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A survey of the spider *Agroeca dentigera* on Dyfi NNR, with a particular focus on Ynyslas Dunes, in 2013 and 2014

National Museums Liverpool

NRW Evidence Report No. 54

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1. Crynodeb Gweithredol

System twyni tywod Ynyslas, sy'n rhan o Warchodfa Natur Genedlaethol Dyfi, yw'r unig safle y gwyddys amdano yn y DU lle ceir y corryn *Agroeca dentigera*, sef corryn sydd dan fygythiad yn ôl safonau'r IUCN. Prif ddiben y gwaith arolygu a wnaed yn 2013 a 2014 oedd ailddarganfod y corryn, a gofnodwyd y tro diwethaf yn 2002, a cheisio diffinio'i flaenoriaethau o safbwynt cynefin a'i anghenion ecolegol, a hynny trwy chwilio'r twyni a chynefinoedd eraill a allai fod yn addas o fewn y Warchodfa Natur Genedlaethol.

Ymwelwyd â safleoedd ym mis Hydref 2013, mis Ebrill 2014 a mis Hydref 2014, ac aethpwyd ati i'w harolygu trwy ddefnyddio cyfuniad o dechnegau chwilio â llaw a thechnegau mecanyddol. Daethpwyd o hyd i un *Agroeca dentigera* fenywaidd lawndwf ar 3^{ydd} Hydref 2014 mewn moresg trwchus o fewn y system dwyni. Cofnodwyd cyfanswm o 94 o fathau gwahanol o gorynnod, gan gynnwys *Philodromus fallax* a *Ceratinopsis romana*, a chredir bod 11 o'r rhywogaethau hyn yn newydd i Warchodfa Natur Genedlaethol Dyfi. Cofnodwyd 47 o rywogaethau creaduriaid di-asgwrn-cefn eraill, a chredir bod 16 o'r rhain yn newydd i Warchodfa Natur Genedlaethol Dyfi.

Drachefn, mewn moresg trwchus yn y system dwyni y daethpwyd o hyd i *Agroeca dentigera* yn 2014. Er chwilio cynefinoedd posibl eraill, ni ddaethpwyd o hyd i fwy hyd yn hyn. Felly, er nad oes modd esbonio beth yw blaenoriaethau'r corryn o safbwynt cynefin, ymddengys ei fod yn gysylltiedig â'r ecosystem hon yng Ngwarchodfa Natur Genedlaethol Dyfi. Mae'r ymdrech sydd ei hangen i ddod o hyd i'r rhywogaeth yn awgrymu mai poblogaethau dwysedd isel iawn sydd i'w cael, gan ei gwneud yn anodd argymhell sut i gyfarwyddo dulliau arolygu a monitro ar gyfer y dyfodol.

2. Executive Summary

The sand dune system at Ynyslas, part of Dyfi National Nature Reserve, is the only known UK locality for the IUCN Vulnerable liocranid spider *Agroeca dentigera*. The main purposes of the survey work in 2013 and 2014 was to re-locate the spider, last recorded in 2002 and attempt to define its habitat preferences and ecological requirements by searching the dunes and other potentially suitable habitats within the NNR.

Sites were visited in October 2013, April 2014 and October 2014 and surveyed using a combination of hand-searching and mechanical techniques. A total of 136 person hours were given to searching potential habitats. A single mature female of *Agroeca dentigera* was found on 3rd October 2014 in an area of dense marram within the dune system. In total 94 species of spider were recorded, including *Philodromus fallax* and *Ceratinopsis romana*, 11 of these species are thought to be new to Dyfi NNR. An additional 47 other invertebrate species were recorded, 16 of which are thought to be new to Dyfi NNR.

The 2014 record of *Agroeca dentigera* was again from dense marram in the dune system and searching of other potential habitats have so far produced negative results. So whilst it is still not possible to elucidate on its habitat preferences it seems likely to be associated with this ecosystem at Dyfi NNR. The efforts required to find the species suggest it occurs at very low densities, making it difficult to recommend how to direct future survey and monitoring protocols.

3. Introduction

3.1. Background information

Agroeca dentigera Kulczynski (Liocranidae) is widely distributed in Europe, having been recorded from Belarus, Belgium, Finland, Germany, Lithuania, the Netherlands, Poland, Romania, parts of Russia and Ukraine. It has been collected from coastal habitats including marshes and pastures, and inland habitats including *Calluna* heath near *Sphagnum* swamp, fens and peat bogs, although never in large numbers (Jonsson, 2005).

Regarded as IUCN Vulnerable in Great Britain, the spider was first collected in the UK during pitfall trapping at Ynyslas Dunes by students from Aberystwyth University in 1989. A single female was found among one hundred specimens of the common and closely related *Agroeca proxima* but was determined as *Agroeca lusatica* at the time (Felton *et al.*, 2004; Fowles, 1994). Its true identity was confirmed in 2002 following fieldwork commissioned by the Countryside Council for Wales, four females and one male were taken while hand searching among the base of marram *Ammophila arenaria* on a sheltered south-facing hollow, on an East-West fixed dune (Felton *et al.*, 2004; Judd *et al.*, 2003). Subsequent searches within the dune system failed to find the spider and, given its association with peat bogs in Finland and Lithuania (Jonsson, 2005), it has been speculated that *Agroeca dentigera* may actually be associated with the neighbouring raised mire, Cors Fochno, or the wet margins of the bog.

Dyfi NNR comprises three distinct habitat types lying within the estuarine/coastal unit of the river Dyfi, to the north of Aberystwyth on the mid-Wales coast. The intertidal part of the estuary consisting of river channels, sand flats and saltmarshes is the largest section, followed by the extensive raised bog peatland of Cors Fochno lying on the southern flank of the estuary between Ynyslas and Borth. Here *Sphagnum* (bog moss), cotton grass and heather rich vegetation predominates, but there are also large areas of purple-moor grass and bog myrtle dominated fen, reed swamp, bog woodland and marshy grassland. Ynyslas Dunes are the other principal habitat type comprising a spit of sand and shingle at the southern mouth of the estuary. Here newly forming embryo dunes can be seen close to the estuary, as well as young building marram grass dunes and older species-rich mature dunes

3.2. Objectives

The main purposes of the survey work in 2013 and 2014 were to re-locate the spider, last recorded in 2002, and to attempt to define its preferred habitat and ecological requirements by searching the dunes and other habitats within the NNR, including part of the raised bog of Cors Fochno.

4. Methods

The site was visited on six separate occasions between October 2013 and October 2014 by eight surveyors: Chris Felton, Richard Gallon, Tony Hunter, Steve Judd, Richard Loxton and Tom Mawdsley (National Museum Liverpool staff or associates); Mike Bailey and Mike Howe (NWR). 57 hours were spent sampling on 3rd to 4th

October 2013, 39 hours on 9th to 10th April 2014, and 40 hours on 9th to 10th October 2014, adding up to a total of 136 hours.

Grubbing at the base of dune vegetation and sieving litter were the main survey methods. A modified leaf blower was used on one occasion, but static traps (pitfalls) were not deployed. Much of the survey time was dedicated to searching dunes in the area where the spider had been previously recorded. Two person days were also used in attempts to cover the remaining dune system and to investigate part of Cors Fochno as another potential *Agroeca dentigera* site.



Figure 1: The main sampling sites in 2013 and 2014.

5. Results

A single female of *Agroeca dentigera* was collected just after dawn on 10th October 2014 (see Appendix 1), on a breezy and slightly overcast morning, from fixed dunes slightly to the north of the previous collection locality (Judd *et al.*, 2003). It was found amongst a field layer of mosses and grasses within dense marram, on a sandy substrate with a distinct organic soil layer from which the vegetation had been carefully moved back (see Figure 2). Aerial views of the locality are shown in Figures 4 and 5. Table 1 provides all the records of *Agroeca dentigera* from Ynyslas Dunes.



Figure 2: Typical marram grassland on Ynyslas Dunes.



Figure 3: Sieving litter at Morfa Borth on Cors Fochno, April 2014.

A total of 94 other spider species was also found during the 2013 and 2014 surveys (see Table 2 and Appendix 1). Eleven of these are thought to be recorded from Dyfi NNR for the first time, including seven from Ynyslas Dunes and four from Morfa Borth, Cors Fochno. Two Nationally Rare and two Nationally Scarce spiders were found. Species associated with sand dunes included: *Ceratinopsis romana*; *Mecopisthes peusi*, a single female of which was collected on 3rd October 2013 from the northern end of the dune system (Appendix 1); and *Philodromus fallax*, a single female was collected in the late afternoon on 9th April 2014, at the top of a yellow dune ridge to the west side of the site near the elevated boardwalk (Appendix 1).

Table 1: Records of the spider *Agroeca dentigera* from Ynyslas Dunes.

Date	GR	Date	Abundance	Recorder	Determiner
Ynyslas Dunes	SN6093	October 1989	1 ♀	John Gee	Peter Merrett
Ynyslas Dunes	SN6093	10 October 2002	1 ♂ + 4 ♀♀	Chris Felton	Peter Merrett
Ynyslas Dunes	SN6064693403	3 October 2014	1 ♀	Tony Hunter	Tony Hunter/ Chris Felton

Ynyslas dunes

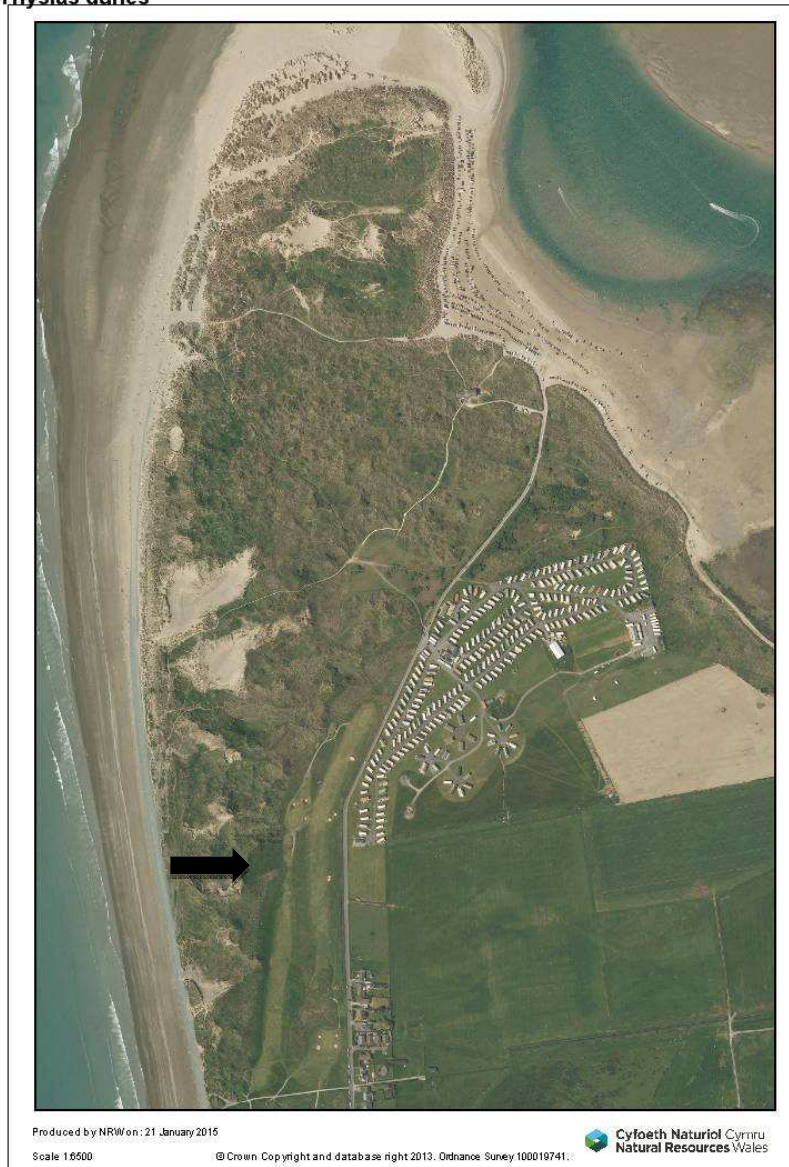


Figure 4: Location of the October 2014 record of *Agroeca dentigera*. 2009 aerial image.



Figure 5: Close-up of location of the October 2014 record of *Agroeca dentigera*.
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Table 2: Spiders recorded from Dyfi NNR during the 2013-14 survey work. Key species of conservation importance are highlighted. Statuses after Harvey *et al.* (2014).

Species	Comment
Dysderidae	
<i>Harpactea hombergii</i> (Scopoli, 1763)	Widely distributed
Oonopidae	
<i>Oonops pulcher</i> Templeton, 1835	Widely distributed
Mimetidae	
<i>Ero cambridgei</i> Kulczyński, 1911	Widespread in south
<i>Ero furcata</i> (Villers, 1789)	Widely distributed
Theridiidae	
<i>Enoplognatha latimana</i> Hippa & Oksala, 1982	Southern and western coastal distribution
<i>Episinus angulatus</i> (Blackwall, 1836)	Widespread in south
<i>Neottiura bimaculata</i> (Linnaeus, 1761)	Widely distributed
Linyphiidae	
<i>Bathyphantes approximatus</i> (O.P.-Cambridge, 1871)	Widely distributed
<i>Bathyphantes gracilis</i> (Blackwall, 1841)	Widely distributed
<i>Ceratinopsis romana</i> (O.P.-Cambridge, 1872)	Nationally Rare. Southern coastal distribution
<i>Centromerita concinna</i> (Thorell, 1875)	Widely distributed
<i>Centromerus prudens</i> (O.P.-Cambridge, 1873)	Widely distributed
<i>Ceratinella brevipes</i> (Westring, 1851)	Widely distributed

<i>Diplocephalus permixtus</i> (O.P.-Cambridge, 1871)	Patchy and scattered through most of the UK.
<i>Erigone atra</i> Blackwall, 1833	Widely distributed
<i>Gnathonarium dentatum</i> (Wider, 1834)	Widespread in south
<i>Gongylidium rufipes</i> (Linnaeus, 1758)	Widely distributed in England and Wales
<i>Gongylidiellum vivum</i> (O.P.-Cambridge, 1875)	Widely distributed
<i>Gonatium rubens</i> (Blackwall, 1833)	Widely distributed
<i>Hypomma bituberculatum</i> (Wider, 1834)	Widely distributed
<i>Hylyphantes graminicola</i> (Sundevall, 1830)	Widespread in south, un-common in north
<i>Jacksonella falconeri</i> (Jackson, 1908)	Patchy and scattered throughout the UK
<i>Lepthyphantes ericaeus</i> (Blackwall, 1853)	Widely distributed
<i>Leptyphantes flavipes</i> (Blackwall, 1854)	Widespread in south
<i>Leptyphantes mengei</i> Kulcznski, 1887	Widely distributed
<i>Leptyphantes tenuis</i> (Blackwall, 1852)	Widely distributed
<i>Leptyphantes zimmermanni</i> Bertkau, 1890	Widely distributed
<i>Lophomma punctatum</i> (Blackwall, 1841)	Widely distributed
<i>Mecopisthes peusi</i> Wunderlich, 1972	Nationally Scarce. Largely confined to southern and central Britain.
<i>Micrargus herbigradus</i> (Blackwall, 1854)	Widely distributed
<i>Microlinyphia pusilla</i> (Sundevall, 1830)	Widely distributed
<i>Nerienne clathrata</i> (Sundevall, 1830)	Widely distributed
<i>Oedothorax fuscus</i> (Blackwall, 1834)	Widespread in south
<i>Oedothorax gibbosus</i> (Blackwall, 1841)	Widely distributed
<i>Oedothorax retusus</i> (Westring, 1851)	Widely distributed
<i>Pholcomma gibbum</i> (Westring, 1851)	Patchy and scattered throughout the UK
<i>Peponocranium ludicrum</i> (O.P.-Cambridge, 1861)	Patchy and scattered throughout the UK
<i>Pholcomma gibbum</i> (Westring, 1851)	Patchy and scattered throughout the UK
<i>Pocadicnemis pumila</i> (Blackwall, 1841)	Widely distributed.
<i>Porrhomma oblitum</i> (O.P.-Cambridge, 1871)	Nationally Scarce. Absent from north and widespread but patchy in the south.
<i>Porrhomma pygmaeum</i> (Blackwall, 1834)	Widely distributed.
<i>Savignia frontata</i> (Blackwall, 1833)	Widely distributed.
<i>Stemonyphantes lineatus</i> (Linnaeus, 1758)	Widely distributed.
<i>Tallusia experta</i> (O.P.-Cambridge, 1871)	Patchy and scattered throughout the UK.
<i>Tapinopa longidens</i> (Wider, 1834)	Patchy and scattered throughout the UK.
<i>Troxochrus scabriculus</i> (Westring, 1851)	Patchy and scattered through most of the UK.
<i>Walkenaeria acuminata</i> Blackwall, 1833	Widely distributed.
<i>Walkenaeria alticeps</i> (Denis, 1952)	Patchy and scattered through most of the UK.
<i>Walckenaeria antica</i> (Wider, 1834)	Widely distributed.
<i>Walckenaeria clavicornis</i> (Emerton, 1882)	Scattered throughout northern UK.
<i>Walckenaeria obtusa</i> Blackwall, 1836	Widespread in south, un-common in north.
<i>Walckenaeria unicornis</i> O.P.-Cambridge, 1861	Widespread in south, un-common in north.
Tetragnathidae	
<i>Metellina merianae</i> (Scopoli, 1763)	Widely distributed.
<i>Metellina mengei</i> (Blackwall, 1869)	Widely distributed.

<i>Pachynatha clerckii</i> Sundevall, 1823	Widespread in south, patchy in the north.
<i>Pachygnatha degeeri</i> Sundevall, 1830	Widely distributed.
<i>Tetragnatha extensa</i> (Linnaeus, 1758)	Widely distributed.
Araneidae	
<i>Araneus diadematus</i> Clerck, 1757	Widely distributed.
<i>Araneus quadratus</i> Clerck, 1757	Patchy and scattered through most of the UK.
<i>Agalenatea redii</i> (Scopoli, 1763)	Widespread in south mostly absent from the north.
<i>Hypsosinga pygmaea</i> (Sundevall, 1831)	Widespread in south, patchy in the north.
<i>Larinioides cornutus</i> (Clerck, 1757)	Widespread in south, patchy in the north.
Lycosidae	
<i>Alopecosa pulverulenta</i> (Clerck, 1757)	Widely distributed.
<i>Pardosa nigriceps</i> (Thorell, 1856)	Patchy and scattered through most of the UK.
<i>Pardosa pullata</i> (Clerck, 1757)	Widely distributed.
<i>Pirata piraticus</i> (Clerck, 1757)	Widely distributed.
<i>Trochosa terricola</i> Thorell, 1856	Widely distributed.
<i>Xerolycosa miniata</i> (C.L. Koch, 1834)	Widespread on UK coasts but patchy or absent in the north.
Pisauridae	
<i>Pisaura mirabilis</i> (Clerck, 1757)	Widespread in South, patchy in the north.
Hahniidae	
<i>Antistea elegans</i> (Blackwall, 1841)	Patchy and scattered through most of the UK.
<i>Hahnia nava</i> (Blackwall, 1841)	Widespread in south, patchy in the north.
Liocranidae	
<i>Agroeca dentigera</i> Kulczynski, 1913	IUCN Vulnerable/Nationally Rare. Only known from Dyfi NNR in UK.
<i>Agroeca proxima</i> (O.P-Cambridge, 1871)	Patchy and scattered through most of the UK.
Clubionidae	
<i>Cheirecanthium virescens</i> (Sundevall, 1833)	Patchy in the South and mostly absent from the north.
<i>Clubiona neglecta</i> O.P-Cambridge, 1862	Patchy and scattered through most of the UK.
<i>Clubiona phragmitis</i> (C.L. Koch, 1843)	Widespread in south, patchy in the north.
<i>Clubiona reclusa</i> O.P-Cambridge, 1863	Widely distributed.
<i>Clubiona stagnatilis</i> Kulczyński, 1897	
<i>Clubiona subtilis</i> L. Koch, 1876	Widespread in southern UK coasts, mostly absent in the north.
<i>Clubiona terrestris</i> Westring, 1851	Widespread in south, patchy in the north.
Gnaphosidae	
<i>Haplodrassus signifer</i> (C.L. Koch, 1839)	Patchy and scattered through most of the UK.
<i>Micaria pulicaria</i> (Sundevall, 1831)	Patchy and scattered through most of the UK.
<i>Zelotes electus</i> (C.L. Koch, 1839)	Widespread on UK coasts but absent in the north-west.
Zoridae	
<i>Zora spinimana</i> (Sundevall, 1833)	Patchy and scattered through most of the UK.
Philodromidae	

<i>Philodromus fallax</i> Sundevall, 1833	IUCN Vulnerable/Nationally Rare. Mainly recorded from Welsh and southern coasts in UK.
<i>Thanatus striatus</i> C.L. Koch, 1845	Widespread in south-east, patchy or absent in the north.
<i>Tibellus oblongus</i> (Walckenaer, 1802)	Widespread in south, patchy or absent in the north.
Thomisidae	
<i>Ozyptila atomaria</i> (Panzer, 1801)	Patchy and scattered through most of the UK.
<i>Ozyptila trux</i> (Blackwall, 1846)	Patchy and scattered through most of the UK.
<i>Xysticus cristatus</i> (Clerck, 1757)	Widely distributed.
<i>Xysticus erraticus</i> (Blackwall, 1834)	Patchy and scattered through most of the UK.
Salticidae	
<i>Euophrys frontalis</i> (Walckenaer, 1902)	Widespread in south, patchy or absent in the north.
<i>Heliophanus flavipes</i> (Hahn, 1832)	Widespread in south, patchy or absent in the north.
<i>Marpissa nivoyi</i> (Lucas, 1846)	Widespread on English and Welsh coasts, absent in Scotland.

A total of 47 other species of invertebrates were also recorded, including one RDB species and 16 which are potentially new to the NNR (Appendix 2).

6. Discussion

The recording of a single female of *Agroeca dentigera* in October 2014 confirms that the spider still occurs within Dyfi NNR and is likely to be resident. The time taken to find the specimen however suggests that either it occurs at very low densities or we have yet to locate the core population(s). The 2014 specimen was collected just after dawn; this may be a coincidence or it might be that the species is more nocturnal in habit and retires to more inaccessible places during daylight, making it easier to overlook. All UK records are from dense marram on the dune system at Ynyslas, suggesting that the spider is associated with dunes rather than the raised bog of Cors Fochno or wet areas on the margins of the bog (although it would be premature to rule out the likelihood of it occurring on some part of the adjacent and diverse wetland complex).

The 2014 specimen was collected within close proximity of the 1989 and 2002 records. Whilst there is undoubtedly bias to this as much of the survey effort during the current survey focussed around these areas, it may suggest that the population has a very localised distribution within the dune system.

The dune habitat the spider occupies at Ynyslas appears to be markedly different from the mostly wetter habitats utilised in continental Europe, the 2014 locality of mosses under a dense canopy of marram was at least relatively damp and humid. The lack of quantitative data makes it very difficult to determine habitat preferences, it is even possible that historical topographic and vegetation changes have forced the spider to adapt to changes and occupy an atypical niche. The course of the Afon Leri

was modified in the early 19th century, and the development of a golf course and the construction of a sea wall have altered the habitat at Ynyslas considerably. Old maps show that the northern end of the dune spit has grown and developed rapidly in the last two centuries extending over areas underlain by peat and formerly lying on the maritime margin of a more extensive estuarine bog. Small remnants of poor fen habitat dominated by purple moorgrass *Molinia caerulea* and black bog rush *Schoenus nigricans* do still occur in a couple of slack locations towards the inland side of the dune spit. A study of spider assemblages on sand dunes in mainland Europe (Bonte *et al.*, 2003) postulated that species with poor dispersal capabilities can react slowly to habitat restoration. It is therefore possible that the population of *Agroeca dentigera* is a relict from a time prior to these extensive modifications. Duffey *et al.* (2005) noted that on a European basis, habitat tolerance in spiders can be highly variable even within a single country. The presence of *Agroeca dentigera* on the sand dunes at Ynyslas may be due to a favoured, as yet unidentified niche microhabitat.

In addition to *Agroeca dentigera*, important records were made for other spiders of conservation importance. *Philodromus fallax* (IUCN Vulnerable/Nationally Rare) has only been recorded from Ynyslas Dunes on three previous occasions: in 1977, when E. Jones reported “immatures common in fore and yellow dunes”; a single female from the strandline in 1990, and five immatures from marram foredunes in 1998. *Mecopisthes peusi* (Nationally Scarce) has been recorded on five previous occasions on Ynyslas Dunes, between 1982 and 2001, all from the marram foredunes. *Porhomma oblitum* (Nationally Scarce) was found among grass tussocks bordering slacks to the north of the caravan site, and a single female of *Ceratinopsis romana* (Nationally Rare) was recorded on Ynyslas Dunes.

It was hoped to record *Dipoena inornata* (Nationally Scarce), previously recorded from Ynyslas Dunes in April 1998 when a male and female were collected together from exposed roots of marram on an eroding foredune ridge, but none was found.

7. Recommendations

Given the continued presence of *Agroeca dentigera* on Ynyslas Dunes, further surveys should be undertaken to determine the status and distribution of the spider. Whilst all records to date are from the dune system, wider searches of the NNR (including saltmarsh, tributaries and river banks along the Afon Dyfi and peripheral areas of fen/poor-fen on Cors Fochno proper) should continue in case core populations associated with wetland habitats have been overlooked. It may also prove more productive to look for *Agroeca dentigera* at night, when the spider may be more active.

Comparison of relative humidity and chemical composition of known localities on Ynyslas Dunes with continental stations may provide a better understanding of the requirements of the spider and help to identify additional locations within Dyfi NNR.

The current paucity of records and information on its habitat requirements make it difficult to determine a suitable monitoring programme for *Agroeca dentigera*. At present, the best we can recommend is that an assessment of stands of dense marram is made, with a determined search for the spider at least every five years.

8. Acknowledgements

World Museum Liverpool wishes to thank Mike Bailey, Adrian Fowles and Mike Howe (Natural Resources Wales) for commissioning these surveys and providing survey assistance throughout, and the survey team, in particular Chris Felton, for their tireless work in the field.

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10. Appendices

10.1. Appendix A: Records of spiders from Dyfi NNR made during survey work in 2013 and 2014. New records for the NNR or subsites (Morfa Borth, Cors Fochno and Ynyslas Dunes) are shown with an asterisk *

Date collected.	Sex.	Locality.	Grid Ref.	Collector.
Araneae: Dysderidae: <i>Harpactea hombergii</i> (Scopoli, 1763)				
04.10.2013	Imm.	Ynyslas	SN 60732 94462	Chris Felton
Araneae: Oonopidae: <i>Oonops pulcher</i> Templeton, 1835				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
10.04.2014	Male	Ynyslas	SN 60622 93413	Chris Felton
Araneae: Mimetidae: <i>Ero cambridgei</i> Kulczyński, 1911				
10.04.2014	Female	Ynyslas	SN 61085 93913	Tony Hunter
10.10.2014	Both	Ynyslas	SN 60586 93322	Tony Hunter
10.10.2014	Both	Ynyslas	SN 60859 93722	Steve Judd
Araneae: Mimetidae: <i>Ero furcata</i> (Villers, 1789)				
03.10.2013	Male	Ynyslas	SN 60732 94462	Steve Judd
03.10.2013	Female	Ynyslas	SN 60608 93474	Tony Hunter
10.04.2014	Male	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Both	Ynyslas	SN 60622 93413	Tony Hunter
10.10.2014	Male	Ynyslas	SN 60586 93322	Tony Hunter
Araneae: Theridiidae: <i>Enoplognatha latimana</i> Hippa & Oksala, 1982				
10.04.2014	Female	Ynyslas	SN 60859 93722	Steve Judd
Araneae: Theridiidae: <i>Episinus angulatus</i> (Blackwall, 1836)				
03.10.2013	Imm.	Ynyslas	SN 60732 94462	Chris Felton
03.10.2013	Imm.	Ynyslas	SN 60586 93322	Tony Hunter
09.04.2013	Imm.	Ynyslas	SN 61018 94041	Chris Felton
Araneae: Theridiidae: <i>Neottiura bimaculata</i> (Linnaeus, 1761)				
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
09.04.2014	Imm.	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
Araneae: Linyphiidae: <i>Bathyphantes approximatus</i> (O.P.-Cambridge, 1871)				
09.04.2014	Both	Morfa Borth	SN 61036 90871	Tony Hunter
Araneae: Linyphiidae: <i>Bathyphantes gracilis</i> (Blackwall, 1841)				
09.04.2014	Imm	Ynyslas	SN 61018 94041	Chris Felton
Araneae: Linyphiidae: <i>Ceratinopsis romana</i> (O.P.-Cambridge, 1872) Nb				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
Araneae: Linyphiidae: <i>Centromerita concinna</i> (Thorell, 1875)				
09.04.2014	Imm.	Ynyslas	SN 60549 94030	Tony Hunter
10.04.2014	Female	Ynyslas	SN 61254 93821	Steve Judd
Araneae: Linyphiidae: <i>Centromerus prudens</i> (O.P.-Cambridge, 1873)				
09.04.2014	Female.	Morfa Borth	SN 61135 91057	Steve Judd
Araneae: Linyphiidae: <i>Ceratinella brevipes</i> (Westring, 1851)				
09.04.2014	Female.	Morfa Borth	SN 61036 90871	Tony Hunter
Araneae: Linyphiidae: <i>Diplocephalus permixtus</i> (O.P.-Cambridge, 1871)				
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Linyphiidae: <i>Erigone atra</i> Blackwall, 1833				
09.04.2014	Female	Ynyslas	SN 60549 94030	Tony Hunter
09.04.2013	Female	Morfa Borth	SN 61301 91113	Chris Felton

10.10.2014	Both	Ynyslas	SN 61018 93905	Steve Judd
Araneae: Linyphiidae: <i>Gnathonarium dentatum</i> (Wider, 1834)				
09.04.2013	Both	Morfa Borth	SN 61301 91113	Chris Felton
09.04.2014	Both	Morfa Borth	SN 61036 90871	Tony Hunter
10.04.2014	Female	Morfa Borth	SN 61439 90975	Tony Hunter
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Linyphiidae: <i>Gongylidium rufipes</i> (Linnaeus, 1758)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
Araneae:Linyphiidae: <i>Gongylidiellum vivum</i> (O.P.-Cambridge, 1875)				
09.04.2014	Female	Morfa Borth	SN 61135 91057	Tony Hunter
Araneae: Linyphiidae: <i>Gonatium rubens</i> (Blackwall, 1833)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Both	Ynyslas	SN 60608 93474	Tony Hunter
03.10.2013	Both	Dyfi NNR	Not localised	Chris Felton
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
09.04.2014	Female	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Female	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
10.04.2014	Female	Ynyslas	SN 61018 93905	Steve Judd
10.04.2014	Female	Ynyslas	SN 60859 93722	Steve Judd
Araneae: Linyphiidae: <i>Hypomma bituberculatum</i> (Wider, 1834)				
09.04.2014	Female	Morfa Borth	SN 61036 90871	Tony Hunter
09.04.2014	Both	Morfa Borth	SN 61301 91113	Chris Felton
Araneae: Linyphiidae: <i>Hylyphantes graminicola</i> (Sundevall, 1830)				
10.04.2014	Male	Morfa Borth	SN 60622 93413	Tony Hunter
Araneae: Linyphiidae: <i>Jacksonella falconeri</i> (Jackson, 1908)				
04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
Araneae: Linyphiidae: <i>Lepthyphantes ericaeus</i> (Blackwall, 1853)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
Araneae: Linyphiidae: <i>Leptyphantes flavipes</i> (Blackwall, 1854)				
03.10.2013	Male	Ynyslas	SN 60681 93601	Tony Hunter
Araneae: Linyphiidae: <i>Leptyphantes mengei</i> Kulcznski, 1887				
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Female	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Female	Ynyslas	SN 61254 93821	Steve Judd
Araneae: Linyphiidae: <i>Lepthyphantes tenuis</i> (Blackwall, 1852)				
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
04.10.2013	Both	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Both	Ynyslas	SN 61018 94041	Chris Felton
09.04.2014	Not recorded	Morfa Borth	SN 61301 91113	Chris Felton
10.04.2014	Female	Ynyslas	SN 61085 93913	Tony Hunter
10.04.2014	Female	Ynyslas	SN 61254 93821	Steve Judd
Araneae: Linyphiidae: <i>Leptyphantes zimmermanni</i> Bertkau, 1890				
03.10.2013	Female	Ynyslas	SN 60608 93474	Tony Hunter
Araneae: Linyphiidae: <i>Lophomma punctatum</i> (Blackwall, 1841)				
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Linyphiidae: <i>Mecopisthes peusi</i> Wunderlich, 1972 Nb				
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
Araneae: Linyphiidae: <i>Micrargus herbigradus s.l.</i> (Blackwall, 1854)				
09.04.2014	Female	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Female	Morfa Borth	SN 61036 90871	Tony Hunter
Araneae: Linyphiidae: <i>Microlinyphia pusilla</i> (Sundevall, 1830)				

09.04.2014	Imm	Ynyslas	SN 61018 94041	Chris Felton
Araneae: Linyphiidae: <i>Neriene clathrata</i> (Sundevall, 1830)				
09.04.2014	Male	Ynyslas	SN 61018 94041	Chris Felton
Araneae: Linyphiidae: <i>Oedothorax fuscus</i> (Blackwall, 1834)				
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Female	Morfa Borth	SN 61036 90871	Tony Hunter
10.04.2014	Male	Morfa Borth	SN 61439 90978	Tony Hunter
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Linyphiidae: <i>Oedothorax gibbosus</i> (Blackwall, 1841)				
09.04.2014	Male	Morfa Borth	SN 61301 91113	Chris Felton
Araneae: Linyphiidae: <i>Oedothorax retusus</i> (Westring, 1851)				
09.04.2014	Female	Morfa Borth	SN 61135 91057	Steve Judd
Araneae: Linyphiidae: <i>Peponocranium ludicrum</i> (O.P.-Cambridge, 1861)				
10.04.2014	Male	Dyfi NNR	Not localised	Steve Judd
Araneae: Linyphiidae: <i>Pholcomma gibbum</i> (Westring, 1851)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
Araneae: Linyphiidae: <i>Pocadicnemis pumila</i> s. l. (Blackwall, 1841)				
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
Araneae: Linyphiidae: <i>Porrhomma oblitum</i> (O.P.-Cambridge, 1871) Nb				
10.04.2014	Female	Ynyslas	SN 61085 93913	Tony Hunter
Araneae: Linyphiidae: <i>Porrhomma pygmaeum</i> (Blackwall, 1834)				
10.10.2014	Both	Ynyslas	SN 60622 93413	Tony Hunter
Araneae: Linyphiidae: <i>Savignia frontata</i> (Blackwall, 1833)				
09.04.2014	Female	Ynyslas	SN 60549 94030	Tony Hunter
Araneae: Linyphiidae: <i>Stemonyphantes lineatus</i> (Linnaeus, 1758)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Male	Ynyslas	SN 60608 93474	Tony Hunter
03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
09.04.2014	Male	Ynyslas	SN 61018 94041	Steve Judd
10.04.2014	Both	Ynyslas	SN 61254 93821	Steve Judd
Araneae: Linyphiidae: <i>Styloctetor romanus</i> (O.P.-Cambridge, 1872) Nb				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
Araneae: Linyphiidae: <i>Tallusia experta</i> (O.P.-Cambridge, 1871)				
09.04.2014	Female	Morfa Borth	SN 61036 90871	Tony Hunter
10.10.2014	Female	Morfa Borth	SN 61036 90871	Tony Hunter
10.04.2014	Both	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Linyphiidae: <i>Tapinopa longidens</i> (Wider, 1834)				
10.10.2014	Female	Ynyslas	SN 60622 93413	Tony Hunter
Araneae: Linyphiidae: <i>Troxochrus scabriculus</i> (Westring, 1851)				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Female	Ynyslas	SN 60549 94030	Tony Hunter
10.04.2014	Male	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
Araneae: Linyphiidae: <i>Walkenaeria acuminata</i> Blackwall, 1833				
03.10.2013	Male	Ynyslas	SN 60681 93601	Tony Hunter
Araneae: Linyphiidae: <i>Walkenaeria alticeps</i> (Denis, 1952)				
03.10.2013	Male	Ynyslas	SN 60586 93322	Tony Hunter

04.10.2013	Female	Ynyslas	SN 60608 93474	Tony Hunter
04.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
Araneae: Linyphiidae: <i>Walckenaeria antica</i> (Wider, 1834)				
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
Araneae: Linyphiidae: <i>Walckenaeria clavicornis</i> (Emerton, 1882)				
10.04.2014	Male	Dyfi NNR	Not localised	Steve Judd
Araneae: Linyphiidae: <i>Walckenaeria obtusa</i> Blackwall, 1836				
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
Araneae: Linyphiidae: <i>Walckenaeria unicornis</i> O.P.-Cambridge, 1861				
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
03.10.2013	Both	Ynyslas	SN 60586 93322	Tony Hunter
09.04.2014	Male	Morfa Borth	SN 61036 90871	Tony Hunter
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Male	Ynyslas	SN 60888 93788	Steve Judd
10.04.2014	Both	Ynyslas	SN 61085 93913	Tony Hunter
Araneae: Tetragnathidae: <i>Metellina merianae</i> (Scopoli, 1763)				
03.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
Araneae: Tetragnathidae: <i>Metellina mingei</i> (Blackwall, 1869)				
09.04.2014	Female	Morfa Borth	SN 61301 91113	Chris Felton
Araneae: Tetragnathidae: <i>Pachynatha clerckii</i> Sundevall, 1823				
03.10.2013	Male	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Both	Ynyslas	SN 61085 93913	Tony Hunter
Araneae: Tetragnathidae: <i>Pachygnatha degeeri</i> Sundevall, 1830				
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Ynyslas	SN 60586 93322	Tony Hunter
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Both	Ynyslas	SN 60888 93788	Steve Judd
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
10.04.2014	Female	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Both	Dyfi NNR	Not localised	Steve Judd
Araneae: Tetragnathidae: <i>Tetragnatha extensa</i> (Linnaeus, 1758)				
10.04.2014	Imm	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Araneidae: <i>Araneus diadematus</i> Clerck, 1757				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Dyfi NNR	Not localised	Tom Maudsley
Araneae: Araneidae: <i>Araneus quadratus</i> Clerck, 1757				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
Araneae: Araneidae: <i>Agalenatea redii</i> (Scopoli, 1763)				
03.10.2013	Both	Dyfi NNR	Not localised	Tom Maudsley
10.10.2014	Imm	Ynyslas	SN 60622 93413	Tony Hunter
Araneae: Araneidae: <i>Hypsosinga pygmaea</i> (Sundevall, 1831)				
03.10.2013	Imm	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Dyfi NNR	Not localised	Tom Maudsley
Araneae: Araneidae: <i>Larinioides cornutus</i> (Clerck, 1757)				
10.04.2014	Female	Morfa Borth	SN 61106 91042	Steve Judd
Araneae: Lycosidae: <i>Alopecosa pulverulenta</i> (Clerck, 1757)				
03.10.2013	Imm	Ynyslas	SN 60586 93322	Tony Hunter
04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd

10.04.2014	Both	Ynyslas	SN 61085 93913	Tony Hunter
10.04.2014	Both	Dyfi NNR	Not localised	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
10.10.2014	Imm	Ynyslas	SN 60622 93413	Tony Hunter

Araneae: Lycosidae: *Pardosa nigriceps* (Thorell, 1856)

03.10.2013	Imm	Ynyslas	SN 60586 93322	Tony Hunter
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Both	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Male	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Lycosidae: *Pardosa pullata* (Clerck, 1757)

04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Male	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd
09.04.2014	Imm	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Imm	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Lycosidae: *Pirata piraticus* (Clerck, 1757)

09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd
09.04.2014	Imm	Morfa Borth	SN 61301 91113	Chris Felton

Araneae: Lycosidae: *Trochosa terricola* Thorell, 1856

03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Female	Morfa Borth	SN 60590 93275	Tony Hunter
03.10.2013	Male	Ynyslas	SN 60732 94462	Steve Judd
04.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Both	Ynyslas	SN 60888 93788	Steve Judd
10.04.2014	Both	Dyfi NNR	Not localised	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Lycosidae: *Xerolycosa miniata* (C.L. Koch, 1834)

04.10.2013	Imm	Ynyslas	SN 60888 93788	Chris Felton
03.10.2013	Imm	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Male	Morfa Borth	SN 60622 93413	Chris Felton

Araneae: Pisauridae: *Pisaura mirabilis* (Clerck, 1757)

04.10.2013	Imm	Ynyslas	SN 60732 94462	Steve Judd
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Araneae: Hahniidae: *Antistea elegans* (Blackwall, 1841)

09.04.2014	Imm	Morfa Borth	SN 61301 91113	Chris Felton
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Araneae: Hahniidae: *Hahnina nava* (Blackwall, 1841)

03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
04.10.2013	Both	Dyfi NNR	Not localised	Chris Felton
10.10.2014	Imm	Ynyslas	SN 60622 93413	Tony Hunter

Araneae: Liocranidae: *Agroeca dentigera* Kulczynski, 1913

10.10.2014	Female	Ynyslas	SN 60646 93403	Tony Hunter
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Araneae: Liocranidae: *Agroeca proxima* (O.P-Cambridge, 1871)

03.10.2013	Female(4)	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female(5)	Morfa Borth	SN 60590 93275	Tony Hunter
09.10.2014	Female(2)	Morfa Borth	SN 60622 93413	Tony Hunter
10.10.2014	Female(3)	Ynyslas	SN 60622 93413	Tony Hunter
10.10.2014	Male	Ynyslas	SN 60622 93413	Tony Hunter

Araneae: Liocranidae: *Agroeca* sp.

03.10.2013	Imm(3)	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Imm(2)	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Imm	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Clubionidae: *Cheirecanthium virescens* (Sundevall, 1833)

04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
10.04.2014	Male	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Clubionidae: *Clubiona neglecta* O.P-Cambridge, 1862

04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd
09.04.2014	Imm	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd

Araneae: Clubionidae: *Clubiona phragmitis* (C.L. Koch, 1843)

09.04.2014	Imm	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Female	Morfa Borth	SN 61301 91113	Chris Felton

Araneae: Clubionidae: *Clubiona reclusa* O.P-Cambridge, 1863

03.10.2013	Female	Morfa Borth	SN 60590 93275	Tony Hunter
04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd
09.04.2014	Imm	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Imm	Ynyslas	SN 61018 94041	Chris Felton
09.04.2014	Imm	Morfa Borth	SN 61301 91113	Chris Felton
10.04.2014	Imm	Ynyslas	SN 60622 93413	Chris Felton
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Imm	Dyfi NNR	Not localised	Steve Judd

Araneae: Clubionidae: *Clubiona stagnatilis* Kulczyński, 1897

09.04.2014	Male	Morfa Borth	SN 61036 90871	Tony Hunter
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Araneae: Clubionidae: *Clubiona subtilis* L. Koch, 1876

03.10.2013	Both	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Both	Ynyslas	SN 6045 9359	Richard Gallon
03.10.2013	Both	Morfa Borth	SN 60590 93275	Tony Hunter
04.10.2013	Both	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Female	Ynyslas	SN 61018 94041	Chris Felton
09.04.2014	Female	Morfa Borth	SN 61301 91113	Chris Felton

Araneae: Clubionidae: *Clubiona terrestris* Westring, 1851

10.04.2014	Both	Ynyslas	SN 61085 93913	Tony Hunter
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Araneae: Gnaphosidae: *Haplodrassus signifer* (C.L. Koch, 1839)

04.10.2013	Imm	Dyfi NNR	Not localised	Chris Felton
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Araneae: Gnaphosidae: *Micaria pulicaria* (Sundevall, 1831)

03.10.2013	Male	Ynyslas	SN 6059 9331	Richard Loxton
10.04.2014	Imm	Ynyslas	Not localised	Chris Felton
09.10.2014	Male	Ynyslas	SN 60622 93413	Tony Hunter

Araneae: Gnaphosidae: *Zelotes electus* (C.L. Koch, 1839)

04.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
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Araneae: Zoridae: *Zora spinimana* (Sundevall, 1833)

03.10.2013	Male	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Male	Morfa Borth	SN 60590 93275	Tony Hunter
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Female	Ynyslas	SN 61018 94041	Chris Felton
09.04.2014	Male	Morfa Borth	SN 61301 91113	Chris Felton
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd

Araneae: Philodromidae: *Philodromus fallax* Sundevall, 1833 **Nb**

09.04.2014	Female	Ynyslas	SN 60548 93711	Tony Hunter
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Araneae: Philodromidae: *Thanatus striatus* C.L. Koch, 1845

03.10.2013	Imm	Ynyslas	SN 60732 94462	Steve Judd
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Araneae: Philodromidae: *Tibellus oblongus* (Walckenaer, 1802)

03.10.2013	Imm	Ynyslas	Not localised	Tom Maudsley
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Araneae: Thomisidae: *Ozyptila atomaria* (Panzer, 1801)

03.10.2013	Male	Ynyslas	SN 60681 93601	Tony Hunter
09.10.2014	Both	Morfa Borth	SN 60590 93275	Tony Hunter
10.04.2014	Male	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Imm	Morfa Borth	SN 60622 93413	Chris Felton

Araneae: Thomisidae: *Ozyptila trux* (Blackwall, 1846)

03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Ynyslas	SN 60586 93322	Tony Hunter
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
09.10.2014	Male	Ynyslas	SN 60622 93413	Tony Hunter

Araneae: Thomisidae: *Xysticus cristatus* (Clerck, 1757)

03.10.2013	Imm	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Both	Ynyslas	SN 60732 94462	Steve Judd
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Imm	Ynyslas	SN 60888 93788	Steve Judd
09.10.2014	Female	Ynyslas	SN 60622 93413	Tony Hunter
10.04.2014	Male	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Thomisidae: *Xysticus erraticus* (Blackwall, 1834)

03.10.2013	Both	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Female	Ynyslas	SN 61085 93913	Tony Hunter

Araneae: Salticidae: *Euophrys frontalis* (Walckenaer, 1902)

03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Female	Morfa Borth	SN 60590 93275	Tony Hunter
03.10.2013	Female	Ynyslas	SN 60732 94462	Steve Judd
03.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton

Araneae: Salticidae: *Heliophanus flavipes* (Hahn, 1832)

03.10.2013	Female	Dyfi NNR	Not localised	Tom Maudsley
09.04.2014	Female	Ynyslas	SN 61018 94041	Chris Felton

Araneae: Salticidae: *Marpissa nivoyi* (Lucas, 1846) **Nb**

03.10.2013	Imm	Ynyslas	SN 6059 9331	Richard Loxton
03.10.2013	Imm	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Male	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton

10.2. Appendix B: Records of invertebrates other than spiders from Dyfi NNR made during survey work in 2013 and 2014. New records for the NNR or subsites (Morfa Borth, Cors Fochno and Ynyslas Dunes) are shown with an asterisk *. Note that species names preceded with ? require confirmation.

Geophilomorpha: Geophilidae: *Geophilus truncorum* Bergsoë & Meinert, 1886

09.04.2014	Not sexed	Morfa Borth	SN 61301 91113	Chris Felton
10.04.2014	Female	Morfa Borth	SN 61439 90978	Chris Felton
10.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton

Lithobiomorpha: Lithobiidae: *Lithobius forficatus* (Linnaeus, 1758)

09.04.2014	Male	Morfa Borth	SN 61301 91113	Chris Felton
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***Lithobiomorpha: Lithobiidae: *Lithobius borealis* Meinert, 1868 ***

09.04.2014	Male	Ynyslas	SN 60549 94030	Tony Hunter
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Lithobiomorpha: Lithobiidae: *Lithobius melanops* Newport, 1845

03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
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Lithobiomorpha: Lithobiidae: *Lithobius microps* Meinert, 1868

03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Not sexed	Ynyslas	SN 60590 93275	Tony Hunter
09.04.2014	Male	Ynyslas	SN 61018 94041	Tony Hunter

Opiliones: Phalangiidae: *Leiobunum blackwalli* Meade, 1861

03.10.2013	Male	Ynyslas	SN 6059 9331	Richard Gallon
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Not sexed	Ynyslas	SN 61018 94041	Chris Felton
10.04.2014	Not sexed	Morfa Borth	SN 60622 93413	Chris Felton

Opiliones: Phalangiidae: *Oligolophus hansenii* (Kraepelin, 1896)

03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
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Opiliones: Phalangiidae: *Opilio saxatilis* C. L. Koch, 1839

03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
03.10.2013	Male	Ynyslas	SN 60732 94462	Steve Judd
04.10.2013	Female	Dyfi NNR	Not localised	Chris Felton

Opiliones: Phalangiidae: *Paroligolophus agrestis* (Meade, 1855)

03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Gallon
03.10.2013	Both	Ynyslas	SN 60732 94462	Steve Judd
10.04.2014	Female	Ynyslas	SN 60859 93722	Steve Judd

Opiliones: Phalangiidae: *Phalangium opilio* Linnaeus, 1758

03.10.2013	Not sexed	Dyfi NNR	Not localised	Tom Maudsley
10.04.2014	Female	Ynyslas	SN 60859 93722	Steve Judd

Opiliones: Phalangiidae: *Rileana triangularis* (Herbst, 1799)

03.10.2013	Male	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Not sexed	Morfa Borth	SN 61135 91057	Steve Judd
09.04.2014	Not sexed	Ynyslas	SN 60888 93788	Steve Judd
10.04.2014	Imm	Ynyslas	SN 61254 93821	Steve Judd
10.04.2014	Both	Dyfi NNR	Not localised	Steve Judd

Opiliones: Nemastomatidae: *Mitostoma chrysomelas* (Hermann, 1804)

03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Gallon
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Opiliones: Nemastomatidae: *Nemastoma bimaculatum* (Fabricius, 1775)

03.10.2013	Not sexed	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Not sexed	Morfa Borth	SN 61018 94041	Chris Felton
10.04.2014	Not sexed	Ynyslas	SN 60888 93788	Steve Judd
10.04.2014	Not sexed	Ynyslas	SN 61254 93821	Steve Judd

Coleoptera: Carabidae: *Badister bullatus* (Schrank, 1798)

03.10.2013	Not sexed	Dyfi NNR	Not localised	Chris Felton
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Coleoptera: Carabidae: <i>Broscus cephalotes</i> (Linnaeus, 1758)				
03.10.2013	Larvae	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Carabidae: <i>Calathus melanocephalus</i> (Linnaeus, 1758)				
03.10.2013	Not sexed	Dyfi NNR	Not localised	Chris Felton
Coleoptera: Carabidae: <i>Philorhizus melanocephalus</i> Dejean, 1825				
03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Chrysomelidae: <i>Cassida rubiginosa</i> Muller, 1776				
03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Curculionidae: <i>Charagmus griseus</i> (Fabricius, 1775)				
03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Staphyliniidae: <i>Stenus subaenus</i> Erichson, 1840				
03.10.2013	Female	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Staphyliniidae: <i>Tachyporus chrysomelinus</i> (Linnaeus, 1758)				
03.10.2013	Not sexed	Ynyslas	SN 6059 9331	Richard Loxton
Coleoptera: Staphyliniidae: <i>Tasgius ater</i> (Gravenhorst, 1802)				
10.10.2014	Both	Ynyslas	SN 60586 93322	Tony Hunter
Hemiptera: Miridae: <i>Stenodema calcarata</i> (Fallén, 1807)				
09.04.2014	Not sexed	Morfa Borth	SN 61301 91113	Chris Felton
Hymenoptera: Dryinidae: <i>Gonatopus striatus</i> Kieffer, 1905				
09.04.2014	Female	Ynyslas	SN 61018 94041	Tony Hunter
Hymenoptera: Formicidae: <i>Lasius brunneus</i> (Latreille, 1798)				
03.10.2013	Worker	Ynyslas	SN 60732 94462	Steve Judd
Hymenoptera: Formicidae: <i>Lasius flavus</i> (Fabricius, 1782)				
09.04.2014	Worker	Morfa Borth	SN 61301 91113	Chris Felton
Hymenoptera: Formicidae: <i>Lasius niger</i> (Linnaeus, 1758)				
09.04.2014	Worker	Morfa Borth	SN 61301 91113	Chris Felton
Hymenoptera: Formicidae: <i>Myrmica ruginodis</i> Nylander, 1846				
09.04.2014	Worker	Morfa Borth	SN 61301 91113	Chris Felton
Hymenoptera: Ichneumonidae: <i>Dicaelotus ?ruficoxatus</i> (Gravenhorst, 1829)				
10.10.2014	Female	Ynyslas	SN 60490 93811	Chris Felton
Hymenoptera: Ichneumonidae: <i>Ichneumon albiger</i> Wesmael, 1845				
04.10.2014	Female	Ynyslas	SN 60567 93480	Tony Hunter
Hymenoptera: Ichneumonidae: <i>Ichneumon oblongus</i> Schrank, 1802				
10.04.2014	Female	Ynyslas	Not localised	Steve Judd
Hymenoptera: Ichneumonidae: <i>Pimpla rufipes</i> (Miller, 1759)				
10.10.2014	Female	Ynyslas	SN 60490 93811	Chris Felton
Hymenoptera: Ichneumonidae: <i>Schizopyga circulator</i> (Panzer 1800)				
10.10.2014	Female	Ynyslas	SN 61072 93898	Tony Hunter
Isopoda: Oniscidae: <i>Oniscus asellus</i> Linnaeus, 1758				
09.04.2014	Not sexed	Morfa Borth	SN 61301 91113	Chris Felton
Isopoda: Philoscidae: <i>Philoscia muscorum</i> (Scopoli, 1763)				
09.04.2014	Not sexed	Morfa Borth	SN 61301 91113	Chris Felton
Isopoda: Trichoniscidae: <i>Trichoniscus pusillus</i> (Brandt, 1833)				
09.04.2014	Not sexed	Morfa Borth	SN 61301 91113	Chris Felton
Julida: Julidae: <i>Cylindroiulus latestriatus</i> (Curtis, 1845)				
10.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton
Julida: Julidae: <i>Julus scandinavus</i> Latzel, 1884				

03.10.2013	Male	Ynyslas	SN 60590 93275	Tony Hunter
09.04.2014	Not sexed	Morfa Borth	SN 61439 90978	Chris Felton
09.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
10.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton
Julida: Julidae: <i>Ommatoiulus sabulosus</i> (Linnaeus, 1758)				
03.10.2013	Not sexed	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton
Julida: Julidae: <i>Ophiulus pilosus</i> (Newport, 1842)				
09.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton
Julida: Julidae: <i>Proteroiulus fuscus</i> (Am Stein, 1857)				
10.04.2014	Not sexed	Ynyslas	SN 60622 93413	Chris Felton
Julida: Julidae: <i>Tachypodoiulus niger</i> (Leach, 1815)				
03.10.2013	Not sexed	Dyfi NNR	Not localised	Chris Felton
09.04.2014	Male	Morfa Borth	SN 61301 9111	Chris Felton
09.04.2014	Female	Ynyslas	SN 60622 93413	Chris Felton
Neuroptera: Chrysopidae: <i>Chrysotropia ciliata</i> (Wesmael, 1841)				
03.10.2013	Female	Ynyslas	SN 60586 93322	Tony Hunter
Neuroptera: Hemerobiidae: <i>Micromus angulatus</i> (Stephens, 1836)				
03.10.2013	Female	Ynyslas	SN 60586 93322	Tony Hunter
Polydesmida: Polydesmidae: <i>Polydesmus angustus</i> Latzel, 1884				
09.04.2014	Male	Ynyslas	SN 61018 94041	Tony Hunter
Pulmonata: Lauriidae: <i>Lauria cylindracea</i> (Da Costa, 1778)				
03.10.2013	NA	Dyfi NNR	Not localised	Chris Felton
10.04.2014	NA	Ynyslas	SN 60622 93413	Chris Felton
Pulmonata: Cochlicopidae: <i>Cochlicopa cf. lubrica</i> (O. F. Müller, 1774)				
03.10.2013	NA	Dyfi NNR	Not localised	Chris Felton
09.04.2014	NA	Dyfi NNR	SN 60622 93413	Chris Felton
Squamata: Anguinae: <i>Anguis fragilis</i> Linnaeus, 1758				
10.04.2014	Not sexed	Morfa Borth	SN 61015 91078	Tony Hunter
Squamata: Colubridae: <i>Natrix natrix</i> (Linnaeus, 1758)				
10.04.2014	Not sexed	Morfa Borth	SN 60974 91061	Tony Hunter

10.3. Data Archive Appendix

The data archive contains:

- [A] The final report in Microsoft Word and Adobe PDF formats.
- [B] Species records, which are held on the NRW Recorder 6 database.

Metadata for this project is publicly accessible through Natural Resources Wales' Library Catalogue <http://libcat.naturalresources.wales> or <http://catllyfr.cyfoethnaturiol.cymru> by searching 'Dataset Titles'. The metadata is held as record no 115894.



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