ECOLOGICAL MONITORING

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Raised Bogs

- Consist of domed masses of peat
- Originate in former lake basins or shallow depressions
- Maintain high water table
- Poor in nutrients
- Ombrotrophic

Characteristic Species-Sphagnum

Sphagnum cuspidatum

- Main peat forming species
- Retain large volumes of water
- Maintains acid conditions

Characteristic Species–Bog rosemary

Bog rosemary

- Bog rosemary

High/Cutover Bog

Coolrain Bog cSAC

- High Bog
  - remnant of the original habitat
  - intact peat archive
  - holds record of past climates.

- Cutover
  - exploited for peat extraction
  - affected by drainage

Active Raised Bog

Drumalough Bog cSAC

- On-going peat formation
- High *Sphagnum* moss cover
- Presence of open pools
- Quaking areas

Bog Woodland

Lough Ree cSAC

- Rare habitat, dominated by Downy Birch and Scot's Pine
- Abundant moss cover
- Occurs on intact high bog

Rhynchosporion Depressions

- Occurs in wet depressions, pool edges and erosion channels
- Dominated by White Beak-sedge and a range of *Sphagnum* mosses

Degraded Raised Bog

Killyconny Bog cSAC

- Active peat formation has ceased
- Restorable in the foreseeable future (within 30 years)
- Occurs on the drier sections of high bog
- Occurs on regenerating cutover

Lagg Zone

Carn Park Bog cSAC

- Occur at raised bog margin
- Adjacent to mineral soil
- Shallow peat
- Generally support wet Birch woodland

Open Bog (with forestry)

Carn Park Bog cSAC

- Conifer plantation
- Walrag

Restoration

Carn Park cSAC

- Drain blocking on high bog
  - Use plastic piling
  - Retains high water levels
  - Encourages sphagnum growth

Restoration

Killyconny Bog cSAC

- Clearfelling & drain blocking of cutover bog
  - Slows further water loss from high bog
  - Flooding of cutover

Drain Blocking

Lisnageeragh Bog cSAC

- Used peat dams where possible, using an excavator

Drain Blocking

- Inserted plastic dams manually where high water-levels prevented machinery access

Monitoring

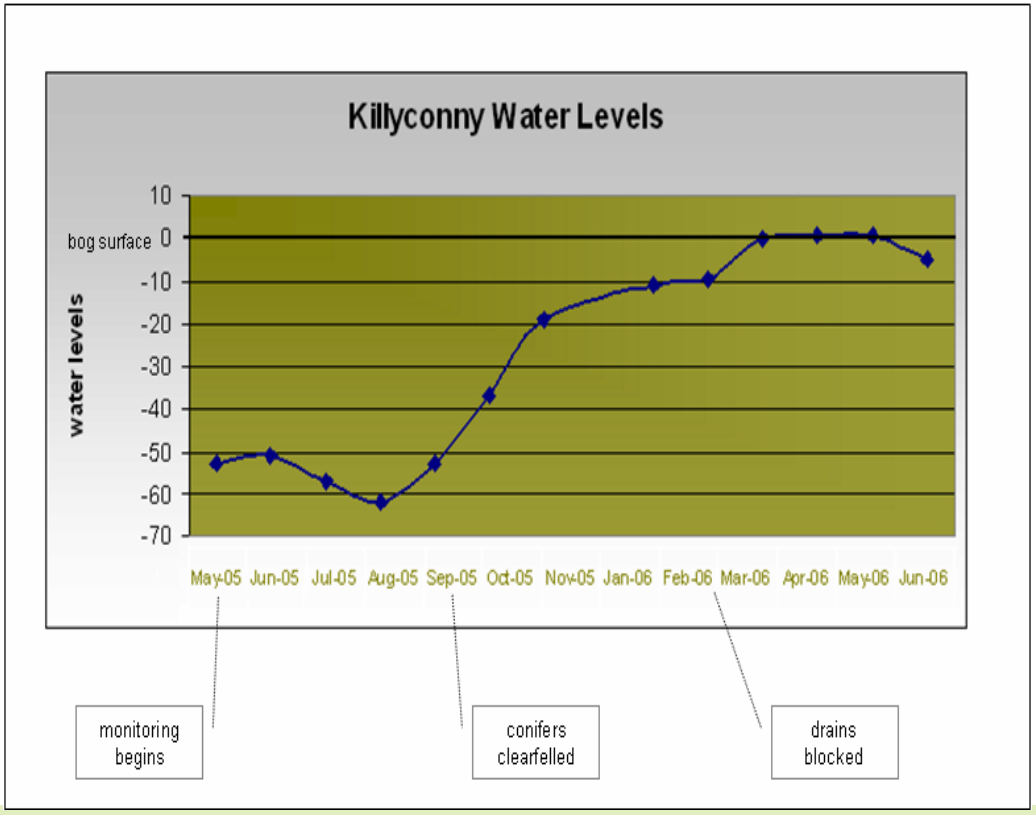
Site No.	Site Name	SAC Code	County	Project Area (ha)	Walrag No.	Quadrat No.
1	Lough Lurgeen Bog and Glenamaddy Turlough	361	Galway	7.3	6	3
2	Camderry Bog	2347	Galway	13.8	8	3
3	Curraghelanagh Bog	2350	Galway	40.7	8	5
4	Kilsallagh Bog	0285	Galway	27.9	8	5
5	Lough Ree	2310	Roscommom	49.0	12	7
6	Lisnageeragh Bog and Ballinastack Turlough	2916	Galway	27.1	8	5
7	Drumalough Bog	2338	Roscommom	43.2	10	5
8*	Cloonshanville Bog	0614	Roscommom	34.2	12	7
9	Kilconny Bog	0006	Cavan	11.6	6	3
10	Ardagullion Bog	2341	Longford	25.0	8	5
11*	Carn Park Bog	2336	Westmeath	132.2	12	7
12	Crosswood Bog	2342	Westmeath	42.7	8	5
13	Mount Hevey Bog	2332	Meath	58.2	8	5
14	Coolrain Bog	2337	Laois	56.5	8	5
Total	*demonstration site			**571.2**	**122**	**70**

Hydrological Monitoring

Carn Park cSAC

- **WALRAGS** (**Wa**ter **L**evel **Ra**nge Gauge**s**)
- Measures water levels within the peat
- Measurements are recorded monthly by field staff
- Monitors water-level fluctuations throughout the year

Hydrological Graph



- Active raised bogs have high water-levels and less fluctuation throughout the year
- Maintain a water level within 10cm of the bog surface
- Conifer removal and drain blocking has lead to a significant increase in water-levels

Vegetation Monitoring

Carn Park Bog cSAC

- Conifer plantation 2005
- Closed canopy
- Pine needles
- No bog species

Vegetation Monitoring

Carn Park Bog cSAC

- Conifer plantation 2006
- Clear felled (summer 05)
- Brash
- Bare peat
- No bog species

Vegetation Monitoring

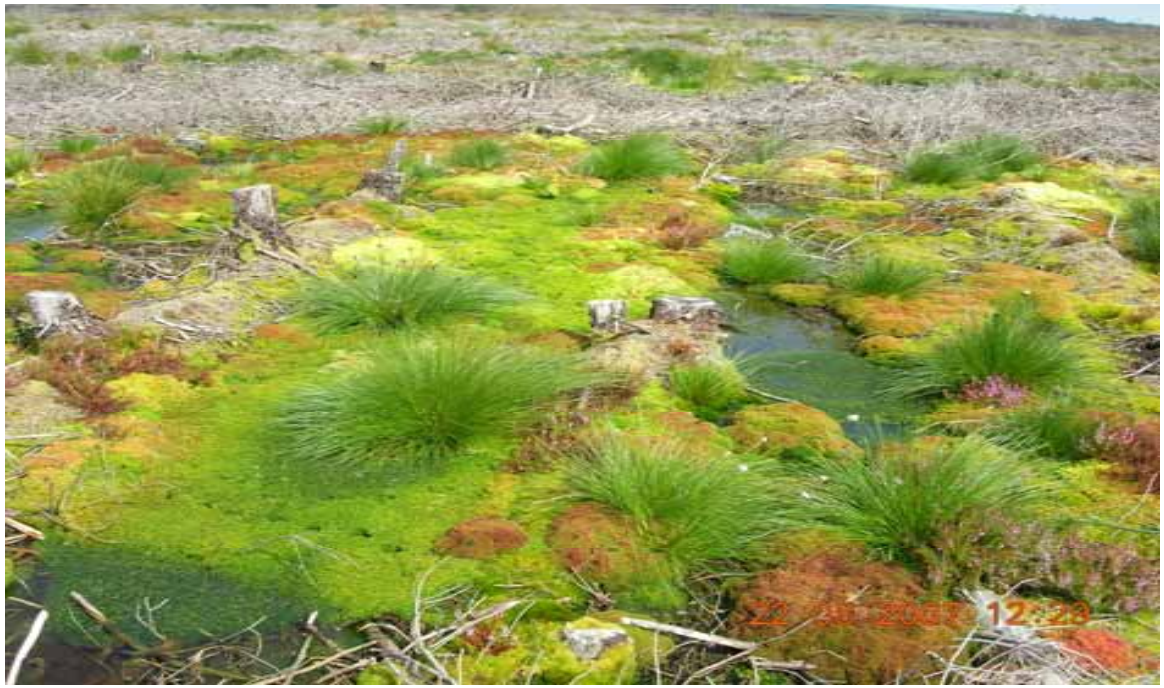
Carn Park cSAC

- Conifer plantation 2007
- Clear felled (summer 05)
- Pioneering species
- Less bare peat
- Some bog species

Vegetation Quadrats

Carn Park - High Bog	Quadrat 3	Quadrat 3	Quadrat 3	Quadrat 6
Landuse	Forestry	Forestry	Forestry	Unplanted
Management	Clearfell	Clearfell	Clearfell	Non-intervention
Drains	Yes	Yes/Blocked	Yes/Blocked	No
Canopy Cover	70%	0%	0%	0%
Vegetation Cover	80%	50%	60%	100%
Sphagnum cover	1%	0%	0%	20%
Open Water	0%	0%	5%	0%
Brash cover	20%	30%	30%	0%
Pine Needle cover	10%	10%	10%	0%
Pinus contorta	70%	1%	1%	
Betula pubescens			1%	
Rubus spp	5%	5%	5%	
Epiolobium spp	5%		10%	
Myrica gale		1%	1%	
Calluna vulgaris			**15%**	**25%**
Erica tetralix		**1%**	**5%**	**5%**
Narthecium ossifragum				**50%**
Carex panicea		**2%**	**2%**	**5%**
Eriophorium vaginatum			**1%**	**10%**
Trichophorum caespitosum				**5%**
Andromeda polifolia				**1%**
Drosera rotundifolia				**1%**
Cladonia portentosa				**10%**
Campylopus atroverins				**10%**
Hypnum cupressiforme	10%		5%	
Hypnum jutlandicum	60%	45%	40%	
Polytricum commune	7%		5%	
Sphagnum recurvum	1%			
Sphagnum capillifolium				15%
S. subnitens				5%

Regenerating Bog



Camderry cSAC

- Clearfell 2005
- Drain blocking 2008
- Abundant sphagnum