



Survey for the Jumping Spider Sitticus caricis on Selected Anglesey Wetlands



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Executive summary

<u>English</u>

Sitticus caricis (jumping spider) populations were rediscovered at both Cors Bodeilio NNR and Cors Goch NNR. This UK Biological Action Plan Priority species was also found at Cors Erddreiniog NNR for the first time. At these three fen sites the spider was found to inhabit unshaded *Schoenus nigricans* (Black Bog Rush) tussocks standing as islands in open water (M13 vegetation). Vacuum sampling was found to be the most efficient method of surveying for this spider. The sites on the reserves where *S. caricis* was recorded from are mapped. Cors Salbri SSSI was surveyed, but *Sitticus caricis* was not rediscovered at this site.

Other spiders from the four reserves were identified during the survey and are tabulated as appendices to this report.

Welsh – Cymraeg

Cafodd poblogaethau o *Sitticus caricis* (pryf copyn neidio) eu hailddarganfod yn GNG Cors Bodeilio ac yn GNG Cors Goch. Hefyd, cafwyd hyd i'r rhywogaeth blaenoriaeth yma yng Nghynllun Gweithredu Bioamrywiaeth y DU yn GNG Cors Erddreiniog am y tro cyntaf. Yn y tair cors yma, canfuwyd y pryf copyn yn byw mewn twmpathau digysgod o *Schoenus nigricans* (Corsfrwyn Du) yn sefyll fel ynysoedd mewn dŵr agored (llystyfiant M13). Gwelwyd mai samplu faciwm oedd y dull mwyaf effeithlon o arolygu'r pryf copyn yma. Mae'r safleoedd yn y gwarchodfeydd lle mae *S. caricis* wedi'u cofnodi wedi'u mapio. Arolygwyd SoDdGA Cors Salbri ond ni chafodd *Sitticus caricis* ei ailddarganfod yn y safle hwn.

Cafodd pryfed cop eraill o bedair gwarchodfa eu hadnabod yn ystod yr arolwg ac maent wedi'u tablu fel atodiadau i'r adroddiad hwn.

Introduction

Sitticus caricis geographic distribution

The jumping spider genus *Sitticus* is represented in Britain by six species: *S. caricis* (Westring, 1861); *S. distinguendus* (Simon, 1868); *S. floricola* (C. L. Koch, 1837); *S. inexpectus* Logunov & Kronestedt, 1997; *S. pubescens* (Fabricius, 1775); *S. saltator* (O. P. -Cambridge, 1868). Four of the species are known from Wales: *S. saltator* from coastal dunes; *S. pubescens* from buildings; *S. floricola* from two acidic bogs near Wrexham; *S. caricis* from three wetlands on Anglesey.

Sitticus caricis exhibits a wide boreal Paleantarctic distribution and is recorded from Ireland, England, Wales, France, Belgium, Netherlands, Germany, Denmark, Switzerland, Italy, Poland, Czech Republic, Austria, Slovakia, Hungary, Croatia, Romania, Sweden, Finland, Russia (eastwards to Sakhalin), Estonia, Latvia, Lithuania, Ukraine, Georgia, Montenegro, Serbia, Macedonia and Kosovo (Logunov & Kronestedt 1997; Logunov & Marusik 2000; Harvey *et al.* 2002). In Wales the species has only been recorded from three wetlands on Anglesey; Cors Goch NNR (Michael Roberts in 1973), Cors Bodeilio SSSI and Cors Salbri SSSI (WPIS in 1988).

Sitticus caricis status

Sitticus caricis was listed as Notable-b by Merrett (1990) and was recently (2007) added to the UK Biodiversity Action Plan Priority List of species, due to an 80% decline over 25 years (measured between the periods 1951–1986 and 1987–2000) (JNCC 2010).

Sitticus caricis ecology

In the UK *Sitticus caricis* is a wetland species and has been recorded from amongst grass in swamps (Locket & Millidge 1951) and also among *Molinia* and *Sphagnum* in lowland bogs, marshes and fens (Merrett, 1990; Harvey *et al.* 2002). Peter Harvey (pers. comm.) noted that he and John and Frances Murphy found it at Langshot bog on Chobham Common – a typical acid *Sphagnum* bog location on southern heathland.

On the continent the species has been reported from pine forest, *Carex*-moss bogs, *Sphagnum* bogs, spruce and birch forests, lowland bogs and the border between raised bog and forest (Logunov & Marusik 2000). In the Czech Republic Buchar & Ružicka (2002) record the species on herb vegetation and among detritus on marshy pond margins and in peat bogs.

The three Anglesey localities are fenland sites (Cors Goch & Cors Bodeilio) and an acidic basin mire (Cors Salbri SSSI). It is not know which habitat the Cors Goch *Sitticus* record was from, but the Cors Bodeilio specimen was pitfalled from an area of "*Schoenus nigricans* with *Molinia, Juncus subnodulosus* and *Succisa*", and the Cors Salbri specimen was water-trapped from an "area of *Sphagnum* bog with *Calluna, Molinia* and *Eriophorum angustifolium*". The precise microhabitat occupied by *Sitticus caricis* at its Anglesey sites is/was unknown.

Salticidae (Jumping spiders) are typically diurnal spiders which hunt actively without a web; most show increased activity in sunny conditions. Many species seal themselves within silk cells during moulting, egg-sac construction and presumably over the winter period.

In the UK adult *Sitticus caricis* have been recorded in September, October, November and from March to July, and probably over winter (Merrett 1990; SRS website).



Figures 1–2: Sitticus caricis from Cors Bodeilio NNR; 1 male left, 2 female right.

Survey methods

Initially a variety of survey techniques were employed on the first day of survey at Cors Bodeilio, however it was soon discovered that G-vac (vacuum sampling) was by far the most efficient means of sampling spiders in terms of numbers of species and individuals. By comparison sweep-netting and hand grubbing yielded very few spider specimens/species and it was difficult (and potentially damaging to fragile *Schoenus* tussocks) to grub-up sufficient quantities of loose vegetation to sieve-sort material.



Figure 3: Survey method showing G-vac, sieve and tray. Cors Bodeilio NNR.

A Stihl SH56c garden vacuum, with mesh collection bag within the suction nozzle, was used to sample spiders with minimal damage to vegetation. At each wetland sample location a total of 9 minutes of vacuuming was conducted at ground level amongst the surrounding vegetation. At three minute intervals the catch was sieved over a plastic tray and the spiders collected (Figures 3 & 6). All specimens of Salticidae (jumping spiders) were collected/recorded, but only a representative sample of mature spiders from other families were retained for the purpose of identification (i.e. Salticidae were sampled qualitatively, but the rest were only sampled qualitatively).

At each of the three contracted survey sites (Cors Bodeilio, Cors Goch and Cors Salbri) sample locations were selected to include a variety of wetland vegetation types across the site, in order to elucidate the precise microhabitat used by *Sitticus caricis*. The vegetation and water depth was noted for each site (see appendix). Sample locations were recorded to 8-figure UK grid references using a Garmin GPS.

Identification of the preserved spider samples was conducted under a Leica S6d stereomicroscope. Later in the survey it was found that immature *Sitticus caricis* could be readily distinguished (by an overall greyish colouration and dorsal abdominal pattern of paler spots) from other salticid species present on site, and so most of these were released alive at the point of capture. All the preserved spider samples are retained in the author's reference collection and species data will be submitted to Cofnod (North Wales Record Centre) and the Spider Recording Scheme.

Results

Cors Bodeilio SSSI/NNR

Two survey days were conducted at Cors Bodeilio SSSI/NNR on the 17th and 18th August 2011. An additional day visit was made to discuss findings with Adrian Fowles on the 27th September 2011.

Over the three days *Sitticus caricis* was located at four locations on the reserve, all of which fall within the NNR boundary of the site (Table 1 & Figure 4).

Table 1: Sitticus caricis locations at Cors Bodeilio NNR				
Sample location	Date	Abundance	Habitat	Sample method
SH50057764	17-Aug-11	1 ♀	Schoenus	G-vac
		4 immatures	nigricans, Cladium,	
			Juncus. Marl area	
SH50357745	17-Aug-11	1 ♀	Schoenus nigricans	G-vac
		2 immatures	tussocks in water	
SH49827764	18-Aug-11	1 ð	Schoenus nigricans	G-vac
		1 ♀	tussocks in channel	
		2 immature 🕈		
		1 immature		
SH50277760	18-Aug-11	1 ð	Low Schoenus	G-vac
		1 ♀	nigricans & Myrica.	
		1 immature	Horse grazed	
SH50357745	27-Sep-11	3 immatures	Schoenus nigricans	G-vac
			tussocks in water	
SH50267760	27-Sep-11	4 immatures	Low Schoenus	G-vac
			nigricans & Myrica.	
			Horse grazed	

At all four locations (Figures 4–7, 9–12) the specific microhabitat where *Sitticus caricis* was discovered was on open *Schoenus nigricans* (Black Bog Rush) tussocks surrounded by water. The original area where *S. caricis* was located was also investigated (Figure 8) without success. Although this site (SH49797729) was rich in well developed *Schoenus* tussocks they were not situated in standing water and were tall enough to cast shade on one another, differing in these two factors from the sites where *S. caricis* was found. This may indicate a requirement for high humidity, coupled with good exposure to sunlight. It is worth noting that the *Sitticus* site at SH50277760 had been mown previously and was horse-grazed with a vegetation height of *c.*15 cm (Figures 11–12). Vegetation such as dominant *Juncus subnodulosus* stands, *Cladium* beds and wet grassland did not yield *Sitticus caricis*.

Invertebrates were sampled at 12 locations across the SSSI yielding: 57 spider species; 4 harvestman species; 2 mollusc species (Tables 4–20). Of note was the discovery of the small orb-web spider *Hypsosinga pygmaea* (SH50057764; SH49797729; SH50267760) which is new to the reserve and has only been recorded at one other location on Anglesey previously.



Figure 4: Cors Bodeilio SSSI/NNR survey locations and *Sitticus caricis* sites. Key: NNR boundary in blue; SSSI boundary in red; survey locations pink stars; *Sitticus caricis* locations blue circles.





Cors Goch NNR

Two survey days were conducted at Cors Goch NNR on the 17th and 18th September 2011.

Sitticus caricis was located at four locations on the reserve, all within the NNR (Table 2 & Figure 13).

Table 2: Sitticus caricis locations at Cors Goch NNR				
Sample location	Date	Abundance	Habitat	Sample method
SH50168141	17-Sep-11	1 immature	Schoenus nigricans tussocks	G-vac
SH50148132	17-Sep-11	1 immature ♂	Schoenus nigricans tussocks	G-vac
SH49778128	17-Sep-11	3 immatures	Schoenus nigricans tussocks near limestone pavement	G-vac
SH49488116	18-Sep-11	2♂ 1 immature ♂ 1 immature ♀ 5 spiderlings	Schoenus nigricans tussocks	G-vac

As at Cors Bodeilio, the four locations where *S. caricis* was found had the combined characteristics of *Schoenus* tussock islands standing in water and exposed to direct sunlight (Figures 13–18). Other wetland vegetation types such as *Juncus subnodulosus/Phragmites* swamp, *Carex* beds and dry dense shaded *Schoenus* tussocks did not produce any *S. caricis* specimens.

Invertebrates were sampled at 12 locations across the SSSI yielding: 48 spider species; 4 harvestman species; 1 mollusc species; 1 centipede species; 1 orthopteran (Tables 21–32). The discovery of *Tetragnatha striata*, a rarely recorded spider, on *Phragmites* at the margins of a lake represents the first record for the NNR.



Figure 13: Cors Goch SSSI/NNR survey locations and Sitticus caricis sites. Key: NNR boundary in blue; SSSI boundary in red; survey locations pink stars; Sitticus caricis locations blue circles.



Cors Erddreiniog NNR

Although not part of this contract's specification the opportunity was presented to search for *Sitticus caricis* at Cors Erddreiniog NNR on the 25th August and 13th September 2011 (Cofnod Recorders' Day and its reccie). Invertebrate data from these days are presented in this report.

Sitticus caricis was located at one location on the NNR (Table 3; Figure 20) and represents a new species record for the reserve.

Table 3: Sitticus caricis location at Cors Erddreiniog NNR				
Sample location	Date	Abundance	Habitat	Sample method
SH46888328	25-Aug-11	1 immature	M13 Schoenus nigricans tussocks	G-vac
SH46878330	13-Sep-11	1♂ 5 immatures	M13 Schoenus nigricans tussocks	G-vac

The Cors Erddreiniog *S. caricis* site (Figure 19) exhibited the same general characteristics found at the Cors Bodeilio and Cors Goch sites; open un-shaded *Schoenus* tussocks standing in open water.

Invertebrates were sampled at 11 locations across the NNR yielding: 26 spider species; 2 harvestman species (Tables 33–41).



Figure 20: Cors Erddreiniog SSSI/NNR northern survey locations and Sitticus caricis sites. Key: NNR boundary in blue; SSSI boundary in red; survey locations pink stars; *Sitticus caricis* locations blue circles.

Cors Salbri SSSI

One survey day was conducted at Cors Salbri SSSI on the 10th December 2011.

Sitticus caricis was not located at this site during the survey. This acidic Schwingmoor site differs from the other alkaline fens investigated in this study. As a result there are no *Schoenus* tussocks to sample, but a structurally similar habitat based on *Sphagnum* islands with *Erica tetralix*, *Eriophorum* was located (Figure 23). This microhabitat may be worth further study in order to relocate *Sitticus caricis* at this site.

Invertebrates were sampled at 5 locations (Figure 21) across the SSSI yielding: 30 spider species; 1 beetle species (Tables 42–46). Of note was the presence of *Walckenaeria nodosa* in two of the samples, a rarely recorded money spider typically found in very wet sites in winter. A single female *Robertus arundineti* and an immature *Argyroneta aquatica* were also interesting wetland finds, given that it is the first time the author has encountered both spider species.



Figure 21: Cors Salbri SSSI survey locations. Key: SSSI boundary in red; survey locations pink stars.



Conclusions/Discussion

Data gathered during this survey suggests that on the Anglesey fens of Cors Bodeilio, Cors Goch and Cors Erddreiniog, *Sitticus caricis* is utilising *Schoenus nigricans* tussocks which are open to direct sunlight and standing in open water. Salticidae are well known as largely diurnal spiders which are active in sunshine; this would be in keeping with the openness of the microhabitat occupied on these fens. *Sitticus caricis* was absent from samples taken in dense shaded *Schoenus* tussocks and also those which were not standing in open water. This may suggest a requirement for high humidity levels (at least in their resting places) coupled with good direct sunlight.

Unfortunately *S. caricis* was not re-discovered on Cors Salbri during this survey, so firm conclusions cannot be drawn here. However, a structurally similar habitat (to the *Schoenus* tussocks described above) of *Sphagnum* moss islands with *Erica tetralix* and *Eriophorum* was identified as worthy of further investigation.

Vacuum sampling was shown to be an effective means of sampling this spider from what is a relatively delicate, easily damaged, microhabitat. Hand searching did not yield any specimens within the spider's known microhabitat, so cannot be relied upon to locate this species. *Sitticus* specimens were extremely cryptic within the chaff sampled by G-vac (Figure 6) and would sometimes remain still until disturbed.

It is unlikely that the G-vac would sample all the specimens within a chosen tussock, since spiders sealed within silk cells are unlikely to be dislodged by the vacuum. Captive *S. caricis* were found to construct these silk cell retreats. With this in mind it would appear that active specimens are at a low population density and this may contribute to difficulties in locating specimens by hand.

Salticidae have scopulae hairs on their tarsi which enable them to scale smooth surfaces easily, this accounts for their poor representation in pitfall samples, and so this survey method would be unreliable, as highlighted by the fact that only two specimens were collected by pitfall/water traps during the WPIS survey.

Monitoring suggestions for Sitticus caricis

Based on this survey it would seem that vacuum sampling is likely to be the most reliable method of monitoring this species (during its activity season). Suitable habitat can be sampled rapidly using a G-vac without causing damaged to the fragile *Schoenus* tussocks.

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<u>References</u>

Burchar, J. & Vlastimil, R. 2002: Catalogue of Spiders of the Czech Republic. Peres Publishers.

Harvey, R., Nellist, D. R. & Telfer, M. G. 2002: *Provisional Atlas of British Spiders (Arachnida, Araneae), Volumes 1 & 2.* Biological Records Centre.

Locket, G. H. & Millidge, A. F. 1951: British spiders Volume 1. Ray Society.

Logunov, D. V. & Kronestedt, T. 1997: A new Palearctic species of the genus *Sitticus* Simon, with notes on related species in the *floricola* group (Araneae, Salticidae). *Bull Br Arachnol Soc* 10: 225–233.

Logunov, D. V. & Marusik, Yu. M. 2000: Catalogue of the jumping spiders of northern Asia (Arachnida, Araneae, Salticidae). KMK Scientific Press Ltd.

Merrett, P. 1990: A review of the nationally notable spiders of Great Britain. NCC Contract Survey (127), p. 67.

http://salticidae.org/salticid/diagnost/sitticus/caricis.htm

http://srs.britishspiders.org.uk/portal.php/p/summary/s/Sitticus%20caricis

JNCC 2010: http://jncc.defra.gov.uk/_speciespages/2603.pdf

Appendix 1. Species lists

<u>Table 4</u> 17-Aug-11 Cors Bodeilio NNR SH50637740 Wet grassland Grubbing

Таха	
Pardosa pullata	1F
Bathyphantes gracilis	1F
Erigone atra	1F
Oedothorax fuscus	1F
Leiobunum blackwalli	1
Total number of species	5

<u>Table 5</u> 17-Aug-11

Cors Bodeilio NNR

SH50637740

Wet grassland G-Vac

Таха	
Pardosa pullata	1F
Pachygnatha clercki	1F
Neottiura bimaculata	1F
Zora spinimana	1M
Allomengea vidua	1M 1F
Microlinyphia pusilla	1F
Kaestneria pullata	4F
Bathyphantes setiger	1F
Bathyphantes gracilis	4M 6F
Gnathonarium dentatum	1M 1F
Oedothorax gibbosus	2F
Micrargus herbigradus	1F
Gonatium rubens	1F
Hypomma bituberculatum	1F
Erigone atra	1F
Meioneta saxatilis s.l.	1F
Oligolophus tridens	2
Total number of species	17

<u>Table 6</u> 17-Aug-11

Cors Bodeilio NNR

SH50637740 Wet grassland Sweeping

Таха	
Tibellus maritimus	1F
Tetragnatha extensa	1i
Total number of species	2

<u>Table 7</u> 17-Aug-11

Cors Bodeilio NNR

Grubbing

Таха	
Tetragnatha extensa	1F
Arctosa leopardus	1F
Pirata piraticus	1F
Pirata tenuitarsis	1F
Allomengea vidua	1F
Lepthyphantes zimmermanni	1F
Gnathonarium dentatum	1F
Erigone dentipalpis	1F
Tetragnatha extensa	1F
Arctosa leopardus	1F
Pirata piraticus	1F
Pirata tenuitarsis	1F
Allomengea vidua	1F
Lepthyphantes zimmermanni	1F
Gnathonarium dentatum	1F
Erigone dentipalpis	1F
Total number of species	16

<u>Table 8</u> 17-Aug-11

Cors Bodeilio NNR

SH50387747

Таха	
Maso sundevalli	5F
Pachygnatha clercki	1M
Zora spinimana	1M 1F
Clubiona stagnatilis	1F
Neon reticulatus	2F 1iM
Tetragnatha extensa	1F
Ero cambridgei	1M
Floronia bucculenta	1M 2F
Microlinyphia impigra	1F
Gnathonarium dentatum	3F
Kaestneria pullata	5F
Gonatium rubens	1M 1F
Oedothorax gibbosus	2F
Hypomma bituberculatum	1F
Bathyphantes gracilis	1M 1F
Lepthyphantes ericaeus	2M 1F
Lepthyphantes zimmermanni	1M 3F
Walckenaeria unicornis	1F
Pocadicnemis pumila	1F
Leiobunum blackwalli	2
Oligolophus tridens	2
Total number of species	21

<u>Table 9</u> 17-Aug-11

Cors Bodeilio NNR SH50057764

Taxa Zora spinimana 1M 1F Pachygnatha clercki 1F Tetragnatha extensa 2F 2i 3F Gonatium rubens Pirata tenuitarsis 1F Neon reticulatus 1iM 1F Sitticus caricis 1F 4i Bathyphantes setiger 1M Hypsosinga pygmaea 1iF Total number of species 9

Black Bog Rush, Cladium, Juncus. Marl. G-vac

Bog Myrtle & Juncus	G-vac

<u>Table 10</u> 17-Aug-11

Cors Bodeilio NNR

SH50357745

Black Bog Rush tussocks in water G-vac

Таха	
Zora spinimana	1M
Pirata tenuitarsis	1F
Neon reticulatus	1iM
Floronia bucculenta	1M
Allomengea vidua	1F
Maso sundevalli	3F
Oligolophus tridens	1
Sitticus caricis	1F 2i
Total number of species	8

Table 11

17-Aug-11	Cors Bodeilio NNR	SH50	357745	Inundation site	G-vac
Таха]		
Maso sundeva	lli	1F			
Neon reticulatu	IS	1iM			
Kaestneria pul	lata	1F			
Bathyphantes :	setiger	1F			
Antistea elegar	ns	1M			
Ozyptila trux		1F			
Nemastoma bi	maculatum	1			
Total number	of species	7			
			-		
-					

<u>Table 12</u> 18-Aug-11

18-Aug-11	Cors Bodeilio SSSI	SH497	797729
Таха			
Pachygnatha c	lercki	1M 1F	
Zora spinimana	a	1M	
Floronia buccu	lenta	1M	
Lepthyphantes	ericaeus	2F	
Lepthyphantes	zimmermanni	1F	
Oedothorax gib	obosus	1F	
Lophomma pui	nctatum	1M	
Agroeca proxin	na	1F	
Leiobunum bla	ckwalli	2	
Nemastoma bii	maculatum	1	
Total number	of species	10	

<u>Table 13</u> 18-Aug-11

Cors Bodeilio SSSI

SH49797729

Black Bog Rush & Juncus

Black Bog Rush & Juncus

G-vac

Grubbing

Таха	
Pardosa pullata	1F
Hypsosinga pygmaea	2iM
Zora spinimana	1M 1F
Pachygnatha clercki	1F
Neon reticulatus	2iM
Gonatium rubens	2F
Kaestneria pullata	3F
Taranucnus setosus	1M 1F
Oedothorax gibbosus	1F
Pocadicnemis pumila	1F
Maso sundevalli	1F
Pholcomma gibbum	4F
Total number of species	12

<u>Table 14</u> 18-Aug-11

Cors Bodeilio SSSI

SH49837721

Cladium bed

G-vac

Таха	
Zora spinimana	1M 2F
Pisaura mirabilis	1i
Neon reticulatus	1F
Pholcomma gibbum	1F
Pachygnatha clercki	1F
Taranucnus setosus	1F
Floronia bucculenta	2M
Lepthyphantes zimmermanni	1F
Pocadicnemis pumila	1F
Neriene clathrata	1F
Walckenaeria cuspidata	1F
Oligolophus tridens	1
Total number of species	12

<u>Table 15</u> 18-Aug-11 Cors Bodeilio SSSI Island SH49857718 Gorse & bramble Beating

1F
1M
1F
1
Several F
5

<u>Table 16</u> 18-Aug-11

Cors Bodeilio NNR SH49827764 Black bog rush tussocks in channel G-vac Таха Pirata piraticus 1F Pachygnatha clercki 1M Bathyphantes gracilis Lepthyphantes tenuis 1F 1M Pocadicnemis pumila 1F Tetragnatha extensa 1i Ero cambridgei 1F

1M 1F 2iM

1i

1F

9

Table 17

Sitticus caricis

Floronia bucculenta

Total number of species

18-Aug-11	Cors Bodeilio NNR	SH500	077762	Gorse	Beating
Таха					
Pardosa nigrice	eps	1F			
Theridion impre	essum	1F			
Linyphia triang	ularis	1M 2F			
Erigone dentipa	alpis	1F			
Peponocraniun	n ludicrum	1F			
Hylyphantes gr	raminicola	1F			
Total number	of species	6			

<u>Table 18</u> 18-Aug-11

Cors Bodeilio NNR

SH50277760

Pardosa pullataPirata piraticusPirata tenuitarsisAntistea elegans	
Pirata piraticus Pirata tenuitarsis Antistea elegans	1F
Pirata tenuitarsis Antistea elegans	1F
Antistea elegans	1F
	1F
Zora spinimana	1F
Sitticus caricis 11	M 1F 1i
Neon reticulatus	2F
Clubiona stagnatilis	1M
Hypomma bituberculatum	1F
Total number of species	9

Table 19

18-Aug-11

Cors Bodeilio NNR

SH50457729 Juncus swamp

G-vac

Таха	
Pachygnatha clercki	1M
Antistea elegans	1M 1F
Ozyptila trux	1F
Neon reticulatus	1F
Ero cambridgei	1M
Oedothorax gibbosus	2F
Taranucnus setosus	1F
Kaestneria pullata	3F
Erigone atra	1F
Allomengea vidua	1M
Aphileta misera	1M
Agroeca proxima	1M
Total number of species	12

<u>Table 20</u> 27-Sep-11

Cors Bodeilio NNR

SH50267760

1M
1F
1iF
1F
1M
1M
4i
1
1
9

Cors Goch NNR

<u>Table 21</u> 17-Sep-11

SH50168141

Таха	
Sitticus caricis	1i
Pardosa pullata	1F
Tetragnatha extensa	1iM 2iF
Ozyptila atomaria	1M
Pirata tenuitarsis	1F
Lepthyphantes tenuis	1F
Bathyphantes gracilis	1M
Oedothorax fuscus	2M
Gnathonarium dentatum	1M
Cnephalocotes obscurus	1M
Total number of species	10

Low Black Bog Rush & Myrica. Horse grazed G-vac

Black bog rush tussocks G-vac

Table 22 17-Sep-11

Cors Goch NNR

SH50148132

G-vac

Таха	
Sitticus caricis	1iM
Pachygnatha clercki	1F
Metellina segmentata	1F
Zora spinimana	1F
Gonatium rubens	1M 1F
Gnathonarium dentatum	1M 1F
Ero cambridgei	1F
Lophomma punctatum	1M
Maso sundevalli	3F
Lepthyphantes ericaeus	1F
Bathyphantes setiger	1M
Total number of species	11

Table 23

17-Sep-11

Cors Goch NNR

Таха	
Sitticus caricis	3i
Euophrys frontalis	1iM 1iF
Gonatium rubens	1F
Lepthyphantes ericaeus	1F
Zora spinimana	1F
Antistea elegans	1F
Pirata tenuitarsis	2F
Pirata piraticus	1F
Pirata latitans	1F
Total number of species	9

Black bog rush tussocks near limestone pavement G-vac

<u>Table 24</u> 17-Sep-11

Cors Goch NNR

SH49978138

SH49778128

Juncus/Phragmites swamp

G-vac

Таха	
Pachygnatha clercki	3F
Tetragnatha extensa	1iM
Gnathonarium dentatum	1M 1F
Bathyphantes setiger	5F
Batghyphantes gracilis	2M
Hypomma bituberculatum	1F
Tetragnatha striata	1iM
Drepanotylus uncatus	1F
Total number of species	8

<u>Table 25</u> 17-Sep-11

Cors Goch NNR

SH50288159

Shaded dense black bog rush & Juncus G-vac

Таха	
Gnathonarium dentatum	3M 4F
Drepanotylus uncatus	2F
Pachygnatha clercki	1F
Zora spinimana	1F
Maso sundevalli	2F
Lepthyphantes zimmermanni	1M
Nemastoma bimaculatum	1
Pirata tenuitarsis	3F
Total number of species	8

<u>Table 27</u> 18-Sep-11

<u>Table 26</u> 18-Sep-11

Cors Goch NNR

SH49488116

G-vac

Таха	
	2M 1iM 1iF
Sitticus caricis	5 slings
Pachygnatha clercki	1M
Zora spinimana	1F
Pardosa pullata	1F
Pisaura mirabilis	1i
Tetragnatha extensa	1iM 1i
Ozyptila trux	1F
Pirata tenuitarsis	3F
Gnathonarium dentatum	1F
Lepthyphantes zimmermanni	1M
Bathyphantes gracilis	1F
Bathyphantes setiger	1M
Maso sundevalli	1F
Micrargus herbigradus	1F
Leiobunum blackwalli	1M 1F
Vertigo antivertigo	5
Lamyctes emarginatus	1F
Total number of species	17

antivertigo	
es emarginatus	
umber of species	

Cors Goch NNR

SH49278095

Таха	
Bathyphantes gracilis	2F
Gnathonarium dentatum	6M 12F
Tallusia experta	1F
Gonatium rubens	2F
Maso sundevalli	3F
Oedothorax gibbosus	1F
Ozyptila trux	1F
Xysticus cristatus	2F
Pisaura mirabilis	1i
Bathyphantes setiger	1M 2F
Antistea elegans	1M
Tetragnatha extensa	1iF
Kaestneria pullata	2M
Metellina segmentata	1M
Pirata piraticus	2F
Arctosa leopardus	1iM
Aphileta misera	1F
Paroligolophus agrestis	1F
Tetrix undulata	1F
Araneus diadematus	1F
Total number of species	20

Black bog rush & Juncus tussocks in rich seepage G-vac

<u>Table 28</u> 18-Sep-11

Cors Goch NNR

SH49098106

Carex bed

G-vac

Таха	
Pachygnatha clercki	1F
Pachygnatha degeeri	1M
Clubiona stagnatilis	1F
Drepanotylus uncatus	1F
Tallusia experta	1M 1F
Bathyphantes gracilis	1F
Centromerita bicolor	1M
Walckenaeria kochi	1M
Nemastoma bimaculatum	1
Oligolophus tridens	1
Paroligolophus agrestis	2M
Total number of species	11

<u>Table 29</u>

18-Sep-11

Cors Goch NNR

SH49448113

Sparse black bog rush tussocks G-vac

Таха	
Pardosa pullata	1F
Pirata tenuitarsis	1F
Pachygnatha clercki	1F
Drepanotylus uncatus	2M 2F
Gnathonarium dentatum	1F
Tallusia experta	1F
Walckenaeria kochi	1F
Ozyptila trux	1F
Lepthyphantes tenuis	1M
Bathyphantes setiger	2M
Baryphyma trifrons	1F
Total number of species	11

<u>Table 30</u> 18-Sep-11

Cors Goch NNR

SH49848128

Heathland	
i icatinana	

Таха	
Theridion impressum	2F
Enoplognatha ovata	1F
Metellina segmentata	1M
Araneus diadematus	1F
Total number of species	4

<u>Table 31</u> 18-Sep-11 Cors Goch NNR

SH50228151

Limestone grassland slope

G-vac

Таха	
Pardosa nigriceps	1F
Pachygnatha degeeri	1F
Gonatium rubens	2F
Lepthyphantes ericaeus	1F
Lepthyphantes zimmermanni	1F
Lepthyphantes mengei	2F
Hahnia helveola	1M
Paroligolophus agrestis	1F
Total number of species	8

Table 32

17-Sep-11 Cors Goch NNR	SH498	878129	Heathland	
Таха				
Araneus quadratus	1F			
Total number of species	1			
Table 3325-Aug-11Cors Erddreiniog N	INR SH468	388328	M13 Black Bog Rush tussocks	G-vac
Таха				
Pirata piraticus	1F			
Arctosa leopardus	1iM			
Sitticus caricis	1i			
Clubiona stagnatilis	1F			
Hypomma bituberculatum	1F			
Sitticus caricis	1M 5i			
Lepthyphantes mengei	2M			
Total number of species	7			

Table 34

13-Sep-11	Cors Erddreiniog NN	IR SH47	028337	Heathland	G-vac
			•		
Таха					
Pachygnatha de	egeeri	1M			
Clubiona trivialis	5	1F			
Pisaura mirabilis	S	2i			
Agalenatea redi	ï	1iF			
Lepthyphantes	ericaeus	1F			
Maso sundevall	i	2F			
Leiobunum blac	kwalli	1M			
Total number o	of species	7			
			-		

Table 35

13-Sep-11	Cors Erddreiniog NN	R SH46	518229	Field swamp	G-vac
			-		
Таха					
Pachygnatha	clercki	1F			
Antistea elega	ns	1F			
Clubiona reclu	Isa	1F			
Gnathonarium	dentatum	1M 3F			
Erigone atra		1F			
Total number	of species	5			
			-		

Table 36

13-Sep-11	Cors Erddreiniog NN	R SH47	148329	Fen seepage	G-vac
Таха			1		
Linyphia triang	ularis	1F			
Gnathonarium dentatum		2F			
Lepthyphantes ericaeus		1F			
Lepthyphantes mengei		1F			
Gonatium rubens		1F			
Bathyphantes	gracilis	1F			
Trochosa terrio	cola	1F			
Total number	of species	7]		
			_		

<u>Table 37</u> 13-Sep-11

Cors Erddreiniog NNR

SH46898213

Ditch-side vegetation G-vac

Таха	
Pachygnatha clercki	1M
Gnathonarium dentatum	2M 2F
Tallusia experta	1F
Hypomma bituberculatum	1F
Total number of species	4

Table 38

13-Sep-11 Cors Erddreiniog N	NR	SH47078165	Birch woodland
Таха			
Linvphia triangularis 1F			
Metellina segmentata	1M		
Total number of species	2		
Table 39		.	
13-Sep-11 Cors Erddreiniog N	NR	SH47138328	Fen seepage/heath
Таха			
Araneus quadratus	1F		
Araneus diadematus	1F		
Clubiona reclusa	1F		
Agelena labyrinthica	1F		
Total number of species 4			
Table 40			
13-Sep-11 Cors Erddreiniog N	NR	SH47138184	Grassland
Texe			
Phalangium opilio			
Araneus ulademalus			
rotal number of species 2			
Table 41			
13-Sep-11 Cors Erddreiniog N	NR	SH47228144	Heathland

Таха Araneus quadratus Total number of species 1F 1

<u>Table 42</u> 10-Dec-11

Cors Salbri SSSI

SH37268886

Sphagnum & Eriophorum bog

G-vac

Таха	
Agalenatea redii	1iF
Tetragnatha extensa	2iF
Drepanotylus uncatus	1F
Gonatium rubens	1F
Tallusia experta	1M 5F
Aphileta misera	1M 1F
Micrargus herbigradus	1M 1F
Oedothorax gibbosus	1F
Porrhomma pygmaeum	1F
Walckenaeria nodosa	1M 1F
Lepthyphantes tenuis	1M 1F
Lepthyphantes mengei	1M
Bathyphantes gracilis	1M
Taranucnus setosus	1M
Pocadicnemis pumila	1F
Total number of species	15

Table 43

10-Dec-11	Cors Salbri SSSI	SH372	298888	Sphagnum & Erica tetralix bog	G-vac
Таха					
Tallusia experi	ta	2M 2F			
Gnathonarium	dentatum	3M			
Tetragnatha e	xtensa	1iF			
Bathyphantes	gracilis	2M 2F			
Micrargus herl	bigradus	1M			
Robertus arun	dineti	1F			
Ozyptila trux		1F			
Walckenaeria	antica	1F			
Total number	of species	8			
T . 1.1. 44					

Ta	abl	е	44

1 41010 11	
10-Dec-1	1 Cors Salbri SSSI

SH37338888

Sphagnum islands with Eriophorum bog	G-vac
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Таха	
Tetragnatha extensa	2iF
Neon reticulatus	1iM
Tallusia experta	1F
Aphileta misera	2F
Bathyphantes gracilis	1F
Erigone atra	1F
Maso sundevalli	3F
Total number of species	7

27

<u>Table 45</u> 10-Dec-11

Cors Salbri SSSI

SH37388891

Moss lawn, Eriophorum & Juncus bog

G-vac

G-vac

Таха	
Tallusia experta	1M 3F
Drepanotylus uncatus	2F
Taranucnus setosus	1F
Neon reticulatus	1iM
Antistea elegans	1F
Aphileta misera	1M 2F
Bathyphantes gracilis	1M 1F
Lophomma punctatum	1M
Maso sundevalli	1F
Erigone atra	2M
Ceratinella brevipes	1M
Anisosticta novemdecimpunctata	1
*Argyroneta aquatica	1i
Total number of species	13

*Amongst submerged Utricularia spp. at SH37398891.

Table 46 10-Dec-11

10-Dec-11	Cors Salbri SSSI	SH37388883	
Таха			
Antistea elegans		1F	
Gonatium rubens		2F	
Tallusia experta		7M 4F	
Lophomma punctatum		1M 1F	
Lepthyphantes ericaeus		2M	
Gnathonarium dentatum		2M 2F	
Drepanotylus uncatus		1F	
Taranucnus setosus		1M	
Bathyphantes gracilis		1F	
Bathyphantes approximatus		1M 2F	
Kaestneria pullata		1M	
Walckenaeria nodosa		1M	
Erigone atra		2M 2F	
Xysticus cristatus		1F	
Ozyptila trux		1M	
Total number of species		15	

Key M = male F = female