RESTORING RAISED BOG IN IRELAND
Project Reference: LIFE04 NAT/IE/000121

A REPORT ON THE RESTORATION OF PROJECT SITE No. 5

LOUGH REE cSAC - (KILTEEVAN BOG), Co. ROSCOMMON

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Project Site No. 5 - Lough Ree - (Kilteevan Bog), Co. Roscommon

1. Introduction

Grid Reference IM9413 6425	**Elevation (m)** xx	**Bedrock Geology** **Limestone**
SAC Name and Number Lough Ree cSAC (2310) **SAC Area (ha)** 13,626	**Project Site Area (ha)** 49.0	**Main Restoration Methods** Clear-fell mature conifer crop Block drains with peat dams Control natural regeneration Control Rhododendron
Area of Conifer Cover (ha) 29.1	**Area of Open Bog (ha)** 14.9	**Area of Birch Woodland (ha)** 5.0
Noteworthy habitats/plant/animal species present Bog Woodland present on open bog		

General Site Description

Kilteevan Bog is a medium-sized raised bog located on the western shore of Lough Ree in Co. Roscommon. The site is a good example of a western raised bog and the most frequent plant species present on the intact high bog areas include Ling Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Hare's tail Cottongrass (*Eriophorum vaginatum*), Common Cottongrass (*E. angustifolium*) and various bog mosses (*Sphagnum* spp.). In the wetter more central areas of the site, there are a number of pool areas. These pools are typically dominated by the bog moss *Sphagnum cuspidatum* with the vascular plant species Hare's tail Cottongrass and White-beaked Sedge (*Rhynchospora alba*). There is also an area of Bog woodland dominated by Scot's Pine with and understory of Downy Birch and a groundflora of abundant mosses.

Project Site Description (Pre-restoration)

The project area consists of 29.1 hectares of conifer plantation, planted on high bog and cutover bog. These conifers consist largely of Lodgepole Pine (*Pinus contorta*). Although the conifers formed a closed canopy, some bog vegetation remained on the wet bog surface along the fire-lines.

Bog vegetation persists along fire-lines in conifer plantation

Pine needles dominate under closed canopy plantation

Description of bog vegetation adjoining planted areas
There are still excellent areas of high quality active peatland within and adjacent to the project site. The open bog area retains some excellent pool complexes, although relatively recent drainage operations are threatening the long term integrity of these features (Brooks, 2005).

Pool system on open bog adjacent to conifer plantation

Restoration Actions
At this site the main restoration measures undertaken was the clear-felling and removal of the mature conifer crop, wind-rowing of the remaining brash and blocking of drains with peat dams. Follow-up work included the control of the natural regeneration of conifer seedlings and control the spread on invasive species especially Rhododendron.

It is noted that timber has been recently harvested just beyond the western perimeter of the project site. Although there is no potential for peatland restoration in this area, replanting with non native conifers could jeopardise the restoration potential of the adjacent project area. Replanting along the eastern boundary should favour native broadleaves instead of non native conifers. This would minimise conflict with the adjacent restoration area and mimic a natural wet woodland edge (Brooks, 2005).

Harvesting of the western block should be relatively straight forward with vehicle access possible from the recent harvest route to the west. Extraction routes should follow the planted area (and avoid the open peatland). Ditches on the open peatland and the planted areas should be blocked with peat dams. The high water table and proximity of residual peatland vegetation should provide good opportunities for peatland restoration across most of the project site (Brooks, 2005).

2. Methods

Prior to the start of restoration activities at the site, the habitats and vegetation occurring was surveyed and described (Conaghan, 2003). . During the initial restoration work of 2005, permanent quadrats were established on each of the vegetation types within the project site.

During the field survey, particular attention was paid to the possible occurrence of plant and animal species which are considered to be rare in both a national and local context with particular emphasis on animal species listed in Annex II of the E.U. Habitats Directive and plant species listed in the Irish Red Data Book for vascular plants (Curtis and McGough, 1988), the 1999 Flora Protection Order and Annex II of the E.U. Habitats Directive.

3. Site Photographs

During the initial fieldwork a number of colour photographs of the site and vegetation encountered were taken with a digital camera and a selection of these are presented in this report. These include a selection of ground photographs taken by the Project Ecologist in order to illustrate the vegetation descriptions and changes in the habitats/vegetation present over time.

4. Vegetation of Project Site

In general the eastern block of trees has established better than the strip along the western perimeter, although there are areas of closed canopy in both blocks. Where the trees have reached closed canopy there is relatively little residual peatland vegetation. Generally the water level is lower within the eastern section (Brooks, 2005).

5. Changes in Overall Vegetation/Habitat Cover

Much of the site is now cleared of conifers and brash. The brash which remained after clear-felling was wind-rowed to allow bog vegetation to re-colonise exposed peat surface. In the clear-fell areas where the ground layer is dominated by pine needles, bog vegetation is slow to recolonise. Regeneration of pine seedlings is also a problem that needs to be controlled.

6. Vegetation Monitoring Quadrats

The vegetation changes which have taken place within the site over the period of the restoration project are shown by means of observed changes in permanent quadrats. Seven permanent quadrats were installed on this site, which were described and photographed to monitor changes in vegetation over time. In order to ensure the future position of quadrats the corners have been marked with short stakes and an 8-figure GPS reading was also recorded. Each 10m x10m quadrat, was photographed annually and vegetation tables are presented below.

Quadrat 1: This quadrat is located on the south-western margin of Kilteevan Bog and occurred under closed canopy conifer plantation on cutover bog. The sparse ground cover consists of Bramble, Purple Moor-grass and Yorkshire Fog, but is mainly dominated by pine needles and brash. With the felling of conifers, Ling Heather and mosses are recolonising and over time, raised bog habitat will establish.

Lough Ree (Kilteevan Bog) Quadrat 1

Area: 10 x 10m **Location:** 30m West W11 **Grid Ref:** IM9409 6435 **Altitude:** 37m
Bog Type: Cutover Bog **Ecotope:** NA **Slope:** Flat **Aspect:** NA
Landuse: Forestry **Management:** Clear-fell

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Very Dry	Dry	Dry	Soft
Drains	Yes	Yes	Yes	Yes
Canopy Cover %	0	0	0	0
Canopy Height	0	0	0	0
Vegetation Cover %	3	15	35	40
Vegetation Height (m)	5	10	20	30
Dwarf Shrub Cover %	0	5	10	10
Herb Cover %	2	10	25	30
Bryophyte Cover %	0	5	15	20
Sphagnum cover %	0	0	0	0
Open Water %	0	0	0	0
Brash cover %	30	25	15	15
Pine Needle cover %	50	55	50	20
Pine Needle Depth cm	10	5	5	5
Bare Peat %	12	5	5	5
Species number	**5**	**13**	**15**	**17**
Pinus contorta	1	1	1	2
Betula pubescens		1	1	2
***Salix* spp.**				1
Ulex eurpoaeus		1		1
Rubus spp	1	1	2	2
Seneco jacobea		1	3	
Taraxicum spp	1	1		
***Cirsium* Spp.**		1	1	1
Lonicera periclymenum			3	
***Juncus* spp**			1	1
Molinia caerulea	1	1	1	1
Holcus lanatus	1	1	5	5
***Agrostis* spp**			2	15
***Pteridium* spp**				1
Epiolobium spp			5	5
Vaccinium myrtilus		1		1
Calluna vulgaris		4	8	8
Erica tetralix			2	1
Campylopus atroverins		3	10	15
Polytricum commune		2	5	5

Lough Ree Quadrat 1, 2005

Lough Ree Quadrat 1, 2008

Quadrat 2: This quadrat is located on the southern margin of Kilteevan Bog and occurred under closed canopy conifer plantation on high bog. The ground cover consisted of Hare's-tail Cotton-grass and *Sphagnum* moss. Over time, as the plantation becomes wetter, conditions of this raised bog habitat will improve and *Sphagnum* cover may increase further and active raised bog habitat may become established.

Lough Ree (Kilteevan Bog) Quadrat 2

Area: 10 x 10m **Location:** 15m North W7 **Grid Ref:** IM9442 6437 **Altitude:** 33m
Bog Type: High Bog **Ecotope:** NA **Slope:** Flat **Aspect:** NA
Landuse: Forestry **Management:** Clear-fell

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Soft	Soft	Soft	Soft
Drains	Yes	Yes	Yes	Yes
Canopy Cover %	1	0	0	0
Canopy Height	0.5	0	0	0
Vegetation Cover %	75	80	75	85
Vegetation Height (cm)	20	20	50	20
Dwarf Shrub Cover %	15	15	20	30
Herb Cover %	24	30	55	50
Bryophyte Cover %	36	75	65	55
Sphagnum cover %	35	70	**65**	**55**
Open Water %	0	0	10	0
Brash cover %	15	5	10	10
Pine Needle cover %	5	5	10	5
Pine Needle Depth cm	5	10	1	1
Bare Peat %	5	10	0	0
Species number	**12**	**15**	**13**	**14**
Pinus contorta	1	5	30	1
Betula pubescens	2	5	5	5
Vaccinium myrtilus		5	1	5
Calluna vulgaris		5	10	20
Erica tetralix	5	5	10	5
Eriophorium vaginatum	20	10	20	40
E. angustifolium	1			2
Andromeda polifolia	1	5	2	2
Drosera rotundifolia			1	
Vaccinium oxycoccos	10	5		1
Cladonia portentosa		5		10
C. introflexus		1		
Hypnum jutlandicum		3		
Polytricum commune	1	1		
Sphagnum recurvum	5	10	5	5
S cuspidatum	5		5	1
S. capillifolium	10	30	10	10
S. subnitens			5	5
S. magellanicum	15	30	40	40

Lough Ree Quadrat 2, 2005

Lough Ree Quadrat 2, 2008

Quadrat 3: This quadrat occurred on open bog to the south of the bog woodland and is dominated by Ling Heather, Cross-leaved Heath, Bog Asphodel, Hare's-tail Cotton-grass and *Sphagnum* moss. Over time, as the adjoining plantation becomes wetter, conditions of this active raised bog habitat will improve and *Sphagnum* cover may increase further.

Lough Ree (Kilteevan Bog) Quadrat 3

Area: 10 x 10m **Location:** 60m North W11 **Grid Ref:** IM9402 6449 **Altitude:** 42m
Bog Type: High Bog **Ecotope:** Sub-central **Slope:** Flat **Aspect:** NA
Landuse: Unplanted **Management:** Non-intervention

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Very Soft	Quaking	Very Soft	Quaking
Drains	No	No	No	No
Canopy Cover %	0	0	0	0
Canopy Height	0	0	0	0
Vegetation Cover %	95	95	95	95
Vegetation Height (m)	30	30	30	20
Dwarf Shrub Cover %	35	40	40	40
Herb Cover %	37	55	55	55
Bryophyte Cover %	85	65	65	60
Sphagnum cover %	80	65	65	60
Open Water %	5	5	10	3
Brash cover %	0	0	0	0
Pine Needle cover %	0	0	0	0
Pine Needle Depth cm	0	0	0	0
Bare Peat %	0	0	0	2
Species number	**19**	**15**	**15**	**15**
Calluna vulgaris	25	30	30	30
Erica tetralix	5	10	10	10
Menyanthes trifoliata	5	10	10	10
Narthecium ossifragum	15	10	15	15
Eriophorium vaginatum	15	15	10	10
Rhyncospora alba	10	20	15	15
Andromeda polifolia	2		1	1
Drosera rotundifolia	2	1	2	2
D. anglica	3	1	2	2
Cladonia portentosa	10	5	10	10
C. uncilais	3	1		
Hypnum jutlandicum	5			
S cuspidatum	10	10	10	5
S. auriculatum	5			
S. capillifolium	20	10	20	15
S. subnitens	10	5	5	5
S. magellanicum	30	20	20	25
S. imbricatum	3	20	10	10
S. fuscum	2			3

Lough Ree Quadrat 3, 2005

Lough Ree Quadrat 3, 2008

Quadrat 4: This quadrat is located in the centre of Kilteevan Bog and occurred under closed canopy conifer plantation on high bog. The sparse ground cover consisted of Cladonia lichen and *Sphagnum* moss, but is mainly dominated by pine needles and brash. With the felling of conifers and blocking of drains raised bog habitat dominated by Ling Heather and Hare's-tail Cotton-grass has improved and *Sphagnum* cover may increase further.

Lough Ree (Kilteevan Bog) Quadrat 4

Area: 10 x 10m **Location:** 75m West W9 **Grid Ref:** IM9439 6461 **Altitude:** 36m
Bog Type: High Bog **Ecotope:** NA **Slope:** Flat **Aspect:** NA
Landuse: Forestry **Management:** Clear-fell

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Dry	Dry	Firm	Firm
Drains	Yes	Yes	Yes	Yes/blocked
Slope	Flat	Flat	Flat	Flat
Aspect	NA	NA	NA	NA
Canopy Cover %	0	0	0	0
Canopy Height	0	0	0	0
Vegetation Cover %	20	40	45	65
Vegetation Height (cm)	5	5	50	50
Dwarf Shrub Cover %	5	15	20	30
Herb Cover %	0	25	25	35
Bryophyte Cover %	20	25	30	50
Sphagnum cover %	15	15	20	25
Open Water %	0	0	0	0
Brash cover %	30	20	20	20
Pine Needle cover %	50	35	35	10
Pine Needle Depth cm	5	5	5	1
Bare Peat %	10	5	5	5
Species number	**10**	**12**	**10**	**17**
Pinus contorta	3	10	10	2
P. Sylvestris	2	0	0	0
Betula pubescens	0	5	5	3
***Salix* spp.**	0	5	0	0
***Pteridium* spp**	0	0	1	1
Epiolobium spp	0	0	5	5
Vaccinium myrtilus	3	4	5	5
Calluna vulgaris	0	10	15	20
Erica tetralix	2	1	0	5
Eriophorium vaginatum	0	5	0	20
E. angustifolium	0	0	0	2
Rhyncospora alba	0	0	0	2
Vaccinium oxycoccos	0	0	0	1
Cladonia portentosa	5	5	0	5
Hypnum jutlandicum	3	10	10	20
Polytricum commune	0	0	0	5
S. capillifolium	5	5	10	10
S. subnitens	5	5	5	5
S. magellanicum	5	5	5	10

Lough Ree Quadrat 4, 2005

Lough Ree Quadrat 4, 2008

Quadrat 5: This quadrat is located in the centre of Kilteevan Bog and occurred under closed canopy conifer plantation on high bog. The sparse ground cover is dominated by Cladonia lichen and *Sphagnum* moss, with pine needles and brash. With the felling of conifers and blocking of drains, Ling Heather, Hare's-tail Cotton-grass dominated raised bog habitat has established and *Sphagnum* cover may increase further**.**

Lough Ree (Kilteevan Bog) Quadrat 5

Area: 10 x 10m **Location:** 30m West W10 **Grid Ref:** IM9431 6475 **Altitude:** 31m
Bog Type: High Bog **Ecotope:** NA **Slope:** Flat **Aspect:** NA
Landuse: Forestry **Management:** Clear-fell

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Firm	Dry	Firm	Firm
Drains	Yes	Yes	Yes	Yes/blocked
Canopy Cover %	0	0	0	0
Canopy Height	0	0	0	0
Vegetation Cover %	45	50	50	60
Vegetation Height (m)	15	15	20	30
Dwarf Shrub Cover %	2	10	20	25
Herb Cover %	4	25	30	35
Bryophyte Cover %	29	45	55	40
Sphagnum cover %	20	15	30	15
Open Water %	0	0	0	0
Brash cover %	20	40	25	20
Pine Needle cover %	30	10	20	15
Pine Needle Depth cm	10	5	1	5
Bare Peat %	5	0	5	5
Species number	**11**	**18**	**14**	**17**
Pinus contorta	3	5	5	1
Betula pubescens		1		2
***Salix* spp.**		5	2	3
Quercus spp	1			
Rubus spp		1		3
Hedera helix		1		
Seneco jacobea		1		
***Pteridium* spp**	1		1	1
Epiolobium spp		5	5	10
Vaccinium myrtilus		2	5	3
Calluna vulgaris	1	7	15	20
Erica tetralix	1	1		2
Eriophorium vaginatum	1	3	10	20
Andromeda polifolia		1		2
Cladonia portentosa	10		5	5
Hypnum jutlandicum	9	30	30	20
Polytricum commune		1	5	5
Sphagnum recurvum			10	5
S cuspidatum			5	
S. capillifolium	10	5		
S. subnitens	4	5	5	5
S. magellanicum	5	5	10	5

Lough Ree Quadrat 5, 2005

Lough Ree Quadrat 5, 2008

Quadrat 6: This quadrat is located within the bog woodland in the centre of Kilteevan Bog , that is dominated by Scot's Pine and Birch with a ground cover of Hare's-tail Cotton-grass, Bog Myrtle and *Sphagnum* moss. Over time, as the adjoining plantation becomes wetter, conditions of this priority Annex I raised bog habitat will improve and *Sphagnum* cover may increase further.

Lough Ree (Kilteevan Bog) Quadrat 6

Area: 10 x 10m **Location:** 50m South W2 **Grid Ref:** IM9416 6456 **Altitude:** 41m
Bog Type: High Bog **Ecotope:** Bog Woodland **Slope:** Flat **Aspect:** NA
Landuse: Non-intervention **Management:** Non-intervention

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	Soft	Soft	Soft	Soft
Drains	No	No	No	No
Canopy Cover %	40	40	40	40
Canopy Height	5	5	3	3
Vegetation Cover %	100	100	100	100
Vegetation Height (cm)	50	50	50	50
Dwarf Shrub Cover %	40	40	40	35
Herb Cover %	40	45	45	65
Bryophyte Cover %	90	95	90	90
Sphagnum cover %	40	60	65	60
Open Water %	0	0	0	0
Brash cover %	0	0	0	0
Pine Needle cover %	0	0	0	0
Pine Needle Depth cm	0	0	0	0
Bare Peat %	0	0	0	0
Species number	**18**	**16**	**17**	**17**
P. Sylvestris	10	15	15	15
Betula pubescens	30	25	25	35
***Pteridium* spp**			1	
***Dryopteris* spp**	1			
Vaccinium myrtilus	30	25	25	20
Calluna vulgaris	5	10	10	10
Erica tetralix	5	5	5	5
Eriophorium vaginatum	25	40	30	40
E. angustifolium	5			2
Andromeda polifolia	5	3	1	2
Vaccinium oxycoccos	5	2	5	5
Cladonia portentosa	10	10	5	10
Campylopus atroverins	5			
Hypnum jutlandicum	40	20	20	25
Polytricum commune	5	10	5	5
Dicranium spp		5		
Sphagnum recurvum	20	30	30	20
S cuspidatum	2	1	5	
S. capillifolium	10	10	10	10
S. subnitens	5	10	10	10
S. magellanicum	5	10	10	15
S. pulcrum				5

Lough Ree Quadrat 6, 2005

Lough Ree Quadrat 6, 2008

Quadrat 7: This quadrat is located open bog to the north of the bog woodland on Kilteevan Bog. The vegetation is dominated by Ling Heather, Cross-leaved Heath, Hare's-tail Cotton-grass, White-beaked Sedge and *Sphagnum* moss. Over time, as the adjoining plantation becomes wetter, conditions of this active raised bog habitat will improve and *Sphagnum* cover may increase further.

Lough Ree (Kilteevan Bog) Quadrat 7

Area: 10 x 10m **Location:** 50m South-east W4 **Grid Ref:** IM9407 6466 **Altitude:** 39m
Bog Type: High Bog **Ecotope:** Sub-central **Slope:** Flat **Aspect:** NA
Landuse: Unplanted **Management:** Non-intervention

Date	**25/08/2005**	**27/07/2006**	**16/08/2007**	**30/07/2008**
Firmness	V soft	Soft	V soft	V soft/Quaking
Drains	No	No	No	No
Canopy Cover %	0	0	0	0
Canopy Height	98	0	0	0
Vegetation Cover %	95	95	95	95
Vegetation Height (cm)	30	30	20	30
Dwarf Shrub Cover %	30	40	35	35
Herb Cover %	68	45	60	60
Bryophyte Cover %	75	70	70	60
Sphagnum cover %	75	70	70	60
Open Water %	2	3	5	5
Brash cover %	0	0	0	0
Pine Needle cover %	0	0	0	0
Bare Peat %	0	2	0	0
Species number	**21**	**16**	**18**	**16**
Calluna vulgaris	25	30	30	30
Erica tetralix	5	10	5	5
Menyanthes trifoliata	3	2	5	5
Narthecium ossifragum	5	5	5	5
Carex panicea	5	10	20	20
Trichophorum caespitosum	1	1		
Eriophorium vaginatum	8	5	5	10
Rhyncospora alba	30	30	25	20
Andromeda polifolia	2	1	1	1
Drosera rotundifolia	2	1	1	2
D. anglica	2	1		1
Vaccinium oxycoccos	1		1	1
Cladonia portentosa	10	10	5	10
S cuspidatum	5		5	5
S. capillifolium	10	30	20	10
S. tenellum	10		10	
S. subnitens	10	10		15
S. magellanicum	30	20	10	10
S. imbricatum	5		10	5
S. pulcrum	5		10	10
S. fuscum	10	10	5	5

Lough Ree Quadrat 7, 2005

Lough Ree Quadrat 7, 2008

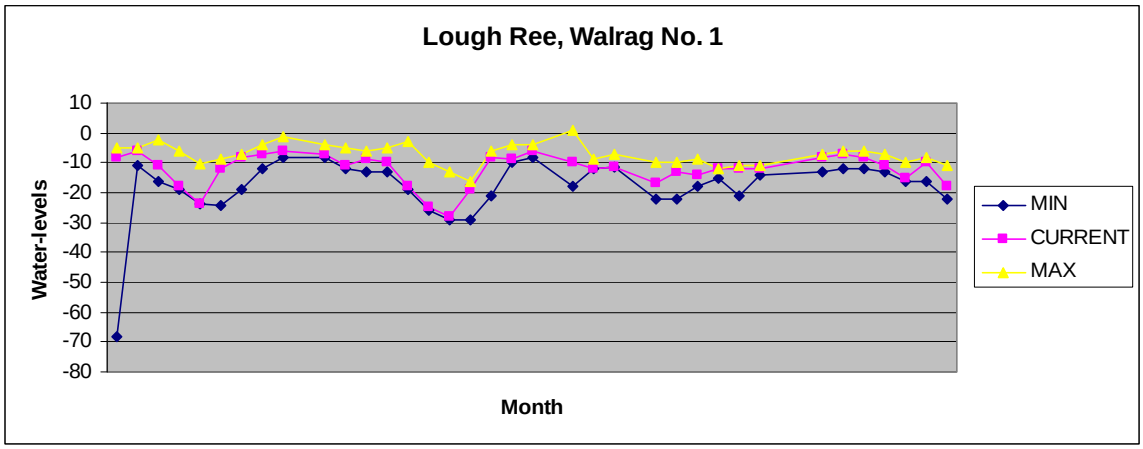
7. Changes in Water-levels

Prior to restoration, Walrags were installed in the conifer plantation to record any changes in water-levels, due to tree removal and drain blocking. Water-levels were found to be up to **55cm** below the surface. With the removal of conifers and drain-blocking, there was a rise in the water-table in the plantation on the high bog project and the water-table remains close to the bog surface throughout most of the year.

8. Hydrological Monitoring (Walrag) Graphs

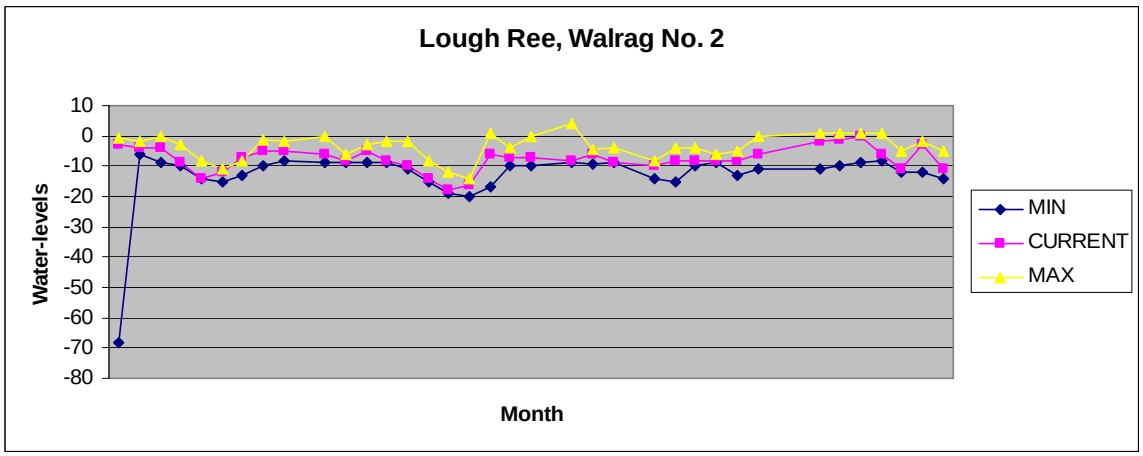
During the clear-felling operation, **12** Walrags were installed on this site to record the changes in water-levels. The rise in water-levels is clearly seen in the following graphs.

Lough Ree Walrag 1: Active Raised Bog (Water-levels remain within 10cm of bog surface post restoration* on adjacent plantations, slight decline in summer months)



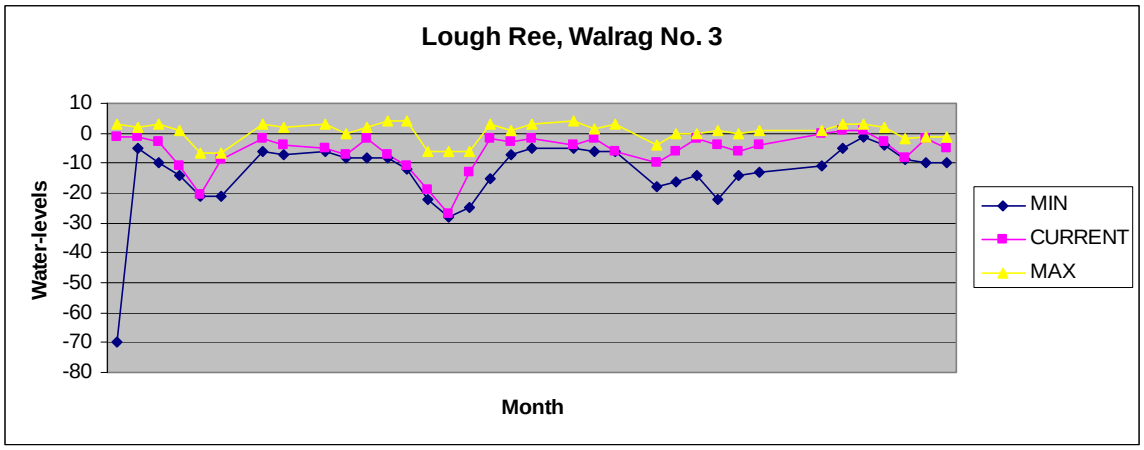
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 2: Bog Woodland on High Bog (Water-levels remain within 10cm of bog surface post restoration* on adjacent plantations, slight decline in summer months)



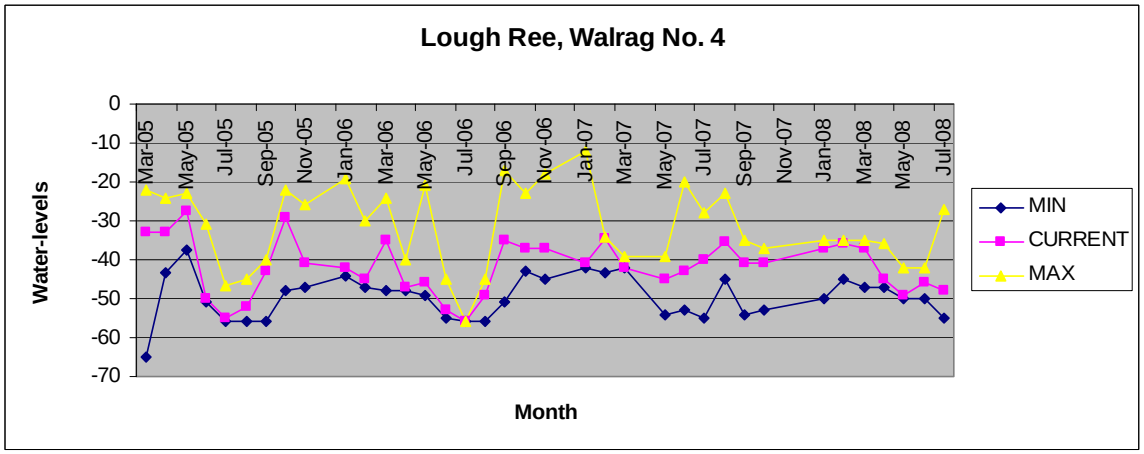
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 3: Open High Bog (Water-levels remain within 10cm of bog surface post restoration* on adjacent plantations, decline below 10cm in summer months)



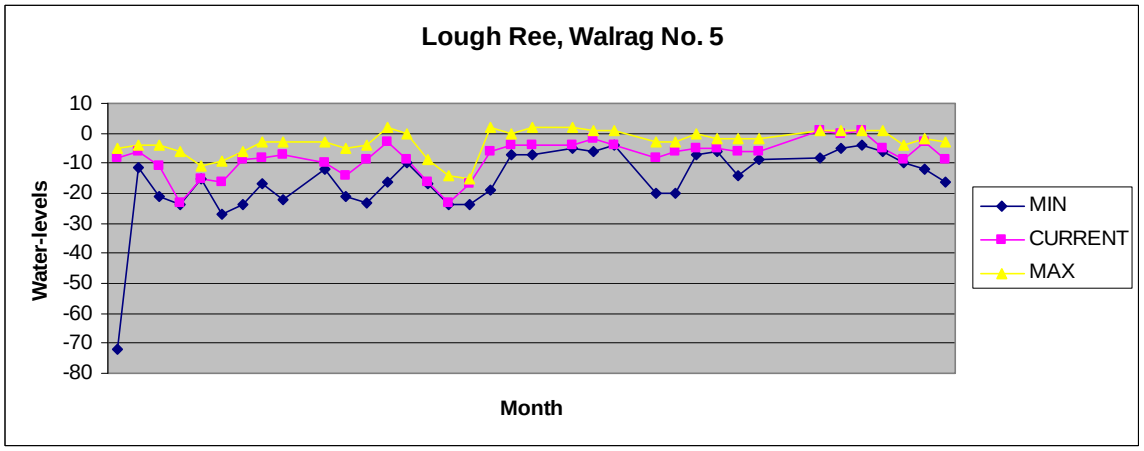
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 4: Clearfell Conifer Plantation on High Bog Margin (Water-levels remain below 30cm of bog surface post restoration*, due to the shallow peat depth)



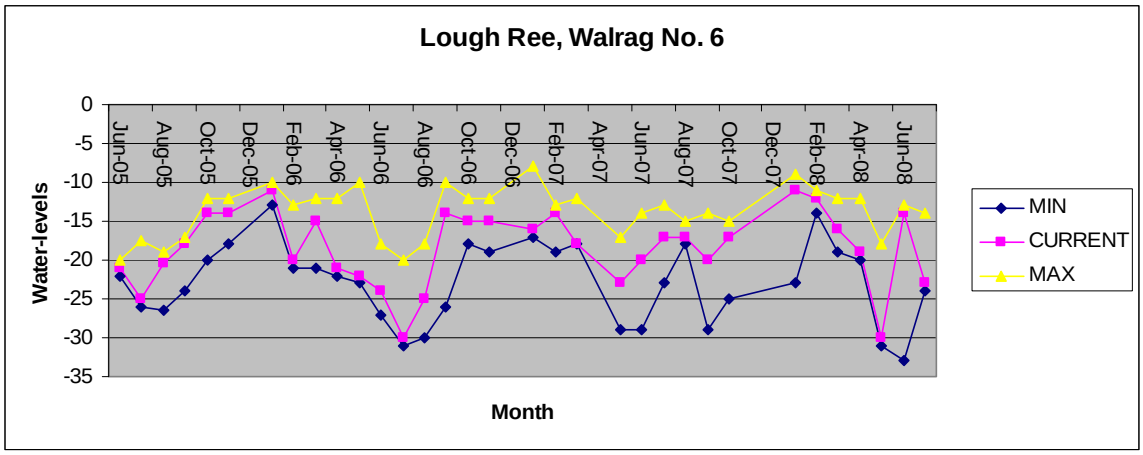
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 5: Open High Bog (Water-levels remain within 10cm of bog surface post restoration* on adjacent plantations, slight decline during summer months)



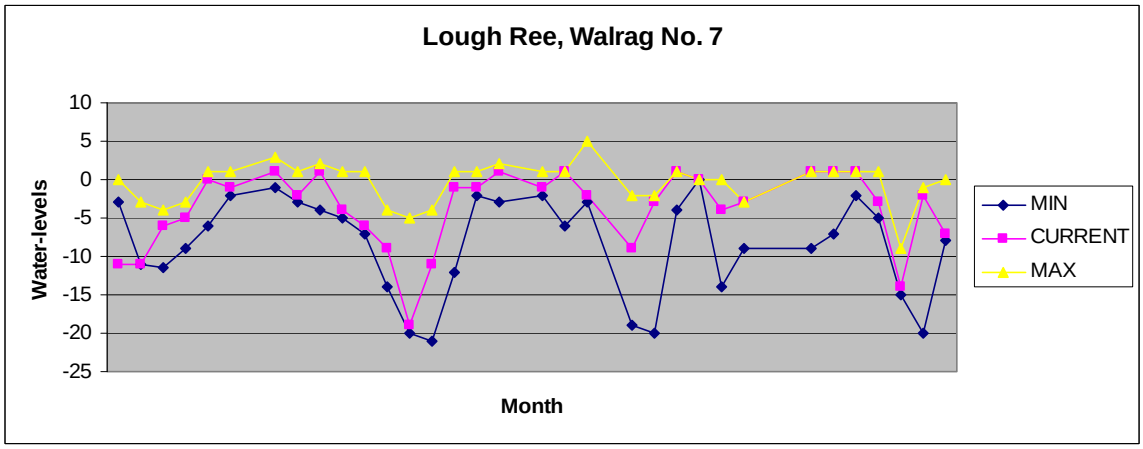
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 6: Clearfell on High Bog (Water-levels variable, but remain within 20cm of bog surface post restoration*. Decline during summer months remains)



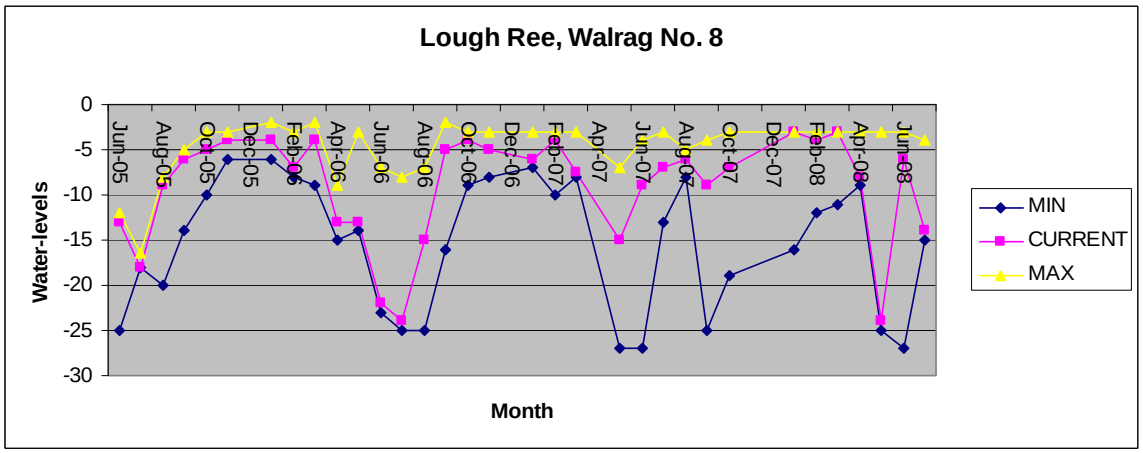
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 7: Clearfell on High Bog (Water-levels variable, but mainly remain within 10cm of bog surface post restoration*. Decline during summer months remains)



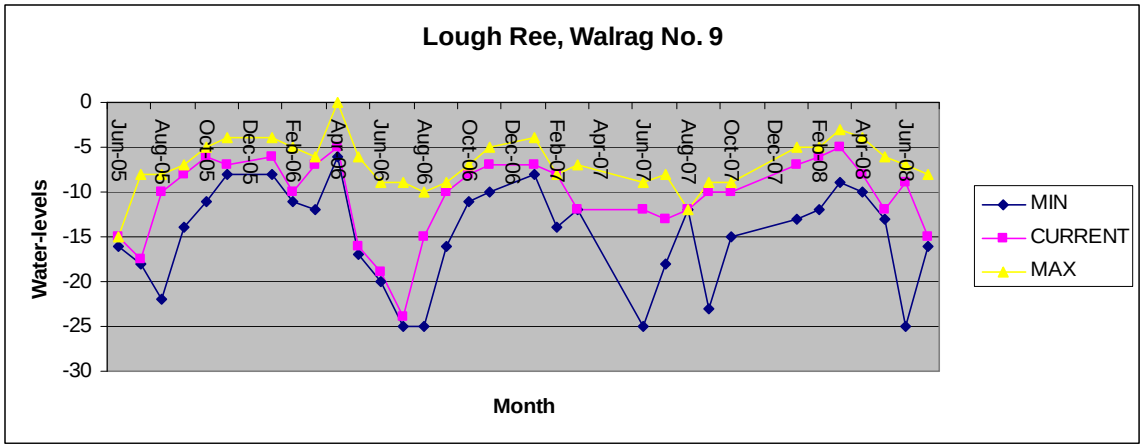
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 8: Clearfell on High Bog (Water-levels variable, but mainly remain within 10cm of bog surface post restoration*. Decline during summer months remains)



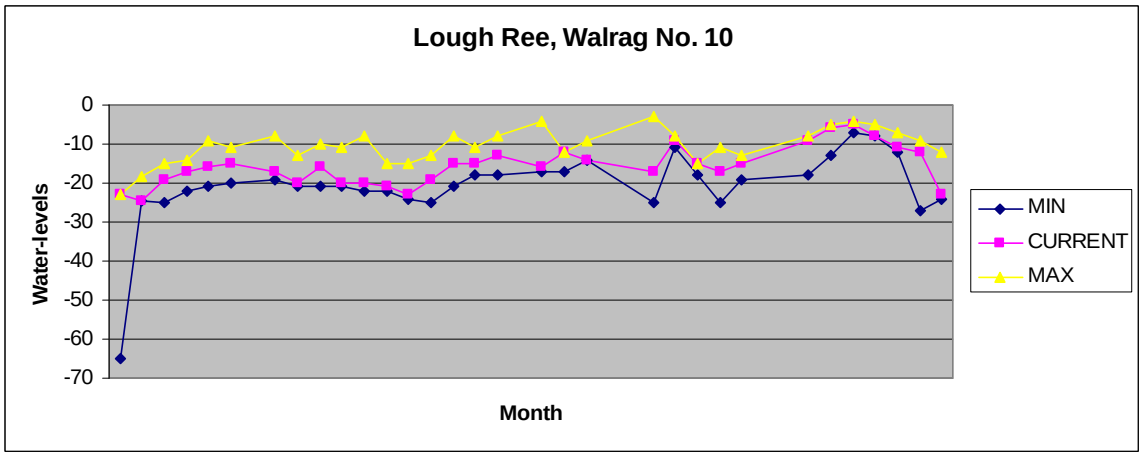
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 9: Clearfell on High Bog (Water-levels variable but remain within 20cm of bog surface post restoration*. Decline during summer months remains)



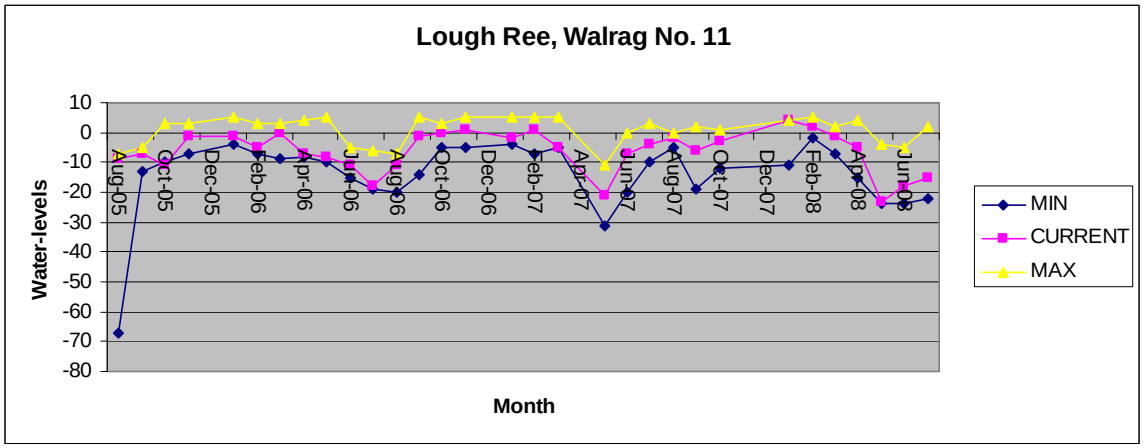
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 10: Clearfell on High Bog (Water-levels remain with 20cm of bog surface post restoration* on adjacent plantations. Slight decline during summer months)



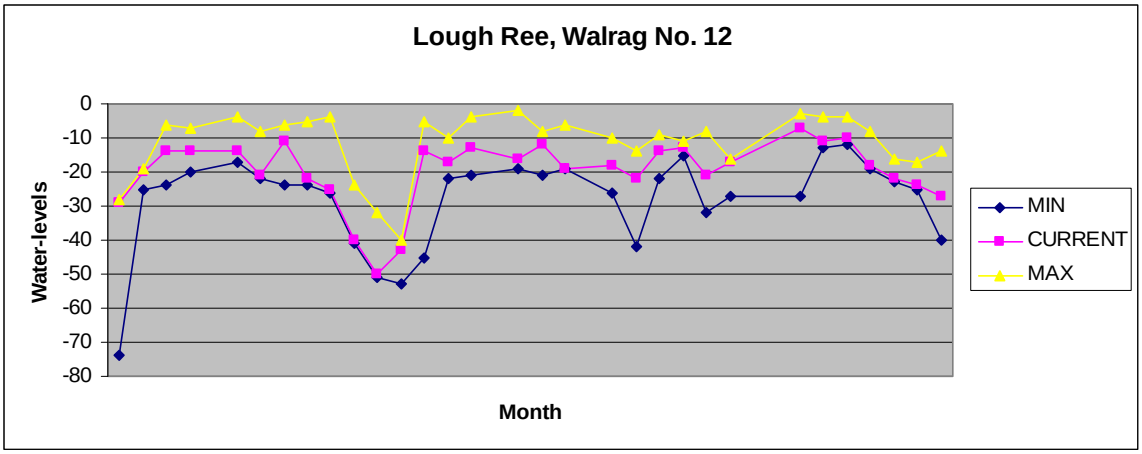
*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 11: Clearfell on Bog (Water-levels remain within 20cm of bog surface post restoration*, but decline in summer months remain)



*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

Lough Ree Walrag 12: Clear-fell on High Bog (Water-levels variable, but remain within 20cm of bog surface post restoration*, slight decline in summer months remains)



*** ClearFell** Jul 2005 Jul 2006 Jul 2007 ***Drain-blocking** Jul 2008

9. Conclusions

This site has excellent restoration potential due to the presence of active raised bog and bog woodland within the project area. With the clear-felling of conifers and blocking of drains, these priority Annex I Habitats will be protected from further water loss. In addition where water-levels remain high within clear-fell conifer plantations further areas of active raised bog may become established.

10. References

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