

**UK Acid Waters Monitoring Network  
Report to DEFRA under Contract  
Variation Request AQ0820**

**April 2013**

**E. M. Shilland**



# 1. Contents

1.	Contents .....	1
1.1.	List of Tables.....	1
2.	Introduction.....	2
3.	Epilithic Diatoms .....	3
3.1.	Allt na Coire nan Con.....	3
3.2.	Loch Chon .....	3
3.3.	Loch Tinker .....	3
3.4.	Loch Grannoch .....	4
3.5.	Dargall Lane .....	4
3.6.	Old Lodge.....	4
3.7.	Narrator Brook .....	5
3.8.	Beaghs Burn .....	5
3.9.	Bencrom River .....	5
3.10.	Blue Lough .....	6
3.11.	Coneyglen Burn.....	6
3.12.	Danby Beck .....	6
4.	Sediment Trap Diatoms .....	7
4.1.	Loch Chon .....	7
4.2.	Loch Tinker .....	7
4.3.	Loch Grannoch .....	7
4.4.	Blue Lough.....	7
5.	Macroinvertebrates .....	8
5.1.	Allt na Coire nan Con.....	8
5.2.	Loch Chon .....	8
5.3.	Loch Tinker .....	8
5.4.	Loch Grannoch.....	9
5.5.	Dargall Lane .....	9
5.6.	Old Lodge.....	9
5.7.	Narrator Brook .....	10
5.8.	Blue Lough.....	10
5.9.	Bencrom River .....	10
5.10.	Coneyglen Burn.....	11
5.11.	Beagh's Burn .....	11
5.12.	Danby Beck .....	11
6.	Macrophytes.....	11
6.1.	Allt na Coire nan Con.....	11
6.2.	Dargall Lane .....	12
6.3.	Old Lodge.....	12
6.4.	Narrator Brook .....	12
6.5.	Bencrom River .....	12
6.6.	Beagh's Burn .....	13
6.7.	Coneyglen Burn.....	13
6.8.	Danby Beck .....	13
6.9.	Loch Chon.....	14
6.10.	Loch Tinker .....	14
6.11.	Loch Grannoch .....	14
6.12.	Blue Lough .....	14
7.	Thermistors .....	14

## 1.1. List of Tables

Table 1	Schedule of additional work February – March 2013 .....	2
---------	---	---

Cover photo: Loch Tinker, 7<sup>th</sup> August 2012 © Ewan Shilland

## 2. Introduction

This report lists the additional work carried out by the UK Acid Waters Monitoring Network Consortium for DEFRA, under Contract Variation Request AQ0820, between February 2013 and March 2013. A summary of the work is presented in Table 1 and further details of individual work units are provided in the following sections.

**Table 1 Schedule of additional work February – March 2013**

<b>Activity</b>	<b>Site</b>	<b>2011-12</b>	<b>2012-13</b>
<b>Epilithic Diatoms</b>	Allt na Coire nan Con	Analyse & report	Prepare & archive
	L. Chon	Analyse & report	Prepare & archive
	L. Tinker	Analyse & report	Prepare & archive
	L. Grannoch	Analyse & report	Prepare & archive
	Dargall Lane	Analyse & report	Prepare & archive
	Old Lodge	Analyse & report	Prepare & archive
	Narrator Brook	Analyse & report	Prepare & archive
	Beagh's Burn	Analyse & report	Prepare & archive
	Bencrom River	Analyse & report	Prepare & archive
	Blue Lough	Analyse & report	Prepare & archive
	Coneyglen Burn	Analyse & report	Prepare & archive
	Danby Beck	Analyse & report	Prepare & archive
	<b>Sediment Trap Diatoms</b>	L. Chon	
L. Tinker		Analyse & report	Prepare & archive
L. Grannoch		Analyse & report	Prepare & archive
Blue Lough		Analyse & report	Prepare & archive
<b>Macroinvertebrates</b>	Allt na Coire nan Con	Report	Analyse
	L. Chon	Report	Analyse
	L. Tinker	Report	Analyse
	L. Grannoch		Analyse
	Dargall Lane	Report	Analyse
	Old Lodge	Report	Analyse
	Narrator Brook	Report	Analyse
	Blue Lough	Report	Analyse
	Bencrom River	Report	Analyse
	Coneyglen Burn	Report	Analyse
	Beagh's Burn		Analyse
	Danby Beck		Analyse
	<b>Macrophytes</b>	Allt na Coire nan Con	Report
Dargall Lane		Report	Analyse
Old Lodge		Report	Analyse
Narrator Brook		Report	Analyse
Bencrom River		Report	Analyse
Beagh's Burn		Report	
Coneyglen Burn		Report	
Loch Chon			Analyse

Activity	Site	2011-12	2012-13
	Loch Tinker		Analyse
	Loch Grannoch		Analyse
	Blue Lough		Analyse
	Danby Beck	Analyse & report	Analyse
<b>Thermistors</b>			Purchase for lake chains

### 3. Epilithic Diatoms

#### 3.1. Allt na Coire nan Con

The 2011-12 epilithic diatoms were collected from Allt na Coire nan Con on 10/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site03\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site03_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Allt na Coire nan Con on 08/07/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

#### 3.2. Loch Chon

The 2011-12 epilithic diatoms were collected from Loch Chon on 27/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site05\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site05_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Loch Chon on 06/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

#### 3.3. Loch Tinker

The 2011-12 epilithic diatoms were collected from Loch Tinker on 27/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded

to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site06\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site06_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Loch Tinker on 07/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.4. Loch Grannoch**

The 2011-12 epilithic diatoms were collected from Loch Grannoch on 25/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site08\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site08_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Loch Grannoch on 04/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.5. Dargall Lane**

The 2011-12 epilithic diatoms were collected from Dargall Lane on 09/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site09\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site09_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Dargall Lane on 07/07/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.6. Old Lodge**

The 2011-12 epilithic diatoms were collected from Old Lodge on 04/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. After reformatting, the data were also sent for inclusion in the Environmental Change Network database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site13\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site13_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Old Lodge on 02/07/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.7. Narrator Brook**

The 2011-12 epilithic diatoms were collected from Narrator Brook on 05/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site14\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site14_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Narrator Brook on 03/07/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.8. Beaghs Burn**

The 2011-12 epilithic diatoms were collected from Beagh's Burn on 31/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site19\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site19_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Beagh's Burn on 20/09/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.9. Bencrom River**

The 2011-12 epilithic diatoms were collected from Bencrom River on 01/08/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site20\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site20_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Bencrom River on 21/09/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.10. Blue Lough**

The 2011-12 epilithic diatoms were collected from Blue Lough on 01/08/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site21\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site21_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Blue Lough on 21/09/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.11. Coneyglen Burn**

The 2011-12 epilithic diatoms were collected from Coneyglen Burn on 31/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site22\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site22_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Coneyglen Burn on 20/09/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **3.12. Danby Beck**

The 2011-12 epilithic diatoms were collected from Danby Beck on 08/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site26\\_diatoms.pdf](http://awmn.defra.gov.uk/resources/datasheets/site26_diatoms.pdf)

The 2012-13 epilithic diatoms were collected from Danby Beck on 05/07/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

## **4. Sediment Trap Diatoms**

### **4.1. Loch Chon**

Loch Chon was visited on 27/07/2011 but unfortunately, after a considerable time searching, the sediment trap array could not be located. This was most likely due to either the effects of ice movement or interference from members of the public. We were thus unable to collect the 2011-12 sediment trap diatom sample.

The 2012-13 sediment trap diatoms were successfully collected from Loch Chon on 06/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides

### **4.2. Loch Tinker**

The 2011-12 sediment trap diatoms were collected from Loch Tinker on 27/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website.

These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site06\\_sedtrap.pdf](http://awmn.defra.gov.uk/resources/datasheets/site06_sedtrap.pdf)

The 2012-13 sediment trap diatoms were collected from Loch Tinker on 07/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **4.3. Loch Grannoch**

The 2011-12 sediment trap diatoms were collected from Loch Grannoch on 25/07/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled then added to the UKAWMN biological database at UCL. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site08\\_sedtrap.pdf](http://awmn.defra.gov.uk/resources/datasheets/site08_sedtrap.pdf)

The 2012-13 sediment trap diatoms were collected from Loch Grannoch on 04/08/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

### **4.4. Blue Lough**

The 2011-12 sediment trap diatoms were collected from Blue Lough on 01/08/2011. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides. After 300 diatom valves were counted the data were quality controlled



then added to the UKAWMN biological database at UCL. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site21\\_sedtrap.pdf](http://awmn.defra.gov.uk/resources/datasheets/site21_sedtrap.pdf)

The 2012-13 sediment trap diatoms were collected from Blue Lough on 21/09/2012. The samples were preserved on site and brought back to UCL where they were prepared into microscope slides.

## **5. Macroinvertebrates**

### **5.1. Allt na Coire nan Con**

The 2011-12 macroinvertebrate kick samples were collected from Allt na Coire nan Con on 05/05/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site03\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site03_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Allt na Coire nan Con on 10/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.2. Loch Chon**

The 2011-12 macroinvertebrate kick samples were collected from Loch Chon on 01/05/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address [http://awmn.defra.gov.uk/resources/datasheets/site05\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site05_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Loch Chon on 05/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.3. Loch Tinker**

The 2011-12 macroinvertebrate kick samples were collected from Loch Tinker on 01/05/2011. The samples were preserved on site and taken to Queen Mary, University of

London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site06\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site06_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Loch Tinker on 05/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

#### **5.4. Loch Grannoch**

Due to there being no other funded fieldwork in the area at the appropriate time of year, it was not possible to collect the 2011-12 macroinvertebrate kick samples from Loch Grannoch.

The 2012-13 macroinvertebrate kick samples were collected from Loch Grannoch on 09/04/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

#### **5.5. Dargall Lane**

The 2011-12 macroinvertebrate kick samples were collected from Dargall Lane on 04/05/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site09\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site09_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Dargall Lane on 09/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

#### **5.6. Old Lodge**

The 2011-12 macroinvertebrate kick samples were collected from Old Lodge on 15/04/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site13\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site13_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Old Lodge on 19/04/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.7. Narrator Brook**

The 2011-12 macroinvertebrate kick samples were collected from Narrator Brook on 27/05/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site14\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site14_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Narrator Brook on 20/04/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.8. Blue Lough**

The 2011-12 macroinvertebrate kick samples were collected from Blue Lough on 28/04/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site21\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site21_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Blue Lough on 06/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.9. Bencrom River**

The 2011-12 macroinvertebrate kick samples were collected from Bencrom River on 27/04/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site20\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site20_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Bencrom River on 06/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.10. Coneyglen Burn**

The 2011-12 macroinvertebrate kick samples were collected from Coneyglen Burn on 20/04/2011. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted. The data were sent to UCL where they were quality controlled then added to the UKAWMN biological database. The relative abundance of species and a variety of diversity indices were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site22\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site22_inverts.pdf)

The 2012-13 macroinvertebrate kick samples were collected from Coneyglen Burn on 07/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.11. Beagh's Burn**

The 2012-13 macroinvertebrate kick samples were collected from Beagh's Burn on 07/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

### **5.12. Danby Beck**

The 2012-13 macroinvertebrate kick samples were collected from Danby Beck on 09/05/2012. The samples were preserved on site and taken to Queen Mary, University of London where they were sorted and the macroinvertebrates counted.

## **6. Macrophytes**

### **6.1. Allt na Coire nan Con**

The 2011-12 macrophyte survey was performed at Allt na Coire nan Con on 10/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site03\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site03_macros.pdf)

The 2012-13 macrophyte survey was performed at Allt na Coire nan Con on 08/07/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.2. Dargall Lane**

The 2011-12 macrophyte survey was performed at Dargall Lane on 09/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site09\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site09_macros.pdf)

The 2012-13 macrophyte survey was performed at Dargall Lane on 19/09/2012 after an unsuccessful earlier visit on 07/07/12 when the stream was in spate. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.3. Old Lodge**

The 2011-12 macrophyte survey was performed at Old Lodge on 04/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site13\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site13_macros.pdf)

The 2012-13 macrophyte survey was performed at Old Lodge on 02/07/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.4. Narrator Brook**

The 2011-12 macrophyte survey was performed at Narrator Brook on 05/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address

[http://awmn.defra.gov.uk/resources/datasheets/site14\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site14_macros.pdf)

The 2012-13 macrophyte survey was performed at Narrator Brook on 27/10/2012 after an unsuccessful earlier visit on 03/07/12 when the stream was in spate. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.5. Bencrom River**

The 2011-12 macrophyte survey was performed at Bencrom River on 01/08/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website.

These are available from the website at the address  
[http://awmn.defra.gov.uk/resources/datasheets/site20\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site20_macros.pdf)

The 2012-13 macrophyte survey was performed at Bencrom River on 21/09/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

### **6.6. Beagh's Burn**

The 2011-12 macrophyte survey was performed at Beagh's Burn on 31/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address  
[http://awmn.defra.gov.uk/resources/datasheets/site19\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site19_macros.pdf)

The 2012-13 macrophyte survey was not performed at Beagh's Burn during the site visit on 20/09/2012 due to spate conditions.

### **6.7. Coneyglen Burn**

The 2011-12 macrophyte survey was performed at Coneyglen Burn on 31/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address  
[http://awmn.defra.gov.uk/resources/datasheets/site22\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site22_macros.pdf)

The 2012-13 macrophyte survey was not performed at Coneyglen Burn during the site visit on 20/09/2012 due to spate conditions.

### **6.8. Danby Beck**

The 2011-12 macrophyte survey was performed at Danby Beck on 08/07/2011. Voucher specimens were collected and after microscopic analysis and verification at UCL the data were added to the UKAWMN biological database. The relative abundance of species were calculated, graphed, reported and uploaded to the UKAWMN website. These are available from the website at the address  
[http://awmn.defra.gov.uk/resources/datasheets/site26\\_macros.pdf](http://awmn.defra.gov.uk/resources/datasheets/site26_macros.pdf)

The 2012-13 macrophyte survey was performed at Danby Beck on 05/07/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.9. Loch Chon**

The 2012-13 macrophyte survey was performed at Loch Chon on 06/08/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.10. Loch Tinker**

The 2012-13 macrophyte survey was performed at Loch Tinker on 07/08/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.11. Loch Grannoch**

The 2012-13 macrophyte survey was performed at Loch Grannoch on 04/08/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.12. Blue Lough**

The 2012-13 macrophyte survey was performed at Blue Lough on 21/09/2012. Voucher specimens were collected and await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **7. Thermistors**

In March 2013 an order was placed for 84 Tinytag Aquatic II thermistor units to install as thermistor chains in UKAWMN lake sites.