



LIFE Project Number  
**LIFE04 NAT/IE/000121**

**TECHNICAL INTERIM REPORT**  
*Covering the project activities from 01.10.2004 (project starting date) to  
30.09.2006*

Reporting Date  
**31/12/2006**

LIFE PROJECT NAME  
**Restoring Raised Bog in Ireland**

Data Project

<b>Project location</b>	Ireland
<b>Project start date:</b>	01/10/2004
<b>Project end date:</b>	30/09/2008
<b>Total Project duration (in months)</b>	48 months
<b>Total budget</b>	€2,500,000
<b>EC contribution:</b>	€1,875,000
<b>(%) of total costs</b>	75%
<b>(%) of eligible costs</b>	75%

Data Beneficiary

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## **2. KEY-WORDS AND ABBREVIATIONS**

### **(I) Key Words:**

Raised bog restoration, Ireland, tree removal, water level monitoring, vegetation monitoring, raising water levels, drain blocking.

### **(II) Abbreviations:**

FSC	Forest Stewardship Council
IPCC	Irish Peatland Conservation Council
NPWS	National Parks and Wildlife Service
PAP	Project Advisory Panel
PMG	Project Management Group
SFM	Sustainable Forest Management

### **3. EXECUTIVE SUMMARY**

#### **Project objectives**

- To restore 571.2 ha of raised bog on 14 sites to a favourable conservation status.
- To extend the area of raised bog, so that the area free from the effects of afforestation is enlarged thereby increasing the likelihood of recolonisation with ANNEX 1 habitat type species.
- To demonstrate and interpret the techniques of bogland restoration on afforested sites, principally tree removal and drain blocking, to as wide as possible an audience.
- To ameliorate the effects of turbary and reduce the hazard risk for adjoining landowners.
- To reduce the risk of fire damage to the project sites by implementing Coillte's Fire Plan and carrying out vegetation clearance on vulnerable high risk perimeter areas as necessary.
- To increase current knowledge in the area of afforested bogland restoration through the dissemination of project results.

#### **Summary of each of the following chapters**

##### **Chapter 4: Introduction**

The Coillte estate contains many partially or wholly afforested areas that have been included in SACs and which continue to impact on the raised bog habitat. This project covers 14 of these sites, selected in conjunction with NPWS, that have potential for restoration. They represent the largest and best raised bog areas owned by Coillte within SACs and form an important part of the company's nature conservation programme. When restoration work is completed their management objectives will change from timber production to the conservation of raised bog habitat.

##### **Chapter 5: Life-Project Framework**

The essential features of this project are the removal or felling to waste of conifer plantations on raised bogs together with the blocking of forestry drains in order to restore bog water levels and facilitate the growth of bog vegetation.

##### **Overview of project actions:**

- A1-A5 preparatory actions
- C1-C6 once-off management interventions e.g. tree removal/drain blocking
- D1-D7 repeat management interventions e.g. remove natural regeneration
- E1-E7 public awareness/dissemination e.g. project brochure and website
- F1-F7 project management e.g. PMG, reporting, monitoring, expert advice.

## Chapter 6: Progress, Results

All preparatory “A” actions have made good progress, however experience has shown that some of these actions need to continue to some extent, for the duration of the project. All non-recurring management “C” actions have made excellent progress with targets almost fully complete on fell and windrow (C1), harvesting (C2) and installation of dipwells (C6); significant progress has been made on installing dams (C3) and fencing (C4). All recurring management “D” actions have been on-going as necessary, including removal of natural regeneration (D1), drainage pattern survey (D3), fire prevention (D4), refuse removal (D5) and vegetation control (D6). All public awareness “E” actions programmed for Years 1 and 2 continued. Work done included land manager training courses (E1), project website constructed (E2), project information brochure produced and distributed (E3) and media publicity campaign progressed (E6). All project management “F” actions which were programmed for Years 1 and 2 continued. Work done included Project Management Group meetings (F1), first Project Advisory Panel meeting (F2), visits from external monitor and project report preparation (F3), procurement of expert advice (F4), hydrology monitoring (F5) and vegetation monitoring (F6).

## Chapter 7: Evaluation and Conclusions

The project ecologist’s report (Appendix 9) indicates that restoration work is progressing satisfactorily on all sites. Nearly all of the conifers have been removed by the end of the second year as planned, and drain-blocking has been completed on two sites, and commenced on a further 5 sites, resulting in a significant increase in water-levels.

## Chapter 8: Interim Report: Planned Project Progress

Planned activities and reports to the end of the project are summarised in the tables in this chapter. Principal remaining actions include small amount of tree removal (C1/C2), balance of drain blocking (C3), updating of website (E2), development of demonstration sites (C5/E7) and project results booklet/end-of-project conference (E4/E6).

## Chapter 9: Comments On Financial Report

The project is being implemented well within project budget. The tables in Chapter 9 show that 41% of the total approved provisional budget has now been incurred at the mid point of the project. The level of expenditure arising under each action category reflects the extent to which operational milestones have been achieved. These are outlined in detail in Chapter 6 of this report. All major actions are either on target or expected to finish within budget, with the exception of Action C2 (Commercial Felling) where there is expected to be a considerable underspend in External Assistance and Action C3 (Install Dams) where there is expected to be a significant underspend in durable Goods. However, it is anticipated that it may be necessary to augment some budgets for other project actions, particularly Action D6 – vegetation control. (See Chapter 7 Evaluation and Conclusions).

## Chapter 10: Annexes

Appendix 1	Visit from members of Latvian LIFE Project No. LIFE04 NAT/LV/000196 Visit by members of our team to Scottish LIFE sites
Appendix 2	Safety Plan for the 14 Project sites
Appendix 3	Agenda and handout for Land Managers training course
Appendix 4	Distribution list for Project Information Brochure
Appendix 5	Bog Walks to site No's 9 and 5
Appendix 6	Internal Publicity for the project in Year 2
Appendix 7	External Publicity for the project in Year 2
Appendix 8	Media Publicity for the project in Year 2
Appendix 9	Photographs of the boardwalk under construction at Carn Park Bog – site No. 11
Appendix 10	Agenda and handout for the Project Advisory Panel Meeting
Appendix 11	Hydrology and vegetation monitoring from the Project Ecologist
Appendix 12	GIS Maps indicating progress of felling on the project sites to the end of Year 2

## Key Deliverables and Outputs

Product	No. of Action	Deadline	Progress to end Year 2
Safety Plan and Hazard Identification	A3	31.03.2005	A safety plan has been produced and HIRA (hazard identification, risk assessment forms) are completed on all sites before actions begin. Site managers will continue to work with Coillte's safety & training team to ensure that appropriate safety procedures are in place at all times while work is ongoing during the project.
Land Managers Training Course	E1	31.03.2005	Land Managers Training Days have taken place in each of the 2 project years, and will continue for the remaining 2 years of the project.
Drainage Pattern Survey (Initial survey)	D3	31.10.2005	Ongoing through conductivity and pH readings and laboratory analysis where necessary. A full year's data is being recorded by autosampler at Site 8 Cloonshanville (finishing June 2006).
Project Information Brochure	E3	31.10.2005	20,000 copies produced by this date – distribution of same ongoing see Appendix No. 4
Hydrology Monitoring Interim Report	F5	30.11.2006	Included in the Interim Report
Mid-point Project Mapping	F7	31.12.2006	Updated maps included in the Interim Report
Produce 1 technical article during the life of the project	E6	Before 31.12.2008	Not yet required.
Drainage Pattern Survey (Final Report)	D3	30.09.2008	Not yet required
Project Results Booklet	E4	31.12.2008	Not yet required
Vegetation Monitoring (Final Report)	F6	31.12.2008	Not yet required
Hydrology Monitoring (Final Report)	F5	30.11.2008	Not yet required
End of Project Mapping	F7	31.12.2008	Not yet required
Produce layman articles for inclusion in Coillte Contact, Newsletters, etc 2 per year	E6	01.10.2004 – 31.12.2008	Carried out in Year 1 and 2, (See Appendix No. 6), will continue in Year 3 and 4.

## 4. INTRODUCTION

### Description of background, problems and objectives

Ireland began a reforestation programme in the early 1900s following centuries of exploitation of native woodlands and deforestation for agriculture. Successive governments supported a programme of plantation establishment but a strong farming lobby ensured that this was confined mainly to sites marginal, or unsuitable, for agriculture. Peatland ( both raised and blanket peats) was one of these site types and until their ecological value was fully appreciated they were regarded as wasteland to be converted to more productive uses . Forestry was one of these uses and in the midland region, many plantations were established on the cutaway edges of raised bogs and also in some cases on high bog. The main period of afforestation occurred over a 20 year period from the mid 1960s to the mid 1980s with the cutaway peats being favoured as being more accessible, fertile and easier to cultivate than the high bogs. Today the Coillte estate comprises a total raised bog area of 31,815ha of which 6,496ha are virgin raised bog.

Since 1997, 10,290ha of high raised bog has been proposed for designation in candidate SACs under the EU Habitats Directive (92/43/EEC). The Coillte estate contains many partially or wholly afforested areas that have been included in SACs and which continue to impact on the raised bog habitat. In this project 14 of these sites have been selected, in conjunction with NPWS, that have the potential for restoration. They represent the largest and best raised bog areas owned by Coillte within SACs and form an important part of the company's nature conservation programme. When restoration work is completed their management objectives will change from timber production to the conservation of raised bog habitat.

### Overall and specific objectives

- To restore 571.2 ha of raised bog on 14 sites predominantly in the central plain of Ireland to a favourable conservation status.
- To extend the area of raised bog, so that the area free from the effects of afforestation is enlarged thereby increasing the likelihood of recolonisation with ANNEX 1 habitat type species.
- To demonstrate and interpret the techniques of bogland restoration on afforested sites, principally tree removal and drain blocking, to as wide as possible an audience but particularly the foresters who are managing these areas.
- To ameliorate the effects of turbary and reduce the hazard risk for adjoining landowners.
- To reduce the risk of fire damage to the project sites by implementing Coillte's Fire Plan and carrying out vegetation clearance on vulnerable high risk perimeter areas as necessary. Accordingly, the project sites will benefit from the protection of Coillte's existing fire control infrastructure.
- To increase current knowledge in the area of afforested bogland restoration through the dissemination of project results both nationally and throughout the European Union.

## Sites involved

There are 14 sites, all owned and managed by Coillte Teoranta, that have been partially or wholly afforested. The project sites cover 571.2ha within 14 candidate SACs, spread over 5 counties.

<b>LIFE Project Site No.</b>	<b>Site and cSAC Name</b>	<b>Tree Covered Area (Ha)</b>	<b>Open Bog Area (Ha)</b>	<b>Site Total Area (Ha)</b>
<b>1</b>	Lough Lurgeen	7.3	0.0	<b>7.3</b>
<b>2</b>	Camderry	13.8	0.0	<b>13.8</b>
<b>3</b>	Curraghlehannagh	40.6	0.1	<b>40.7</b>
<b>4</b>	Kilsallagh	10.8	18.9	<b>29.7</b>
<b>5</b>	Lough Ree	29.1	19.9	<b>49.0</b>
<b>6</b>	Lisnageeragh	9.6	17.5	<b>27.1</b>
<b>7</b>	Drumalough	32.0	11.2	<b>43.2</b>
<b>8</b>	Cloonshanville	34.2	0.0	<b>34.2</b>
<b>9</b>	Killyconny	11.6	0.0	<b>11.6</b>
<b>10</b>	Ardagullion	25.0	0.0	<b>25.0</b>
<b>11</b>	Carn Park	96.3	35.9	<b>132.2</b>
<b>12</b>	Crosswood	39.1	3.6	<b>42.7</b>
<b>13</b>	Mount Hevey	56.7	1.5	<b>58.2</b>
<b>14</b>	Coolrain	44.4	12.1	<b>56.5</b>
	<b>Total</b>	<b>450.5</b>	<b>120.7</b>	<b>571.2</b>

## Habitat types targeted

Active raised bog priority habitat (Natura 2000 Code 7110) and degraded raised bog habitat, capable of restoration (Natura 2000 Code 7120) under *Annex I of the Habitats Directive*.

## Main conservation issues being targeted (including threats)

This project will address the main ecological threats which affect raised bog habitats through the following actions:

- Removal of 450 ha of plantation forest
- Blocking forestry drains in order to elevate water levels and hence restore the hydrological balance of the peatland areas
- Removal of naturally regenerated trees from open, unplanted bogs
- Perimeter protection of vulnerable raised bog sites against fire
- Consultations to secure control of turbarry (turf-cutting) rights



## **How the project came about**

The project came about in the overall context of Coillte's adoption of SFM and achievement of FSC certification for well managed forests. Sites were selected in conjunction with NPWS Research Branch, Coillte's ecologist and a contract ecological survey; project application was prepared by Pat Doolan, Philip Murphy and Aileen O'Sullivan.

## **The socioeconomic context of the project**

The threats being addressed (afforestation and associated drainage) arise from previous social forestry established to provide employment and economic added value in rural areas. In recent times, an increasing social awareness of the importance of nature conservation has prompted national efforts to conserve the best remaining raised bog habitat. In line with this, Coillte has selected, for this major restoration project, those sites which have been identified as having the best nature conservation value. At all stages during the project, the work we do on each site is being offered to local contractors. Every effort is being made to involve local people as much as possible in the project, from working on sites to setting up interpretive meetings and demonstrations.

## **Expected results**

- During the period of the project it is expected that there will be a significant improvement in the quality of the open bog areas.
- This will be due to measures taken to gain control of areas and the re-establishing of natural water levels brought about by the removal of trees, drain blocking and clearance of invasive conifer regeneration.
- Over 570 hectares of raised bog will be improved using these measures. There will be a measurable increase in actively growing raised bog species since monitoring began at the start of the project.
- These improvements will be demonstrated using data from dipwells monitoring changes in water levels and data from vegetation transects.
- The area of raised bog will be increased by almost 450 hectares through the removal of conifers. Maps and field inventory will record this process.
- Natural water levels on the raised bog area cleared of trees and on the open bog area will be re-established resulting in an improvement in habitat quality.

This is the largest single raised bog restoration project to be undertaken in Ireland. By the end of this project, significant habitat restoration work will have been completed on over 5% of the national area of raised bog conserved in SACs – a significant contribution to conservation of the most valuable raised bog habitat in Europe. The project will serve as a hands-on demonstration of the best approaches to restoration of raised bog habitats.

## 5. LIFE-PROJECT FRAMEWORK

- **Description and schematic presentation of working method, including overview of: (i) project-actions, and (ii) planning**

The essential features of this project are the removal or felling to waste of conifer plantations on raised bogs together with the blocking of forestry drains in order to restore bog water levels and facilitate the growth of bog vegetation.

### (i) Overview of project actions:

A1-A5 preparatory actions

C1-C6 once-off management interventions e.g. tree removal/drain blocking

D1-D7 repeat management interventions e.g. remove natural regeneration

E1-E7 public awareness/dissemination e.g. project brochure and website

F1-F7 project management e.g. PMG, reporting, monitoring, expert advice.

### (ii) planning

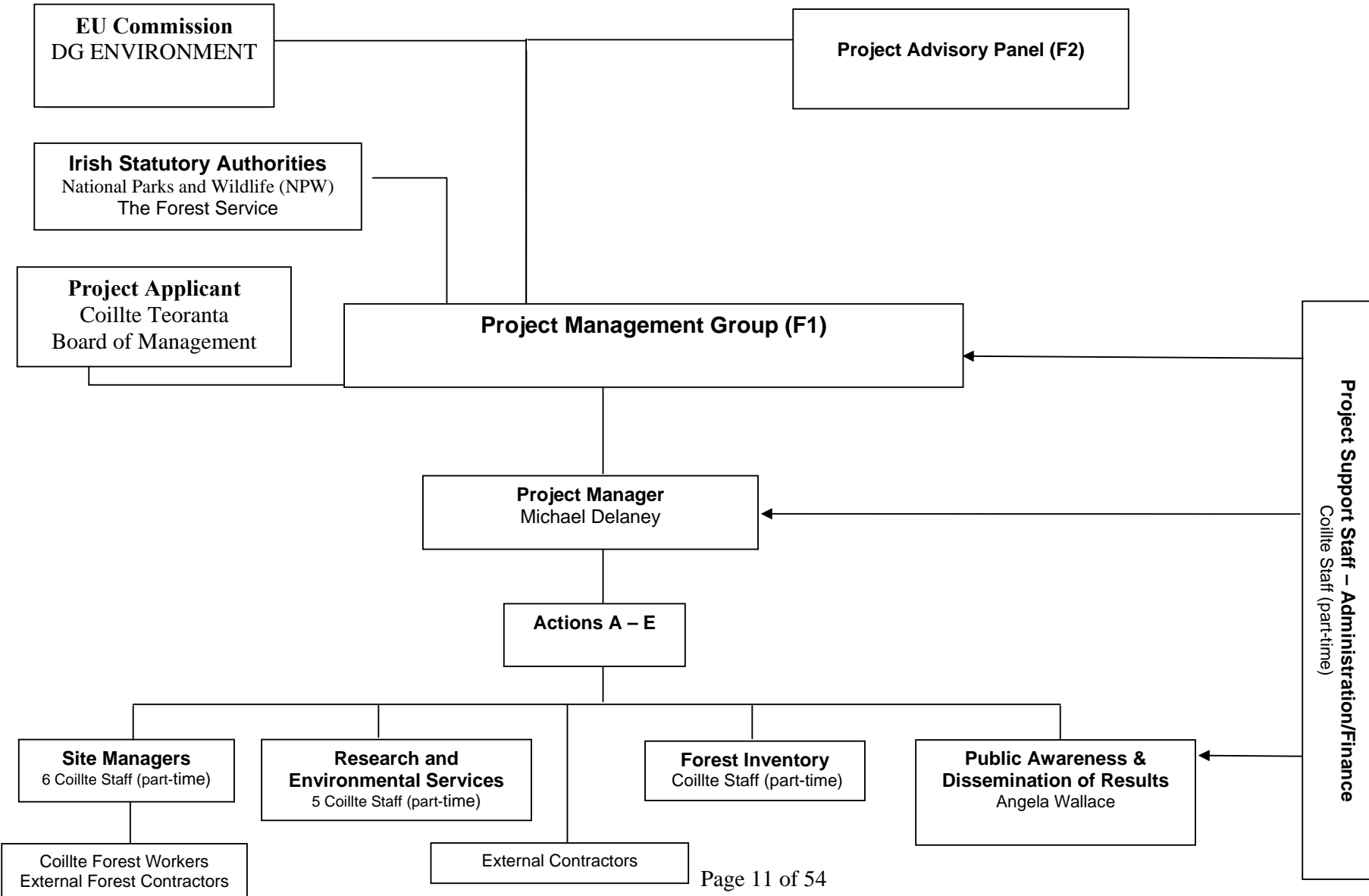
Action A2 provides for the elaboration of action plans while time planning is detailed at Form 22 of the approved project proposal, as are deliverables at Form 23 and milestones at Form 24. Achievement is continually monitored against planning at quarterly PMG meetings and annual site plans are prepared for each calendar year as part of Coillte's own computerised Integrated Planning System.

- **Presentation of Beneficiary, partners and project-organisation**

The beneficiary is Coillte Teoranta/the Irish forestry Board. There are no partners or co-financiers. All actions are carried out by Coillte or its contractors. There has been no modification to date. The PMG is currently comprised as follows (all Coillte except where stated otherwise).

	Title	Name
Chairman	Director, Planning, Research and Environment	George McCarthy
	Project Manager	Michael Delaney
	Project PR/Administrator	Angela Wallace
	Project Accountant	Richard Clear
	EU Affairs Manager	Philip Murphy
	Company Ecologist	Pat Neville
	Contract Ecologist	John Derwin
Members	Managing Director, Coillte Forest Division	Tim Crowley
	Head of Research and Environment	Alistair Pfeifer
	Region Manager	Denis Gallagher
	National; Parks and Wildlife	Judit Kelemen, Jim Ryan
	Forest Service	Pat O'Callaghan

**LIFE-NATURE Project LIFE04 NAT/IE/000121 Restoring Raised Bog in Ireland:**  
Project Management Structure



## **6. PROGRESS, RESULTS**

As there are no project partners, all actions are being implemented by Coillte and/or its contractors.

### “A” Actions - Preparatory Actions, Elaboration of Management Plans

#### **A1: Site Visit to see another LIFE sponsored project**

##### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarters 1,2, 3 and 4.

The main purpose of this action was to give project staff experience of similar LIFE projects already in existence.

##### **Completed to end of Year 1**

On the 1<sup>st</sup> of October 2004 Project staff visited Coillte’s 1<sup>st</sup> LIFE Project on Blanket Bog Restoration (LIFE02 NAT/IRL/8490). Project staff also attended LIFE Workshops on Raised Bogs/Dunes in Holland in October 2004, and in Latvia/Estonia in August 2005. The project hosted visits from the Homebond Architects Group, the Finnish LIFE project "Protection of Aapa Mire wilderness in Ostrobothnia and Kainuu 2002-2005" and a group of French forestry students.

##### **Completed to end of Year 2**

June 2006 - visit by members of Latvian LIFE Project No. LIFE04 NAT/LV/000196 (Implementation of Mire habitat management plan for Latvia) to our Site No. 11 – Carn Park Bog.

August 2006 - members of our project team visited a number of LIFE sites in Scotland, facilitated by Stuart Brooks (UK consultant who had previously provided expert advice to our project under Action F4).

##### **See Appendix 1.**

##### **Comments**

To date, these visits have proved very successful for information exchange and networking. This action will continue until the budget is utilised. Some funding is set aside for project staff to attend end of project conferences on other projects as they arise.

## **A2: Elaboration of Action Plans**

### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarter 1 and 2. The main thrust of this action was consultation with stakeholders in particular NPWS in relation to operational work on all sites.

### **Completed to end of Year 1**

This action is now formally completed on all sites. A meeting was held in the NPWS Office in Mullingar on 9<sup>th</sup> November 2004 to brief them on the background, actions and objectives of the Raised Bog Restoration Project. As a follow on from this meeting, contact details for all Coillte Staff working on the project were e-mailed to NPWS for distribution to relevant staff. NPWS reciprocated by sending Coillte a list of their personnel working in the project areas. However on-going consultation by site managers still continues at local level with the National Parks and Wildlife Staff (NPWS) and other stakeholders as required - particularly with turbary holders on sites 3, 10, 11 and 14 and adjoining landowners on sites 12. In addition to having a member of Research Branch (NPWS) specialising in raised bog on the Project Management Group (PMG) a member of NPWS Regional Management will be joining the Group.

Other consultation activity included:

Visit by the Social and Environmental Panel (including representatives of the Forest Service, NPWS, Shannon Regional Fisheries Board, Galway County Council) to site 3;

Consultation with Roscommon County Council and a local landowner concerning road repairs to a right of way at site 5;

During felling operations at Site 2, officials from the Shannon Regional Fisheries Board made a visual inspection for water discolouration and silting;

### **Completed to end of Year 2**

Judit Kelemen of NPWS has joined our PMG this year. Judit and Jim Ryan are actively involved in decisions reached for the 14 project sites. We continue consulting with NPWS staff at all levels on all of the project sites especially on turbary rights and the Cessation of Turbary Scheme.

Some NPWS Regional Staff attended the Land Managers Training Day held in July 2006 (see report on Action E1 Land Managers Training Course).

## **Comments**

Consultation will be an integral part of our continuing work on each site, therefore this part of the action will continue for the duration of the project. This action has been most useful in developing good working relationships at local level between Coillte and the National Parks and Wildlife Service, Fisheries Boards, relevant county councils and the Forest Service on raised bog restoration.

### **A3: Identify Safety Hazards and draw up a general safety plan for all sites**

#### **Scheduled Duration and main objective**

The schedule duration of this action was Year 1, Quarter 1 and 2. The requirement of this action was for Safety plans to be drawn up, hazard identification risk assessment forms (HIRA) to be completed for sites.

#### **Completed to end of Year 1**

HIRA forms have been completed for all operational work to date and safety regulations are adhered to on all sites.

#### **Completed to end of Year 2**

At a recent PMG Meeting it was decided that safety signage should be erected on all 14 project sites as deep water filled drains (resulting from drain blocking) could represent additional hazards. A safety plan, and sample site signage has been prepared by the Coillte Safety Officer for the 14 restoration sites.

#### **See Appendix 2**

## **Comments**

Safety is an extremely important issue on our sites and this action will be implemented throughout the duration of the project. All site managers and project personnel will continue to work together with Coillte's safety and training team to ensure that appropriate safety procedures are in place on all sites.

#### **A4: Survey of fence lines and enclosures**

##### **Scheduled Duration**

The scheduled duration of this action was Year 1, Quarters 1 and 2. Survey work was scheduled to be completed on site No's 7 (Drumalough), 10 (Ardagullion), 11 (Carn Park), 12 (Crosswood), 13 (Mount Hevey), and 14 (Coolrain) in order to identify site boundaries.

##### **Completed to end of Year 1**

As provided for in the approved application (Durable Goods), 5 hand-held GPS units have been purchased. Surveys have been completed on Site 14 Coolrain Bog, Site 10 Ardagullion, Site 11 Carn Park and Site 12 Crosswood by the end of the 1<sup>st</sup> project year - 30<sup>th</sup> September, 2005.

##### **Completed to the end of Year 2**

Surveys have been carried out on the remaining 2 sites. This action is now complete.

#### **A5: Land Survey**

##### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarters 1, 2, 3 and 4. All sites were to be surveyed to determine levels for blocking drains. All sites were to have land survey to an accuracy of 10cm contours to optimise the distribution and location of dams.

##### **Completed to end of Year 1**

Land survey has been carried out on sites No. 3, 5, 10, 11 (partially) and 14.

##### **Completed to end of Year 2**

Land surveys were completed on site No.11, and have been carried out on site No's 7, 9, 13 and partially on site No. 12 in Year 2.

##### **Comments**

The original schedule for this action was over ambitious as this operation can only take place on sites after Actions C1 and C2 have been completed.

## “C” Actions - Non-Recurring Management

### **C1: Fell and windrow**

#### **Scheduled Duration**

The scheduled duration of this action was, Year 1, and Year 2.

#### **Completed to end of year 2**

The following table outlines progress to Sept 2006 against programme for each site which required this action.

#### **Action C1 – Fell and windrow**

<b>Site</b>	<b>Detail of action</b>	<b>Area</b>	<b>Area complete to 30/09/06 (Ha)</b>	<b>Balance to complete (Ha)</b>	<b>Expected completion date - Windrows</b>
1	Windrow	6.7	0.0	4.3	June '07
1	Fell/Windrow	0.6	3.0	Nil	June '07
3	Fell/Windrow	7.4	7.4	Nil	Dec '06
4	Fell/Windrow	10.8	10.4	Nil	July '07
5	Fell/Windrow	29.1	4.6	Nil	Aug '07
6	Fell/Windrow	2.4	5.3	Nil	June '07
6	Fell/Windrow	7.2	7.2	Nil	June '07
7	Fell/Windrow	Nil	10.3	Nil	Completed
8	Fell/Windrow	Nil	17.0	12.2	Dec '06
9	Fell/Windrow	11.6	2.6	Nil	Complete
10	Fell/Windrow	21.9	21.9	Nil	Complete
11	Fell/Windrow	50.4	50.4	Nil	Complete
12	Fell/Windrow	17.1	0.0	12.2	July 2007
12	Fell/Windrow	3.7	Nil	3.7	31/12/2006
13	Fell/Windrow	25.3	25.3	Nil	Complete
13	Fell/Windrow	Bi 0.8	0.0	Nil	Complete
13	Fell /Windrow	Nil	7.8	3.5	April 2007
14	Fell/Windrow	38.3	38.3	0.0	Complete
14	Windrow	14.1	14.1	0.0	Complete
	Programmed	247.4ha			
	Programmed to be completed			35.9 ha	
	<b>Completed to 30.9.2006</b>		<b>225.6 ha</b>		



## Comments :

Site No. 1 – L. Lurgeen – 2.4 ha of this site was unsuitable for commercial harvesting - (which was due to be carried out in advance of the LIFE project), and was added to give a total area of 3.0 ha felled to waste under the project. (Accordingly Windrow only area has been reduced from 6.7ha to 4.3 ha).

Site No. 3 - Curraglehanagh – All felling complete to end of 2<sup>nd</sup> year. 2ha of windrowing yet to be done – expect to be finished by Dec '06.

Site No 4 – Kilsallagh – All felling complete by Sept '06, too wet to windrow until July '07. (10.4 ha only for fell and windrow – area requiring no restoration measures was understated in application by 0.4 ha).

Site No. 5 – L. Ree - Only 4.6 ha of 29.1 ha programme was complete as fell and windrow. 24.5 ha was harvested commercially – though not programmed as commercial on original application. All felling complete by Sept '06 – 14 ha of windrowing done, 10.3 ha of windrowing yet to do, plan to complete by Aug '07.

Site No. 6 – Lisnageeragh Bog – 12.5 ha felled to waste – (9.6 ha Programmed on approved application – 2.9 ha extra required fell to waste, thus reducing open bog area not requiring restoration measures from 16.3ha to 13.4 ha). Windrowing carried out on 4.6 ha of the area leaving 7.9 ha of windrow yet to do – completion date June '07.

Site 7 - Drumalough – Fell and windrow was not programmed for this site, but proved to be necessary on 10.3 ha. This 10.3 ha consists of 2.6 ha having being transferred from Action C2, and 7.7ha of tree felling omitted from the approved application (but shown on the site maps) was felled and windrowed.

Site No 8 – Cloonshanville (total area = 34.2ha) – No fell to waste or windrowing was programmed for this site.

It was not feasible to commercially harvest 24.0 ha of the 29.0ha programmed on this site under Action C2, because of the long access route and the damage this might cause to the Annex 1 raised bog habitat on this SAC. It was decided that fell to waste would be more appropriate. An additional 5.2 ha of tree felling omitted from the C2 Action table in the approved application (but shown on the site maps) was also felled to waste. (24.0ha + 5.2ha = 29.2ha). Of this 17.0ha were felled and windrowed to Sept '06, an additional 12.2ha was completed by the end of Dec 2006.

Site No. 9 – Killyconny – 9.0 ha of the 11.6 of the area programmed for fell and windrow were harvested commercially, and only 2.6 ha fell to waste. All 11.6 ha were windrowed.

Site No 12 – Crosswood - The project area = 42.7 ha as shown on the maps in the approved application. the programme for tree felling is overstated in the approved application by 0.6 ha in the Table above, C1 = 17.1 ha + 3.7 ha = 20.8 ha, C2 = 22.5 Total of 43.3 ha. Of the 20.2 ha which should have been fell and windrow 4.3 ha proved suitable for commercial harvesting (C2), leaving only 15.9 ha for this action.

Site 13 - Mount Hevey – Additional area of 11.3 ha transferred from commercial harvesting (C2) of which 7.8 ha have been completed to end of year 2 (25.3 ha + 11.3 ha = 36.6 ha in this action). It has been decided, on the expert advise of Stuart Brooks (UK Consultant, Action F4) not to fell a light covering of birch on the lagg area (0.8 ha), as it may regenerate more prolifically if cut.

## C2: Harvesting

### Scheduled Duration

The scheduled duration of this action was all of Year 1, and Year 2.

### Completed to end of Year 2

The following table outlines progress to date against programme for each site which required this action.

### Action C2 – Harvesting

Site	Detail of action	Area in application	Species	Area complete to 30/09/06 (Ha)	Balance to complete (Ha)	Expected completion date
2	Harvesting	13.8	LPS/SS	13.8	Nil	Complete
3	Harvesting	33.2	SS	33.2	Nil	Complete
5	Harvesting Additional not programmed	0.0		24.5	Nil	Complete
7	Harvesting	24.3	LPS	16.8	4.9	31/03/2007
8	Harvesting	29.0	LPS/SS	5.0	Nil	Complete
9	Harvesting additional not programmed	0.0	LPS	9.0	Nil	Complete
10	Harvesting	3.1	SS/LPS	3.1	Nil	Complete
11	Harvesting	40.7	SS / LPS	40.7	Nil	Complete
12	Harvesting	22.5	SS	26.8	Nil	Complete
13	Harvesting	30.1	LPS/SS	19.4	Nil	Complete
14	Harvesting	4.1	SS/LPS	4.1	Nil	Complete
	Programmed	200.8ha				
	Programme to be completed				4.9 ha	
	<b>Programme completed to 30.9.2006</b>			<b>196.4 ha</b>		

### Comments

Site No. 5 – Lough Ree – 24.5 ha felled commercially – transferred from C1 – following consultation with Roscommon Co. Co – timber extracted via alternative route.

\*Site 7 - Only 21.7 ha of the 24.3 ha on approved application were suitable to be commercially harvested. 16.8 ha have been completed to the end of year 2, 4.9 ha yet

to be felled, ground too wet at present, plan to complete by April 2007. Balance of 2.6 ha were felled to waste - C1.

Site 8 - Cloonshanville - only 5 ha of the 29.0 ha programmed for commercial felling could be carried out, remainder transferred to fell to waste C1.

Site No 9 – Killyconny - 9 ha harvested on this site not programmed, timber of better quality than expected.

Site No. 12 – Crosswood – 22.5 ha programmed for commercial harvesting – 26.8 ha completed to end of Sept 2006. 4.3ha transferred from C1.

Site 13 - Mount Hevey –19.4 ha of 30.1ha programme for commercial harvesting is completed. The remaining 11.3 ha will not be harvested commercially as the site became too wet, material was too poor to harvest. This area has been transferred to C1 - fell / windrow.

### **C3: Install Dams**

#### **Scheduled Duration**

The Scheduled duration of this action was the last quarter of Year 1, all Quarters, Year 2, and Year 3.

#### **Completed to end of Year 2**

#### **Action C3 – Install dams**

Site	Details of Action	Area to be treated (Ha)	Area complete to 30/09/06 (Ha)	Balance to complete (Ha)	Expected completion date
1	Install dams, peat	7.3 ha	Nil	7.3 ha	Sept '07
2	Install dams, peat	13.8 ha	Nil	13.8 ha	Sept '07
3	Install dams, peat	40.6 ha	15.0 ha	25.6 ha	Jan '07
4	Install dams, peat	10.8 ha	Nil	10.8 ha	Sept '07
5	Install dams plastic	29.1 ha	Nil	29.1 ha	Sept '07
6	Install dams, peat	9.6 ha	Nil	9.6 ha	Sept '07
7	Install dams, peat	32.0 ha	27.1 ha	4.9ha	Sept '07
8	Install dams peat	30.7 ha	0.0	30.7 ha	Sept '07
9	Install dams, peat	11.6 ha	11.6 ha	Nil	Complete
10	Install dams, peat	25.0 ha	25.0 ha	Nil	Complete
11	Install peat dams	91.4 ha	91.4 ha	Nil	Complete
12	Install dams peat/plastic	39.1 ha	20.0 ha	19.1 ha	Sept '07
13	Install dams plastic/peat	56.7 ha	Nil	56.7 ha	Sept '07
14		29.4 ha	29.4 ha	Nil	Complete
		<b>427.1 ha</b>	<b>219.5 ha</b>	<b>207.6 ha</b>	

## Comments

As explained during the monitoring mission in June 2006, we have been unable to block perimeter drain on some sites – No. 9, 10, 11, 12, 14 – as this could adversely affect turbary on adjoining areas outside of the project.

## Action C4: Fencing

### Scheduled Duration

The scheduled duration of this action was all of Year 1, Quarters 1 and 2 of Year 2. Approx 9000m of stock fence to be erected where necessary.

### Completed to end of Year 2

The following table outlines progress to date against programme for each site which required this action.

### Action C4 – Fencing

Site	Details of action	Area to be protected (Ha)	Metres of fence to be erected	Area complete to 30/09/06 (Ha)	Metres of fence erected to 30/09/06	Balance to complete (Ha)	Balance metres of fence to erect	Expected completion date
7*	Erect fences	5.0	590	1.7	220	Nil	Nil	Complete
9	Erect fence Not programmed	11.6	0.0	11.6	600	Nil	Nil	Complete
10*	Erect fences	25.0	1400	25.0	1,355	25.0	Nil	Complete
11*	Erect fences	132.2	2800	44.0	845	44.0	1,000	31/12/2006
12	Erect fences	42.7	1900	22.7	1,000	20.0	900	31/12/2006
13	Erect fences	58.2	1210	Nil	0.0	58.2	1,210	31/12/2006
14	Erect fences	56.5	1100	56.5	1,100	Nil	Nil	Complete
		<b>319.6</b>	<b>9,000m</b>		<b>5,120 m</b>		<b>3,110 m</b>	<b>31/12/2006</b>
	<b>Revised Target</b>		<b>9,600 m</b>					

## Comments

The slight delay in completing the balance was explained during the monitoring mission in June, 2006 and arose from the fact that the tree felling needed to be complete before this action could take place.

Fencing was not programmed, but 600m were required to secure the site No. 9 – Killyconny Bog.

\*At site No's 7, 10 and 11 not all of the fencing programmed will be required.

## C5: Build roads onto sites for safe access

### Scheduled Duration and main objective

The scheduled duration of this action was Year 1, Quarters ,2,3, 4 and Year 2 quarter 2,3,and 4. 1,600m of new road were to be constructed plus 2 car parks, to give access to demonstration sites.

### Completed to end of Year 2

The following table outlines progress to date against programme for each site which required this action.

### Action C5 – Build/Repair Road

Site	Details of Action	Metres of road/Car Parks	Complete to 30/09/06	Balance to complete	Expected completion date
8	Construct New Road	150m	Nil	150m	April 2007
8	Construct Car Park	1 park	Nil	1 Car Park	April 2007
11	Construct New Road	1450m	Nil	1450m	March 2007
11	Construct Car Park	1 park	Nil	1 Car park	March 2007

## Comments

Site No. 8 - Cloonshanville – this work has been delayed to facilitate water monitoring on this site for 1 full year pre harvesting. Harvesting is now complete on this site, and the car park and road will be in place late April 2007.

Works on the construction of the Car Park and road at Site No. 11 – Carn Park, were delayed because planning permission was required by the local authority for access from the public road to the car park. Work on the construction of the internal forest road (which did not require planning permission) commenced before the end of the 2<sup>nd</sup> year, and is due for completion by March 2007.

## **C6: Install Dipwells**

### **Scheduled Duration and main objective**

The schedule duration for this action was throughout Year 1, Quarters 1 and 2 of Year 2. The installation of 142 Dipwells was scheduled to be completed during the 1<sup>st</sup> year and a half of the project. These dipwells operate mechanically and give maximum and minimum readings for water levels.

### **Completed to end of Year 2**

122 dipwells have been installed on all 14 sites to the end of the 1<sup>st</sup> project year. This figure was increased to 122 by the end of the 2<sup>nd</sup> project year. Readings taken and being collated by John Derwin the project ecologist. The remaining 20 dipwells will be used as required to replace damaged/broken dipwells.

### **Action C6 – Install dipwells – Progress to 30/09/2005**

<b>Site No.</b>	<b>Site Name</b>	<b>Detail of action</b>	<b>Complete to 30/09/2005</b>
1	Lough Lurgeen/Glenamaddy	Install dipwell	6
2	Camderry Bog	Install dipwell	8
3	Curraghlahanagh Bog	Install dipwell	8
4	Kilsallagh Bog	Install dipwell	8
5	Lough Ree	Install dipwell	12
6	Lisnageeragh/Ballinastack	Install dipwell	8
7	Drumalough Bog	Install dipwell	10
8	Cloonshanville Bog	Install dipwell	12
9	Killyconny Bog	Install dipwell	6
10	Ardgullion Bog	Install dipwell	8
11	Carn Park Bog	Install dipwell	12
12	Crosswood Bog	Install dipwell	8
13	Mount Heavey Bog	Install dipwell	8
14	Coolrain Bog	Install dipwell	8
	<b>Total</b>		<b>122</b>

## **“D” Actions – Recurring biotope management**

### **D1: Remove natural regeneration**

#### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarters 2, 3 and 4 and Year 2, Quarter 1. [It is also scheduled for Year 4, all Quarters.] This action will prevent the bogland from drying out and increase the rate of re-colonisation by bog species.

#### **Completed to end of Year 2**

<b>Site No.</b>	<b>Site Name</b>	<b>Detail of action</b>	<b>Target for Action (Ha)</b>	<b>Complete to 30/09/06 (Ha)</b>
1	Lough Lurgeen Bog & Glenamaddy Turlough	Remove regen	As required	0.0
2	Camderry Bog	Remove regen	As required	2.0
3	Curraglehanagh Bog	Remove regen	As required	0.0
4	Kilsallagh Bog	Remove regen	As required	0.0
5	Lough Ree	Remove regen	As required	19.1
6	Lisnageeragh Bog & Ballinastack Turlough	Remove regen	As required	0.0
7	Drumalough Bog	Remove regen	As required	7.0
8	Cloonshanville Bog	Remove regen	As required	0.0
9	Killyconny Bog	Remove regen	As required	0.0
10	Ardgullion Bog	Remove regen	As required	0.0
11	Carn Park Bog	Remove regen	As required	0.0
12	Crosswood Bog	Remove regen	As required	0.0
13	Mount Hevey Bog	Remove regen	As required	0.0
14	Coolrain Bog	Remove regen	As required	56.0
	<b>Total</b>			<b>84.1</b>

#### **Comments**

This action will vary from site to site depending on the strike of the re-generating conifers (which cannot be predicted with any accuracy) and will be carried out as the need arises, mostly in the final year of the project. It will be monitored closely on all sites.

### **D2: Removal of trespassing livestock**

#### **Scheduled Duration and main objective**

The scheduled duration of this action is nominally Quarter 3 of each of the project years. The problems of adjoining landowner's livestock trespassing on the project area has not occurred to date. However periodic removal of trespassing stock will be carried out as necessary. This action will be carried out on all sites as required.



### Completed to end of Year 1

Nil – not required during Year 1.

### Completed to end of Year 2

Nil – not required during Year 2

### Action D3: Drainage pattern survey and inventory

#### Scheduled Duration and main objective

The scheduled duration of this action at this stage is all of Year 1, the last 2 quarters of year 3 and the first quarters of year 4. The objective of this action is to record ph readings, and water quality, pre and post harvesting.

#### Completed to date

This work is ongoing on site No. 8 (reported in error on all sites in Year 1 report.)

### Action D4: Fire Prevention

#### Scheduled Duration and main objective

The scheduled duration of this action is Quarter 2 and 3 of each project year. Approx. 21,360m will be cleared of vegetation, as fire protection for the project sites.

### Completed to end of Year 2

Site	Details of Action	Number of metres of fireline	Complete to 30/09/06	Balance to complete	Expected completion date
1	Fireline	710m fireline-clear vegetation	Nil	710m	Feb 2007
2	Fireline	1230m fireline-clear vegetation	Nil	1230m	Jan 2007
3	Fireline	2030m fireline-clear vegetation	Nil	2030m	Jan 2007
4	Fireline	2320m fireline-clear vegetation	Nil	2320m	Feb 2007
5	Fireline	2000m fireline	Nil	2000m	Feb 2007
6	Fireline	1300m fireline-clear vegetation	Nil	1300m	Jan 2007
7	Fireline	720m	720m	Nil	Complete
8	Fireline	1000m	Nil	1000m	Jan 2007
9*	Fireline	Clear 650m@4m wide	1500m	Nil	Complete
10	Fire line	Clear vegetation 1200M	1200m	Nil	Complete
11	Fireline	4700m fireline	700m	4000m	Dec 2006
12	Fire prev/controls	Remove vegetation on 1300m	Nil	1300m	Dec 2006
13	Fireline	1200m fireline-clear vegetation	Nil	1200m	Dec 2006
14*	Fireline	1000 m clear vegetation	1100m	Nil	Complete
		<b>21,360 metres of fireline programmed and approved Revised Target 22,310 m</b>	<b>5,220 m</b>	<b>17,090m</b>	

## Comments

\*850m extra complete on site No. 9, and 100m extra complete on site No. 14 – site managers felt it was required to secure the site.

Changes in local personnel in NPWS have hampered progress in agreeing the method of fireline construction, on sites No. 1 – 6. Agreement has been reached with NPWS managers on the PMG, and we expect that the work will be completed by Spring 2007.

It was agreed at the monitoring mission in June, 2006 that firelines on site No's 11,12, and 13 would be completed by end of December, 2006.

### **Action D5: Refuse Removal**

#### **Scheduled Duration and main objective**

The scheduled duration of this action at this stage is the 2<sup>nd</sup> and 4<sup>th</sup> Quarter of each of the project years. Approximately 18 loads of refuse will be removed from the 2 demonstration sites over the duration of the project.

#### **Action D5 – Refuse removal**

Site	Details of Action	Number of Loads	Complete to 30/09/06	Balance to complete	Expected completion date
8	Refuse Removal	8 Loads	0	8 loads	Sept 2008
11	Refuse Removal	10 Loads	4 loads	6 loads	Sept 2008
		<b>18 Loads</b>	<b>4 loads</b>	<b>14 loads</b>	

#### **Completed to end of Year 1**

See table for progress on this action.

#### **Completed to end of Year 2**

No refuse required to be removed from demonstration sites in Year 2.

### **Action D6: Vegetation control**

#### **Scheduled Duration and main objective**

The scheduled duration of this action at this stage is the 3<sup>rd</sup> Quarter of each of the project years. Re-growth of vegetation after tree felling will be cleared on 450 ha.

### Completed to end of Year 2

Site No.	Details of Action	No of Ha	Completed to 30/9/2006
1	Vegetation Control	As required	3.0
3	Vegetation Control	As required	8.0
6	Vegetation Control	As required	3.0
7	Vegetation Control	As required	6.0
8	Vegetation Control	As required	5.0
14	Vegetation Control	As required	30.0
<b>Total</b>			55.0 ha

### Comments

This action will be carried out as required on all sites, throughout the 4 year period 2004 – 2008.

### Action D7: Check/repair dams

#### Scheduled Duration and main objective.

The schedule duration for this action is during years 3 and 4.

### Completed to end of Year 2

No work was necessary, to the end of the 2<sup>nd</sup> year.

## **“E“ Actions – Public awareness and dissemination of results**

### **E1: Land manager training course**

#### **Scheduled Duration and main objective**

The scheduled duration of this action is for the 2<sup>nd</sup> quarter of each year. This action is to disseminate the skills and experience needed to restore bogland and to promote awareness and understanding of the LIFE project.

#### **Completed to end of Year 1**

The purpose of the training course was well served for Year 1 by a visit of the raised bog site managers to two of Coillte’s Blanket Bog project sites (LIFE02 NAT/IRL/008490) where specially prepared training material was distributed. In addition, the recent publication “Conservation and Restoration of Raised Bogs”, edited by M. G. C. Schouten, was circulated to all site managers.

#### **Completed to end of Year 2**

A Land Managers Training Course was held on the 12<sup>th</sup> July, 2006, Coillte personnel, along with Fisheries Board Personnel and NPWS staff attended an indoor session Powerpoint Presentation and hand-out distributed. The group visited site No. 9 Killyconny Bog in the afternoon.

#### **See Appendix No. 3**

#### **Comments**

Further land managers training will take place as scheduled in the remaining two years of the project.

### **E2: Project Website**

#### **Scheduled Duration and main objective**

The scheduled duration of this action is throughout the four years of the project. This action will be utilised to publicise the project objectives and to disseminate on-going results from the LIFE project.

#### **Completed to end of Year 1**

A website has been constructed and can be visited at [www.raisedbogrestoration.ie](http://www.raisedbogrestoration.ie) It contains information relating to the project objectives, expected results, location of sites, background information on bogs and LIFE/Natura 2000, along with links to other relevant websites.

## **Completed to end of Year 2**

The website has received a number of updates since last year, The LIFE logo, as advised in the Commission's letter of 20/2/2006 now provides a direct link to the LIFE website. We plan further improvements to the website during Year 3, which will include details from the Interim Report. The website will also contain more detailed reports on water and vegetation monitoring.

### **Comments**

The site will be updated regularly throughout the duration of the project, in areas such as project events, project progress, press releases, and project results.

## **E3: Project Information Brochure**

### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarters 2, 3 and 4. The purpose of the brochure (20,000 copies) is to promote public awareness of the project.

### **Completed to end of Year 1**

The project brochure was produced, and distribution began by the end of Year 1.

### **Completed to end of Year 2**

The project brochure has been distributed to as wide an audience as possible, nationally and internationally. In particular the IPCC have distributed 1,000 of our brochures to members at our request. 20,000 copies printed, 12,000 copies distributed to the end of Year 2

### **Comments**

Distribution to as large 'an audience' as possible both nationally and internationally, will continue in Year 3 and 4. The brochure is available to download from the project website, and in the reception area of the larger Coillte offices.

**See Appendix No. 4**

## **E4: Project results booklet**

### **Scheduled Duration**

This action is not scheduled until the end of Year 4.

## **E5: Annual bog walk**

### **Scheduled Duration**

Bog walks to be held at the 2 demonstration sites Cloonshanville Bog, site No. 8 and Carn Park Bog, site No. 11, in years 2,3, and 4. Participants will learn about the objectives, actions and expected results of the LIFE project.

### **Progress to the end of Year 2**

While the boardwalks were not yet in place in Year 2 (water monitoring and planning permission caused these to be delayed), we did have a bog walk at Killyconny Bog – Site No.9, during Heritage Week, (August 26<sup>th</sup> – September 3<sup>rd</sup>). We also held a bog walk at Kiltewan Bog – site No. 5 during Lough Ree Summer Environmental Week, on the 30<sup>th</sup> July. Both walks were well attended by locals, and were informative and enjoyable events.

### **Comments :**

Bog walks will be held at the demonstration sites No. 8 and 11 in Years 3 and 4.

**See Appendix No. 5**

## **E6: Media Publicity Campaign**

### **Scheduled duration and main objective**

The scheduled duration of this action is throughout the project. The main focus of this action is to promote public awareness of the background, objectives, actions and events of the Raised Bog LIFE Project. A big effort has been made and continues by the Public Relations/Administration Manager to promote the project and its objectives, to ensure that LIFE-Nature, and joint funding of the project both by EU DG-Environment and Coillte, is acknowledged through all forums of media publicity.

### **Completed to end of Year 1**

Communication of the objectives of the project through the use of the media has taken place throughout Year 1 of the project. The main tasks completed were as follows:

- **Internal Publicity Campaign**

Various articles in our in-house magazine, *Coillte Contact*, and in our in-house e-newsletter, *Inside Coillte*.

- **External Publicity Campaign**
  - Coverage of the project was included in *Peatland News*, magazine of the Irish Peatland Conservation Council;
  - Nature in Westmeath, Westmeath County Council heritage Plan; and
  - Roscommon Herald newspaper for Water Heritage Day

## Completed to end of Year 2

- **Internal Publicity Campaign**
  - Coillte Contact Article – IPCC visit to Site No. 14 Coolrain
  - Coillte Contact Article - Ploughing Championships – Life Projects
  - Article in 2005 Annual Report – Circulated in 2006
  - Article in Social & Environmental Report 2004-05 – Circulated to stakeholders in 2006.
  - Project brochures circulated to all Coillte staff

## Appendix No. 6

- **External Publicity Campaign**
  - Bog Walks at Site No.5, - (Lough Ree Environmental School) and No. 9, in conjunction with Heritage Week. (see also E5)
  - Meeting with IPCC (Irish Peatland Conservation Council) – August 2006 (See Powerpoint Presentation)
  - PR Manager attended an Art Exhibition held at the Arts Centre, Mullingar 31<sup>st</sup> August – 3<sup>rd</sup> Sept 2006.  
**‘Exhibition on Peatlands’**  
This was an art exhibition of local artists of art work exploring Bog Conservation.
  - PR Manager attended the National Ploughing Championships ’05 and ’06, (The largest Agricultural Show held annually in Ireland, which attracts a crowd of approx 160,000- mostly rural people - 3 day event) distributed the Raised Bog Restoration Brochures, and spoke to interested parties at the Show.
  - PR Manager attended the Tullamore Show which is the 2<sup>nd</sup> largest Agricultural Show held annually in Ireland, and spoke to people about the Raised Bog Restoration Project.

- Sponsorship of National Wetlands Wilderness Park – Fund raising Canoe Trip.

### **Appendix No. 7**

#### **Press coverage in:**

- Irish Independent – 9<sup>th</sup> May, 2006 – Article on Coillte’s 3 EU funded LIFE Projects
- Longford News – 23<sup>rd</sup> May, 2006 – Article on upcoming Lough Ree Environmental Summer School, in which LIFE Site No. 5 was visited for a bog walk
- Roscommon Champion – 4<sup>th</sup> July, 2006 – Article on Lough Ree Environmental School – Bog Walk at Lough Ree Bog (Site No. 5)
- Longford News – 4<sup>th</sup> July, 2006 – Article on Environmental Summer School and bog walk at Kiltewan – Site No. 5.
- Irish Examiner – 5<sup>th</sup> August, 2006
- Anglo Celt - 24<sup>th</sup> August, 2006 - Article on Bog Walk in Site No. 9 - 1<sup>st</sup> September.
- Anglo Celt - 31<sup>st</sup> August, 2006 - Article on Bog Walk in Site No. 9 – 1<sup>st</sup> September

### **Appendix No. 8**

#### **Comments**

It is intended to officially launch the project at site No. 11 – Carn Park Bog as soon as the car park and boardwalk are in place, see Action E7 below regarding delay. It is now planned to hold the launch in Spring 2007.

Publicity for the project, its objectives, actions and achievements will continue in years 3 and 4.



## **E7: Interpretative displays and boardwalks**

### **Scheduled Duration and main objective**

This action was scheduled to commence in the 4<sup>th</sup> quarter of Year 1. It is proposed to have two demonstration sites for the project, one at Cloonshanville Bog (Site 8), and one at Carn Park Bog (Site 11). At each of these sites we will provide an information panel, and boardwalk for safe visitor access and habitat protection.

### **Completed to end of Year 1**

Preparatory work has commenced on Carn Park Site 11, and it is expected that the information panel/boardwalk will be put in place in Year 2.

### **Completed to end of Year 2**

All tree removal actions C1 and C2 were delayed at Cloonshanville Bog (Site No. 8), for 1 year, to allow water quality sampling to take place on this sensitive site. (see Action D3. This has resulted in felling operations not being complete on this site at the end of Year 2. (now expected by Dec 2006). Accordingly the construction of the boardwalk and interpretative signage has also been delayed. These will be in place by April '07.

We were required to apply to the local authority - Westmeath County Council for planning permission for the Car Park at Carn Park Bog demonstration site – Site No. 11. When the application was submitted to Brussels we did not envisage that this would be a requirement. Construction of the boardwalk has commenced, and it is planned that this demonstration site will be operational by Spring 2007.

### **Comments**

Preparatory work for the launch has already commenced.

### **Appendix 9 - (Photos of boardwalk under construction)**

## **“F” Actions – Overall project operation and monitoring**

### **F1: Project Management**

#### **Scheduled Duration and main objective:**

This action is scheduled for the duration of the project. The main objective of this action is to manage the project and evaluate progress in relation to its aims and objectives.

#### **Completed to end of Year 1**

The following vacancies were filled on the Project Management Group:

- PR/Administration Manager - Angela Wallace
- Project Accountant – Oh Peng Lim
- National Parks and Wildlife Service representatives – Jim Ryan, Judit Kelemen
- Forest Service representative – Pat O’Callaghan

Four successful Project Management Group (PMG) meetings were held in Year 1.

#### **Completed to end of Year 2**

Personnel changes – Michael Delaney new Project Manager from 1<sup>st</sup> January 2006, Richard Clear new Project Accountant from 25<sup>th</sup> January 2006.

Four successful Project Management Group meetings were held in Year 2. Day to day management involved various meetings of core project staff, particularly the project manager, PR manager, project accountant and site managers.

#### **Comments**

PMG meetings have been productive and positive, always proceeding on the basis of consensus.

### **F2: Project Advisory Panel**

#### **Scheduled Duration and main objective**

The scheduled duration of this action was the last quarter of each year. The panel will be available to provide technical or management advice should the project management group request it.

#### **Completed to end of Year 1**

Preparatory work had begun for this action, including identifying potential interested organisations and drafting invitations.

## **Completed to end of Year 2**

Meeting of Project Advisory Panel was held on 27<sup>th</sup> September, 2006 with an indoor session in the morning and a site visit to Carn Park – site No. 11 in the afternoon. Representatives from Birdwatch Ireland, The Heritage Council, Eastern Regional Fisheries Board, Laois County Council, Meath County Council, and IPCC, attended this meeting.

**See Appendix 10**

### **Comments**

Various interest groups are represented on our Project Advisory Panel, and we look forward to good interaction. We are already co-operating with our Birdwatch representative, Sinead Cummins, on their Red Grouse Survey.

## **F3: Project Reporting**

### **Scheduled Duration and main objective**

The scheduled duration of this action is 1<sup>st</sup> quarter of years 2,3,and 4. and also the final quarter of year 4. This action is required in order to report to the European Commission on activities and progress during the project in relation to its aims and objectives.

### **Completed to end of Year 1**

Progress Report for Year 1 was produced and submitted to the European Commission and external team during December, 2005. This report was well received.

### **Completed to end of Year 2**

Interim Report to be submitted by 31/12/2006.

### **Comments**

All reports submitted to the Commission will be distributed to all members of the Project Management Group and kept on file for reference. Responses from the Commission will be taken on board in subsequent reports.

## **F4: Procure the use of expert advice**

### **Scheduled Duration and main objective**

The scheduled duration of this action was Year 1, Quarter 1. The raised bog restoration project will benefit from the expertise of a consultant experienced in similar LIFE funded projects in the UK.

## **Completed to end of Year 1**

Action Complete in Year 1. Report of project site evaluations by Stuart Brooks (Peatland Consulting, Scotland) received and utilised while formulating site action plans (A2). Mr. Brooks also gave a presentation of his findings at the second PMG meeting on 17<sup>th</sup> February 2005. Mr Brooks recommendations regarding the retention of birch on lagg areas have been taken on board as indicated above in Actions C1 and C2.

## **Completed to end of Year 2**

As detailed under Action A1, members of our Project Team have visited LIFE sites in Scotland with Stuart Brooks.

## **Comments**

Mr Brooks has proved to be a very useful contact as he was involved in some of the earliest UK raised bog LIFE projects dating to the early 1990s. Both the project manager and site managers have found Mr Brooks' report very useful as a reference document.

## **F5: Hydrology monitoring**

### **Scheduled duration and main objective**

The scheduled duration of this action was throughout the project. The objective of this action is to record changes in water levels which are expected to increase following removal of exotic tree species and blocking of drains.

## **Completed to end of Year 1**

As already outlined under Action C6, 122 of 142 dipwells have been installed on all 14 project sites. Readings are being taken monthly and recorded.

## **Completed to end of Year 2**

The aim of installing the dipwells is to obtain information on the water regime in each of the project sites, before restoration work begins and to assess the impact of restoration measures on water levels over the life-time of the project. These walrags have been installed into areas of open high bog, cutover bog, failed plantations and commercial plantations, to measure water-levels before harvesting. The dipwell measurements are recorded monthly by field staff.

It has been noted that the intact areas of high bog have higher water-levels and less fluctuation throughout the year. Water-levels on all 14 sites fell during the summer months of 2006, due to the long dry spell, but the reduction in water-levels has been less on the intact high bog. Drain-blocking will re-wet the damaged areas and over time water-levels will rise to similar levels as the intact bog.

## **Comments**

These readings will be collated for the lifetime of the raised bog restoration project. Overall the restoration work is progressing satisfactorily on all sites. Nearly all of the conifers have been removed by the end of the second year as planned, and drain-blocking has been completed on two sites, and commenced on a further 5 sites resulting in a significant increase in water-levels. The remaining drain-blocking is scheduled to be completed by September 2007.

With the removal of the conifers and blocking of drains, the restoration of raised bog habitat should improve over the remaining 2 years of the project.

**See Appendix No. 11**

## **F6: Vegetation Monitoring**

### **Scheduled duration and main objective**

The scheduled duration of this action is throughout the 4 years of the project. The main objective of the action is to determine through the use of vegetation transects the recovery of the bog vegetation, and therefore the degree of success of the restoration project.

### **Completed to end of Year 1**

Seventy vegetation transects 10m x 10m permanent quadrats have been laid down on cleared areas, and / or on open bog habitats on all fourteen sites. There is an average of five quadrats per site, with some sites - which are quiet uniform in vegetation cover requiring only three quadrats, while more diverse sites required up to seven quadrats.

### **Completed to end of Year 2**

During the summer of 2006, the vegetation of the permanent quadrats was re-surveyed. The species and vegetation cover present in each quadrat was recorded. This allows a comparison of the vegetation communities present on each site and an assessment of the change in these communities over the timescale of the project.

## **Comments**

Changes in vegetation composition will be recorded and will help to indicate the progress of the restoration work.

**See Appendix No. 11**

**F7: Mid-point and end of project mapping**

**Completed to end of Year 1**

This action is not scheduled for Year 1.

**Completed to end of Year 2**

GIS maps of all 14 project sites have been updated to reflect progress on tree felling at the Interim stage.

See Appendix No. 12

**OVERVIEW OF TIME PLANNING: Action activity at end of Year 2.**

**Table Legend**

- ✓ = original time planning schedule
- ▼ = action continuing through specific quarters
- = action fully completed for specific year

Action Number/ name	Calendar Year 1				Calendar Year 2				Calendar Year 3				Calendar Year 4			
	*I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
<b>A. Preparatory actions, elaboration of management plans and/or action plans:</b>																
A1 Project visits to see other LIFE-Nature sites.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	▼	▼	▼	▼								
A2 Elaboration of action plans.	✓ ▼	✓ ▼	▼	▼	▼	▼	▼	▼								
A3 Identify Safety Hazards and draw up a general safety plan for sites.	✓ ▼	✓ ▼	▼	▼	✓ ▼	▼	▼	▼	✓				✓			
A4 Survey of fence lines and enclosures.	✓ ▼	✓ ▼			▼	■										
A5 Land Survey.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	▼	▼	✓ ▼	▼			✓					
<b>B. Purchase/lease of land and/or rights:</b>																
None																

Action Number/ name	Calendar Year 1				Calendar Year 2				Calendar Year 3				Calendar Year 4			
	*I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
<b>C. Non-recurring biotope management:</b>																
C1 Fell non-commercial.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼								
C2 Harvesting.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼								
C3 Install dams.				✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓	✓	✓	✓				
C4 Fencing.	✓	✓	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼								
C5 Build roads onto sites for safe access and the removal of trees.		✓	✓	✓		✓	✓	✓ ▼								
C6 Install dipwells.	✓ ▼	✓ ▼	✓ ▼	✓ ■	✓	✓										
<b>D. Recurring biotope management:</b>																
D1 Remove natural regeneration.		✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼						✓	✓	✓	✓
D2 Removal of trespassing livestock.			✓				✓				✓			✓		
D3 Drainage pattern survey and inventory.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼			✓	✓	✓	✓		
D4 Fire prevention		✓ ▼	✓ ▼			✓ ▼	✓ ▼			✓	✓			✓	✓	
D5 Refuse removal		✓ ▼		✓		✓		✓		✓		✓		✓		✓
D6 Vegetation control			✓ ▼		✓ ▼	✓ ▼	✓ ▼	✓ ▼			✓				✓	

Action Number/ name	Calendar Year 1				Calendar Year 2				Calendar Year 3				Calendar Year 4			
	*I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
D7Check/ repair dams					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>E. Public awareness and dissemination of results:</b>																
E1 Land Manager Training Course	▼	✓				✓		▼		✓				✓		
E2 Project Website	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓	✓	✓	✓	✓	✓	✓	✓
E3 Project Information Brochure		✓ ▼	✓ ▼	✓ ■												
E4 Project Results Book															✓	✓
E5 Annual Bog Walk								✓ ▼				✓				✓
E6 Media Publicity Campaign	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓	✓	✓	✓	✓	✓	✓	✓
E7 Site Interpretative Displays and Boardwalks				✓ ▼	✓	✓	✓	✓ ▼	✓	✓		✓				✓
<b>F. Overall project operation and monitoring:</b>																
F1 Project management	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓	✓	✓	✓	✓	✓	✓	✓
F2 Project advisory panel				✓				✓ ▼				✓				✓
F3 Project reporting					✓ ▼				✓ ▼				✓			✓
F4 Procure the use of expert advice	✓ ▼	■														
F5 Hydrology monitoring.	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓ ▼	✓	✓	✓	✓	✓	✓	✓	✓
F6 Vegetation monitoring.			✓ ▼				✓ ▼				✓				✓	
F7 Mid-point and end mapping.									✓ ▼							✓



## 7. EVALUATION AND CONCLUSIONS

### a. The process

The restoration of raised bog habitat, through the removal of forestry plantations and the blocking of drains to restore hydrological levels.

### b. The project management

Coillte are the sole beneficiaries, there are no project partners. The PMG (including representatives from the NPWS and the Forest Service) holds quarterly meetings which have been productive and positive, always proceeding on the basis of consensus. Day to day management involves various meetings of core project staff, particularly the project manager, PR manager, project accountant, project ecologist and site managers.

### c. Success and failures

The project ecologist's report (Appendix 9) indicates that restoration work is progressing satisfactorily on all sites. Nearly all of the conifers have been removed by the end of the second year as planned, and drain-blocking has been completed on two sites, and commenced on a further 5 sites resulting in a significant increase in water-levels.

As explained during the monitoring mission in June 2006, we have been unable to block perimeter drain on some sites – No. 9, 10, 11, 12, 14 – as this could adversely affect turbary on adjoining areas outside of the project. The ultimate resolution of this issue depends on the success or otherwise of the Cessation of Turbary Scheme operated by NPWS.

### d. Comparison against the project-objectives

C1 and C2 actions were programmed for completion by the end of year 2. C3 is programmed for completion by end of year 3. Table below shows achievement to end of year 2 is exactly on target.

Action	Area programmed	Area achieved to date	% achieved
C1 – Fell and windrow	247.4 ha	225.6 ha	91%
C2 – Harvesting	200.8 ha	196.4 ha	98%
C3 – Install dams	427.1 ha	219.4 ha	51%

**e. Environmental benefits, policy and legislation implications**

The conservation benefit for the Natura 2000 (pSCI/SPA) and habitat type targeted is that there will be an improvement in the conservation status of more than 570ha of priority raised bog habitat within the network. The project will have acted as a flagship demonstration of what could be achieved on a wider scale in Ireland and other Member States subject to the availability of funding.

**f. Innovation, demonstration value**

One of the local harvesting contractors, who worked on a number of the project sites, imported an attachment for his machine - a Hitachi tracked excavator - to suit the work which needed to be carried out i.e. fell and windrow. The attachment for the Hitachi is of German manufacture – it is a hydraulic tree cutter which cuts trees (not large enough to harvest commercially) with a ‘scissors action. It is also capable of stacking the trees either side of the machine when cut, or it can place them under the machine (to form a brush mat), to protect the surface of the bog. The attachment is of light weight, this was also an important factor to be considered when working on the raised bog restoration sites. This contractor successfully carried out approx 100 ha of fell and windrow (C1) on 4 of the project sites.

Two of the project sites (No’s 8 and 11) have been selected as project Demonstration Sites where information panels will be erected and boardwalks will be constructed. These sites will be the focus of a public awareness programme over the four-year period of the project and will continue to provide a demonstration value thereafter. Techniques used/developed on the project (e.g. windrowing of timber felled to waste, plastic/peat damming of drains) have clear potential for transfer within Ireland and other Member States. The project has been visited, in this context, by the IPCC and LIFE projects from Finland and Latvia.

**g. Socio-economic effects**

In recent times, an increasing social awareness of the importance of nature conservation has prompted national efforts to conserve the best remaining raised bog habitat. In line with this, Coillte has selected, for this major restoration project, those sites which have been identified as having the best nature conservation value. At all stages during the project, the work carried out on each site is offered to local contractors. Every effort is made to involve local people as much as possible in the project, from working on sites to setting up interpretive meetings and demonstrations.

**h. The future**

The project sites will be incorporated into Coillte’s biodiversity programme in that they will continue to be managed with nature conservation as the primary management objective. Although not mandatory for projects financed in

2004, an After-LIFE Conservation Plan will be submitted with the Final Report. As indicated in the approved application (Form 26, Continuation), “Re-invasion of lagg area by predominantly birch and other herbaceous woodland growth may persist and may have to be accepted as constituting an appropriate buffer zone to the raised bog”. There are currently indications of this threat at several sites, and this issue is being closely monitored. Work will continue against this threat under Action D6 until the end of the project, when the After-LIFE Conservation Plan will take effect. Similarly, expert advice under Action F4 is that “significant threat from rhododendron and other non desirable invasive species is apparent on most sites following harvesting. Raising water levels by blocking ditches will not address this problem alone. Ongoing maintenance is likely to be necessary”. How much can be done under the After-LIFE Conservation Plan will depend on available funding; it is hoped that support may be available through Ireland’s Rural Development Programme 2007-13 under Article 49 (non-productive investments) of the Rural Development Regulation 1698/2005.

**i. Long term indicators of the project success**

- It is expected that there will be a significant improvement in the quality of the open bog areas.
- This will be due to project measures taken to gain control of areas and the re-establishing of natural water levels brought about by the removal of trees, drain blocking and clearance of invasive conifer regeneration.
- Over 570 hectares of raised bog will be improved using these measures. There will be a measurable increase in actively growing raised bog species since ecological monitoring began at the start of the project.
- These improvements will be demonstrated using data from 122 dipwells monitoring changes in water levels and data from 70 vegetation transects.
- The area of raised bog will be increased by almost 450 hectares through the removal of conifers. Maps and field inventory will record this process.
- Natural water levels on the raised bog area cleared of trees and on the open bog area will be re-established resulting in an improvement in habitat quality.
- Re-invasion of lagg area by predominantly birch and other herbaceous woodland growth may persist and may have to be accepted as constituting an appropriate buffer zone to the raised bog.
- 

**8. INTERIM REPORT: PLANNED PROJECT PROGRESS**

Planned activities and reports to the end of the project are summarised in the tables below. Principal remaining actions include small amount of tree removal (C1/C2), balance of drain blocking (C3), updating of website (E2), development of demonstration sites (C5/E7) and project results booklet/end-of-project conference (E4/E6).

**Table Of Planned Activities To Be Expected Until The End Date Of The Project**

Milestone	No. of Action	Deadline	Comments
Land Survey completed	A5	30.09.2005	Cannot be completed until actions C1 and C2 are complete
Project Website updated	E2	30.09.2008	<a href="http://www.raisedbogrestoration.ie">www.raisedbogrestoration.ie</a> will be continually updated
Fell non-commercial complete	C1	30.09.2006	Plan to complete by April 2007
Harvesting completed	C2	30.09.2006	Plan to complete by July 2007
Fencing completed	C4	30.09.2006	Awaiting completion of tree felling
Install dams completed	C3	30.09.2007	Expected on schedule
Build roads/Car Parks in 2 Demonstration sites	C5	30.09.2006	Preparatory work has commenced on both sites, Carn Park (Site No.11) and Cloonshanville (Site No. 8)
Displays and boardwalks completed	E7	31.03.2007	Expected on schedule
End-of-project conference	E6	30.09.2008	Expected on schedule
Project results booklet produced	E4	31.12.2008	Expected on schedule
Hydrology and water monitoring	F5 & F6	31.12.2008	Expected on schedule

**Reports To Be Expected Until The End Date Of The Project**

Progress Report Year III	30.11.2007
Progress Report Year IV with Final Report	31.12.2008

## 9. COMMENTS ON FINANCIAL REPORT

The summary financial tables at pages 47- 53 below show expenditure by budget posts, action types, and individual actions respectively.

41% of the total approved provisional budget has now been incurred. The level of expenditure arising under each action category reflects the extent to which operational milestones have been achieved. These are outlined in detail in Chapter 6 of this report, and in summary in the notes below.

### **“A” Actions – Preparatory Actions, Elaboration of Management Plans**

While all preparatory actions are well advanced, experience to date has shown that some of these actions will need to continue for the lifetime of the project, and accordingly limited expenditure will continue up to the end of the project.

Significant overspends arise in Personnel and External Assistance. Coillte Personnel recorded under Action A1 should have been coded under Action F1 (this does not seriously affect the mid point position for the overall Personnel budget post which is considered to be under control). Under Action A5, additional Coillte Personnel and external assistance contractors were necessary as the work proved to be more intensive than envisaged.

### **“C” Actions – Non-Recurring Management**

Actions C1, C4, C5 and C6 are either on target or expected to finish within budget.

While the harvesting programme under Action C2 – Commercial Felling is almost complete on the ground, the Company’s sales data process is not closed off in most cases, and consequently the calculation of losses is not yet finalised. However, indications are that of the €215,952 budgeted for losses only perhaps 20% of these losses has materialised. It is expected that final details of losses will be available and included in the next progress report. Assuming these indications are confirmed, there maybe a considerable underspend on this action. It is anticipated that this underspend will be required to augment budgets for other project actions. (See Chapter 7 Evaluation and Conclusions).

While the drain blocking under Action C3 – Install Dams is about 50% complete (see Page 20), only about 15% of the budget for plastic dams has been utilised. Assuming that this trend continues (and allowing for some later expenditure under Action D7-Repair Dams), there maybe a significant underspend on this action.

### **“D” Actions – Recurring Biotope Management**

Actions D2, D3, D4, D5, and D7 are either on target or expected to finish within budget. It is not expected that there will be significant additional expenditure under Action D1. Action D6 provides a budget for controlling re-growth of vegetation after tree clearance on 450ha. Only a small amount of this work has taken place to date, as it scheduled for the final 2 years of the project. Indications are (as detailed in Chapter 7h) that more intensive treatment will be needed, and therefore an increased budget will be required.

### **“E” Actions – Public Awareness and Dissemination of Results**

As some items of major expenditure are scheduled for the 2<sup>nd</sup> half of the project term, Actions E1-E7 are either on target or expected to finish within budget.

### **“F” Actions – Overall Project Operation and Monitoring**

All actions are progressing on schedule and approximately 50% of the overall budget has been spent at the mid point.

**Summary of Incurred costs for Reporting Period**

<b>Expenditure Category</b>	<b>Amount Spent</b>	<b>Amount Budgeted</b>	<b>Variance</b>	<b>% Spent</b>
<b>Personnel</b>	532,712	891,494	358,782	60%
<b>Travel</b>	58,263	135,461	77,198	43%
<b>External Assistance</b>	314,235	767,417	453,182	41%
<b>Durable Goods</b>	105,856	508,426	402,570	21%
<b>Consumable Material</b>	9,259	41,650	32,391	22%
<b>Other Costs</b>	5,440	19,830	14,390	27%
<b>Overheads</b>	9,951	135,722	125,771	7%
<b>TOTAL</b>	<b>1,035,717</b>	<b>2,500,000</b>	<b>1,464,283</b>	<b>41%</b>

**Financial Summary by Action Type to end of Year 2**

Category →	A (Form 16)	A (Form 16)	C (Form 18)	C (Form 18)	D (Form 19)	D (Form 19)	E (Form 20)	E (Form 20)	F (Form 21)	F (Form 21)	Total costs € Actual	Total costs € Budget	Total Variance €
Budget item ↓	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	
1. Personnel	62,617	26,400	156,657	201,190	42,606	199,900	17,821	50,557	253,011	413,447	532,712	891,494	358,782
2. Travel	12,458	11,460	7,343	30,178	1,097	29,985	5,519	3,683	31,846	60,155	58,263	135,461	77,198
3. External assistance	19,705	0	246,994	636,357	9,333	7,920	9,161	60,740	29,042	62,400	314,235	767,417	453,182
4. Durable goods	1,468	1,000	98,843	467,926	2,350	14,500	1,780	10,000	1,415	15,000	105,856	508,426	402,570
5. Land purchase/lease	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Consumable material	437	6,200	7,344	1,000	1,234	1,750	18	12,700	228	20,000	9,259	41,650	32,391
7. Other costs	0	0	0	0	0	0	5,440	9,830	0	10,000	5,440	19,830	14,390
8. Overheads	0	2,253	0	80,198	1,232	15,244	1,519	5,171	7,200	32,856	9,951	135,722	125,771
<b>TOTAL</b>	<b>96,684</b>	<b>47,313</b>	<b>517,181</b>	<b>1,416,849</b>	<b>57,852</b>	<b>269,299</b>	<b>41,258</b>	<b>152,681</b>	<b>322,742</b>	<b>613,858</b>	<b>1,035,717</b>	<b>2,500,000</b>	<b>1,464,283</b>
<b>% of total budget spent</b>	<b>204%</b>		<b>37%</b>		<b>21%</b>		<b>27%</b>		<b>53%</b>		<b>41%</b>		



## Expenditure by Action Type

### A Actions

#### Preparatory Actions, Elaboration of Management Plans

Budget Item	A1 - Visit to other Sites			A2 - Elaboration of plan			A3 - Identify Safety Hazards		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	34,618	-	- 34,618	7,524	3,700	- 3,824	316	3,700	3,384
Travel	8,654	7,500	- 1,154	1,944	555	- 1,389	92	555	463
External Assistance	2,066	-	- 2,066	2,996	-	- 2,996	-	-	-
Durable Goods	-	-	-	-	-	-	-	-	-
Consumable Material	-	-	-	-	3,800	3,800	-	1,400	1,400
Other Costs	-	-	-	-	-	-	-	-	-
Overheads	-	-	-	-	483	483	-	339	339
<b>Total</b>	<b>45,339</b>	<b>7,500</b>	<b>- 37,839</b>	<b>12,464</b>	<b>8,538</b>	<b>- 3,926</b>	<b>408</b>	<b>5,994</b>	<b>5,586</b>

Budget Item	A4 - Survey of fence lines			A5 - Land Survey			Total		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	3,832	10,000	6,168	16,326	9,000	- 7,326	62,617	26,400	- 36,217
Travel	314	1,500	1,186	1,453	1,350	- 103	12,458	11,460	- 998
External Assistance	-	-	-	14,643	-	- 14,643	19,705	-	- 19,705
Durable Goods	1,018	500	- 518	450	500	50	1,468	1,000	- 468
Consumable Material	268	500	232	168	500	332	437	6,200	5,763
Other Costs	-	-	-	-	-	-	-	-	-
Overheads	-	750	750	-	681	681	-	2,253	2,253
<b>Total</b>	<b>5,432</b>	<b>13,250</b>	<b>7,818</b>	<b>33,040</b>	<b>12,031</b>	<b>- 21,009</b>	<b>96,684</b>	<b>47,313</b>	<b>- 49,371</b>

**Expenditure by Action Type**

**C Actions**

**Non-Recurring Management**

Budget Item	C1 - Fell and Windrow			C2 - Harvesting			C3 - Install Dams			C4 - Fencing		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	64,411	24,100	- 40,311	7,717	39,221	31,504	70,682	99,796	29,114	7,003	26,451	19,448
Travel	3,107	3,615	508	1,895	5,883	3,988	1,687	14,969	13,282	137	3,968	3,831
External Assistance	143,338	189,600	46,262	43,500	215,952	172,452	50,712	166,305	115,593	4,280	-	4,280
Durable Goods	4,692	500	- 4,192	-	-	-	76,364	444,000	367,636	3,787	6,386	2,599
Consumable Material	6,548	1,000	- 5,548	53	-	- 53	742	-	- 742	-	-	-
Other Costs	-	-	-	-	-	-	-	-	-	-	-	-
Overheads	-	13,129	13,129	-	15,663	15,663	-	43,504	43,504	-	2,208	2,208
<b>Total</b>	<b>222,096</b>	<b>231,944</b>	<b>9,848</b>	<b>53,165</b>	<b>276,719</b>	<b>223,554</b>	<b>200,188</b>	<b>768,574</b>	<b>568,386</b>	<b>15,207</b>	<b>39,013</b>	<b>23,806</b>

Budget Item	C5 - Build Roads			C6 - Install dipwells			Total		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	2,722	8,566	5,844	4,122	3,056	- 1,066	156,657	201,190	44,533
Travel	58	1,285	1,227	459	458	- 1	7,343	30,178	22,835
External Assistance	1,700	64,500	62,800	3,464	-	- 3,464	246,994	636,357	389,363
Durable Goods	-	-	-	14,000	17,040	3,040	98,843	467,926	369,083
Consumable Material	-	-	-	-	-	-	7,344	1,000	- 6,344
Other Costs	-	-	-	-	-	-	-	-	-
Overheads	-	4,461	4,461	-	1,233	1,233	-	80,198	80,198
<b>Total</b>	<b>4,480</b>	<b>78,812</b>	<b>74,332</b>	<b>22,044</b>	<b>21,787</b>	<b>- 257</b>	<b>517,181</b>	<b>1,416,849</b>	<b>899,668</b>

## Expenditure by Action Type

### D Actions

#### Recurring Biotope Management

Budget Item	D1 - Remove Nat Regen			D2 - Remove Trespass			D3 - Drainage pattern survey			D4 - Fire Prevention		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	10,808	8,282	- 2,526	-	1,097	1,097	19,096	65,023	45,927	1,791	39,212	37,421
Travel	266	1,242	976	-	165	165	547	9,753	9,206	59	5,882	5,823
External Assistance	-	-	-	-	-	-	180	-	180	5,346	-	5,346
Durable Goods	2,350	1,000	- 1,350	-	-	-	-	1,200	1,200	-	11,300	11,300
Consumable Material	134	250	116	-	-	-	1,099	1,000	99	-	-	-
Other Costs	-	-	-	-	-	-	-	-	-	-	-	-
Overheads	-	646	646	-	76	76	1,232	4,619	3,387	-	3,384	3,384
<b>Total</b>	<b>13,559</b>	<b>11,420</b>	<b>- 2,139</b>	<b>-</b>	<b>1,338</b>	<b>1,338</b>	<b>22,155</b>	<b>81,595</b>	<b>59,440</b>	<b>7,196</b>	<b>59,778</b>	<b>52,582</b>

Budget Item	D5 - Refuse removal			D6 - Vegetation Control			D7 - Check/repair dams			Total		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	2,500	1,052	- 1,448	8,411	70,234	61,823	-	15,000	15,000	42,606	199,900	157,294
Travel	-	158	158	6	10,535	10,529	218	2,250	2,032	1,097	29,985	28,888
External Assistance	-	7,920	7,920	3,807	-	3,807	-	-	-	9,333	7,920	- 1,413
Durable Goods	-	-	-	-	1,000	1,000	-	-	-	2,350	14,500	12,150
Consumable Material	-	-	-	-	500	500	-	-	-	1,234	1,750	516
Other Costs	-	-	-	-	-	-	-	-	-	-	-	-
Overheads	-	548	548	-	4,936	4,936	-	1,035	1,035	1,232	15,244	14,012
<b>Total</b>	<b>2,500</b>	<b>9,678</b>	<b>7,178</b>	<b>12,224</b>	<b>87,205</b>	<b>74,981</b>	<b>218</b>	<b>18,285</b>	<b>18,067</b>	<b>57,852</b>	<b>269,299</b>	<b>211,447</b>

**Expenditure by Action Type**

**E Actions**

**Public Awareness and Dissemination of Results**

Budget Item	E1 - Land manager training course			E2 - Project Website			E3 - Project Information			E4 - Project Results		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	1,648	-	- 1,648	3,285	-	- 3,285	3,553	-	- 3,553	-	-	-
Travel	752	-	- 752	710	-	- 710	1,441	-	- 1,441	-	-	-
External Assistance	207	4,500	4,293	3,500	10,000	6,500	5,102	10,000	4,898	-	14,500	14,500
Durable Goods	1,780	10,000	8,220	-	-	-	-	-	-	-	-	-
Consumable Material	-	3,000	3,000	-	-	-	-	-	-	-	-	-
Other Costs	-	5,290	5,290	-	700	700	200	2,840	2,640	-	500	500
Overheads	668	-	- 668	51	-	- 51	800	-	- 800	-	-	-
<b>Total</b>	<b>5,055</b>	<b>22,790</b>	<b>17,735</b>	<b>7,546</b>	<b>10,700</b>	<b>3,154</b>	<b>11,095</b>	<b>12,840</b>	<b>1,745</b>	<b>-</b>	<b>15,000</b>	<b>15,000</b>

Budget Item	E5 - Annual Bog Walk			E6 - Media Publicity			E7 - Site Interpretatives			Total		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	255	5,000	4,745	8,994	42,670	33,676	86	2,887	2,801	17,821	50,557	32,736
Travel	173	750	577	2,341	2,500	159	102	433	331	5,519	3,683	- 1,836
External Assistance	207	-	- 207	-	-	-	146	21,740	21,594	9,161	60,740	51,579
Durable Goods	-	-	-	-	-	-	-	-	-	1,780	10,000	8,220
Consumable Material	-	2,500	2,500	18	2,000	1,983	-	5,200	5,200	18	12,700	12,683
Other Costs	-	500	500	1,740	-	- 1,740	3,500	-	- 3,500	5,440	9,830	4,390
Overheads	-	525	525	-	2,830	2,830	-	1,816	1,816	1,519	5,171	3,652
<b>Total</b>	<b>635</b>	<b>9,275</b>	<b>8,640</b>	<b>13,093</b>	<b>50,000</b>	<b>36,907</b>	<b>3,834</b>	<b>32,076</b>	<b>28,242</b>	<b>41,258</b>	<b>152,681</b>	<b>111,423</b>

## Expenditure by Action Type

### F Actions

#### Overall Project Operation and Monitoring

Budget Item	F1 - Project Management			F2 - Project Advisory Panel			F3 - Project Reporting			F4 - Procure Expert Advice		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	224,153	341,548	117,395	-	-	-	20,998	31,308	10,310	-	-	-
Travel	23,404	48,568	25,164	-	-	-	2,171	5,500	3,329	-	-	-
External Assistance	-	-	-	-	-	-	-	-	-	8,588	15,140	6,552
Durable Goods	1,415	13,000	11,585	-	-	-	-	-	-	-	-	-
Consumable Material	228	5,000	4,772	-	8,000	8,000	-	4,000	4,000	-	-	-
Other Costs	-	10,000	10,000	-	-	-	-	-	-	-	-	-
Overheads	6,888	23,083	16,195	312	480	168	-	2,448	2,448	-	908	908
<b>Total</b>	<b>256,087</b>	<b>441,199</b>	<b>185,112</b>	<b>312</b>	<b>8,480</b>	<b>8,168</b>	<b>23,169</b>	<b>43,256</b>	<b>20,087</b>	<b>8,588</b>	<b>16,048</b>	<b>7,460</b>

Budget Item	F5 - Hydrology monitoring			F6 - Vegetation Monitoring			F7 - Mid-point mapping			Total		
	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance	Actual	Budget	Variance
Personnel	7,860	23,981	16,121	-	-	-	-	16,610	16,610	253,011	413,447	160,436
Travel	6,271	3,597	-2,674	-	-	-	-	2,490	2,490	31,846	60,155	28,309
External Assistance	12,293	-	12,293	8,161	47,260	39,099	-	-	-	29,042	62,400	33,358
Durable Goods	-	-	-	-	-	-	-	2,000	2,000	1,415	15,000	13,585
Consumable Material	-	-	-	-	-	-	-	3,000	3,000	228	20,000	19,772
Other Costs	-	-	-	-	-	-	-	-	-	-	10,000	10,000
Overheads	-	1,655	1,655	-	2,836	2,836	-	1,446	1,446	7,200	32,856	25,656
<b>Total</b>	<b>26,424</b>	<b>29,233</b>	<b>2,809</b>	<b>8,161</b>	<b>50,096</b>	<b>41,935</b>	<b>-</b>	<b>25,546</b>	<b>25,546</b>	<b>322,742</b>	<b>613,858</b>	<b>291,116</b>

## **10. APPENDICES (bound separately)**

Appendix 1	Visit from members of Latvian LIFE Project No. LIFE04 NAT/LV/000196 Visit by members of our team to Scottish LIFE sites
Appendix 2	Safety Plan for the 14 Project sites
Appendix 3	Agenda and handout for Land Managers training course
Appendix 4	Distribution list for Project Information Brochure
Appendix 5	Bog Walks to site No's 9 and 5
Appendix 6	Internal Publicity for the project in Year 2
Appendix 7	External Publicity for the project in Year 2
Appendix 8	Media Publicity for the project in Year 2
Appendix 9	Photographs of the boardwalk under construction at Carn Park Bog – site No. 11
Appendix 10	Agenda and handout for the Project Advisory Panel Meeting
Appendix 11	Hydrology and vegetation monitoring from the Project Ecologist
Appendix 12	GIS Maps indicating progress of felling on the project sites at end of Year 2