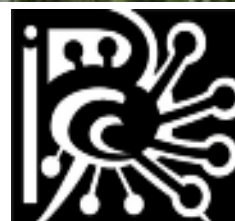


Coad Bog, Co. Kerry Conservation Management Plan 2017-2023

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CONSERVATION COUNCIL

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Cover images; from top *Lychnis flos-cuculi*, *Eriophorum vaginatum*, *Orchis mascula*, *Drosera rotundifolia*, *Cardamine pratensis*, *Anthocharis cardamines* and *Arrhenia onisca*. Photographs © IPCC

Citation: Geraghty, K. & O'Connell, C. 2017. *Coad Bog, Co. Kerry, Conservation Management Plan 2017-2023*. Irish Peatland Conservation Council, Lullymore, Rathangan, Co. Kildare, R51 V293.

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We would like to extend particular thanks to all our staff and volunteers who assisted with the development of the Coad Bog Conservation Management Plan: Rebecca Jeffrey NPWS, Catherine O'Connell, Johann Kielesz, Katie Geraghty, Dr Jenni Roche (project mentor), Cathy Fischer (Kerry Biodiversity Officer), Mary Mahony, Myfanway Humfreys, Werner Sheehan, Lyndall O'Brien, Brendan O'Leary, Vincent Hyland, Pieter J. Bot, Tricia Donnelly and Sinead Walsh



We are indebted to the late Diarmuid Ó Súilleabháin who donated the bog to the IPCC and the IPCC Friends of the Bog who supported fundraising appeals, without whom none of the work would have been possible; Thank you!



Vision for the Plan

The vision of the Coad Bog Conservation Management Plan is to bring about restoration and conservation of the blanket bog habitats and biodiversity on Coad bog and to provide opportunities for everyone to learn about the heritage importance of Coad Bog and to take part in protecting it.



Selection of the biodiversity on Coad Bog, Co. Kerry. Clockwise from the top left: Green Hairstreak butterfly, Orange Tip butterfly, Round-leaved Sundew, Early Purple Orchid, Single-headed Bog Cotton and Common Frog. © IPCC

Executive Summary

The Coad Bog Conservation Management Plan 2017-2023 is developed by the Irish Peatland Conservation Council.

The Plan is to be used to guide conservation and public awareness works on the site between 2017 and 2023.

IPCC's mission is to conserve a representative sample of the peatlands of Ireland for future generations to enjoy. Coad Bog is a nature reserve we have established to help achieve our mission.

Coad Bog is a regenerating blanket bog habitat covering 4ha in extent.

Coad Bog is located on the Ring of Kerry, the Wild Atlantic Way and falls within the 'CORE' area of the Kerry International Dark-Sky Reserve.

Site specific research on Coad Bog was undertaken by Wetland Surveys Ireland in 2015 but the majority of the data collated about this site resulted from the Coad Bog BioBlitz organised by the IPCC in 2016. Information was collected on the biodiversity, hydrology, stratigraphy, pH, habitats and archaeology of the site during this event.

Management works undertaken since the acquisition of the site by IPCC in 2015 include drain profiling and partial blocking, installation of 12 water monitoring piezometers and removal of invasive species.

The human history of Coad Bog revolves around the use of the bog as a source of fuel for a local blacksmith and for domestic use.

With suitable management Coad Bog has the potential to contain 3ha of active peat forming blanket bog habitat.

The vision of the Coad Bog Conservation Management Plan is to bring about restoration and conservation of the blanket bog habitats and biodiversity on Coad bog and to provide opportunities for everyone to learn about the heritage importance of Coad Bog and to take part in protecting it.

Management of Coad Bog aims to restore and protect the blanket bog and its active peat forming vegetation and to enhance its unique biodiversity. To achieve this 10 site conservation objectives have been drawn up for the site. Side by side with the conservation objectives there are 7 amenity objectives to raise awareness of the site locally.

In terms of site restoration and conservation IPCC have identified 26 management actions that need to be undertaken to deliver the target area of 3ha of active peat forming blanket bog habitat.

Coad Bog has a strong local value for education and public awareness and the IPCC have included a number of actions to help facilitate the objective of raising awareness about the site and encouraging the development of a network of citizen scientists to help with the on-going monitoring of the site.

IPCC have established a number of local and national partners who are assisting us with public awareness and funding for the various actions of this plan. These networks will be developed during the lifespan of this plan.

1. Coad Bog Site Description

Site Name: Coad Bog

County: Kerry

Grid Reference: V 58073 60057

GPS: Latitude 51° 46' 31.365 Longitude -10° 3' 25.316

Discovery Map: (1:50,000) No. 84, Historic 6' map Kerry 106

Location: Coad bog is located 1 km west of Castle Cove, in the townland of Coad. The site is located north of the N70 road between Sneem and Castledaniel. The N70 is the Ring of Kerry and the Wild Atlantic Way (see Figure 1).

Area: 10 acres, 4ha

Ownership: The Irish Peatland Conservation Council (IPCC). The bog was donated to the IPCC by Diarmuid Ó Suilleabháin in 2015.

Status: Local nature reserve in private ownership. The Kenmare River SAC (2158) is 300m to the south of the site and Killarney National Park, Macgillicuddy Reeks and Caragh River Catchment SAC (365) is 850m North of the site. The whole site falls within the 'CORE' area of Kerry International Dark-Sky Reserve. (See Figure 2 and 3 for maps of SAC and Dark-Sky reserve)

Endangered Habitats Present: There is 1.5ha of the Annex I habitat Active Blanket Bog 7130 as defined by the Habitats Directive 92/43/EEC currently present on the site with the potential to extend this area to 3ha with the right management (see Figures 4 and 5).

Rare Species Present: *Sphagnum* species (Bog moss), *Succisa pratensis* (Devil's-bit Scabious), *Dactylorhiza maculata*, (Early Purple Orchid), *Drosera rotundifolia* (Sundew), *Gallinago gallinago* (Common Snipe), *Anthus pratensis* (Meadow pipit), *Sorex minutus* (Pygmy Shrew), *Leucobryum glaucum* (Large White-moss) and *Mylia anomala* (Anomalous Flapwort).

Conservation Assessment: Peter Foss and Patrick Crushell surveyed Coad bog in August 2015 as part of the Kerry Wetland Survey. They described the site as 'A small cutover blanket bog with excellent regeneration of *Sphagnum* rich vegetation in low lying areas'. They concluded that the active blanket bog communities on the site are considered to be of EU conservation value.

Species Biodiversity: 139 floral species and 94 faunal species

Archaeological Interest: None on the site but there 11 archaeological sites close to Coad Bog including: a copper mine, church, graveyard, holy well, ringfort-rath, ringfort-cashel and cross-incised slab.

Tourism: The site is located on the Ring of Kerry and the Wild Atlantic Way (N70). In addition the Kerry Way long distance walking route skirts the Coad Mountain located to the north of the site.

Conservation Management Plan Aim: To enhance and maintain Coad Bog so that it is a fully functioning, self regulating active blanket bog ecosystem.

Threats: Drainage, fire, hand cutting of peat, telegraph pole maintenance, dumping and invasive species.

References:

Foss P. & Crushell, P. (2015) *Coad Bog Site Report*. Kerry Wetland Survey 2015;

Geraghty, K., Ó Corcora, T. & O'Connell, C. 2016. *Coad Bog, Co. Kerry, Conservation Report*. Irish Peatland Conservation Council, Lullymore, Rathangan, Co. Kildare, R51 V293.

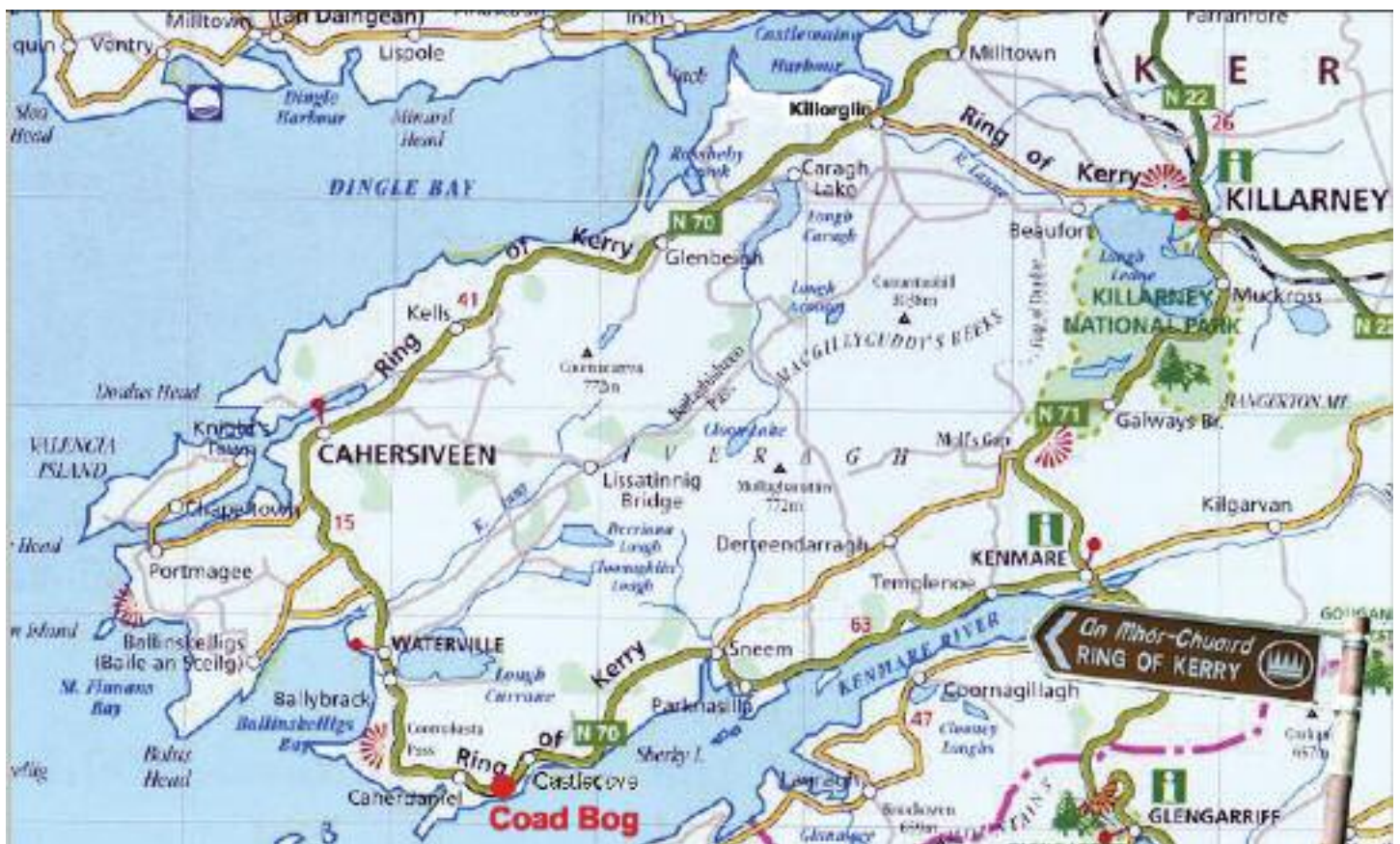


Figure 1: Location map of Coad Bog, Co. Kerry on the Iveragh Peninsula between Castlecove and Caherdaniel.

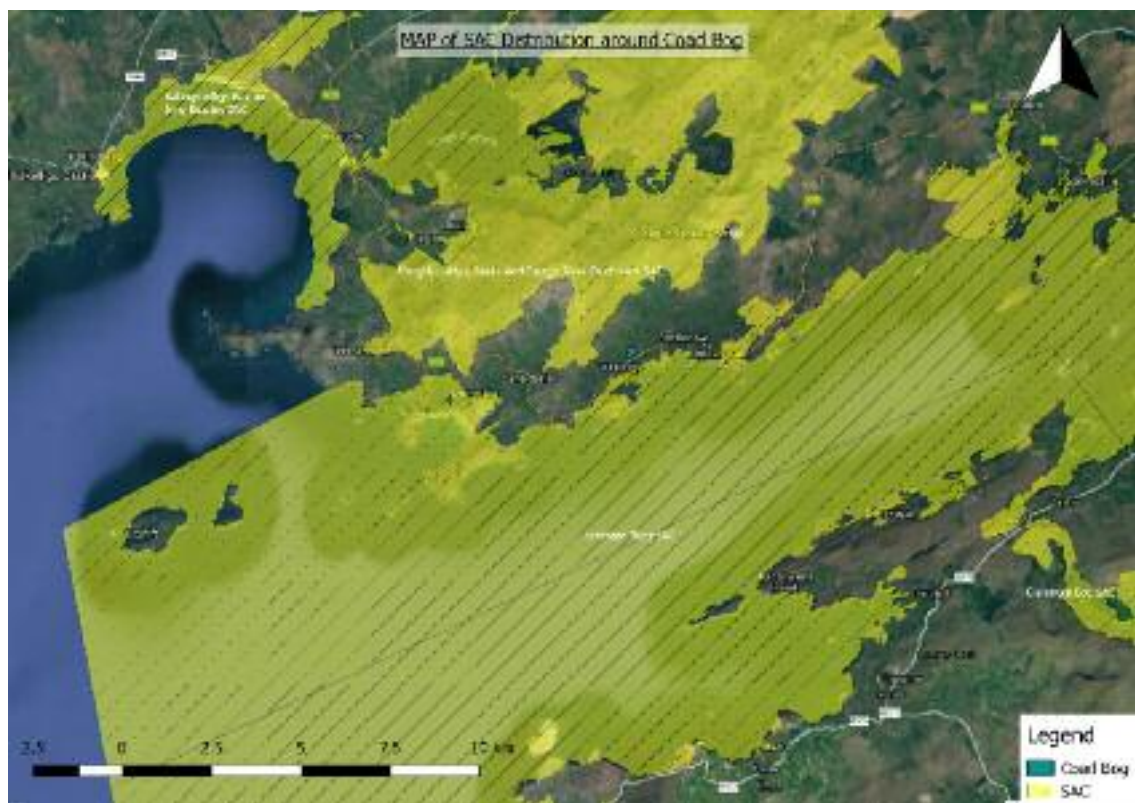
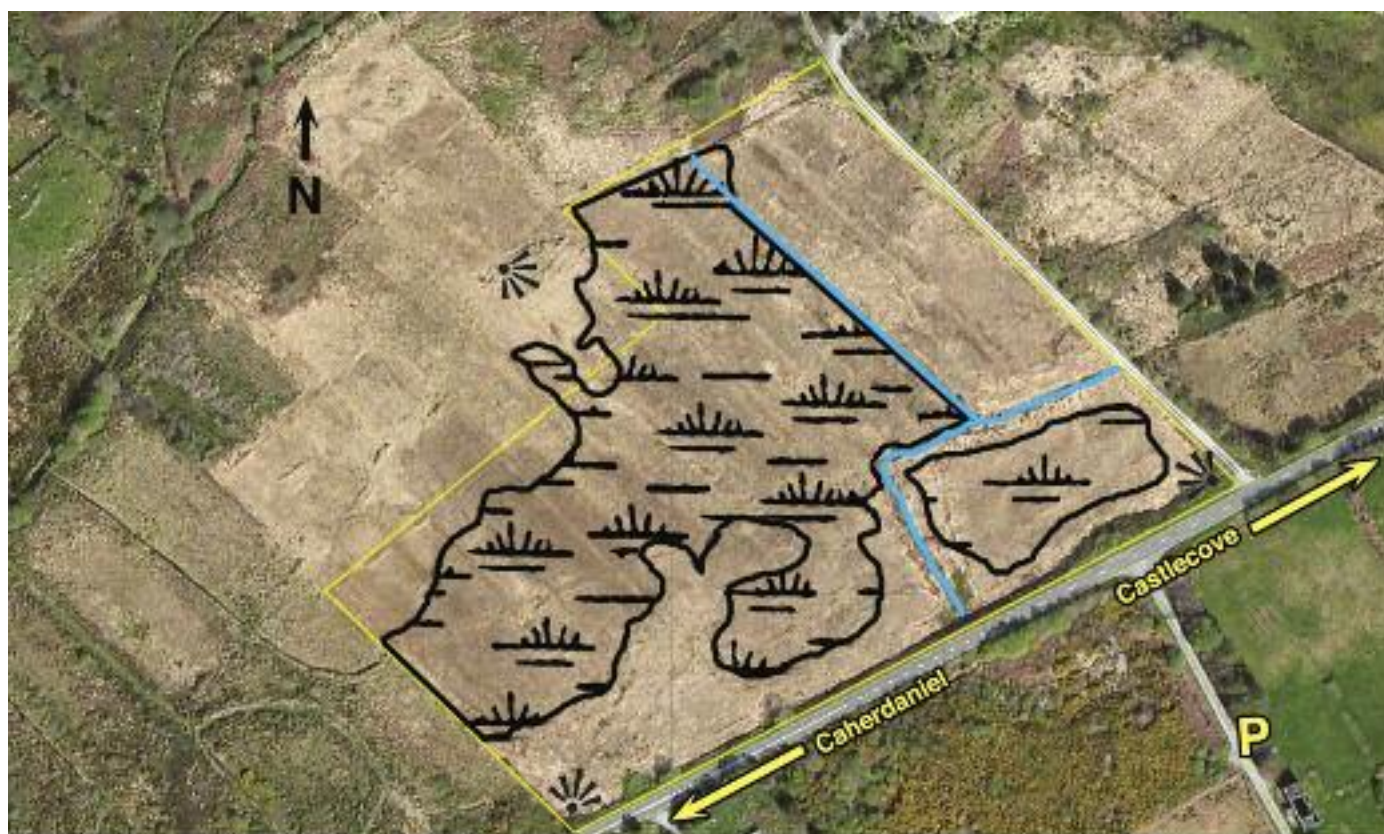


Figure 2: Map showing SAC distribution around Coad Bog. Source: NPWS.ie

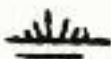


Figure 3: Map showing location of Kerry International Dark-Sky Reserve. Source: kerrydarksky.com



Map Legend

Wet bog habitat



Viewpoint



IPCC Boundary



Ditch/Stream



Figure 4: Close up aerial view of Coad detailing the extent of the wet bog habitat present on the site which includes 1.5ha of active blanket bog habitat, the site boundary, a ditch or stream and the location of towns and viewing points, modified from Bing Maps

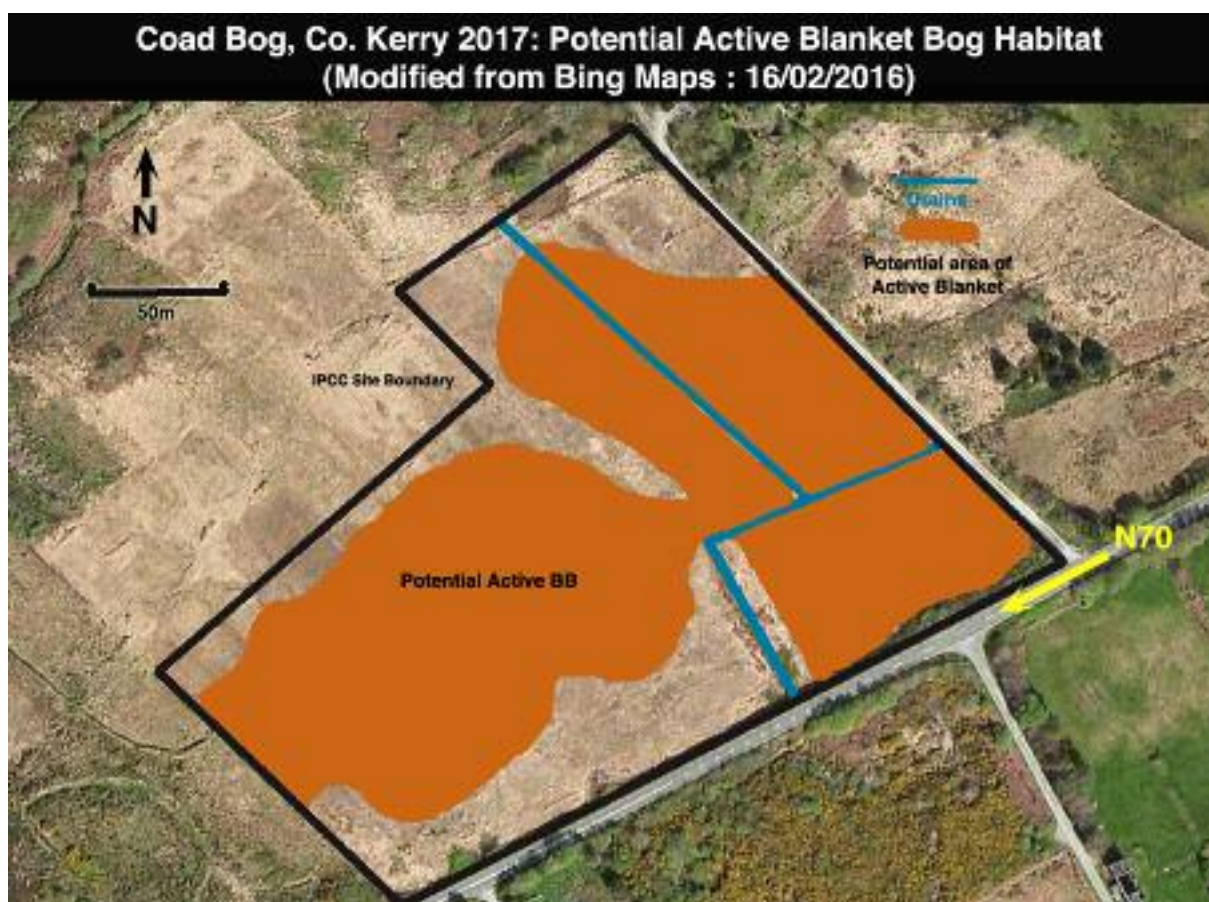


Figure 5: Map showing potential area of active blanket bog habitat provided management of the hydrology and other anthropogenic influences occurs, modified from Bing Maps

2: Research on Coad Bog

2.1 Habitats and Vegetation

A vegetation and habitat survey was undertaken across a transect established on Coad Bog during a week-long BioBlitz event held in May 2016. The transect measured 1.4km and its location is shown in Figure 6. Flags were inserted along the route of the transect at intervals of 20m. In total 57 flag points were inserted.

At the 57 flag points the vegetation was described and given cover abundance within quadrats. Any additional species occurring outside a quadrat were also noted. The survey took place on the 24th and 25th May 2016. Participants on the survey were Dr Catherine O'Connell, Katie Geraghty and volunteers: Gwyn Grace, Seán Ó Fearghail, John Walker and Deirdre O'Brien. Eleven different communities were determined during the survey, nine communities fell on the transect and two further communities described included the drain/stream and a bracken dominated community along the N70. The vegetation occurring at each of the 57 flag points on the transect was then classified according to the communities described and a map was produced (see Figure 7)..

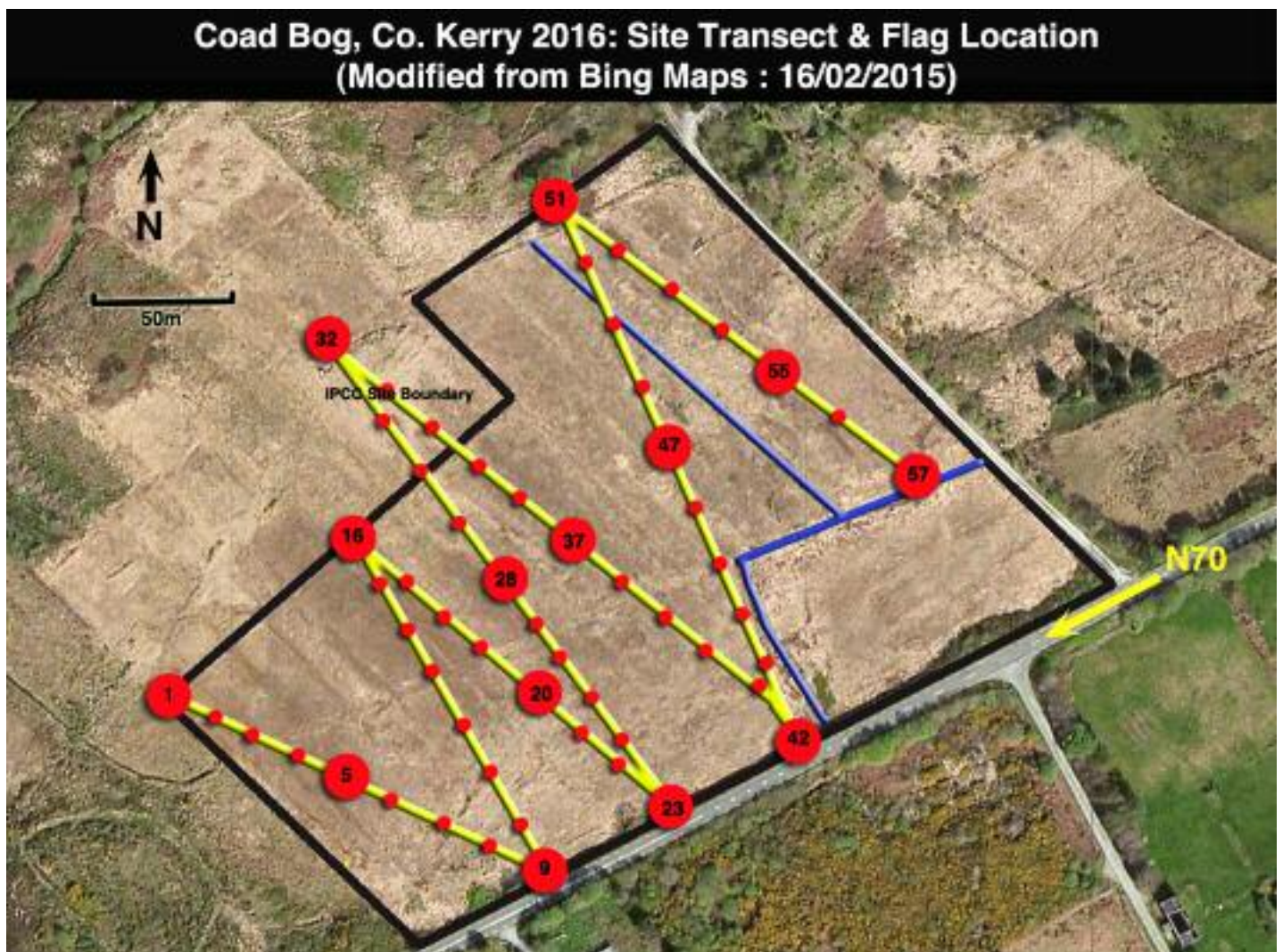


Figure 6: Map showing location of the temporary BioBlitz transect established on Coad Bog in 2016 to help record the principal habitats, Species and features of the bog. The transect was marked with 57 flags.

A map of the vegetation of Coad Bog is presented in Figure 7 and vegetation data is presented in Table 1.

Table 1: Vegetation communities of Coad Bog, Co. Kerry 2016

Transect Flag Code	F57	F56	F50	F49	F45	F43	F37	F33	F23		
Quadrat Size	2x2m	1x1m	50x50cm	50x50cm	50x50cm	50x50cm	50x50cm	50x50cm	50x50cm	2x2m	2x2m
Description & Notes	Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	Note 8	Note 9	Note 10	Note 11
Species	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover	% cover
Angelica sylvestris	+	+	+
Anthoxanthum odoratum	10	.	.	+	.	.	.	.	+	5	5
Apium nodiflorum	5
Aulacomnium palustre	.	.	.	1	5	.	.	.	.	.	.
Blechnum spicant	.	.	.	1	.	.	.	.	.	.	.
Calluna vulgaris	.	10	.	+	.	5	5	20	.	.	.
Campylopus introflexus	100	.	.	.	.	.
Cardamine pratense	10
Carex panicea	30	.	.	.	.	.
Cirsium palustre	+	.	+
Composite	+
Convolvulus	+	.
Crocsmia x crocosmiflora	+	.
Drosera rotundifolia	+	.	+
Dryopteris dilatata	+	+
Erica tetralix	.	10	10	.	5	10	5	5	1	.	.
Eriophorum angustifolium	.	20	50	.	10	5	50	+	.	.	5
Eriophorum vaginatum	5	.	.	.	.
Filipendula ulmaria	1	.	5
Galium palustre	1
Holcus lanatus	10
Hydrocotyle vulgare	+
Hypericum elodes	.	.	.	1	.	.	.	.	.	.	5
Hypnum jutlandicum	.	5	.	.	.	.	.	.	.	.	.
Juncus acutiflorus	.	.	.	30	.	.	.	.	.	+	.
Juncus effusus	5
Liverworts	+	.	+
Lotus pendunculatus	+	.
Luzula campestris	+	.	.
Lychnis flos cuculi	+	.	+
Mentha aquatica	5
Menyanthes trifoliata	+
Molinia caerulea	100	70	50	70	30	15	50	100	70	100	.
Narthecium ossifragum	.	+	+	.	5	10	5	+	.	.	.
Osmunda regalis	5	.	+	+	5	.	.	.	5	.	1
Pedicularis sylvatica	.	+	+	.	.	.
Poa trivialis	1
Polygala serpyllifolia	.	.	+	+	+	.	+
Polytrichum moss	+
Potamogeton polygonifolius	5
Potentilla erecta	+	+	.	.	1	.	.	+	+	.	.
Potentilla palustris	5
Pteridium aquilinum	+	50	.
Ranunculus flammula	5
Rorippa palustris	5
Rubus fruticosus	10	.	.	.	.	.	.	.	.	20	.
Salix aurita/multinervis/cinerea	5	.	.	+	5	.	.	.	+	.	5
Scirpus cespitosus	.	+
Scrophularia nodosa	+	.
Sphagnum capillifolium	.	5	60	.	10	.	5	.	.	.	.
Sphagnum cuspidatum	5	.	.	.	.
Sphagnum inundatum	.	.	.	5	.	.	.	.	.	.	.
Sphagnum papillosum	85	.	85	.	.	.	.
Sphagnum subnitens	.	10	.	.	5	.	.	.	20	.	.
Sphagnum tenellum	.	+	10	.	.	.	10	5	.	.	.
Succisa pratensis	.	+	.	5	5	.	.	.	30	+	.
Ulex europaeus	.	5	.	.	.	.	.	10	+	.	.
Number of Species	9	14	9	12	15	7	13	9	15	11	22

Notes to the Vegetation and Habitat Table

1. Dry acidic grassland dominated by *Molinia*. Dry ridge, peat hagg or bank, elevated above the surrounding bog. Formed using material from the drain alongside.
2. Cutover bog with 15% *Sphagnum* cover
3. Wet bog hole. Overgrown bog hole, quaking under foot, good *Sphagnum* cover in ground layer. Moor grass not tussocky, formed in a notable depression.
4. Drain with infilling blanket bog species, flushed. Deep bog hole between ridges, pine stumps visible. Vegetation 1m tall. Water present, open water visible. Willow trees invading. Dominated by *Molinia* with tussocks of *Juncus*. 10-20cm depth of water present.
5. Wet quaking *Sphagnum* rich regenerating blanket bog with *Succisa pratensis*. Flushed, water visible when *Sphagnum* moss cushions pressed under foot.
6. Dry bog ridge, low sward height <10cm tall with *Carex panicea* and *Campylopus introflexus*. Habitat not very extensive, covers 5x10m, blending in with the F57 habitat.
7. Quaking blanket bog habitat rich in *Sphagnum* mosses with *Eriophorum angustifolium*. Lot of water trapped in the mosses.
8. Rocky outcrop of Old Red Sandstone with *Molinia* dominated grassland with gorse
9. *Molinia* grassland with marsh indicators including *Lychnis*, *Angelica* and *Succisa*. Water movement in this area, flushed. Beside the N70 main road.
10. Bracken Community along the roadside and on ridge near F1 on the transect. Tussocky vegetation, bracken 1m tall. Occurs along the steep road bank which is 2-3m tall. Evidence of burning in this habitat.
11. The L-shaped drain or the "River". Water moving through the 2m wide channel.

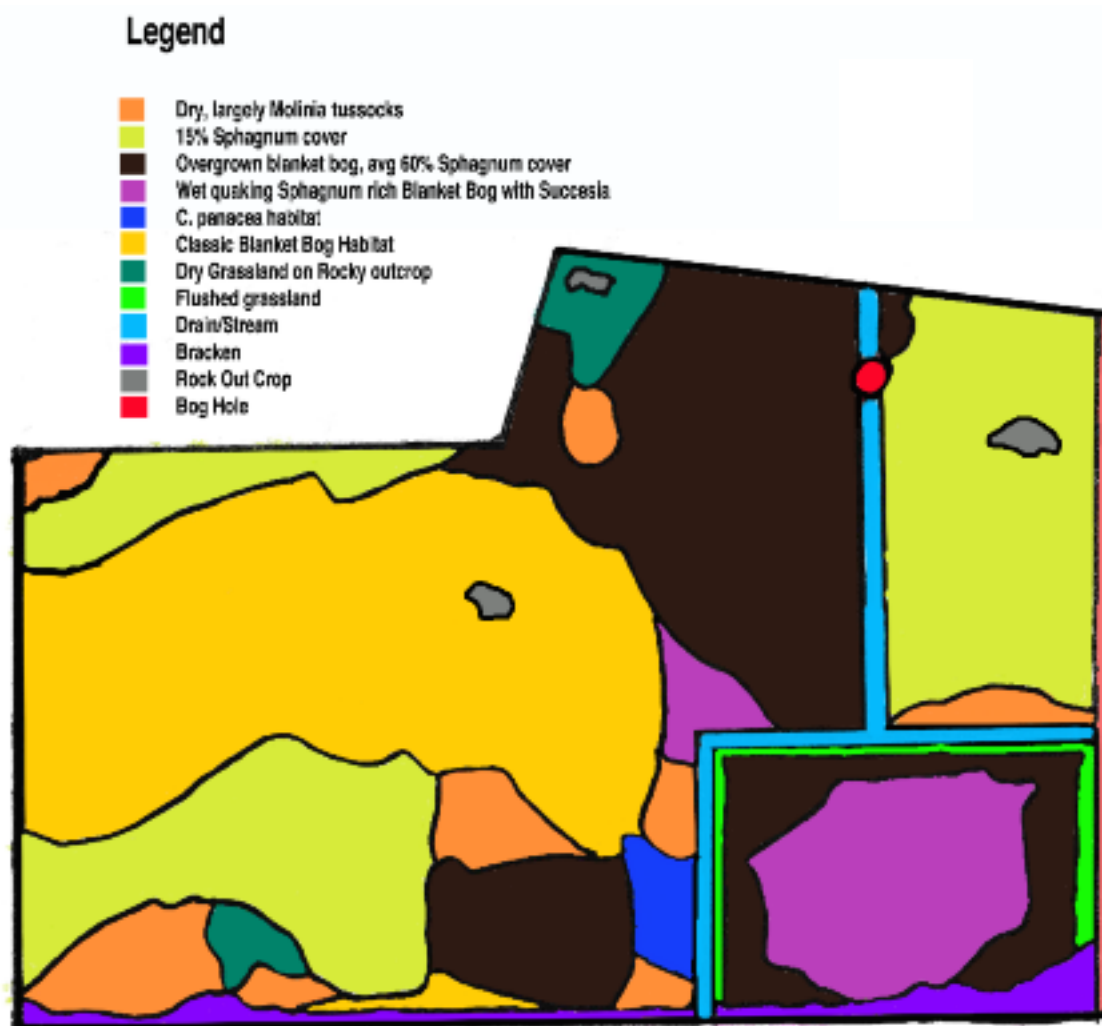


Figure 7: Vegetation Map of Coad Bog, Co. Kerry 2016.

2.2 Species Diversity

The first species list for Coad bog was drawn up by Foss and Crushell on the Kerry Wetland Survey 2015. 45 species were identified by these workers.

During the Coad Bog BioBlitz in 2016 a comprehensive list of species was drawn up by a variety of workers including Ken Bond, Rory Hodd, Therese Higgins and Niamh Ní Dhubhghaill. Some recorders worked along a temporary BioBlitz transect (see Figure 6) while others did more detailed survey work across the whole site.

Mammal traps were set in 9 locations across the bog and 18 pitfall traps were set out along the marked transect to sample invertebrates.

Further species were added to the list during a wildlife survey undertaken in July 2017. At this time 3 volunteers were trained to survey birds and butterflies along a permanent mapped transect on Coad Bog so that they can help IPCC to continue to monitor wildlife on Coad Bog in the future (see figure 8 showing location of the wildlife survey transect)

A full species list of floral and faunal records for Coad Bog are presented in Appendices I and II respectively. All records recorded during the 2016 BioBlitz are lodged with the National Biodiversity Data Centre. The volunteer monitoring survey sheets for species is presented in Appendix III.

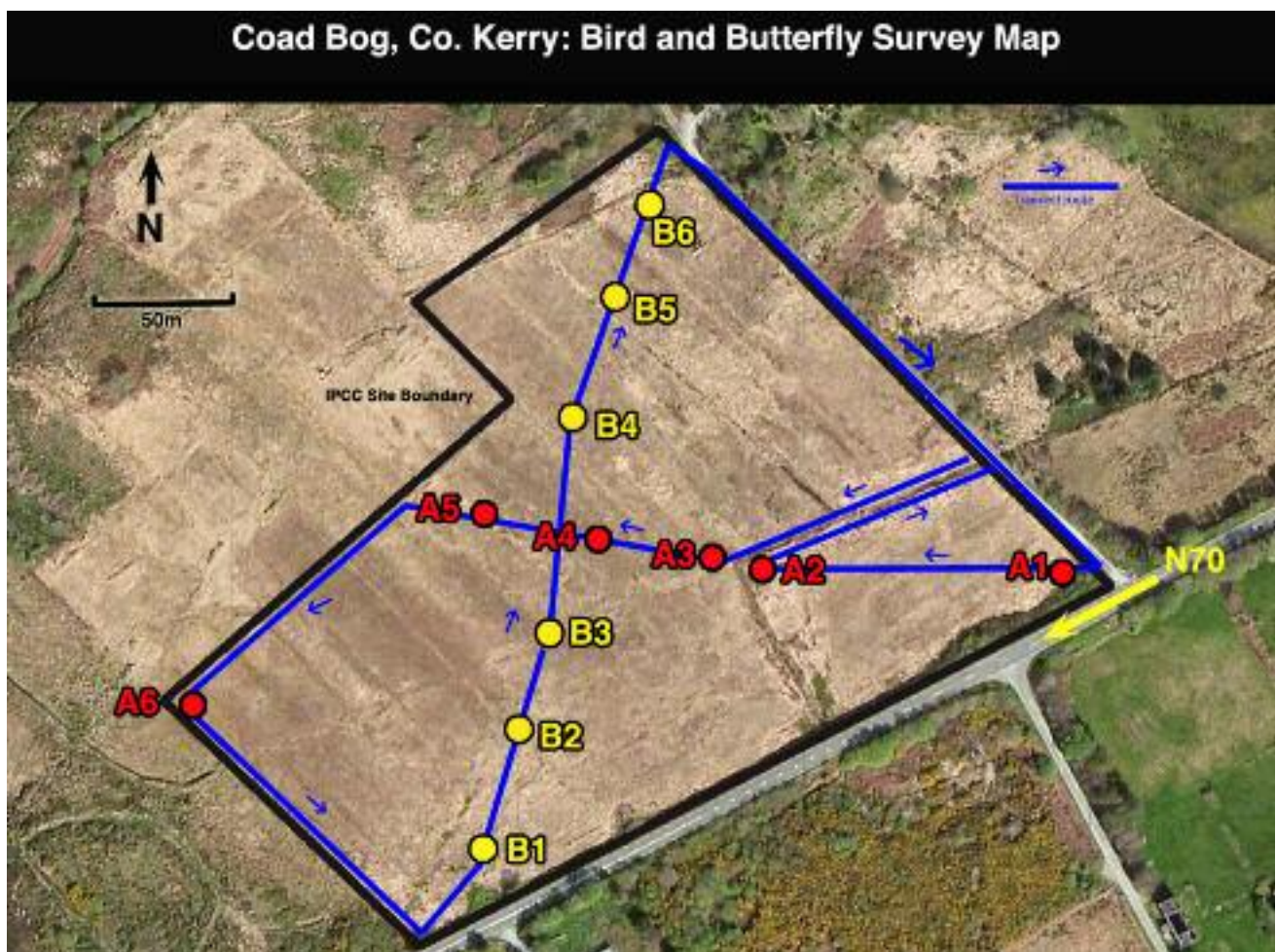


Figure 8: Map of Coad Bog, Co. Kerry showing location of piezometers and wildlife survey transect.

2.3 Topography and Stratigraphy

A peat core was taken by Tadhg Ó Corcora using a soil auger. Please note that the auger compressed the peat core into a 1m length. The core was described by Dr Catherine O'Connell.

24th May 2016

GPS: 58230 60018 deviation 8.3m

Elevation: 12.6m

The core was sampled in the "Square" area of Coad Bog. An area of blanket bog habitat, cutover but regenerating. Good cover of *Sphagnum* mosses particularly *S. papillosum* on the surface of the bog with *Eriophorum angustifolium* and *Molinia caerulea*.

Peat depths were analysed along the flagged transect (see Figure 6) with depths being recorded at every third flag across the site. A total of 20 points were recorded (results are shown in Table 3). At each point 3 peat depth measurements were taken; adjacent to the flag, 1m East and 1m West.

The deepest measurement found at each point was used to diagnose peat depth (Figure 9). Depths ranged from 33cm to 373cm across the site. At each point GPS readings were also taken to provide a topography map of the site. These data were then used to map the overall topography of the site

Coad Bog was found to lie between 13 and 20m above sea level with significant variation across the site (see Figure 10).

Table 2: Results of peat coring to analyse peat stratigraphy of Coad Bog

Depth from the Surface cm	Description
0-2.5cm	Live <i>Sphagnum</i> moss on the surface of the core
2.5-15cm	Brown to black peat containing the live roots of heathers and grasses. The peat is quite decomposed and amorphous, no structure. Smells of hydrogen sulphide. Wet.
15-30cm	Brown peat containing remains of moss. Dry texture like putty.
30-67cm	Brown to black peat, quite wet, smells of hydrogen sulphide, turning black on exposure to the air. Remains of sedges evident and pieces of bog cotton fibres.
67- 100cm	Light brown peat with a smooth texture, malleable retaining shape, smooth when rubbed between the fingers. Dense peat, odourless. Highly decomposed, no visible remains seen.
Peat subsoil	Rock of old red sandstone

Table 3: Maximum recorded peat depths at each point across the Coad Bog flagged transect

Point	Northing	Easting	Elevation (m)	Accuracy (m)	Nearest flag	Max Depth (cm)
1	58228	60060	12.6	5.5	57	184
2	58182	60099	15.9	7.8	54	73
3	58141	60146	15.8	6	51	144
4	58154	60085	13.9	6.3	48	75
5	58170	60029	15.2	7.1	45	160
6	58183	59970	16.3	5.9	42	164
7	58142	60005	14.3	6.8	39	143
8	58104	60050	17.8	6.9	36	300
9	58057	60088	15.3	5.6	33	47
10	58061	60064	17.2	10.6	30	64
11	58097	60017	16.8	8.5	27	373
12	58132	59969	20.6	6.8	24	127
13	58113	59976	13.5	5.8	21	49
14	58071	60016	14.1	5.7	18	178
15	58043	60032	18.2	5.3	15	127
16	58075	59982	15.2	5.8	12	190
17	58102	59928	17.8	5.9	9	74
18	58061	59950	13.9	5.7	6	136
19	588009	59980	15.8	10.3	3	158
20	57975	59997	14.7	6.6	1	33

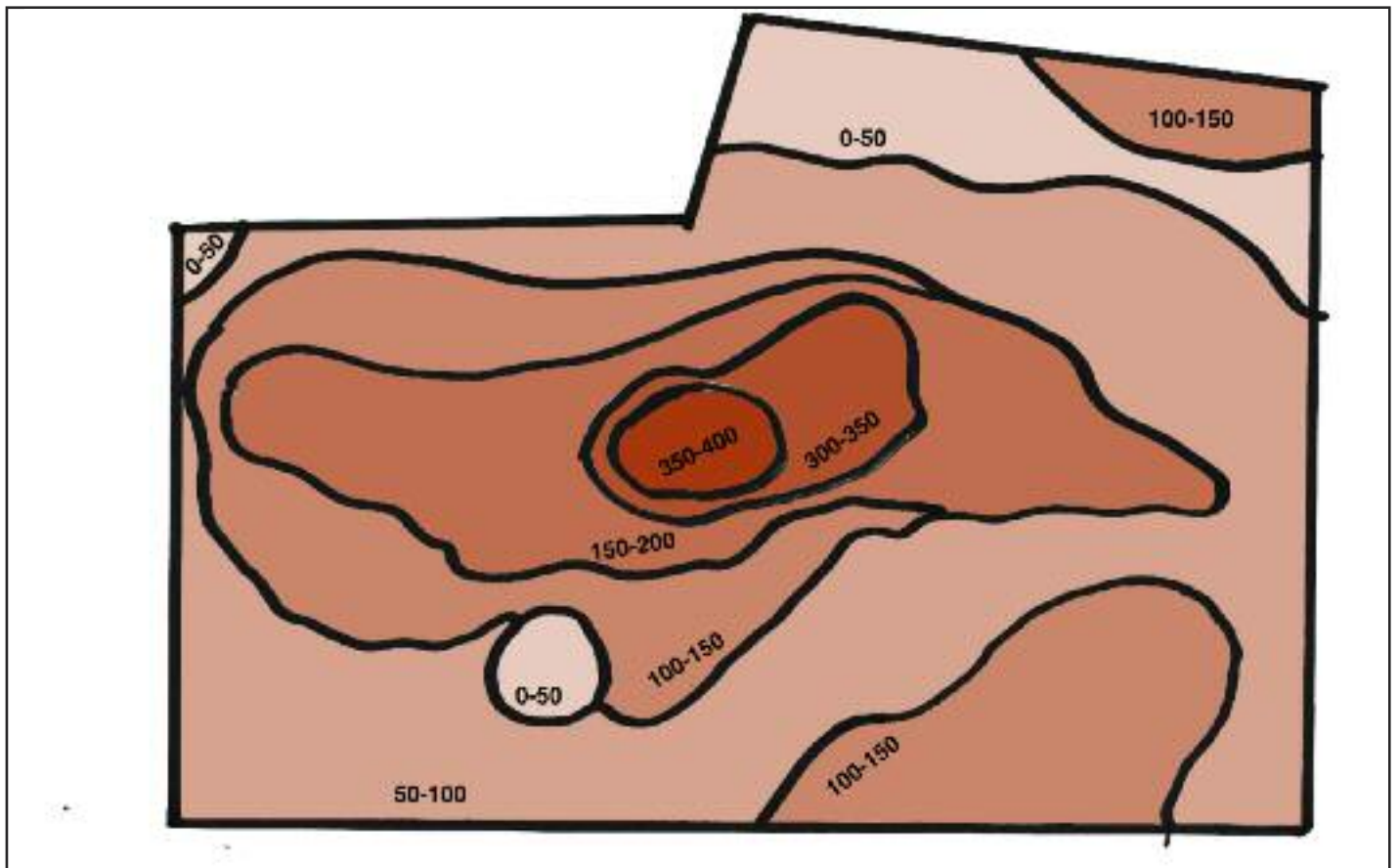


Figure 9: Peat Depth map for Coad Bog showing depths across the site in 50cm increments

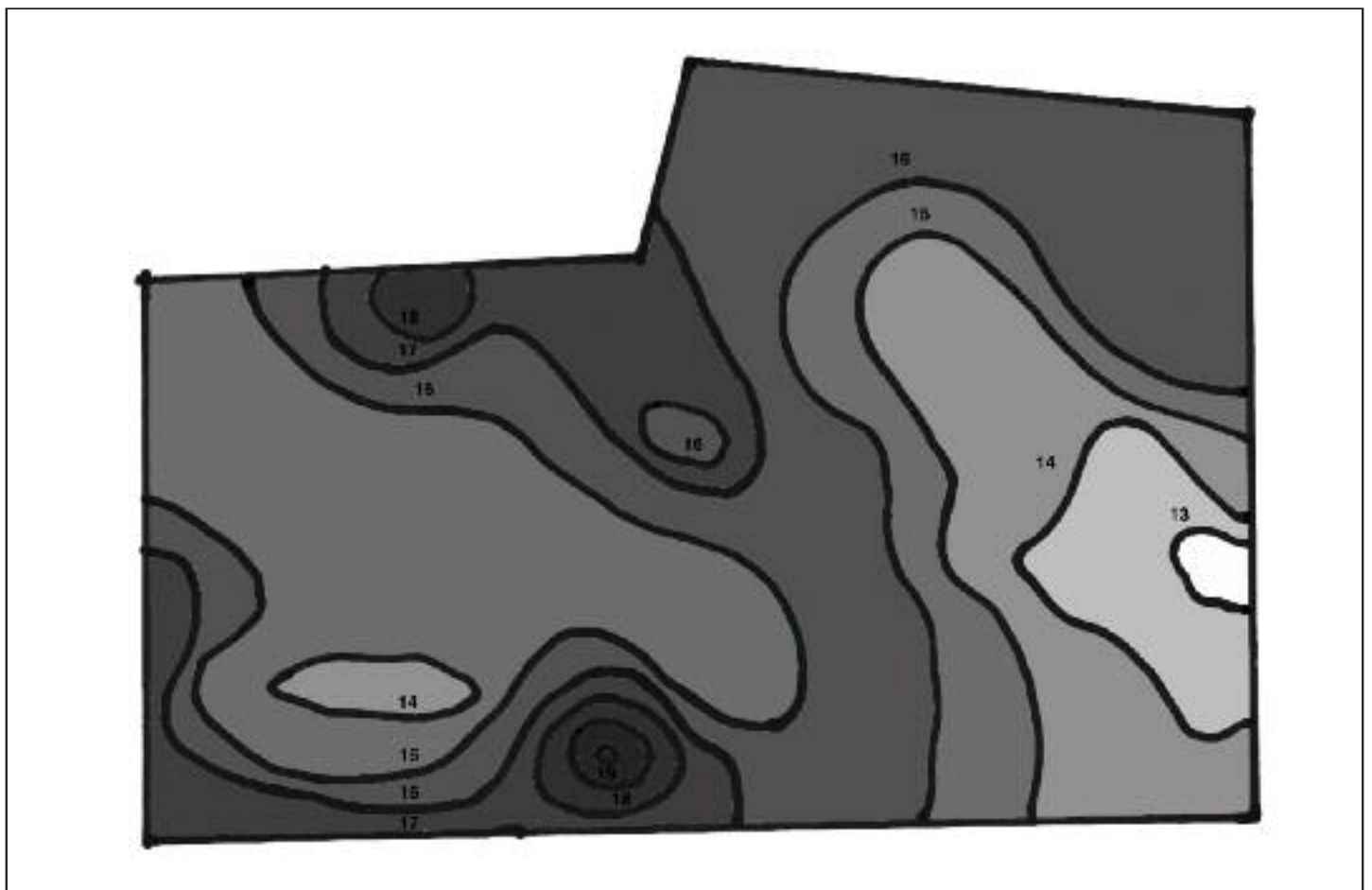


Figure 10: Topography map for Coad Bog showing height above sea-level in metres across the site

2.4 Water Table

12 piezometers were installed across the site in 2016 to assess water table levels. These were placed in a X shape across the bog to ensure a representation of all habitats across the site. These were installed in two transects (A & B) across the site (see Figure 11). GPS readings were recorded for the location of each piezometer (see Table 4).

Water measurements were recorded in 2016 and 2017 and the data collected are presented in Appendix IV. A graph of the water table is shown in Figure 12.

The water levels recorded in May 2016 ranged from 8cm to 31cm below the bog surface. In July 2017 the water levels recorded ranged from 1.5cm to 28.5cm below the surface. The water levels have risen at each piezometer since 2016, with an average rise of 7.3cm across the site. These results suggest that the blocking of drain A has had a positive impact on the hydrology of Coad Bog.

Table 4: Coad Bog Piezometer Installation recording form including individual GPS

Piezo	Northing	Easting	Elev	Acc	Notes
A1	58286	60025	18.5	8.6	South East Corner
A2	58177	60026	14.4	10.1	
A3	58169	60031	14.1	8.6	
A4	58136	60043	10.8	6.9	
A5	58088	60064	17	9.5	
A6	57980	59998	9.8	9.6	North West Corner
B1	58055	59946	13.7	7.1	South West Corner
B2	58071	59981	12.4	6.4	
B3	58095	60032	12.6	8.8	
B4	58101	60086	13.5	5.1	
B5	58135	60117	12.9	5	
B6	58154	60146	14.6	6.8	North East Corner

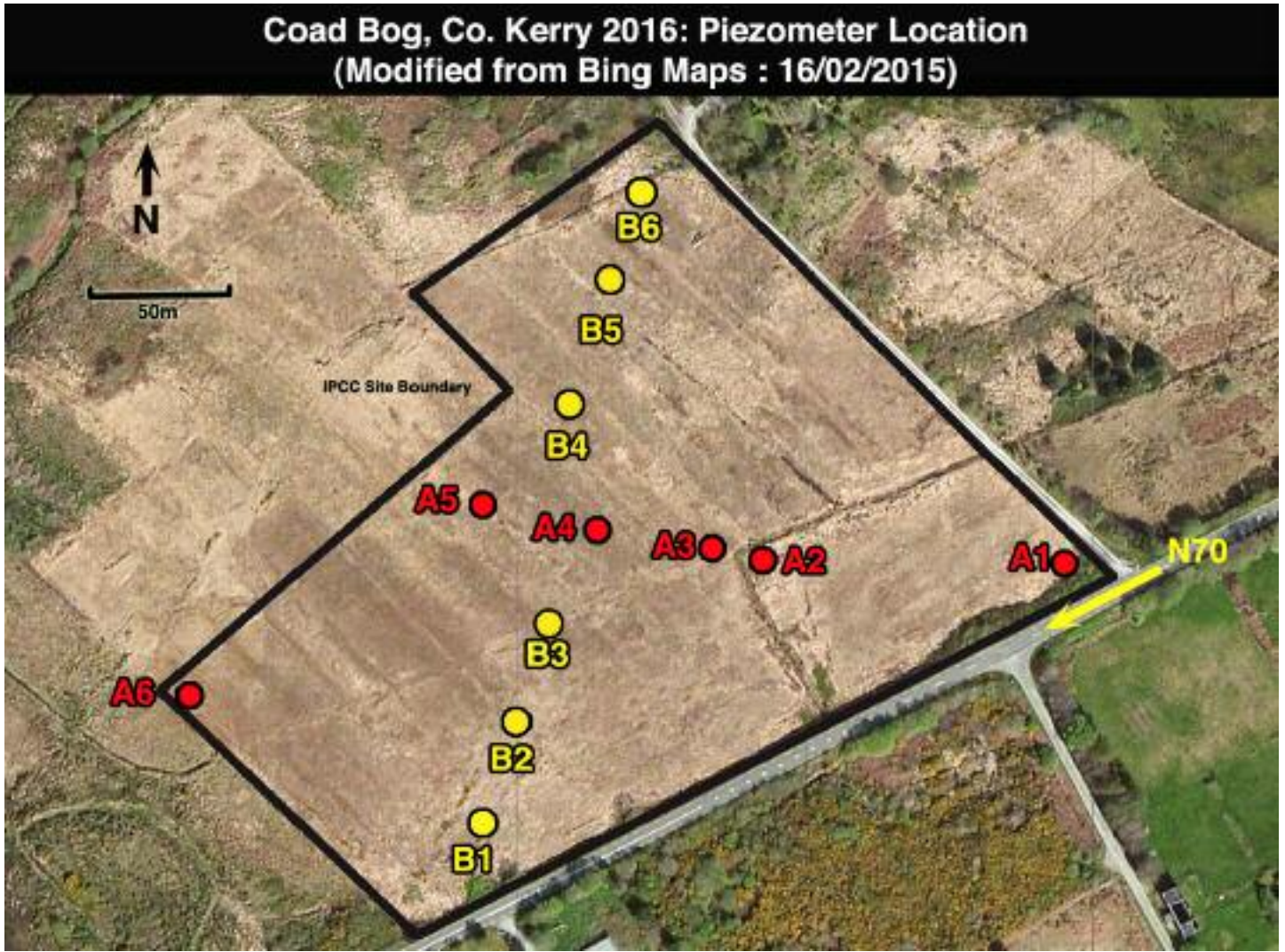


Figure 11: Location of all piezometers (Transects A and B) across Coad Bog 2016

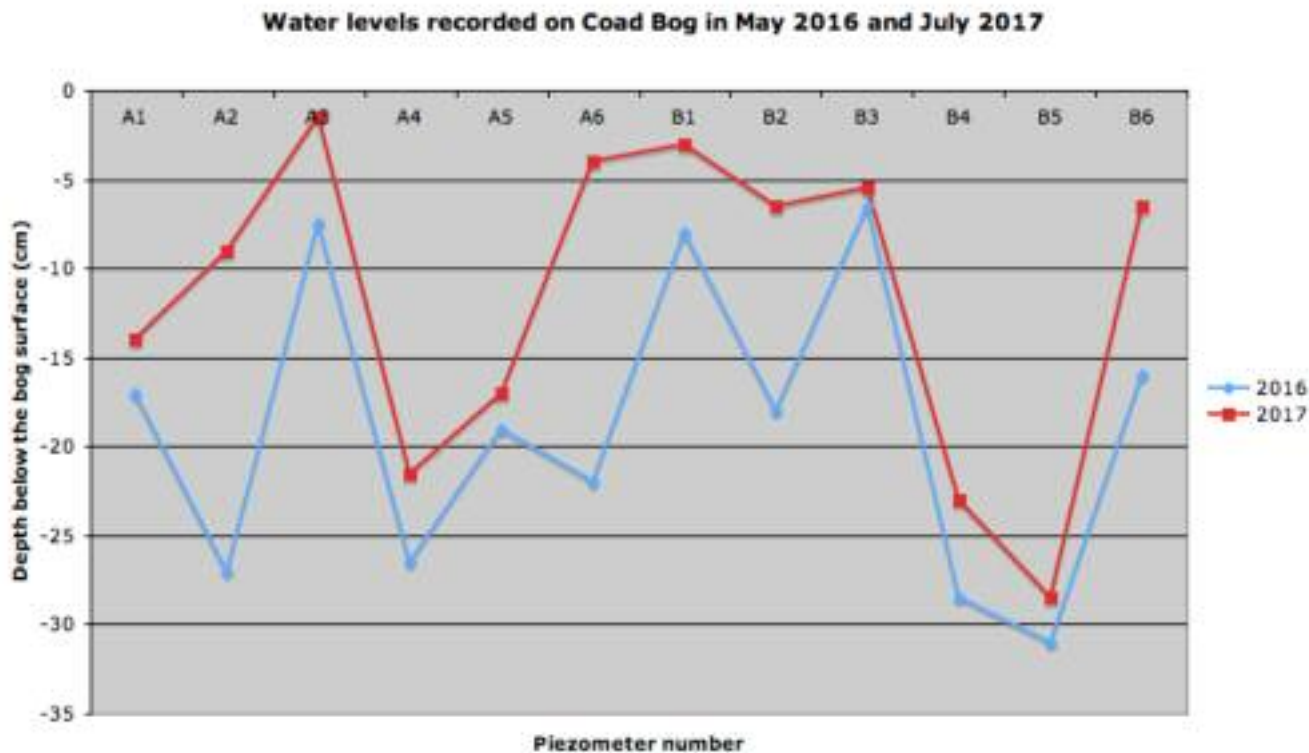


Figure 12: Water table graphs for Coad Bog 2016 and 2017. The water levels in piezometer A6 show dramatic increases. This may be attributed to the way in which the water level in the piezometer is being measured as the piezometer is located in soft Sphagnum peat.

2.5 pH levels (needs to be extended)

pH readings were recorded on the 25th May 2016 from 6 locations on Coad Bog and found to range from 5.17 to 6.69. *how do these compare with other bb and we need more results from 2017.* The locations of the sample sites and the results recorded are shown in Figure 13 and Table 10 respectively.

Year	Location	pH	Notes
2016	A	6.57	Drain A
2016	B	6.69	Drain A
2016	C	6.4	Where drain A meets stream
2016	D	6.8	Where water enters stream from under N70
2016	E	6.42	Where stream goes under road
2016	F	5.17	Bog Pool
2017	G		Drain A
2017	H		Drain A
2017	I		North-east corner of the stream

Table 10: Description of sample site and pH reading for selected locations on Coad Bog, Co Kerry



Figure 13: pH measurement locations on Coad Bog 2016 and 2017

2.6 Drain Profiling and Blocking

A full site walkover was carried out to assess the location, flow direction and impact of drainage on the site in 2016. Off-site mapping had indicated that there was a significant drain in the southeast corner of the site but local knowledge and investigation found that this was in fact more akin to a stream and was the water source for a wetland further down the water course. IPCC will ensure that this water source remains open while other drains, removing water from the site could be investigated for blocking.

Profiling was carried out on two drains A and B (see location in Figure 14) on site to assess topography and water flow and the data was analysed. On this basis 3 dams were inserted the north western end of Drain A (Figure 15) using interlocking sheets of drain piling.

In 2017 the dams were revisited and were showing signs of retaining water on the site. However at this stage field observations suggested that the water flow in the drain is to the South east which was not what the profile drawing indicated from 2016. Therefore before further dams are inserted, this drain needs to be reprofiled avoiding the bank of peat that would originally have been removed from the drain. In addition the existing dams may need to be re-enforced to prevent water flow and erosion around their sides.

Figure 16 shows a dam holding water on Drain A on Coad Bog in 2017.

The profile diagram for Drain B is shown in Figure 17 and dam construction is required on this drain.

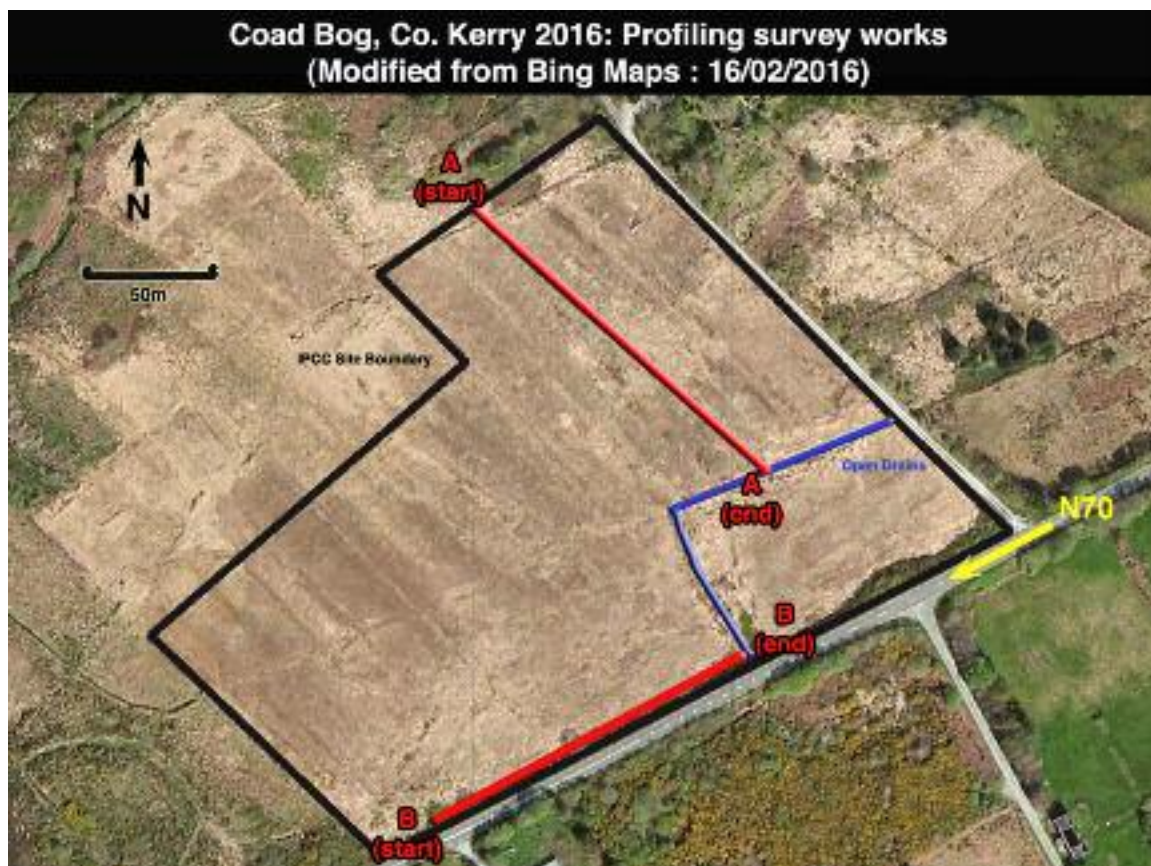


Figure 14: Drains A and B were profiled as they were negatively influencing the hydrological regime on Coad Bog. Drain A was blocked with three dams on its northern end.

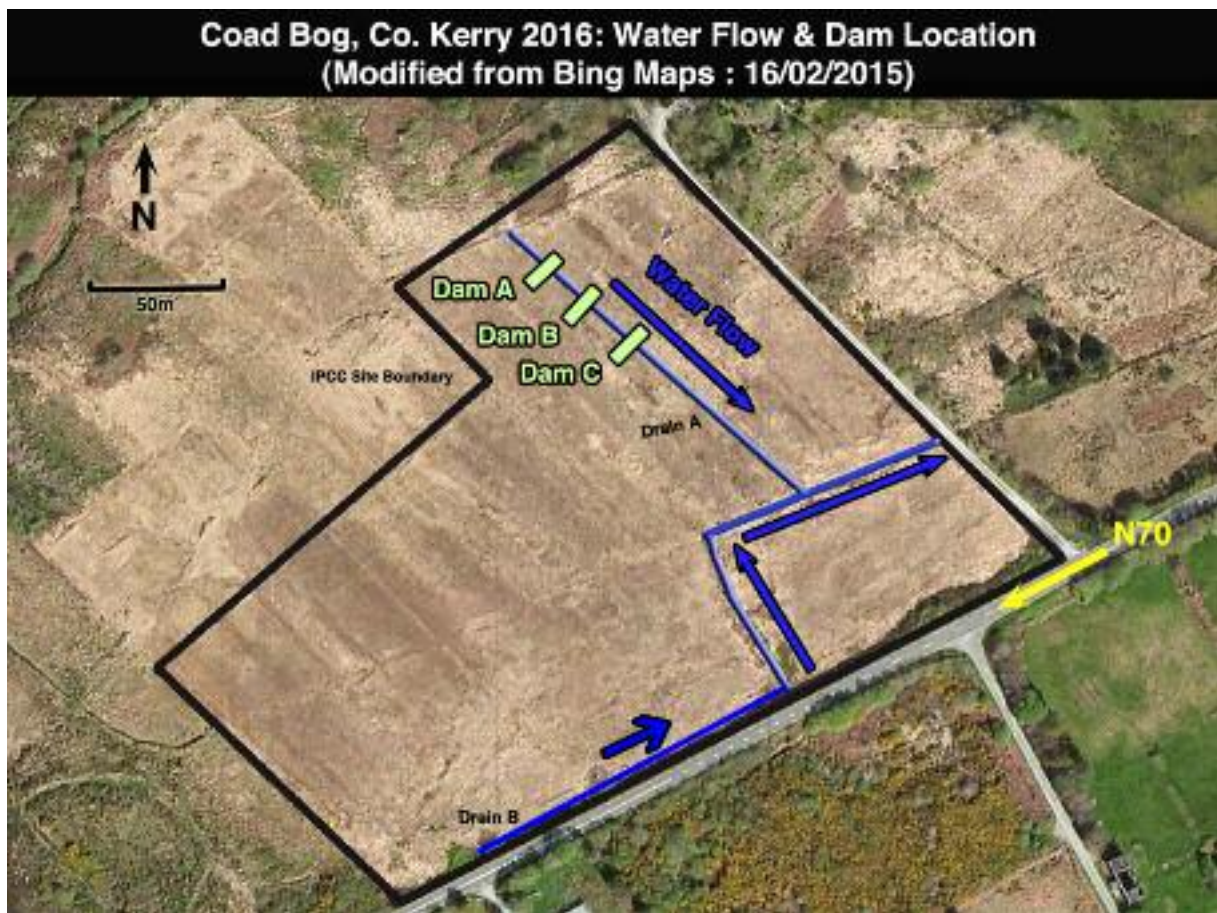


Figure 15: Location of dams inserted in Drain A on Coad Bog, Co. Kerry, 2016.



Figure 16: Photo taken in July 2017 showing water being held back by dam inserted in drain A in May 2016.
Photo: K. Geraghty

Coad Bog, Co. Kerry: Profile of Drain B (West to East)



Figure 17: Profile diagram for Drain B on Coad Bog 2016.

2.7 Fire Break

Volunteers used loppers and saws to remove Gorse bushes on the northeastern perimeter of the bog adjacent to a house entrance in 2016. This measure needs to be undertaken regularly to prevent fire from spreading across the site. In addition a full fire break needs to be constructed on the site in combination with rewetting to help prevent fire spread.

2.8 *Rhododendron* Removal

All *Rhododendron* bushes located on the site are being removed each year by digging and destruction off site. *Rhododendron* is present in the lands surrounding Coad Bog. Its invasion onto the site needs to be monitored annually.

Another species of concern is *Gunnera* which is present along the stream edge in a neighbouring garden.

2.9 Grazing

At present there is no grazing on Coad Bog.

2.10 Public Awareness, Education and Community Engagement

The Coad Bog BioBlitz in 2016 provided a focal point for public awareness and education. The programme for the event is shown in Figure 18. Public awareness and engagement on the project needs to be undertaken annually to keep people abreast of developments on the project. As many people in the area are engaged in tourism, public events are best organised outside the peak tourism months of June, July and August.

Educating children in the local Caherdaniel National School with site visits and outdoor laboratory investigations should be given priority. A successful site visit was one element in the BioBlitz 2016. There is a need to train local teachers to conduct a field study on the site with students at lower primary and upper primary levels. IPCC have online education resources suitable for Coad Bog entitled: '*Discovering the Wild Bogs of Ireland*' (N. Madigan, 2016), these workbooks can be downloaded at www.ipcc.ie/discover-and-learn/resources.

On IPCC's website there is a dedicated page for Coad Bog at (www.ipcc.ie/discover-and-learn/ipccs-peatland-nature-reserves/coad-bog-visitor-map-and-guide/), there is a visitor guide that can be downloaded as a pdf (see Appendix V) and there is a 2 minute video providing the visitor with a virtual tour of the site on IPCC's You Tube Channel and . An A1-sized poster is on display in the Bog of Allen Nature Centre and Caherdaniel National School (see Appendix VI).

Social Media	Business, Community & Tourist Venues	Web Sites	Newsletters
Waters and Communities Facebook	Derrynane House	Radiokerry.ie	IPCC Peatland News
IPCC's Facebook	O'Leary's Newsagents, Castlecove	ipcc.ie	Caherdaniel Parish Newsletter
IPCC Twitter	Sneem Geopark	Catchments.ie	
IPCC Instagram	Caherdaniel National School	Independent.ie	
Biodiversity.ie	Hostel in Caherdaniel	heritageweek.ie	
Greennews.ie	Local Tourist Offices	biodiversityweek.ie	
Wild Derrynane Facebook	The Olde Forge B&B	watersandcommunities.ie	
	Staigue Fort House Bar and B&B		
	The Blind Piper Bar, Caherdaniel		
	Freddie's Bar, Caherdaniel		

Table 11: Media resources that can be used to promote events at Coad Bog, Co Kerry

Citizen Science

As Coad Bog is very remote from the headquarters of the IPCC, the recruitment and training of local people to act as citizen scientists monitoring water levels and wildlife on the site year round. In 2017 IPCC recruited four volunteers and trained them as citizen scientists.

IPCC need to invest in this area and build up a volunteer base locally.



Date	AM	PM
Fri 20th May	IPCC team commute to Coad Bog	Set up moth traps with NPWS, site access, transect location, erect temporary signs, full site walkover, GPS 4 corners, site overview
Sat 21st May	Set pitfall traps & GPS Install piezometers	Site profiling, Drain mapping & Photography
Sun 22nd May	Site profiling Peat Depths (19 points)	Site profiling, peat probing
Mon 23rd May	Biodiversity Surveys Birds, Bryophytes, Carnivorous Plants. Sweep netting, Pond dipping	Habitat mapping, Site profiling
Tues 24th May	Volunteer training	Film footage, Peat stratigraphy, <i>Community Event (7.30pm)</i> Site Safari & Star Party
Wed 25th May	Water measurements Drain blocking, volunteer training	Film footage/photography, Install fire break, Habitat mapping
Thurs 26th May	Caherdaniel National School visit, Infants - Earth Walk Senior students - Ranger Programme	Water Measurements Film footage & photography
Fri 27th May	Empty pitfall traps Site clean-up	publish awareness materials including results poster, visitor guide, video etc

**Go raibh maith agat as ucht cabhrú linn!
Thank you!**



Figure 18: Coad Bog 2016 BioBlitz Event Programme

2.11 Tourism Infrastructure

A map showing tourism infrastructure in relation to Coad Bog is presented in Figure 19.



Figure 19: Map showing Coad Bog Tourism Infrastructure. Modified from Google Maps 2017.

2.12 Archaeology and Local History

Coad Bog was once owned by the local blacksmith Florrie O’Sullivan who cut turf from the bog to fuel his furnace. Florrie lived across the Road from the Black Shop in Caslecove. Turf has not been cut from the bog since the 1950’s. The road bordering the bog - the N70 was built in 1839 and was widened in 1890. Before this road was built the road above the bog on Coad Mountain was the only access route to the site.

The ruined buildings across the road from Coad Bog (see figure 22) were originally owned by Mrs Broderick who set up a hospital for TB sufferers in 1905. There was a problem with the water supply to the hospital so it was never in operation. Mrs Broderick played the organ at the church in Sneem. She left the

buildings to the IRA. (The above information was supplied by Lin Baldock whose family have lived in Westcove since 1905)

There are over 11 archaeological sites close to Coad Bog (see Figure 20). Table 12 lists their site monument name and site codes. This information was gathered from www.archaeology.ie and derived from A. O’Sullivan and J. Sheehan (compilers), *The Iveragh peninsula: an archaeological survey of South Kerry*. Cork University Press (1996).

Table 12: Site monuments in the surrounds of Coad Bog, Co Kerry from O’Sullivan and Sheehan 1996.

Monument	Monument Code	Townland	Classification
1	KE106-128	Coad	Mine - Copper
2	KE106-031	Coad	Hut site
3	Redundant		
4	KE106-032 (includes 5 monuments)	Behaghane	Church, graveyard, Ritual site-holy well, Holy tree and Cross-incised slab
5	KE106-033	Coad	Ringfort-rath
6	KE106-110	Behaghane	Enclosure
7	KE107-004	Gowlanes	Ringfort-cashel
8	KE107-016	Liss	Church
9	KE107-007	Behaghane	Castle-tower house
10	KE106-072	Coad	Enclosure
11	KE106-121 (includes 4 monuments)	Brackaharagh	Ringfort-cashel, House, Souterrain, Field boundary

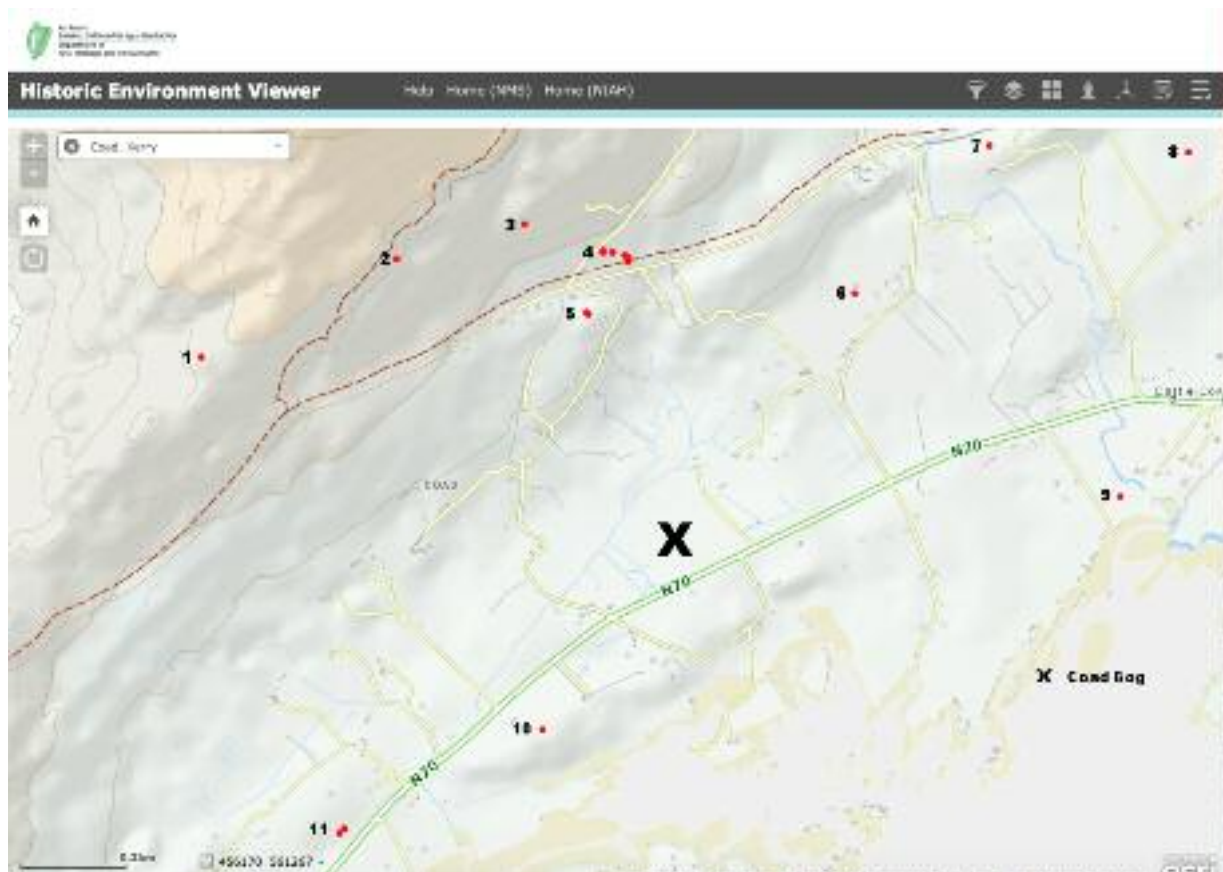


Figure 20: Location of recorded site monuments in relation to Coad Bog (marked with X)



Figure 21: Photo of the church and graveyard archaeological site. no. 4 on figure 20 above. Photo: K. Geraghty



Figure 22: Photo of the ruined IRA buildings across the road from Coad Bog with Cove Harbour in the background. Photo: J. Kielesz

3. Site Specific Conservation and Amenity Objectives

Blanket Bog habitats are listed for conservation protection under the European Union Habitats Directive. Blanket bogs are not only beautiful, dramatic landscapes, full of inspiring wildlife, but they also provide us with some very useful services, vital to our own wellbeing and survival. Part of our drinking water comes from blanket bogs and peatlands hold nearly 30% of the world's soil carbon locked into their deep peat layers. Blanket bog vegetation slows the flow of rainfall helping to prevent flooding on roads and in local towns and villages. Without doubt the protection of blanket bogs and sites like Coad Bog is necessary to avoid adverse economic and environmental impacts.

Coad Bog is an example of a regenerating blanket bog habitat. In this regard its protection and enhancement can contribute to the national objective of protecting blanket bog habitats. For areas of high conservation value containing near pristine habitat, the National Parks and Wildlife Service have given these the designation of special Area of Conservation. For example the neighbouring Killarney National Park, Macgillicuddy Reeks and Caragh River Catchment SAC.

The blanket bog habitat at Coad is secondary, in that it is regenerating following turf extraction in the last century. While it is not suitable for SAC designation the site does have local biodiversity importance for habitats and species. In this regard IPCC are keen to set Conservation Objectives for the site following the system developed for SAC's as best practice. We have studied the Site Specific Conservation Objectives for Glanmore SAC blanket bog provided by Rebecca Jeffrey and have devised a series of targets to aim for in achieving our overall goal of restoring active blanket bog on Coad Bog (see Table 13).

Table 13: Conservation Objectives for Coad Bog, Co. Kerry

Number	Attribute	Measure	Target	Notes
CO1	Blanket Bog Habitat Area	ha	Area of active peat forming blanket bog habitat stable or increasing subject to natural processes	Active blanket bog habitat on Coad is estimated at 1.5ha currently with potential to increase this to 3ha with drain blocking and re-wetting
CO2	Community Diversity	Occurrence	Maintain and expand existing diversity of wet bog habitats	Expand the wet bog habitats recorded on Coad Bog including the areas of classic blanket bog, quaking <i>Sphagnum</i> rich blanket bog with <i>Succisa</i> and overgrown blanket bog with 60% <i>Sphagnum</i> cover though blocking drains. expand the extent of the flushed vegetation with <i>Hypericum elodes</i> around the stream.
CO3	Vegetation Composition - Typical and Indicator Species	Vegetation mapping across the site every 5 years. Monitoring of butterflies and birds annually	Restore typical and indicator species for blanket bog. <i>Sphagnum</i> cover to between 75 and 100% to ensure peat forming capacity resumes	At present Coad Bog does not support plant species characteristic of atlantic blanket bog such as <i>Pleurozia purpurea</i> , <i>Campylopus atrovirens</i> and <i>Schoenus nigricans</i> -all wet bog indicators. With re-wetting these species may return. The site has 49% <i>Sphagnum</i> cover with a range of moderately peat forming <i>Sphagna</i> including <i>S. magellanicum</i> , <i>S. capillifolium</i> , <i>S. papillosum</i> , <i>S. subnitens</i> . The site has a graminoid appearance which is typical of Atlantic blanket bog according to Fossitt 2000. Species lists for butterflies and birds exist but data is needed on seasonal variations in composition, population size and breeding behaviour.
CO4	Vegetation Composition - Potential dominant species	Monitoring through permanent photographic positions or permanent quadrats located in areas subject to change	Cover of each potential species dominant species less than 75%	<i>Molinia caerulea</i> is regarded as a potentially dominant species on Coad responding to the lack of grazing and frequent fire. At present its cover is 60%. Potentially Bracken and Gorse may also have a tendency to spread across the site in response to anthropogenic factors.
CO5	Vegetation Composition - non native species	Monitoring through permanent photographic positions	Cover less than 1%	<i>Rhododendron ponticum</i> is present on site and is being removed through cutting
CO6	Vegetation Structure - burning	Monitoring through permanent photographic positions	No signs of burning in sensitive areas, into the moss, liverwort or lichen layer or exposure of peat surface due to burning	Coad has a history of fire spreading from adjacent hill sheep farms. A fire break needs to be created and Gorse needs to be removed. Sensitive <i>Sphagnum</i> mosses must be protected from fire.
CO7	Ecosystem function: soil nutrients	Monitor Soil pH and nutrient levels	Maintain within natural range - <i>what is this for bb?</i>	The range of pH on Coad Bog at present is pH 5.17 on the open bog and between 6.4 and 6.8 in the drains.
CO8	Physical Structure - drainage	Drain length and depth	Less than 10% of site affected by drainage	Drainage maps show two drains on the site labelled A and B. These are to be blocked to reduce area of impact. No further drainage is to occur.
CO9	Physical Structure- hydrology	Monitoring dipwells on site	Restore water table to within 10cm of surface in wet bog areas - near natural conditions	Drain blocking and regular monitoring of water levels to measure progress
CO10	Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population size	Rory Hodd identified <i>Mytilus anomalus</i> on site, a species associated with raised bogs of the Irish midlands

Table 14: Amenity Objectives for Coad Bog, Co. Kerry

Number	Attribute	Measure	Target	Notes
AO1	Information signage	Occurrence and condition	Provide and maintain high quality interpretive signage on the site. Investigate the possibility of including the same sign on the Kerry Way at the archaeological Church site north of the site.	At present there are no information signs on Coad Bog or in the vicinity of the bog
AO2	Warning and hazard signs	Occurrence and condition	Erect no dumping and fire warning signs	Coad bog has a history of fire incidents and dumping. Signs are needed to warn offenders of the consequences.
AO3	Access	Manage access	Direct users to the least sensitive areas on the site. Fence the eastern boundary of the site and provide an access style.	The areas of wet bog habitat on the site are sensitive to trampling.
AO4	Reporting facility	Provide service	Provide a contact service for visitors and users	Email, web site comments or social media comments
AO5	Outreach education	Public participation	Provide annual programme of awareness raising activities on the site. Develop a network of local contacts to promote these events	A variety of walks, talks, volunteer days and festival fringe events are provided by the IPCC which could be formalised as an annual programme of events
AO6	Schools	Participation	Develop an outdoor learning opportunity for local primary and secondary schools	Caherdaniel national school visited the bog in 2016 and found the visit fun and educational for students and teachers. These educational visits could become annual event if teachers are provided with appropriate training and resources
AO7	Research	Participation	Develop projects for research students that assist IPCC with developing our understanding of the biodiversity, history and eco-hydrology of Coad Bog	IPCC's knowledge of Coad bog is limited to data gathered during the 2016 BioBlitz. Further information is needed on breeding birds, butterflies and other wildlife.

4. Management Actions for Coad Bog

The following management recommendations are made for Coad Bog to deliver the Conservation Objectives for the site (see Table 15).

Item	Action	Priority	Responsibility	Conservation/Amenity Objective
Water levels	monthly monitoring 12 piezometers on established transect	High	IPCC and Citizen Scientists	CO9
Birds	seasonal survey on established transect	Medium	IPCC and Citizen Scientists	CO3
Butterflies	Spring/summer survey on established transect	Medium	IPCC and Citizen Scientists	CO3
Vegetation	Repeat 2016 vegetation survey in five years to monitor spread of active blanket bog habitat	Low	IPCC and student researcher	CO1, CO2, CO3
pH	monthly monitoring of pH at input and outfall of all drains and the stream	Medium	IPCC and Citizen Scientists	CO7
Drains	Block drains A and B in 2018	High	IPCC and Citizen Scientists	CO8, CO9
Dam Survey	Conduct dam survey in 2018 and repeat in five years time	Medium	IPCC and Citizen Scientists	CO8, CO9
Habitat Creation	Create open water pool habitats for breeding dragonflies in suitable locations	Medium	IPCC and Citizen Scientists	CO2
Volunteers	Recruit and train an team of volunteers to undertake various monitoring and management works on the site	High	IPCC	CO4, CO5, CO6, CO7, CO9
Invasive Species	Monitor and remove <i>Rhododendron</i> and <i>Gunnera</i>	High	IPCC and Citizen Scientists	CO5
Dumping	Monitor and remove	Medium	IPCC, Kerry County Council	AO2
Fencing	Fence eastern margin of the bog	Medium	IPCC	AO3
Access Style	Include access style in fence boundary	Medium	IPCC	AO3
Fire	Install complete fire break on bog	High	IPCC	AO2
Hazard Warning Signage	Erect fire and dumping prevention signage on N70 perimeter of site	Medium	IPCC, Kerry County Council	AO2
Visitor Information Sign	Erect interpretive signage on site perimeter and on Kerry Way	Medium	IPCC, Kerry County Council, Sports Council	AO1
Nature Reserve Sign	Erect on site	High	IPCC	AO1
Funding	Apply for funding to realise the actions of the Management Plan	High	IPCC	ALL
Education	Train local school teachers to deliver bog modules to students	Medium	IPCC	AO6, AO5
Public Awareness	Organise annual programme of public awareness events on site	High	IPCC	AO5
Health and Safety	Conduct audit and devise guidelines for on site researchers, citizen scientists and contractors	High	IPCC	AO2
Student Researchers/Colleges	Design projects suitable for student research projects and investigate twinning with local colleges	Medium	IPCC, Tralee IT	AO7
Site Archives	Maintain information archive on Coad Bog	Medium	IPCC	AO4, AO7
Local Networking	Build network of local contacts to help promote the site	Medium	IPCC	AO5
Visitor information media	Maintain and update web pages for Coad Bog on www.ipcc.ie	High	IPCC	AO4, AO5
Conservation Management Plan	Monitor effectiveness of Conservation Management Plan	High	IPCC	ALL

Table 15: Management Actions for Coad Bog, Co. Kerry

Appendix I: Coad Bog Co. Kerry, Flora Species List

TaxonName	CommonName
<i>Acronicta rumicis</i>	Knot Grass
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Amblystegium serpens</i> var. <i>salinum</i>	
<i>Aneura pinguis</i>	Greasewort
<i>Angelica sylvestris</i>	Wild Angelica
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Arabis hirsuta</i>	Hairy Rock-cress
<i>Aulacomnium palustre</i>	Bog Groove-moss
<i>Bellis perennis</i>	Daisy
<i>Blechnum spicant</i>	Hard-fern
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss
<i>Bryum capillare</i>	Capillary Thread-moss
<i>Calluna vulgaris</i>	Heather
<i>Calypogeia arguta</i>	Notched Pouchwort
<i>Calypogeia fissa</i>	Common Pouchwort
<i>Calypogeia muelleriana</i>	Mueller's Pouchwort
<i>Campylium stellatum</i>	Yellow Starry Feather-moss
<i>Campylopus flexuosus</i>	Rusty Swan-neck Moss
<i>Campylopus introflexus</i>	Heath Star Moss
<i>Campylopus pyriformis</i>	Dwarf Swan-neck Moss
<i>Cardamine pratensis</i>	Cuckooflower
<i>Carduelis carduelis</i>	European Goldfinch
<i>Carex binervis</i>	Green-ribbed Sedge
<i>Carex nigra</i>	Common Sedge
<i>Carex panicea</i>	Carnation Sedge
<i>Cephalozia bicuspidata</i>	Two-horned Pincerwort
<i>Cephalozia connivens</i>	Forcipated Pincerwort
<i>Ceratodon purpureus</i>	Redshank
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium palustre</i>	Marsh Thistle
<i>Cladopodiella fluitans</i>	Bog Notchwort
<i>Crocasmia pottsii</i> x <i>aurea</i> = <i>C. x crocosmiiflora</i>	Montbretia
<i>Dicranella heteromalla</i>	Silky Forklet-moss
<i>Dicranum bonjeanii</i>	Crisped Fork-moss
<i>Dicranum scoparium</i>	Broom Fork-moss
<i>Dicranum scottianum</i>	Scott's Fork-moss
<i>Digitalis purpurea</i>	Foxglove
<i>Diplophyllum albicans</i>	White Earwort
<i>Drosera rotundifolia</i>	Round-leaved Sundew
<i>Dryopteris dilatata</i>	Broad Buckler-fern
<i>Epilobium montanum</i>	Broad-leaved Willowherb
<i>Epipterygium tozeri</i>	Tozer's Thread-moss
<i>Erica cineria</i>	Bell heather
<i>Erica tetralix</i>	Cross-leaved Heath
<i>Eriophorum angustifolium</i>	Common Cottongrass
<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass
<i>Eupithecia virgaureata</i>	Golden-rod Pug
<i>Eurhynchium praelongum</i>	Common Feather-moss
<i>Festuca rubra</i>	Red Fescue
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Fissidens bryoides</i> var. <i>bryoides</i>	Lesser Pocket-moss
<i>Fissidens taxifolius</i> var. <i>taxifolius</i>	

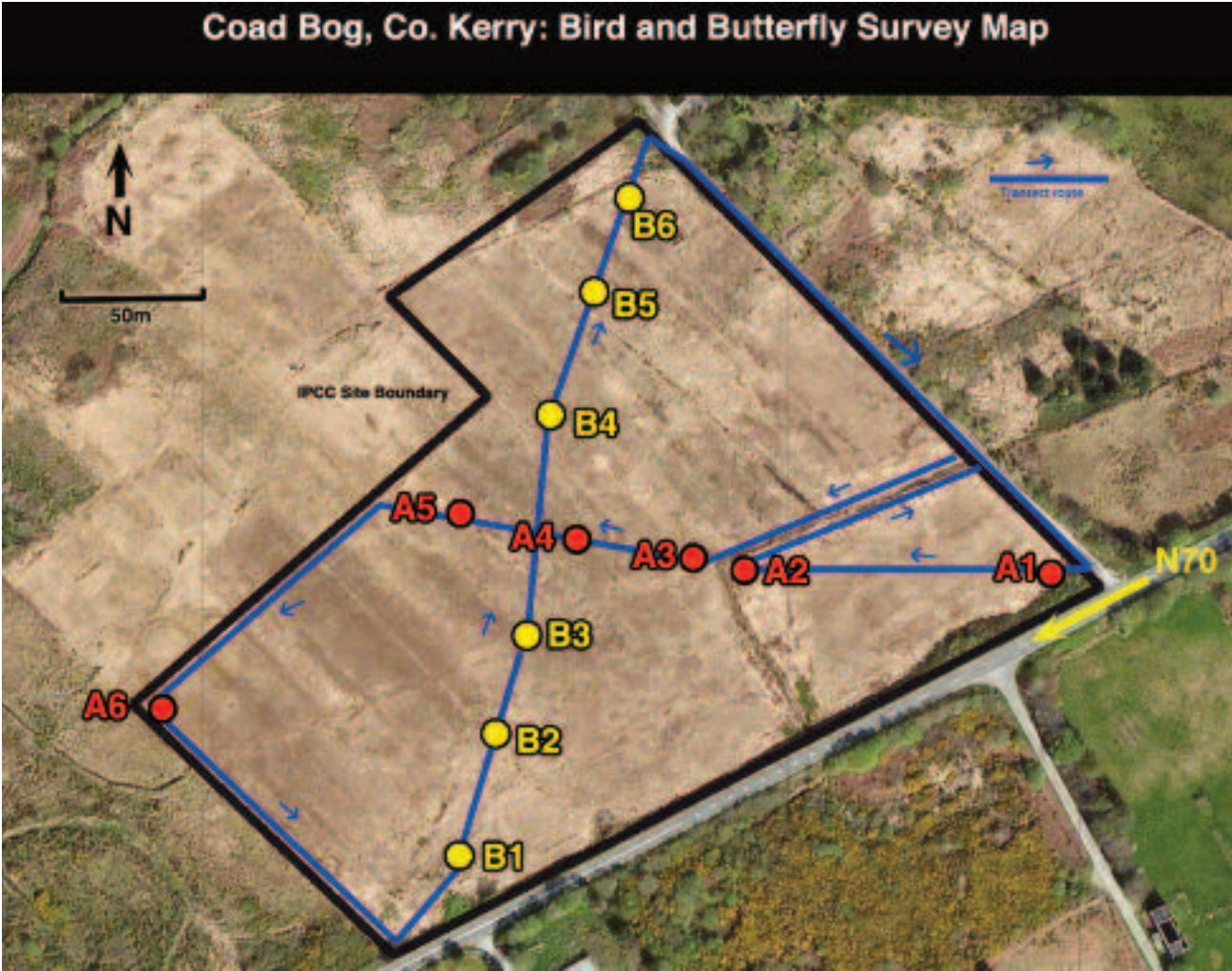
<i>Frullania dilatata</i>	Dilated Scalewort
<i>Frullania microphylla</i> var. <i>microphylla</i>	
<i>Frullania tamarisci</i>	Tamarisk Scalewort
<i>Galium aparine</i>	Cleavers
<i>Galium palustre</i>	Marsh-bedstraw
<i>Geranium robertianum</i>	Herb-Robert
<i>Hedwigia stellata</i>	Starry Hoar-moss
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Homalothecium sericeum</i>	Silky Wall Feather-moss
<i>Hookeria lucens</i>	Shining Hookeria
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Hydrocotyle vulgaris</i>	Marsh Pennywort
<i>Hypericum elodes</i>	Marsh St John's-wort
<i>Hypnum cupressiforme</i>	Cypress-leaved Plait-moss
<i>Hypnum cupressiforme</i> var. <i>resupinatum</i>	Supine Plait-moss
<i>Hypnum jutlandicum</i>	Heath Plait-moss
<i>Iris pseudacorus</i>	Yellow Iris
<i>Juncus articulatus</i>	Jointed Rush
<i>Juncus effusus</i>	Soft-rush
<i>Kurzia pauciflora</i>	Bristly Fingerwort
<i>Kurzia trichoclados</i>	Heath Fingerwort
<i>Lamium purpureum</i>	Red Dead-nettle
<i>Leucobryum glaucum</i>	Large White-moss
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lophocolea bidentata</i>	Bifid Crestwort
<i>Lophozia incisa</i>	Jagged Notchwort
<i>Lophozia ventricosa</i>	Tumid Notchwort
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
<i>Luzula campestris</i>	Field Wood-rush
<i>Luzula multiflora</i>	Heath Wood-rush
<i>Medicago lupulina</i>	Black Medick
<i>Mentha aquatica</i>	Water Mint
<i>Menyanthes trifoliata</i>	Bogbean
<i>Metzgeria furcata</i>	Forked Veilwort
<i>Mnium hornum</i>	Swan's-neck Thyme-moss
<i>Molinia caerulea</i>	Purple Moor-grass
<i>Mylia anomala</i>	Anomalous Flapwort
<i>Narthecium ossifragum</i>	Bog Asphodel
<i>Odontoschisma denudatum</i>	Matchstick Flapwort
<i>Odontoschisma sphagni</i>	Bog-moss Flapwort
<i>Opisthograptis luteolata</i>	Brimstone Moth
<i>Orchis mascula</i>	Early-purple Orchid
<i>Osmunda regalis</i>	Royal Fern
<i>Pedicularis sylvatica</i>	Lousewort
<i>Pellia epiphylla</i>	Overleaf Pellia
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Pleurozium schreberi</i>	Red-stemmed Feather-moss
<i>Polygala serpyllifolia</i>	Heath Milkwort
<i>Polytrichum commune</i> var. <i>commune</i>	
<i>Potamogeton polygonifolius</i>	Bog Pondweed
<i>Potentilla erecta</i>	Tormentil
<i>Pteridium aquilinum</i>	Bracken

<i>Ptychomitrium polyphyllum</i>	Long-shanked Pincushion
<i>Racomitrium fasciculare</i>	Green Mountain Fringe-moss
<i>Racomitrium lanuginosum</i>	Woolly Fringe-moss
<i>Racomitrium sudeticum</i>	Slender Fringe-moss
<i>Ranunculus flammula</i>	Lesser Spearwort
<i>Rhododendron ponticum</i>	
<i>Riccardia chamedryfolia</i>	Jagged Germanderwort
<i>Rubus fruticosus</i> agg.	Bramble
<i>Sagina procumbens</i>	Procumbent Pearlwort
<i>Salix aurita</i>	Eared Willow
<i>Salix cinerea</i>	
<i>Salix cinerea</i> x <i>aurita</i> = <i>S. x multinervis</i>	
<i>Scapania gracilis</i>	Western Earwort
<i>Scrophularia auriculata</i>	Water Figwort
<i>Solidago virgaurea</i>	Goldenrod
<i>Sonchus asper</i>	Prickly Sow-thistle
<i>Sphagnum capillifolium</i> subsp. <i>rubellum</i>	Red Bog-moss
<i>Sphagnum cuspidatum</i>	Feathery Bog-moss
<i>Sphagnum denticulatum</i>	Cow-horn Bog-moss
<i>Sphagnum inundatum</i>	Lesser Cow-horn Bog-moss
<i>Sphagnum magellanicum</i>	Magellanic Bog-moss
<i>Sphagnum palustre</i> var. <i>palustre</i>	
<i>Sphagnum papillosum</i>	Papillose Bog-moss
<i>Sphagnum subnitens</i> var. <i>subnitens</i>	
<i>Sphagnum tenellum</i>	Soft Bog-moss
<i>Succisa pratensis</i>	Devil's-bit Scabious
<i>Thuidium tamariscinum</i>	Common Tamarisk-moss
<i>Trifolium repens</i>	White Clover
<i>Typha latifolia</i>	Bulrush
<i>Ulex europaeus</i>	Gorse
<i>Ulota phyllantha</i>	Frizzled Pincushion
<i>Vaccinium myrtillus</i>	Bilberry
<i>Veronica hederifolia</i>	Ivy-leaved Speedwell
<i>Weissia controversa</i> var. <i>controversa</i>	

Appendix II: Coad Bog Co. Kerry, Fauna Species List

Taxon name	Common name
<i>Alauda arvensis</i>	Sky Lark
<i>Altica palustris</i>	
<i>Ancylis unguicella</i>	
<i>Anthocharis cardamines</i>	Orange-tip
<i>Anthus pratensis</i>	Meadow Pipit
<i>Apamea crenata</i>	Clouded-bordered Brindle
<i>Aphantopus hyperanthus</i>	Ringlet
<i>Arion (Arion) ater</i>	Great Black Slug
<i>Artogeia napi</i>	Green-veined white
<i>Biselachista albidella</i>	
<i>Biston betularia form carbonaria</i>	Peppered Moth
<i>Bombus (Bombus) lucorum</i>	
<i>Bombus (Thoracombus) pascuorum</i>	Common Carder Bee
<i>Cabera exanthemata</i>	Common Wave
<i>Cabera pusaria</i>	Common White Wave
<i>Callistege mi</i>	Mother Shipton
<i>Callophrys rubi</i>	Green Hairstreak
<i>Carabus granulatus</i>	
<i>Chloroclysta citrata subsp. citrata</i>	Dark Marbled Carpet
<i>Chloroclysta truncata</i>	Common Marbled Carpet
<i>Cleora cinctaria subsp. bowesi</i>	Ringed Carpet
<i>Colocasia coryli</i>	Nut-tree Tussock
<i>Colostygia pectinataria</i>	Green Carpet
<i>Columba livia</i>	Rock Pigeon
<i>Corus corone</i>	Hooded crow
<i>Corvus monedula</i>	Eurasian Jackdaw
<i>Cydia ulicetana</i>	
<i>Cytisus scoparius</i>	Broom
<i>Diacrisia sannio</i>	Clouded Buff
<i>Diarsia rubi</i>	Small Square-spot
<i>Dolomedes fimbriatus</i>	Raft Spider
<i>Dolycoris baccarum</i>	Sloe Shieldbug
<i>Dytiscus marginalis</i>	Great Diving Beetle
<i>Elachista canapennella</i>	
<i>Endothenia marginana</i>	
<i>Epiphyas postvittana</i>	Light Brown Apple Moth
<i>Euophrys frontalis</i>	
<i>Forficula auricularia</i>	Common Earwig
<i>Gallinago gallinago</i>	Common Snipe
<i>Glyphipterix thrasonella</i>	
<i>Hadena rivularis</i>	Campion
<i>Hepialus fusconebulosa form gallicus</i>	Map-winged Swift
<i>Hirundo rustica</i>	Barn Swallow
<i>Hydriomena impluviata</i>	May Highflyer
<i>Hydriomena ruberata</i>	Ruddy Highflyer
<i>Hypselistes jacksoni</i>	
<i>Inachis io</i>	Peacock
<i>Lacanobia oleracea</i>	Bright-line Brown-eye
<i>Lacorum ag.</i>	Bumble bee
<i>Lampropteryx suffumata</i>	Water Carpet
<i>Laothoe populi</i>	Poplar Hawk-moth

<i>Lasius niger</i>	Small Black Ant
<i>Libellula quadrimaculata</i>	Four-spotted Chaser
<i>Locustella naevia</i>	Common Grasshopper Warbler
<i>Lomaspilis marginata</i>	Clouded Border
<i>Lycaena phlaeas subsp. eleus</i>	Small Copper
<i>Macrothylacia rubi</i>	Fox Moth
<i>Maniola jurthe</i>	Meadow brown
<i>Micropterix calthella</i>	
<i>Mymica ruginodis</i>	
<i>Nebula salicata</i>	Striped Twin-spot Carpet
<i>Notodonta ziczac</i>	Pebble Prominent
<i>Ochropleura plecta</i>	Flame Shoulder
<i>Odontopera bidentata</i>	Scalloped Hazel
<i>Ophioninae</i>	
<i>Orthetrum coerulescens</i>	Keeled skimmer
<i>Oxyptila trux</i>	
<i>Pachygnatha degeeri</i>	
<i>Paradosa pullata</i>	
<i>Pararge aegeria</i>	Speckled Wood
<i>Parasitiformes</i>	
<i>Petrophora chlorosata</i>	Brown Silver-line
<i>Phasianus colchicus</i>	Common Pheasant
<i>Phylloscopus trochilus</i>	Willow Warbler
<i>Pieris brassicae</i>	Large white
<i>Pieris napi</i>	Green-veined White
<i>Pieris rapae</i>	Small White
<i>Pirata hygrophilus</i>	
<i>Pirata piraticus</i>	
<i>Plateumaris discolor</i>	
<i>Pocadinemis juncea</i>	
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly
<i>Rana temporaria</i>	Common Frog
<i>Scopula floslactata form floslactata</i>	Cream Wave
<i>Silene</i>	Campion
<i>Sorex minutus</i>	Eurasian Pygmy Shrew
<i>Trichoptera</i>	caddisflies
<i>Troglodytes troglodytes</i>	Winter Wren
<i>Turdus merula</i>	Common Blackbird
<i>Vanessa cardui</i>	Painted Lady
<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet
<i>Xysticus cristatus</i>	
<i>Zelotes latreillei</i>	
<i>Zootoca vivipara</i>	Common Lizard



Date:	Recorders:
Start time:	Finish time:
Weather description:	
Notes:	

Coad Bog Water Levels Data Sheet

DATE:		RECORDERS:		
PIEZO	cm sticking out	cm from tube	watertable	Notes
A1				
A2				
A3				
A4				
A5				
A6				
B1				
B2				
B3				
B4				
B5				
B6				

Appendix IV: Water table measurements from Coad Bog, Co. Kerry

Date:	26/05/2016	Workers:	TOC/KG/SOF
Piezometer	Inside cm	Outside cm	Corrected cm
A1	55	38	-17
A2	67	40	-27
A3	51.5	44	-7.5
A4	49.5	23	-26.5
A5	42	23	-19
A6	43	21	-22
B1	41	33	-8
B2	43	25	-18
B3	27.5	21	-6.5
B4	51.5	23	-28.5
B5	63	32	-31
B6	34	18	-16

Date:	08/07/2017	Workers:	KG, JK, MM, WS, LOB
Piezometer	Inside	Outside	Corrected
A1	55	41	-14
A2	66	57	-9
A3	48.5	47	-1.5
A4	47.5	26	-21.5
A5	40	23	-17
A6	26	22	-4
B1	39	36	-3
B2	33.5	27	-6.5
B3	27.5	22	-5.5
B4	49.5	26.5	-23
B5	64	35.5	-28.5
B6	30	23.5	-6.5

Appendix V: Coad Bog, Co. Kerry Visitor Guide and Map

Safe Visit Guidelines

While the Irish Peatland Conservation Council warmly welcomes visitors to Coad Bog we would like to remind you of the needs and priority of local residents and to acknowledge the interests of local land owners. Here are a few tips to ensure you have a safe visit and to help protect Coad Bog and its wildlife so that future generations can enjoy it too.

- Please do not park on public roads. See map showing available parking.
- Dumping of rubbish and personal items is prohibited as they damage the bog and spoil the environment.
- Walking dogs without leads, camping, fires and the use of motorised vehicles on the bog are prohibited as they disturb wildlife.
- It is an offence to lead or molest wildlife or to remove or otherwise disturb any natural feature or plant on the bog.
- It is dangerous to walk on the bog surface owing to hidden ditches, soft uneven ground, 4,000 year old peat slabs, pools, drains and crannies.
- Forests and walls keep some animals in and game out, use gates and gates (and shut them after you close).
- Weather conditions can change rapidly. Are you prepared?
- Coad Bog is adjacent to the N70 which is an extremely busy road so please take care if walking on or crossing the road.
- Leave No Trace

"Passing to the pavilions of the Chapeau" (c.1850). The occupant of these premises puts all visitors to his premises on notice that his sole desire to them are (a) not to injure the visitor or damage the property of the visitor intentionally, and (b) not to act with wilful disregard for the visitor or the property of the visitor."

Thank you for your co-operation.

Getting to Coad Bog



Coad Bog is located 1 km west of Castlecove in the townland of Coad. It is on the N70, the Ring of Kerry and the Wild Atlantic Way between Glenties and Cahersiveen.

Area: 4ha
GPS Co-ordinates: N 51° 40' 31.365" E 10° 3' 25.315"
Nearest Village: Castlecove
County: Kerry
Owned By: IPCC
Discovery Map: (1:50,000) No. 64
Viewing Points: see map overleaf
Parking: Limited parking available in a lay-by on the road opposite the bog, south of the N70, which leads to a gate (see map overleaf)
Refreshments: Castlecove
Phone: Phone kiosk in Castlecove
Nearest Pub: Castlecove
Dark Skies: Coad Bog falls within the 'CORE' area of Kerry International Dark Sky Reserve
Virtual Tour: Before you visit why not take a virtual tour of the reserve by connecting to the IPCC YouTube channel from www.ipcc.ie

IPCC's mission is to conserve a representative sample of the peatlands of Ireland for future generations to enjoy. Coad Bog is an example of the practical work that we do to enhance nature in local areas and to engage with communities. We are a registered charity (CH1060). You can donate to our work or volunteer by visiting www.ipcc.ie. Thank You.

Text, layout & design by H. Gashgahy, D. O'Donnell & T. O'Corrao.
 © 2016 Irish Peatland Conservation Council, Bog of All-in Nature Centre, Liffymore, Rathpeter, Co. Kerry, T87. 19200. www.ipcc.ie.
 This project is supported by the Environmental Protection Agency as an Ecorest under the EPA Research Programme 2014-2020 and IPCC. Friends of the Bog, Photographs by D. O'Corrao, T. O'Corrao, M. Mahony and S. M. M. M.

Coad Bog, Kerry

Map & Guide



Don't miss this unique experience. Discover a blanket bog nature reserve on the Wild Atlantic Way



A Gift of a Bog

Coad Bog was donated to the Irish Peatland Conservation Council (IPCC) in 2015 by a landscape who built in Kerry. Coad is a blanket bog and is a peat bog. Blanket bog habitat is rare in Ireland and is a conservation priority. 8% of the global area of blanket bog occurs in Ireland and Coad Bog is part of this internationally important resource.

A Wet Blanket Covering the Land

Coad Bog is made of peat, plants and water combined together. Peat is the accumulation of partially decayed plants over thousands of years. The dead plants don't rot because the agents of decay are prevented from working in waterlogged conditions, low in oxygen.

Rainfall mixed with sea spray is the main source of water to the bog. With at least 1,600mm of rainfall each year, these wet conditions prevented the development of Coad Bog on peat drained soil derived from Old Red Sandstone. The peat in Coad is up to 4m deep in places but may be only a few centimeters thick where outcrops of Old Red Sandstone are present.

Refuge for Wildlife

Over 200 species of wildlife have been recorded on Coad Bog. The Hedges (Hedges) are located in the vicinity of the bog. These dry mammals feed on insects and spiders. They



have to eat 1.25 times their own body weight per day to survive.

Insects are commonly seen hunting on the bog surface but they return to water to breed. The Common Lizard (Lacerta vivipara) is seen basking on rocks. On a sunny day butterflies such as the Orange Tip and Green Hairstreak can be seen flying over the bog. On mild nights the bog is alive with moths such as the Peacock (Biston betularia), Mother Shipton and the Dark Marbled Carpet.

In the bog pools and streams, Diving Beetles, Dragonfly and Damselfly nymphs, Caddisfly Larvae and Water Boatmen are found. Coad Bog is packed full of wonderful animals to discover.

The Lark Ascending

The beautiful song of the skylark can be heard as it ascends into the sky above the bog. These musical birds build nests in the grasses on the bog. Meadow Pipits are also seen and heard on Coad Bog. Gulls, known as bog larks, use these tall heathers to make a buzzing sound as they fly above their nesting sites, making territory. When disturbed Gulls fly away in a collective zig-zag pattern. They stick their long bills into the soft peat in search of food.

Centuries of Threat and Change

Peat was harvested from Coad Bog in the 19th century by the local community. Today the bog is threatened by rain in many different ways such as drainage, fire, hard cutting of peat, telegraph pole maintenance, changing and invasion plants.

Community Welcome

IPCC have received a warm welcome to Coad Bog from the local communities of Castlecove and Cahersiveen. Many came forward to volunteer on the site with great enthusiasm. IPCC are confident that Coad Bog will be protected given their interest in the project.

Conserving Coad Bog

IPCC want to ensure Coad Bog is a haven for wildlife so that future generations can enjoy it. Coad Bog is a blanket bog and is a conservation priority. 8% of the global area of blanket bog occurs in Ireland and Coad Bog is part of this internationally important resource.

Peat was harvested from Coad Bog in the 19th century by the local community. Today the bog is threatened by rain in many different ways such as drainage, fire, hard cutting of peat, telegraph pole maintenance, changing and invasion plants.

A drain has been blocked and work has begun on creating a fire break. IPCC will continue to monitor and eradicate these and learn on the bog by creating suitable habitat and maintaining high water levels year round.



A Mossy Haven

Coad Bog has 13 different habitats such as rocky outcrop, swamps bog, grassland and stream. Some rare and fascinating invertebrate life here. During a survey in 2019, the expert Hedges identified 68 different mosses and ferns on Coad Bog. These included 9 Sphagnum mosses - the peat forming moss and also Sphagnum magellanicum - a species usually found in the Irish Midlands. Amongst the mosses, insect eating Sundew plants are found. These catch insects on their sticky leaves.





Map Legend: The bog habitat, Peat bog, IPCC Reserve, Woodland

Map of Coad Bog modified from Ring Maps

Appendix VI: Coad Bog, Co. Kerry Education Poster



Coad Bog with Ragged Robber

Coad Bog has an area of 4ha and is located on the Ring of Kerry and the Wild Atlantic Way between Castletown and Caherdaniel. The world famous, moss-rich, blanket bog habitat that is present on Coad Bog is what makes it special. Rain and sea spray is the main source of water to the bog. With at least 1600mm of rain falling on Coad Bog each year, conditions are wet, nutrient-poor and acidic especially in the centre of the bog which is the wettest, every step sinks into the soft moss cushions squeezing out the water stored there. It's an amazing experience and a wonderful wetland habitat.

Coad Bog - a living landscape



View across Coad Bog from the R97, the route of The Ring of Kerry and Wild Atlantic Way



Map Legend
Wet bog habitat Viewpoint IPCC Boundary Ditch/Stream

Coad Bog from the air. Map modified from Ring Maps



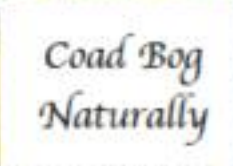
Walking on Coad Bog is the closest a person can ever come to walking on water. This is because the peat soil in the bog is made up of 98% water and only a tiny fraction of solid material. In the centre of the bog which is the wettest, every step sinks into the soft moss cushions squeezing out the water stored there. It's an amazing experience and a wonderful wetland habitat.

Walking on Water

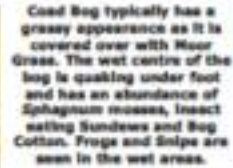
Outcrops of Old Red Sandstone are a feature of Coad Bog. Only the top part of the rocks that have not been swallowed by the growing bog can be seen. They are a fascinating habitat for lichens and mosses which colonise them. These rocks are the only dry place you will find in all down and take in the magic of Coad Bog.



Following the acquisition of Coad Bog in 2016, IPCC arranged a week long BioBlitz on the site to help us learn all about our new reserve and at the same time carry out some protective management work. Just over 200 species of bird, plant and animal were recorded during the BioBlitz. Impressive were the 69 different mosses recorded on the bog by expert Rory Hodd. The high number of species is a result of the variety of different habitats on the bog including rocky outcrop, swampy blanket bog, stream and grassland.



IPCC are protecting Coad Bog for the local community and visitors to enjoy. Drains cut into the bog were blocked, invasive Rhododendron shrubs were removed, a fire break was created and a series of dykes were installed into the bog to help monitor its water levels - the best indicator that all is well for the wildlife at Coad.



Text, layout & design © 2016 Inish Peatland Conservation Council, Bog of Allen Nature Centre, Lullymore, Rathgar, Co. Kildare, R51 V2B5. www.inish.ie. Photographs © C. O'Connell and T. O'Connell. This project is supported by the Environmental Protection Agency as an Event under the EPA Research Programme 2014-2020 and IPCC Friends of the Bog.

