Changes in breeding bird abundances in the Plynlimon SSSI 1984 – 2011

Heather Crump

Institute of Geography and Earth Science, Aberystwyth University

Mick Green

Ecology Matters

September 23, 2011

Abstract

Plynlimon SSSI in Mid Wales was surveyed as part of the NCC moorland bird survey in 1984. A repeat survey, using the same line transect methods was undertaken in 2011. Large scale declines across nearly all the species that occur on the site were recorded. 12 species have been lost from the site against only 3 new species having colonising. Whilst the sample size for some species is to small to draw conclusions there has undoubtedly been a drastic reduction in the bird population of the site.

1 Introduction

The Plynlimon SSSI in central West Wales, is a large expanse of upland moorland, bogs and adjacent coniferous forestry plantations, designated for its upland bird assemblage. Over the last thirty years, many upland bird species have been declining in abundance, distribution or both (Eaton et al., 2009). A baseline surveys of the Plynlimon was undertaken in the 1984 by the Nature Conservancy Council (NCC) as part of a Wales-wide scheme of surveys. In order to look at changes sine 1984, a complete survey of the site took place between May and June 2011.

Methodology The method described in Stroud et al. (1988) was used for direct comparison between the 1984 and the 2011 survey. Transects were 200 m apart and all species within 100 m either side of the transect were recorded onto maps. Recordings used the accepted British Trust for Ornithology (BTO) species abbreviations and behavioural notations to indicate breeding status (singing bird, alarming etc...). Maps defining the original transects were used so to stay as close to the original design as possible. The transects varied in length due to the terrain; some were inaccessible due to cliffs or extremely steep angles. Effort to access all of the transects was comparable to the 1984 survey. The survey used the SSSI boundary as a guideline to the site extents. The survey was only conducted over one visit, rather than the recommended two in Stroud et al. (1988). This was to reflect the effort of the 1984 survey which was also undertaken in one survey.

2 Results

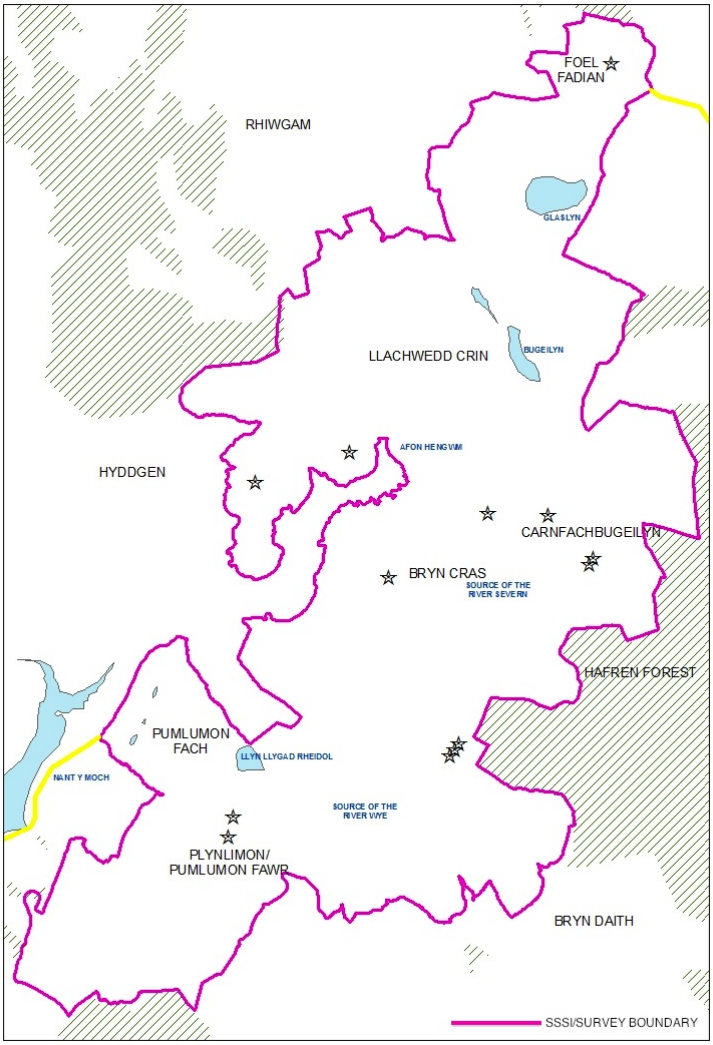

Figure 1: Plynlimon SSSI and Survey location

Table 1: Survey Results: comparison of numbers of breeding pairs, 1984 to 2011

Species	**Latin Name**	**BTO Code**	**1984 Count**	**2011 Count**	**Percent Change**
Teal	*Anas carolinensis*	T.	5	0	- 100
Canada Goose	*Branta canadensis*	HH	0	1	- 100
Mallard	*Anas platyrhynchos*	MA	1	0	- 100
Hen Harrier	*Circus cyaneus*	HH	0	1	+ 100
Buzzard	*Buteo buteo*	BZ	1	1	0
Kestrel	*Falco tinnuculus*	K.	1	0	- 100
Peregrine	*Falco peregrinus*	PE	1	1	0
Red Grouse	*Lagopus lagopus*	RG	27	14	- 48
Coot	*Fulica atra*	CO	1	0	- 100
Golden Plover	*Pluvialis apricaria*	GP	13	1	- 92
Curlew	*Numenius arquata*	CU	2	0	- 100
Common Sandpiper	*Actitis hypoleucos*	CS	10	1	- 90
Black-headed Gull	*Larus ridibundus*	BH	65	0	- 100
Cuckoo	*Cuculus canorus*	CK	8*	0	- 100
Skylark	*Alauda arvensis*	S.	287	134	- 53
Swallow	*Hirundo rustica*	SL	1	1	0
Tree Pipit	*Anthus trivialis*	TP	2	3	+ 50
Grey Wagtail	*Motacilla cinerea*	GL	4	1	- 75
Pied Wagtail	*Motacilla alba*	PW	8	1	- 88
Wren	*Troglodytes troglodytes*	WR	5	3	- 40
Redstart	*Phoenicurus phonicurus*	RT	3	0	- 100
Whinchat	*Saxicola rubetra*	WC	21	4	- 81
Stonechat	*Saxicola torquata*	SC	1	0	- 100
Wheatear	*Oenanthe oenanthe*	W.	49	16	- 67
Ring Ouzel	*Turdus torquatus*	RZ	7	0	- 100
Mistle Thrush	*Turdus viscivorus*	M.	1	0	- 100
Williow Warbler	*Phylloscopus trochilus*	WW	2	1	- 50
Chaffinch	*Phylloscopus collybita*	CH	2	0	- 100
Reed Bunting	*Emberiza schoeniclus*	RB	0	1	+ 100
* Registration only					

As in the results from the 1984 survey, species that were using the area for feeding, such as Red Kite *(Milvus milvus)* were noted but not recorded as part of the survey as they were not considered 'breeding'. Other species that were seen but not recorded include Crow *(Corvus corone)*, Raven *(Corvus corax)* and Merlin *(Falco columbarius)*. Comparatively, Raven and Crow were seen in flocks in the 1984 survey but only a few individuals were seen in the 2011 survey. In addition, Meadow Pipit *(Anthus pratensis)* were widespread, as in the 1984 survey. However, this species was not recorded as experience has shown that is is difficult to evaluate territorial pairs.

3 Discussion

Whilst some population changes involve few individuals that could just be within annual fluctuations, in general the results show a real and serious decline in the overall bird population of Plynlimon and in line with or more serious than Wales-wide population trends (Jonstone et al., 2010).

Golden Plover are in a period of widespread decline over the whole of Wales, with an 83 % decrease between 1982 and 2007. This correlates to the 92 % decline witnessed for Plynlimon between 1984 and 2011. Curlew across Wales have declined by 87 % between 1993 and 2006, and although only ever present in small numbers on Plynlimon they have now disappeared completely from within the SSSI. The 90 % crash in numbers of common sandpiper is considerably more than the UK national trend of 38 % decline between 1975 and 2008 (Baillie et al., 2010). This a cause for concern and indicates that the common sandpiper may merit more than an amber listing if this trend is matched elsewhere in Wales.

Other birds with serious declines include wheatear and whinchat, both of which especially the wheatear - have declined by greater amounts than the UK national trends. The national trend (1994 2009) for wheatear is 5 % decline and the whinchat 57 % decline (Baillie et al., 2010).

Ring ouzels have been lost from the site. The population in Wales had decreased by 69 % between 1999 and 2006 and were already absent from Plynlimon by 2006 (Green, 2007).

Although skylark are often found in high densities in upland Wales (Green, 2005) numbers on Plynlimon were always at lower densities than some other Mid Wales sites, with 7.5 pairs per square kilometre in 1984 but numbers have still declined by 53 % to 3.5 pairs per square kilometre in 2011.

There were less Crows recorded and no records of Rooks in 2011. Black Headed Gulls, present as one colony within the SSSI in 1984, have gone completely. In addition two other known colonies just outside the SSSI have gone since 1984. This may indicate a general reduction in food availability across the site.

Although in general the picture is one of a general sorry state of declining bird numbers across the board, there have been 3 gains. Hen Harrier have colonized the site, reflecting their general population rise of 59 % 1988 2004) and range expansion in recent years. Canada geese are also new to Plynlimon, representing their recent expansion across upland Wales. Reed Bunting were the only other gain to the site and appear to have expanded their range into the Welsh uplands in recent years (Green, ????).

The reasons for the declines are in most cases unclear, and it is especially unclear as to why decreases on Plynlimon appear to be greater than overall trends. Su-

perficially the habitats appear unchanged since 1984. The SSSI designation has meant that the site was spared agricultural improvement and afforestation that has affected many upland areas. Whilst it has suffered from high grazing pressure this unlikely to have been more than most other sites across Wales.

4 Acknowledgements

With thanks to Sian Whitehead, CCW for supplying the 1984 data. Thanks also go to all those who helped to complete this survey: Karen Heppingstall, Richard Lucas, Karen Lucas, George Lucas, Ben Lucas, Josh Brown, Jonathon Brownett, Chris Draper, Sarah Perry and Alberto Di Dio.

References

Baillie, S. R., Marchant, J. H., Leech, D. I., Renwick, A. R., Joys, A. C., Noble, D. G., Barimore, C., Conway, G. J., Downie, I. S., Risely, K., Robinson, R., 2010. Breeding birds in the wider countryside: their conservation status 2010. BTO Research Report No. 565.

Eaton, M. A., Brown, A. F., Noble, D. G., Musgrove, A. J., Hearn, R., Aebischer, N. J., Gibbons, D. W., Evans, A., Gregory, R. D., May 2009. Birds of conservation concern 3: the population status of birds in the united kingdom, channel islands and the isle of man. British Birds 102, 296 – 341.

Green, M., ???? Expansion of reed buntings into upland wales. In prep.

Green, M., 2005. Densities of breeding skylark in upland wales. Welsh Birds 4 (3).

Green, M., 2007. Welsh ring ouzel survey 2006. Welsh Birds.

Jonstone, I., Thorpe, R., Noble, D., 2010. The state of birds in wales 6.

Stroud, D. A., Reed, T. M., Pienkowski, M. W., Lindsay, R. A., 1988. Birds, bogs and forestry - the peatlands of caithness and sutherland.