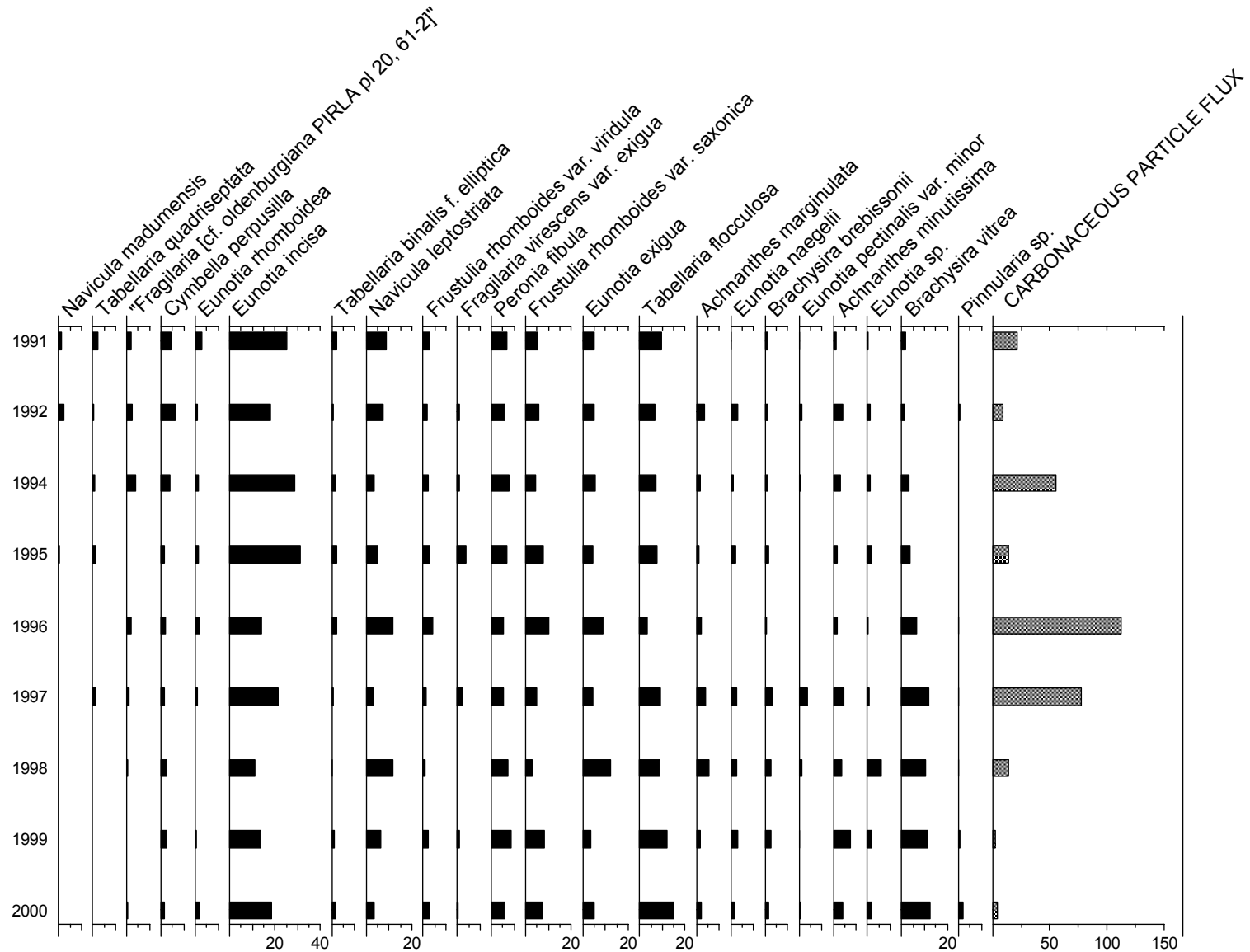
### 5.5. Aquatic macrophyte data, Loch Chon

#### Species Scores (1-5)

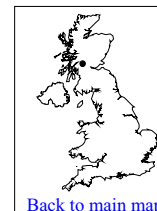


## 5.6. Sediment trap data, Loch Chon

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



## 6. Loch Tinker



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Lake altitude: 420 m  
Maximum depth: 9.8 m  
Mean depth: 3.5 m  
Volume:  $0.40 \times 10^6 \text{ m}^3$

Lake area: 11 ha  
Catchment area: 112 ha  
Catchment:lake ratio: 9.9  
Net relief: 280 m

Grid Ref: NN 445068

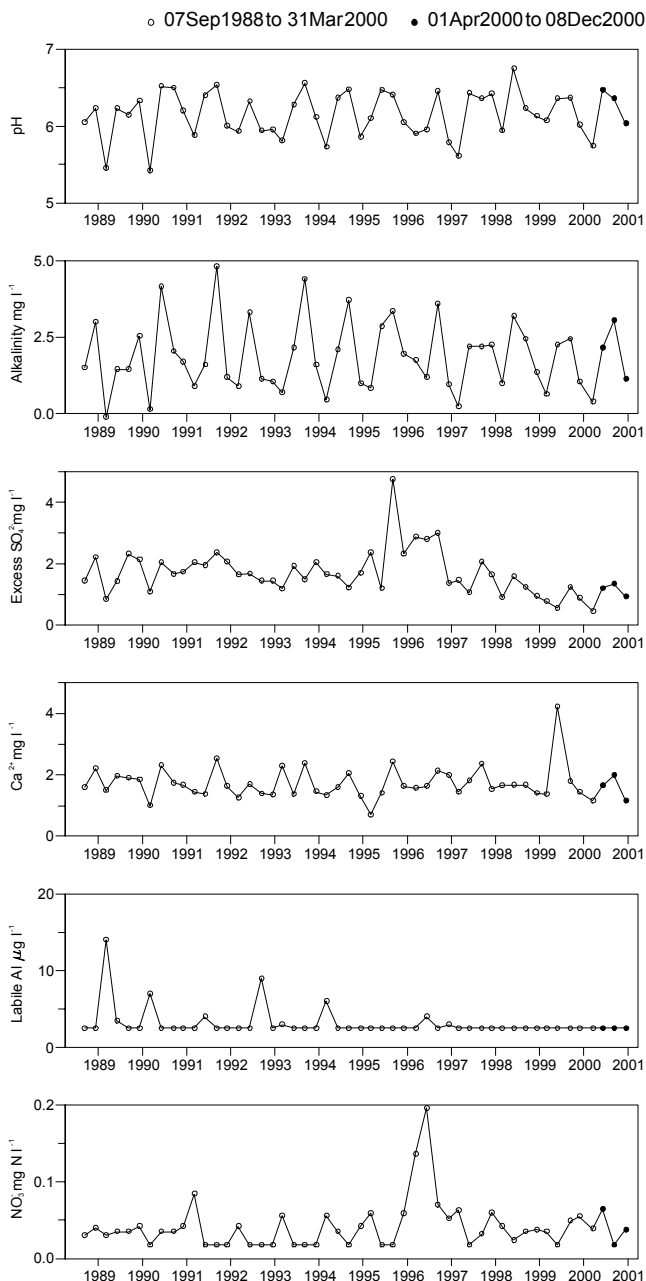
Soils: Blanket peat

Geology: Mica schists  
Grits

Vegetation: 100 % Moorland

### 6.1. Spot sampled chemistry data

#### Time series data



#### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.29	6.47	6.03	0.23	75.0
Alk( $\text{CaCO}_3$ )	2.12	3.05	1.15	0.95	75.0
Cond	29.0	34.0	21.0	7.0	75.0
Ca	1.60	1.99	1.16	0.42	75.0
Mg	0.90	1.70	0.40	0.70	75.0
Na	3.03	3.50	2.20	0.72	75.0
K	0.25	0.28	0.21	0.04	75.0
Ba	0.00	0.01	0.00	0.00	75.0
Sr	0.01	0.01	0.01	0.00	75.0
Fe	0.15	0.23	0.04	0.10	75.0
Mn	0.02	0.04	0.00	0.02	75.0
Sol.Al	17.7	27.0	11.0	8.3	75.0
Sol.lab.Al	All recorded data below detection limit. 75.0				
Cl	5.20	6.30	3.30	1.65	75.0
$\text{SO}_4$	1.90	2.20	1.40	0.44	75.0
$\text{XSO}_4$	1.16	1.35	0.93	0.21	75.0
$\text{NO}_3$	0.04	0.06	0.02	0.02	75.0
$\text{PO}_4$	All recorded data below detection limit. 75.0				
Br	No recorded data.				
F	All recorded data below detection limit. 50.0				
Si	0.23	0.40	0.10	0.15	75.0
DOC	6.00	7.20	4.10	1.66	75.0

N% is the percentage of the expected number of values  
Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

#### Past record statistics

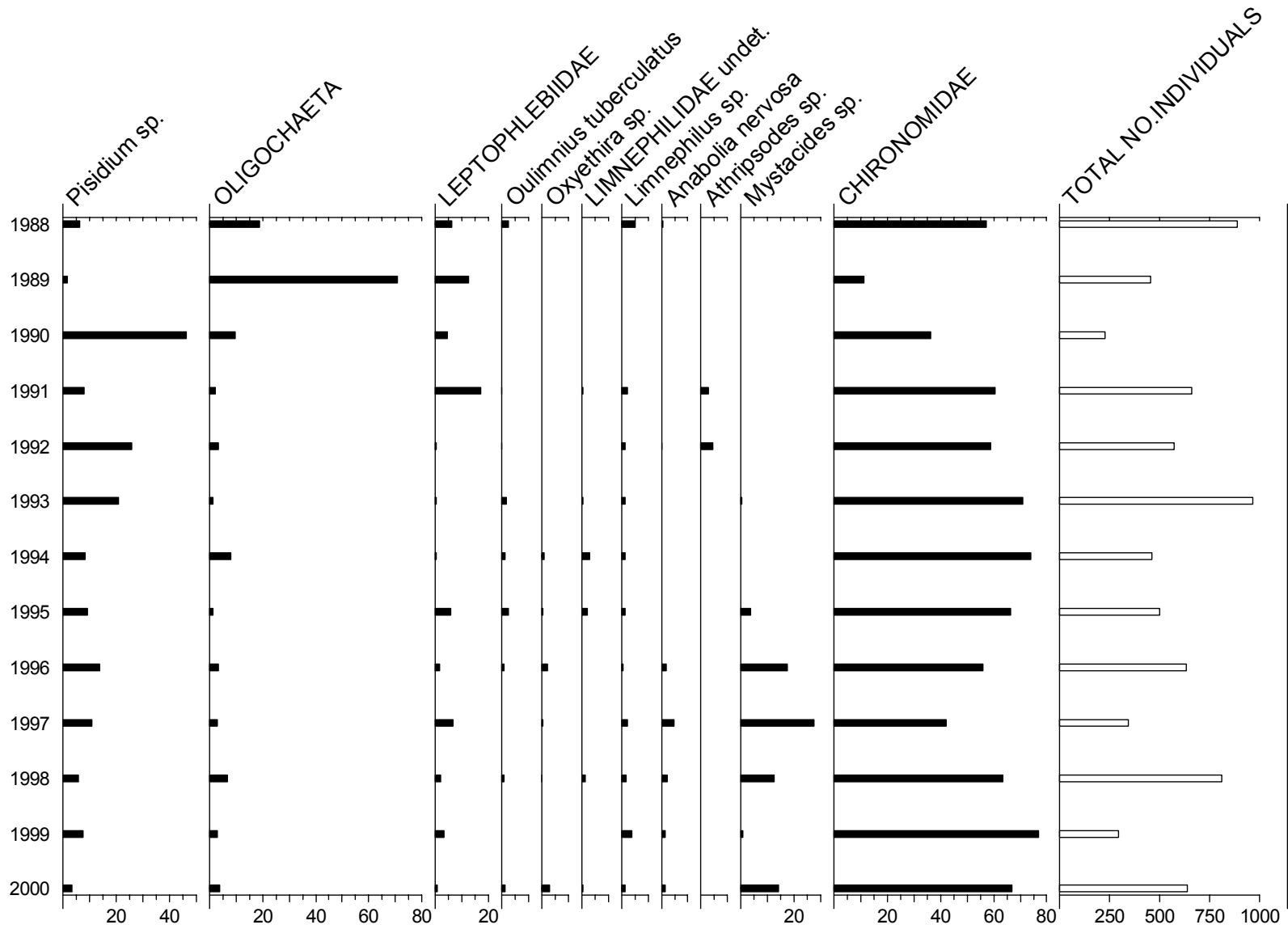
Chemistry statistics for period Sept 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.15	6.75	5.42	0.30	100.0
Alk( $\text{CaCO}_3$ )	1.85	4.80	-0.10	1.16	100.0
Cond	30.7	62.0	21.0	7.3	100.0
Ca	1.73	4.21	0.70	0.54	100.0
Mg	0.60	2.00	0.40	0.25	100.0
Na	3.29	7.40	1.80	1.10	100.0
K	0.39	0.70	0.16	0.08	100.0
Ba	0.01	0.01	0.00	0.00	93.8
Sr	0.01	0.02	0.00	0.00	100.0
Fe	0.17	1.47	0.02	0.21	100.0
Mn	0.03	0.14	0.01	0.03	100.0
Sol.Al	20.5	45.0	5.0	9.3	100.0
Sol.lab.Al	3.2	14.0	2.5	2.0	100.0
Cl	5.81	15.60	2.50	2.59	100.0
$\text{SO}_4$	2.53	5.30	1.60	0.68	100.0
$\text{XSO}_4$	1.70	4.76	0.46	0.74	100.0
$\text{NO}_3$	0.04	0.20	0.02	0.03	100.0
$\text{PO}_4$	0.00	0.01	0.00	0.00	100.0
Br	0.01	0.04	0.00	0.01	100.0
F	0.02	0.12	0.00	0.02	100.0
Si	0.38	1.60	0.10	0.26	100.0
DOC	4.90	9.90	1.90	1.85	100.0

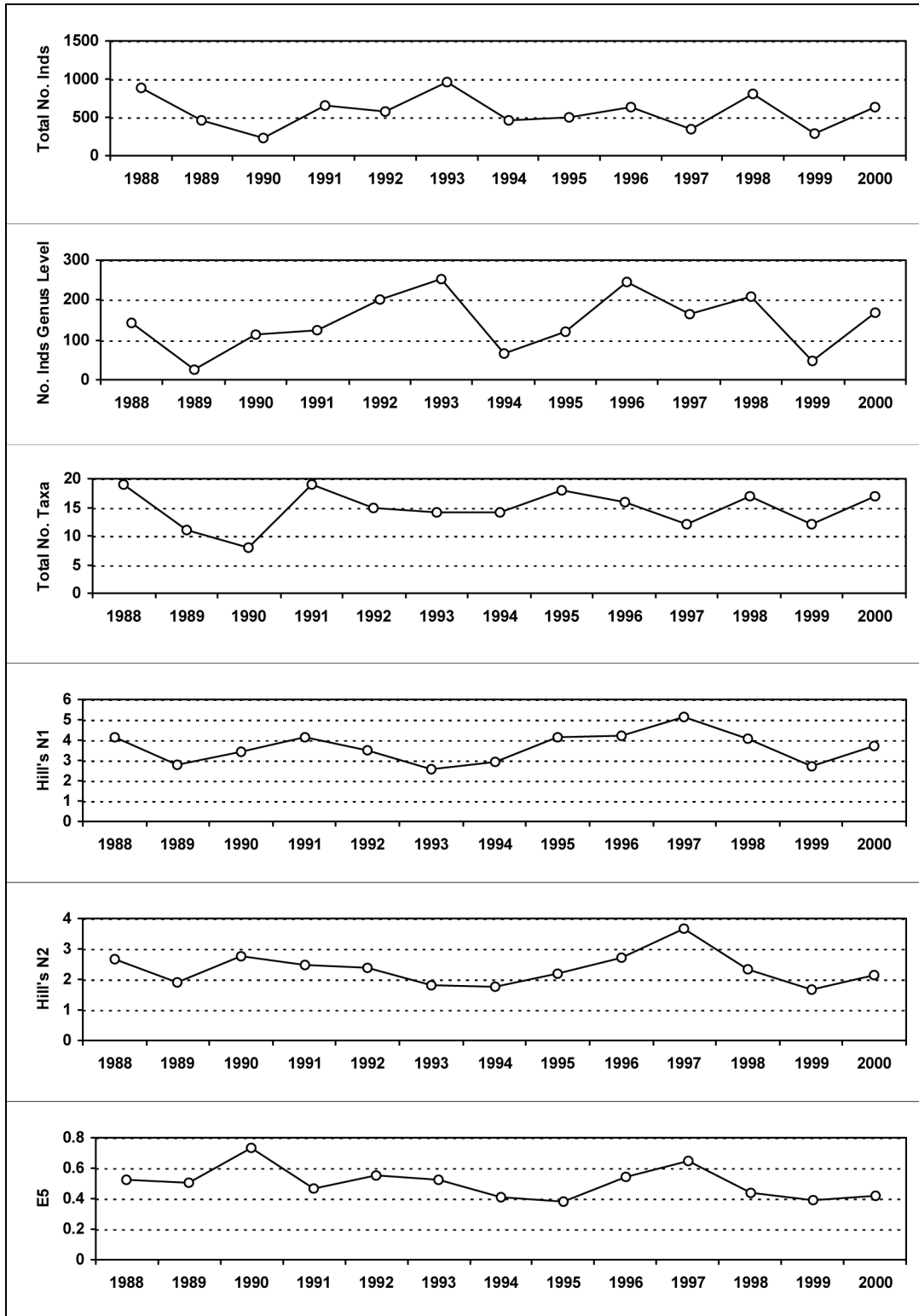
N% is the percentage of the expected number of values  
Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 6.2. Macroinvertebrate data

### 6.2.1. Percentage abundance summary, Loch Tinker

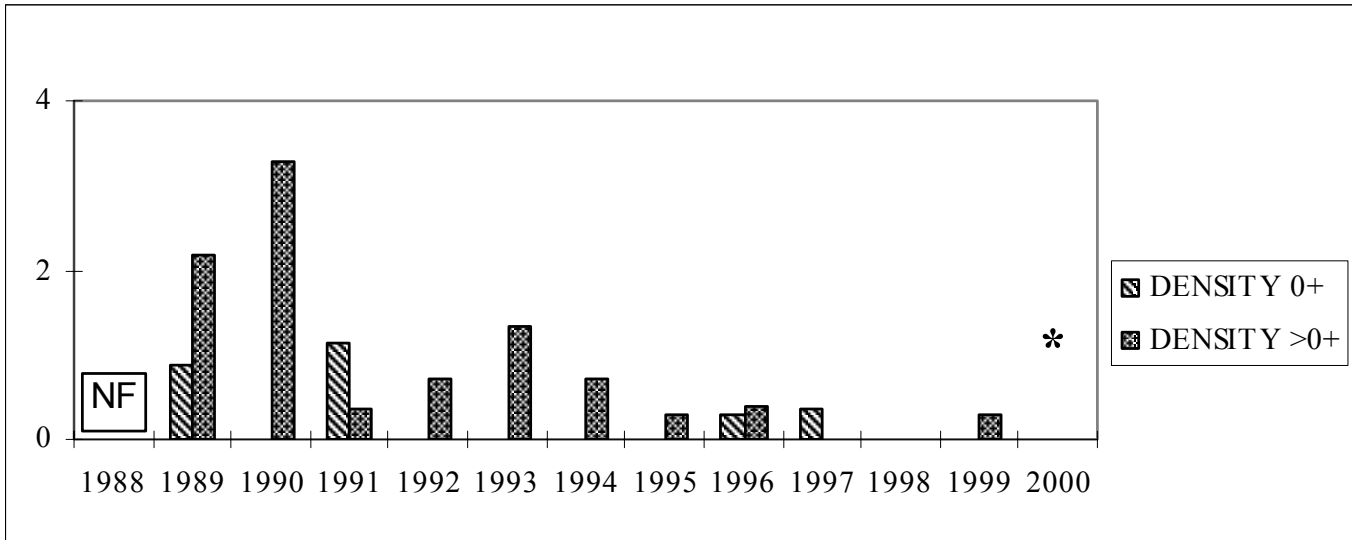


## 6.2.2. Summary statistics, Loch Tinker



### 6.3. Fish data (for outflow stream)

#### 6.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Loch Tinker

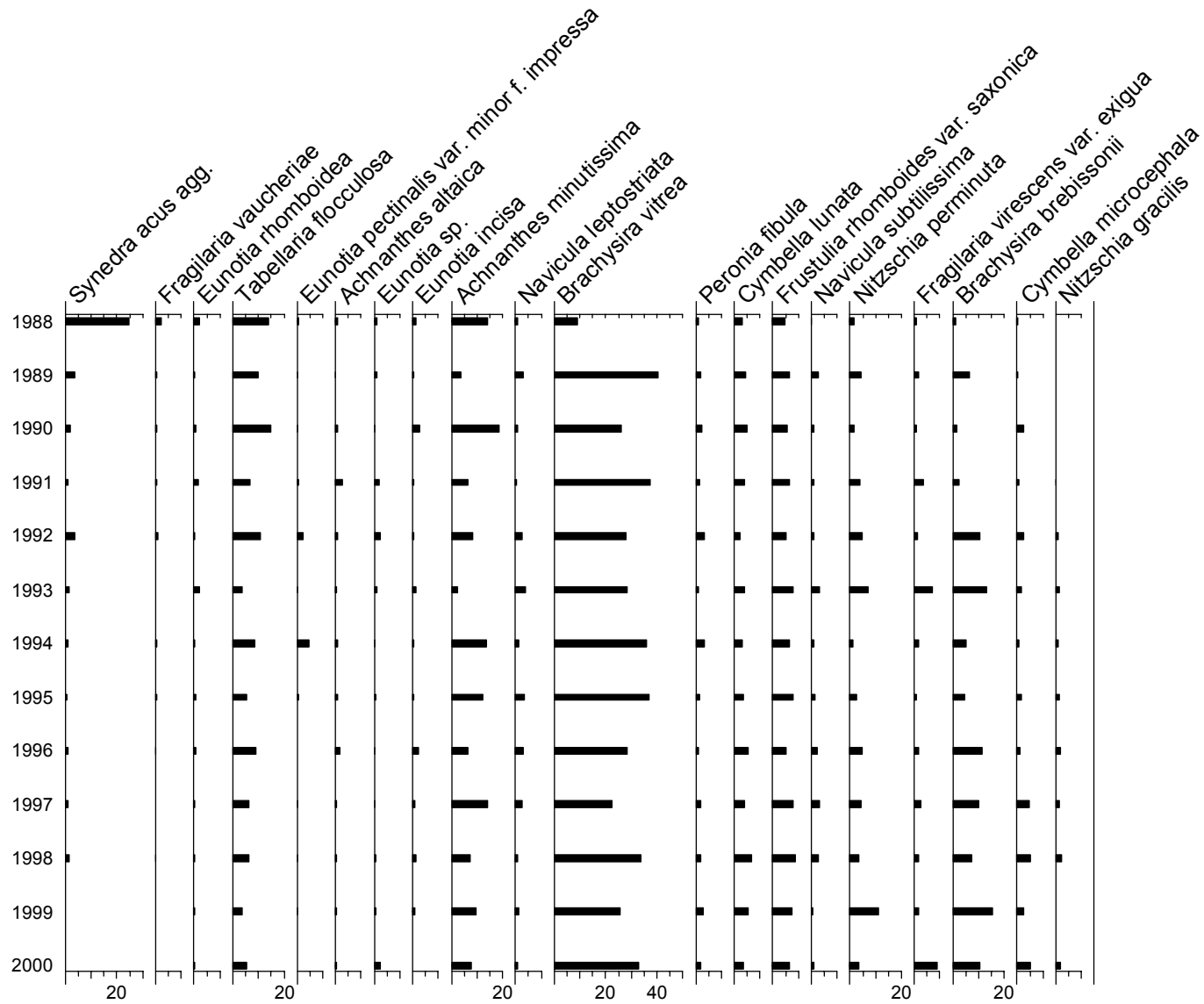


NF = Not fished

\* Not all 3 reaches fished

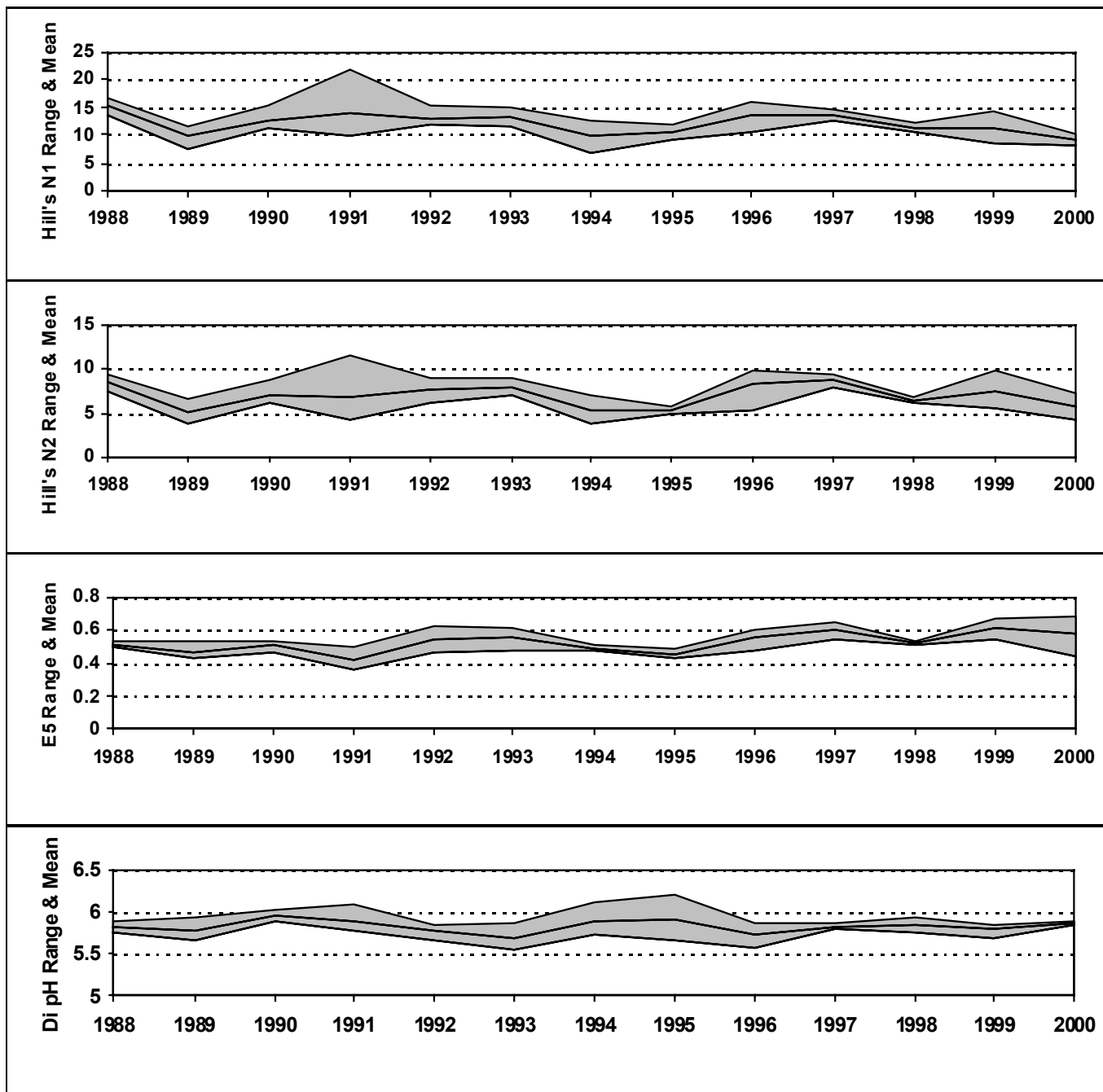
## 6.4. Epilithic diatom data

### 6.4.1. Percentage abundance summary, Loch Tinker



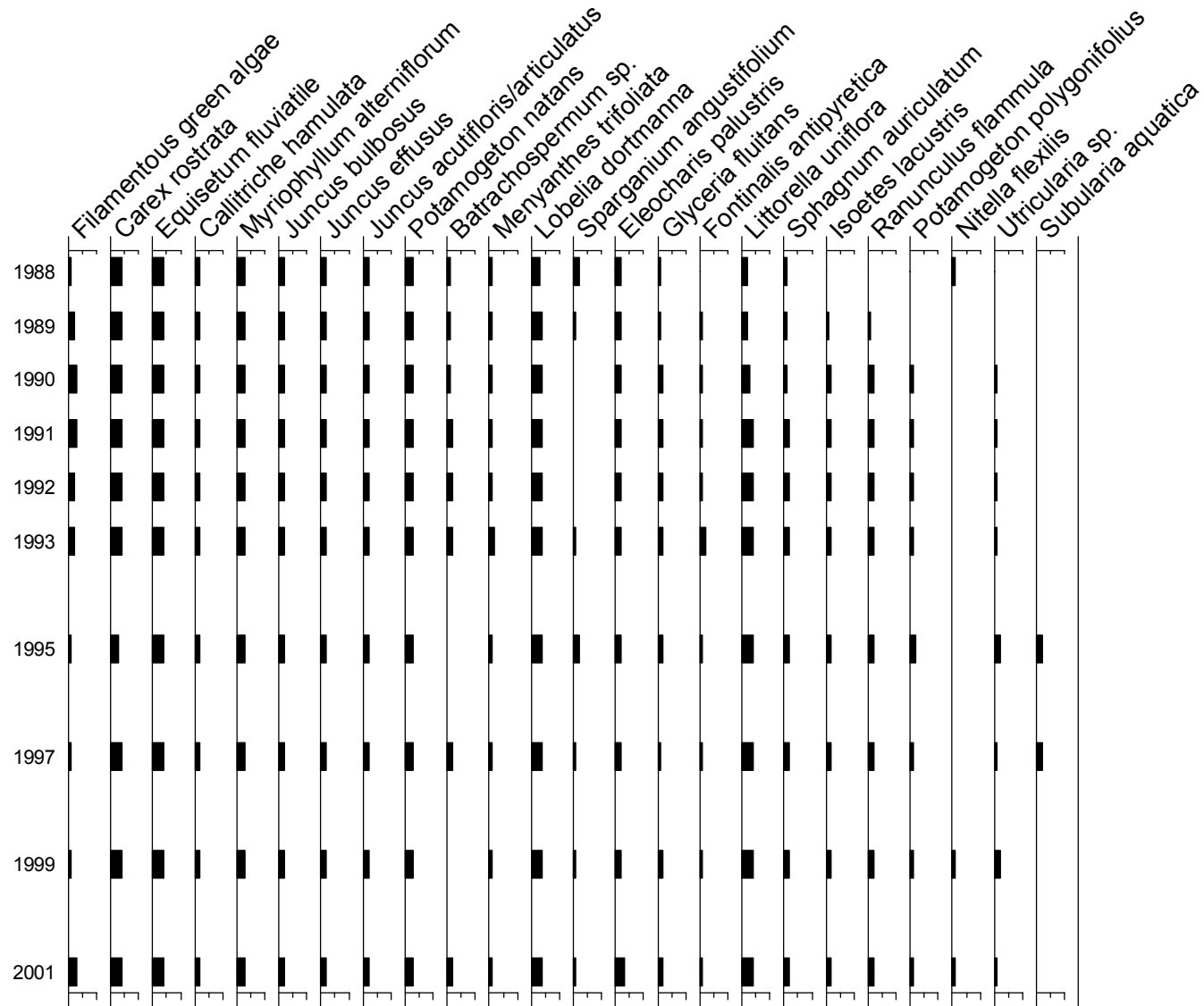


## 6.4.2. Summary statistics, Loch Tinker



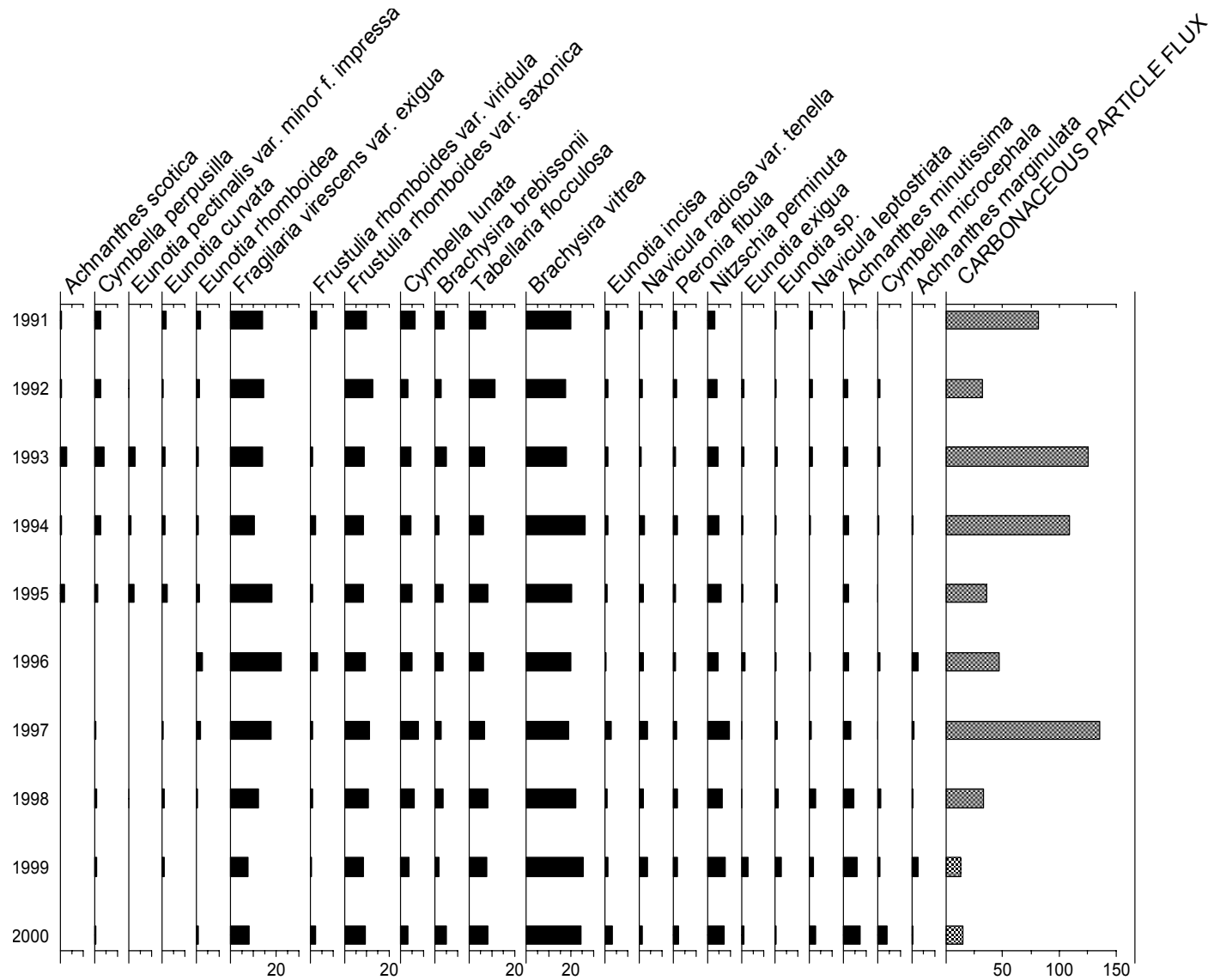
## 6.5. Aquatic macrophyte data, Loch Tinker

### Species Scores (1-5)



## 6.6. Sediment trap data, Loch Tinker

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 7. Round Loch of Glenhead



[Back to main map](#)

Grid Ref: NX 450804

Lake altitude: 295 m  
 Maximum depth: 13.5 m  
 Mean depth: 4.3 m  
 Volume:  $0.53 \times 10^6 \text{ m}^3$

Lake area: 12 ha  
 Catchment area: 95 ha  
 Catchment:lake ratio: 7.5  
 Net relief: 236 m

Soils: Peat  
 Peaty podsol

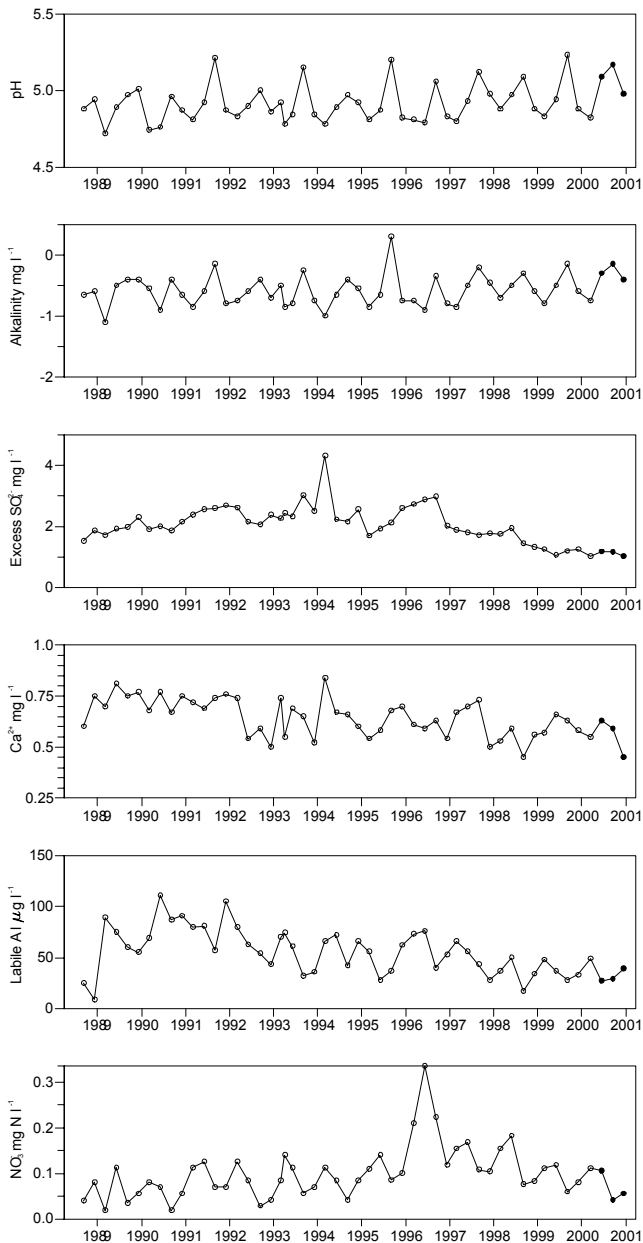
Geology: Tonalite  
 Tonalite granite

Vegetation: 100 % Moorland

## 7.1. Spot sampled chemistry data

### Time series data

○ 06Sep1988to 31Mar2000 ● 01Apr2000to 05Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.08	5.17	4.98	0.10	75.0
Alk(CaCO <sub>3</sub> )	-0.28	-0.15	-0.40	0.13	75.0
Cond	30.3	35.0	26.0	4.5	75.0
Ca	0.56	0.63	0.45	0.09	75.0
Mg	0.50	0.60	0.40	0.10	75.0
Na	3.70	4.40	2.90	0.75	75.0
K	0.25	0.31	0.19	0.06	75.0
Ba	All recorded data below detection limit. 75.0				
Sr	0.00	0.01	0.00	0.00	75.0
Fe	0.04	0.06	0.01	0.02	75.0
Mn	0.01	0.02	0.01	0.00	75.0
Sol.Al	70.3	71.0	70.0	0.6	75.0
Sol.lab.Al	31.7	39.0	27.0	6.4	75.0
Cl	6.63	7.90	5.40	1.25	75.0
SO <sub>4</sub>	2.07	2.30	1.80	0.25	75.0
XSO <sub>4</sub>	1.12	1.18	1.03	0.08	75.0
NO <sub>3</sub>	0.07	0.11	0.04	0.03	75.0
PO <sub>4</sub>	All recorded data below detection limit. 75.0				
Br	All recorded data below detection limit. 25.0				
F	All recorded data below detection limit. 25.0				
Si	0.23	0.40	0.10	0.15	75.0
DOC	4.17	4.70	3.40	0.68	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

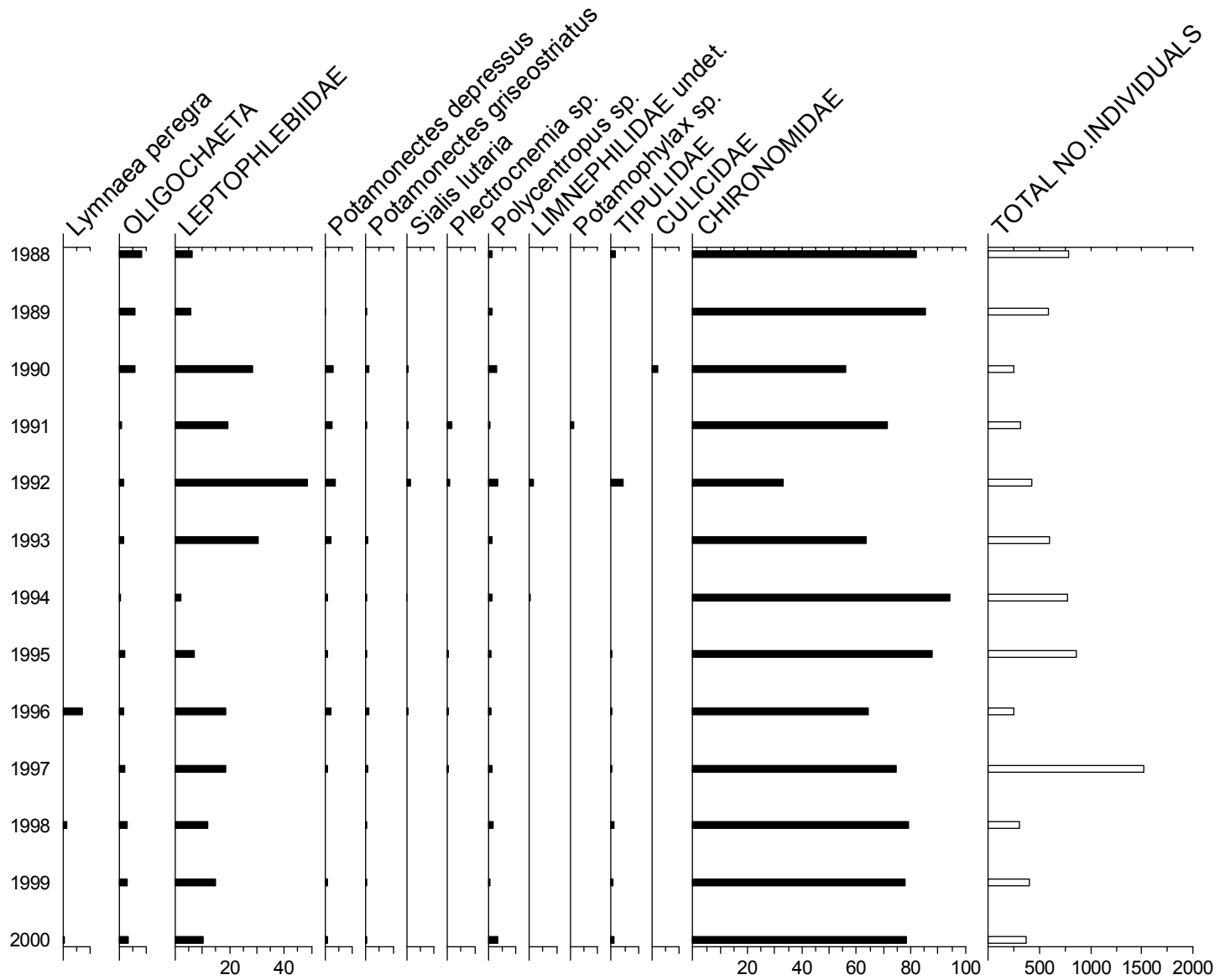
Chemistry statistics for period Sept 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.91	5.23	4.72	0.12	100.0
Alk(CaCO <sub>3</sub> )	-0.59	0.30	-1.10	0.26	100.0
Cond	36.1	49.0	23.0	6.2	100.0
Ca	0.65	0.84	0.45	0.09	100.0
Mg	0.54	0.80	0.30	0.10	100.0
Na	3.95	5.70	2.40	0.78	100.0
K	0.37	0.50	0.18	0.05	100.0
Ba	0.00	0.00	0.00	0.00	93.8
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.04	0.08	0.01	0.01	100.0
Mn	0.02	0.17	0.01	0.02	100.0
Sol.Al	92.6	146.0	55.0	19.1	100.0
Sol.lab.Al	56.3	111.0	9.0	22.6	100.0
Cl	6.88	10.60	3.90	1.72	100.0
SO <sub>4</sub>	3.08	5.50	2.00	0.63	100.0
XSO <sub>4</sub>	2.10	4.31	1.04	0.59	100.0
NO <sub>3</sub>	0.10	0.34	0.02	0.06	100.0
PO <sub>4</sub>	0.00	0.01	0.00	0.00	100.0
Br	0.01	0.04	0.00	0.01	93.8
F	0.01	0.05	0.00	0.01	100.0
Si	0.37	1.00	0.04	0.16	100.0
DOC	3.12	5.10	1.60	0.79	100.0

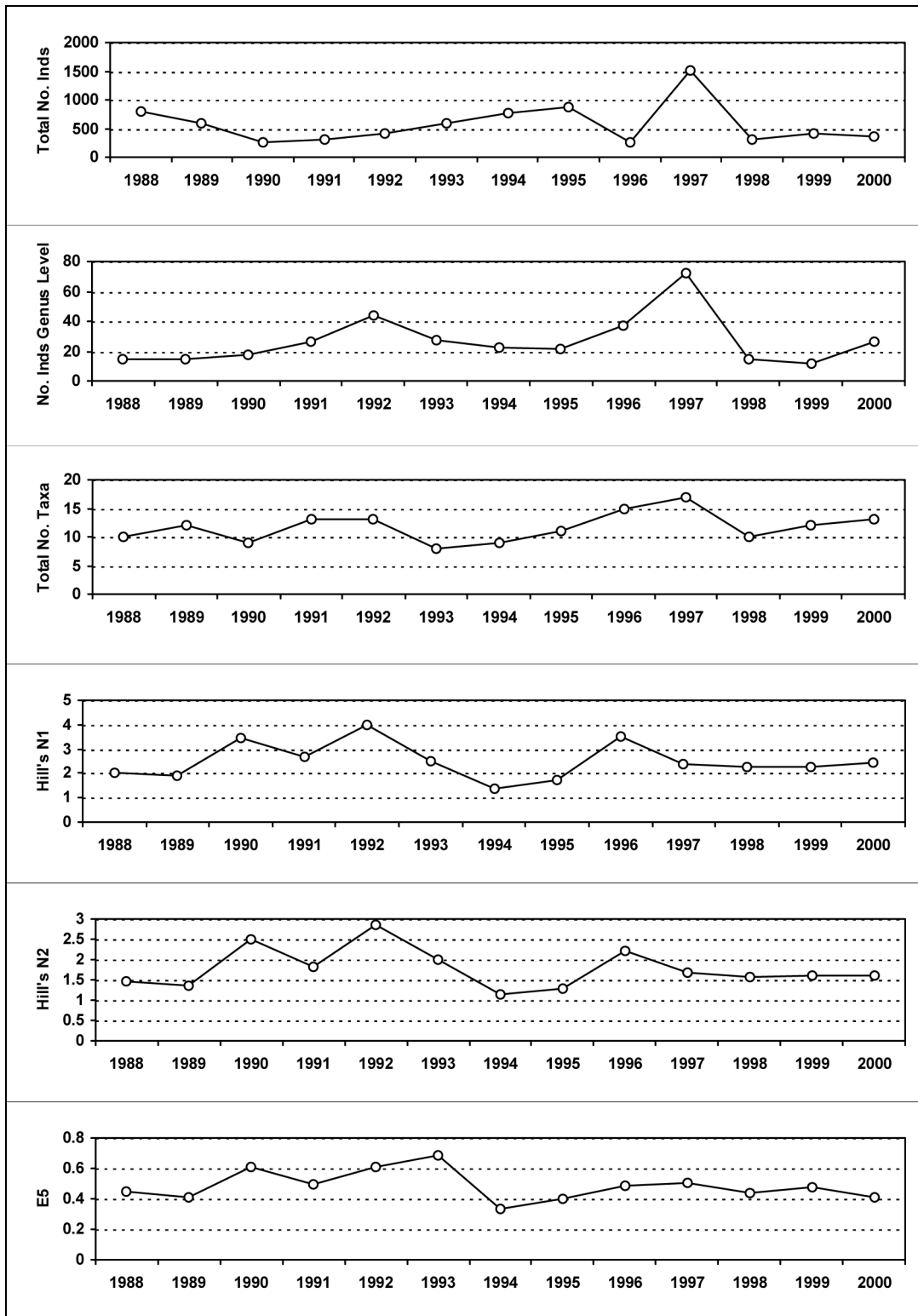
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 7.2. Macroinvertebrate data

### 7.2.1. Percentage abundance summary, Round Loch of Glenhead

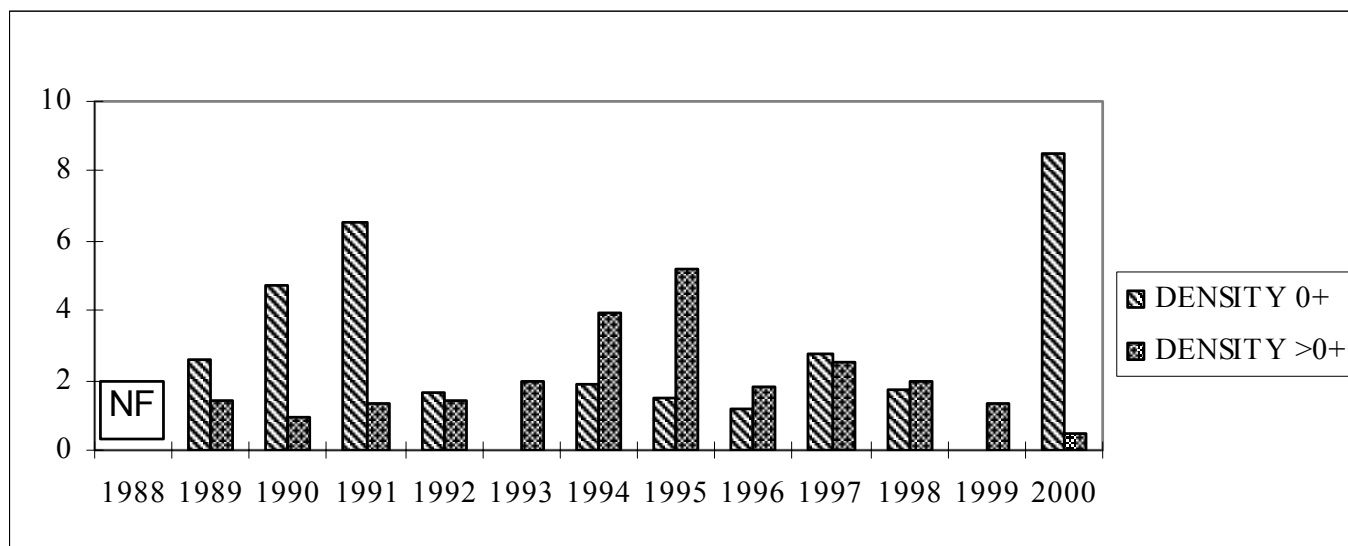


## 7.2.2. Summary statistics, Round Loch of Glenhead



### 7.3. Fish data (for outflow stream)

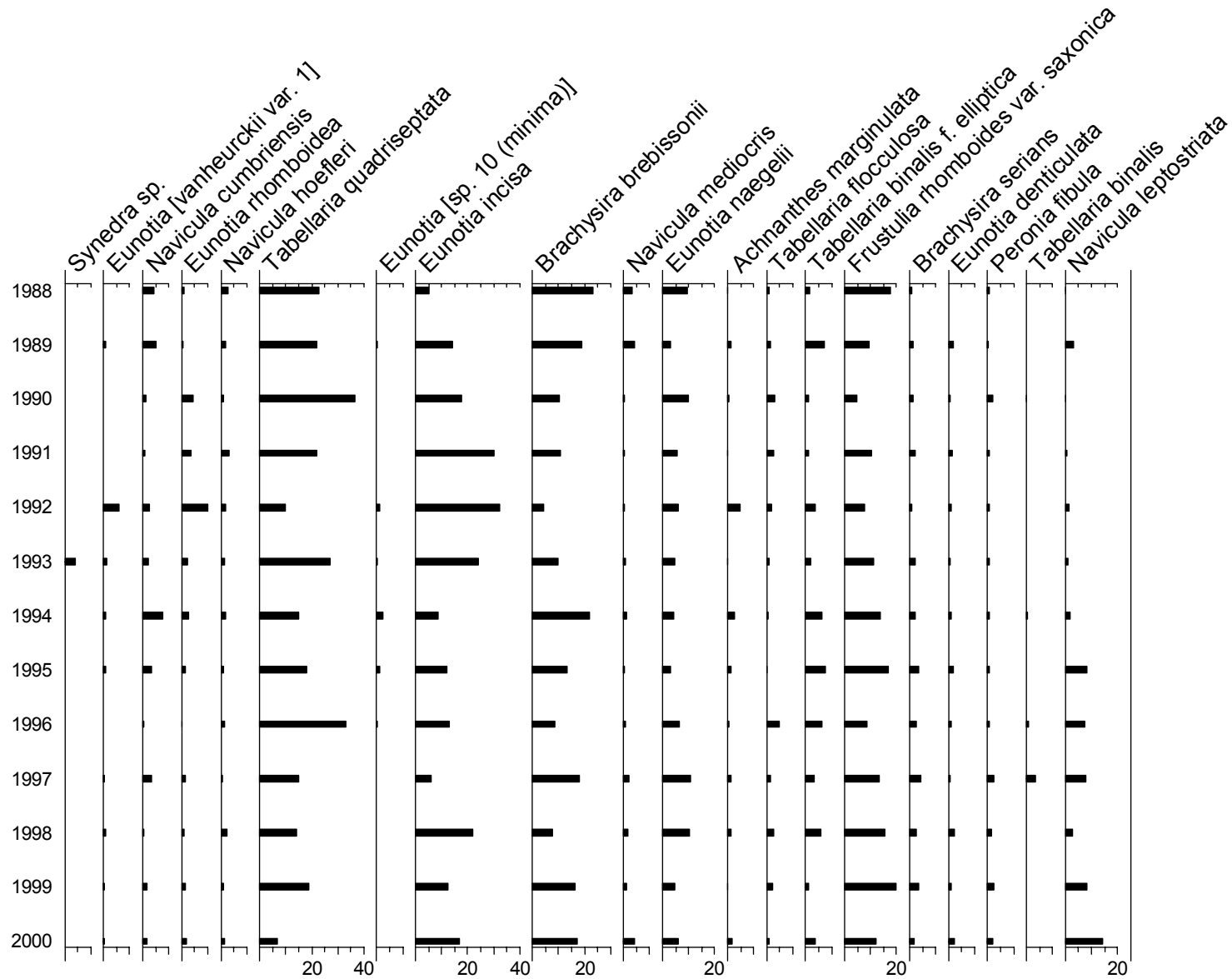
#### 7.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Round Loch of Glenhead



NF = Not fished

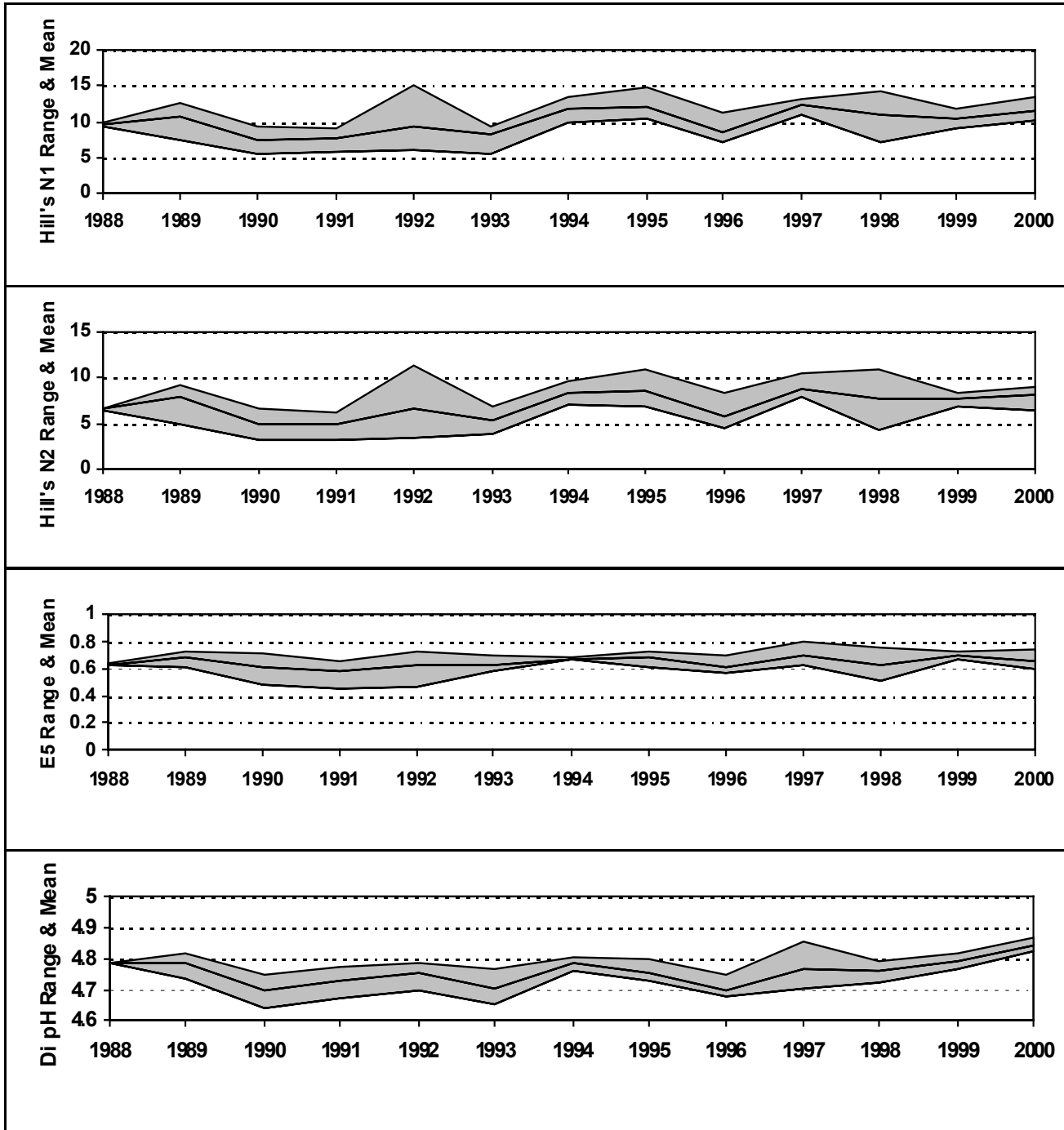
## 7.4. Epilithic diatom data

### 7.4.1. Percentage abundance summary, Round Loch of Glenhead



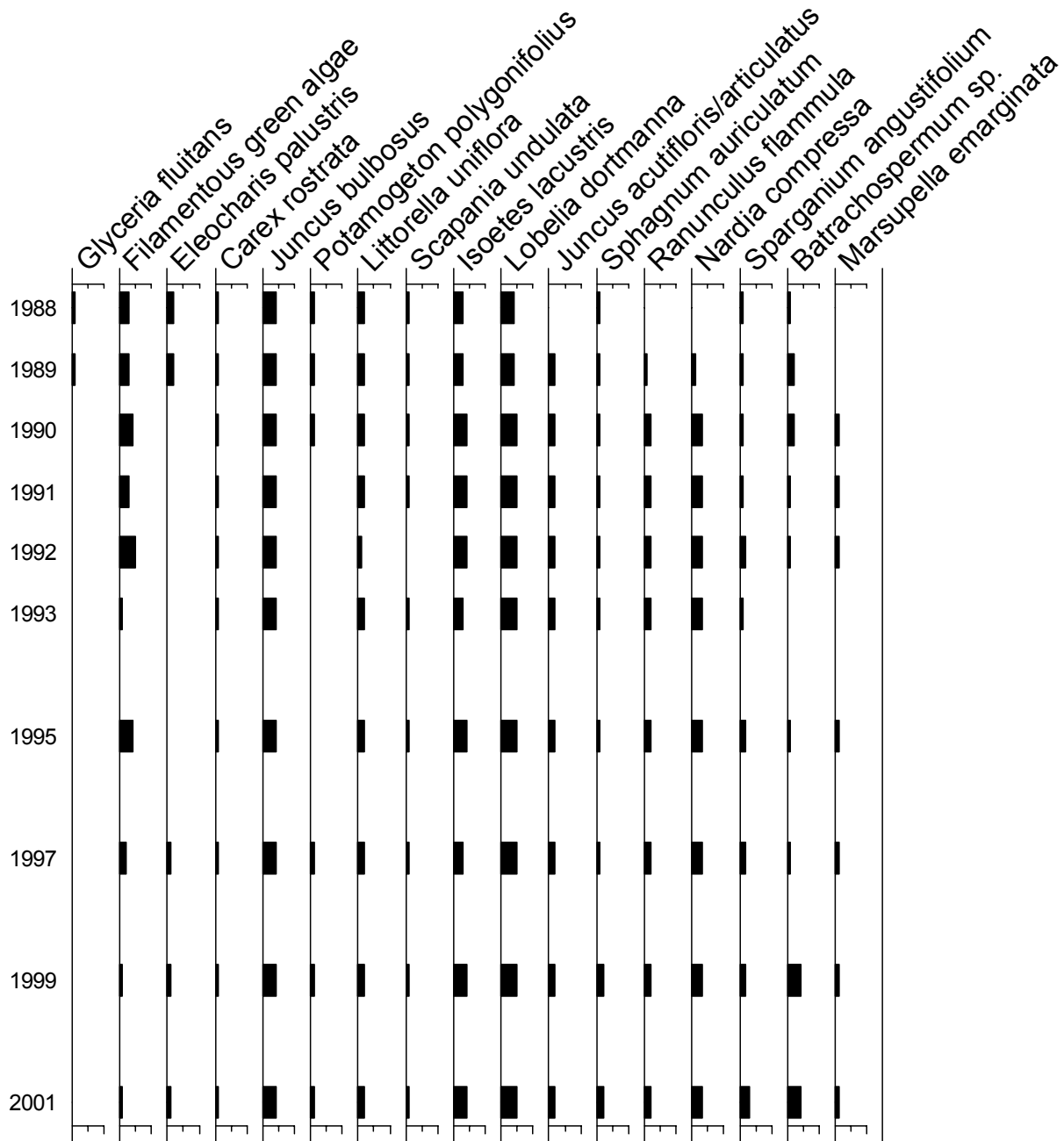


### 7.4.2. Summary statistics, Round Loch of Glenhead



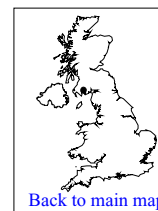
## 7.5. Aquatic macrophyte data, Round Loch of Glenhead

Species Scores (1-5)





# 8. Loch Grannoch



[Back to main map](#)

Grid Ref: NX 542700

Lake altitude: 210 m  
 Maximum depth: 20.5 m  
 Mean depth: 6.4 m  
 Volume:  $7.40 \times 10^6 \text{ m}^3$

Lake area: 114 ha  
 Catchment area: 1287 ha  
 Catchment:lake ratio: 11.3  
 Net relief: 391 m

Soils: Peat  
 Peaty podsol  
 Peaty gley  
 Skeletal soils

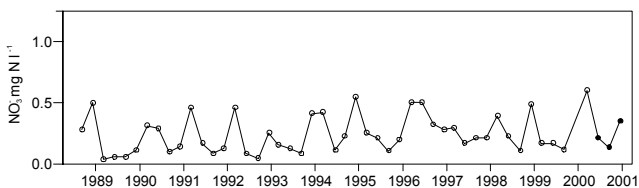
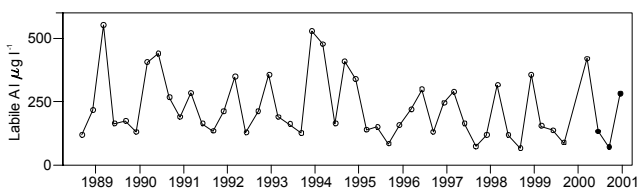
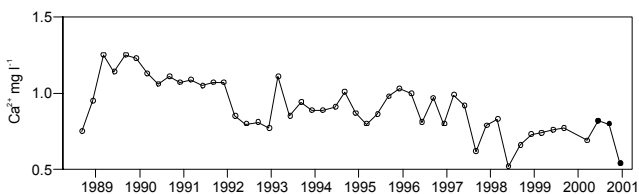
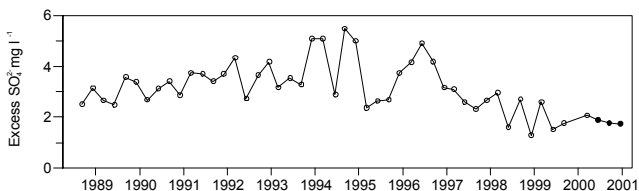
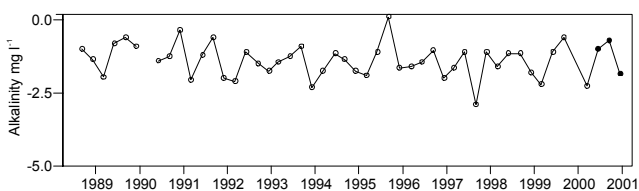
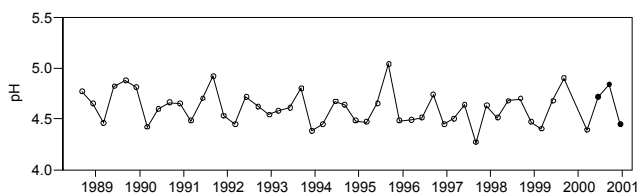
Geology: Granite

Vegetation: 38% Moorland  
 62% Conifers

## 8.1. Spot sampled chemistry data

### Time series data

○ 06Sep1988 to 31Mar2000   ● 01Apr2000 to 06Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.67	4.84	4.45	0.20	75.0
Alk(CaCO <sub>3</sub> )	-1.18	-0.70	-1.85	0.60	75.0
Cond	48.3	53.0	44.0	4.5	75.0
Ca	0.72	0.82	0.54	0.16	75.0
Mg	0.63	0.80	0.50	0.15	75.0
Na	5.23	5.60	4.90	0.35	75.0
K	All recorded data below detection limit.				
Ba	0.00	0.00	0.00	0.00	75.0
Sr	All recorded data below detection limit.				
Fe	0.14	0.19	0.08	0.06	75.0
Mn	0.19	0.20	0.18	0.01	75.0
Sol.Al	262.0	405.0	171.0	125.4	75.0
Sol.lab.Al	160.3	280.0	69.0	108.3	75.0
Cl	9.67	10.00	9.40	0.31	75.0
SO <sub>4</sub>	3.17	3.30	3.10	0.12	75.0
XSO <sub>4</sub>	1.79	1.88	1.74	0.08	75.0
NO <sub>3</sub>	0.23	0.35	0.13	0.11	75.0
PO <sub>4</sub>	All recorded data below detection limit.				
Br	All recorded data below detection limit.				
F	0.03	0.03	0.00	0.00	75.0
Si	0.60	1.20	0.20	0.53	75.0
DOC	5.50	6.40	4.60	0.90	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

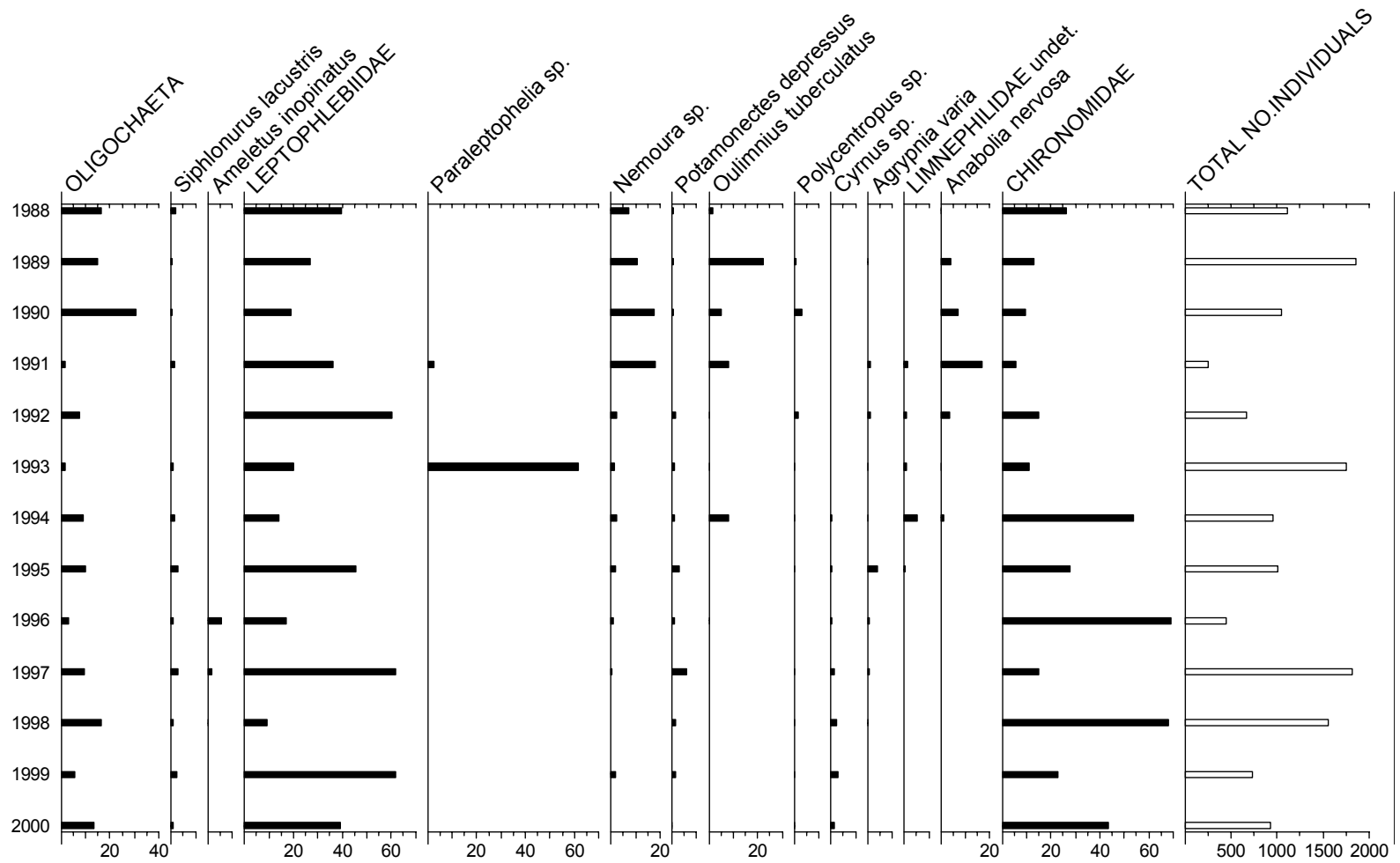
Chemistry statistics for period Sept 1988 to March 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.61	5.04	4.27	0.16	100.0
Alk(CaCO <sub>3</sub> )	-1.40	0.10	-2.90	0.57	93.8
Cond	51.8	78.0	31.0	10.0	100.0
Ca	0.92	1.25	0.52	0.17	100.0
Mg	0.63	0.90	0.30	0.13	100.0
Na	5.08	7.20	3.00	0.91	100.0
K	0.36	0.40	0.16	0.05	100.0
Ba	0.00	0.01	0.00	0.00	93.8
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.10	0.22	0.05	0.03	100.0
Mn	0.19	0.32	0.13	0.04	100.0
Sol.Al	309.0	715.0	106.0	147.8	100.0
Sol.lab.Al	230.1	552.0	66.0	126.1	100.0
Cl	9.12	15.10	5.60	2.16	100.0
SO <sub>4</sub>	4.50	6.90	2.50	0.96	100.0
XSO <sub>4</sub>	3.21	5.48	1.27	0.97	100.0
NO <sub>3</sub>	0.24	0.60	0.04	0.16	100.0
PO <sub>4</sub>	0.01	0.09	0.00	0.01	100.0
Br	0.02	0.05	0.00	0.01	100.0
F	0.04	0.15	0.00	0.02	100.0
Si	0.81	1.90	0.10	0.39	100.0
DOC	4.45	12.80	2.70	1.72	100.0

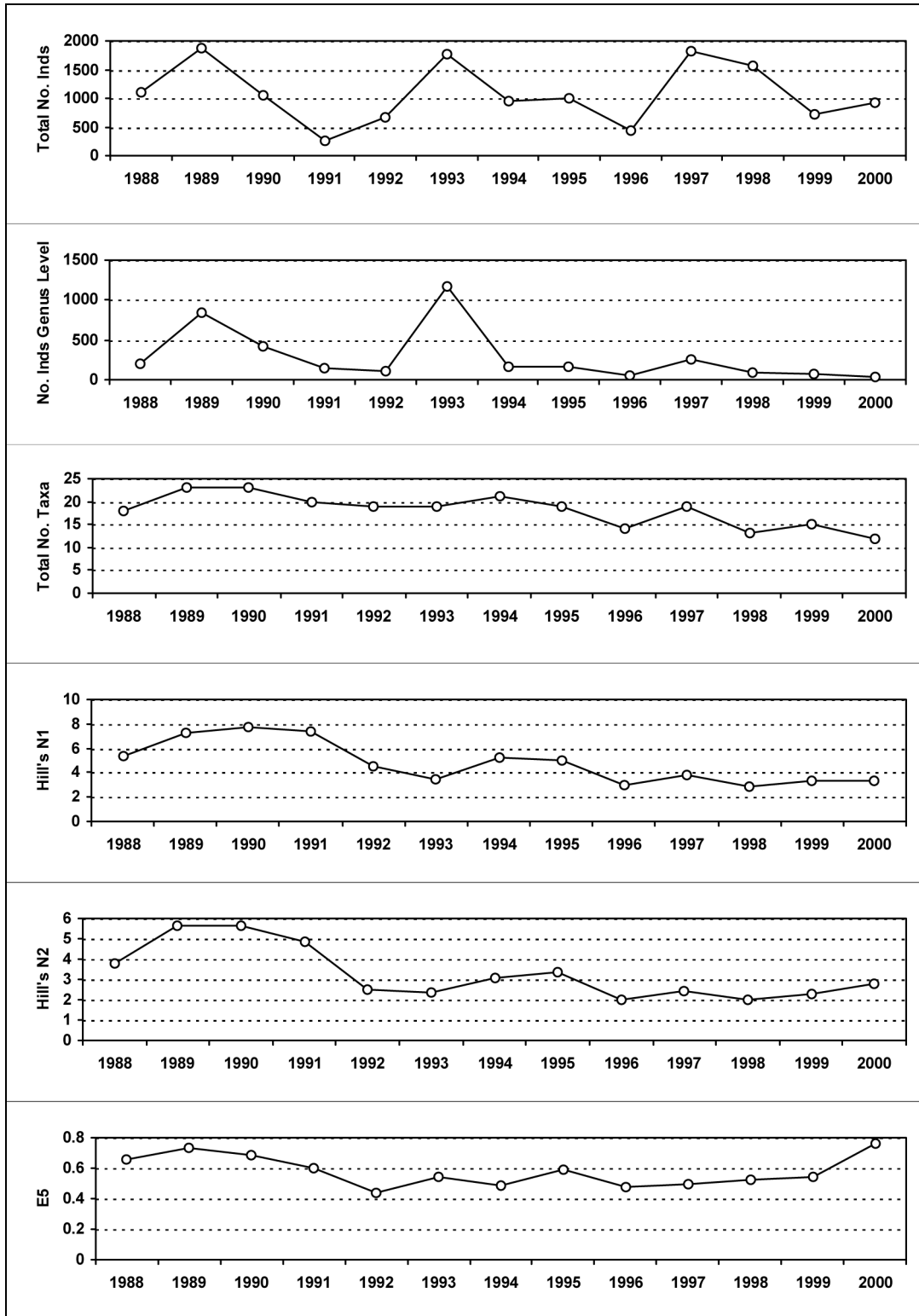
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

## 8.2. Macroinvertebrate data

### 8.2.1. Percentage abundance summary, Loch Grannoch

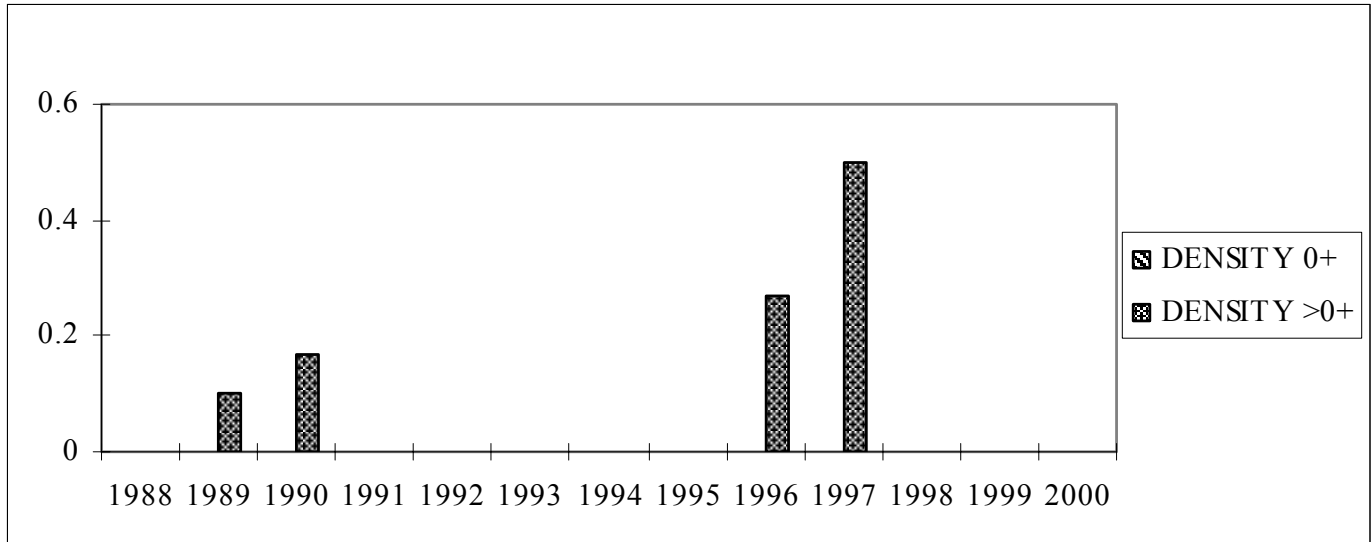


## 8.2.2. Summary statistics, Loch Grannoch



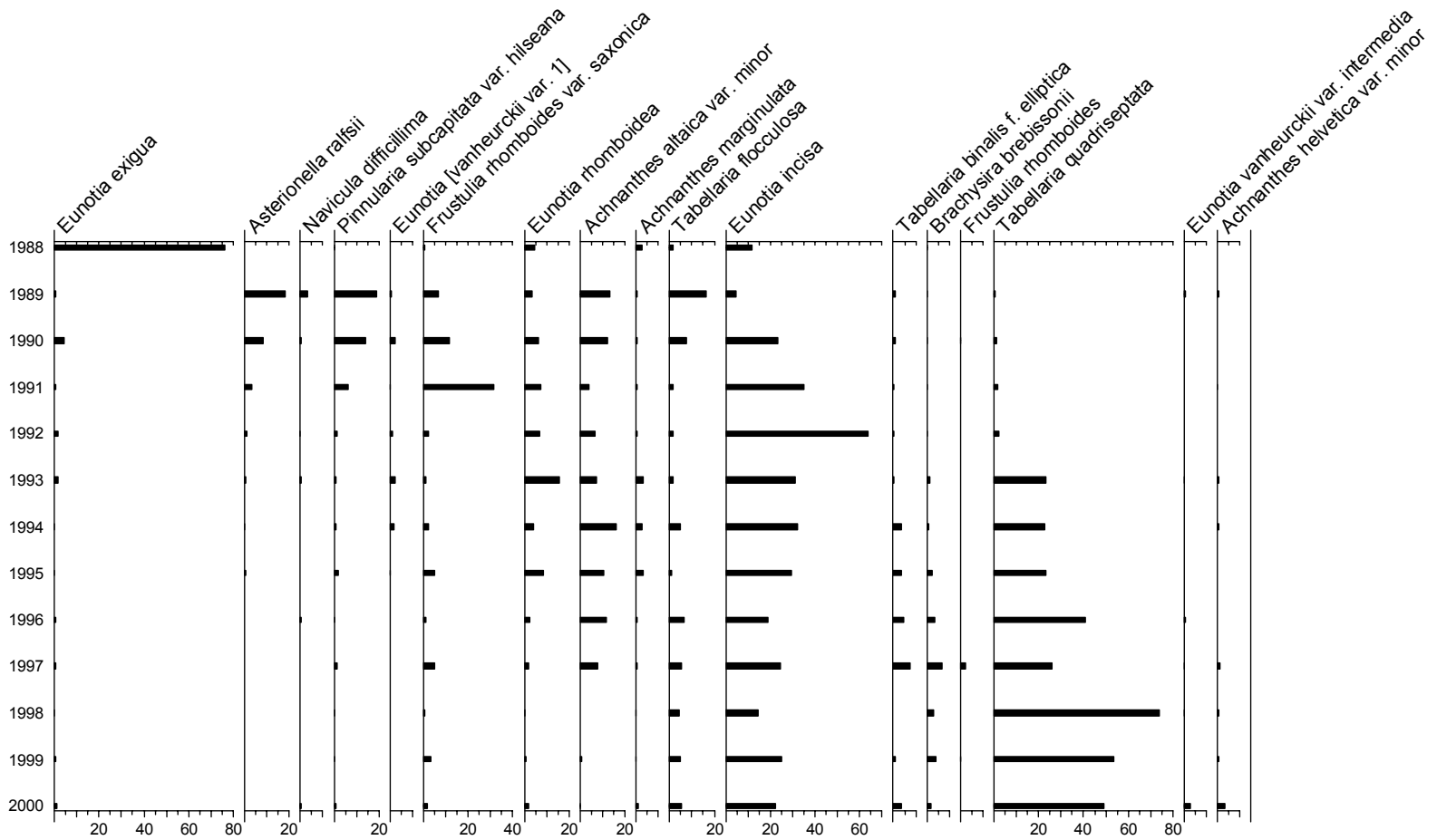
### 8.3. Fish data (for outflow stream)

#### 8.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Loch Grannoch



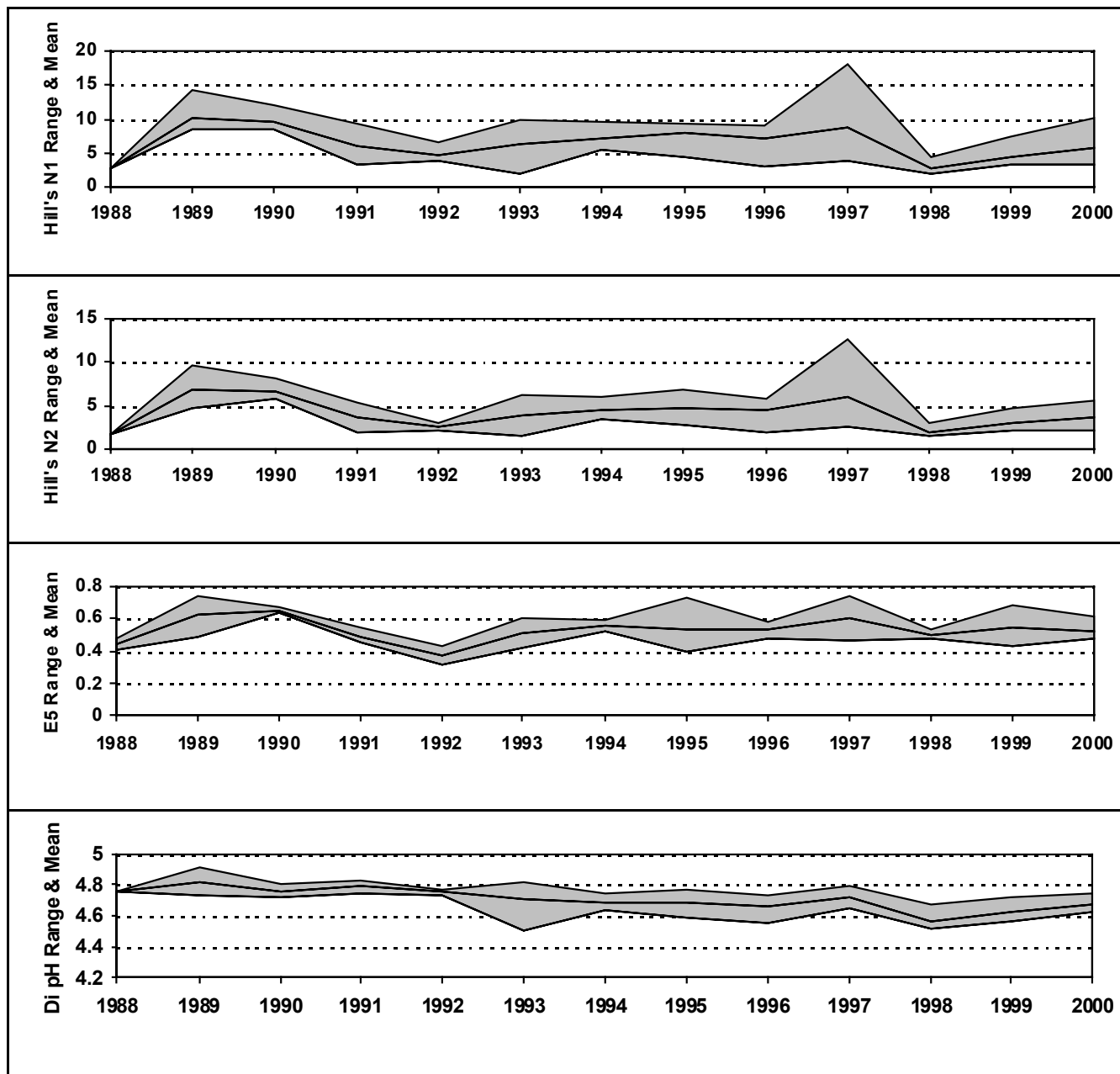
## 8.4. Epilithic diatom data

### 8.4.1. Percentage abundance summary, Loch Grannoch



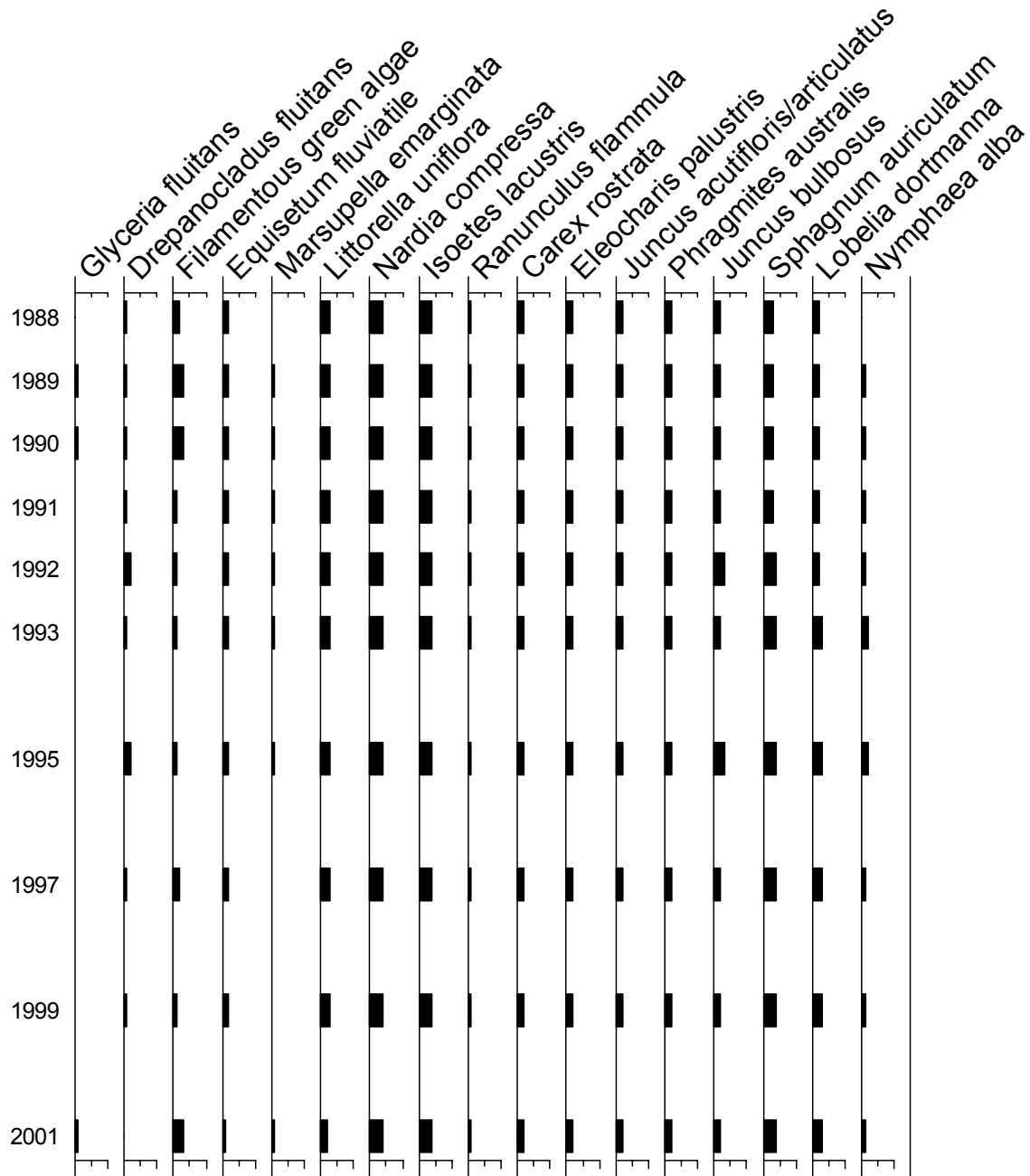


### 8.4.2. Summary statistics, Loch Grannoch



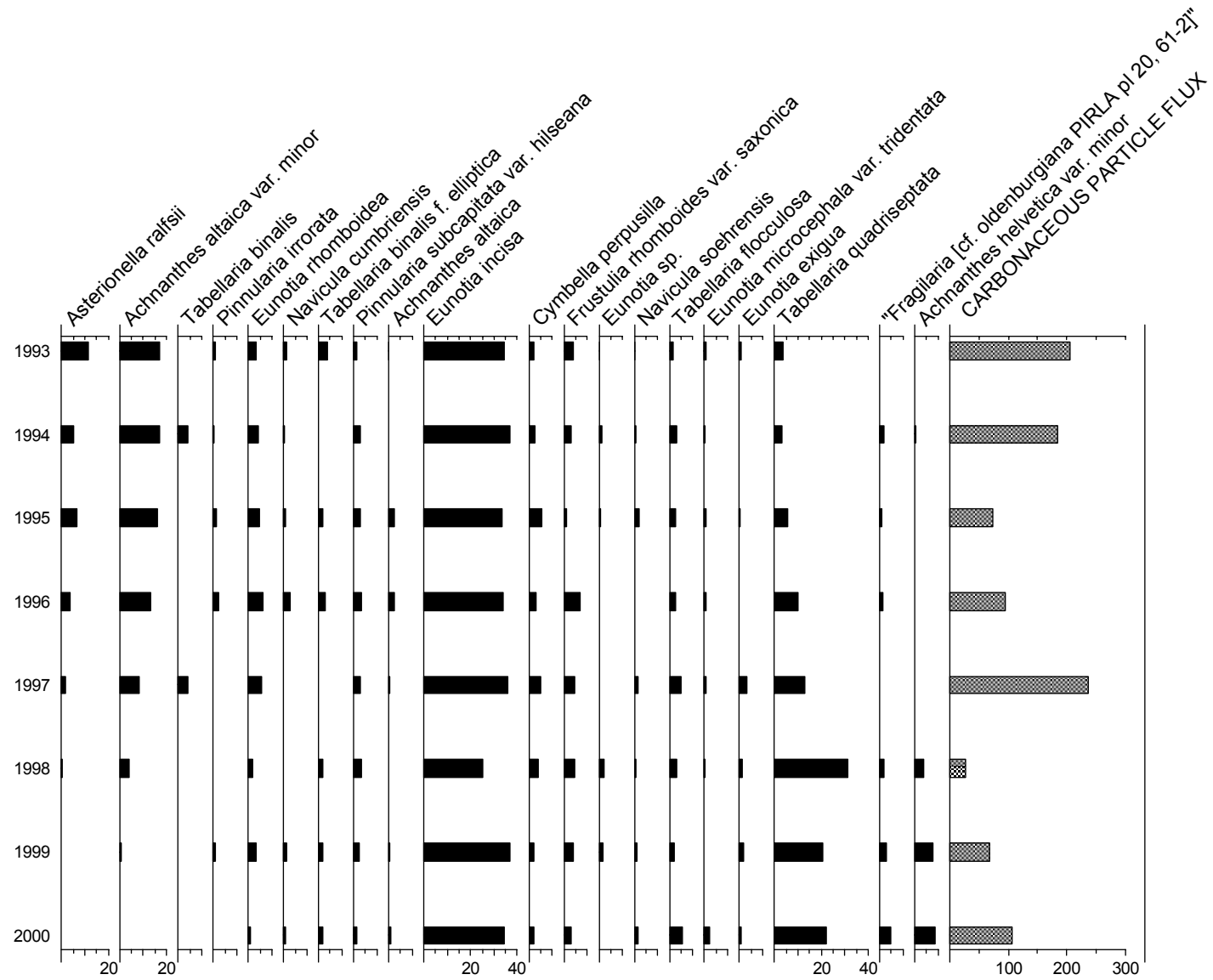
## 8.5. Aquatic macrophyte data, Loch Grannoch

### Species Scores (1-5)



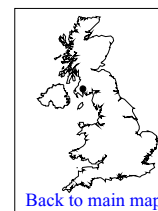
## 8.6. Sediment trap data, Loch Grannoch

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 9. Dargall Lane

Catchment area: 210 ha  
 Minimum catchment altitude: 260 m  
 Maximum catchment altitude: 716 m



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Grid Ref: NX 449786

Soils: Podsoles  
 Peaty gley  
 Blanket peat

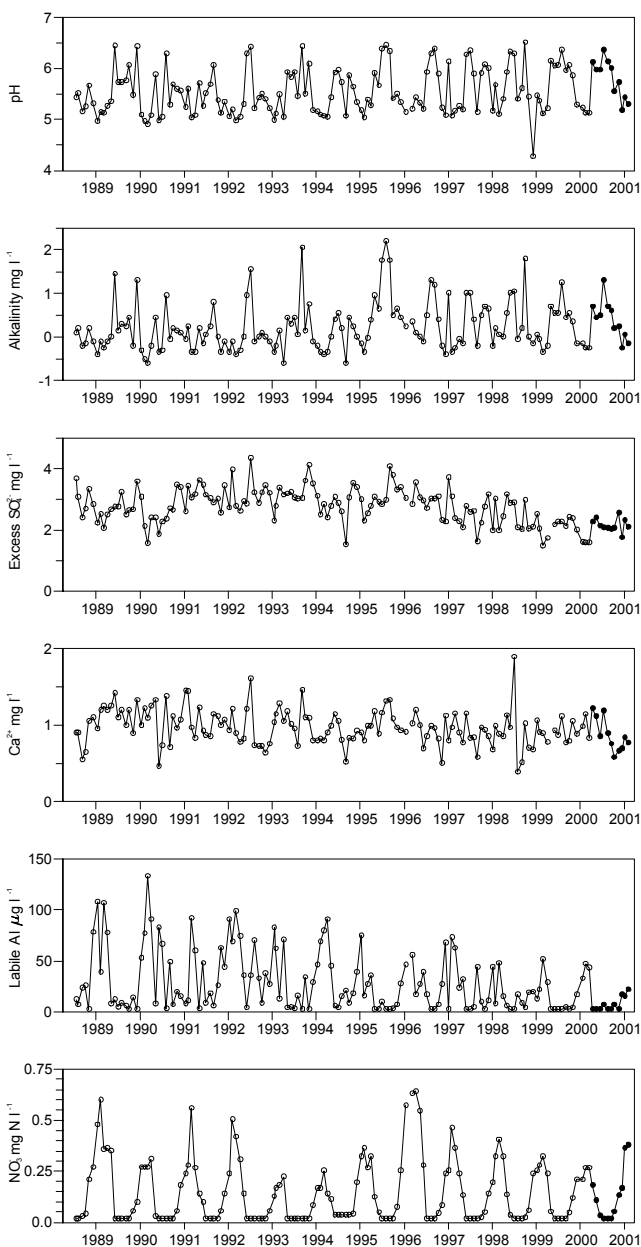
Geology: Granite  
 Gneiss

Vegetation: 100 % Moorland

## 9.1. Spot sampled chemistry data

### Time series data

○ 21Jul1988 to 31Mar2000    ● 01Apr2000 to 06Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.80	6.36	5.18	0.38	91.7
Alk(CaCO <sub>3</sub> )	0.40	1.30	-0.25	0.44	91.7
Cond	30.3	39.0	22.0	5.2	91.7
Ca	0.87	1.22	0.58	0.22	91.7
Mg	0.65	1.20	0.40	0.28	91.7
Na	3.50	4.30	2.90	0.44	91.7
K	0.32	0.45	0.14	0.12	91.7
Ba	0.01	0.01	0.00	0.00	91.7
Sr	0.01	0.01	0.00	0.00	91.7
Fe	0.02	0.04	0.01	0.01	75.0
Mn	0.01	0.02	0.00	0.01	91.7
Sol.Al	22.4	48.0	7.0	13.6	91.7
Sol.lab.Al	7.5	22.0	2.5	7.1	91.7
Cl	6.12	8.40	4.50	1.34	91.7
SO <sub>4</sub>	3.03	3.60	2.70	0.29	91.7
XSO <sub>4</sub>	2.16	2.56	1.75	0.22	91.7
NO <sub>3</sub>	0.13	0.38	0.02	0.13	91.7
PO <sub>4</sub>	All recorded data below detection limit. 91.7				
Br	0.14	0.22	0.01	0.12	25.0
F	0.01	0.01	0.01	0.00	58.3
Si	0.82	1.40	0.30	0.36	91.7
DOC	1.95	3.40	1.20	0.65	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

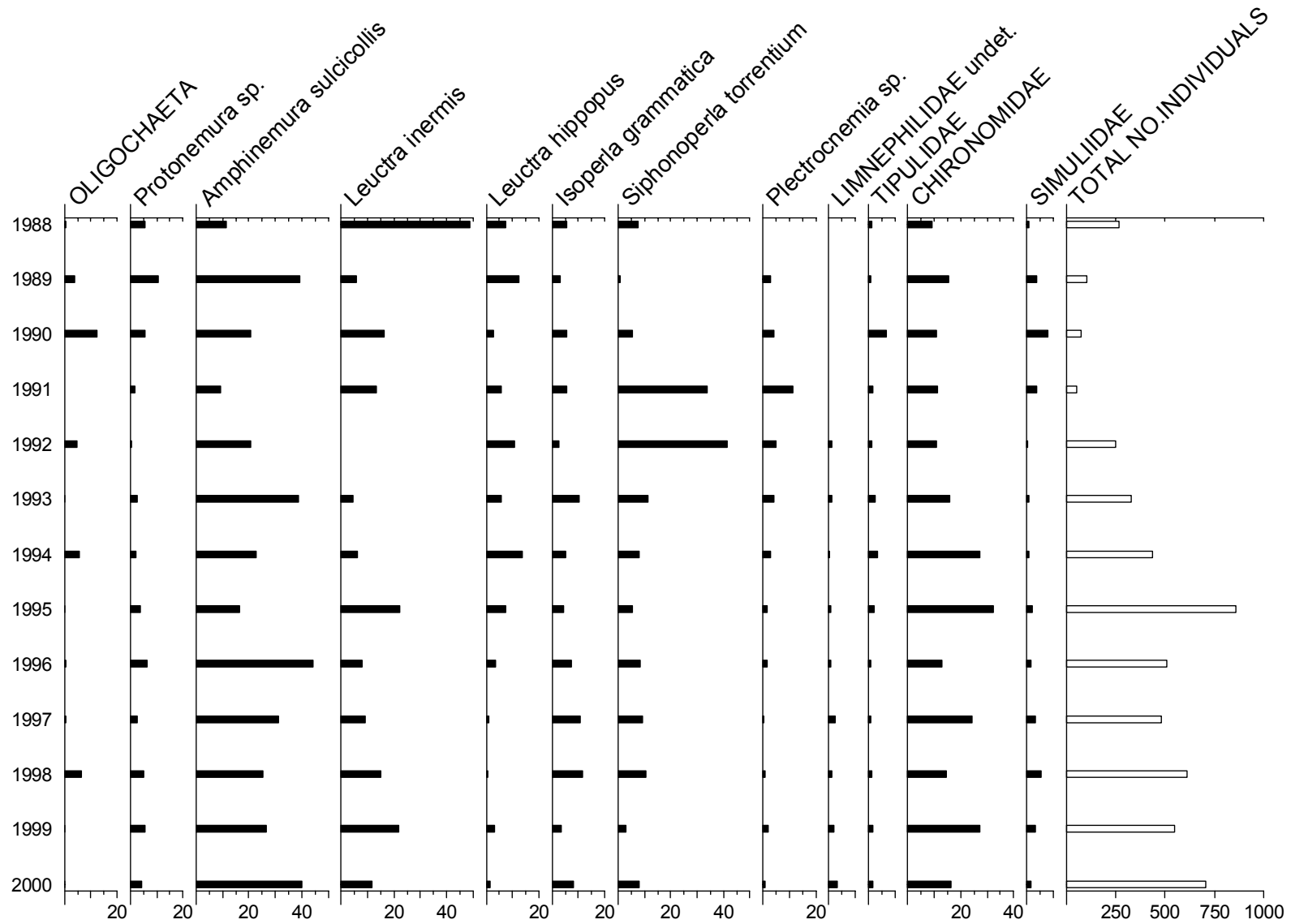
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.54	6.51	4.28	0.45	100.0
Alk(CaCO <sub>3</sub> )	0.22	2.20	-0.60	0.56	100.0
Cond	34.7	59.0	16.0	7.3	100.0
Ca	0.98	1.89	0.39	0.23	100.0
Mg	0.63	1.00	0.30	0.15	100.0
Na	3.84	6.50	1.70	0.81	100.0
K	0.39	0.70	0.10	0.07	100.0
Ba	0.01	0.02	0.00	0.00	100.0
Sr	0.01	0.06	0.00	0.00	100.0
Fe	0.02	0.12	0.01	0.01	100.0
Mn	0.01	0.03	0.00	0.01	100.0
Sol.Al	46.8	143.0	3.0	34.6	100.0
Sol.lab.Al	29.7	133.0	2.5	29.5	100.0
Cl	6.56	13.00	2.20	1.98	100.0
SO <sub>4</sub>	3.71	5.30	2.00	0.58	100.0
XSO <sub>4</sub>	2.78	4.35	1.49	0.57	100.0
NO <sub>3</sub>	0.15	0.64	0.02	0.16	100.0
PO <sub>4</sub>	0.00	0.09	0.00	0.01	100.0
Br	0.01	0.06	0.00	0.01	91.7
F	0.01	0.08	0.00	0.01	100.0
Si	0.94	1.90	0.40	0.28	100.0
DOC	1.73	5.90	0.30	0.90	100.0

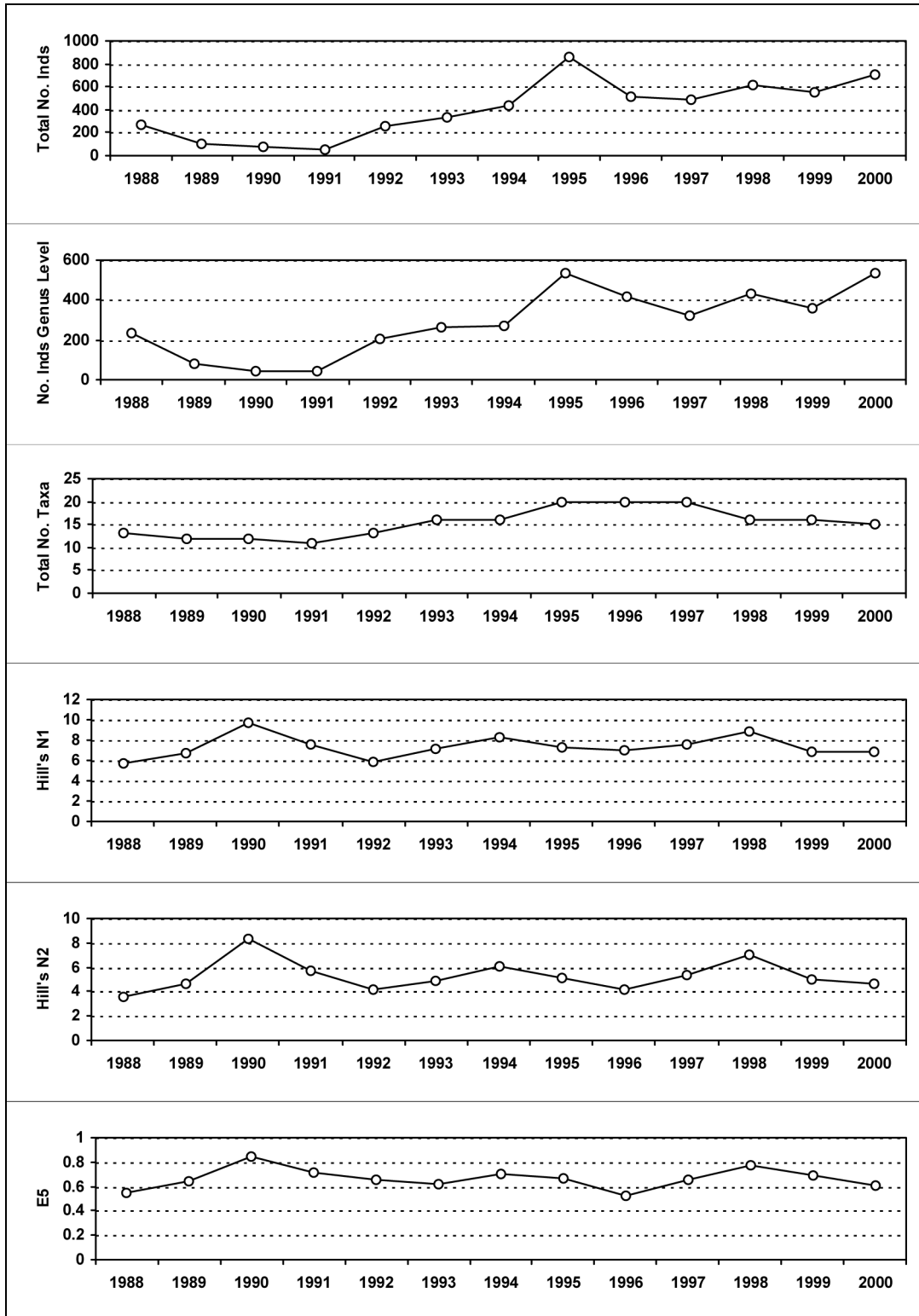
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

## 9.2. Macroinvertebrate data

### 9.2.1. Percentage abundance summary, Dargall Lane

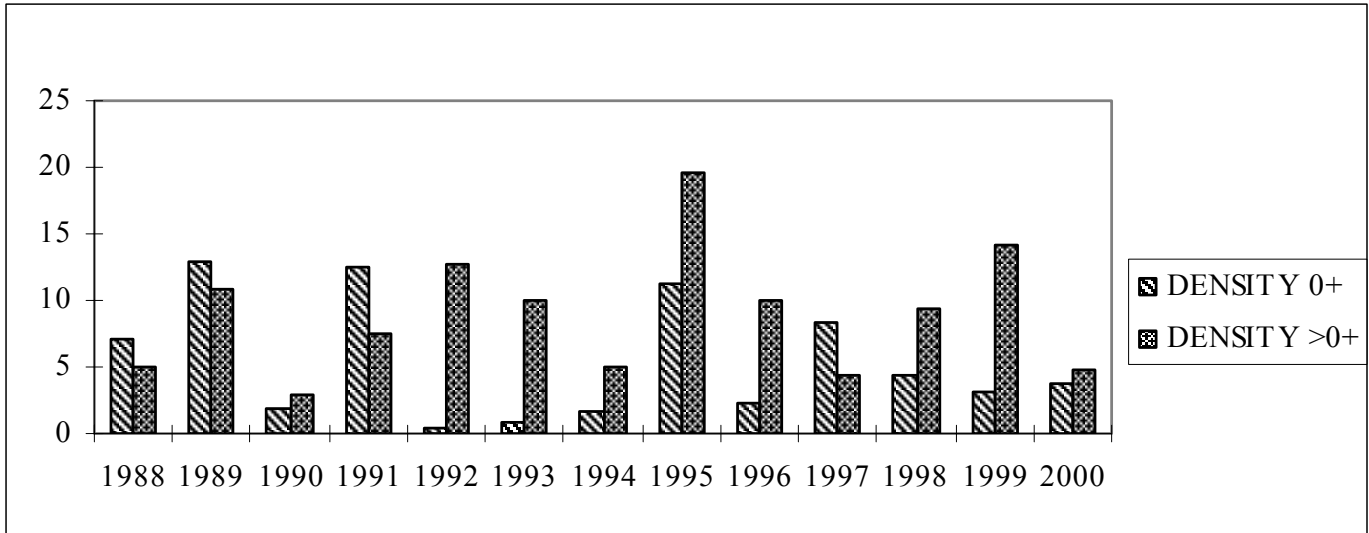


## 9.2.2. Summary statistics, Dargall Lane



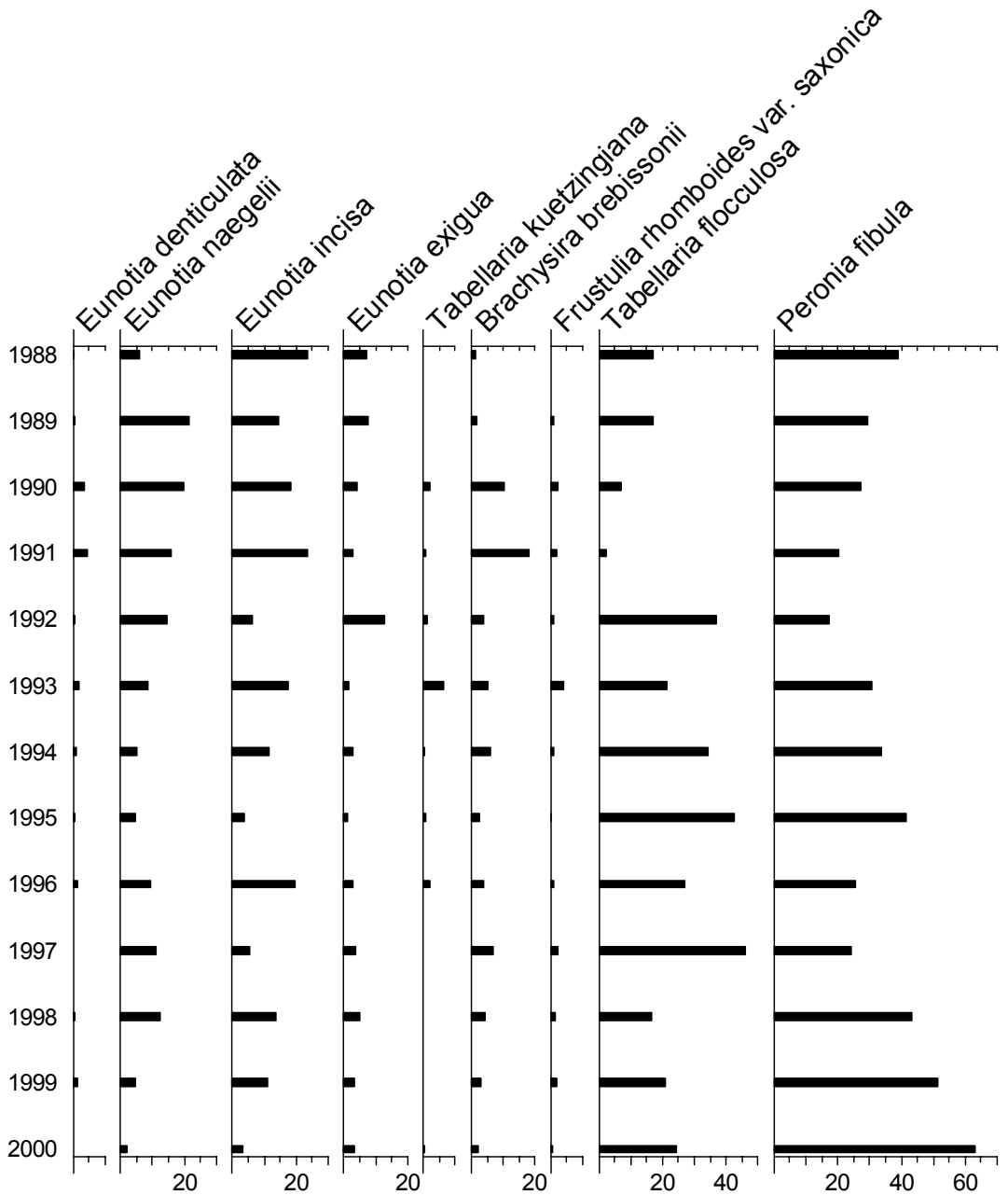
### 9.3. Fish data

#### 9.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Dargall Lane



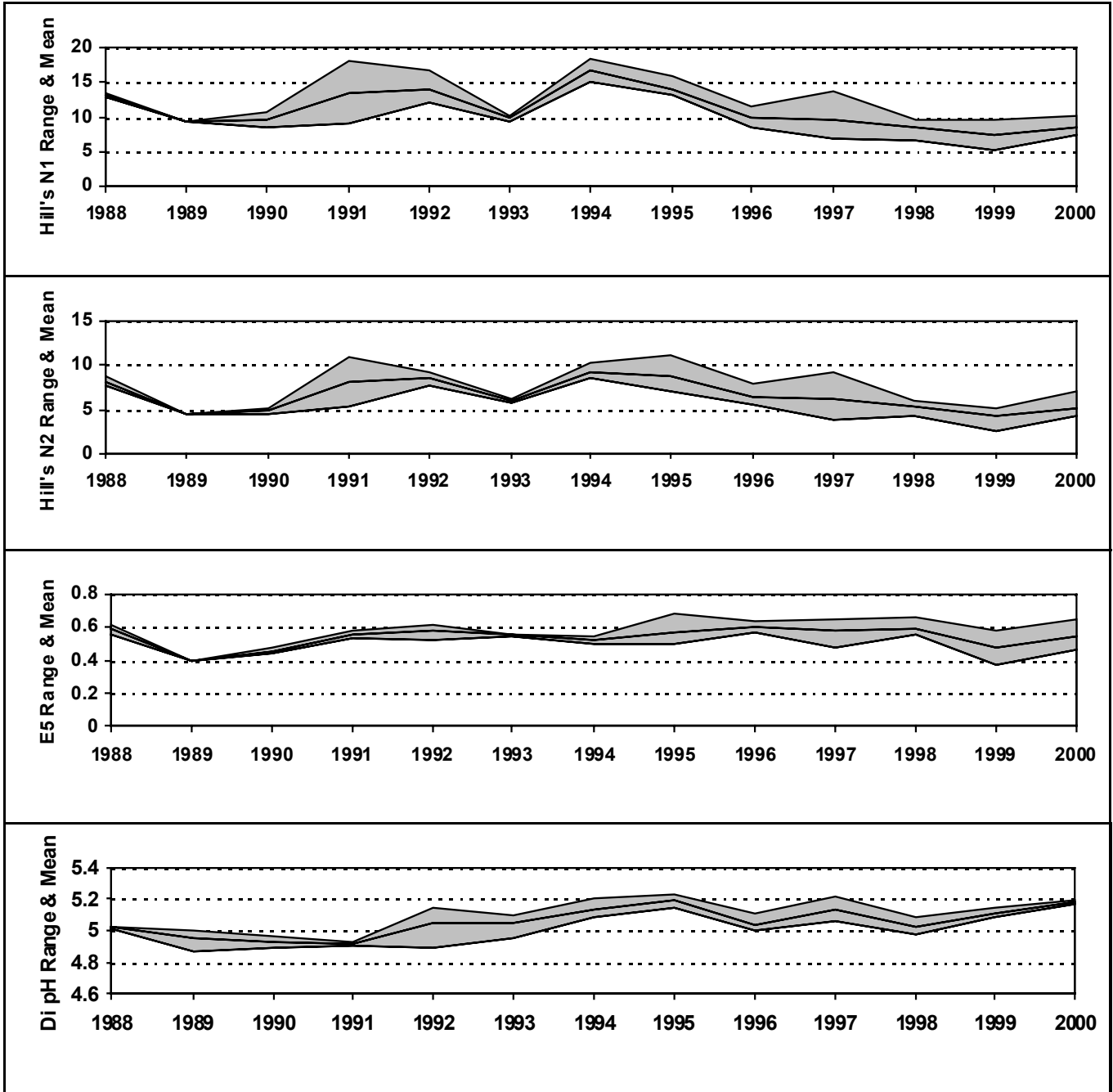
## 9.4. Epilithic diatom data

### 9.4.1. Percentage abundance summary, Dargall Lane



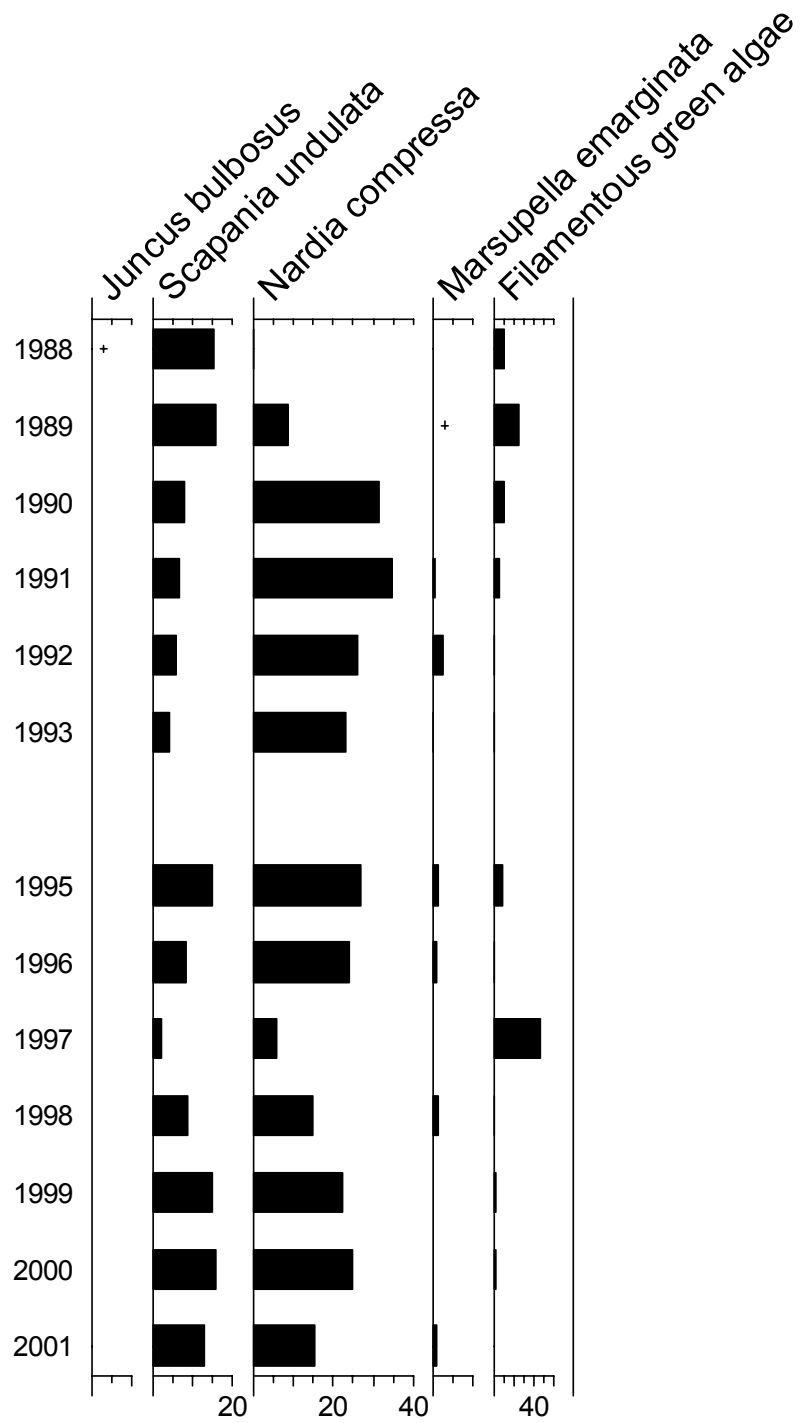


### 9.4.2. Summary statistics, Dargall Lane



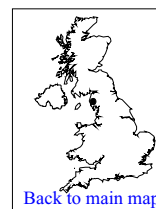
## 9.5. Aquatic macrophyte data, Dargall Lane

Percentage Species Cover



+ Represents  $<0.1\%$  abundance

# 10. Scoat Tarn



[Back to main map](#)

Lake altitude: 602 m  
 Maximum depth: 20.0 m  
 Mean depth: 10.0 m  
 Volume:  $0.42 \times 10^6 \text{ m}^3$

Lake area: 5 ha  
 Catchment area: 95 ha  
 Catchment:lake ratio: 18.2  
 Net relief: 239 m

Grid Ref: NY 159104

Soils: Shallow peat rankers

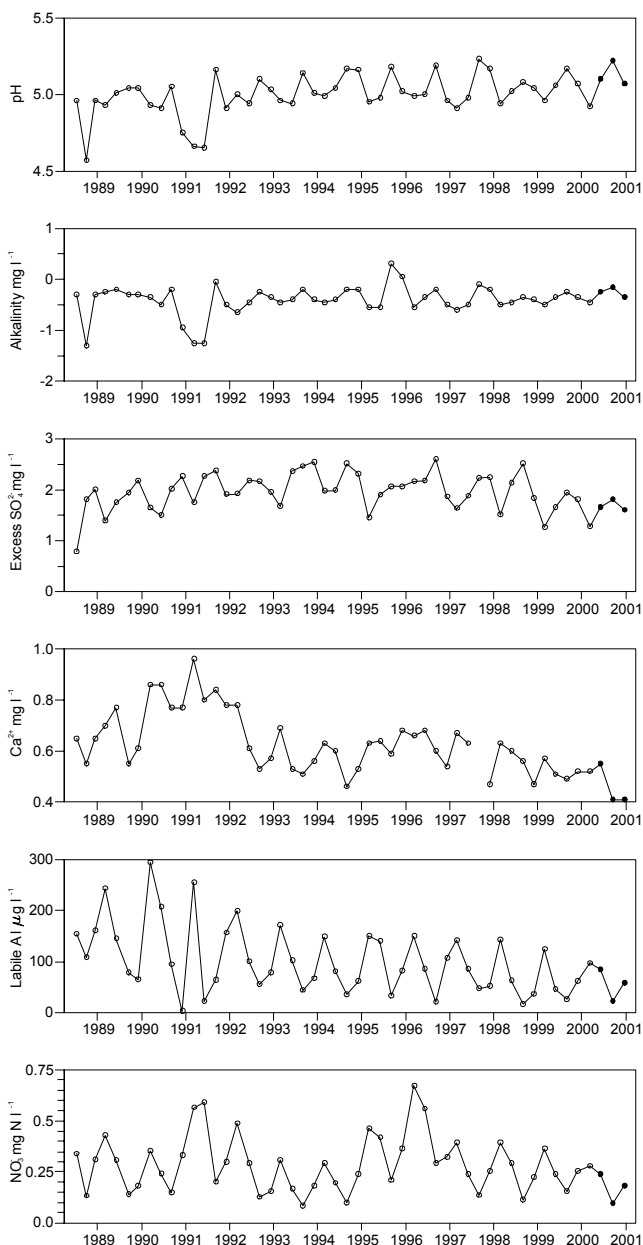
Geology: Ordovician volcanics

Vegetation: 100 % Moorland

## 10.1. Spot sampled chemistry data

### Time series data

○ 11Jul1988 to 31Mar 2000    ● 01Apr2000 to 12Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.13	5.22	5.07	0.08	75.0
Alk(CaCO <sub>3</sub> )	-0.25	-0.15	-0.35	0.10	75.0
Cond	27.3	31.0	24.0	3.5	75.0
Ca	0.46	0.55	0.41	0.08	75.0
Mg	0.47	0.60	0.40	0.12	75.0
Na	2.93	3.40	2.60	0.42	75.0
K	0.21	0.24	0.17	0.04	75.0
Ba	0.01	0.01	0.00	0.00	75.0
Sr	0.00	0.00	0.00	0.00	75.0
Fe	0.01	0.01	0.00	0.01	75.0
Mn	0.01	0.02	0.01	0.00	75.0
Sol.Al	68.0	103.0	35.0	34.0	75.0
Sol.lab.Al	54.7	84.0	22.0	31.1	75.0
Cl	5.00	5.90	4.20	0.85	75.0
SO <sub>4</sub>	2.40	2.50	2.30	0.10	75.0
XSO <sub>4</sub>	1.69	1.80	1.60	0.10	75.0
NO <sub>3</sub>	0.17	0.24	0.09	0.07	75.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.02	0.02	0.01	0.00	50.0
F	0.01	0.01	0.01	0.00	50.0
Si	0.50	0.60	0.40	0.10	75.0
DOC	1.37	1.90	1.10	0.46	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

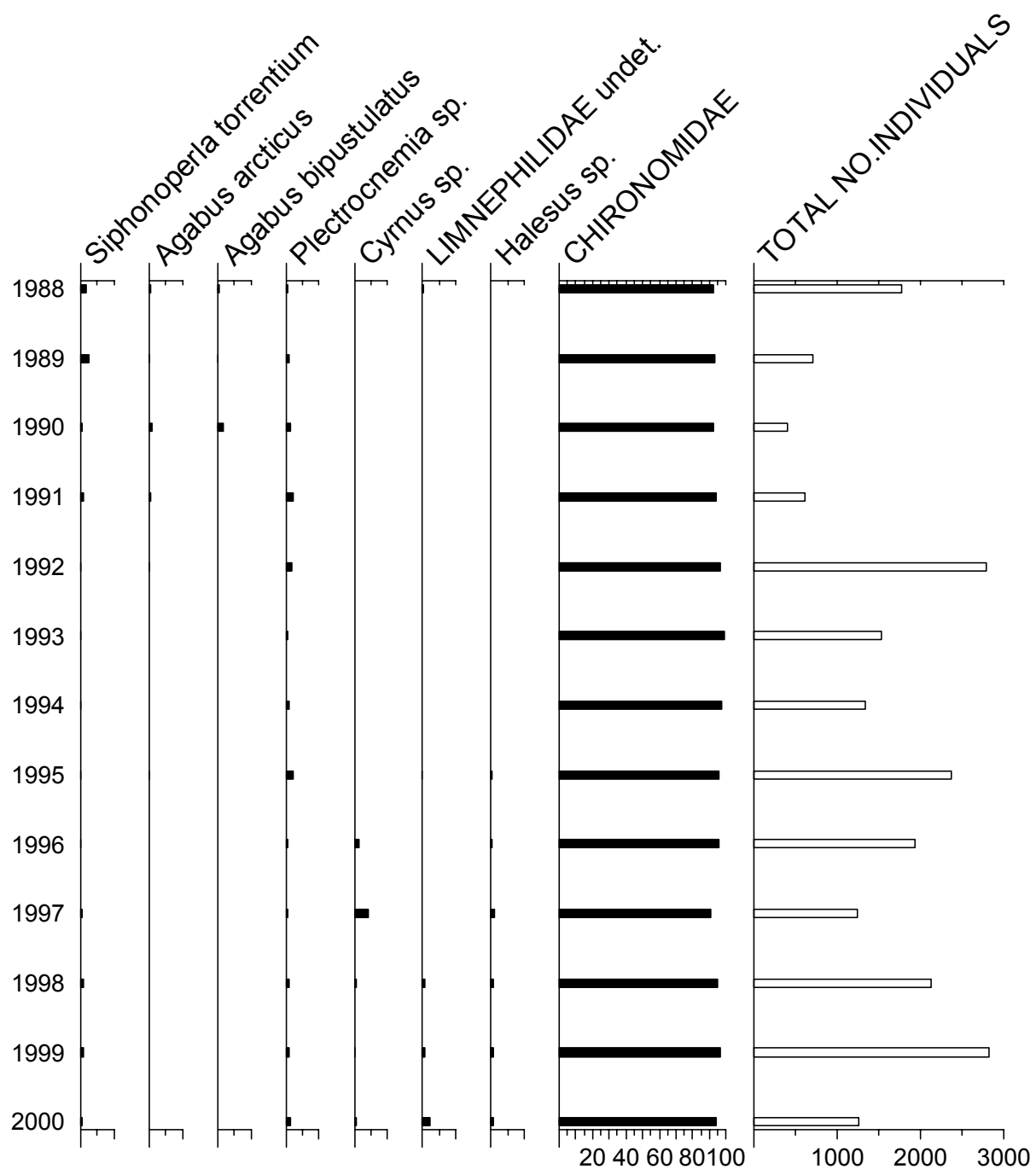
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.00	5.23	4.57	0.14	100.0
Alk(CaCO <sub>3</sub> )	-0.41	0.30	-1.30	0.30	100.0
Cond	34.3	49.0	24.0	6.1	100.0
Ca	0.63	0.96	0.46	0.12	100.0
Mg	0.56	0.90	0.30	0.12	100.0
Na	3.70	6.10	2.60	0.75	100.0
K	0.37	0.60	0.16	0.06	100.0
Ba	0.01	0.02	0.00	0.00	100.0
Sr	0.00	0.01	0.00	0.00	100.0
Fe	0.02	0.19	0.01	0.03	91.7
Mn	0.02	0.07	0.01	0.01	100.0
Sol.Al	112.8	300.0	12.2	65.9	100.0
Sol.lab.Al	102.0	293.8	2.5	65.8	100.0
Cl	6.47	11.60	4.10	1.69	100.0
SO <sub>4</sub>	2.88	3.50	1.70	0.31	100.0
XSO <sub>4</sub>	1.96	2.60	0.79	0.37	100.0
NO <sub>3</sub>	0.29	0.67	0.08	0.14	100.0
PO <sub>4</sub>	0.00	0.01	0.00	0.00	100.0
Br	0.02	0.05	0.00	0.01	100.0
F	0.02	0.03	0.00	0.00	100.0
Si	0.57	0.90	0.20	0.15	100.0
DOC	0.95	2.70	0.10	0.56	100.0

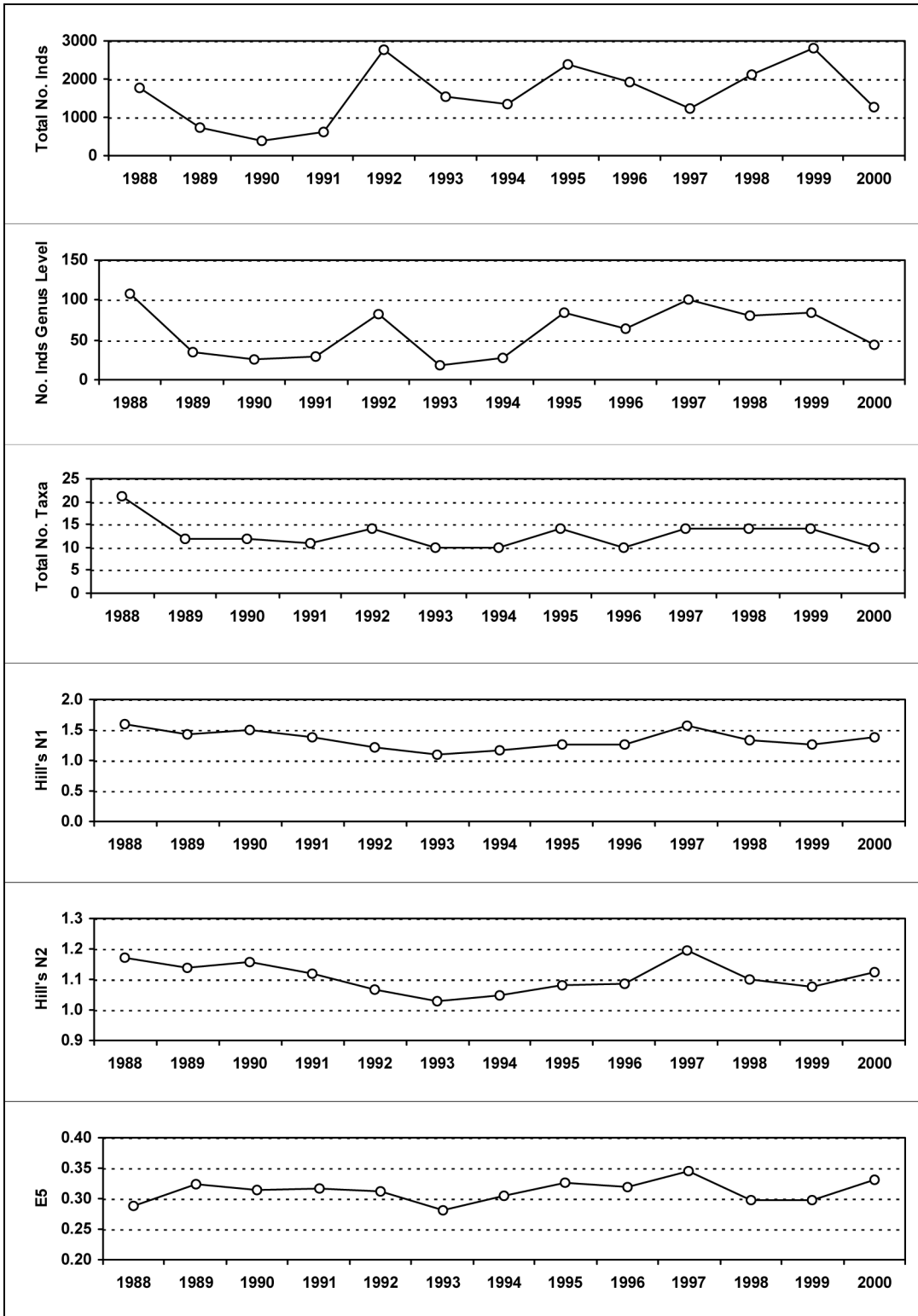
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 10.2. Macroinvertebrate data

### 10.2.1. Percentage abundance summary, Scoat Tarn

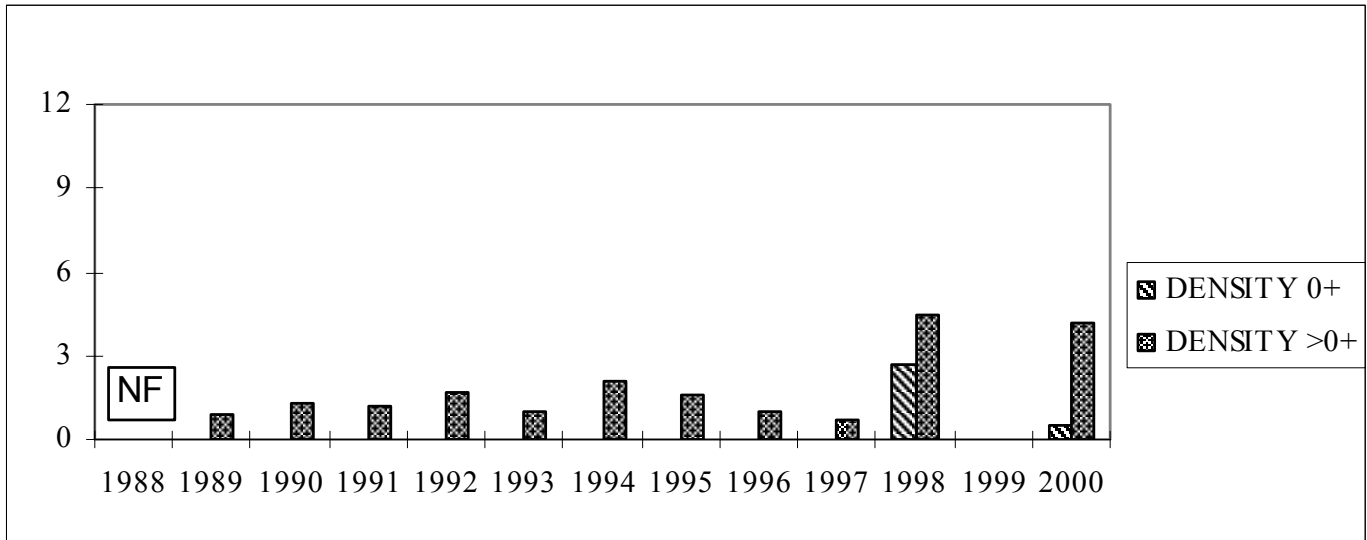


## 10.2.2. Summary statistics, Scoat Tarn



### 10.3. Fish data (for outflow stream)

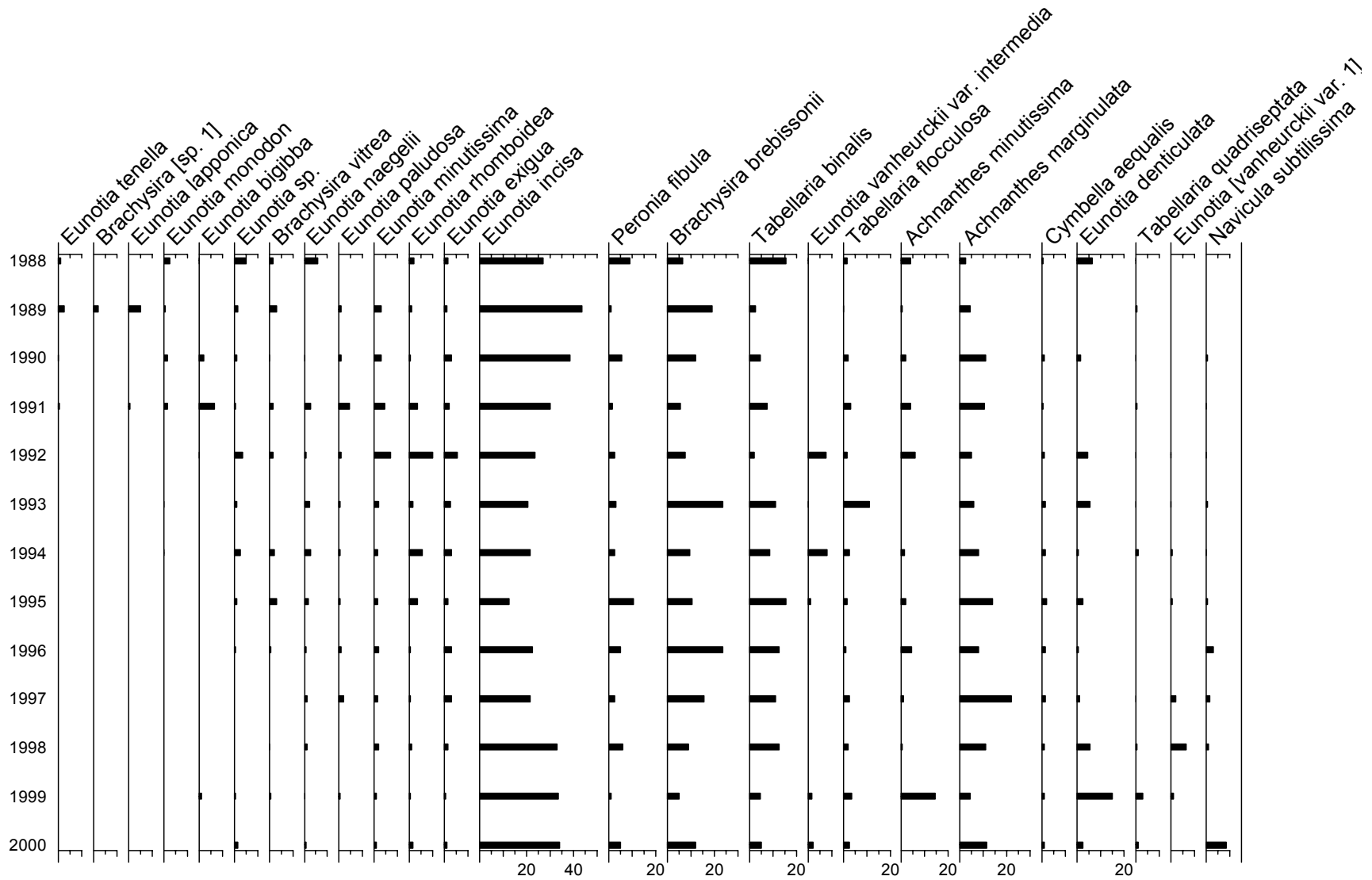
#### 10.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Scoat Tarn



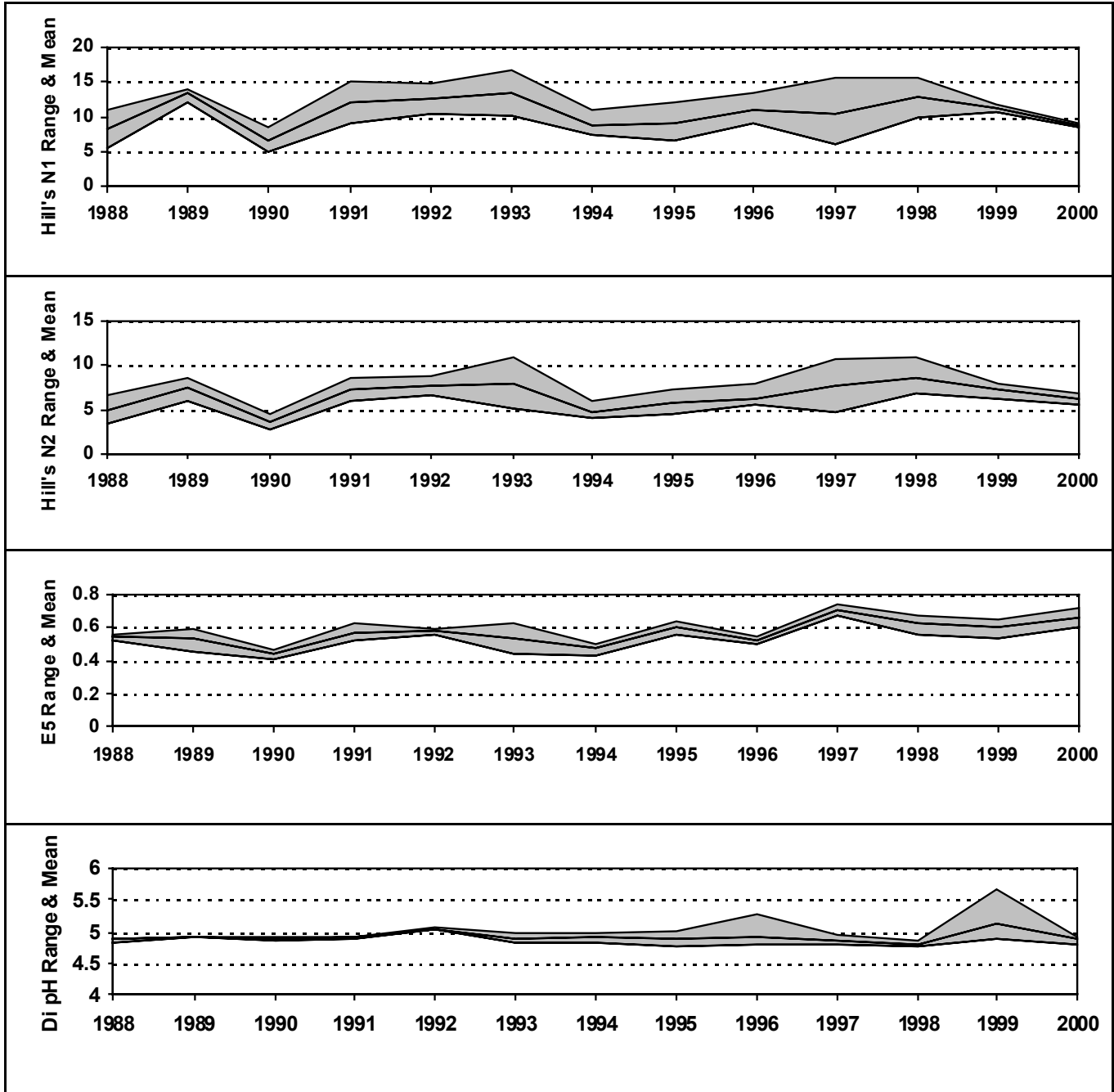
NF = Not fished

## 10.4. Epilithic diatom data

### 10.4.1. Percentage abundance summary, Scoat Tarn



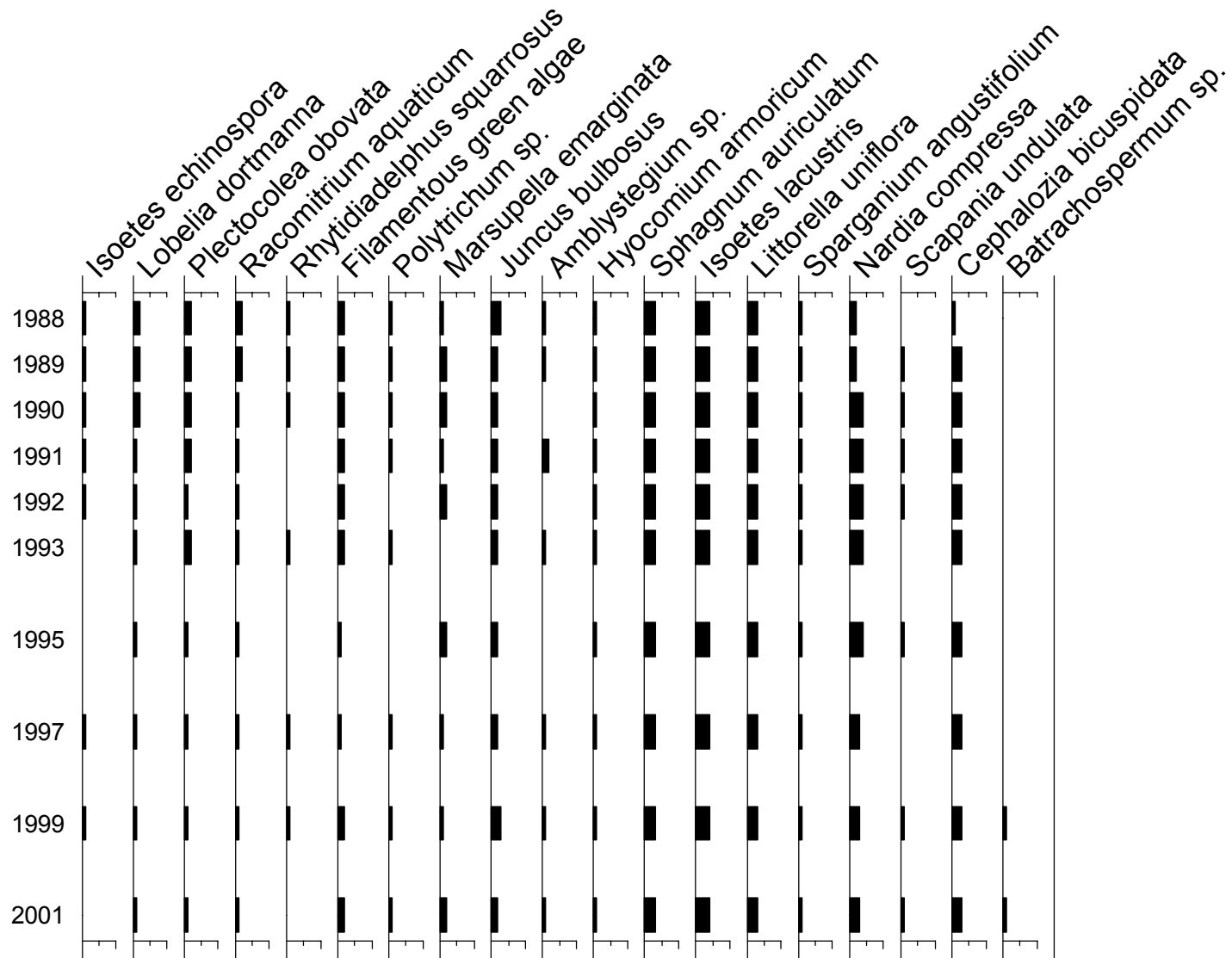
### 10.4.2. Summary statistics, Scoat Tarn





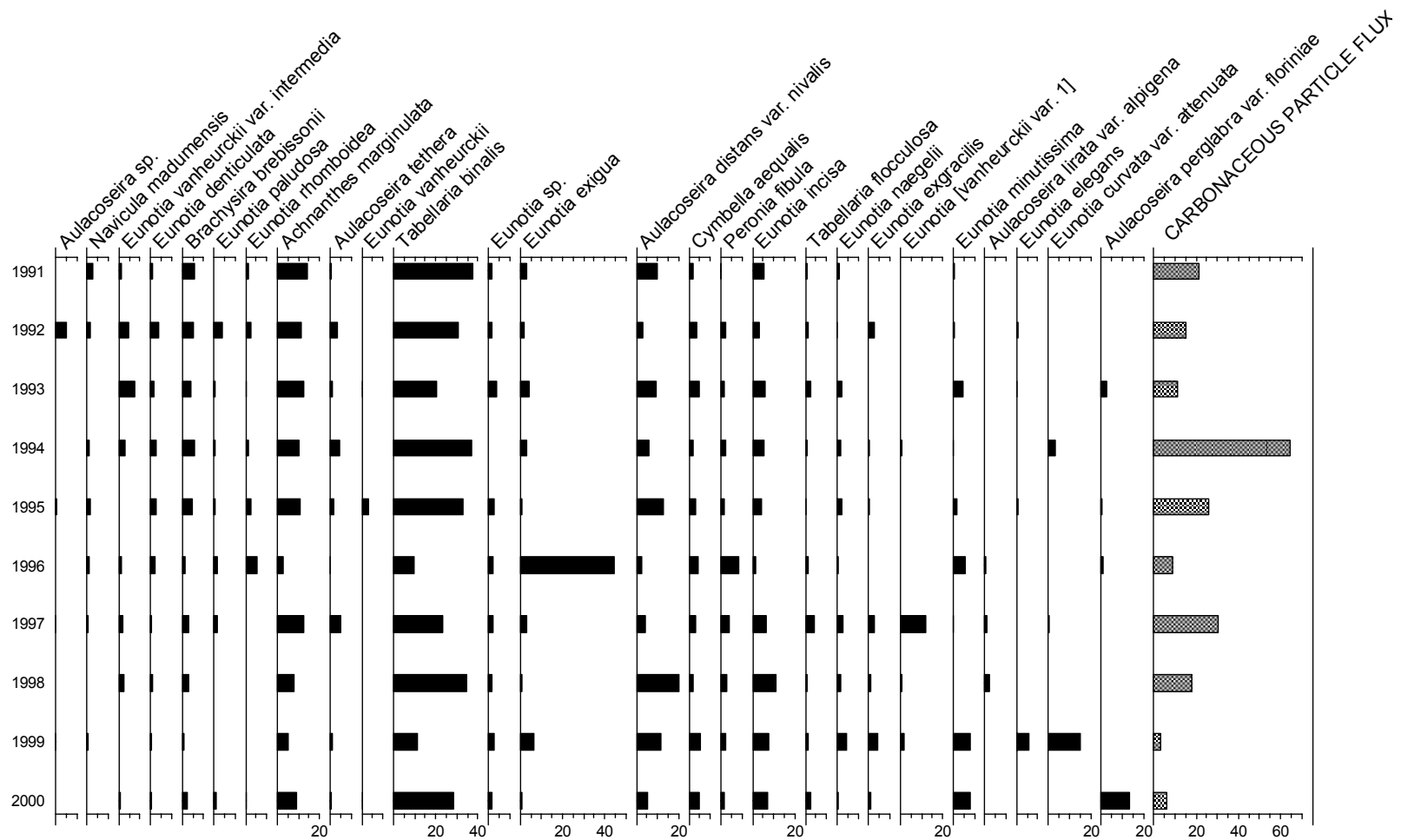
## 10.5. Aquatic macrophyte data, Scoat Tarn

### Species Scores (1-5)



## 10.6. Sediment trap data, Scoat Tarn

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 11. Burnmoor Tarn



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Grid Ref: NY 184043

Lake altitude: 252 m  
 Maximum depth: 13.0 m  
 Mean depth: 5.1 m  
 Volume:  $0.89 \times 10^6 \text{ m}^3$

Lake area: 24 ha  
 Catchment area: 226 ha  
 Catchment:lake ratio: 9.4  
 Net relief: 350 m

Soils: Shallow peat rankers

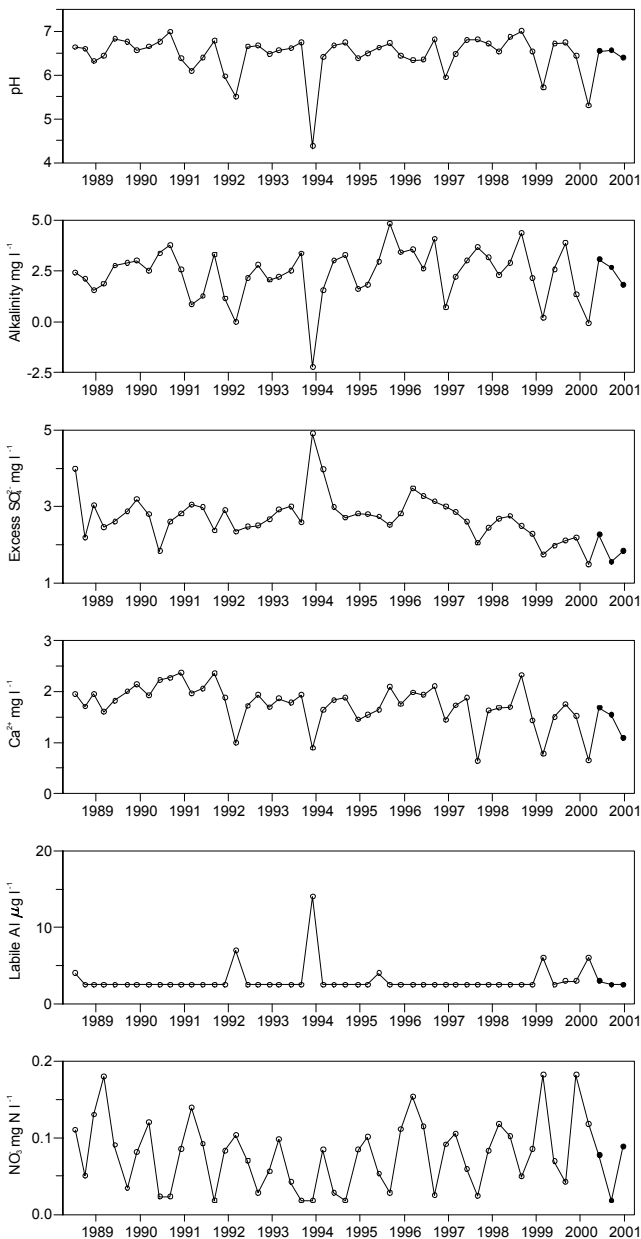
Geology: Ordovician andestic lava  
 Granite

Vegetation: 100 % Moorland

## 11.1. Spot sampled chemistry data

### Time series data

○ 11Jul1988 to 31Mar2000    ● 01Apr2000 to 12Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.50	6.56	6.39	0.09	75.0
Alk(CaCO <sub>3</sub> )	2.50	3.05	1.80	0.64	75.0
Cond	32.7	38.0	30.0	4.6	75.0
Ca	1.43	1.68	1.08	0.31	75.0
Mg	0.97	1.70	0.50	0.64	75.0
Na	3.60	4.20	3.20	0.53	75.0
K	0.26	0.30	0.23	0.04	75.0
Ba	All recorded data below detection limit. 75.0				
Sr	0.01	0.01	0.01	0.00	75.0
Fe	0.01	0.01	0.01	0.00	50.0
Mn	0.00	0.00	0.00	0.00	75.0
Sol.Al	7.3	10.0	5.0	2.5	75.0
Sol.lab.Al	2.7	3.0	2.5	0.3	75.0
Cl	6.23	7.30	5.40	0.97	75.0
SO <sub>4</sub>	2.77	3.30	2.40	0.47	75.0
XSO <sub>4</sub>	1.88	2.26	1.55	0.36	75.0
NO <sub>3</sub>	0.06	0.09	0.02	0.04	75.0
PO <sub>4</sub>	All recorded data below detection limit. 75.0				
Br	No recorded data.				
F	0.02	0.02	0.01	0.00	75.0
Si	0.60	1.00	0.40	0.35	75.0
DOC	3.07	4.60	2.20	1.33	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

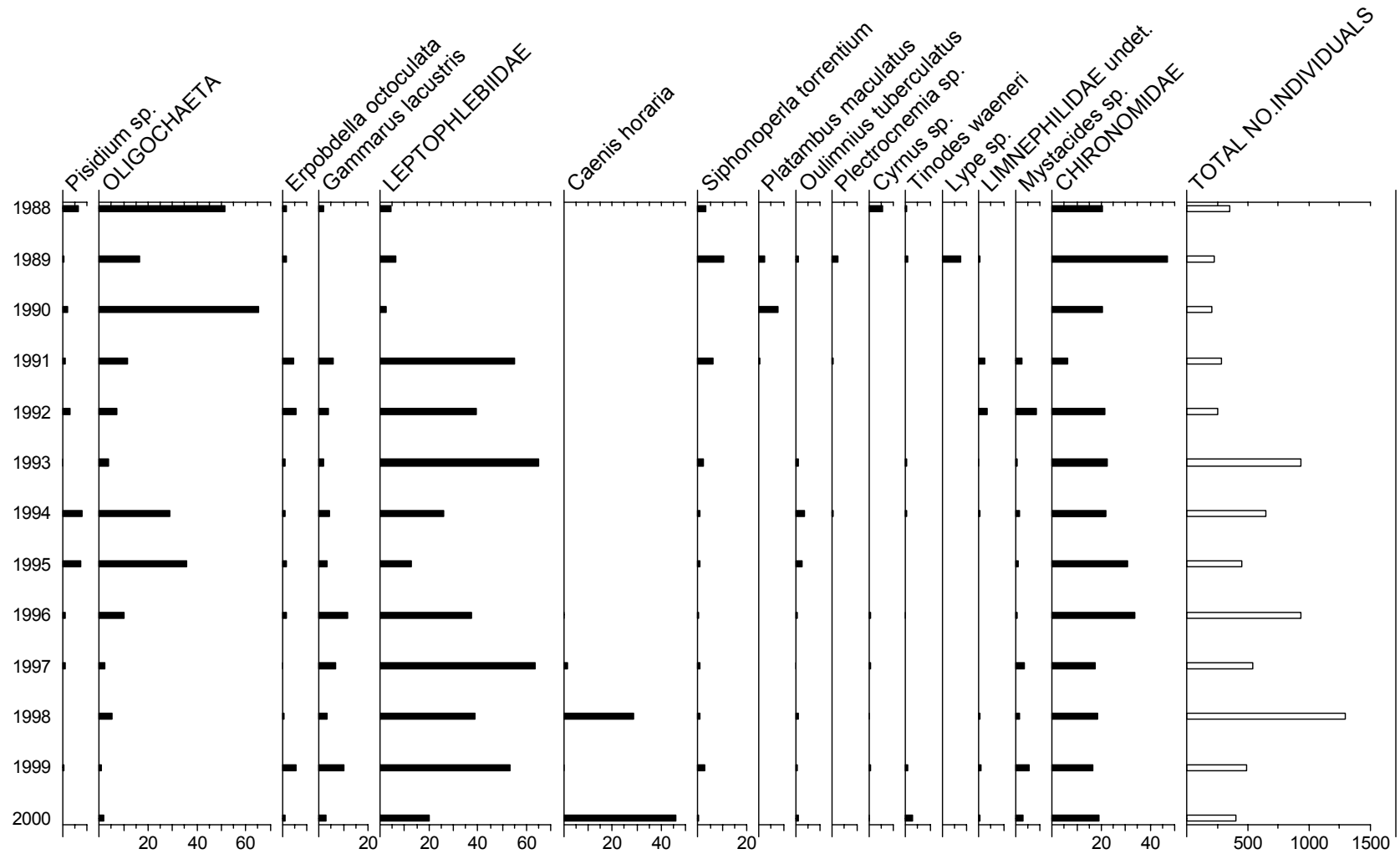
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	6.47	7.01	4.38	0.46	100.0
Alk(CaCO <sub>3</sub> )	2.35	4.80	-2.20	1.27	100.0
Cond	40.6	53.9	23.0	6.0	100.0
Ca	1.74	2.37	0.64	0.41	100.0
Mg	0.76	1.00	0.40	0.12	100.0
Na	4.34	5.60	2.90	0.58	100.0
K	0.37	0.60	0.19	0.05	100.0
Ba	0.01	0.05	0.00	0.01	100.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.03	0.23	0.01	0.04	100.0
Mn	0.01	0.05	0.00	0.01	100.0
Sol.Al	8.8	42.0	2.5	8.1	100.0
Sol.lab.Al	3.1	14.0	2.5	1.9	100.0
Cl	7.32	10.20	4.60	1.27	100.0
SO <sub>4</sub>	3.77	5.70	2.40	0.60	100.0
XSO <sub>4</sub>	2.73	4.91	1.49	0.58	100.0
NO <sub>3</sub>	0.08	0.18	0.02	0.05	100.0
PO <sub>4</sub>	All recorded data below detection limit. 100.0				
Br	0.01	0.03	0.00	0.01	93.8
F	0.03	0.25	0.00	0.03	100.0
Si	0.72	1.40	0.10	0.35	100.0
DOC	2.14	4.70	0.94	0.88	100.0

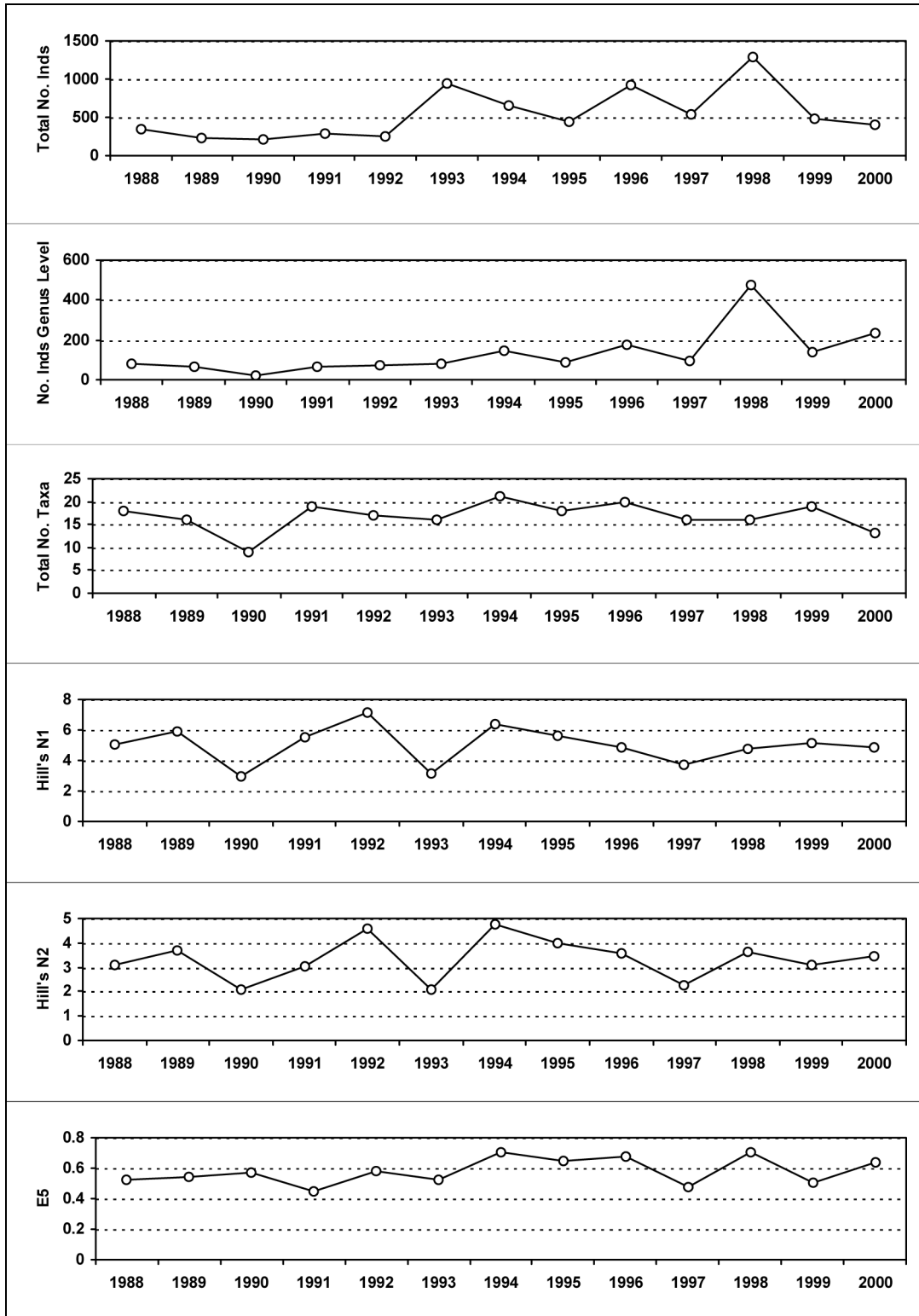
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 11.2. Macroinvertebrate data

### 11.2.1. Percentage abundance summary, Burnmoor Tarn

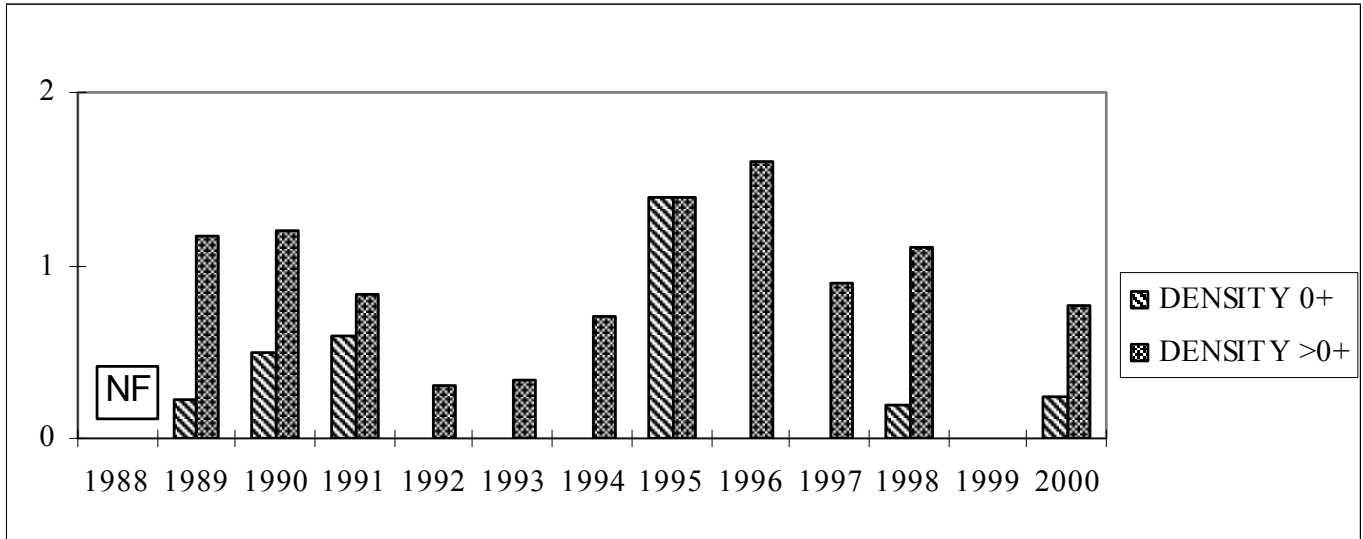


## 11.2.2. Summary statistics, Burnmoor Tarn



### 11.3. Fish data (for outflow stream)

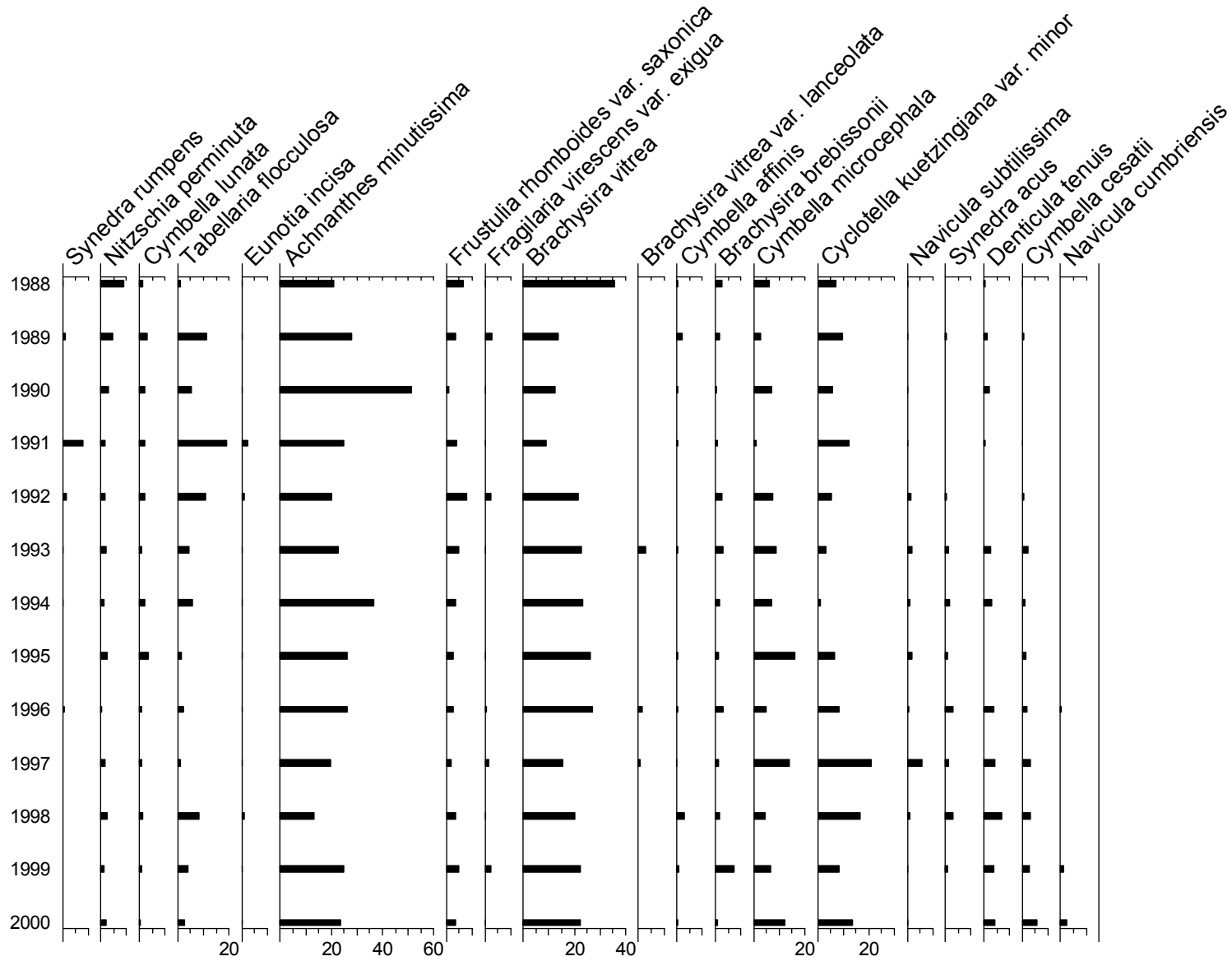
#### 11.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Burnmoor Tarn



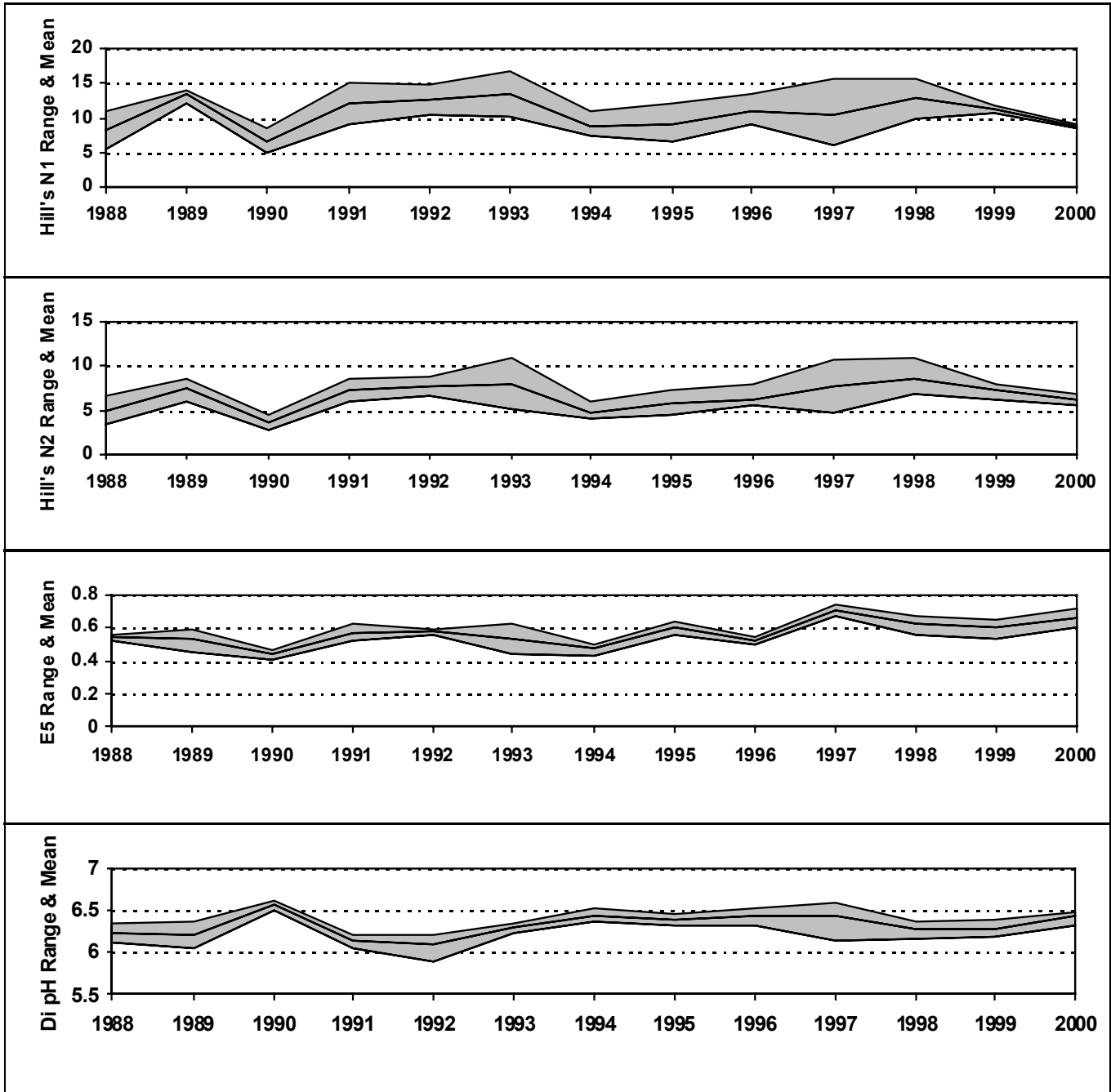
NF = Not fished

## 11.4. Epilithic diatom data

### 11.4.1. Percentage abundance summary, Burnmoor Tarn



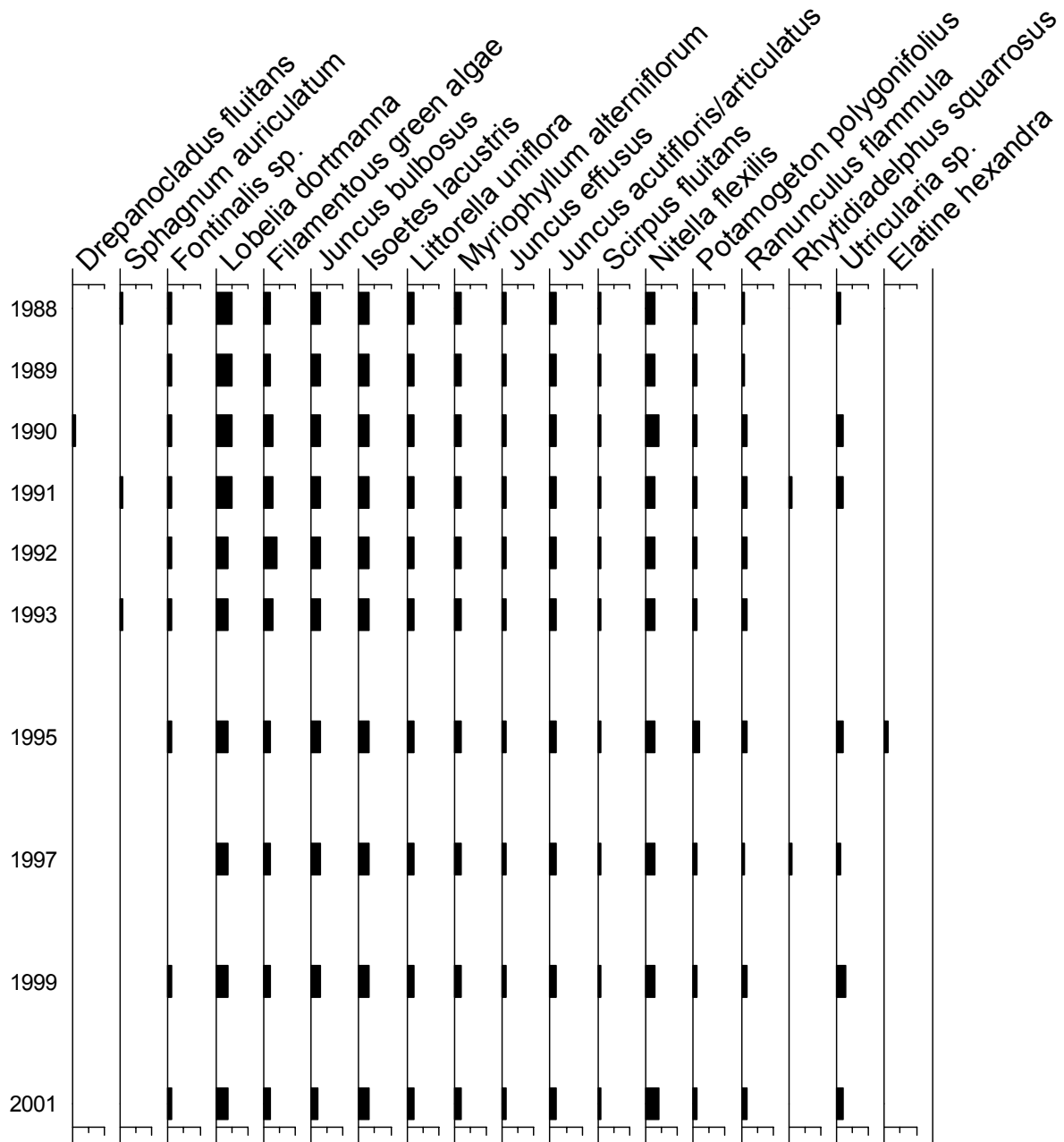
## 11.4.2. Summary statistics, Burnmoor Tarn





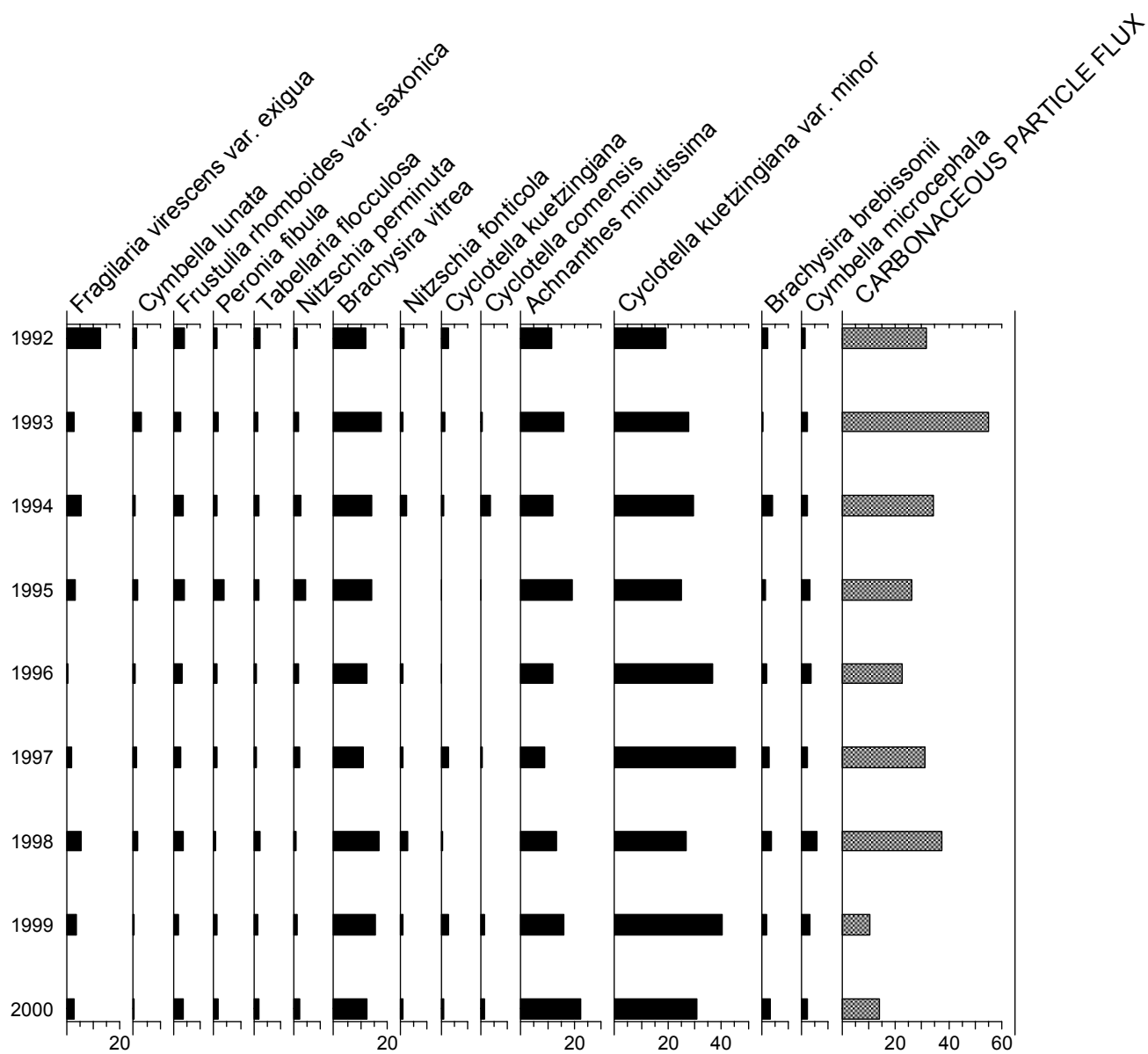
## 11.5. Aquatic macrophyte data, Burnmoor Tarn

### Species Scores (1-5)



## 11.6. Sediment trap data, Burnmoor Tarn

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 12. River Etherow

Catchment area: 1300 ha  
 Minimum catchment altitude: 280 m  
 Maximum catchment altitude: 633 m



[Back to main map](#)

Grid Ref: SK 116996

Soils: Peaty podsol  
 Unclassified inc. peats

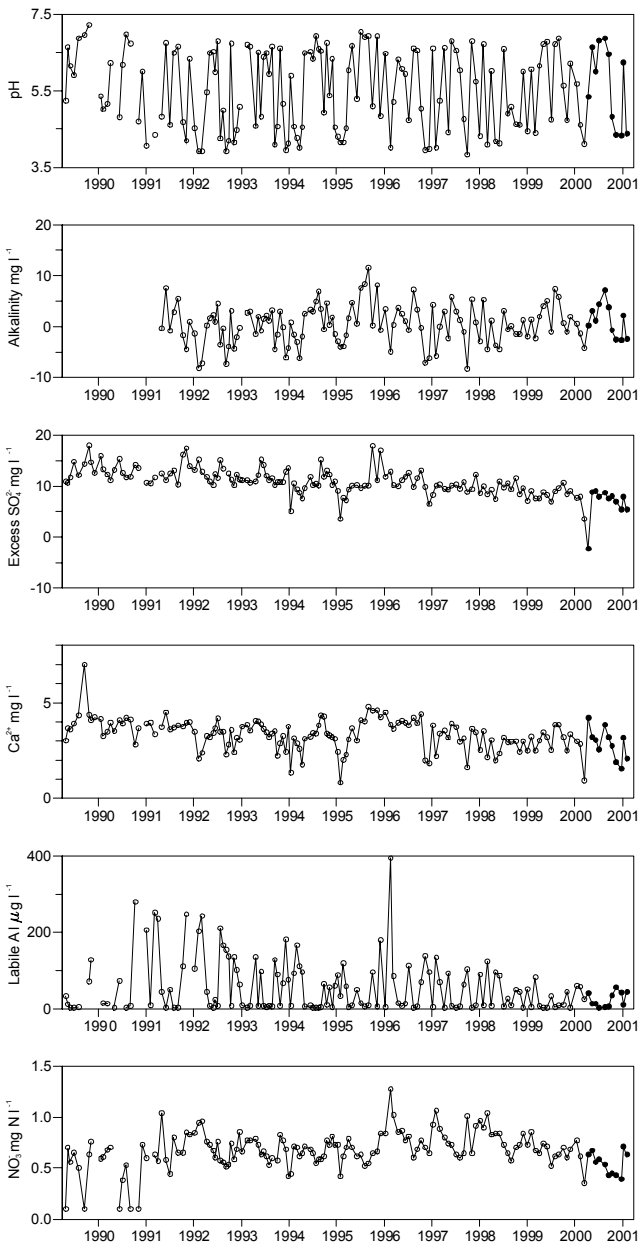
Geology: Millstone grit

Vegetation: 100 % Moorland

## 12.1. Spot sampled chemistry data

### Time series data

○ 26Apr1989 to 31Mar2000 ● 01Apr2000 to 06Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.65	6.86	4.33	1.04	91.7
Alk(CaCO <sub>3</sub> )	1.20	7.05	-2.70	3.19	91.7
Cond	90.5	294.0	59.0	67.9	91.7
Ca	2.86	4.21	1.56	0.81	91.7
Mg	2.03	4.20	0.90	1.06	91.7
Na	10.36	49.70	4.50	13.11	91.7
K	0.66	0.97	0.45	0.18	91.7
Ba	0.02	0.03	0.01	0.00	91.7
Sr	0.02	0.02	0.01	0.00	91.7
Fe	0.40	0.94	0.04	0.26	91.7
Mn	0.04	0.07	0.00	0.02	91.7
Sol.Al	110.6	188.0	27.0	61.1	91.7
Sol.lab.Al	24.0	55.0	2.5	19.3	91.7
Cl	17.23	91.00	7.10	24.57	91.7
SO <sub>2</sub>	9.09	10.80	6.40	1.45	91.7
XSO <sub>4</sub>	6.64	8.98	-2.32	3.22	91.7
NO <sub>3</sub>	0.55	0.71	0.39	0.11	91.7
PO <sub>4</sub>	0.00	0.01	0.00	0.00	91.7
Br	0.16	1.34	0.01	0.42	83.3
F	0.05	0.05	0.04	0.01	83.3
Si	2.68	4.10	1.70	0.80	91.7
DOC	10.07	21.00	3.00	6.41	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

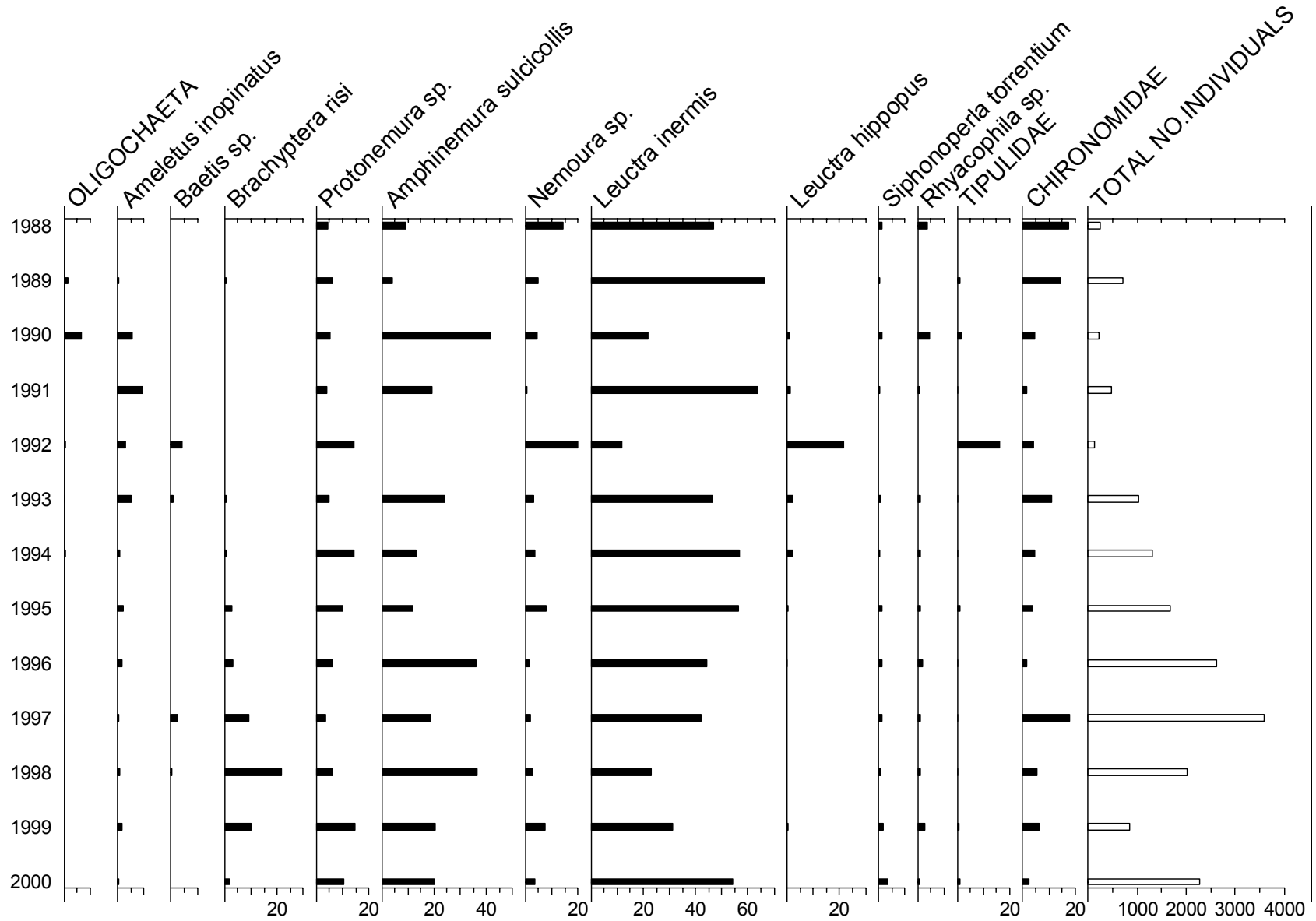
Chemistry statistics for period April 1989 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.51	7.22	3.83	1.05	100.0
Alk(CaCO <sub>3</sub> )	0.37	11.55	-8.25	3.88	90.2
Cond	83.4	161.0	32.8	16.5	100.0
Ca	3.35	7.00	0.80	0.81	100.0
Mg	1.95	3.50	0.30	0.46	100.0
Na	6.88	14.90	2.30	1.59	100.0
K	0.74	2.52	0.32	0.25	100.0
Ba	0.02	0.23	0.00	0.02	100.0
Sr	0.02	0.03	0.00	0.00	100.0
Fe	0.24	1.00	0.01	0.20	100.0
Mn	0.06	0.16	0.00	0.03	100.0
Sol.Al	140.6	565.0	2.5	114.5	100.0
Sol.lab.Al	58.0	394.0	2.5	71.5	100.0
Cl	10.90	25.00	4.00	2.66	100.0
SO <sub>2</sub>	12.51	19.60	4.10	2.59	100.0
XSO <sub>4</sub>	10.96	17.90	3.53	2.49	100.0
NO <sub>3</sub>	0.68	1.27	0.10	0.18	100.0
PO <sub>4</sub>	0.03	4.00	0.00	0.34	100.0
Br	0.04	0.38	0.00	0.03	100.0
F	0.05	0.09	0.00	0.02	100.0
Si	3.17	4.60	0.04	0.94	100.0
DOC	6.15	34.00	0.30	5.05	100.0

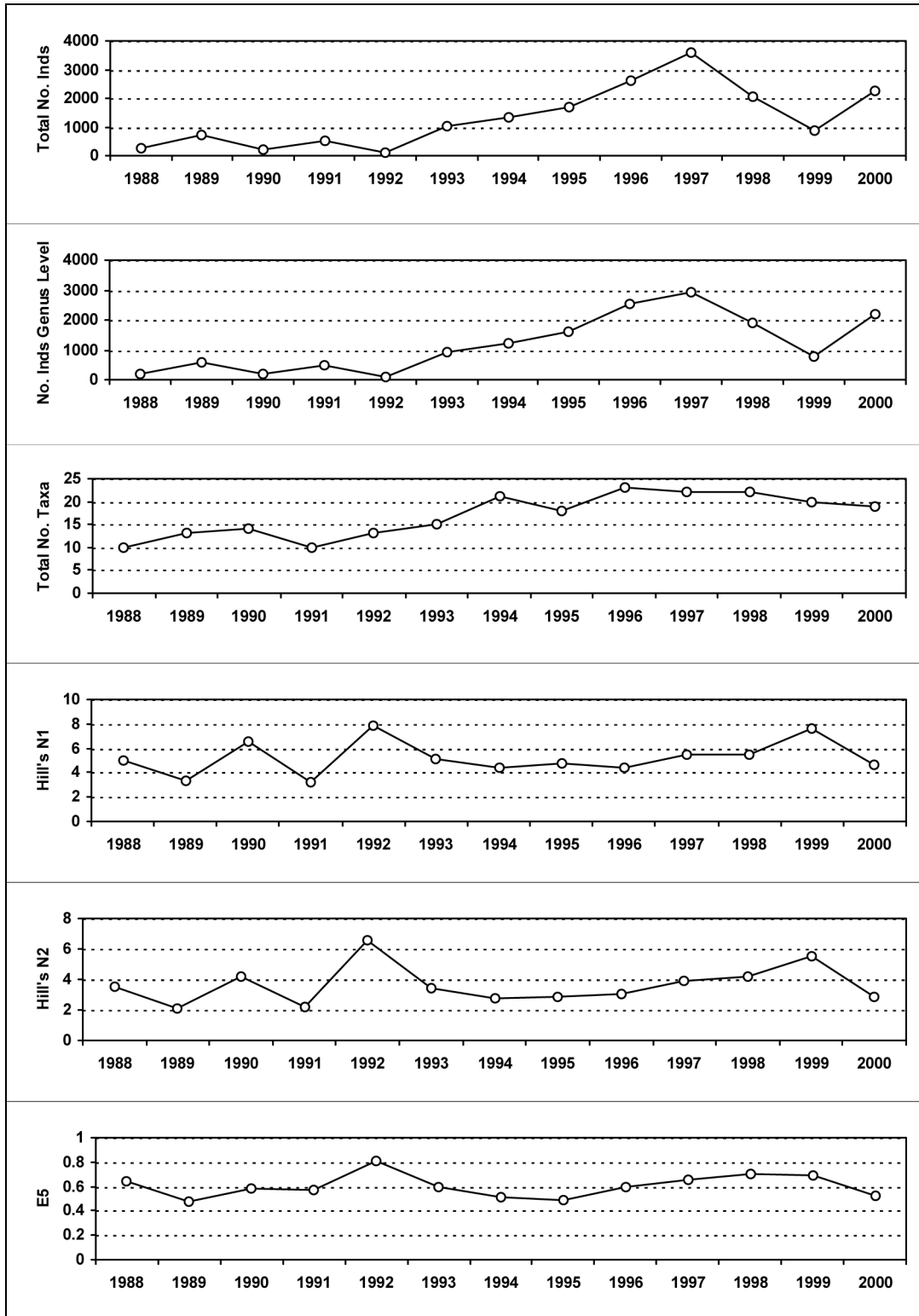
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 12.2. Macroinvertebrate data

### 12.2.1. Percentage abundance summary, River Etherow



## 12.2.2. Summary statistics, River Etherow

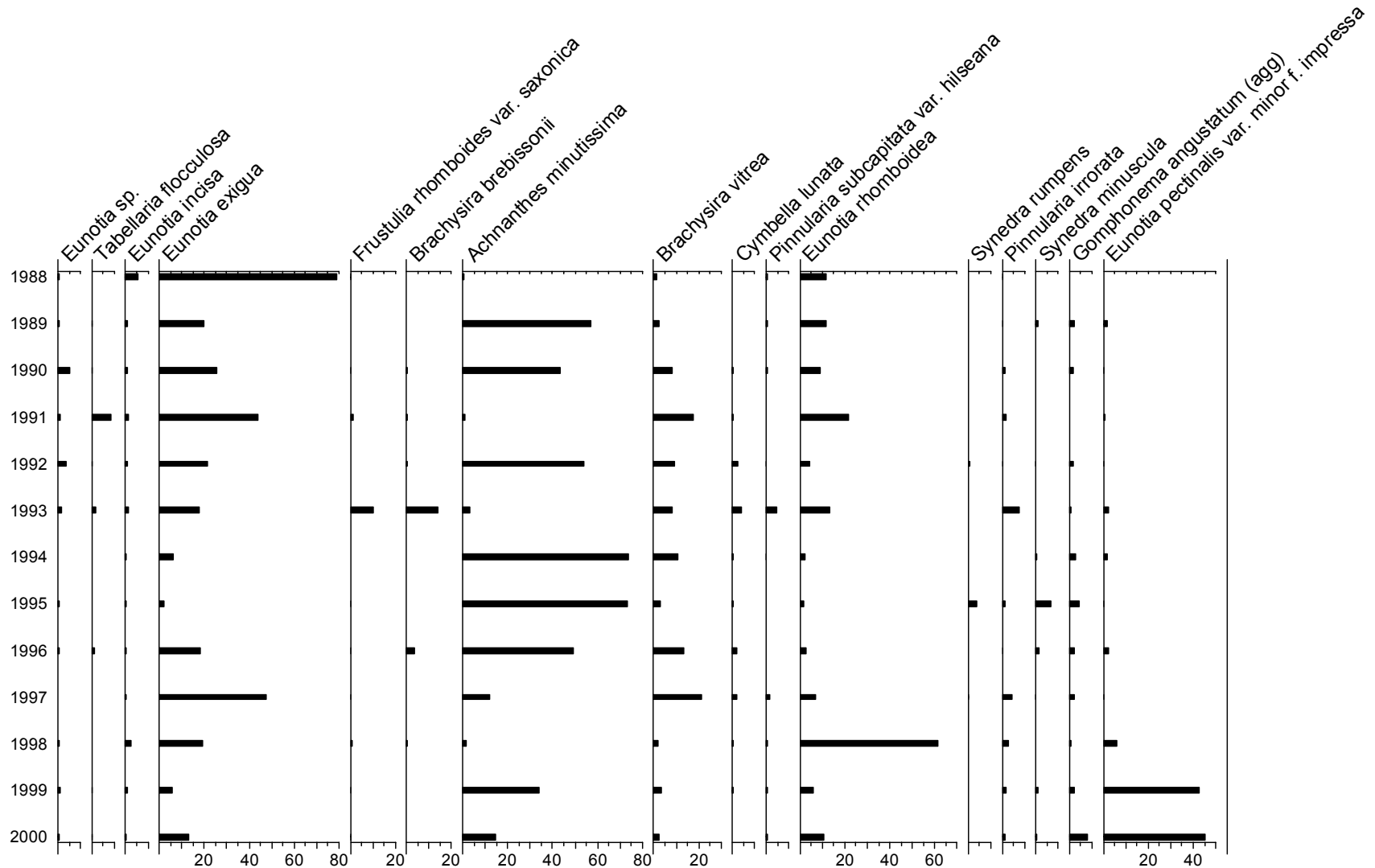


### **12.3. Fish data**

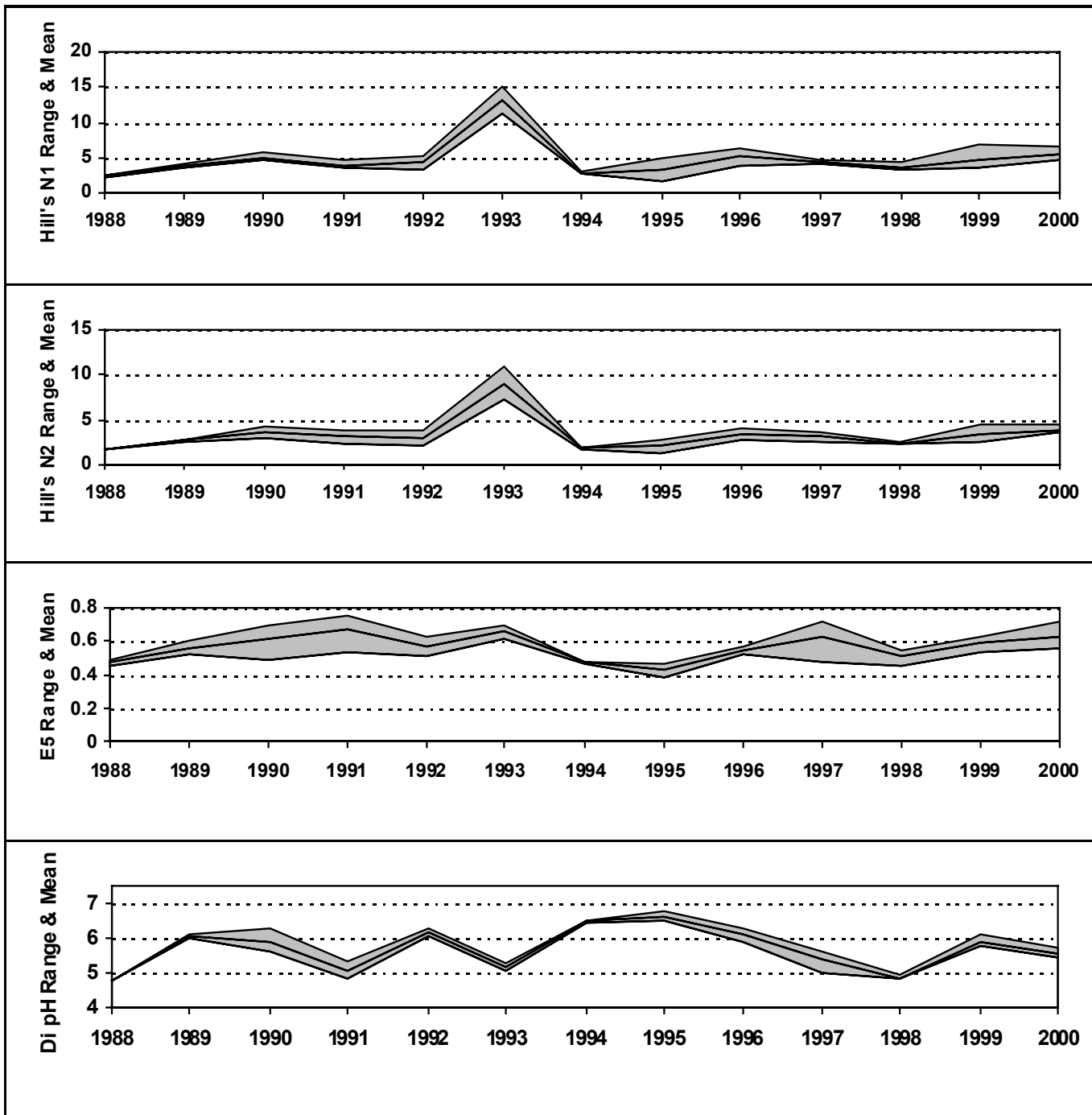
No fish are present in this reach of the river.

## 12.4. Epilithic diatom data

### 12.4.1. Percentage abundance summary, River Etherow



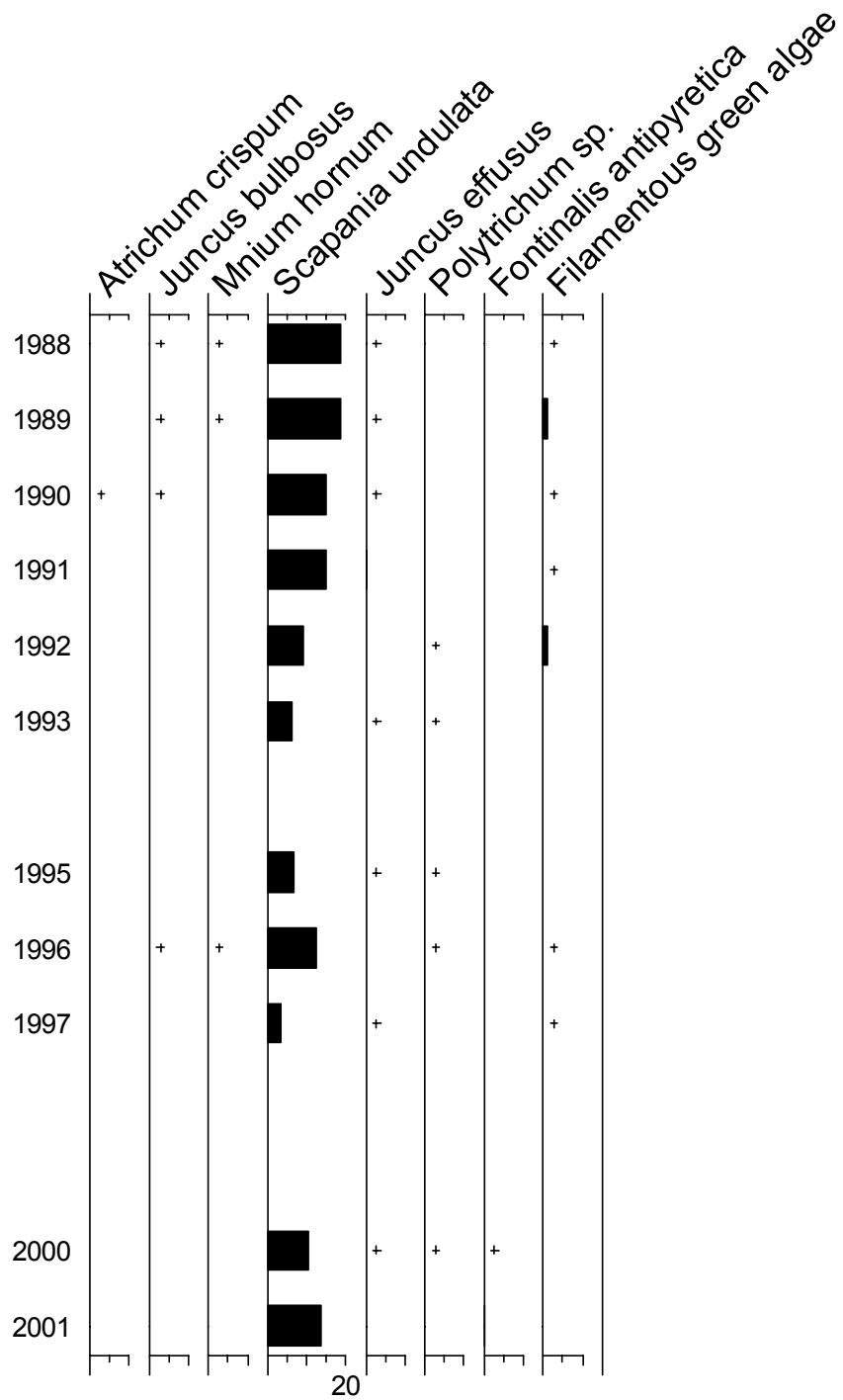
## 12.4.2. Summary statistics, River Etherow





## 12.5. Aquatic macrophyte data, River Etherow

### Percentage Species Cover



+ Represents <0.1% abundance

# 13. Old Lodge

Catchment area: 240 ha  
 Minimum catchment altitude: 94 m  
 Maximum catchment altitude: 198 m



[Back to main map](#)

Grid Ref: TQ 456294

Soils: Podsoles

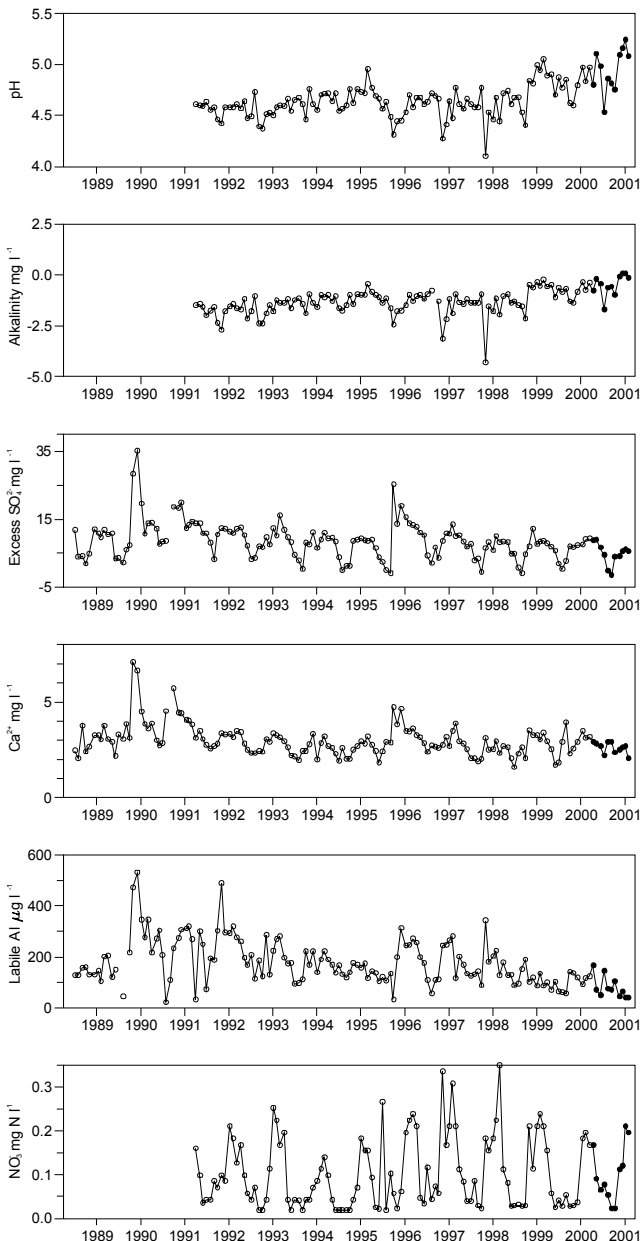
Geology: Ashdown sands

Vegetation: 80% Heathland  
 15% Deciduous woodland  
 5% Conifers

## 13.1. Spot sampled chemistry data

### Time series data

○ 04Jul1988 to 31Mar2000    ● 01Apr2000 to 05Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.95	5.24	4.53	0.21	91.7
Alk(CaCO <sub>3</sub> )	-0.50	0.05	-1.70	0.53	91.7
Cond	79.9	111.0	62.0	15.4	91.7
Ca	2.59	2.89	2.04	0.29	91.7
Mg	1.65	2.90	0.80	0.80	91.7
Na	8.90	13.20	6.00	2.17	91.7
K	0.80	1.32	0.34	0.30	91.7
Ba	0.02	0.02	0.01	0.00	91.7
Sr	0.01	0.02	0.01	0.00	91.7
Fe	0.68	1.51	0.16	0.43	91.7
Mn	0.22	0.39	0.14	0.07	91.7
Sol.Al	196.7	304.0	138.0	46.7	91.7
Sol.lab.Al	78.7	165.0	40.0	42.3	91.7
Cl	17.09	31.60	9.80	6.40	91.7
SO <sub>4</sub>	7.17	11.40	3.00	2.66	91.7
XSO <sub>4</sub>	4.75	8.93	-1.49	3.24	91.7
NO <sub>3</sub>	0.10	0.21	0.02	0.07	91.7
PO <sub>4</sub>	0.00	0.01	0.00	0.00	91.7
Br	0.12	0.44	0.03	0.14	91.7
F	0.04	0.05	0.03	0.01	91.7
Si	1.38	2.20	0.60	0.51	91.7
DOC	9.95	15.30	5.80	3.50	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

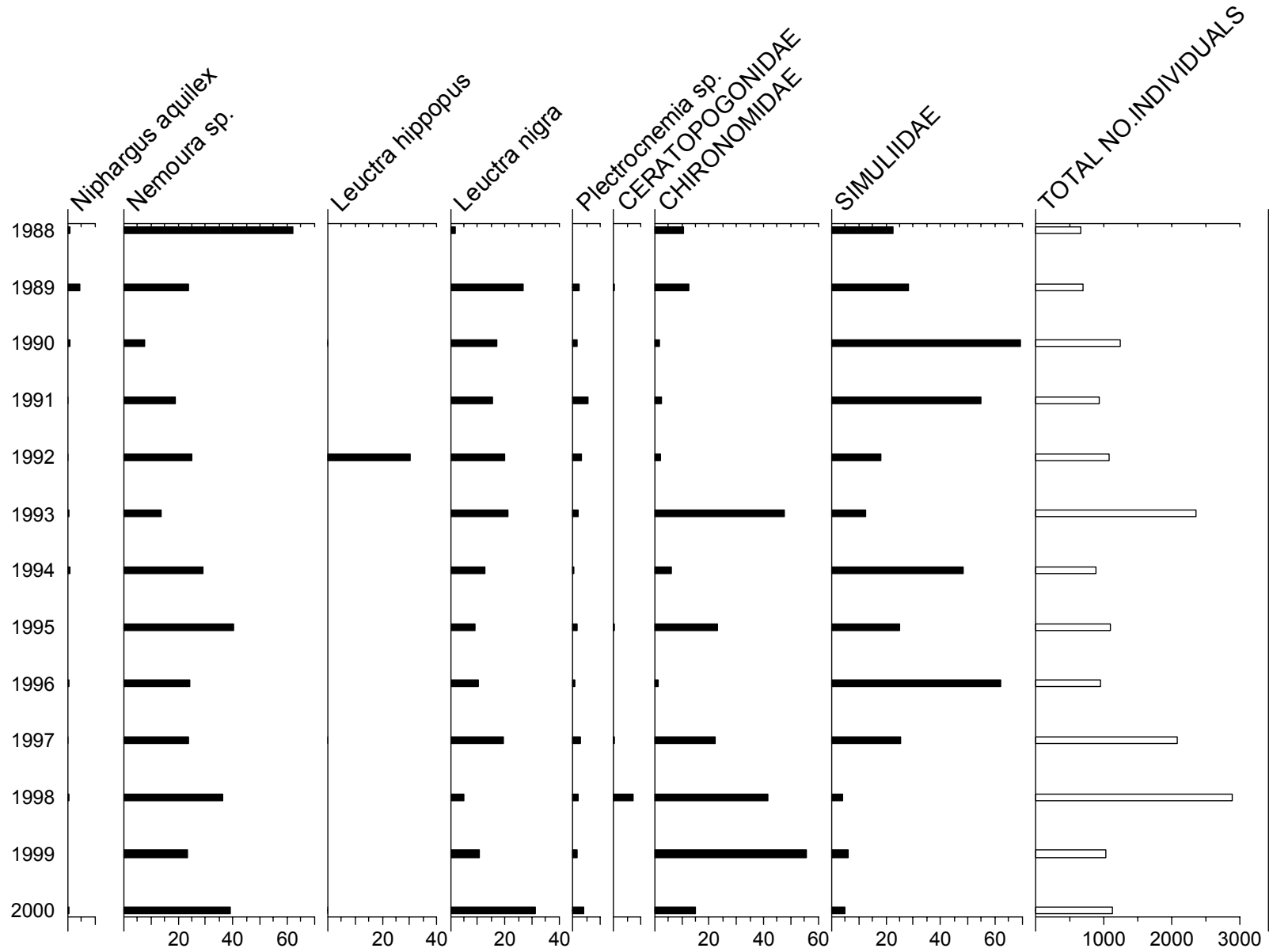
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.63	5.05	4.10	0.16	75.0
Alk(CaCO <sub>3</sub> )	-1.37	-0.25	-4.30	0.59	74.3
Cond	103.3	201.6	63.0	20.9	100.0
Ca	2.99	7.09	1.59	0.82	100.0
Mg	1.69	4.30	0.80	0.48	100.0
Na	10.51	18.70	6.20	1.93	100.0
K	0.76	4.30	0.17	0.47	100.0
Ba	0.02	0.06	0.00	0.01	100.0
Sr	0.02	0.17	0.00	0.01	100.0
Fe	0.36	373	0.03	0.40	100.0
Mn	0.31	0.91	0.06	0.13	100.0
Sol.Al	228.4	533.0	36.2	85.1	100.0
Sol.lab.Al	180.3	530.5	22.4	88.6	100.0
Cl	19.95	36.80	10.80	4.37	100.0
SO <sub>4</sub>	11.55	39.30	3.10	5.44	100.0
XSO <sub>4</sub>	8.71	35.11	-0.99	5.37	100.0
NO <sub>3</sub>	0.10	0.35	0.02	0.08	75.0
PO <sub>4</sub>	0.00	0.02	0.00	0.00	100.0
Br	0.08	1.20	0.00	0.11	100.0
F	0.05	0.11	0.00	0.02	100.0
Si	1.83	3.20	0.80	0.51	100.0
DOC	4.81	26.00	0.20	3.08	100.0

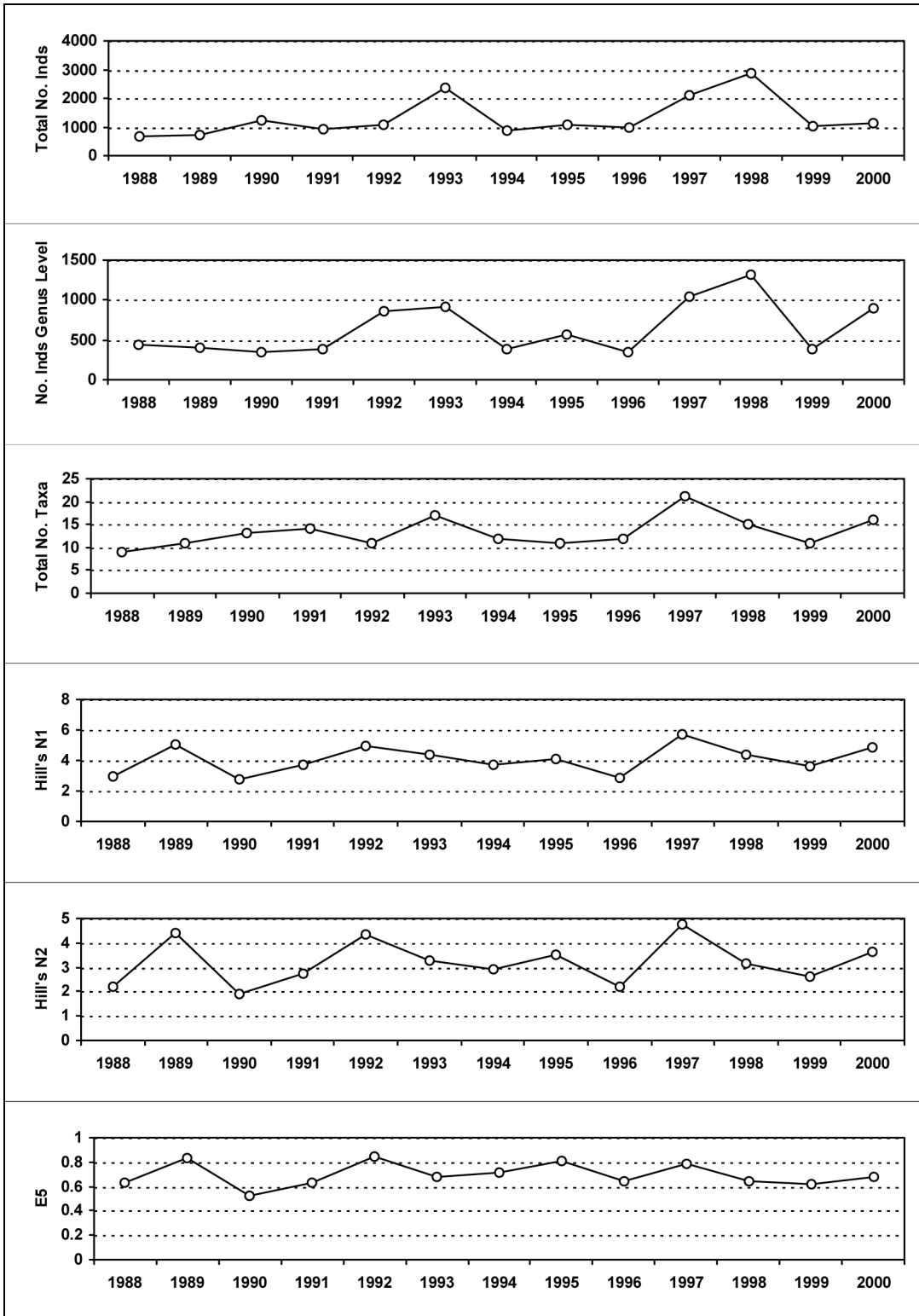
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 13.2. Macroinvertebrate data

### 13.2.1. Percentage abundance summary, Old Lodge

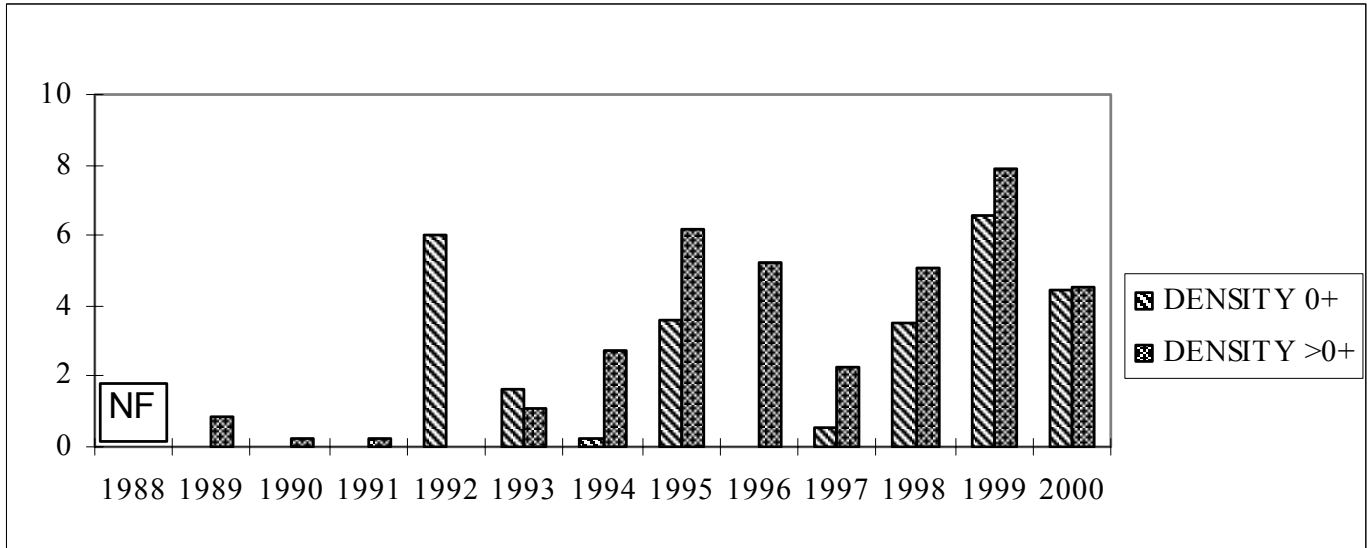


### 13.2.2. Summary statistics, Old Lodge



### 13.3. Fish data

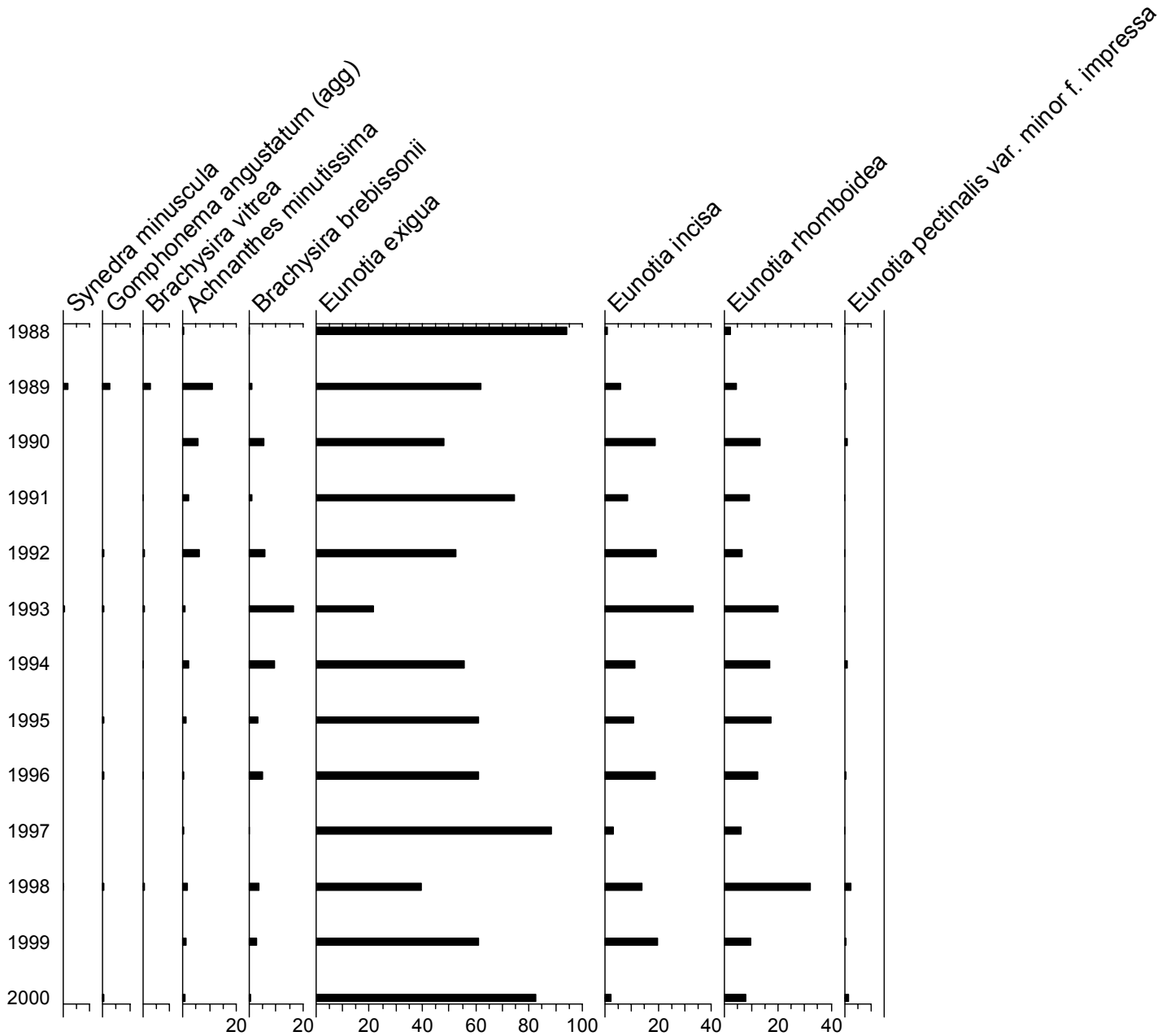
#### 13.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Old Lodge



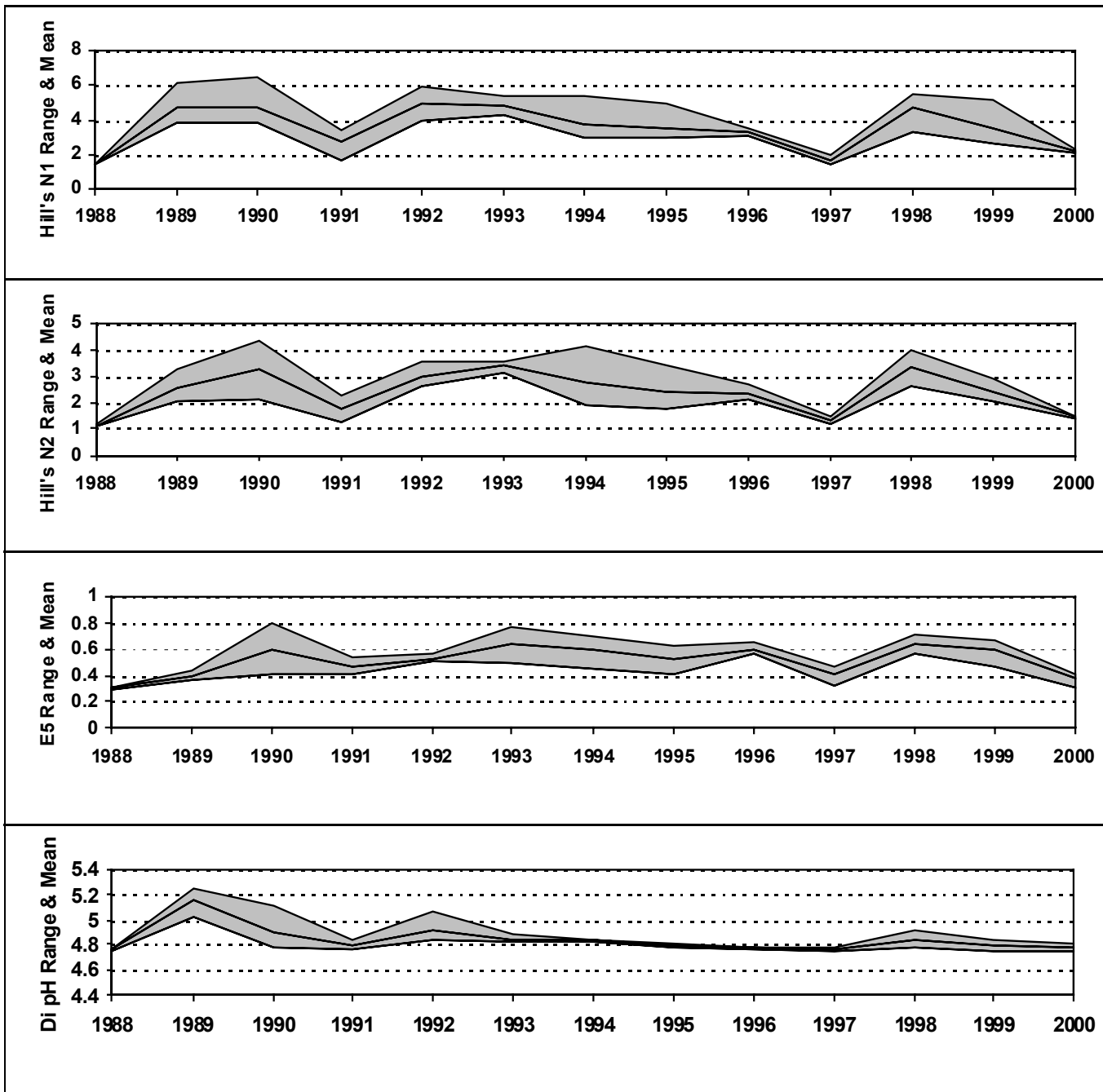
NF = Not fished

### 13.4. Epilithic diatom data

#### 13.4.1. Percentage abundance summary, Old Lodge

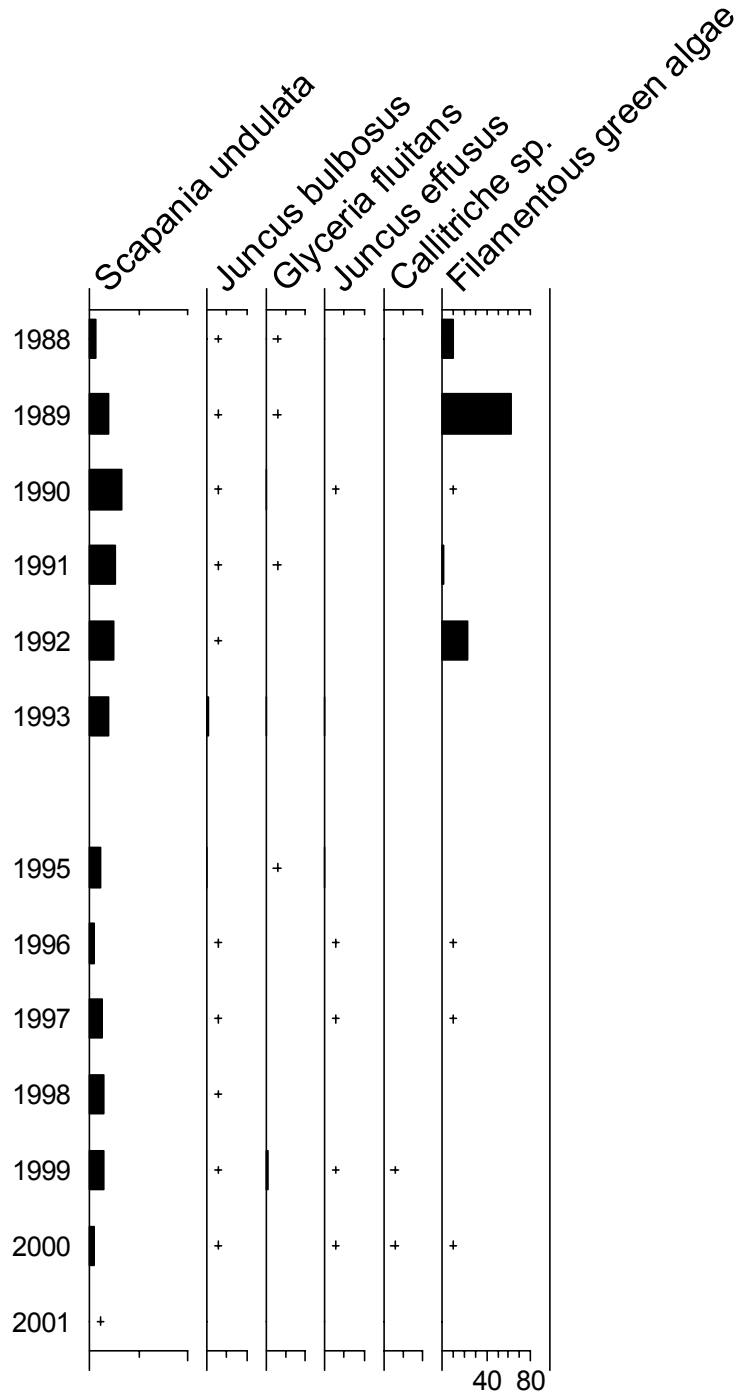


### 13.4.2. Summary statistics, Old Lodge



### 13.5. Aquatic macrophyte data, Old Lodge

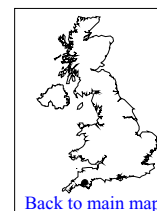
Percentage Species Cover



+ Represents <math><0.1\%</math> abundance



# 14. Narrator Brook



[Back to main map](#)

Catchment area: 240 ha  
 Minimum catchment altitude: 255 m  
 Maximum catchment altitude: 456 m

Grid Ref: SX 568692

Soils: Iron pan stagno podsol

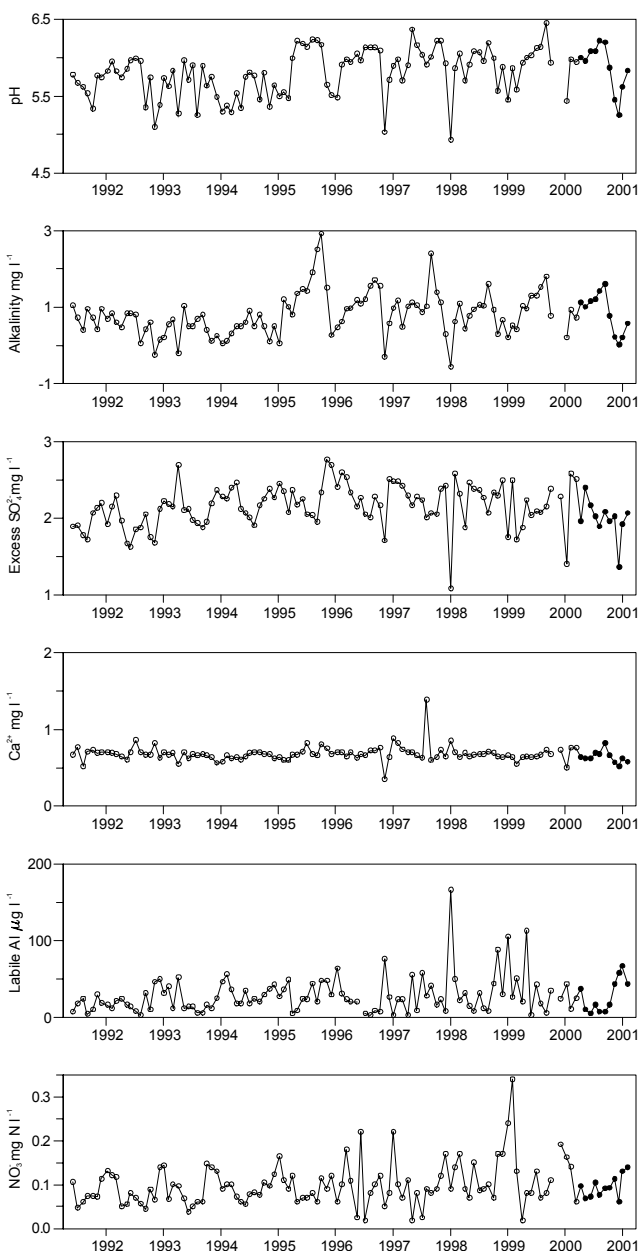
Geology: Granite

Vegetation: 80 % Moorland  
 15 % Acid grassland  
 5 % Deciduous woodland

## 14.1. Spot sampled chemistry data

### Time series data

○ 03Jun1991 to 31Mar2000    ● 01Apr2000 to 06Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.87	6.22	5.25	0.31	917
Alk(CaCO <sub>3</sub> )	0.85	1.60	0.03	0.53	917
Cond	32.8	38.2	29.0	36	917
Ca	0.64	0.82	0.52	0.08	917
Mg	0.72	0.90	0.60	0.10	917
Na	5.35	6.00	4.50	0.46	917
K	0.75	0.83	0.69	0.05	917
Ba	0.00	0.00	0.00	0.00	833
Sr	0.01	0.01	0.00	0.00	917
Fe	0.03	0.05	0.01	0.01	833
Mn	0.01	0.01	0.00	0.00	917
Sol.Al	87.4	202.0	25.0	58.4	917
Sol.lab.Al	28.1	67.0	49	22.3	917
Cl	9.12	10.00	8.00	0.60	917
SO <sub>4</sub>	3.28	3.70	2.60	0.28	917
XSO <sub>4</sub>	1.99	2.39	1.37	0.25	917
NO <sub>3</sub>	0.09	0.14	0.06	0.03	917
PO <sub>4</sub>	0.00	0.00	0.00	0.00	917
Br	0.02	0.03	0.01	0.00	667
F	0.05	0.05	0.04	0.01	917
Si	1.99	2.90	1.50	0.41	917
DOC	1.93	3.26	0.94	0.69	917

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

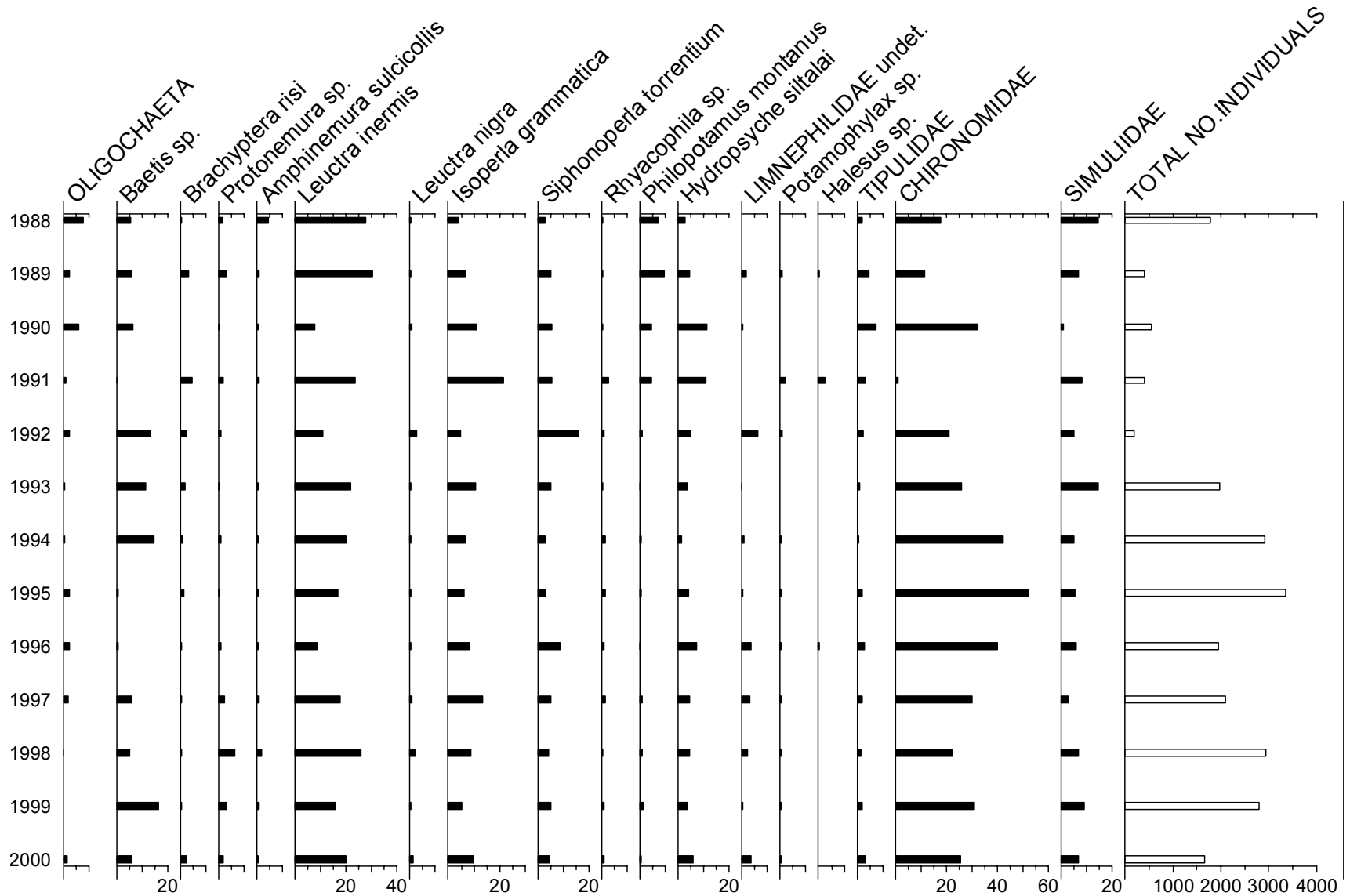
Chemistry statistics for period June 1991 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.80	6.45	4.93	0.30	1000
Alk(CaCO <sub>3</sub> )	0.80	2.92	-0.55	0.56	1000
Cond	40.8	58.0	27.0	7.7	1000
Ca	0.68	1.39	0.35	0.10	1000
Mg	0.78	1.20	0.60	0.07	1000
Na	5.78	7.70	4.60	0.34	1000
K	0.77	1.10	0.60	0.08	1000
Ba	0.01	0.12	0.00	0.01	889
Sr	0.01	0.01	0.00	0.00	1000
Fe	0.03	0.75	0.01	0.07	1000
Mn	0.01	0.04	0.00	0.00	1000
Sol.Al	64.0	236.0	11.0	45.5	1000
Sol.lab.Al	28.3	166.0	25	24.6	1000
Cl	9.63	17.00	7.70	0.96	1000
SO <sub>4</sub>	3.53	4.10	2.50	0.24	1000
XSO <sub>4</sub>	2.16	2.77	1.09	0.28	1000
NO <sub>3</sub>	0.10	0.34	0.02	0.05	1000
PO <sub>4</sub>	0.00	0.04	0.00	0.00	1000
Br	0.02	0.05	0.00	0.01	1000
F	0.05	0.07	0.00	0.01	1000
Si	2.13	2.60	1.10	0.30	1000
DOC	1.54	5.80	0.30	1.11	1000

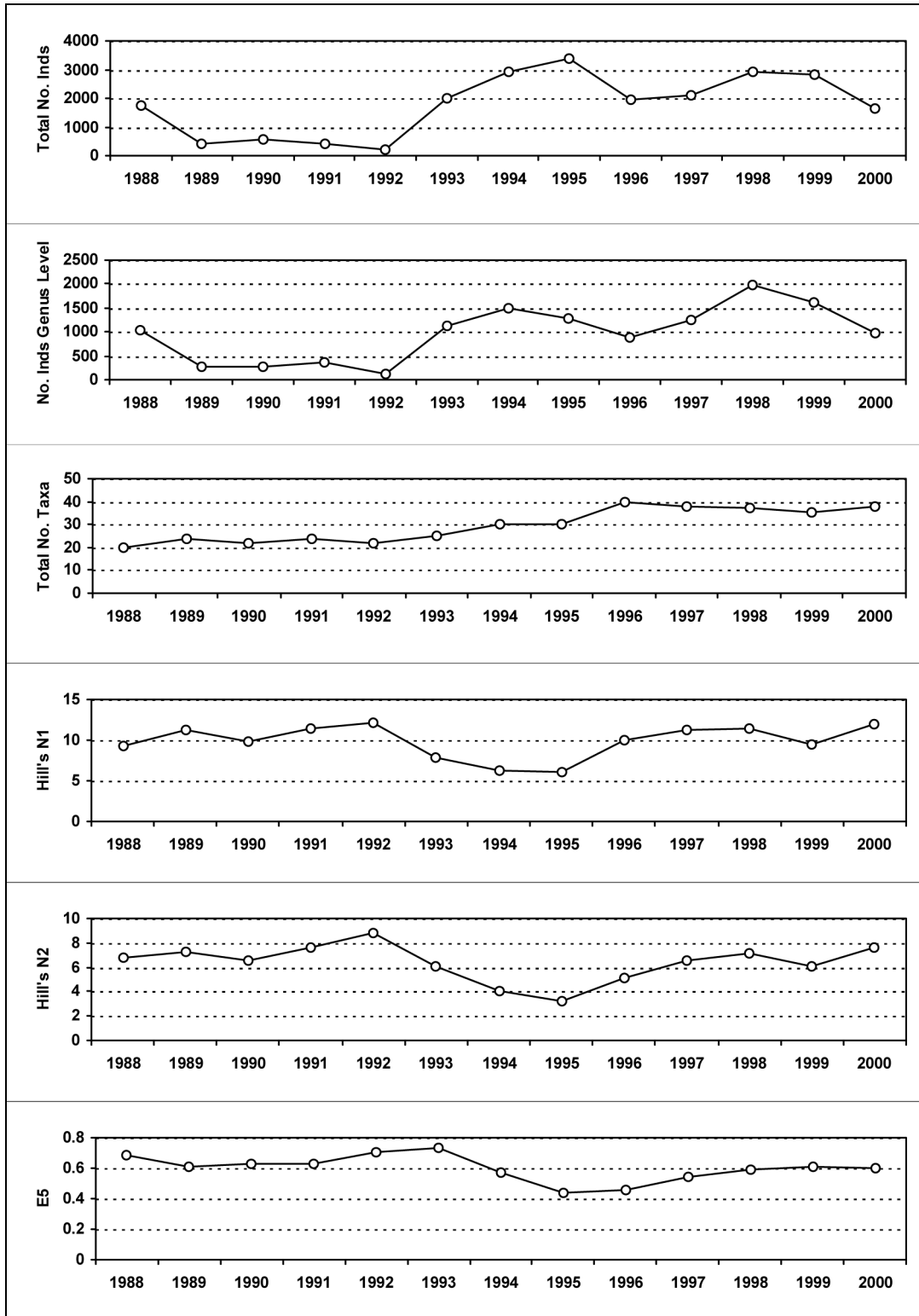
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

## 14.2. Macroinvertebrate data

### 14.2.1. Percentage abundance summary, Narrator Brook

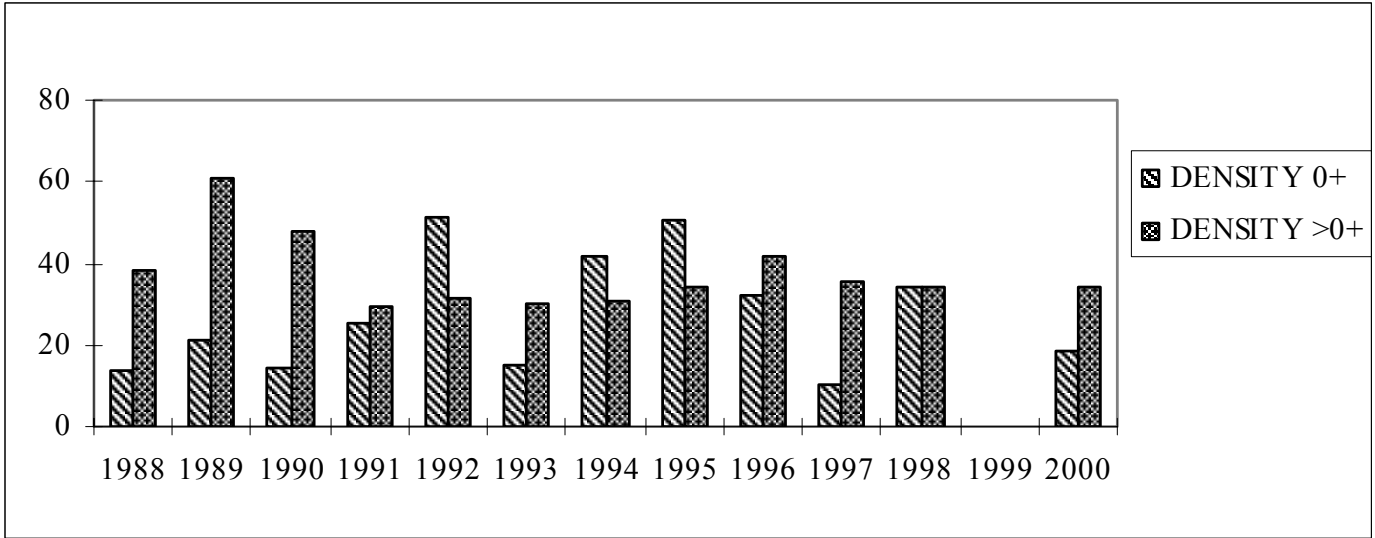


## 14.2.2. Summary statistics, Narrator Brook



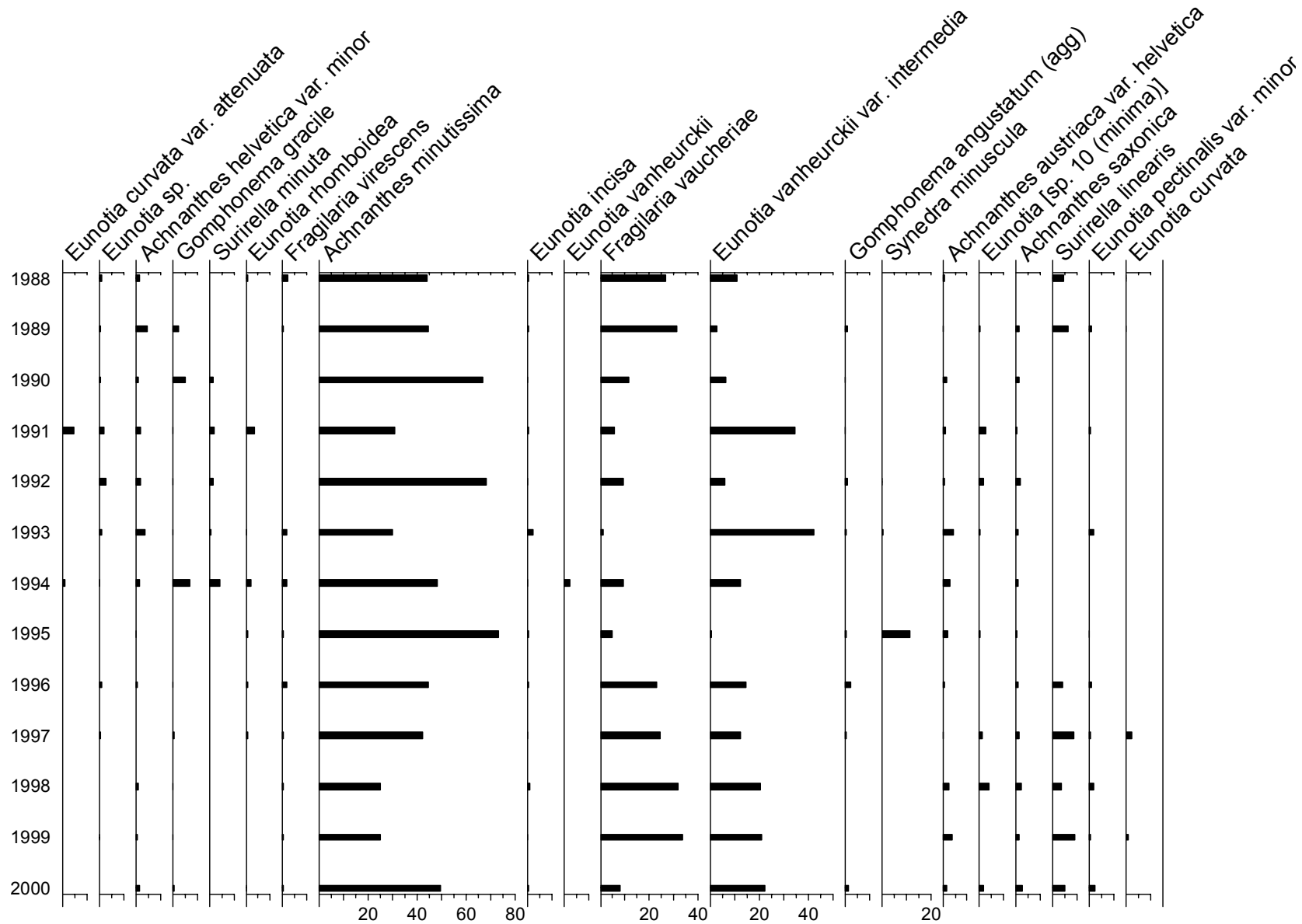
### 14.3. Fish data

#### 14.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Narrator Brook

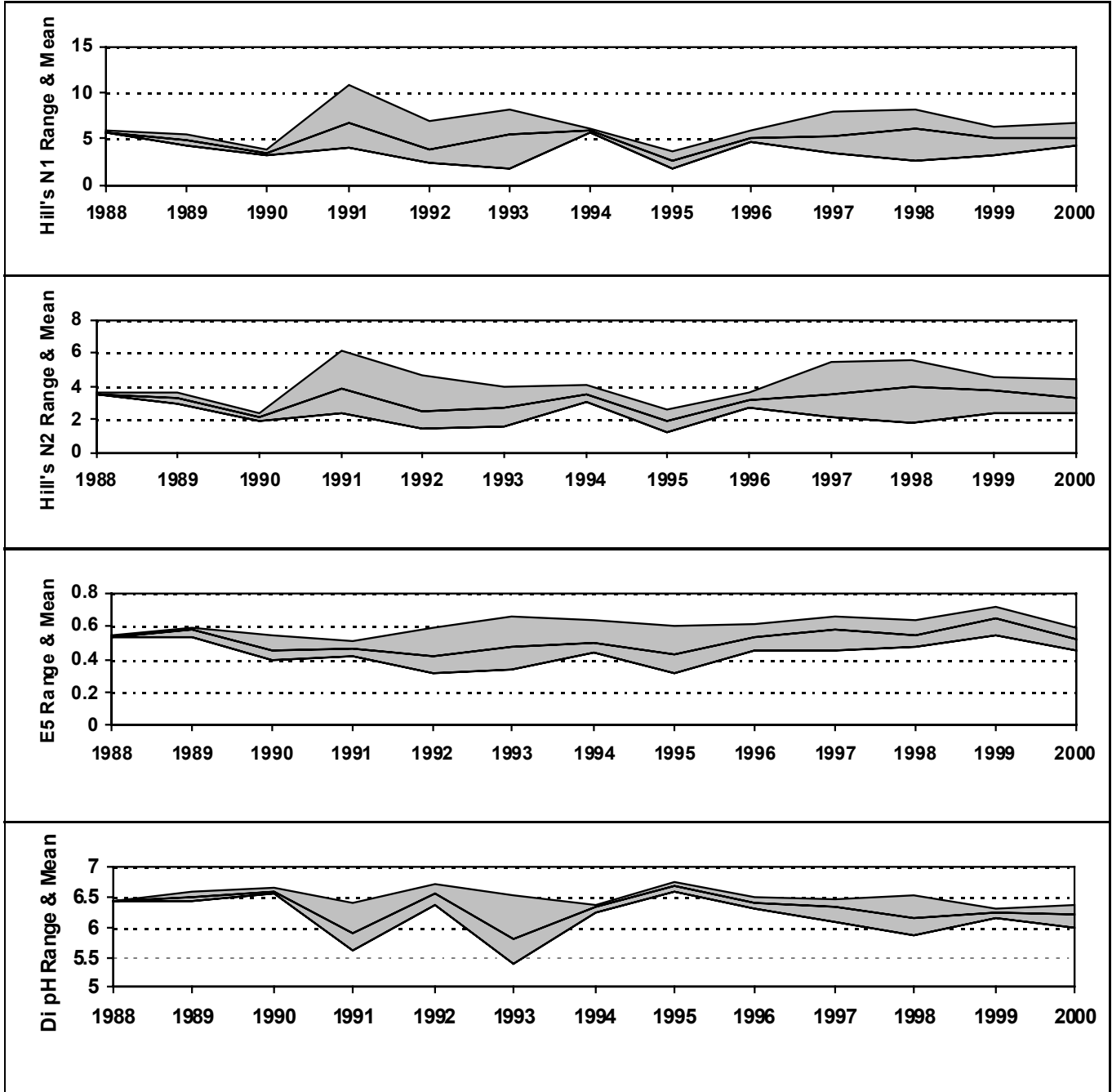


## 14.4. Epilithic diatom data

### 14.4.1. Percentage abundance summary, Narrator Brook

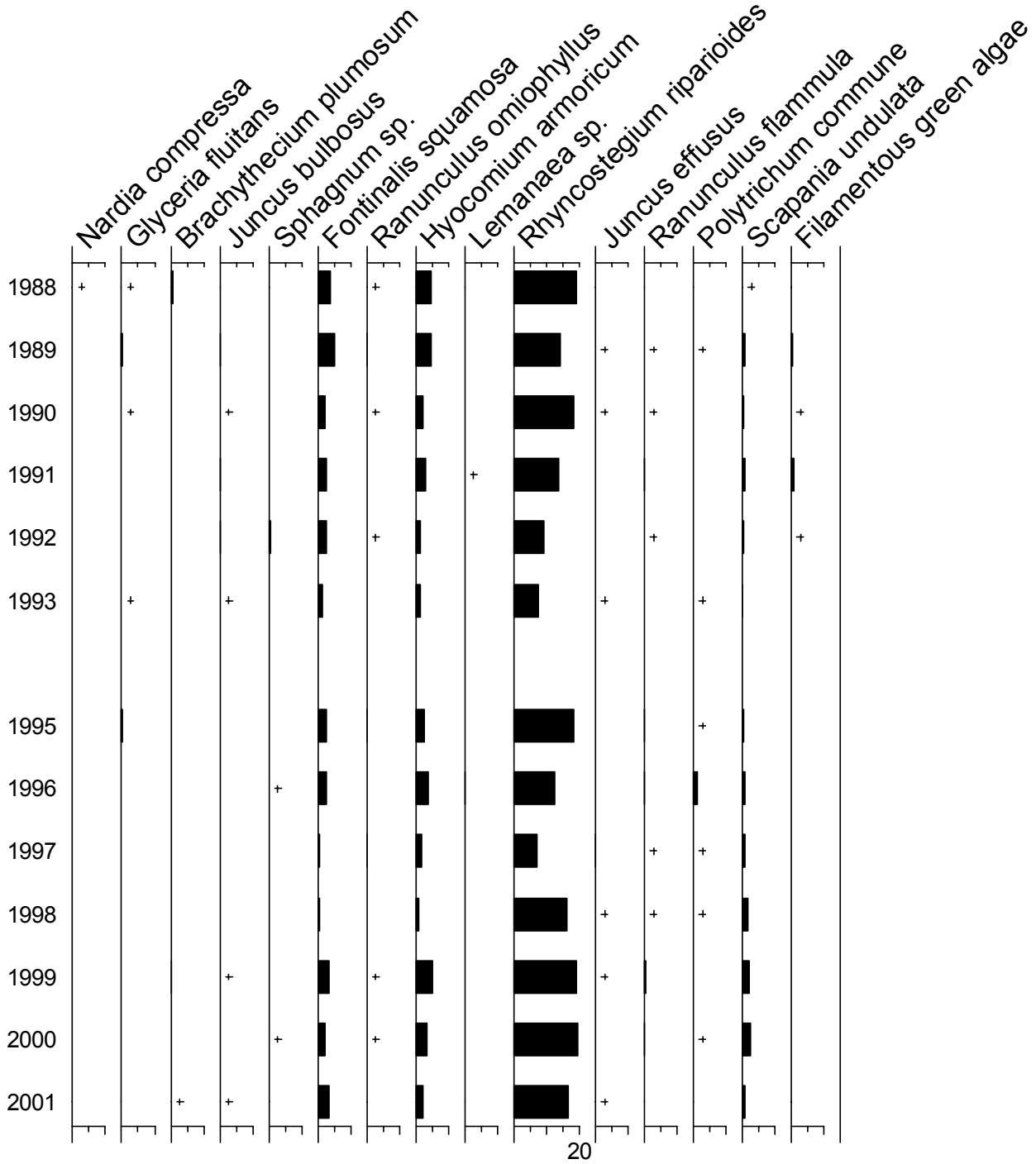


### 14.4.2. Summary statistics, Narrator Brook



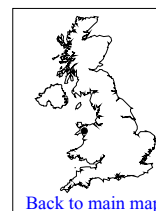
## 14.5. Aquatic macrophyte data, Narrator Brook

### Percentage Species Cover



+ Represents <0.1% abundance

# 15. Llyn Llago



[Back to main map](#)

Lake altitude: 380 m  
 Maximum depth: 16.5 m  
 Mean depth: 5.8 m  
 Volume:  $0.33 \times 10^6 \text{ m}^3$

Lake area: 6 ha  
 Catchment area: 157 ha  
 Catchment:lake ratio: 27.7  
 Net relief: 298 m

Grid Ref: SH 649483

Soils: Stagno podsol  
 Stagno humic gley  
 Blanket peat

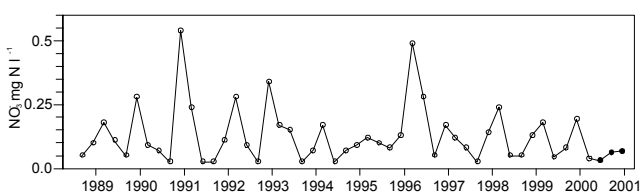
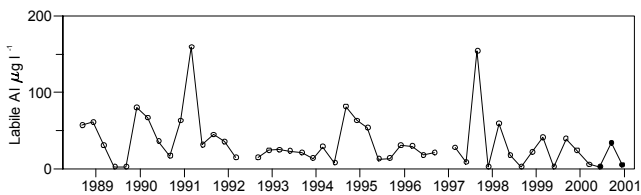
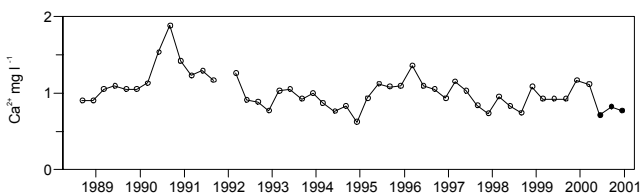
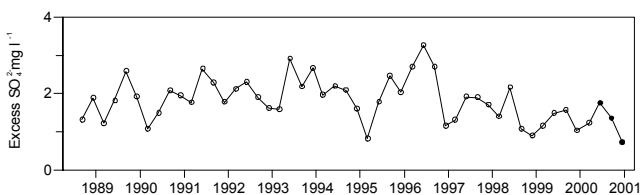
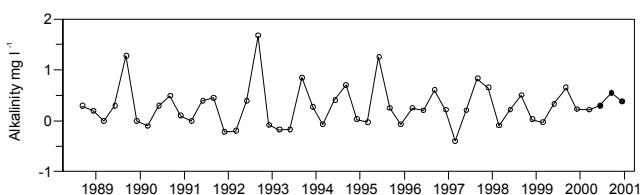
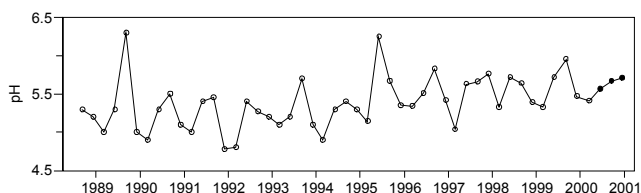
Geology: Ordovician slates  
 Ordovician shales  
 Intrusions  
 Doleritic and volcanic

Vegetation: 100 % Moorland

## 15.1. Spot sampled chemistry data

### Time series data

○ 06Sep1988to 31Mar2000 ● 01Apr2000to 04Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.65	5.71	5.56	0.08	75.0
Alk(CaCO <sub>3</sub> )	0.41	0.55	0.30	0.13	75.0
Cond	25.7	34.4	11.1	12.7	75.0
Ca	0.77	0.82	0.71	0.06	75.0
Mg	0.53	0.70	0.40	0.15	75.0
Na	2.87	3.50	2.40	0.57	75.0
K	0.11	0.20	0.06	0.08	75.0
Ba	All recorded data below detection limit. 75.0				
Sr	0.00	0.00	0.00	0.00	75.0
Fe	0.10	0.20	0.02	0.10	75.0
Mn	0.03	0.06	0.02	0.02	75.0
Sol.Al	78.6	116.0	47.0	34.9	75.0
Sol.lab.Al	13.8	34.0	2.5	17.5	75.0
Cl	4.80	6.80	3.80	1.73	75.0
SO <sub>4</sub>	1.97	2.30	1.70	0.31	75.0
XSO <sub>4</sub>	1.28	1.76	0.73	0.52	75.0
NO <sub>3</sub>	0.05	0.07	0.03	0.02	75.0
PO <sub>4</sub>	0.00	0.01	0.00	0.00	75.0
Br	No recorded data.				
F	All recorded data below detection limit. 50.0				
Si	0.27	0.40	0.20	0.12	75.0
DOC	3.63	4.90	2.98	1.10	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

Chemistry statistics for period Sep 1988 to March 2000

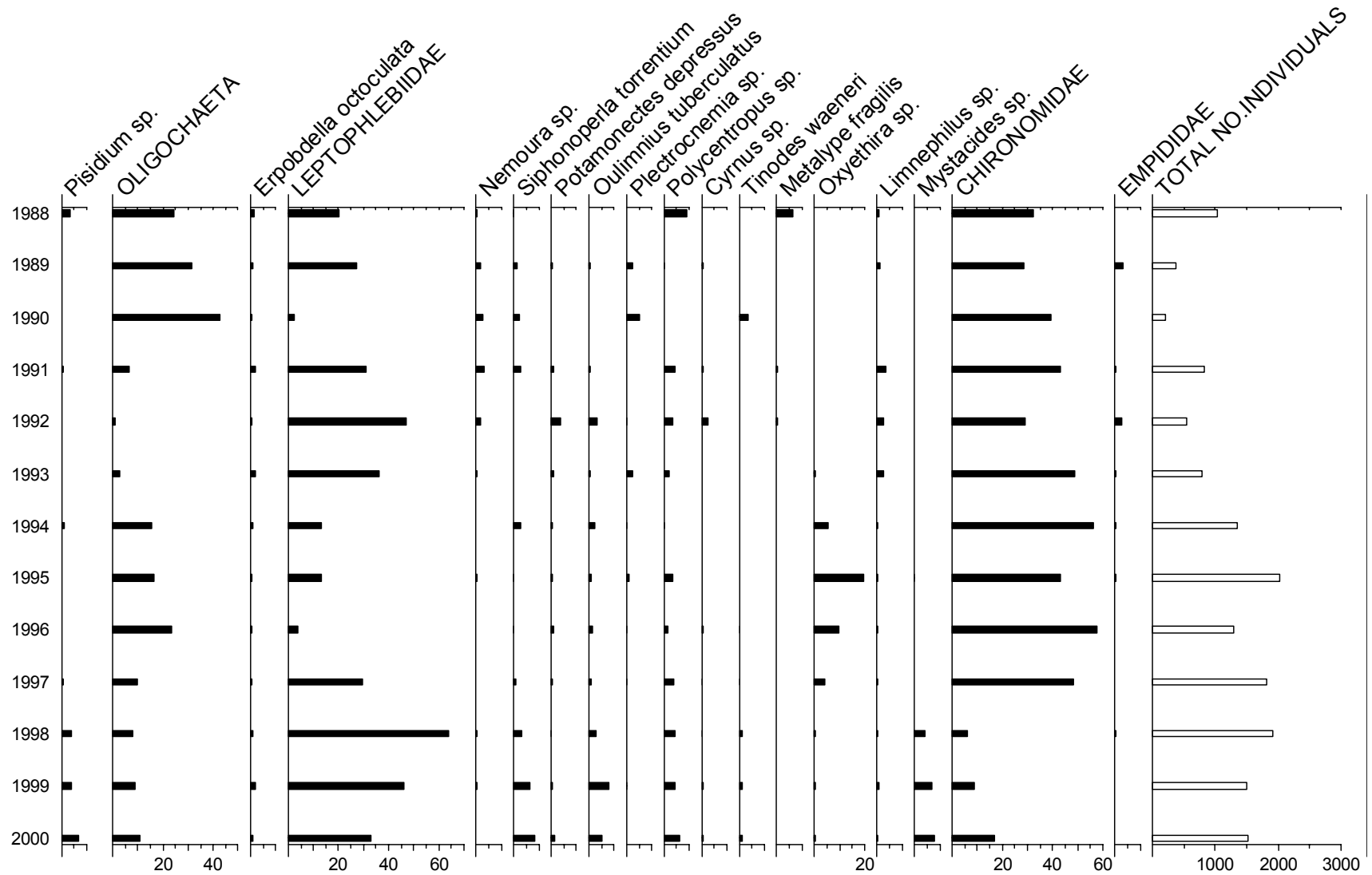
	Mean	Max.	Min.	Std. Dev.	N%
pH	5.38	6.30	4.78	0.33	100.0
Alk(CaCO <sub>3</sub> )	0.28	1.67	-0.40	0.41	100.0
Cond	30.2	58.0	11.0	9.3	100.0
Ca	1.04	1.88	0.62	0.22	100.0
Mg	0.56	0.90	0.30	0.13	100.0
Na	3.87	6.70	2.30	1.00	100.0
K	0.36	0.75	0.10	0.09	100.0
Ba	0.00	0.01	0.00	0.00	89.6
Sr	0.00	0.01	0.00	0.00	100.0
Fe	0.08	0.25	0.01	0.05	100.0
Mn	0.05	0.25	0.02	0.05	100.0
Sol.Al	73.1	193.0	5.0	32.2	100.0
Sol.lab.Al	35.4	159.0	2.5	33.8	93.8
Cl	6.87	13.40	3.50	2.34	100.0
SO <sub>4</sub>	2.82	3.90	1.70	0.53	100.0
XSO <sub>4</sub>	1.85	3.26	0.82	0.56	100.0
NO <sub>3</sub>	0.13	0.54	0.03	0.11	100.0
PO <sub>4</sub>	0.02	0.05	0.00	0.02	100.0
Br	0.02	0.05	0.00	0.01	100.0
F	0.01	0.02	0.00	0.00	100.0
Si	0.37	4.10	0.04	0.61	87.5
DOC	2.47	5.50	0.10	1.04	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

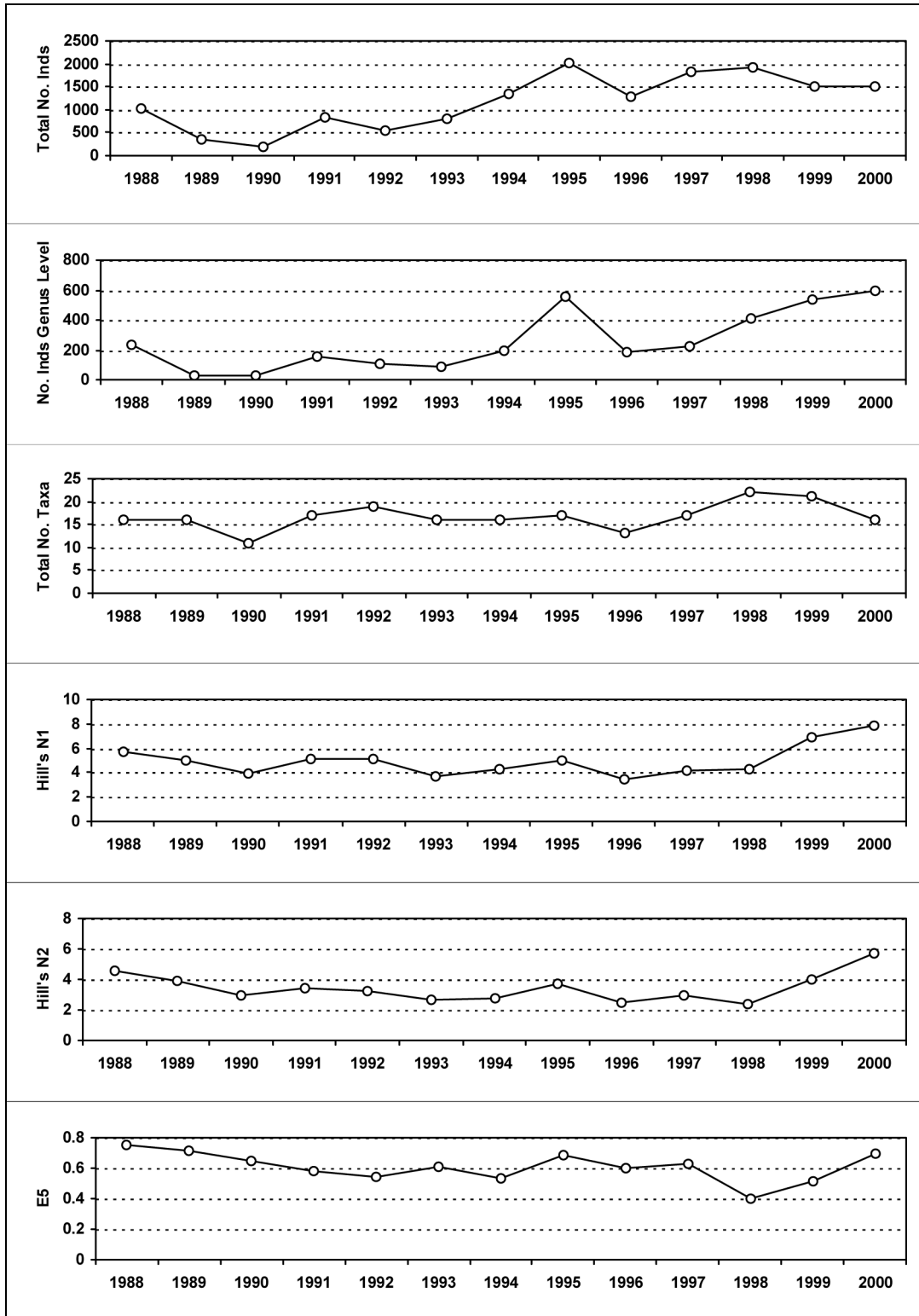


## 15.2. Macroinvertebrate data

### 15.2.1. Percentage abundance summary, Llyn Llgi

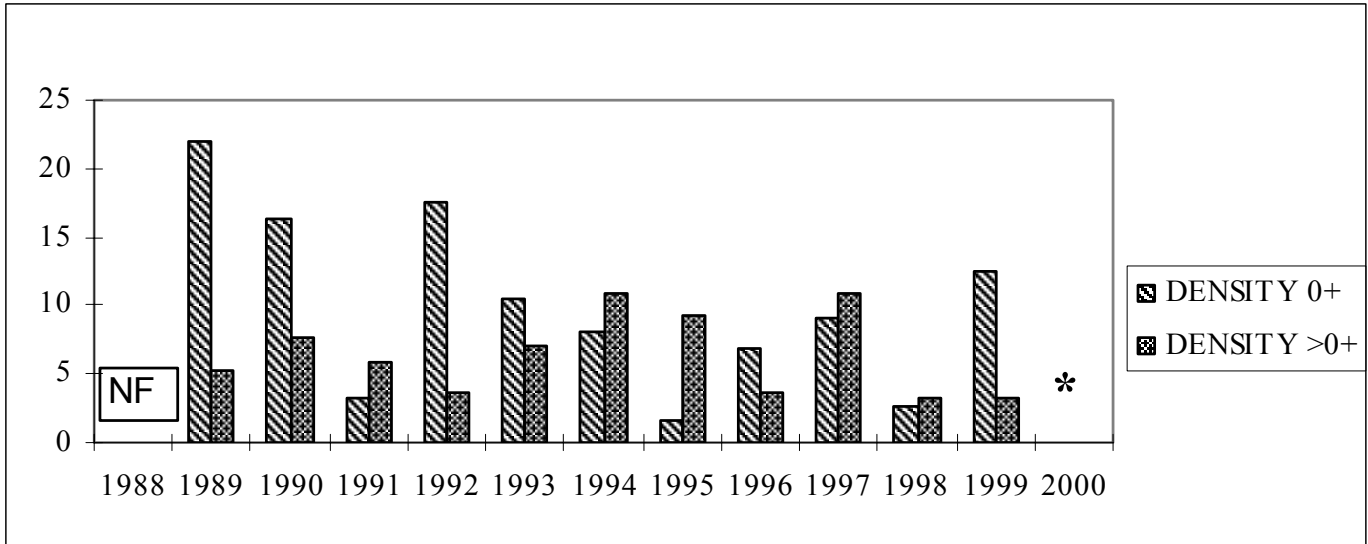


## 15.2.2. Summary statistics, Llyn Llgi



### 15.3. Fish data (for outflow stream)

#### 15.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Llyn Llgi

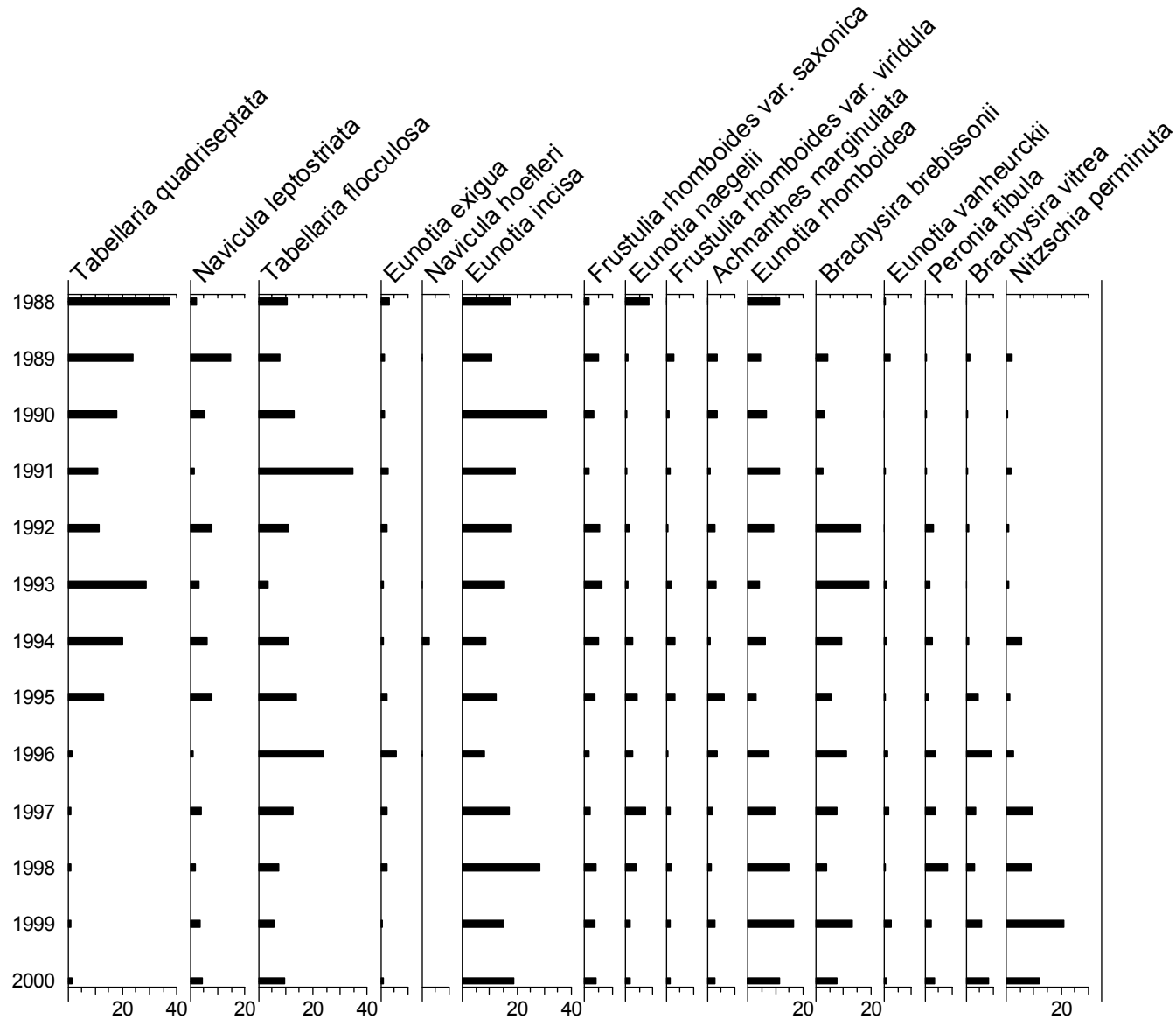


NF = Not fished

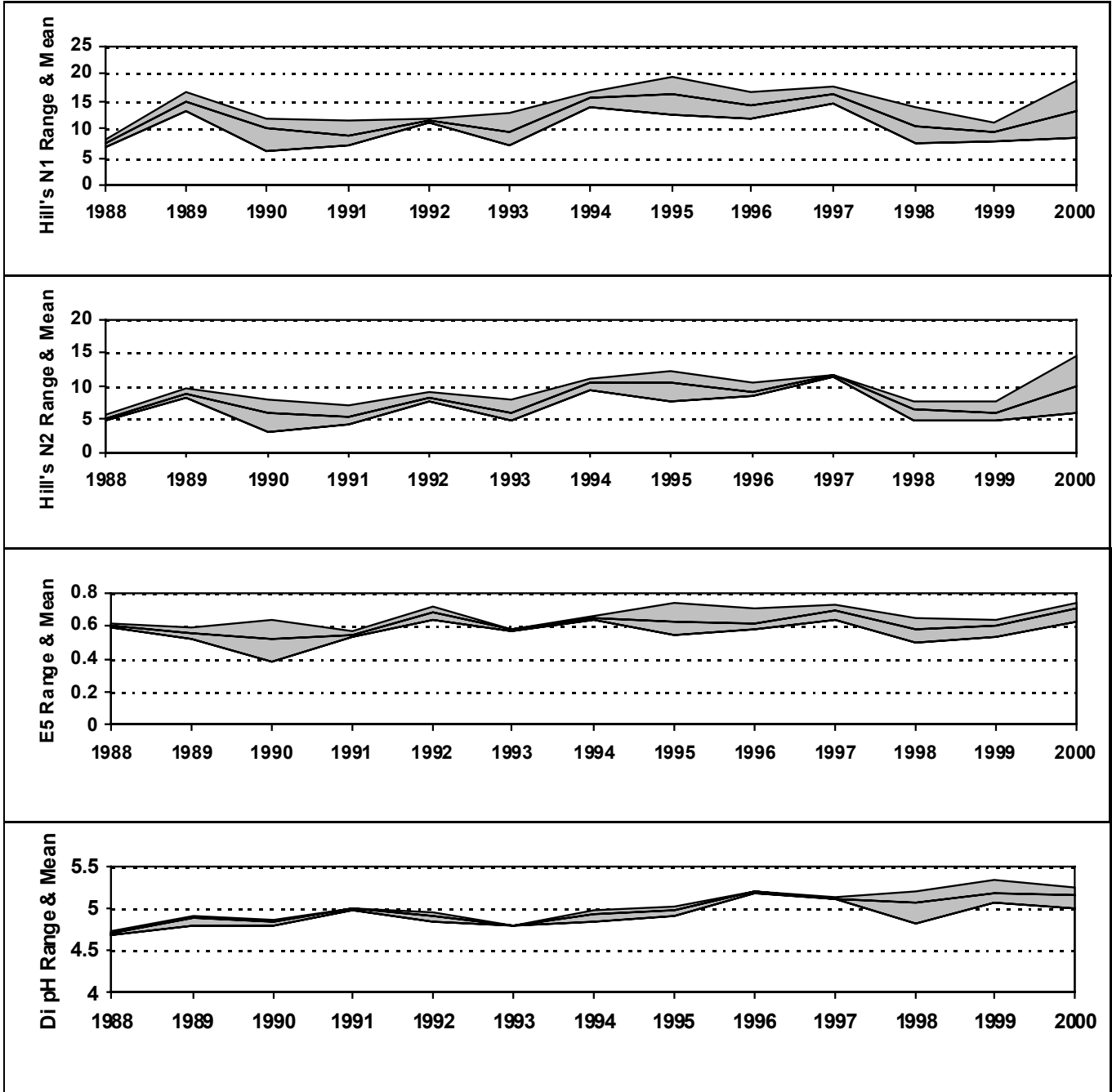
\* Not all 3 reaches fished

## 15.4. Epilithic diatom data

### 15.4.1. Percentage abundance summary, Llyn Llgi

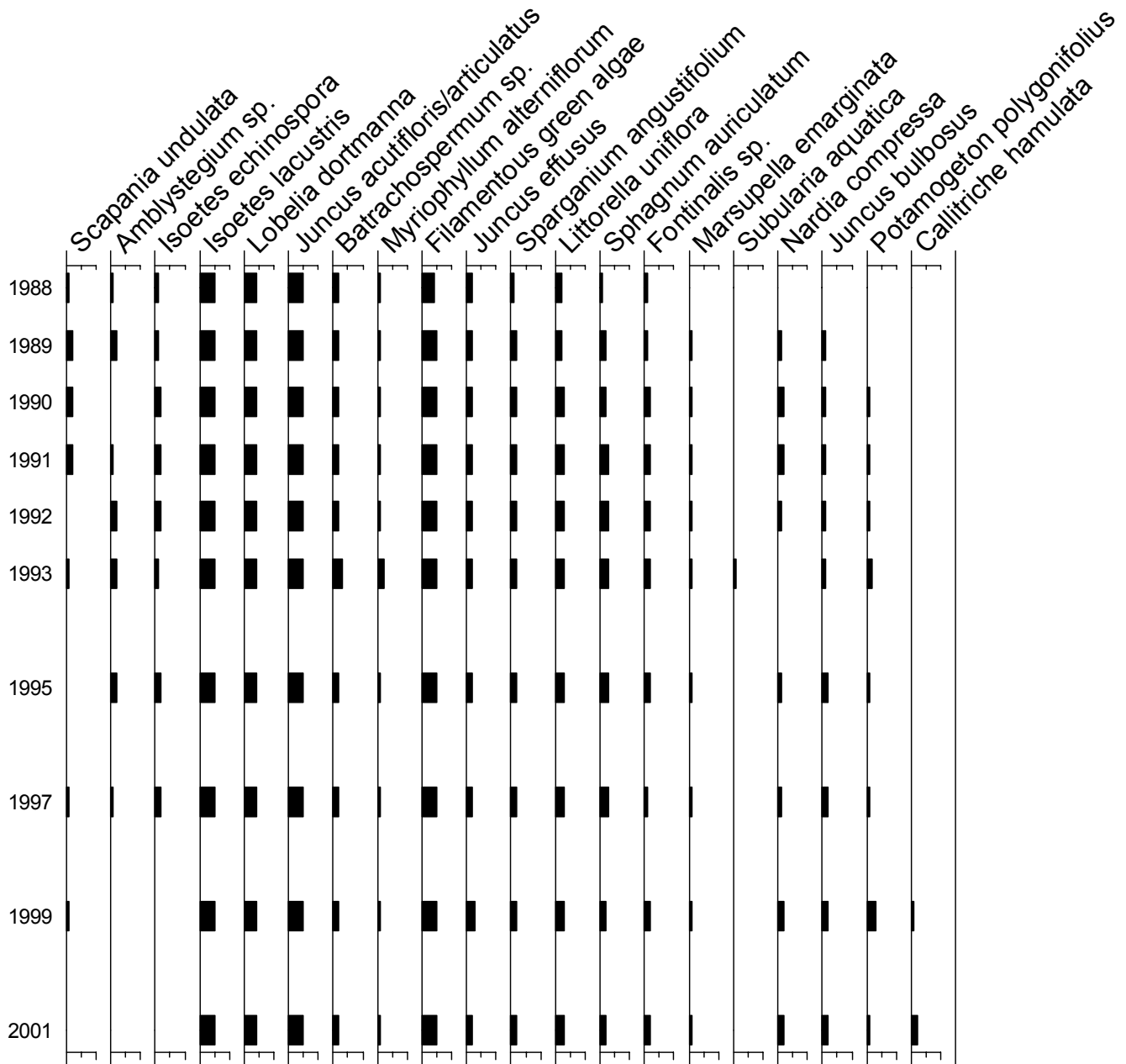


### 15.4.2. Summary statistics, Llyn Llgi



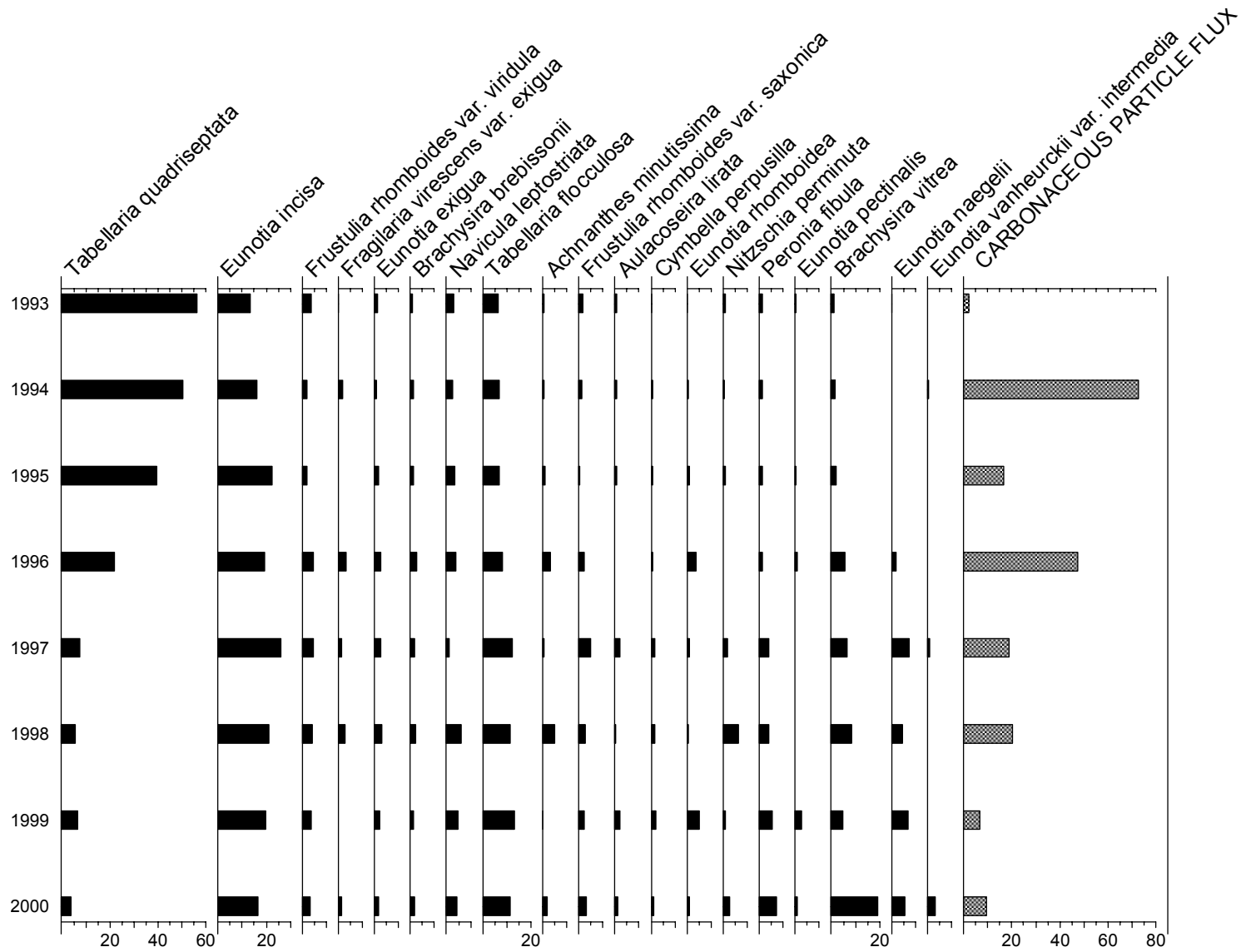
## 15.5. Aquatic macrophyte data, Llyn Llgi

### Species Scores (1-5)



## 15.6. Sediment trap data, Llyn Llagi

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 16. Llyn Cwm Mynach



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Grid Ref: SH 678238

Lake altitude: 285 m  
 Maximum depth: 11.0 m  
 Mean depth: 0.9 m  
 Volume:  $0.05 \times 10^6 \text{ m}^3$

Lake area: 6 ha  
 Catchment area: 152 ha  
 Catchment:lake ratio: 25.9  
 Net relief: 395 m

Soils: Blanket peat  
 Acid rankers

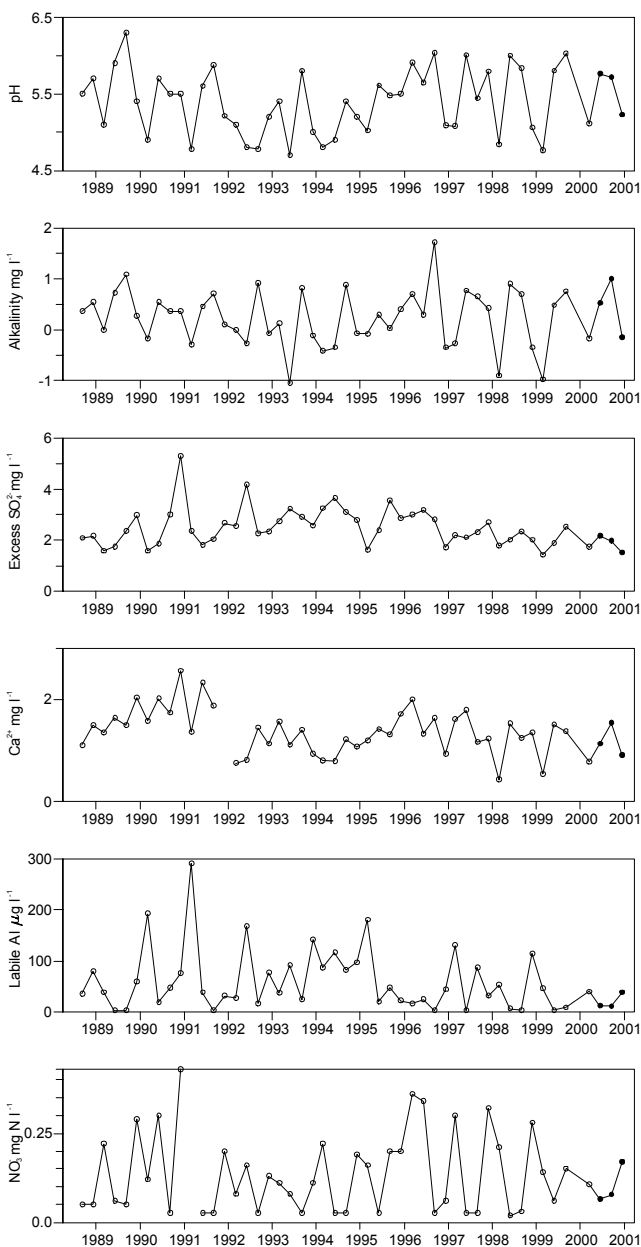
Geology: Cambrian sediments

Vegetation: 22 % Moorland  
 78 % Conifers

## 16.1. Spot sampled chemistry data

### Time series data

○ 06Sep1988 to 31Mar 2000    ● 01Apr2000 to 04Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.57	5.76	5.23	0.30	75.0
Alk(CaCO <sub>3</sub> )	0.46	1.00	-0.15	0.58	75.0
Cond	37.1	38.5	35.6	1.5	75.0
Ca	1.19	1.54	0.91	0.32	75.0
Mg	0.80	1.10	0.60	0.26	75.0
Na	5.20	5.60	4.50	0.61	75.0
K	0.15	0.23	0.11	0.07	75.0
Ba	0.00	0.00	0.00	0.00	75.0
Sr	0.00	0.00	0.00	0.00	75.0
Fe	0.06	0.13	0.02	0.06	75.0
Mn	0.03	0.03	0.03	0.00	75.0
Sol.Al	104.0	115.0	84.9	16.6	75.0
Sol.lab.Al	20.3	38.0	11.0	15.3	75.0
Cl	9.03	9.40	8.40	0.55	75.0
SO <sub>4</sub>	3.17	3.50	2.70	0.42	75.0
XSO <sub>4</sub>	1.88	2.18	1.51	0.34	75.0
NO <sub>3</sub>	0.10	0.17	0.06	0.06	75.0
PO <sub>4</sub>	0.00	0.00	0.00	0.00	75.0
Br	0.02	0.02	0.01	0.00	50.0
F	0.02	0.02	0.01	0.00	75.0
Si	0.43	0.60	0.30	0.15	75.0
DOC	3.72	5.90	2.37	1.90	75.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

Chemistry statistics for period Sept 1988 to March 2000

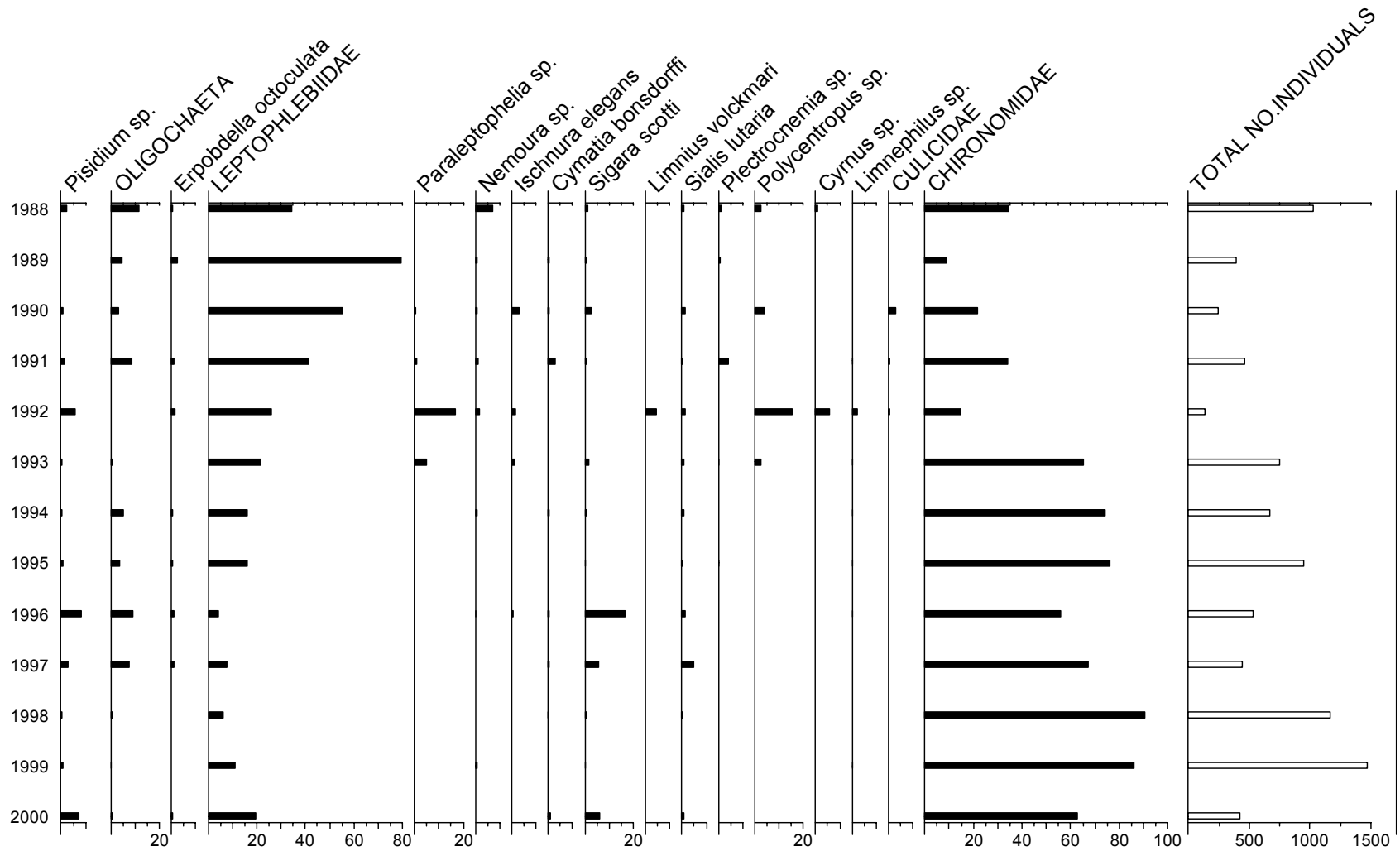
	Mean	Max.	Min.	Std. Dev.	N%
pH	5.39	6.30	4.70	0.43	100.0
Alk(CaCO <sub>3</sub> )	0.23	1.72	-1.05	0.56	100.0
Cond	45.0	72.0	24.0	11.6	100.0
Ca	1.37	2.56	0.43	0.45	93.8
Mg	0.75	1.20	0.40	0.19	100.0
Na	6.12	9.30	4.00	1.37	100.0
K	0.36	0.38	0.16	0.05	91.7
Ba	0.00	0.01	0.00	0.00	87.5
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.04	0.16	0.01	0.03	100.0
Mn	0.04	0.14	0.01	0.02	100.0
Sol.Al	114.4	378.0	5.0	74.2	100.0
Sol.lab.Al	60.1	291.0	2.5	60.7	100.0
Cl	10.73	18.40	5.10	3.06	100.0
SO <sub>4</sub>	4.03	7.40	2.60	0.74	100.0
XSO <sub>4</sub>	2.50	5.30	1.42	0.74	100.0
NO <sub>3</sub>	0.13	0.43	0.02	0.11	93.8
PO <sub>4</sub>	0.02	0.07	0.00	0.02	100.0
Br	0.02	0.04	0.00	0.01	100.0
F	0.02	0.03	0.00	0.01	100.0
Si	0.67	4.60	0.04	0.69	89.6
DOC	2.54	10.70	0.10	1.55	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

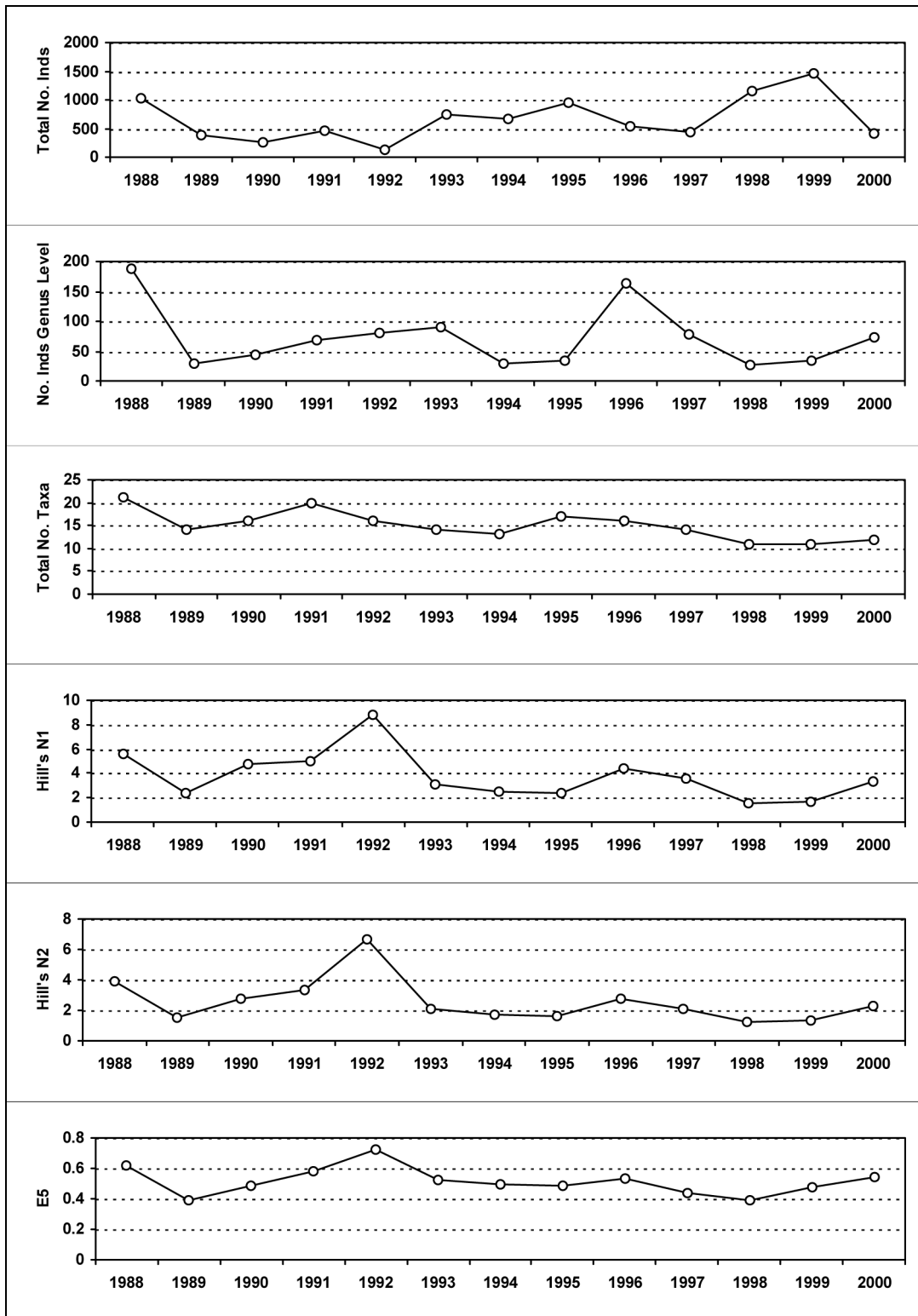


## 16.2. Macroinvertebrate data

### 16.2.1. Percentage abundance summary, Llyn Cwm Mynach

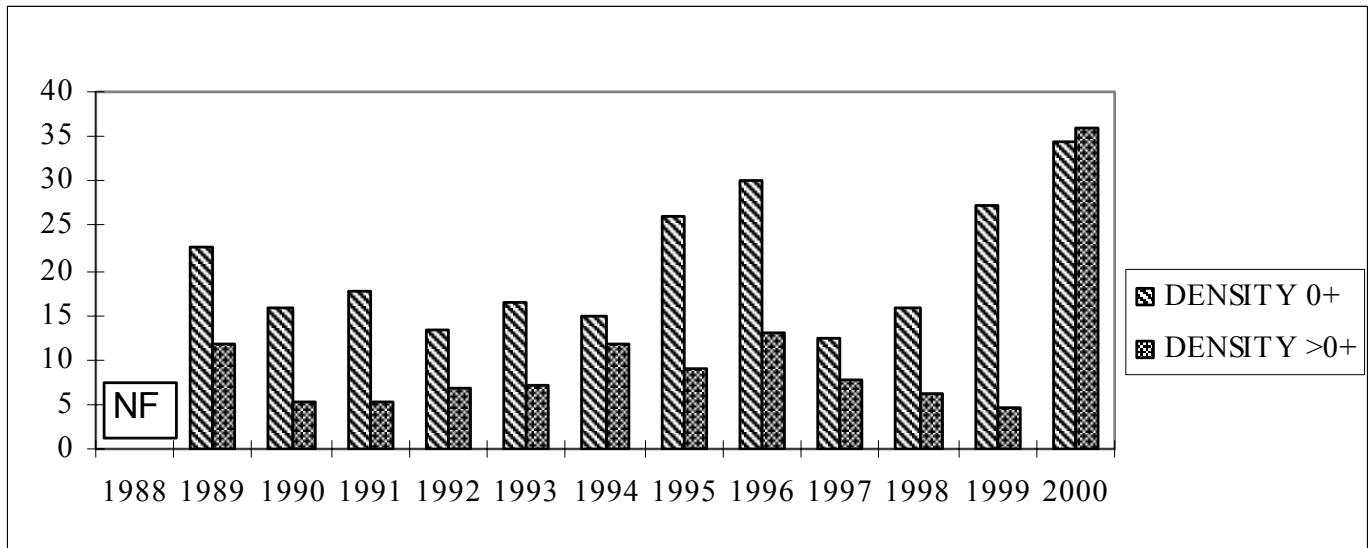


## 16.2.2. Summary statistics, Llyn Cwm Mynach



### 16.3. Fish data (for outflow stream)

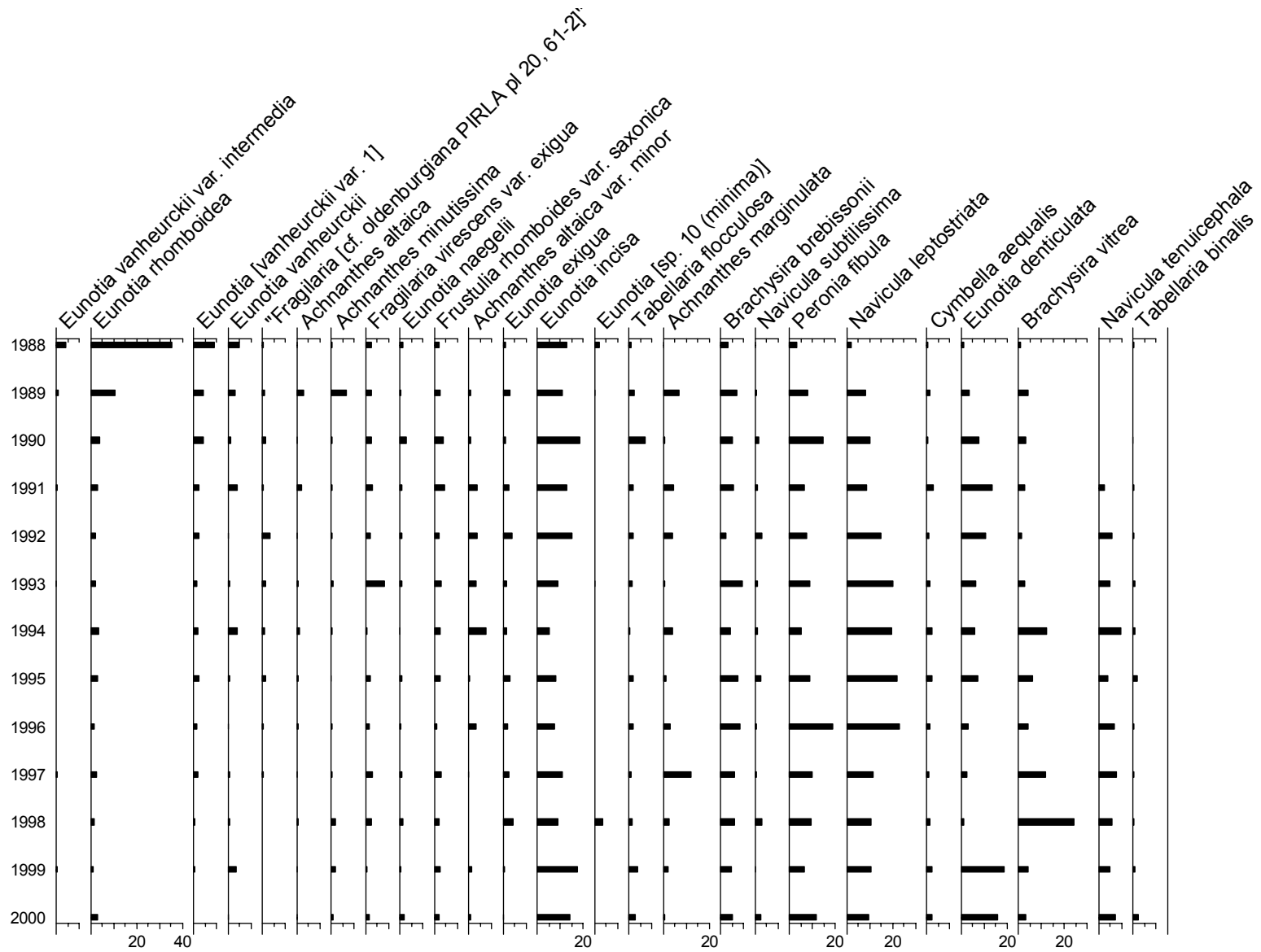
#### 16.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Llyn Cwm Mynach



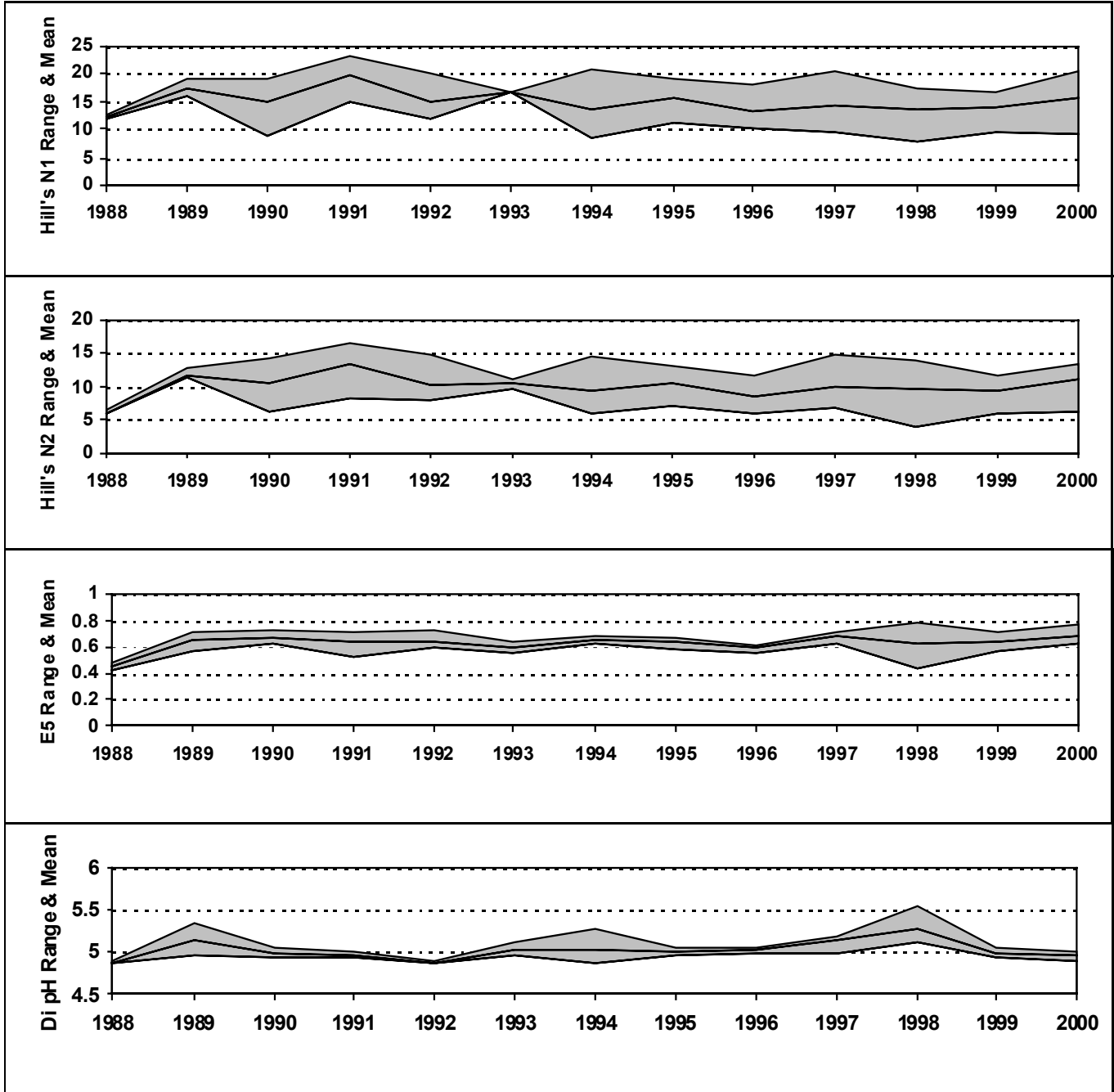
NF = Not fished

## 16.4. Epilithic diatom data

### 16.4.1. Percentage abundance summary, Llyn Cwm Mynach

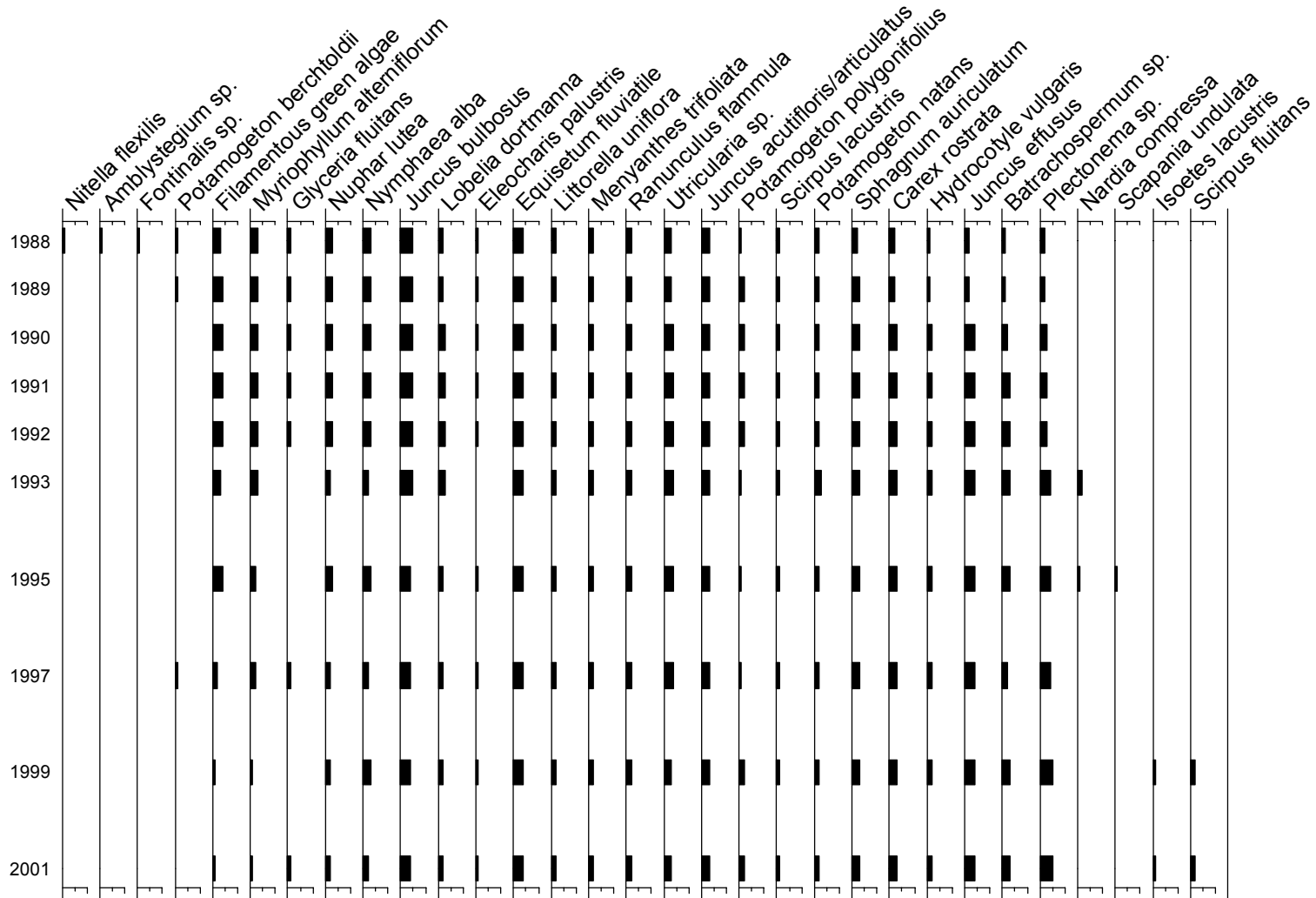


### 16.4.2. Summary statistics, Llyn Cwm Mynach



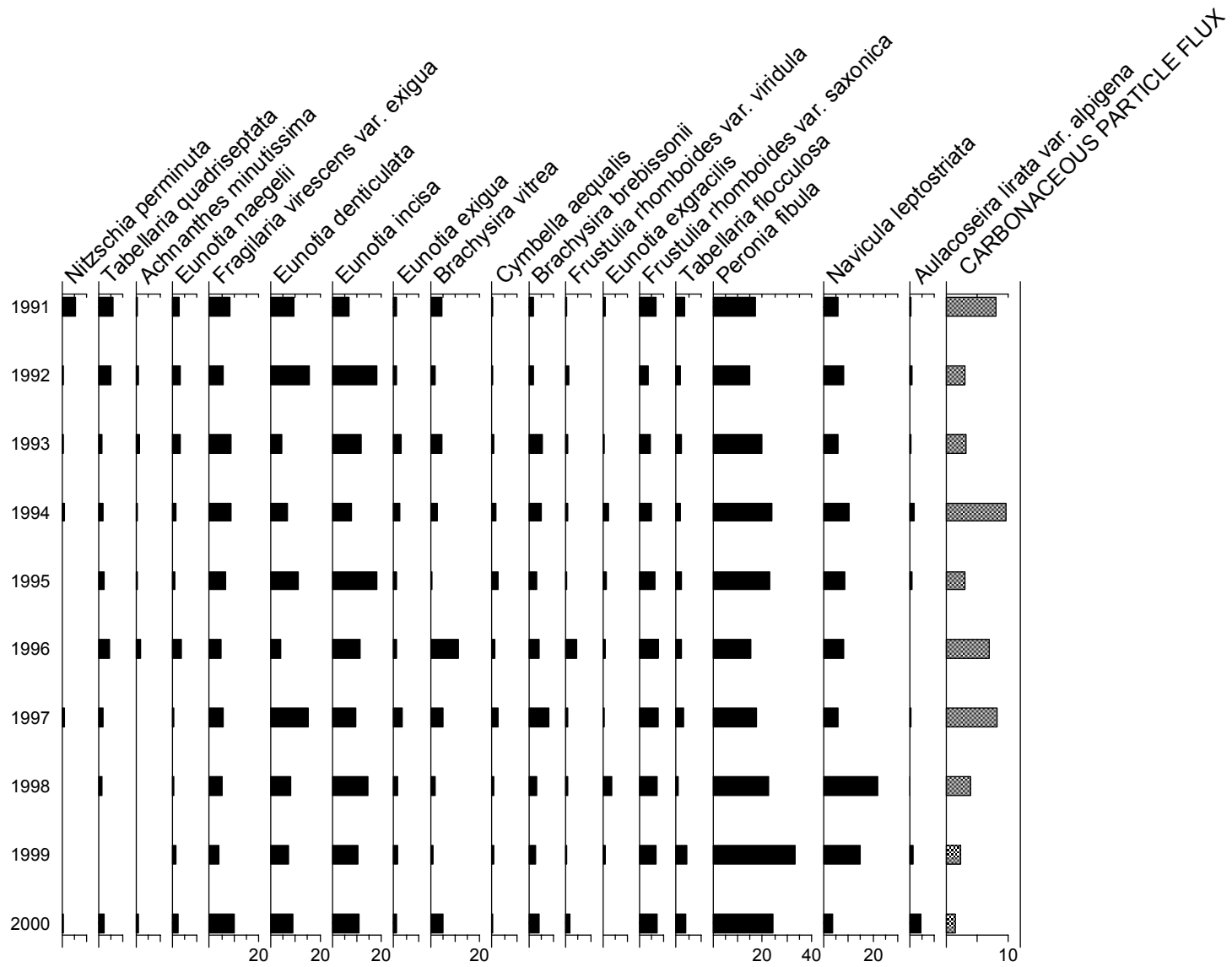
## 16.5. Aquatic macrophyte data, Llyn Cwm Mynach

### Species Scores (1-5)



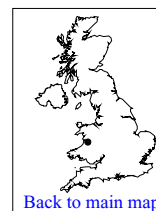
## 16.6. Sediment trap data, Llyn Cwm Mynach

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



# 17. Afon Hafren

Catchment area: 358 ha  
 Minimum catchment altitude: 355 m  
 Maximum catchment altitude: 690 m



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Grid Ref: SN 844876

Soils: Podsoles  
 Organic peats

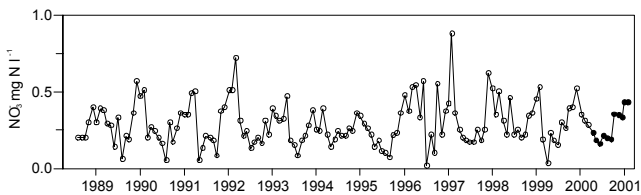
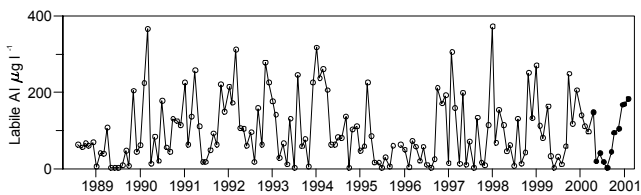
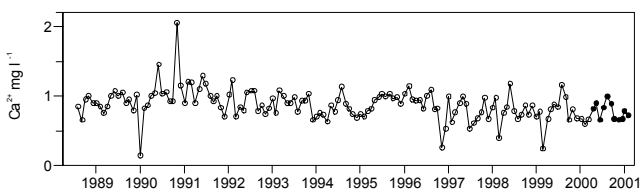
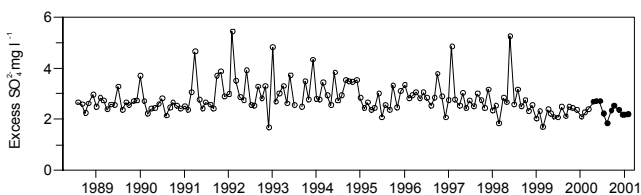
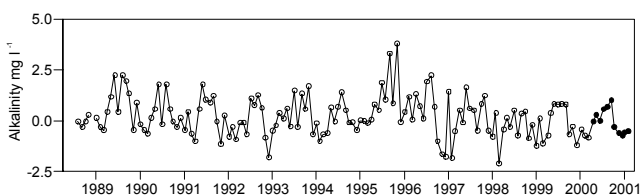
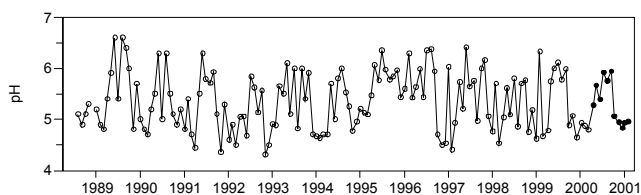
Geology: Ordovician sediments  
 Silurian sediments

Vegetation: 43% Moorland  
 57% Conifers

## 17.1. Spot sampled chemistry data

### Time series data

○ 02Aug1988 to 31Mar2000 • 01Apr2000 to 07Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.33	5.94	4.83	0.43	91.7
Alk(CaCO <sub>3</sub> )	-0.02	1.00	-0.72	0.59	91.7
Cond	27.6	36.8	20.0	5.1	91.7
Ca	0.78	0.99	0.65	0.12	91.7
Mg	0.75	0.90	0.70	0.07	91.7
Na	4.06	4.50	3.70	0.26	91.7
K	0.18	0.29	0.09	0.07	91.7
Ba	0.00	0.00	0.00	0.00	83.3
Sr	0.00	0.01	0.00	0.00	91.7
Fe	0.12	0.20	0.03	0.05	91.7
Mn	0.04	0.05	0.03	0.01	91.7
Sol.Al	182.6	259.0	89.0	65.7	91.7
Sol.lab.Al	89.8	182.0	2.5	68.4	91.7
Cl	6.63	8.00	5.70	0.78	91.7
SO <sub>4</sub>	3.29	3.60	2.80	0.22	91.7
XSO <sub>4</sub>	2.35	2.70	1.83	0.27	91.7
NO <sub>3</sub>	0.28	0.43	0.16	0.10	91.7
PO <sub>4</sub>	0.01	0.03	0.00	0.01	91.7
Br	0.06	0.35	0.01	0.13	58.3
F	0.02	0.03	0.01	0.00	91.7
Si	1.22	1.50	0.90	0.18	91.7
DOC	2.70	4.64	1.09	1.03	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

### Past record statistics

Chemistry statistics for period Aug 1988 to March 2000

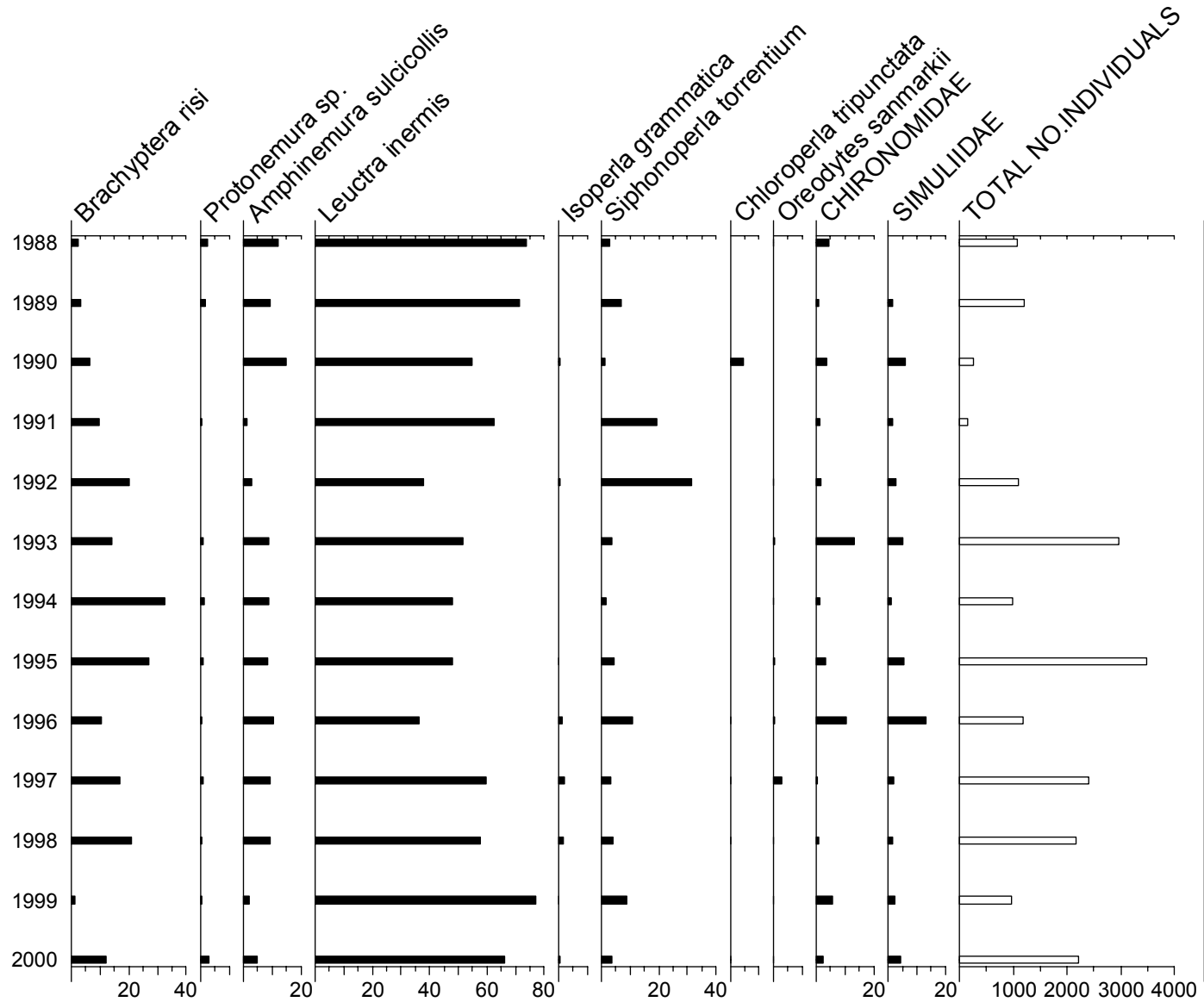
	Mean	Max.	Min.	Std. Dev.	N%
pH	5.36	6.60	4.31	0.57	100.0
Alk(CaCO <sub>3</sub> )	0.22	3.78	-2.10	0.98	100.0
Cond	36.4	112.0	20.0	9.8	100.0
Ca	0.88	2.05	0.14	0.22	100.0
Mg	0.79	1.10	0.30	0.11	100.0
Na	4.38	7.00	2.60	0.51	100.0
K	0.36	0.60	0.13	0.06	100.0
Ba	0.00	0.07	0.00	0.01	87.5
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.09	0.45	0.03	0.04	100.0
Mn	0.04	0.10	0.01	0.01	100.0
Sol.Al	177.1	550.0	5.0	114.7	100.0
Sol.lab.Al	99.8	372.0	2.5	87.6	100.0
Cl	7.37	12.40	4.30	1.23	100.0
SO <sub>4</sub>	3.86	6.70	2.30	0.63	100.0
XSO <sub>4</sub>	2.81	5.44	1.68	0.63	100.0
NO <sub>3</sub>	0.29	0.88	0.02	0.14	100.0
PO <sub>4</sub>	0.02	0.39	0.00	0.04	100.0
Br	0.02	0.07	0.00	0.01	100.0
F	0.02	0.06	0.00	0.01	100.0
Si	1.50	3.70	0.50	0.36	100.0
DOC	2.01	8.10	0.10	1.34	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$

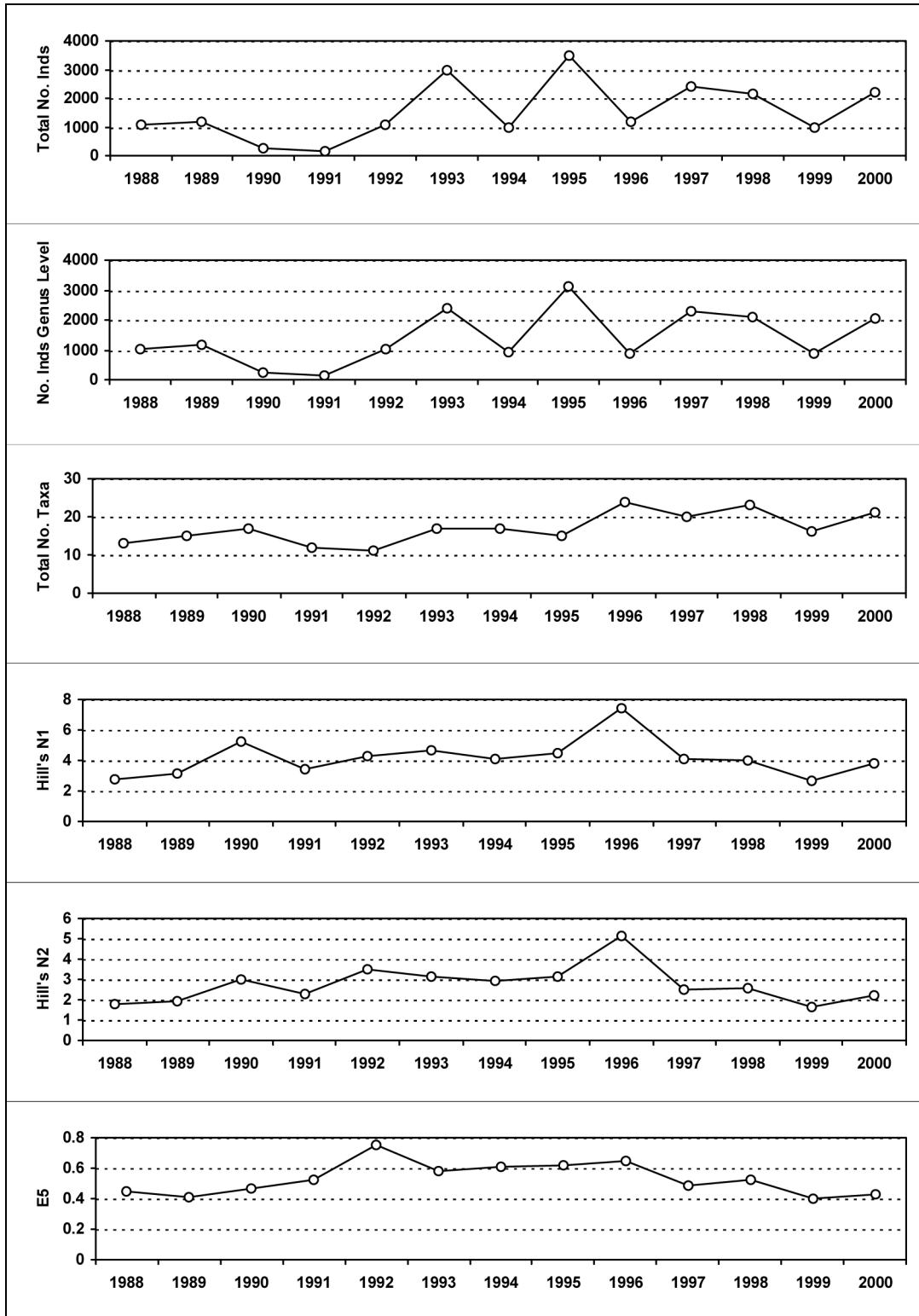


## 17.2. Macroinvertebrate data

### 17.2.1. Percentage abundance summary, Afon Hafren

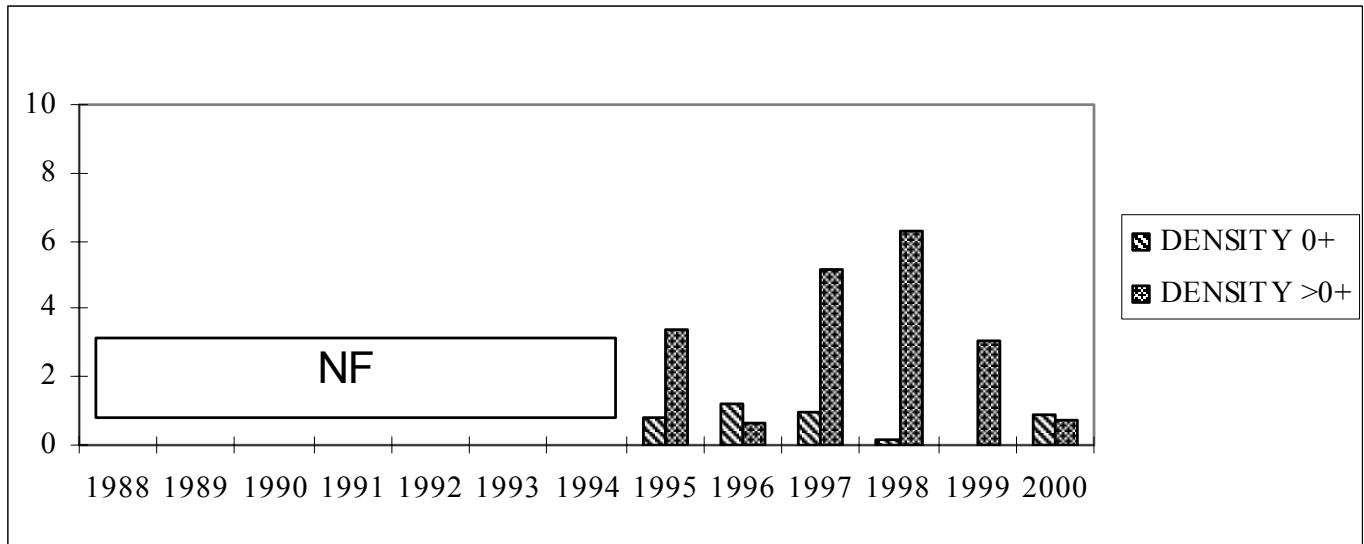


## 17.2.2. Summary statistics, Afon Hafren



### 17.3. Fish data

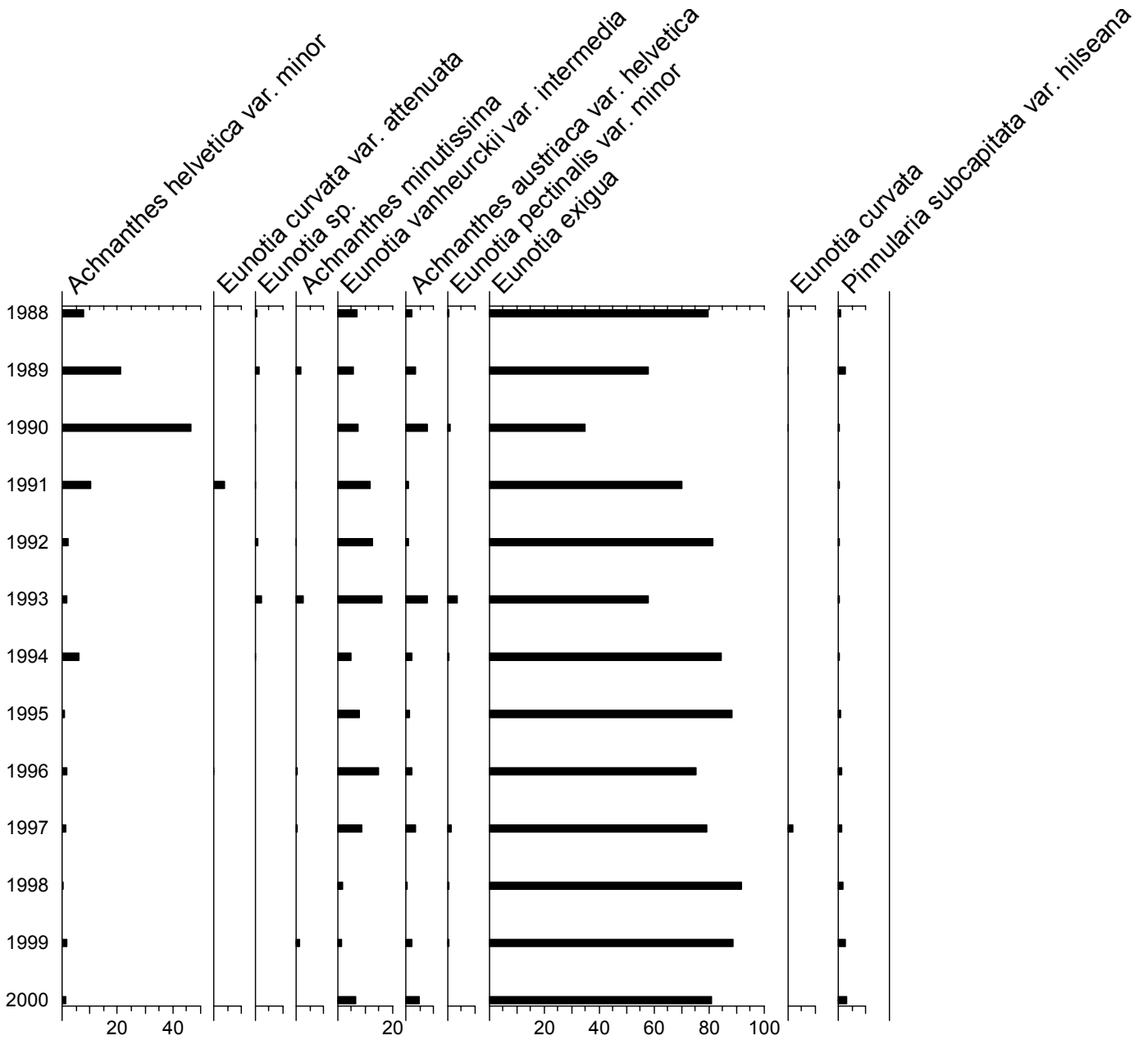
#### 17.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Afon Hafren



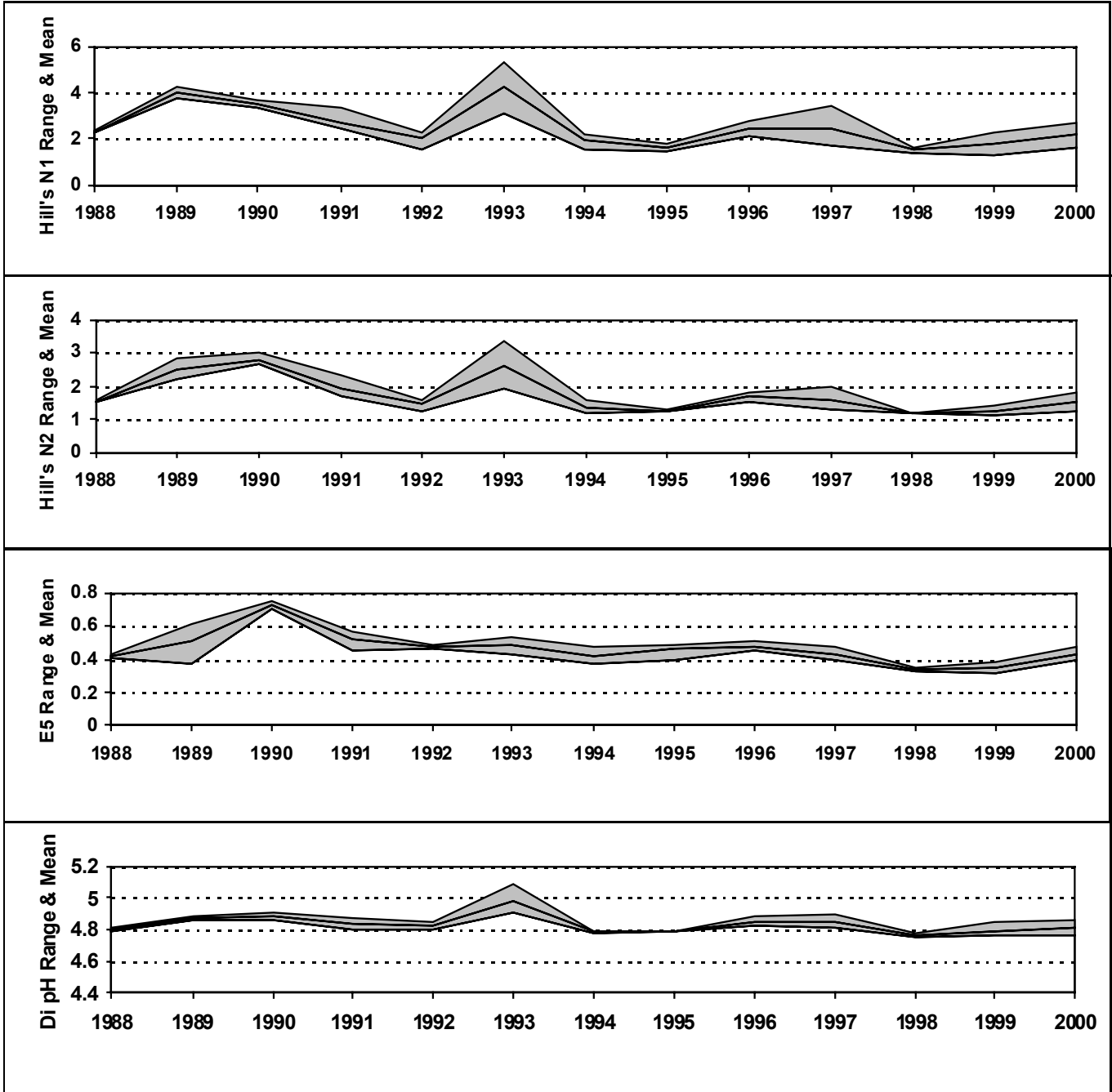
NF = Not fished

## 17.4. Epilithic diatom data

### 17.4.1. Percentage abundance summary, Afon Hafren

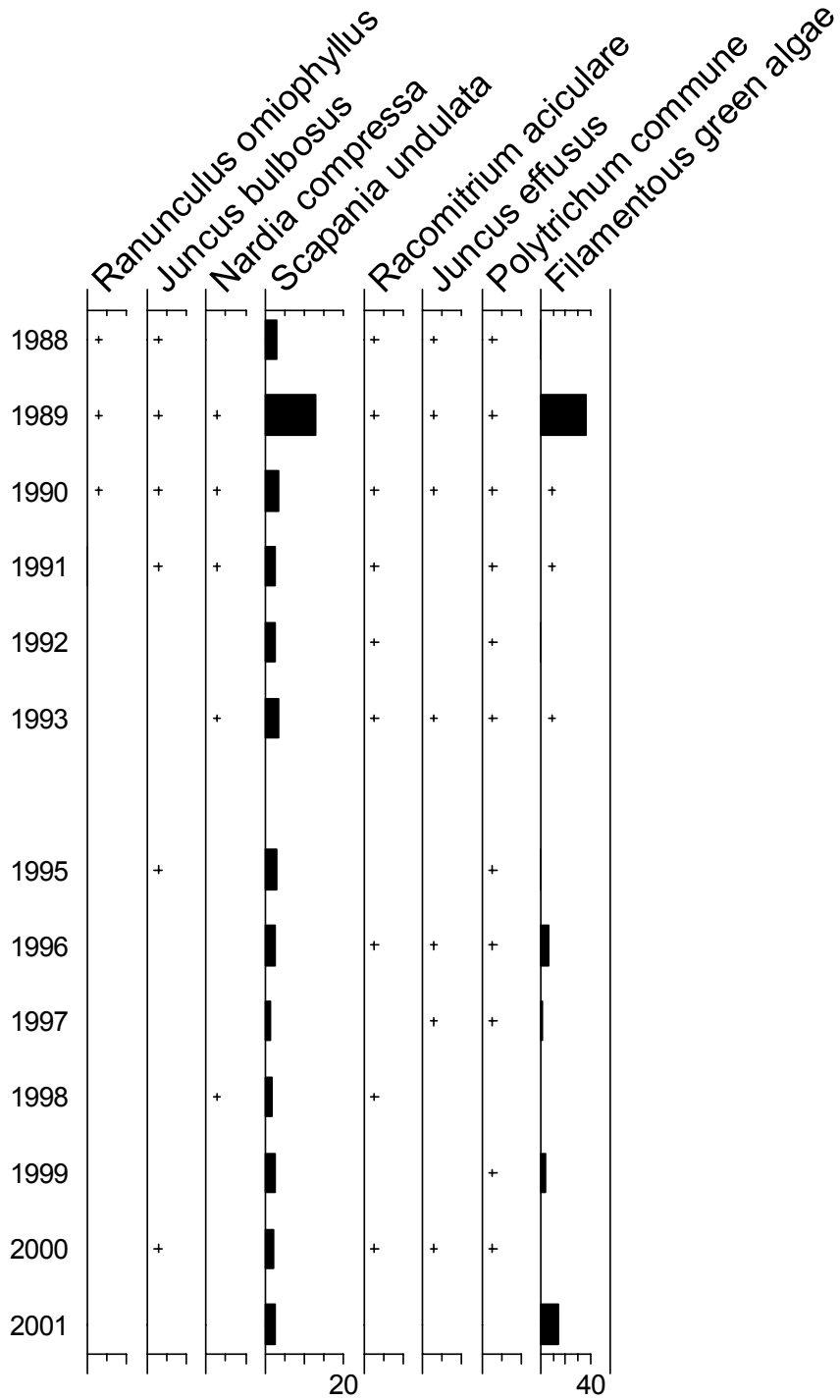


### 17.4.2. Summary statistics, Afon Hafren



## 17.5. Aquatic macrophyte data, Afon Hafren

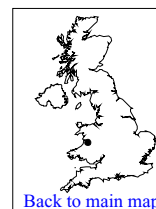
### Percentage Species Cover



+ Represents <math><0.1\%</math> abundance

# 18. Afon Gwy

Catchment area: 210 ha  
 Minimum catchment altitude: 440 m  
 Maximum catchment altitude: 730 m



[Back to main map](#)

Grid Ref: SN 824854

Soils: Peat  
 Peaty podsol

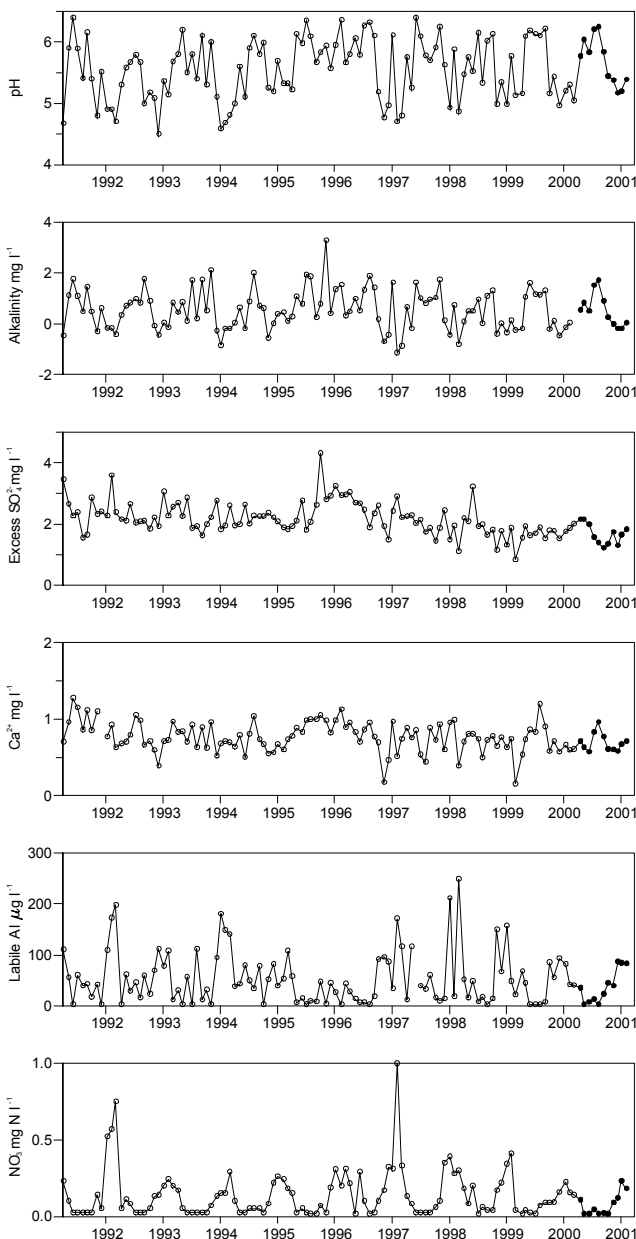
Geology: Lower Palaeozoic sediments

Vegetation: 100 % Moorland

## 18.1. Spot sampled chemistry data

### Time series data

○ 02Apr1991 to 31Mar2000 ● 01Apr2000 to 07Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.68	6.25	5.17	0.39	91.7
Alk(CaCO <sub>3</sub> )	0.54	1.72	-0.18	0.65	91.7
Cond	20.6	28.5	13.3	5.1	91.7
Ca	0.69	0.96	0.57	0.12	91.7
Mg	0.65	0.80	0.60	0.07	91.7
Na	3.18	3.80	2.60	0.38	91.7
K	0.12	0.24	0.05	0.07	75.0
Ba	0.00	0.00	0.00	0.00	83.3
Sr	0.00	0.00	0.00	0.00	91.7
Fe	0.13	0.22	0.01	0.06	91.7
Mn	0.02	0.02	0.01	0.00	91.7
Sol.Al	108.6	157.0	53.0	34.2	91.7
Sol.lab.Al	38.4	87.0	2.5	33.0	91.7
Cl	5.32	6.80	3.70	1.02	91.7
SO <sub>4</sub>	2.42	2.80	1.90	0.32	91.7
XSO <sub>4</sub>	1.66	2.16	1.22	0.34	91.7
NO <sub>3</sub>	0.08	0.23	0.02	0.07	91.7
PO <sub>4</sub>	0.00	0.02	0.00	0.00	91.7
Br	0.01	0.02	0.01	0.00	50.0
F	0.02	0.02	0.01	0.00	58.3
Si	0.70	0.90	0.40	0.18	91.7
DOC	2.50	4.60	1.46	0.96	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

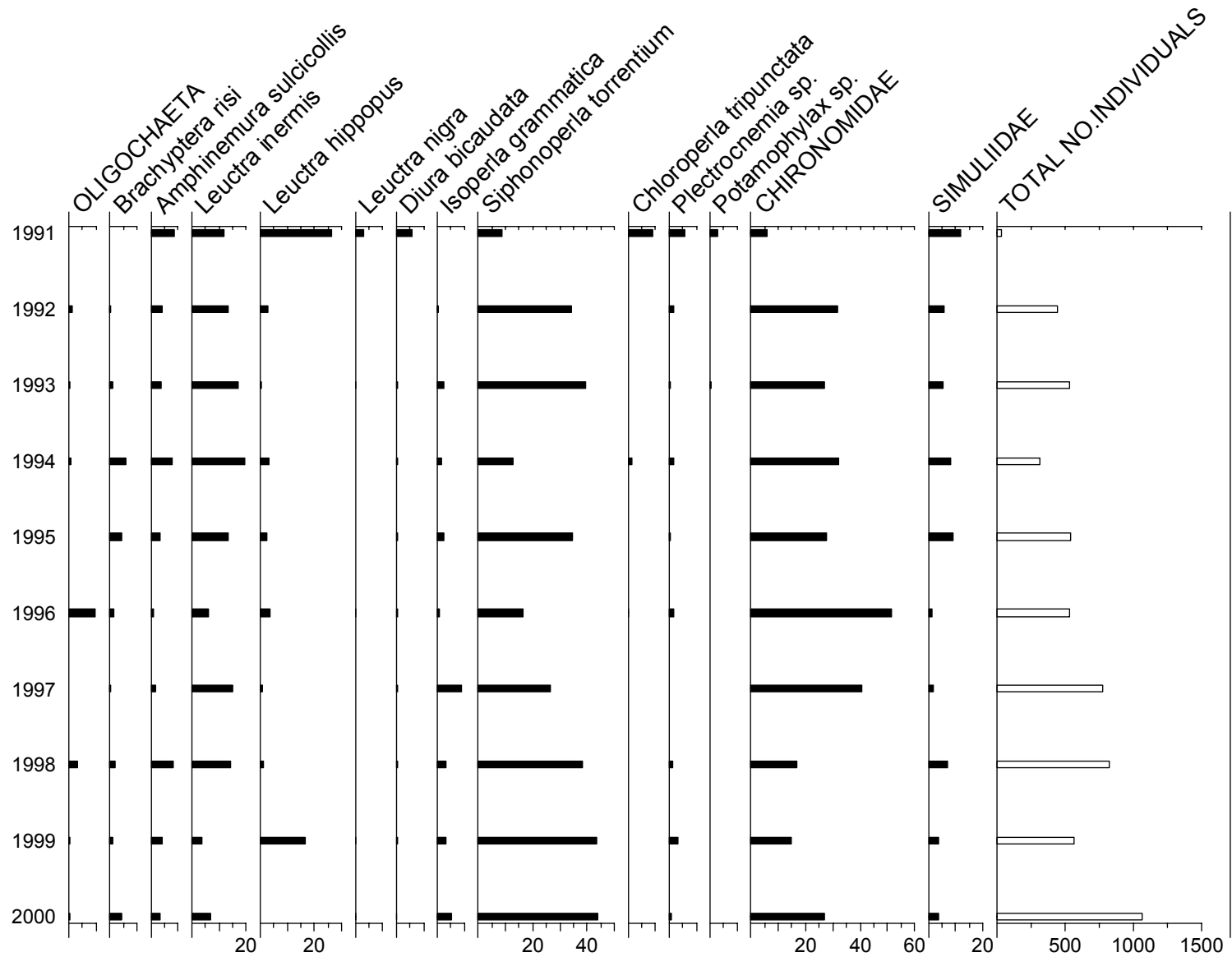
Chemistry statistics for period April 1991 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.55	6.40	4.50	0.50	100.0
Alk(CaCO <sub>3</sub> )	0.55	3.27	-1.13	0.79	100.0
Cond	25.6	44.1	13.0	6.9	100.0
Ca	0.77	1.27	0.15	0.20	100.0
Mg	0.65	1.10	0.20	0.12	100.0
Na	3.33	5.50	1.60	0.48	100.0
K	0.35	0.63	0.10	0.09	93.5
Ba	0.00	0.01	0.00	0.00	88.9
Sr	0.00	0.01	0.00	0.00	100.0
Fe	0.13	0.48	0.05	0.07	100.0
Mn	0.02	0.04	0.01	0.01	100.0
Sol.Al	112.2	366.0	5.0	65.2	100.0
Sol.lab.Al	54.1	249.0	2.5	52.2	100.0
Cl	5.62	12.00	2.50	1.21	100.0
SO <sub>4</sub>	2.98	5.10	1.20	0.55	100.0
XSO <sub>4</sub>	2.18	4.32	0.85	0.54	100.0
NO <sub>3</sub>	0.14	1.00	0.02	0.16	100.0
PO <sub>4</sub>	0.01	0.03	0.00	0.01	100.0
Br	0.01	0.04	0.00	0.01	100.0
F	0.02	0.03	0.00	0.00	100.0
Si	0.92	3.30	0.30	0.34	100.0
DOC	2.29	11.00	0.10	1.40	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{s cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

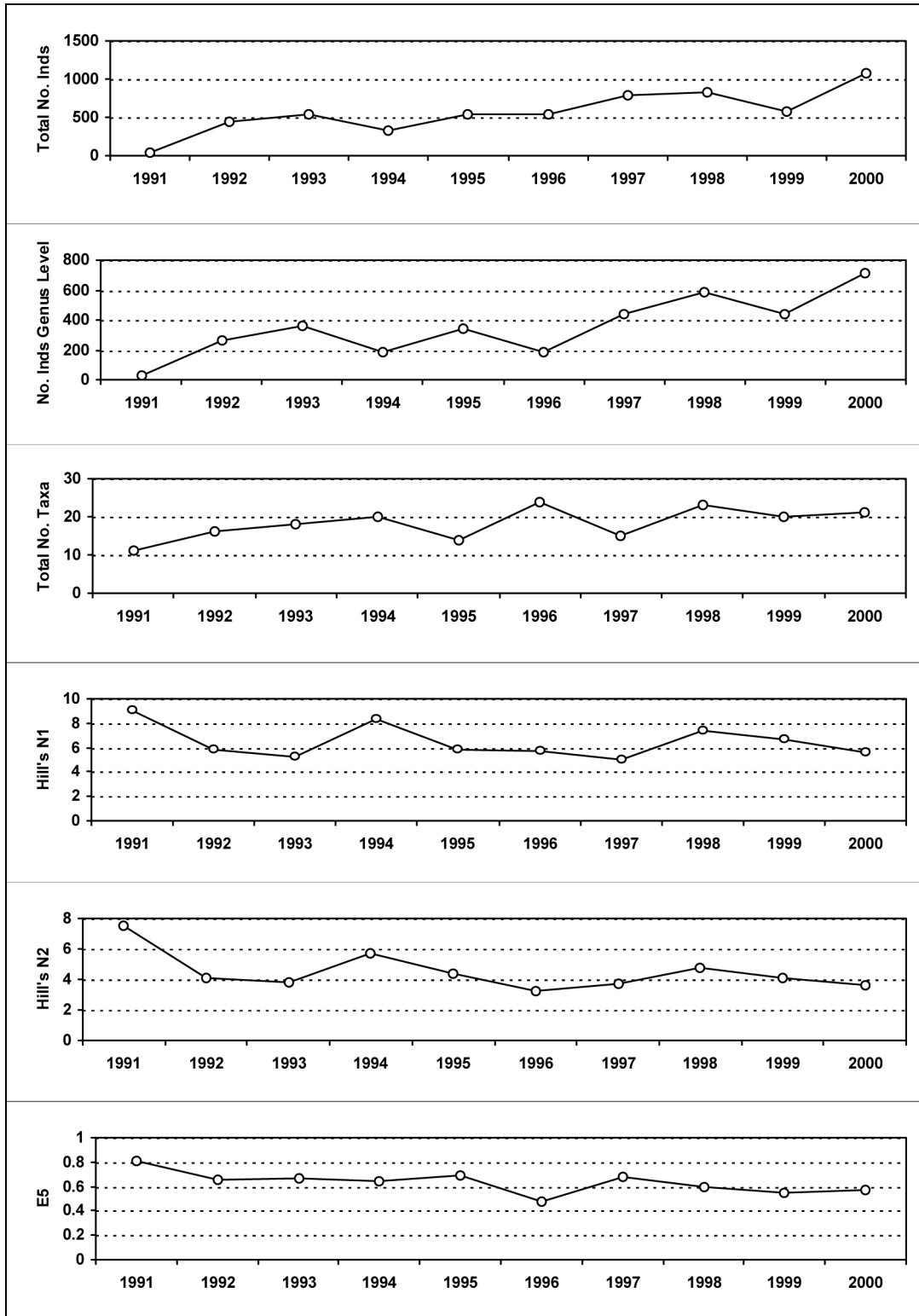
## 18.2. Macroinvertebrate data

### 18.2.1. Percentage abundance summary, Afon Gwy



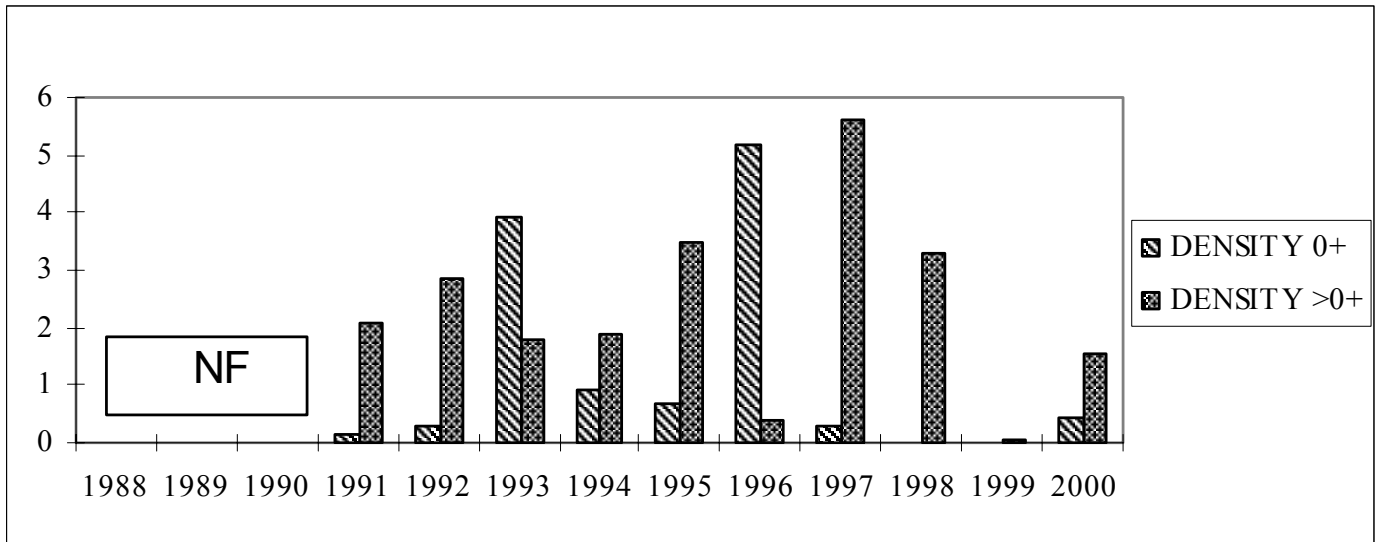


## 18.2.2. Summary statistics, Afon Gwy



### 18.3. Fish data

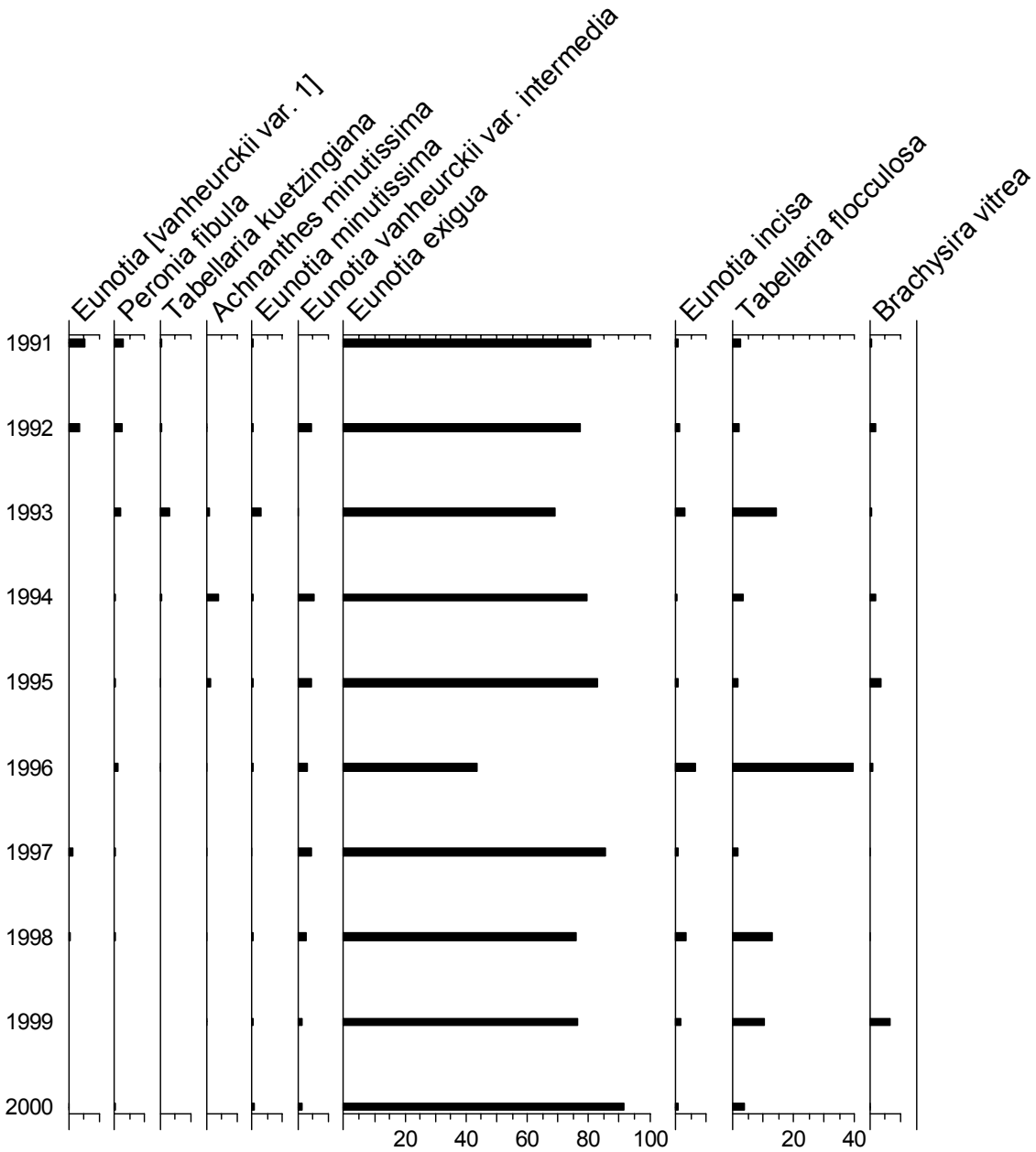
#### 18.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Afon Gwy



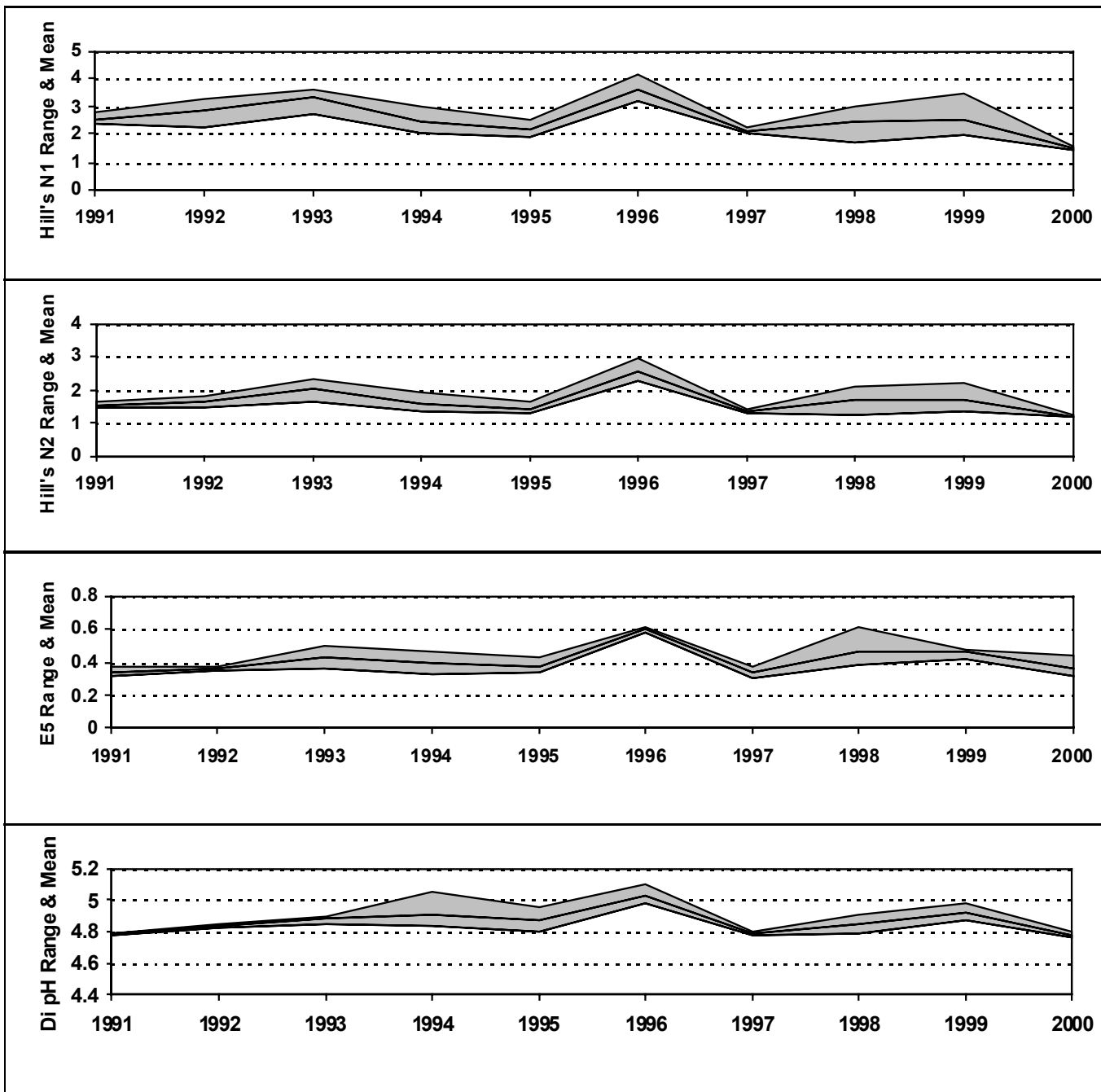
NF = Not fished

## 18.4. Epilithic diatom data

### 18.4.1. Percentage abundance summary, Afon Gwy

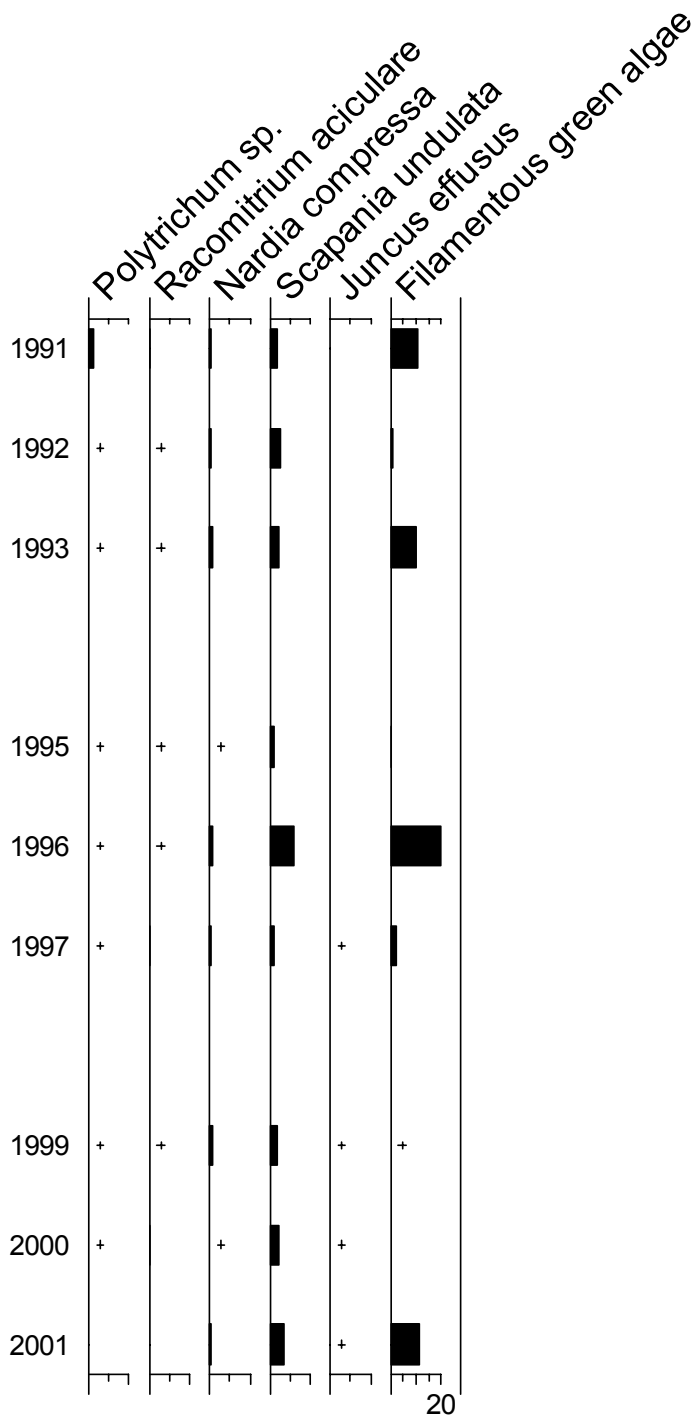


### 18.4.2. Summary statistics, Afon Gwy



## 18.5. Aquatic macrophyte data, Afon Gwy

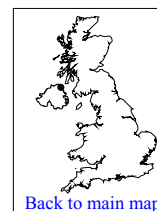
### Percentage Species Cover



+ Represents <0.1% abundance

# 19. Beaghs Burn

Catchment area: 273 ha  
 Minimum catchment altitude: 150 m  
 Maximum catchment altitude: 397 m



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Grid Ref: D 173297

Soils: Blanket peat

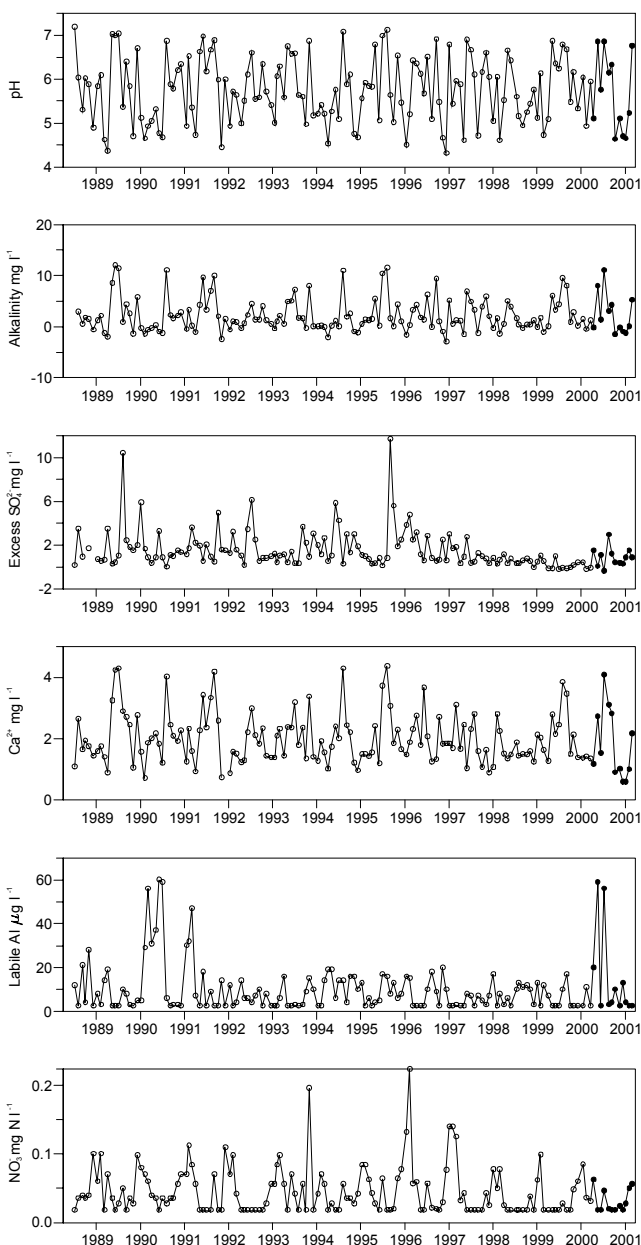
Geology: Schists

Vegetation: 100 % Moorland

## 19.1 Spot sampled chemistry data

### Time series data

○ 06Jul1988 to 31Mar2000    ● 01Apr2000 to 05Mar2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.67	6.85	4.63	0.88	100.0
Alk(CaCO <sub>3</sub> )	2.42	11.15	-1.50	4.03	100.0
Cond	49.9	65.0	36.0	9.4	100.0
Ca	1.82	4.08	0.61	1.14	100.0
Mg	1.23	2.70	0.50	0.67	100.0
Na	5.90	8.20	4.00	1.24	100.0
K	0.34	0.41	0.13	0.08	100.0
Ba	0.00	0.01	0.00	0.00	91.7
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.96	2.94	0.02	0.75	100.0
Mn	0.02	0.03	0.01	0.01	100.0
Sol.Al	60.5	103.0	27.0	23.1	100.0
Sol.lab.Al	14.9	59.0	2.5	20.6	100.0
Cl	9.93	13.00	7.00	1.72	100.0
SO <sub>4</sub>	2.32	4.80	1.30	0.98	100.0
XSO <sub>4</sub>	0.91	2.95	-0.35	0.86	100.0
NO <sub>3</sub>	0.03	0.06	0.02	0.02	100.0
PO <sub>4</sub>	0.01	0.02	0.00	0.01	100.0
Br	0.03	0.04	0.02	0.01	75.0
F	0.02	0.04	0.01	0.01	91.7
Si	0.67	1.50	0.20	0.42	100.0
DOC	14.64	27.00	8.50	6.08	100.0

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

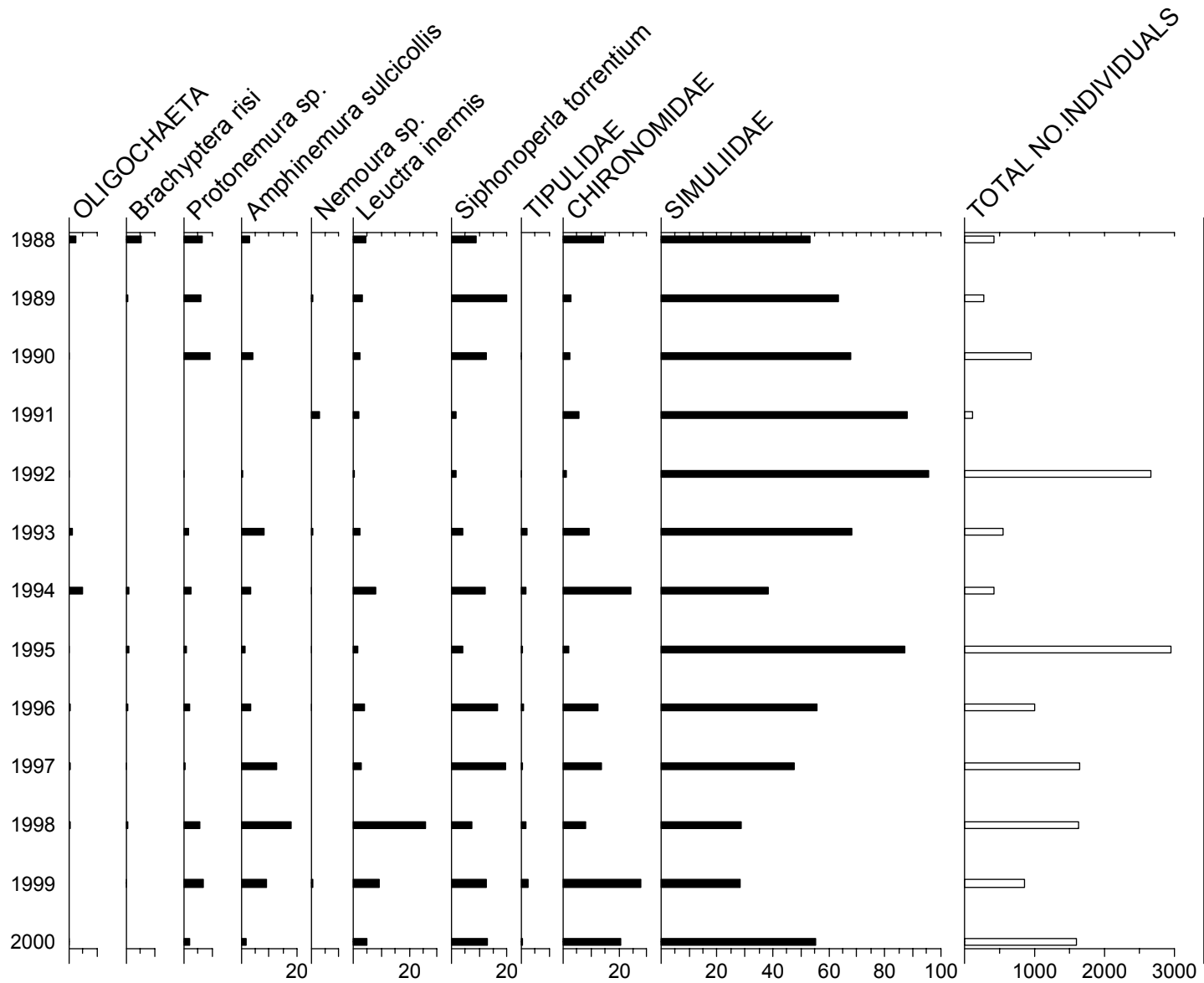
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.76	7.18	4.31	0.75	100.0
Alk(CaCO <sub>3</sub> )	2.21	12.00	-2.90	3.27	100.0
Cond	58.3	96.0	34.0	11.4	100.0
Ca	2.02	4.37	0.71	0.82	100.0
Mg	1.31	2.20	0.60	0.37	100.0
Na	6.85	10.20	4.40	1.12	100.0
K	0.43	0.90	0.17	0.10	100.0
Ba	0.00	0.01	0.00	0.00	93.1
Sr	0.01	0.13	0.00	0.01	100.0
Fe	0.86	3.30	0.04	0.61	100.0
Mn	0.02	0.31	0.00	0.03	100.0
Sol.Al	55.8	117.0	2.5	20.8	100.0
Sol.lab.Al	9.6	60.0	2.5	10.6	100.0
Cl	11.88	22.00	5.90	2.91	100.0
SO <sub>4</sub>	3.23	13.20	1.20	1.78	100.0
XSO <sub>4</sub>	1.55	11.67	-0.20	1.76	100.0
NO <sub>3</sub>	0.05	0.22	0.02	0.04	100.0
PO <sub>4</sub>	0.01	0.29	0.00	0.03	100.0
Br	0.04	0.40	0.00	0.03	100.0
F	0.02	0.25	0.00	0.02	100.0
Si	0.89	4.50	0.10	0.53	100.0
DOC	11.71	30.00	3.10	5.53	100.0

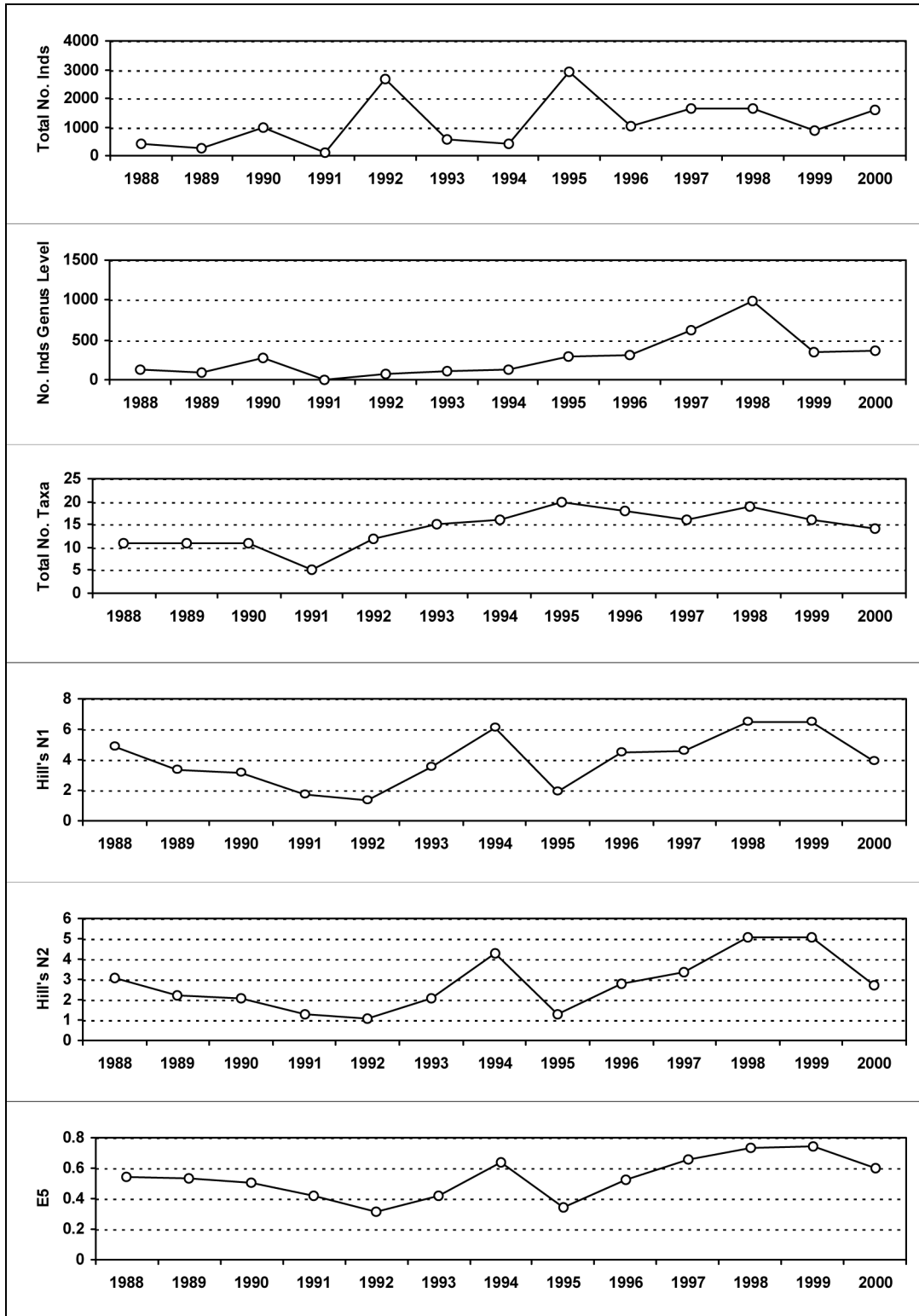
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ , Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 19.2. Macroinvertebrate data

### 19.2.1. Percentage abundance summary, Beaghs Burn



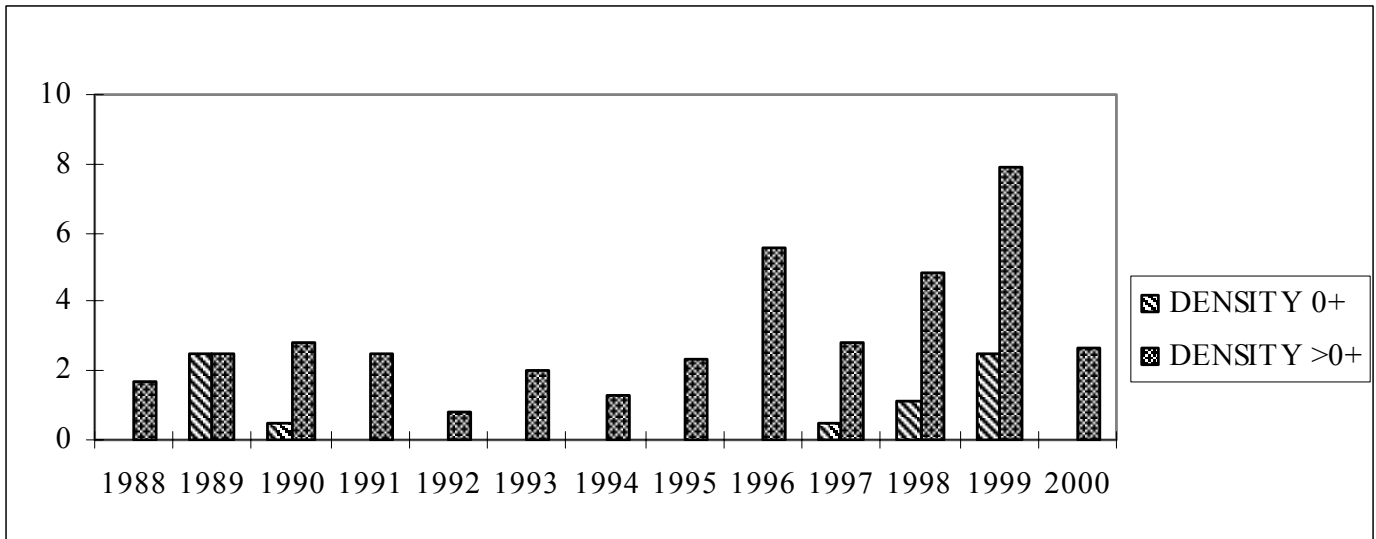
## 19.2.2. Summary statistics, Beaghs Burn





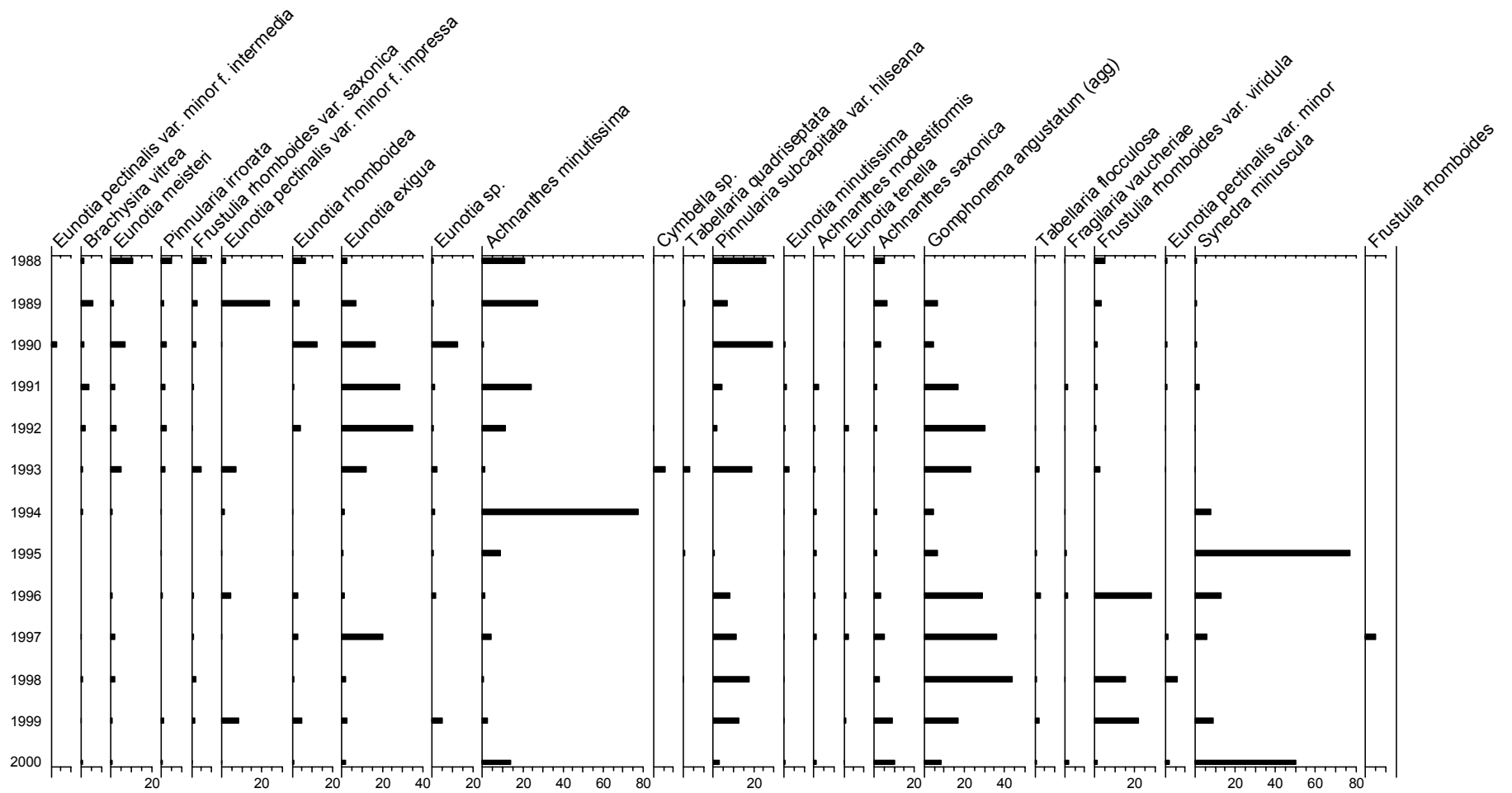
### 19.3. Fish data

#### 19.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Beaghs Burn

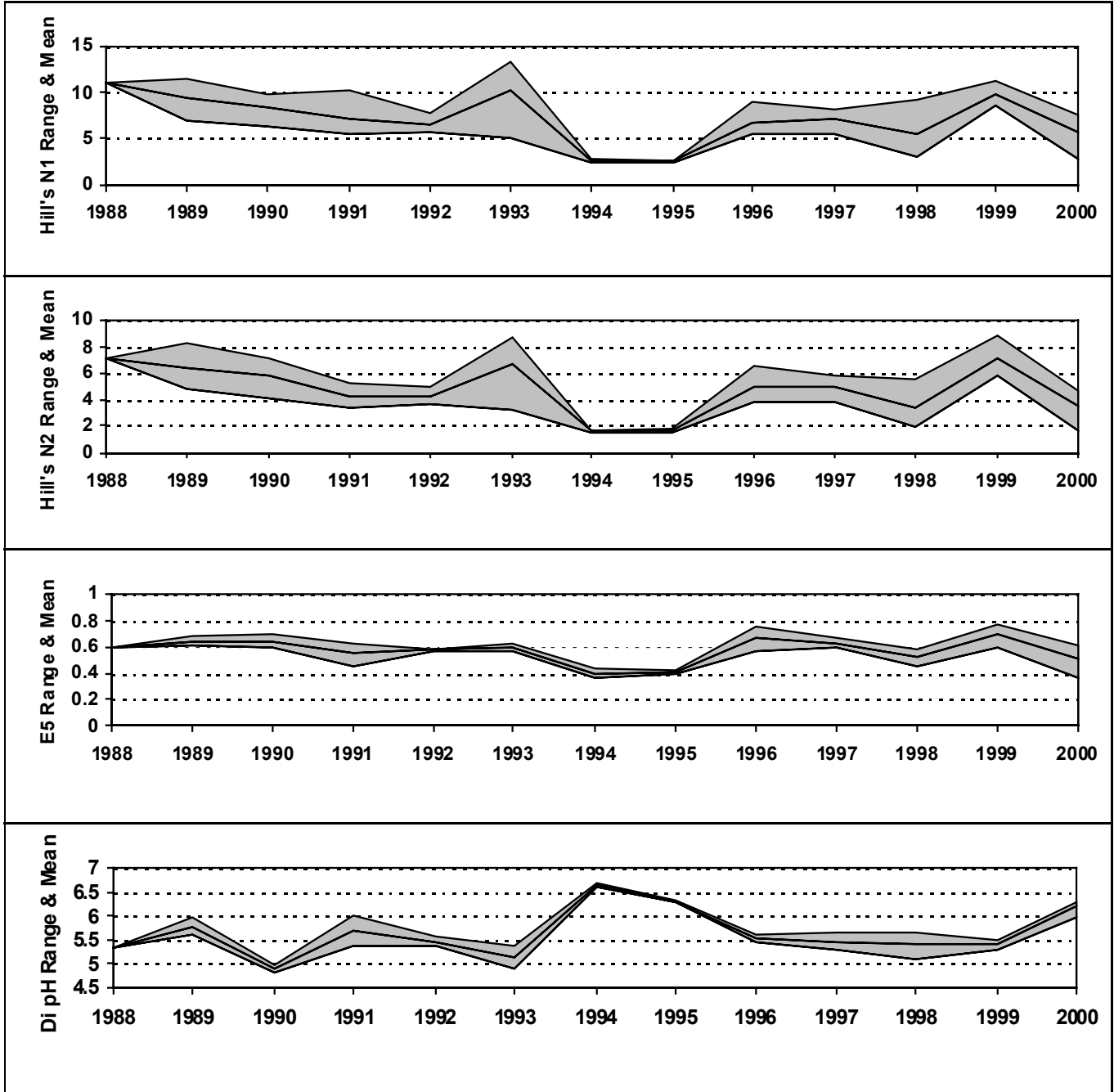


## 19.4. Epilithic diatom data

### 19.4.1. Percentage abundance summary, Beaghs Burn

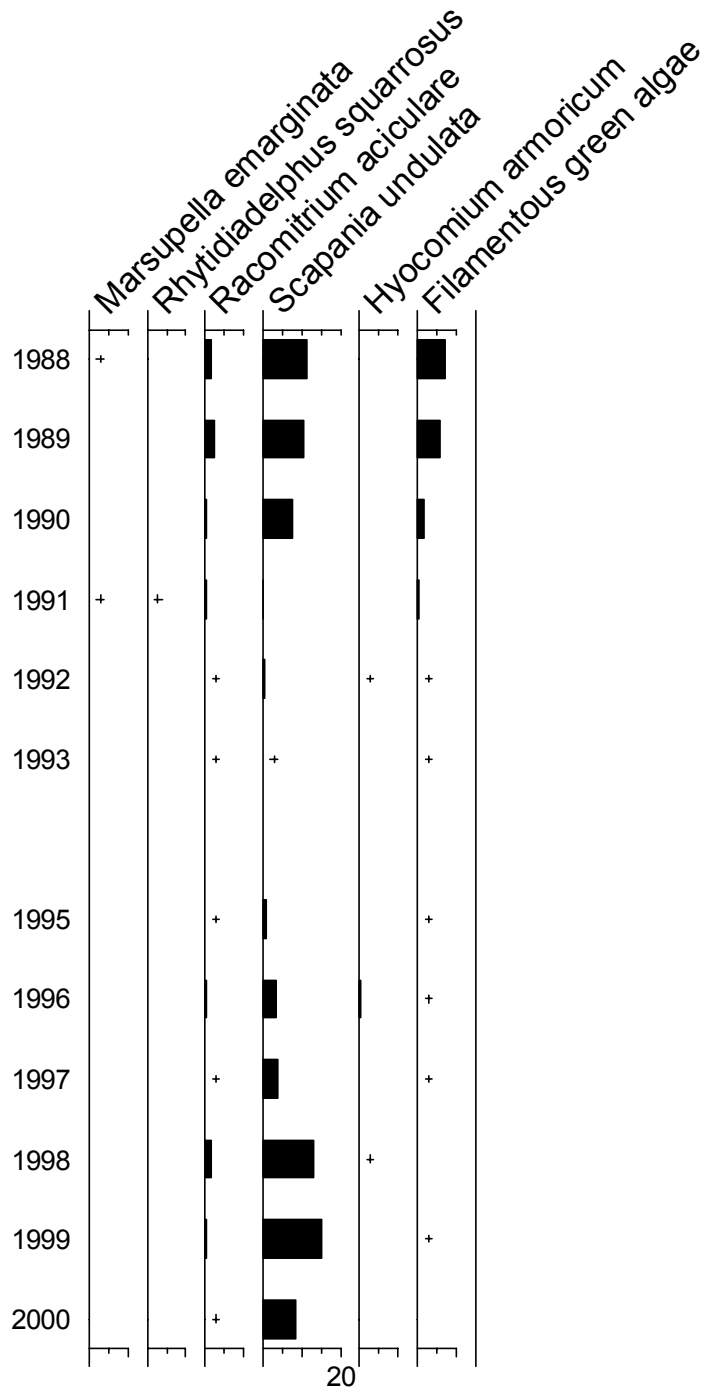


### 19.4.2. Summary statistics, Beaghs Burn



## 19.5. Aquatic macrophyte data, Beaghs Burn

### Percentage Species Cover



+ Represents <0.1% abundance

# 20. Bencrom River



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Catchment area: 298 ha  
 Minimum catchment altitude: 140 m  
 Maximum catchment altitude: 700 m

Grid Ref: J 304245

Soils: Blanket peat

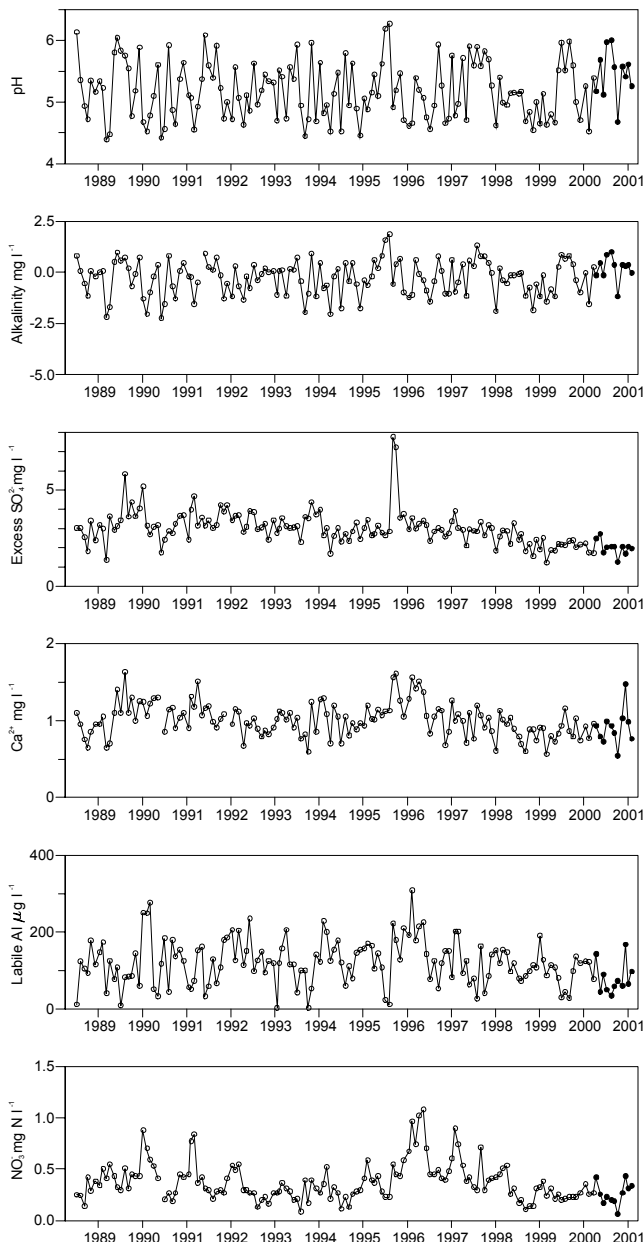
Geology: Granite

Vegetation: 100 % Moorland

## 20.1. Spot sampled chemistry data

### Time series data

○ 06Jul1988 to 31Mar2000    ● 01Apr2000 to 06Feb2001



### Current year statistics

Chemistry statistics for period April 2000 to Feb 2001

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.45	6.00	4.67	0.39	91.7
Alk(CaCO <sub>3</sub> )	0.19	1.00	-1.20	0.59	91.7
Cond	42.5	49.0	36.0	4.3	91.7
Ca	0.91	1.47	0.54	0.24	91.7
Mg	0.65	1.00	0.50	0.16	91.7
Na	5.51	6.60	4.30	0.77	91.7
K	0.41	0.56	0.27	0.08	91.7
Ba	0.00	0.00	0.00	0.00	91.7
Sr	0.01	0.01	0.00	0.00	91.7
Fe	0.06	0.12	0.01	0.03	83.3
Mn	0.01	0.01	0.00	0.00	91.7
Sol.Al	160.1	256.0	70.0	60.9	91.7
Sol.lab.Al	80.0	167.0	34.0	41.7	91.7
Cl	8.71	10.00	6.80	1.08	91.7
SO <sub>4</sub>	3.24	4.00	2.20	0.48	91.7
XSO <sub>4</sub>	2.00	2.72	1.23	0.39	91.7
NO <sub>3</sub>	0.26	0.43	0.06	0.11	91.7
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.02	0.05	0.01	0.01	66.7
F	0.24	0.34	0.10	0.08	91.7
Si	2.44	3.50	1.60	0.60	91.7
DOC	5.27	12.00	2.50	2.70	91.7

N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

### Past record statistics

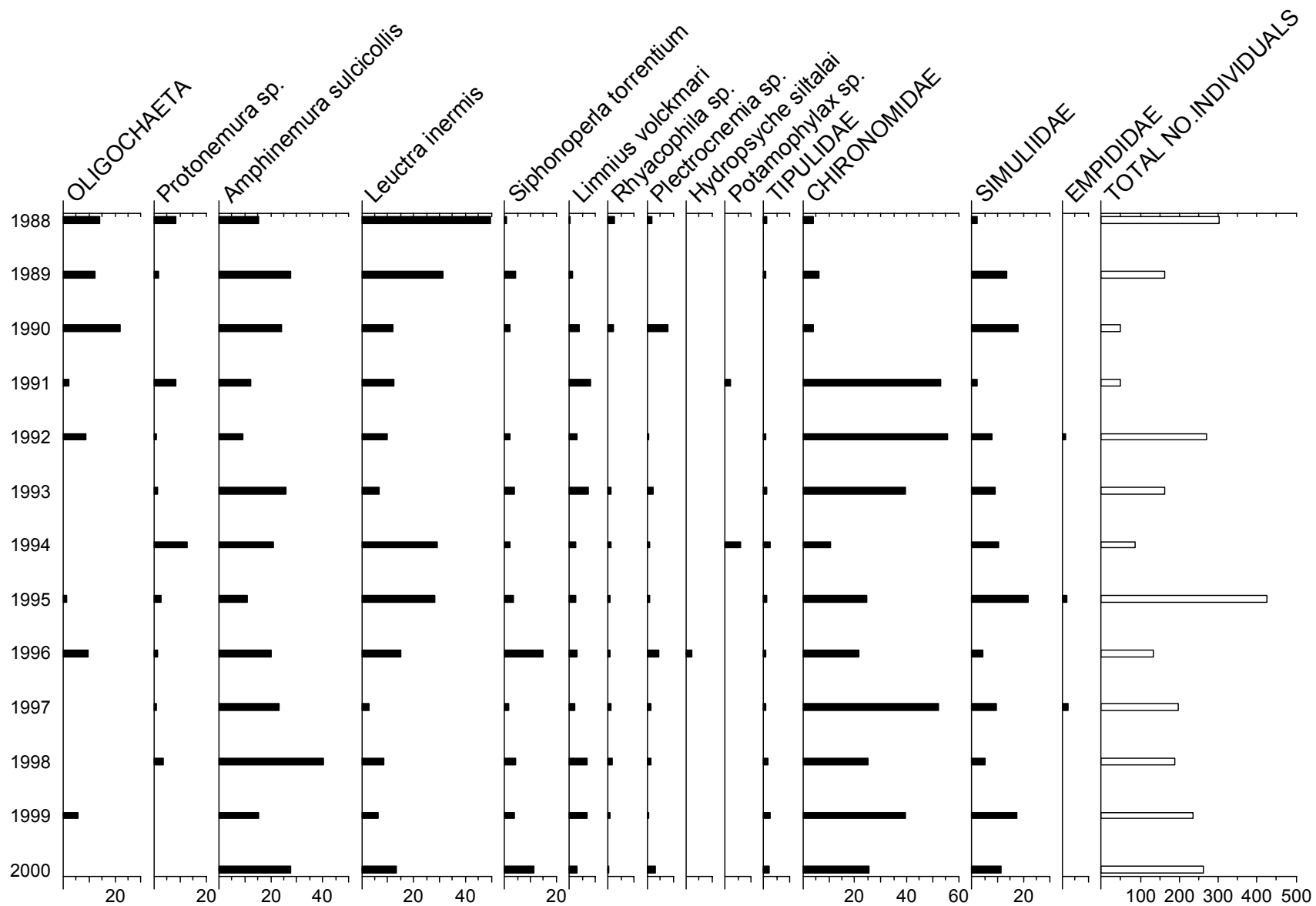
Chemistry statistics for period July 1988 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	5.17	6.27	4.38	0.47	100.0
Alk(CaCO <sub>3</sub> )	-0.30	1.85	-2.25	0.84	100.0
Cond	49.6	80.0	35.0	7.7	100.0
Ca	1.01	1.63	0.56	0.22	100.0
Mg	0.73	1.30	0.40	0.16	100.0
Na	5.96	8.10	4.10	0.80	100.0
K	0.43	0.99	0.31	0.09	100.0
Ba	0.00	0.01	0.00	0.00	90.3
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.07	0.59	0.01	0.06	100.0
Mn	0.01	0.12	0.00	0.01	100.0
Sol.Al	199.5	400.0	9.0	75.5	100.0
Sol.lab.Al	121.0	308.0	2.5	58.7	100.0
Cl	9.00	13.20	4.90	1.60	100.0
SO <sub>4</sub>	4.30	9.00	2.40	0.94	100.0
XSO <sub>4</sub>	3.02	7.75	1.21	0.90	100.0
NO <sub>3</sub>	0.38	1.08	0.08	0.19	100.0
PO <sub>4</sub>	0.01	0.54	0.00	0.05	100.0
Br	0.02	0.07	0.00	0.01	100.0
F	0.24	0.47	0.00	0.11	100.0
Si	2.80	4.90	0.90	0.95	100.0
DOC	4.55	16.00	1.20	2.81	100.0

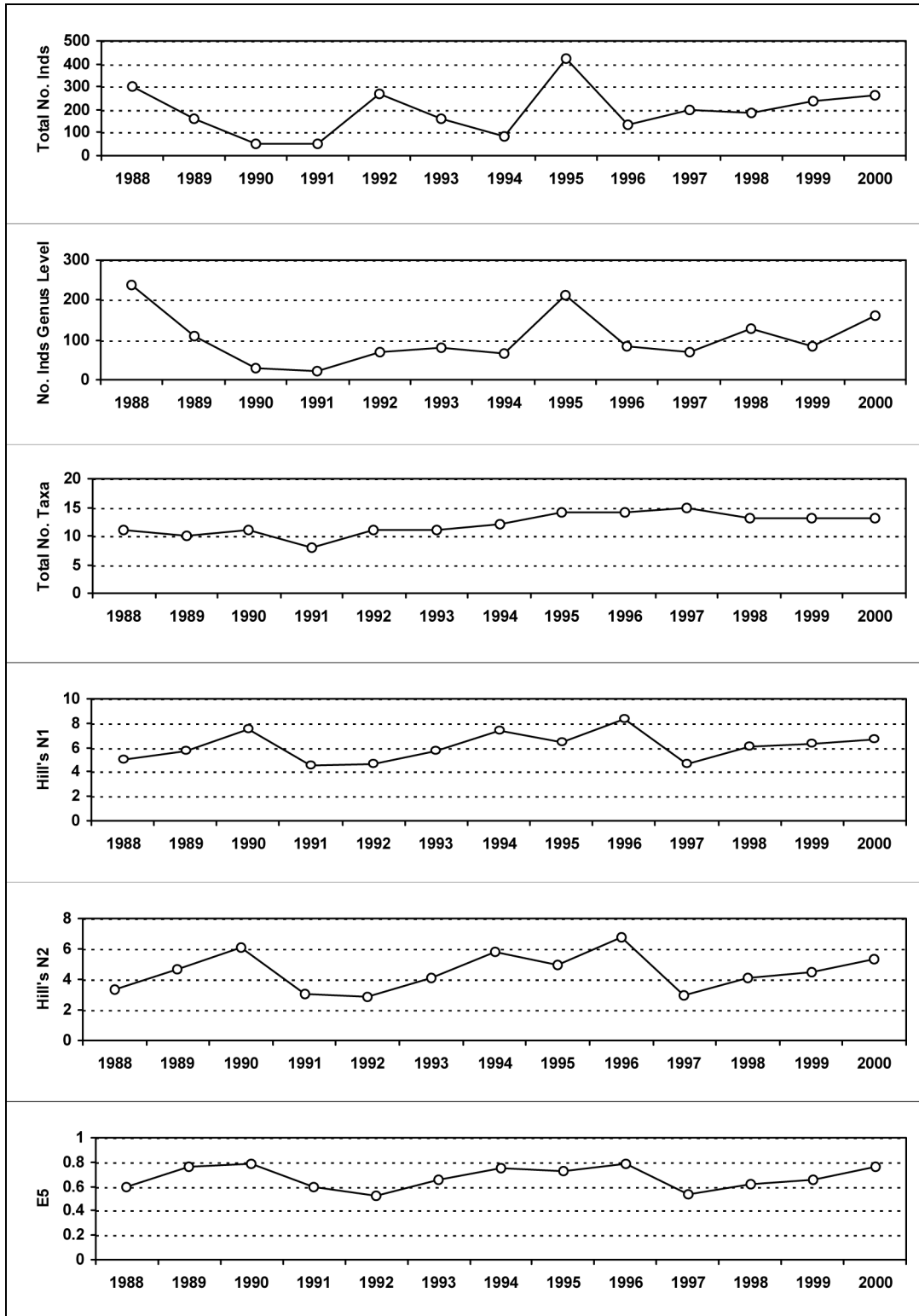
N% is the percentage of the expected number of values  
 Soluble Al in  $\mu\text{g l}^{-1}$ ; Cond in  $\mu\text{S cm}^{-1}$ , all other units in  $\text{mg l}^{-1}$ .

## 20.2. Macroinvertebrate data

### 20.2.1. Percentage abundance summary, Bencrom River

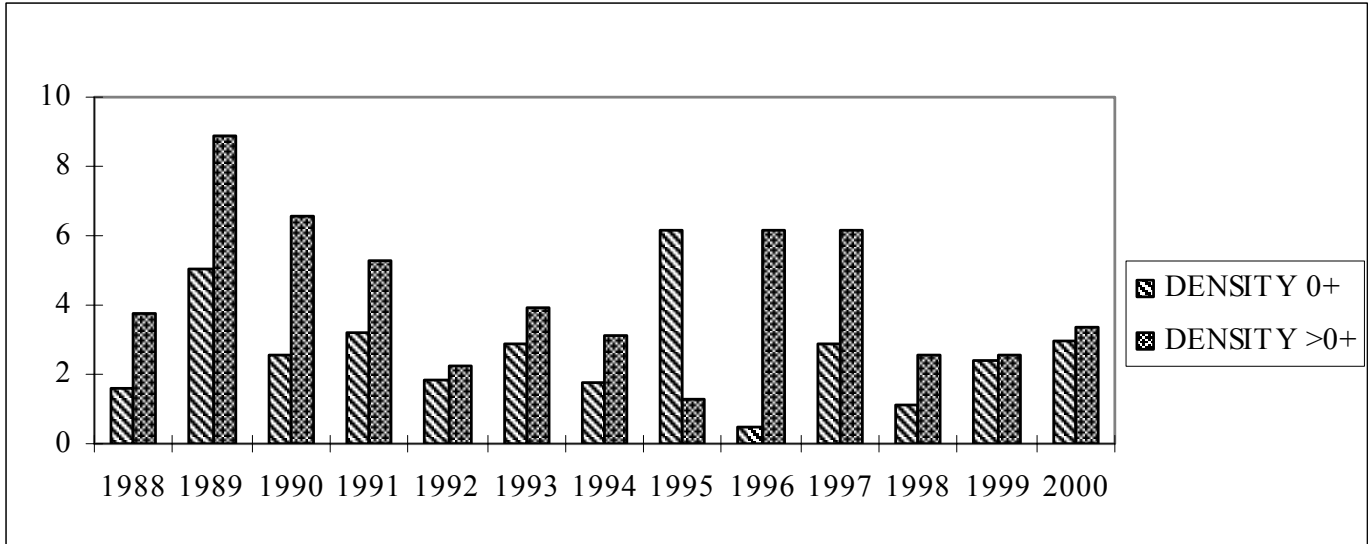


## 20.2.2. Summary statistics, Bencrom River



## 20.3. Fish data

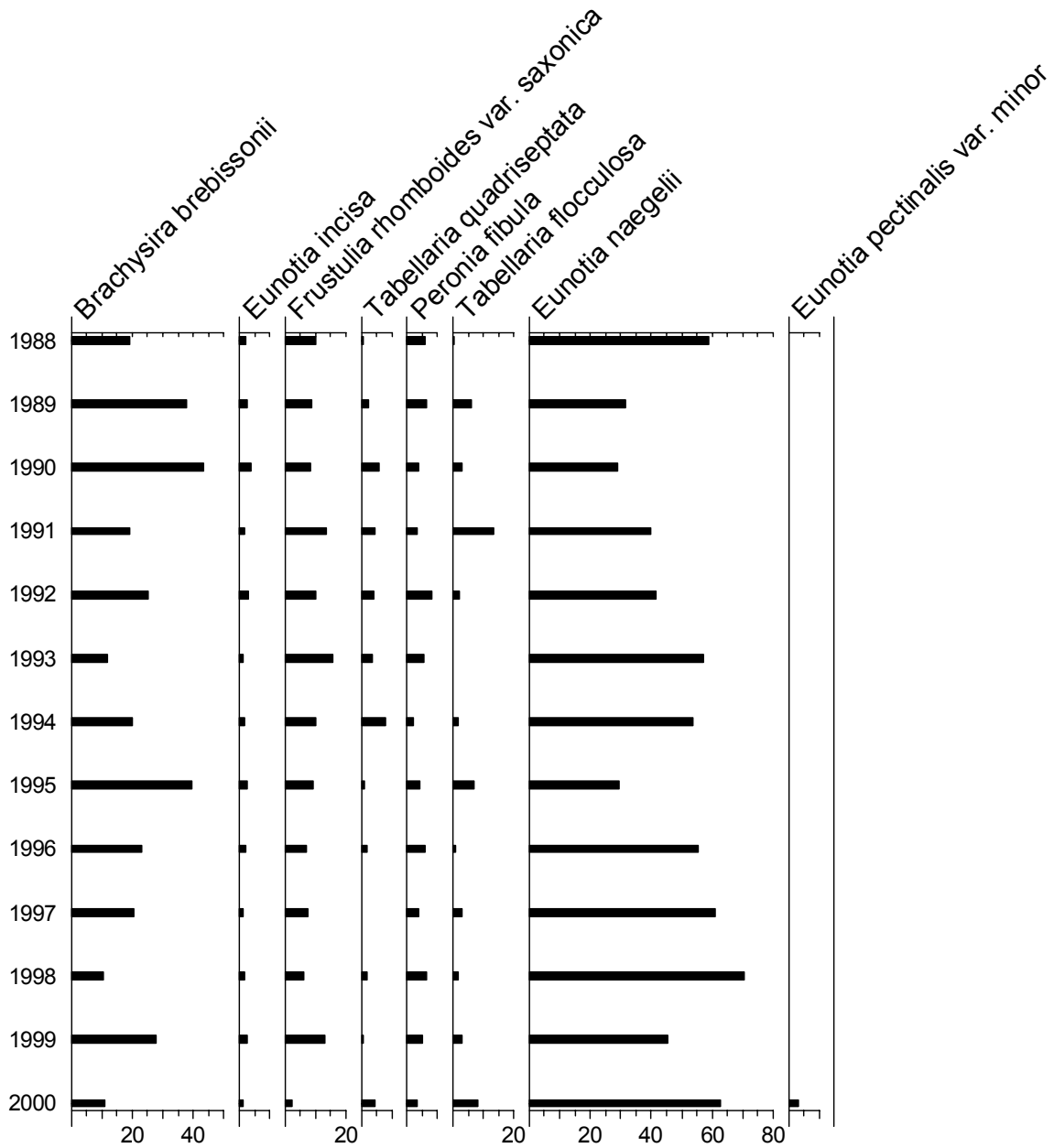
### 20.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Bencrom River



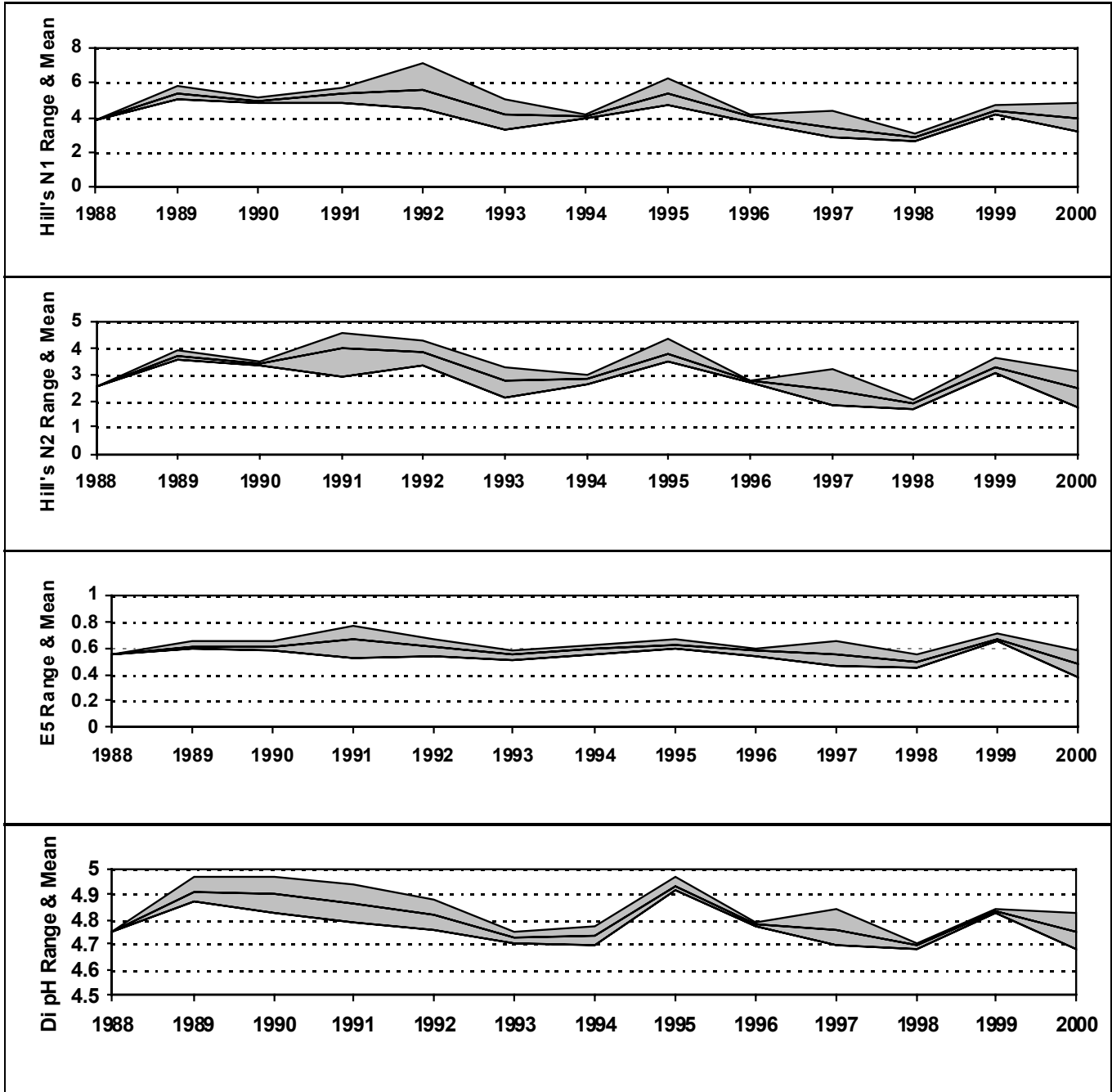


## 20.4. Epilithic diatom data

### 20.4.1. Percentage abundance summary, Bencrom River

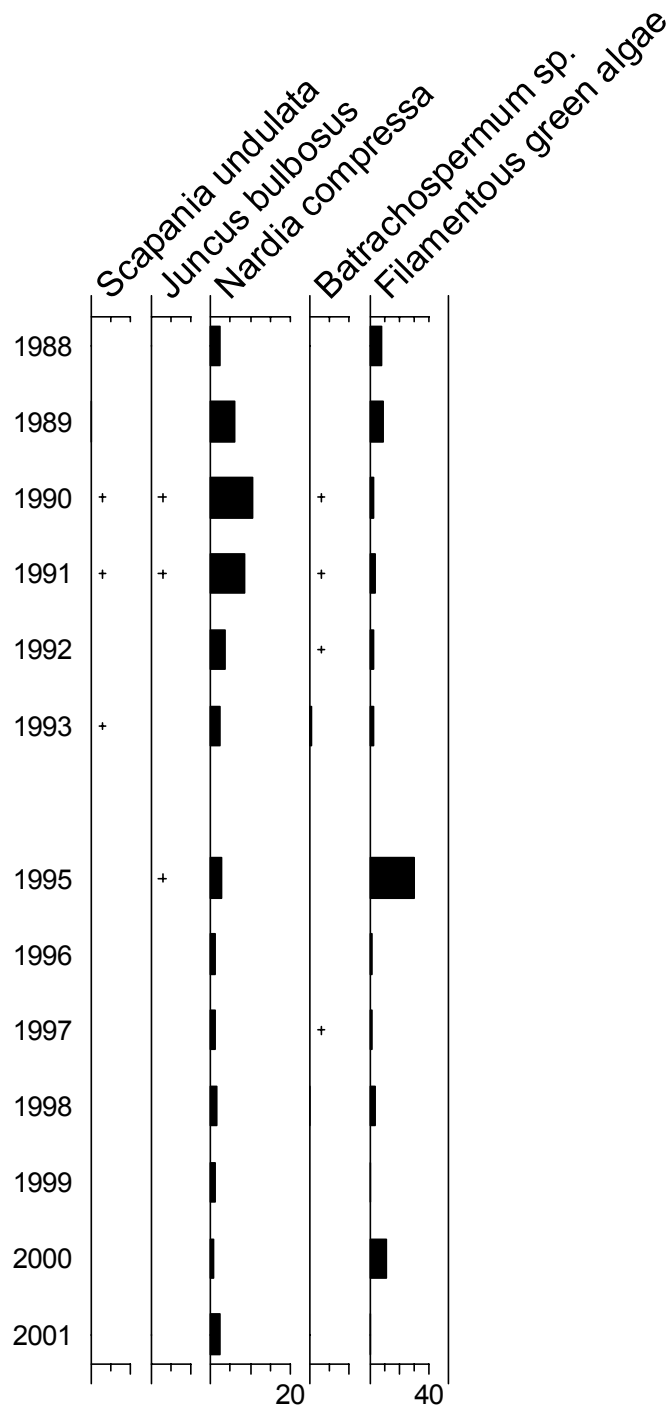


## 20.4.2. Summary statistics, Bencrom River



## 20.5. Aquatic macrophyte data, Bencrom River

Percentage Species Cover



+ Represents <0.1% abundance

# 21. Blue Lough



[Back to main map](#)

Lake altitude: 340 m  
 Maximum depth: 5.0 m  
 Mean depth: 1.7 m  
 Volume:  $0.03 \times 10^6 \text{ m}^3$

Lake area: 2 ha  
 Catchment area: 42 ha  
 Catchment:lake ratio: 19.9  
 Net relief: 363 m

Grid Ref: J 327252

Soils: Blanket peat

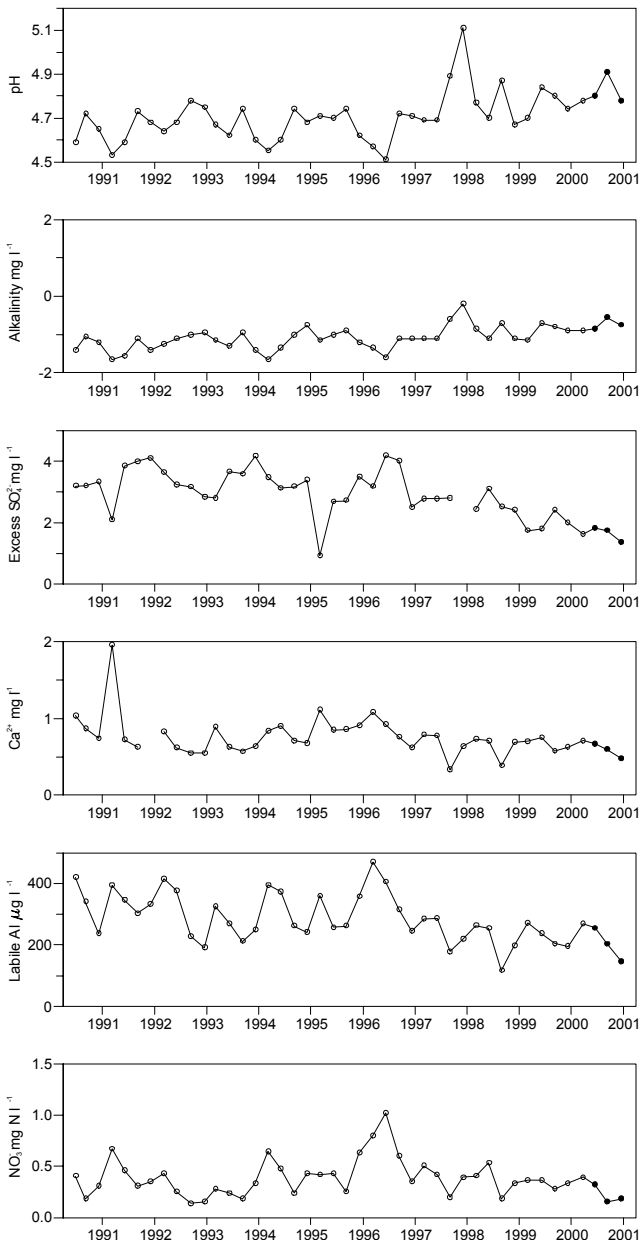
Geology: Granite

Vegetation: 100 % Moorland

## 21.1. Spot sampled chemistry data

### Time series data

○ 28Jun1990 to 31Mar2000 ● 01Apr2000 to 05Dec2000



### Current year statistics

Chemistry statistics for period April 2000 to Dec 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.83	4.91	4.78	0.07	75.0
Alk(CaCO <sub>3</sub> )	-0.72	-0.55	-0.85	0.15	75.0
Cond	47.7	51.0	44.0	3.5	75.0
Ca	0.58	0.67	0.48	0.10	75.0
Mg	0.60	0.70	0.50	0.10	75.0
Na	5.67	6.00	5.10	0.49	75.0
K	0.48	0.56	0.39	0.09	75.0
Ba	0.00	0.00	0.00	0.00	75.0
Sr	0.00	0.01	0.00	0.00	75.0
Fe	0.03	0.05	0.01	0.02	75.0
Mn	0.01	0.02	0.01	0.00	75.0
Sol.Al	270.3	326.0	234.0	49.0	75.0
Sol.lab.Al	201.3	255.0	146.0	54.5	75.0
Cl	9.93	11.00	8.60	1.22	75.0
SO <sub>4</sub>	3.07	3.40	2.60	0.42	75.0
XSO <sub>4</sub>	1.66	1.84	1.38	0.24	75.0
NO <sub>3</sub>	0.22	0.32	0.15	0.09	75.0
PO <sub>4</sub>	<b>All recorded data below detection limit.</b>				
Br	0.03	0.04	0.01	0.01	75.0
F	0.16	0.19	0.12	0.03	75.0
Si	0.80	1.40	0.30	0.56	75.0
DOC	4.00	4.50	3.70	0.44	75.0

N% is the percentage of the expected number of values  
 Soluble Al in μg l<sup>-1</sup>, Cond in μs cm<sup>-1</sup>, all other units in mg l<sup>-1</sup>

### Past record statistics

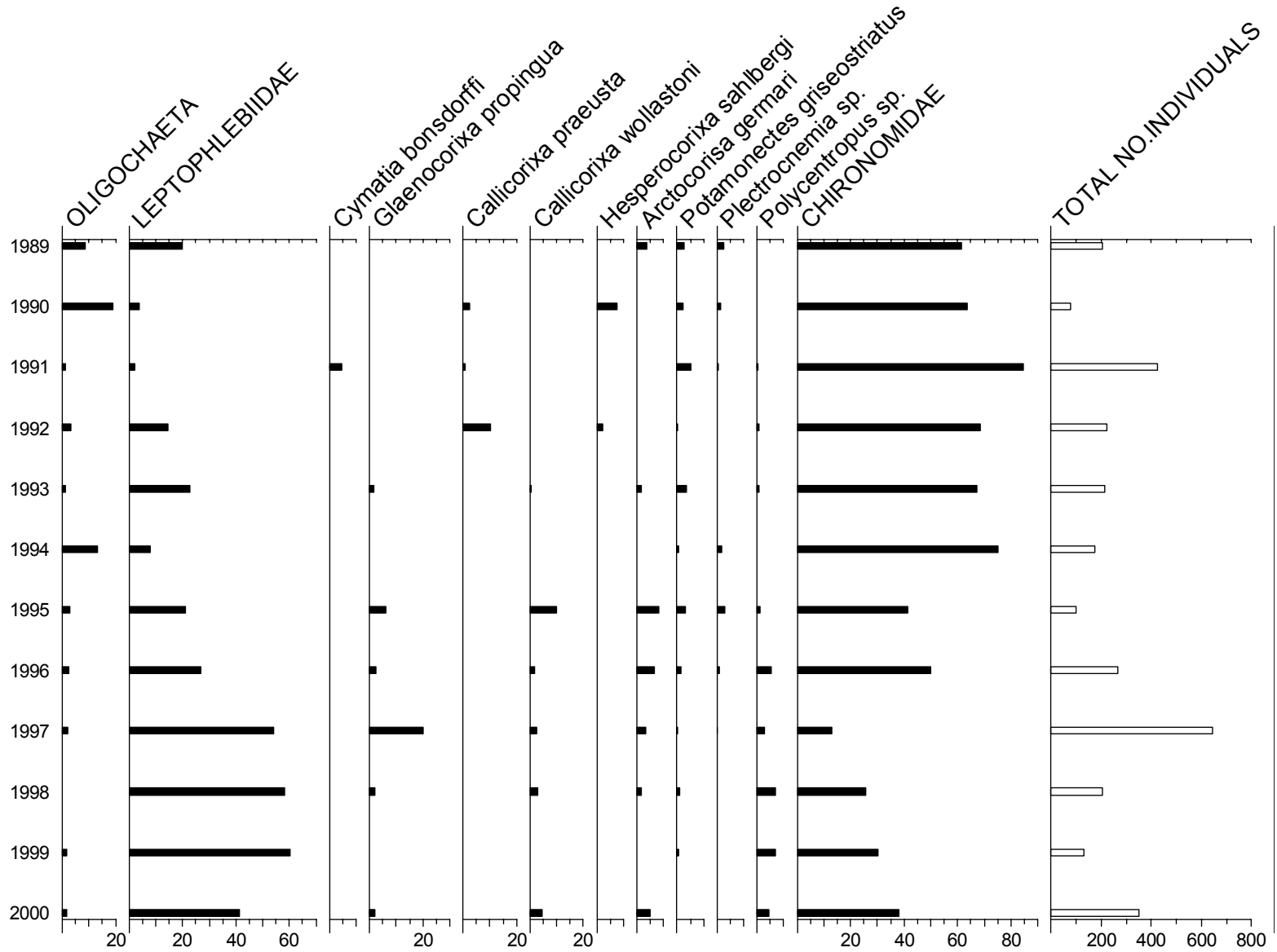
Chemistry statistics for period June 1990 to March 2000

	Mean	Max.	Min.	Std. Dev.	N%
pH	4.70	5.11	4.51	0.11	100.0
Alk(CaCO <sub>3</sub> )	-1.10	-0.20	-1.65	0.30	100.0
Cond	54.5	73.0	33.0	8.9	100.0
Ca	0.77	1.96	0.33	0.26	100.0
Mg	0.70	1.10	0.30	0.17	100.0
Na	5.85	8.50	2.80	0.97	100.0
K	0.50	0.99	0.36	0.13	100.0
Ba	0.00	0.01	0.00	0.00	90.0
Sr	0.01	0.01	0.00	0.00	100.0
Fe	0.06	0.87	0.01	0.14	100.0
Mn	0.02	0.19	0.01	0.03	100.0
Sol.Al	361.9	520.0	254.0	69.1	100.0
Sol.lab.Al	289.4	470.0	118.0	79.0	100.0
Cl	9.71	14.20	4.80	2.09	100.0
SO <sub>4</sub>	4.35	5.70	1.70	0.81	100.0
XSO <sub>4</sub>	2.98	4.19	0.93	0.76	100.0
NO <sub>3</sub>	0.39	1.02	0.14	0.18	100.0
PO <sub>4</sub>	0.00	0.03	0.00	0.00	90.0
Br	0.03	0.05	0.01	0.01	100.0
F	0.17	0.25	0.00	0.05	100.0
Si	0.97	5.40	0.04	0.88	100.0
DOC	3.70	6.80	1.40	1.20	100.0

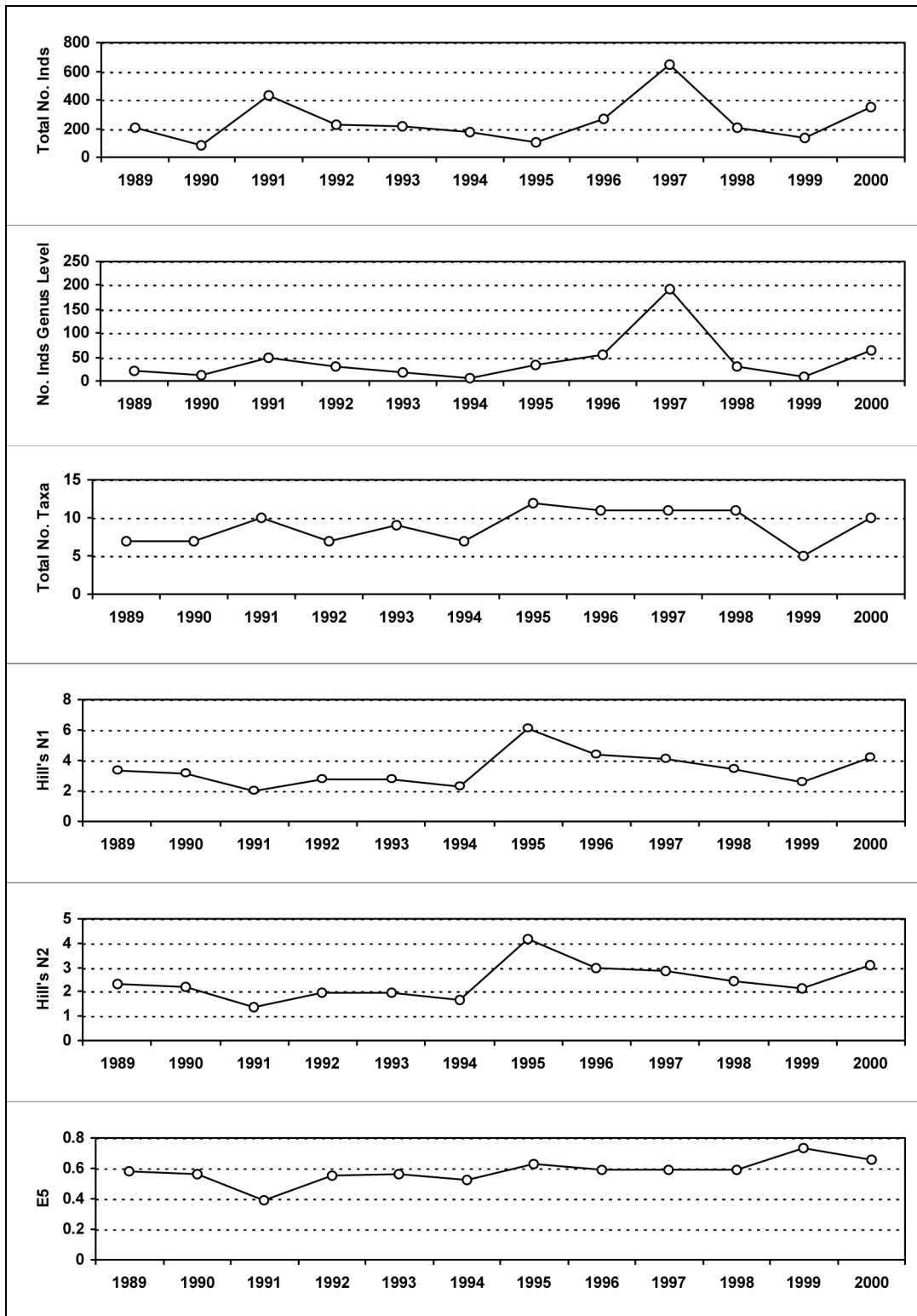
N% is the percentage of the expected number of values  
 Soluble Al in μg l<sup>-1</sup>, Cond in μs cm<sup>-1</sup>, all other units in mg l<sup>-1</sup>

## 21.2. Macroinvertebrate data

### 21.2.1. Percentage abundance summary, Blue Lough

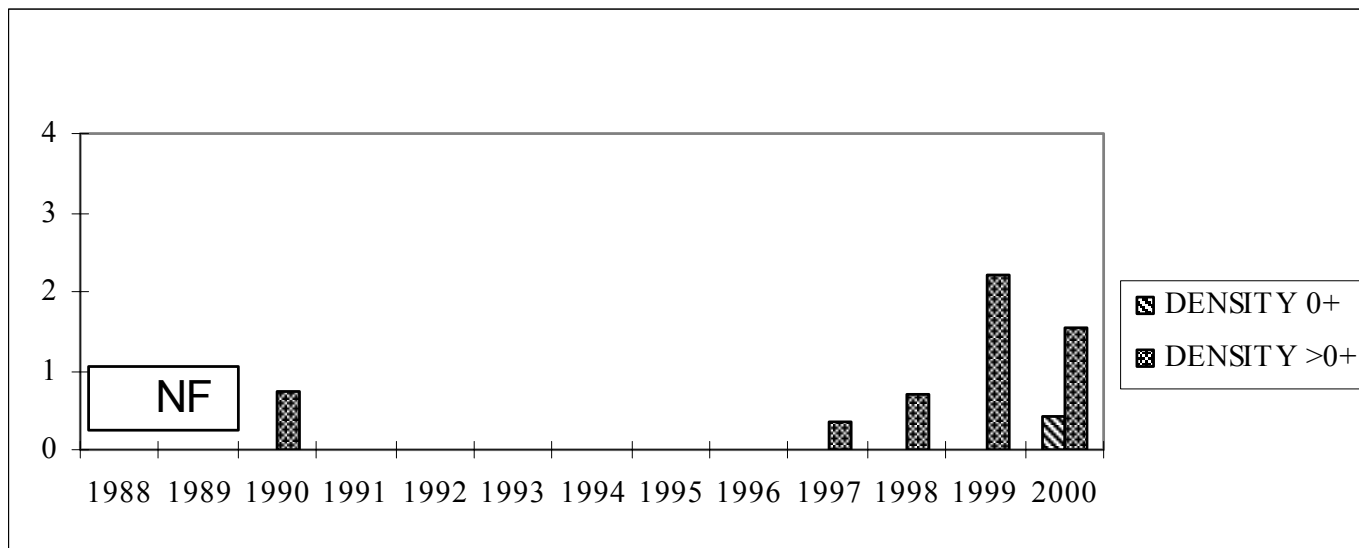


## 21.2.2. Summary statistics, Blue Lough



### 21.3. Fish data (for outflow stream)

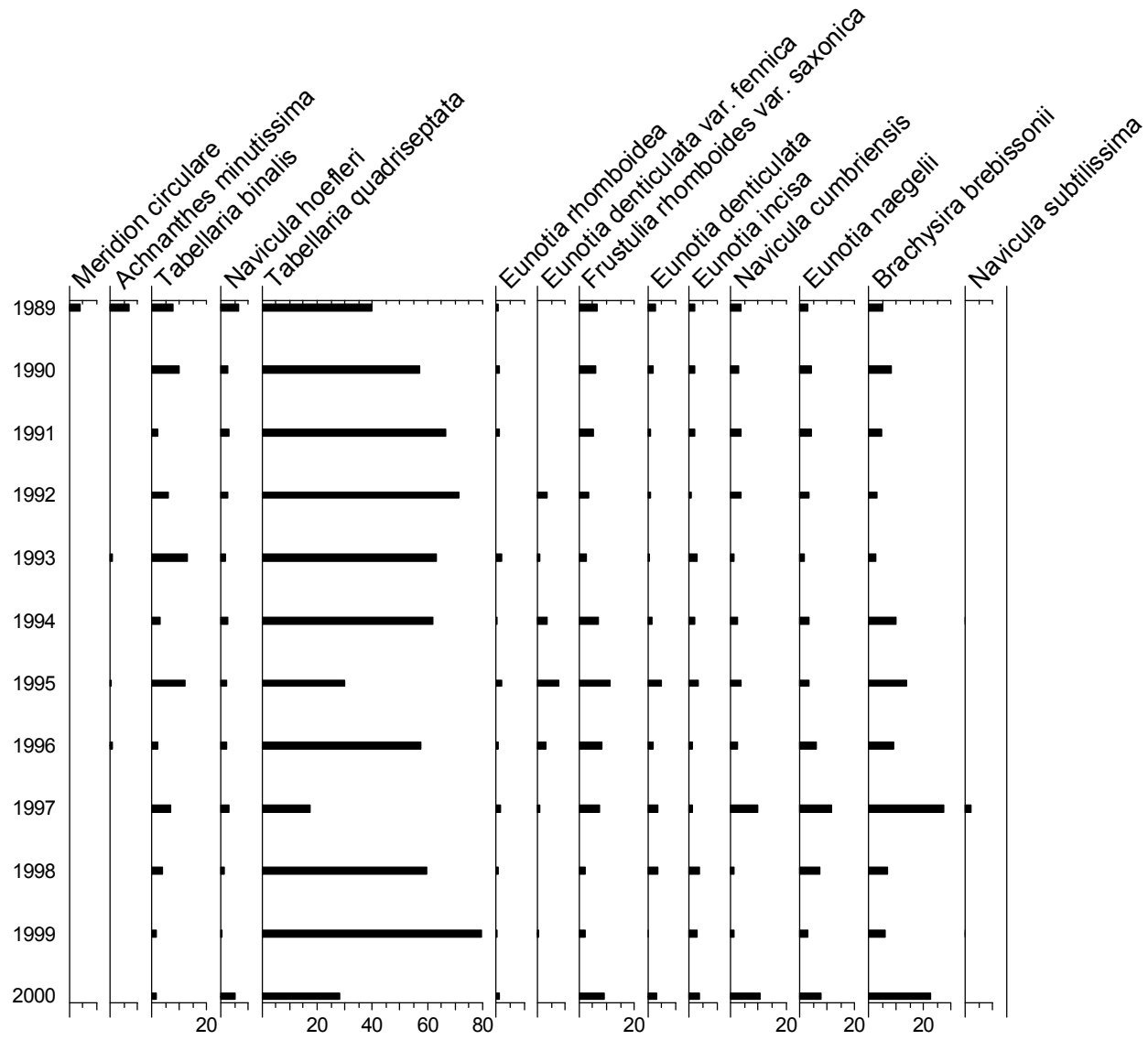
#### 21.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Blue Lough



NF = Not fished

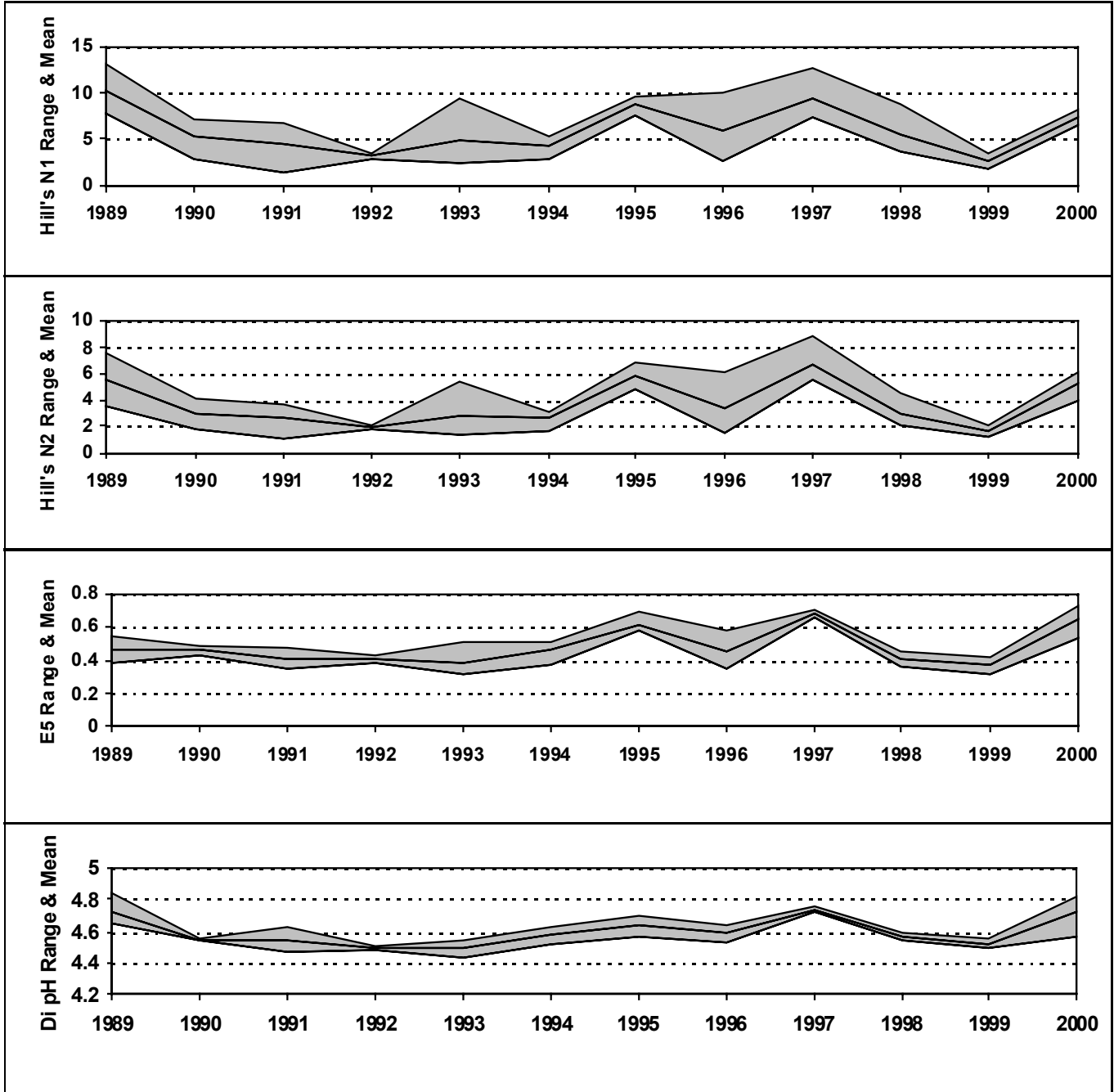
## 21.4. Epilithic diatom data

### 21.4.1. Percentage abundance summary, Blue Lough



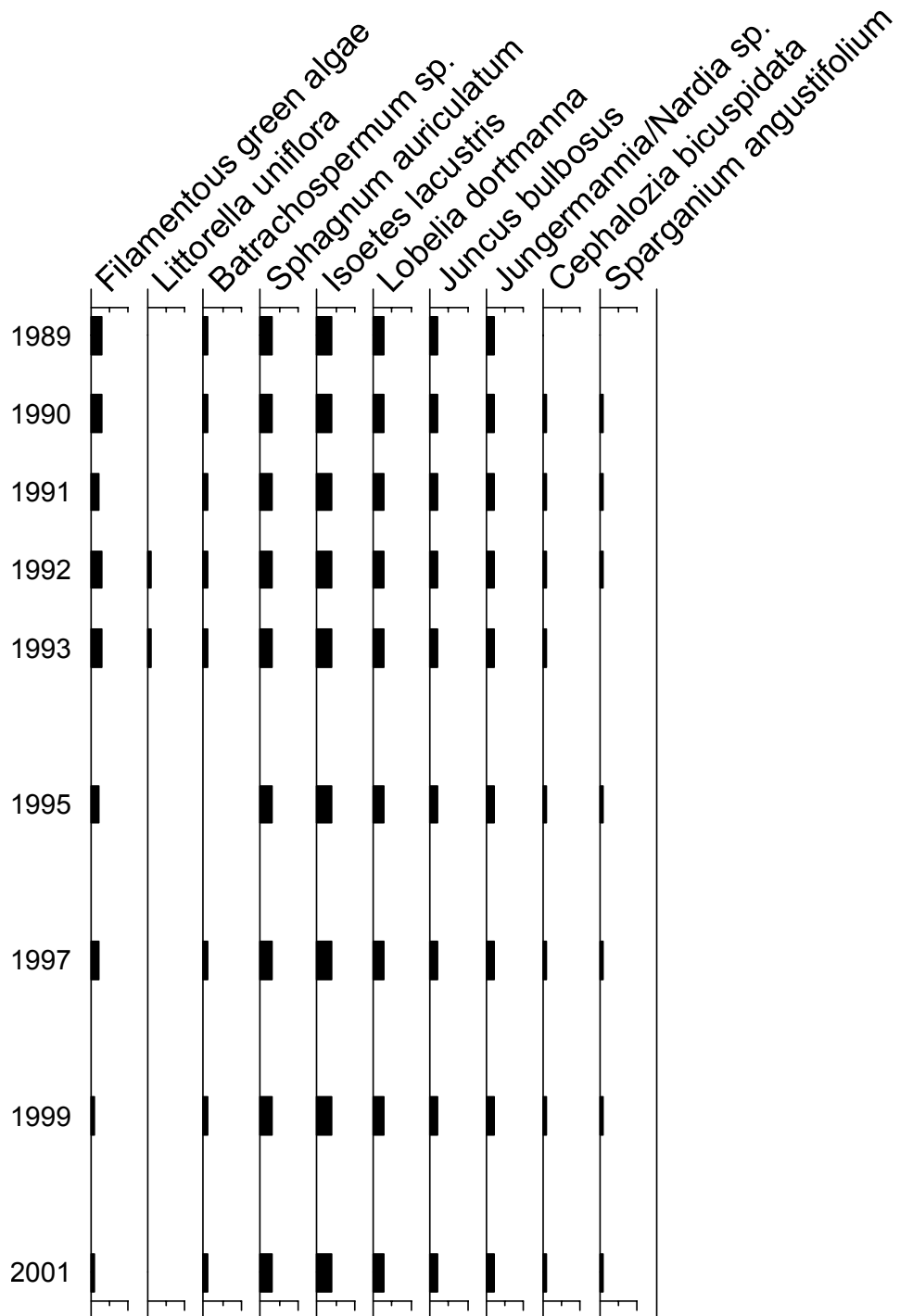


### 21.4.2. Summary statistics, Blue Lough



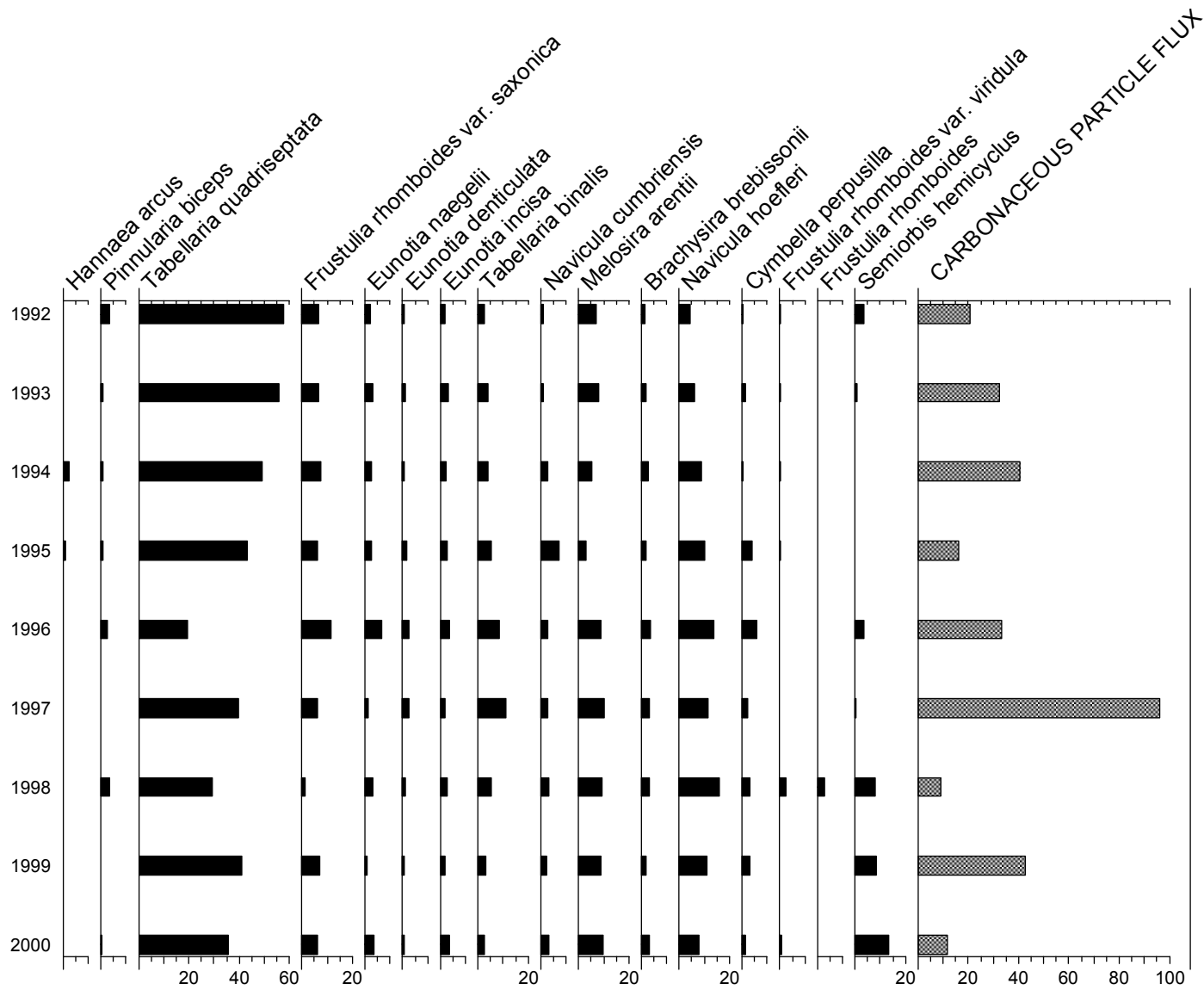
## 21.5. Aquatic macrophyte data, Blue Lough

### Species Scores (1-5)



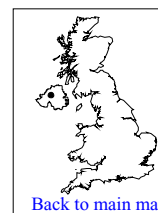
## 21.6. Sediment trap data, Blue Lough

Relative percentage frequency of diatom taxa and carbonaceous particle flux (no. trap<sup>-1</sup> day<sup>-1</sup>).



## 22. Coneyglen Burn

Catchment area: 1414 ha  
 Minimum catchment altitude: 230 m  
 Maximum catchment altitude: 562 m



[Back to main map](#)

Grid Ref: H 640885

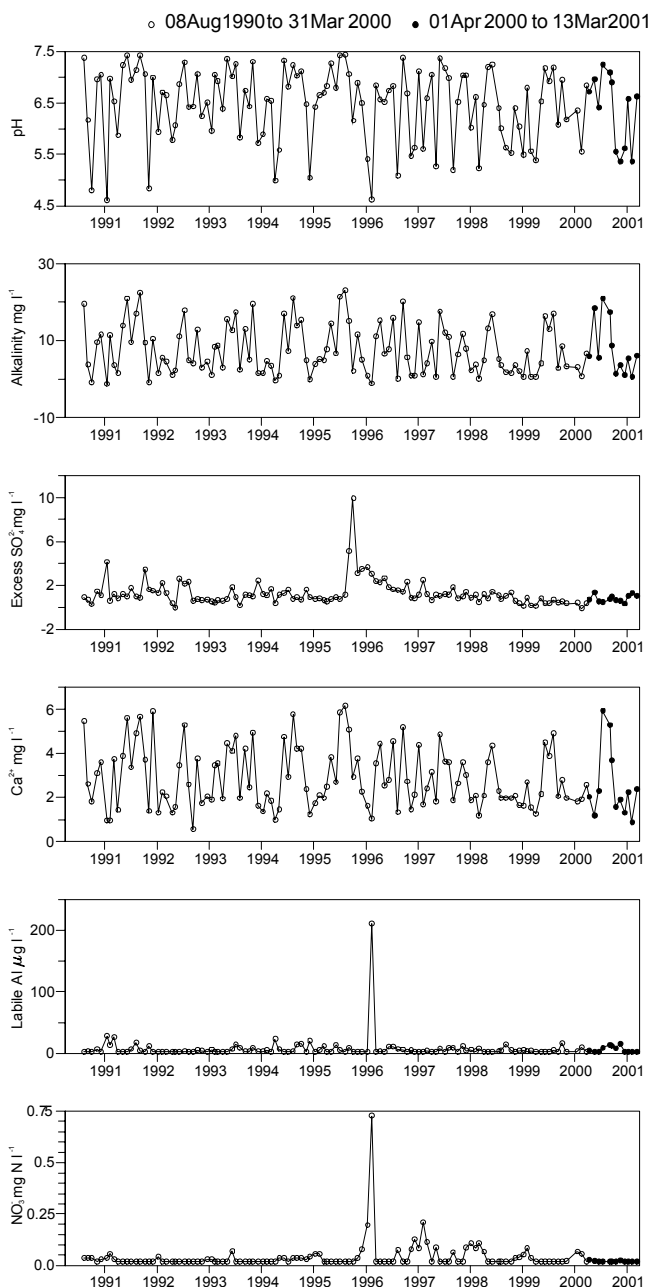
Soils: Blanket peat

Geology: Schists

Vegetation: 95 % Moorland  
 5 % Conifers

### 22.1. Spot sampled chemistry data

#### Time series data



#### Current year statistics

Chemistry statistics for period April 2000 to March 2001

	Mean	Max.	Min.	Std. Dev.	N %
pH	6.36	7.24	5.36	0.70	100.0
Alk(CaCO <sub>3</sub> )	7.87	20.95	0.50	7.11	100.0
Cond	48.6	72.0	32.0	13.9	100.0
Ca	2.55	5.93	0.88	1.60	100.0
Mg	1.43	2.40	0.50	0.68	100.0
Na	4.63	5.70	3.30	0.78	100.0
K	0.37	0.77	0.15	0.16	100.0
Ba	0.01	0.01	0.00	0.00	100.0
Sr	0.01	0.02	0.00	0.01	100.0
Fe	0.99	2.63	0.04	0.87	100.0
Mn	0.10	0.27	0.00	0.08	100.0
Sol.Al	41.3	88.0	19.0	19.2	100.0
Sol.lab.Al	6.5	16.0	2.5	5.1	100.0
Cl	7.66	9.80	5.50	1.35	100.0
SO <sub>4</sub>	1.92	2.30	1.40	0.34	100.0
XSO <sub>4</sub>	0.83	1.38	0.35	0.33	100.0
NO <sub>3</sub>	0.02	0.03	0.02	0.00	100.0
PO <sub>4</sub>	0.00	0.02	0.00	0.00	100.0
Br	0.02	0.04	0.01	0.01	75.0
F	0.03	0.04	0.01	0.01	100.0
Si	1.01	2.10	0.20	0.58	100.0
DOC	11.86	25.00	6.00	5.64	100.0

N% is the percentage of the expected number of values  
 Soluble Al in µg l<sup>-1</sup>; Cond in µs cm<sup>-1</sup>; all other units in mg l<sup>-1</sup>

#### Past record statistics

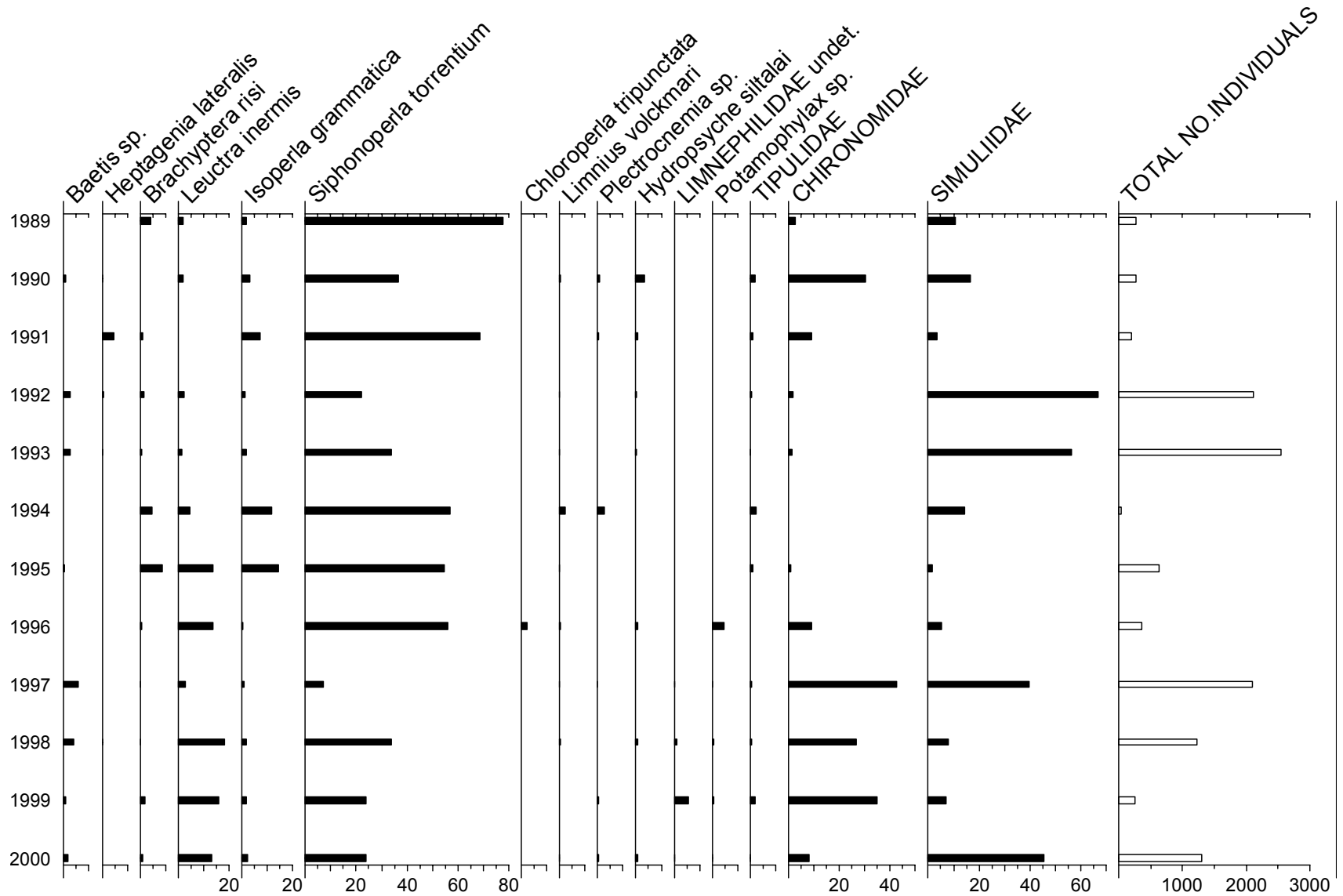
Chemistry statistics for period Aug 1990 to March 2000

	Mean	Max.	Min.	Std. Dev.	N %
pH	6.47	7.44	4.60	0.72	100.0
Alk(CaCO <sub>3</sub> )	7.62	23.05	-1.30	6.47	100.0
Cond	54.2	83.0	31.0	11.6	100.0
Ca	2.89	6.17	0.54	1.37	100.0
Mg	1.42	2.50	0.50	0.49	100.0
Na	5.44	8.60	3.20	0.82	100.0
K	0.42	0.90	0.24	0.10	93.3
Ba	0.01	0.01	0.00	0.00	100.0
Sr	0.01	0.02	0.00	0.00	100.0
Fe	0.89	3.06	0.02	0.57	100.0
Mn	0.15	0.40	0.00	0.08	100.0
Sol.Al	41.8	264.0	6.0	28.3	100.0
Sol.lab.Al	7.4	211.0	2.5	19.9	100.0
Cl	9.10	17.60	3.70	2.24	100.0
SO <sub>4</sub>	2.58	11.40	1.00	1.21	100.0
XSO <sub>4</sub>	1.29	9.90	-0.10	1.19	100.0
NO <sub>3</sub>	0.04	0.73	0.02	0.07	100.0
PO <sub>4</sub>	0.01	0.14	0.00	0.02	93.3
Br	0.03	0.26	0.00	0.02	100.0
F	0.03	0.25	0.00	0.03	100.0
Si	1.23	2.40	0.30	0.56	100.0
DOC	9.13	26.90	1.70	5.10	100.0

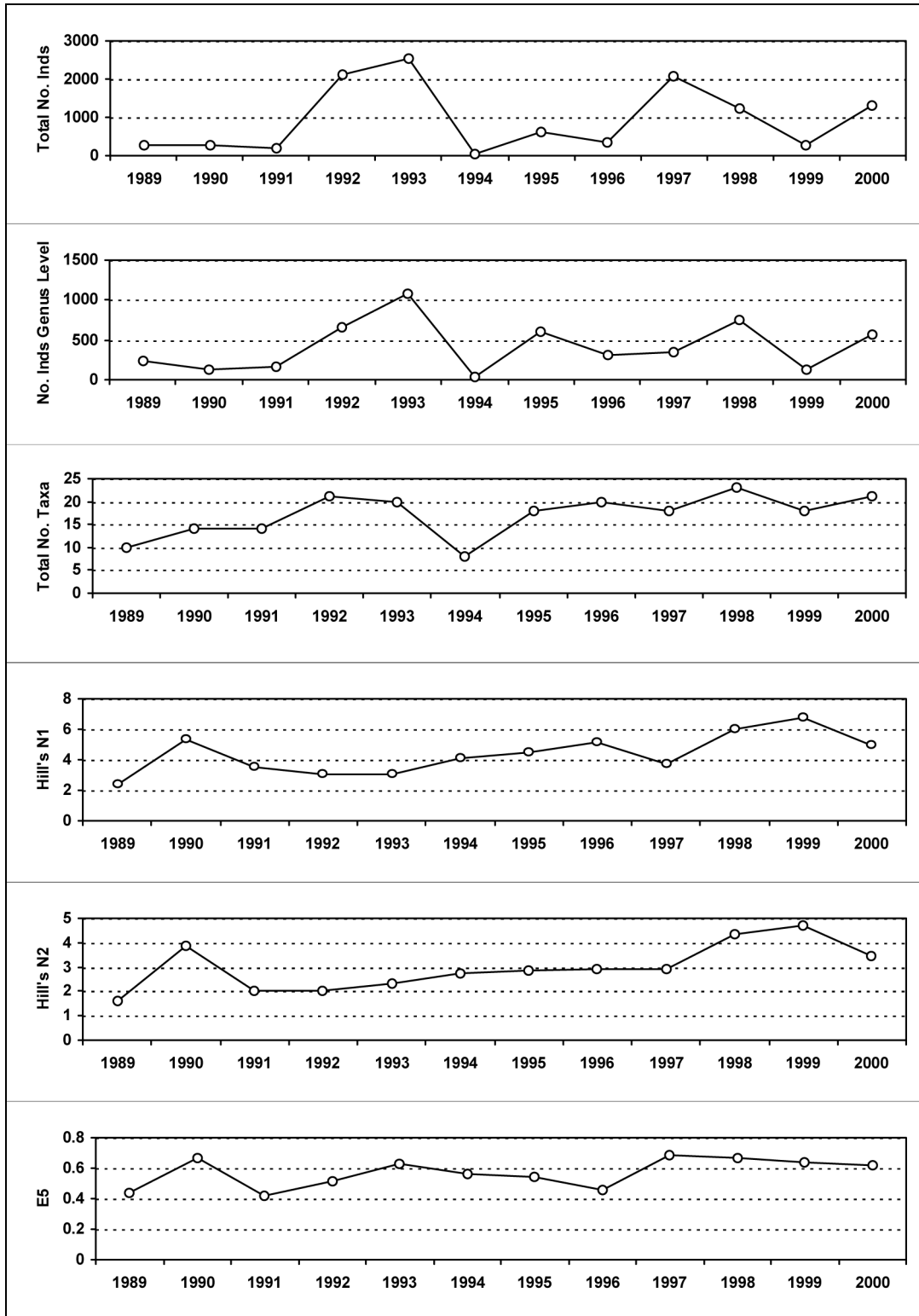
N% is the percentage of the expected number of values  
 Soluble Al in µg l<sup>-1</sup>; Cond in µs cm<sup>-1</sup>; all other units in mg l<sup>-1</sup>

## 22.2. Macroinvertebrate data

### 22.2.1. Percentage abundance summary, Coneyglen Burn

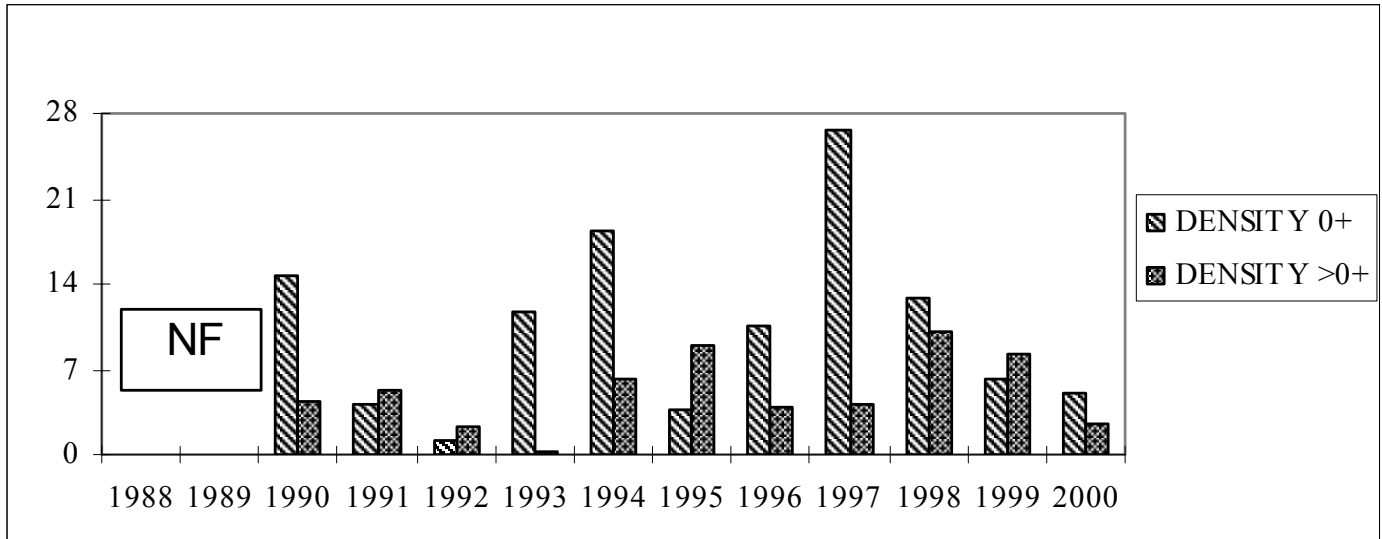


## 22.2.2. Summary statistics, Coneyglen Burn



## 22.3. Fish data

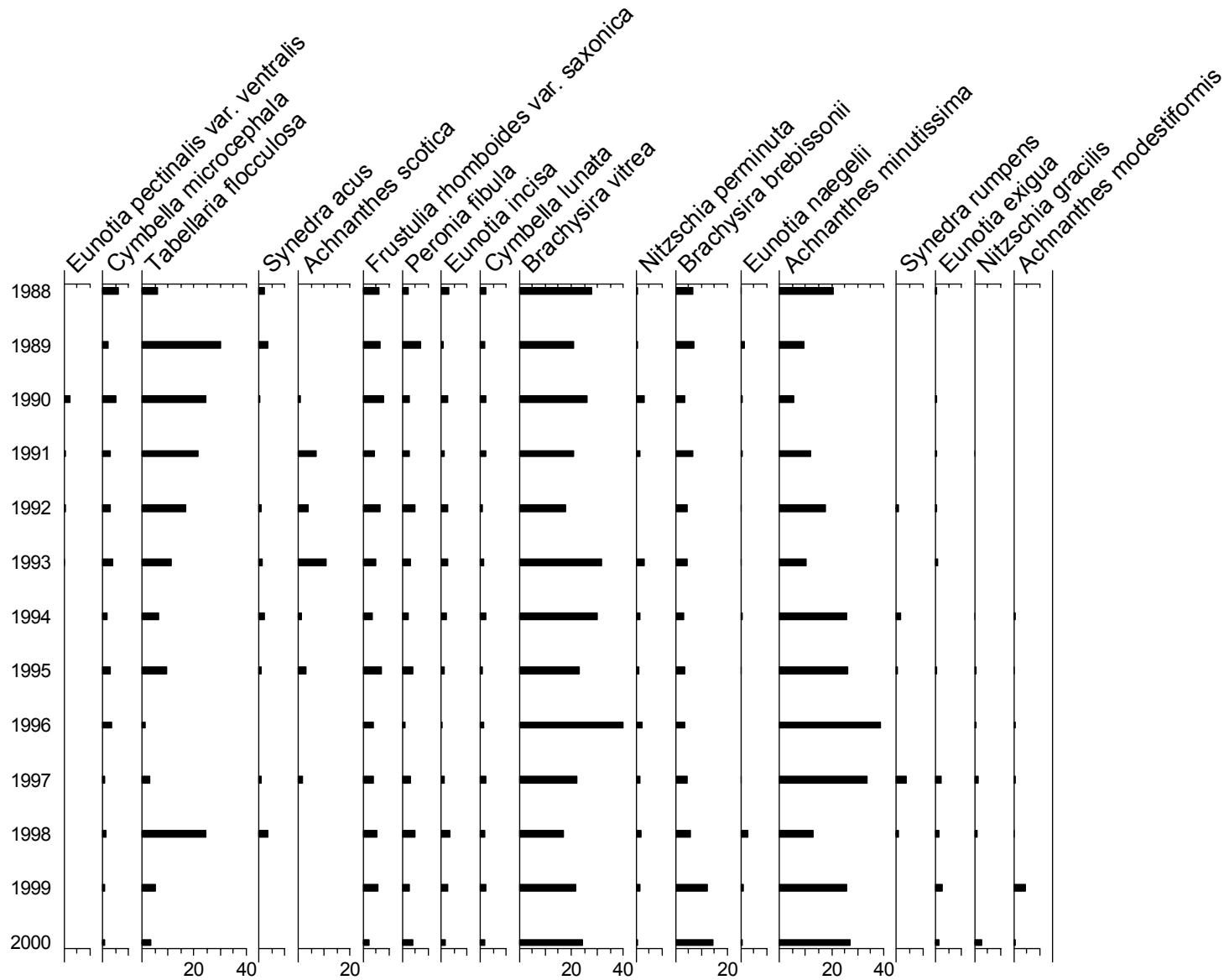
### 22.3.1. Summary of mean Trout density (numbers 100m<sup>-2</sup>), Coneyglen Burn



NF = Not fished

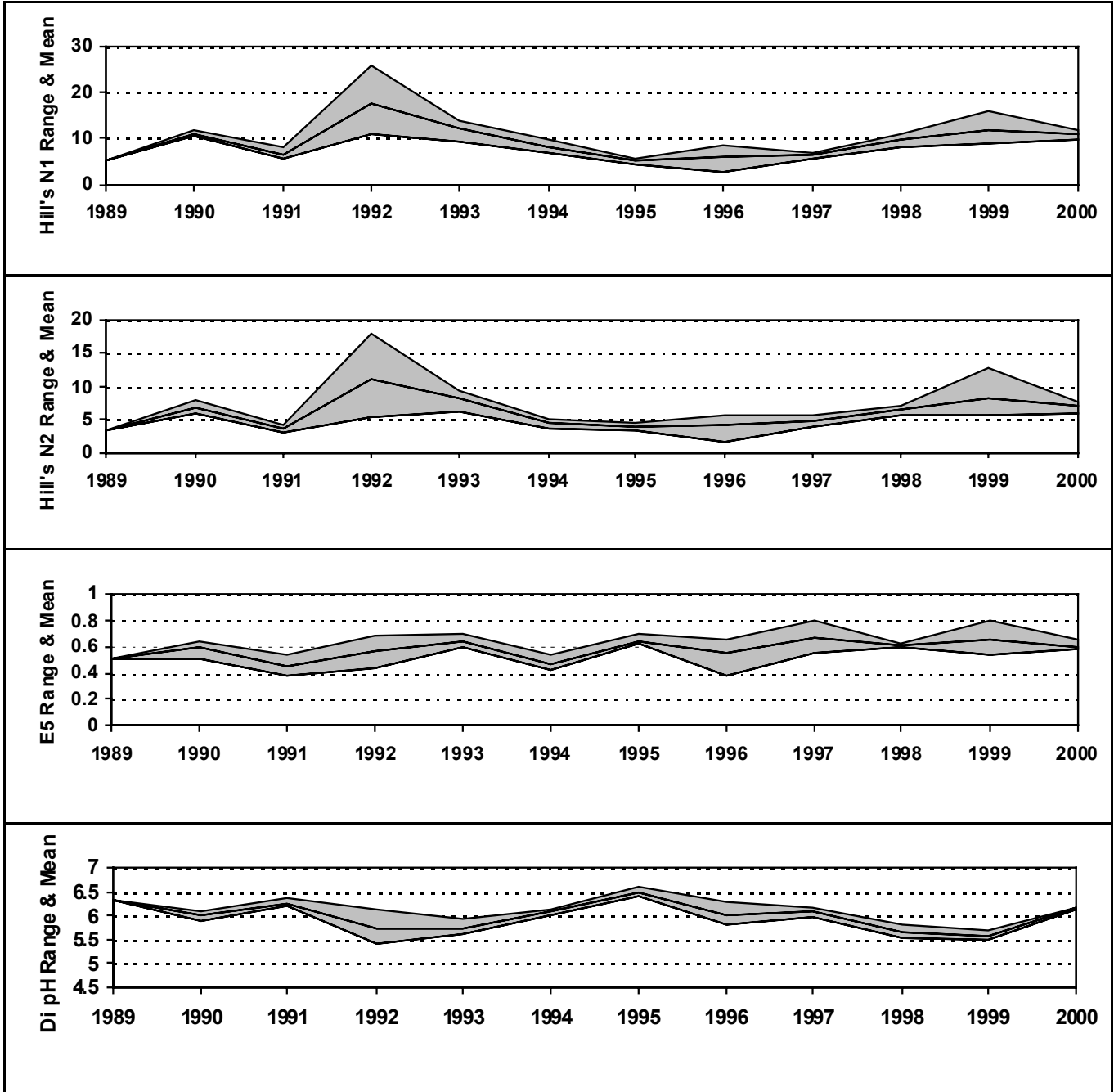
## 22.4. Epilithic diatom data

### 22.4.1. Percentage abundance summary, Coneyglen Burn



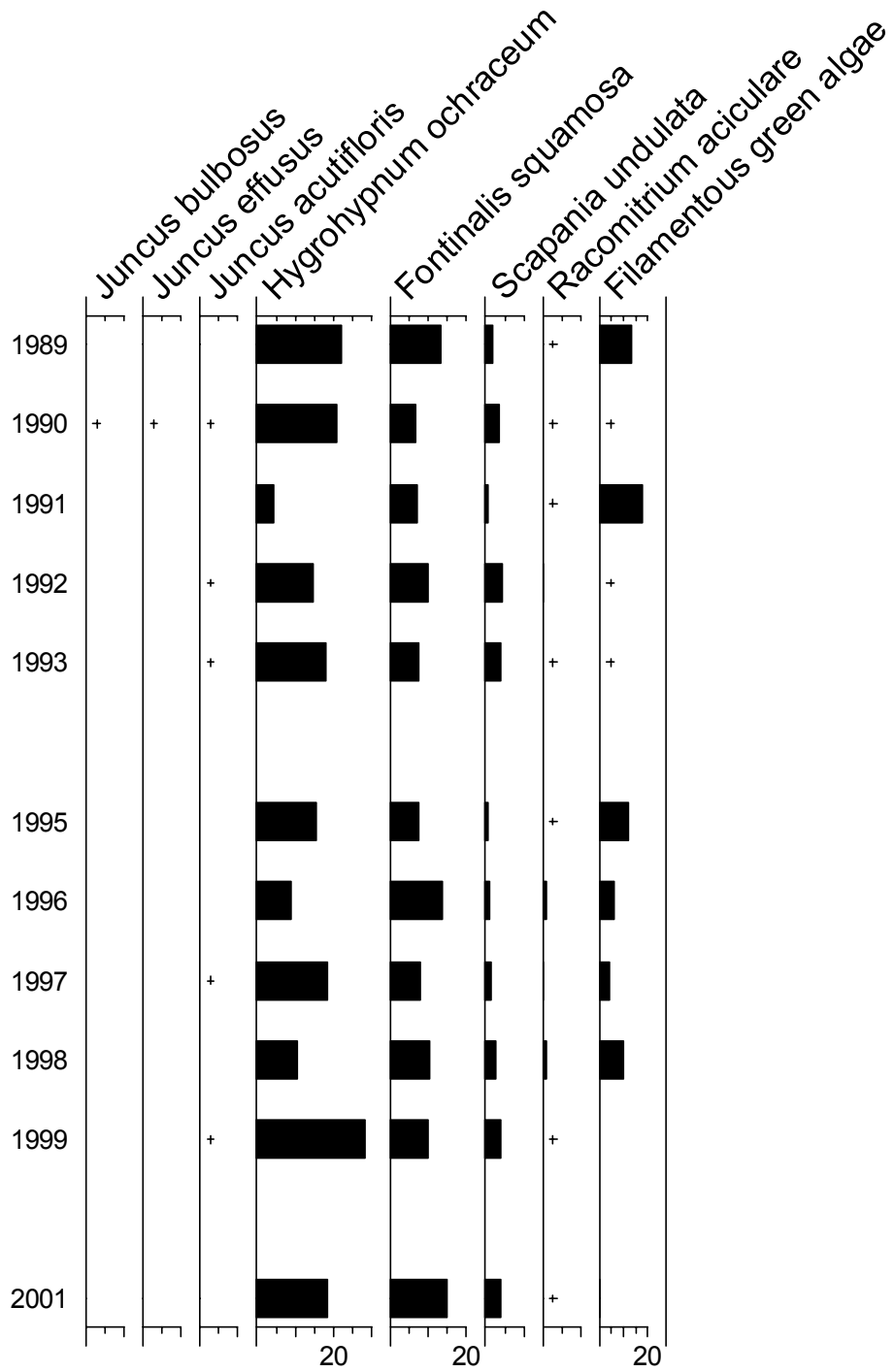


## 22.4.2. Summary statistics, Coneyglen Burn



## 22.5. Aquatic macrophyte data, Coneyglen Burn

Percentage Species Cover



+ Represents <0.1% abundance