

Y Carneddau



Site: Y Carneddau (Yr Elen, Carnedd Llewelyn, Foel Grach and Carnedd Gwenllian)

Date of survey: 20/06/2022

Transect routes: circular loop on footpath from Bethesda



A male Stonechat (*Saxicola torquata*) on the lower slopes of Y Carneddau beside Afon Caseg.

1. Survey details

The 2022 survey followed the same route carried out for this site in 2020 and 2021 (see map in figure 1 below), beginning from Bethesda, along the Afon Llfar and ascending over Foel Ganol and Yr Elen to the summit of Carnedd Llewelyn, before taking the main ridge path to Foel Grach and Carnedd Gwenllian (this particular summit not being covered in 2020), and then descending into the valley along the Afon Wen and contouring along the mountainside above the Afon Caseg back to Bethesda. This survey was carried on 20 June 2022.

During the survey, the observer recorded any birdlife seen during the transect (especially any signs of breeding activity), mammal activity, litter abundance along footpaths and several fixed-point images along the pathways to help assess any changes in the wider landscape and vegetation condition (see figure 2 for details of specific survey locations).

Weather conditions: there were clear skies, very calm winds (0mph) and warm temperatures beginning at 13°C at dawn and rising to 20°C by midday.

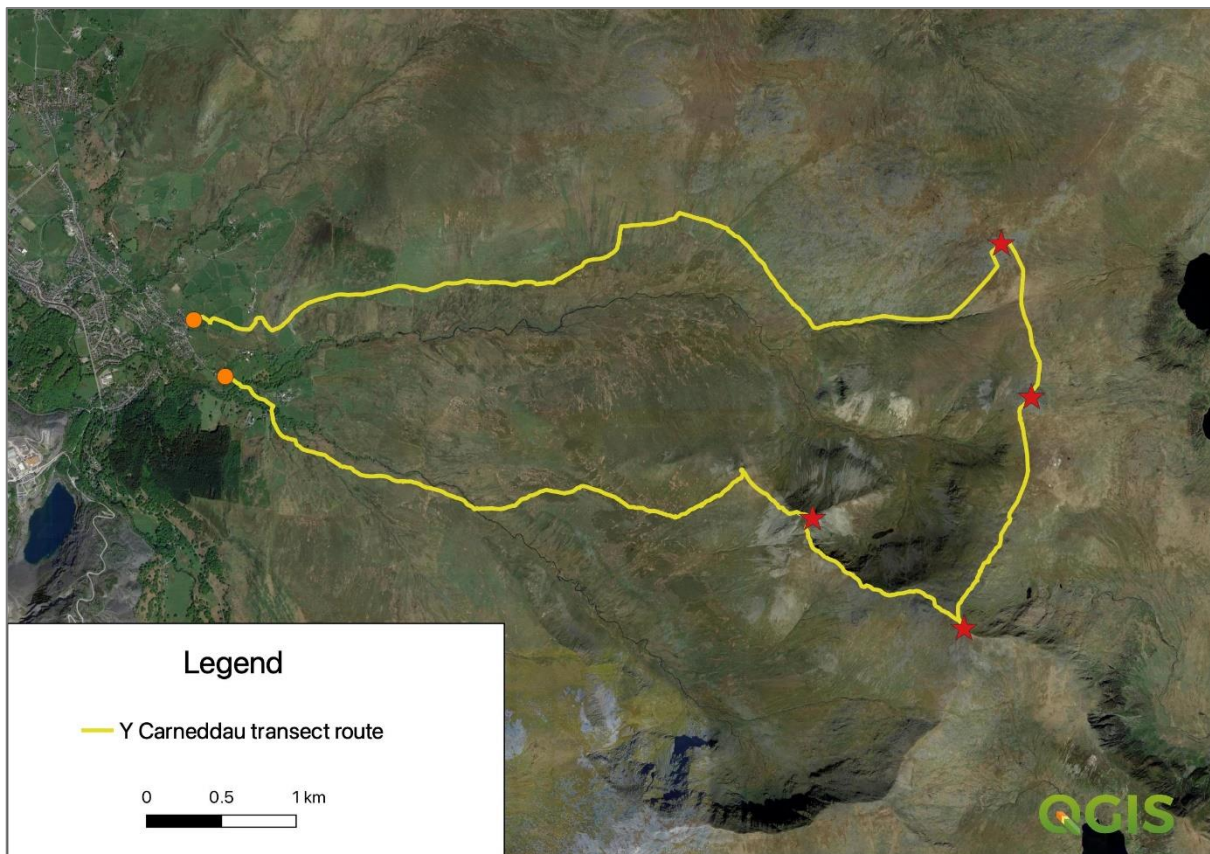


Figure 1. A map of the Carneddau survey area showing the transect route (yellow line), the start and end points of the survey (orange points) and summit peaks of the main mountain tops within the transect route (red stars).

2. Results

A summary of the results for this survey are given below. Figure 2 provides an overview of the locations of more noteworthy sightings, the key survey points and the locations of fixed-point images. The numbered points are referred to in the results text using parentheses followed by the numbered code, for example '(P3)'.

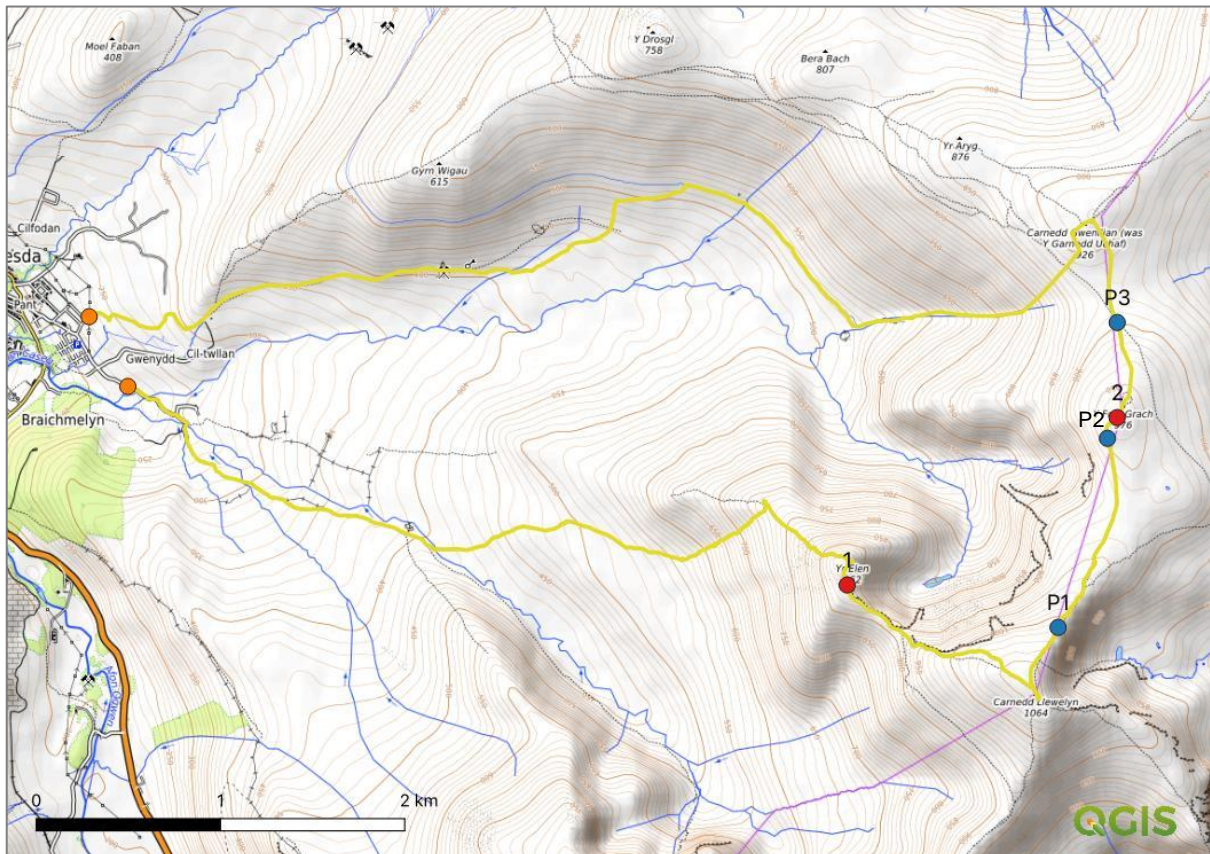


Figure 2. A map of the Carneddau survey area showing the 2022 transect route (yellow line). The red points are target notes referred to in the results summary below, and blue points are the locations of fixed-point photography sites (see section 2.6).

2.1 Birdlife

A total of 18 different bird species and 256 individuals were recorded during the survey (see table 1 below). The most abundant breeding bird species recorded were Meadow Pipits (128 individuals), Northern Wheatears (31) and Skylarks (22). The only more noteworthy species seen during the survey was that of a Red Kite soaring along the summit plateau near Foel Grach.

Four species seen during the 2022 surveys were not present in 2021, including Buzzard, Coal Tit, Linnet and Nuthatch. However, there were 11 species seen in 2021 that were absent this year: Blue Tit, Chaffinch, Common Snipe, Dipper, Great Black-backed Gull, Kestrel, Lesser Black-backed Gull, Lesser Redpoll, Chough, Rook and Siskin.

There were no obvious differences noted to the results of the 2020 surveys during the lockdown period with regard to the effects of human disturbance in the area on birdlife. However, the overall numbers and diversity of birdlife has changed markedly over the three-year survey period (see figures 3 and 4 below), and these changes are discussed more below.

Table 1. Breeding bird survey results for Y Carneddau in 2022.

Name		Carneddau				
Survey type		Breeding birds				
Surveyors		Ben Porter and Eleri Turner				
Dates of survey		20/06/2022				
Species	Scientific name	Transect or site				Evidence of breeding during visits
		Afon Llafar to Yr Elen	Summit plateau	Afon Caseg	Total number	
Meadow Pipit	<i>Anthus pratensis</i>	46	14	68	128	Singing males, alarm calling adults and fledged young
Skylark	<i>Alauda arvensis</i>	13	3	6	22	Singing males
Carrion Crow	<i>Corvus corone</i>	6		8	14	
Grey Wagtail	<i>Motacilla cinerea</i>	4		3	7	Singing male
Wren	<i>Troglodytes troglodytes</i>	3		4	7	Singing males
Stonechat	<i>Saxicola torquata</i>	3		7	10	Singing males and fledged young
Buzzard	<i>Buteo buteo</i>	4		1	5	
Coal tit	<i>Periopus ater</i>	1			1	
Dunnock	<i>Prunella modularis</i>	3		1	4	Singing males
Nuthatch	<i>Sitta europaea</i>	1			1	
Woodpigeon	<i>Columba palumbus</i>	2			2	
Robin	<i>Erithacus rubecula</i>	2			2	
Raven	<i>Corvus corax</i>		3		3	Fledged young
Red Kite	<i>Milvus milvus</i>		1		1	
Pied Wagtail	<i>Motacilla alba yarellii</i>		1		1	
Wheatear	<i>Oenanthe oenanthe</i>			31	31	Fledged young
Herring Gull	<i>Larus argentatus</i>			1	1	
Linnet	<i>Carduelis cannabina</i>			16	16	Singing males and fledged young
Total number of species		12	5	11	18	
Total number		88	22	146	256	

Comparisons of bird abundance and diversity across years

Comparing the abundance and diversity of birdlife across the three years, the Carneddau region shows an interesting pattern. Overall, both the diversity and abundance of birdlife was greater during the 2021 surveys than in 2020 and 2022, but the 2022 surveys were markedly lower than in 2020. This contrasts to the three other upland regions covered in these surveys, where each year after 2020 has shown a decline in both abundance and diversity of birdlife. It was discussed in 2021 that one of the reasons for this was the presence of large flocks of Rooks, Carrion Crows and gulls along the Afon Caseg, which were feeding on flying ants (Yellow Meadow Ants) at the time of the survey. This partially inflated the abundance figures for that survey and may have masked the true trend with relation to breeding birds. However, the higher diversity for 2021 cannot be explained in this way, and further repeat surveys of the site would help to shed light on the changes over longer time periods in this area.



Figure 3. Bird abundance (i.e. number of individual birds recorded) along the main transect routes in 2020 (pale grey), 2021 (darker grey) and 2022 (grey).

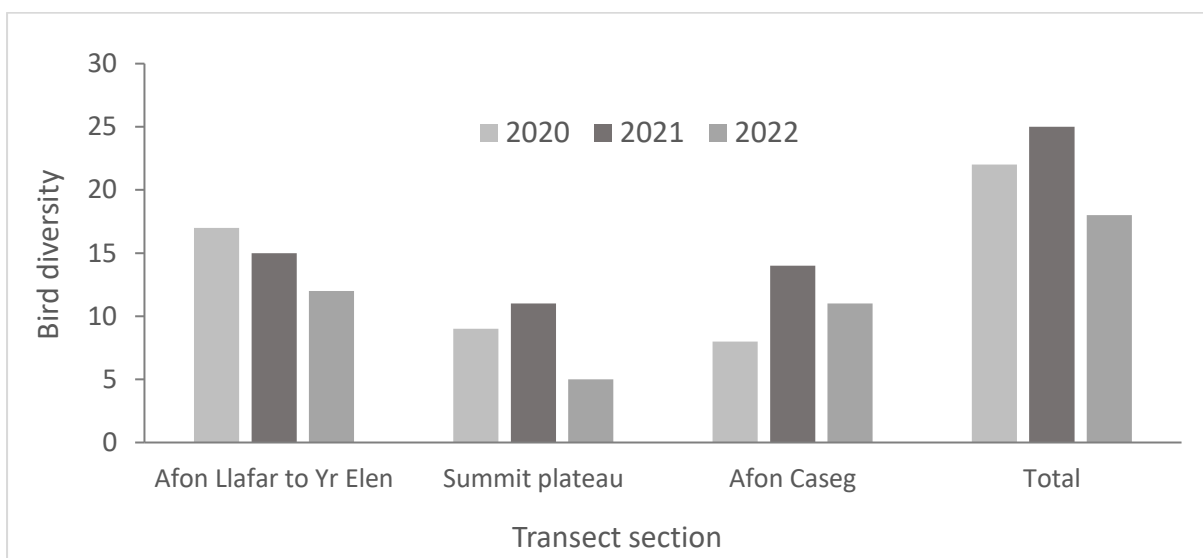


Figure 4. Bird diversity (i.e. total number of species) along the main transect routes in 2020 (pale grey), 2021 (darker grey) and 2022 (grey).



A Raven (*Corvus corax*) on the summit of Carnedd Llewelyn.

2.2 Vegetation

There was little evidence of significant changes to the vegetation communities along the pathways during this transect when compared to 2020 and 2021. However, it was again noted that pathways were more worn and less vegetated than noted in 2020 – perhaps expected given the lack of use during the lockdown period that year. Whilst no specific vegetation surveys were carried out in this area, the fixed-point imagery along pathways (section 2.6) help to document any changes from year to year. The extensive patches of Dwarf Willow (*Salix repens*) were again noted among the rocky terrain around the peak of Foel Grach (point 2 on the map in figure 2). These patches are the most extensive that have been found during any of the transect routes which these surveys across Eryri encompass, and so increased attention as to studying their health and ways to expand the patches of this scarce upland willow species would be worthwhile.



Dwarf Willow (*Salix herbacea*) on the summit of Foel Grach (point 2 in the map in figure 2).

2.3 Litter

The Carneddau had the least amount of litter of all the upland sites surveyed. A total of 10 litter items of five different types were recorded during the survey (see table 2). The most common items found were that of plastic nets (such as is used to package fruit items – four found in total) and sweet wrappers (three in total). This is higher than the three items found across the site in 2021, but is still a very low total compared to the abundance of litter found in the other, perhaps more popular, upland areas covered in these surveys.

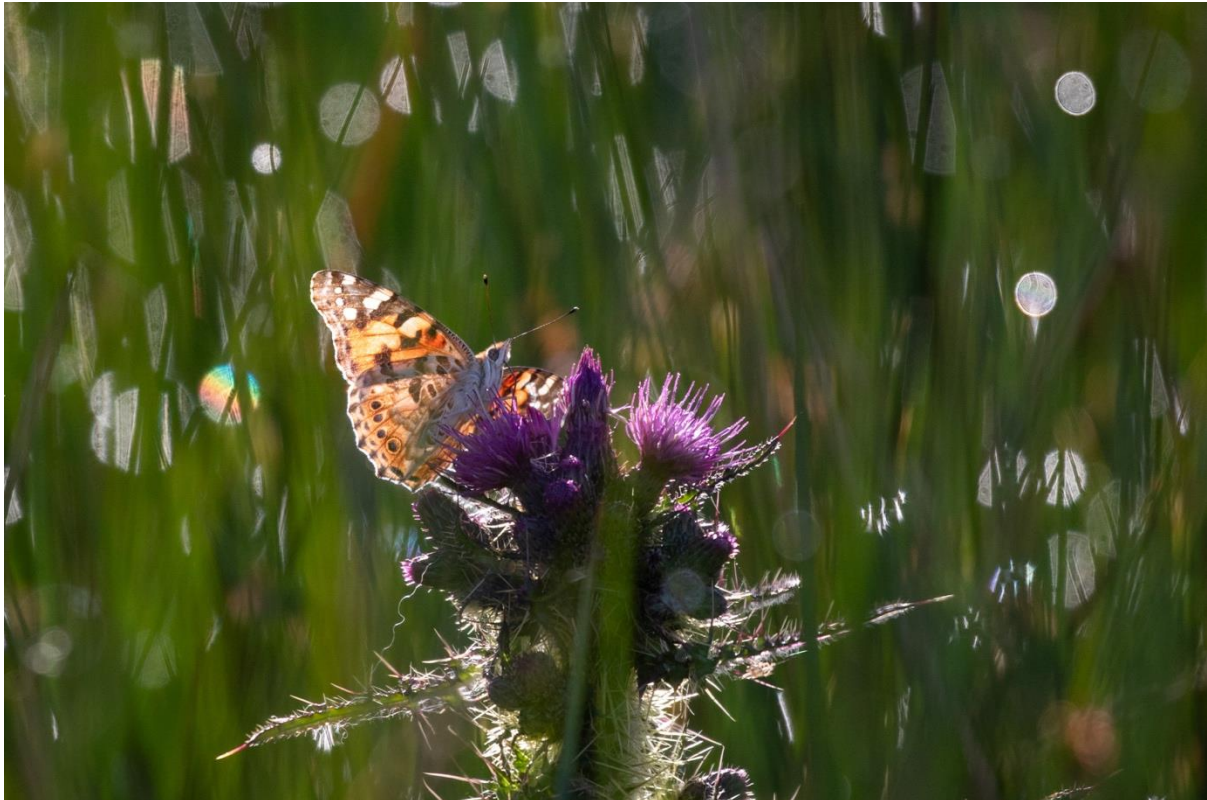
Table 2. Litter survey results for the Carneddau transect in 2022.

Site Name	Y Carneddau			
Survey type	Litter survey			
Surveyors	Ben Porter and Eleri Turner			
Date of survey	13/06/2021			
Litter type	Quantity			
	Afon Llafar to Yr Elen	Summit plateau	Afon Caseg	Total
Plastic net	2	2		4
Crampon		1		1
Sweet wrapper		3		3
Broken glass pieces		1		1
Organics (e.g. orange peel)		1		1
Total number of litter types	1	5	0	5
Total number of litter items	2	8	0	10

2.4 Other sightings and notes from the survey

Insects: due to the very calm and warm conditions during the survey, there were a number of day-flying insects of note recorded during the 2022 survey. These included 15 of the scarce upland micro moth Northern grass-veneer (*Catoptria furcatellus*) around the summit of Yr Elen (point 1), a Painted Lady butterfly (*Vanessa cardui*), over 30 Small Heath butterflies (*Coenonympha pamphilus*) and a Drinker moth caterpillar (*Euthrix potatoria*).

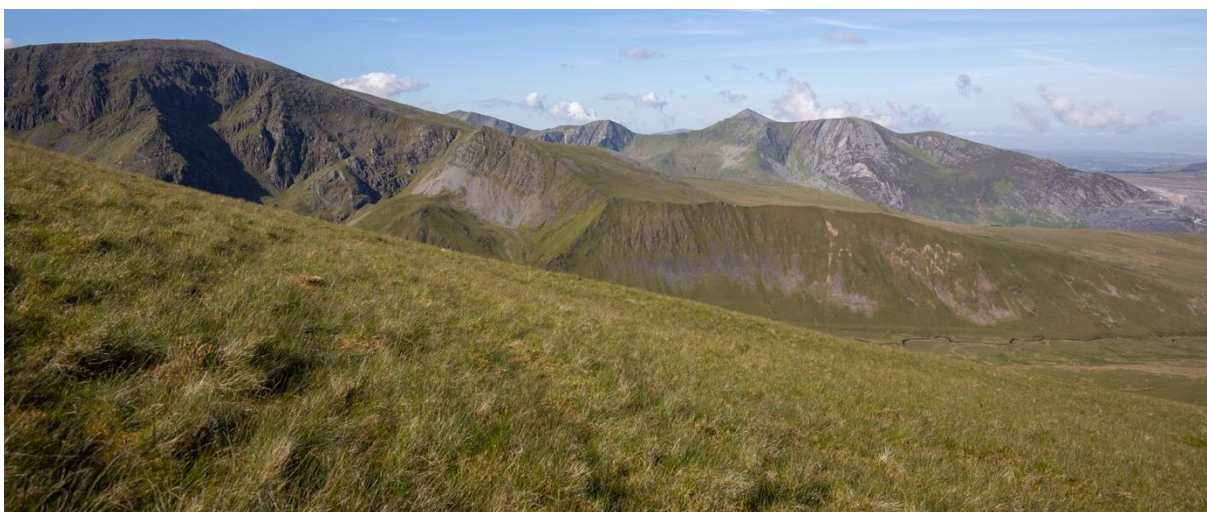
Camping activity: no tents were noted during the survey visit to this area.



A Painted Lady (*Vanessa cardui*) butterfly feeding on Marsh Thistle (*Cirsium palustre*).

2.5 Grazing levels

Whilst not specifically monitored during the surveys, the condition of habitats along the transect routes plays a significant role in dictating the abundance and diversity of plantlife, insect life and birdlife existing in these areas. It was noticeable that most areas along the transect route on Y Carneddau supported a much higher density of grazing than the other mountainous sites covered during the 2022 surveys; mainly that of sheep, but also of 80+ Carneddau ponies were noted, especially between Foel Grach and Carnedd Gwennlian. The habitat throughout the transect route remained largely that of semi-improved grassland, with fewer flowering plants and flowering grasses that seen in areas such as Cader Idris and Cwm Idwal, along with almost no Heather or Bilberry.



Looking west from the ascent to Yr Elen, showing the more homogenous habitat condition than on other sites covered during these surveys.

2.6 Fixed-point pathway images to record vegetation conditions

Images from 2020, 2021 and 2022 are shown side-by-side to allow for any comparisons in landscape and vegetation condition across years. Note that fixed-point number 3 was not taken during 2020, and so only two years of repeat coverage are present for that site.

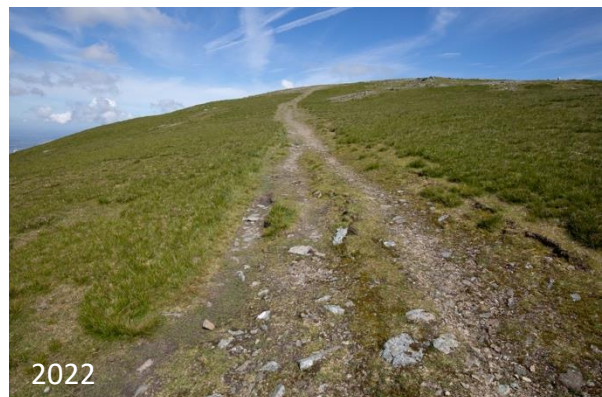


Image locations: **left-hand column** looking towards the summit of Carnedd Llewelyn on the summit plateau (**P1**) and **right-hand column** on the approach to Foel Grach (**P2**).



Image locations: between Foel Grach and Carnedd Llewelyn (P3).