



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

**April 2012**

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Cover photo: Loch Chon, 27<sup>th</sup> July 2011 © 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 December 2011 and March 2012. 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 January – March 2012**

<b>Activity</b>	<b>Site</b>	<b>2010-11</b>	<b>2011-12</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
<b>Sediment Trap Diatoms</b>	L. Chon	Analyse & report	Prepare & archive
	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	Analyse & report	
	L. Chon	Analyse & report	Analyse
	L. Tinker		Analyse
	L. Grannoch	Analyse & report	
	Dargall Lane	Analyse & report	
	Old Lodge	Analyse & report	
	Narrator Brook		Analyse
	Blue Lough		Analyse
	Bencrom River		Analyse
	Coneyglen Burn		Analyse
<b>Macrophytes</b>	Allt na Coire nan Con		Analyse
	Dargall Lane		Analyse
	Old Lodge	Analyse & report	Analyse
	Narrator Brook	Analyse & report	Analyse
	Bencrom River		Analyse
	Beagh's Burn		Analyse
	Coneyglen Burn		Analyse
	<b>Thermistors</b>		

### **3. Epilithic Diatoms**

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

The 2010-11 epilithic diatoms were collected from Allt na Coire nan Con on 08/07/2010. 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 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.

#### **3.2. Loch Chon**

The 2010-11 epilithic diatoms were collected from Loch Chon on 25/07/2010. 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 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.

#### **3.3. Loch Tinker**

The 2010-11 epilithic diatoms were collected from Loch Tinker on 10/08/2010. 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 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.

### **3.4. Loch Grannoch**

The 2010-11 epilithic diatoms were collected from Loch Grannoch on 09/08/2010. 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 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.

### **3.5. Dargall Lane**

The 2010-11 epilithic diatoms were collected from Dargall Lane on 09/08/2010. 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 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.

### **3.6. Old Lodge**

The 2010-11 epilithic diatoms were collected from Old Lodge on 08/09/2010. 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 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.

### **3.7. Narrator Brook**

The 2010-11 epilithic diatoms were collected from Narrator Brook on 05/07/2010. 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 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.

### **3.8. Beaghs Burn**

The 2010-11 epilithic diatoms were collected from Beagh's Burn on 27/07/2010. 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 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.

### **3.9. Bencrom River**

The 2010-11 epilithic diatoms were collected from Bencrom River on 19/08/2010. 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 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.

### **3.10. Blue Lough**

The 2010-11 epilithic diatoms were collected from Blue Lough on 19/08/2010. 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 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.

### **3.11. Coneyglen Burn**

The 2010-11 epilithic diatoms were collected from Coneyglen Burn on 26/07/2010. 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 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.

## **4. Sediment Trap Diatoms**

### **4.1. Loch Chon**

The 2010-11 sediment trap diatoms were collected from Loch Chon on 25/07/2010. 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/site05\\_sedtrap.pdf](http://awmn.defra.gov.uk/resources/datasheets/site05_sedtrap.pdf)

Loch Chon was visited on 27/07/2011 but unfortunately, after a considerable time searching, the sediment trap array could not be located. This is 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.

## **4.2. Loch Tinker**

The 2010-11 sediment trap diatoms were collected from Loch Tinker on 10/08/2010. 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 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.

## **4.3. Loch Grannoch**

The 2010-11 sediment trap diatoms were collected from Loch Grannoch on 09/08/2010. 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 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.

## **4.4. Blue Lough**

The 2010-11 sediment trap diatoms were collected from Blue Lough on 19/08/2010. 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 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.



## **5. Macroinvertebrates**

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

The 2010-11 macroinvertebrate kick samples were collected from Allt na Coire nan Con on 05/05/2010. 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)

### **5.2. Loch Chon**

The 2010-11 macroinvertebrate kick samples were collected from Loch Chon on 29/04/2010. 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 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.

### **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.

### **5.4. Loch Grannoch**

The 2010-11 macroinvertebrate kick samples were collected from Loch Grannoch on 29/04/2010. 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/site08\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site08_inverts.pdf)

### **5.5. Dargall Lane**

The 2010-11 macroinvertebrate kick samples were collected from Dargall Lane on 04/05/2010. 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)

### **5.6. Old Lodge**

The 2010-11 macroinvertebrate kick samples were collected from Old Lodge on 06/04/2010. 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. 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\\_inverts.pdf](http://awmn.defra.gov.uk/resources/datasheets/site13_inverts.pdf)

### **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.

### **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.

## **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.

## **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.

## **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 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 await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

### **6.3. Old Lodge**

The 2010-11 macrophyte survey was performed at Old Lodge on 08/09/2010. 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 2011-12 macrophyte survey was performed at Old Lodge on 04/07/2011. 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 2010-11 macrophyte survey was performed at Narrator Brook on 05/07/2010. 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 2011-12 macrophyte survey was performed at Narrator Brook on 05/07/2011. 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 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 await microscopic analysis and verification at UCL before the data is added to the UKAWMN biological database.

## **6.7. Coneyglen Burn**

The 2011-12 macrophyte survey was performed at Coneyglen Burn on 31/07/2011. 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 2011-12 thermistors were refurbished for 19 UKAWMN sites. This involved replacing seals and batteries and recalibration of the units.