











**CYNLLUN GWEITHREDU BIOAMRYWIAETH LLEOL SIR GAERFYRDDIN – ANIFEILIAID DI-ASGWRN-CEFN
CARMARTHENSHIRE S42/BAP – INVERTEBRATES**

OVERALL OBJECTIVES

- To identify new sites for survey in the county.
- Encourage volunteer interest in the range of invertebrates in the county.
- To use key species as a focus for public/school engagement.
- To raise awareness of these species and the issues affecting them.

SPECIES	PHOTO	HABITAT/CARMS SITES	ISSUES/ACTION REQUIRED
<p><i>Asilus crabroniformis</i> Hornet robberfly Pryf llofrudd</p> <p>© Sam Bosanquet</p>	 <p>Length: 25 mm</p>	<ul style="list-style-type: none"> • Lowland Grassland and Heathland • Much declined species of unimproved cattle or horse-grazed pastures and now very rare in Carmarthenshire. • Last recorded in 1997 but may survive at a few of the small numbers unimproved pastures in the county. • It flies in late summer (July-early Sept) 	<ul style="list-style-type: none"> • Apart from the loss of habitat, it has been seriously affected by the use of ivermectins (and other animal medications) to control bot fly, etc. in horses and other internal parasites in cattle. These chemicals are excreted in the dung and kill off the larvae of dung beetles on which <i>Asilus</i> larvae are predatory. • Specialist survey is needed to check formerly known sites and other potential new sites. • Potential for public participation survey
<p><i>Bembidion quadripustulatum</i> Scarce Four-dot Pin-palp Chwilen ddaear</p>		<ul style="list-style-type: none"> • Found on wetland margins, including bare sand, mud or chalky-clay margins, well-vegetated fen margins, and bare silt lagoon margins. • Found on the banks of the Tywi near Llandeilo in 1996. 	<ul style="list-style-type: none"> • Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Bidessus minutissimus</i> Minutest Diving Beetle Chwilen blymio</p> <p>© The Trustees of the Natural History Museum, London</p>	 <p>Length: 1.5 mm</p>	<ul style="list-style-type: none"> • Lower reaches of rivers in association with sand and fine gravel banks. • 1950 record at Llangadog Bridge, Afon Tywi, Llangadog. 	<ul style="list-style-type: none"> • Specialist survey is needed to check formerly known sites and other potential new sites • Best conserved by maintaining suitable habitat as part of the Afon Tywi SSSI/SAC.
<p><i>Bombus humilis</i> Brown-banded Carder-bee Cardwenynen Lwydfrown</p> <p>© BCT</p>		<ul style="list-style-type: none"> • Lowland Grassland and Heathland/Coastal • Records from the Carmarthenshire coast – Pembrey Burrows and WWT, Penclacwydd. Most recent was at Kidwelly Quay/Canal in 2013. 	<ul style="list-style-type: none"> • The key factor in our bumblebee declines has been loss of flower-rich habitats, particularly wildflower meadows and pastures. There are a number of other issues which are affecting bumblebees (e.g. pesticides, disease, viruses, inbreeding, etc.) which compound the problem. • Advice for managing habitats for bumble bees can be found at: http://bumblebeeconservation.org/get-involved/managing-your-land/ • Specialist survey is needed to check formerly known sites and other potential new sites.
<p><i>Bombus ruderarius</i> Red-shanked Carder-bee Cardwenynen Goesgoch</p> <p>© BCT</p>		<ul style="list-style-type: none"> • 1970s records from Rhandirmwyn area and another from 1993 from Pembrey Burrows. 	<ul style="list-style-type: none"> • The key factor in our bumblebee declines has been loss of flower-rich habitats, particularly wildflower meadows and pastures. There are a number of other issues which are affecting bumblebees (e.g. pesticides, disease, viruses, inbreeding, etc.) which compound the problem. • Advice for managing habitats for bumble bees can be found at: http://bumblebeeconservation.org/get-involved/managing-your-land/

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<p>Ruby-tailed wasp <i>Chrysis fulgida</i> <i>Cacynen gynffon ruddem</i></p>		<p>This was recorded for the first time in Wales from Pembrey bombing range in 2005 by Liverpool Museum (during a CCW-funded survey of Welsh dune aculeates). It was recorded again in Pembrey Forest in 2008, 2012 and 2013. There's also a single record from Whiteford Burrows in 2007. It is a qualifying feature of Pembrey Coast SSSI and is an important feature of the forest.</p>	
<p><i>Cylindera germanica</i> Cliff tiger beetle</p> <p>© Roger Key</p>	 <p>Length: 8–11 mm</p>	<ul style="list-style-type: none"> The species depends on slumping to expose new areas of bare cliff/soil and little of that habitat is found in Carmarthenshire. 1954 record from Craig Du–Wharley Point cliffs west of Llansteffan. 	<ul style="list-style-type: none"> Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Dipoena inornata</i> Silky Gallows-spider Copyn/corryn coes gribog</p>		<ul style="list-style-type: none"> Coastal – a species of dry grassland, shingle and coast and, like most spiders under-recorded and its true status is unknown. 1991 record from the Carmarthenshire coast at Dolwen Point. 	<ul style="list-style-type: none"> Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Hydroporus rufifrons</i> Oxbow Diving Beetle Chwilen blymio</p> <p>© The Trustees of the Natural History Museum, London</p>	 <p>Length: 4–5 mm</p>	<ul style="list-style-type: none"> Wetlands/ Freshwater – shallow and temporary waters in old oxbow systems, unimproved pastures, marshes fens and dune systems. 1959 record from castle moat, Kidwelly. The site was checked in 1988 and none were found. 	<ul style="list-style-type: none"> Adult only active in the autumn and spring so may be overlooked in surveys. Populations are highly vulnerable to drainage and infilling of pools and nutrient enrichment from agricultural runoff. Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Lipsothrix nervosa</i> Southern Yellow Splinter Pryf teiliwr gieuog</p>		<ul style="list-style-type: none"> Wetlands/woodlands – wet rotting twigs and branches in seepages in deciduous woodlands. Thought to need continuous shade and constant supply of rotting timber. 1996 record from Dinefwr Deer Park 	<ul style="list-style-type: none"> Highly vulnerable due to its specialist habitat. Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Margaritifera margaritifera</i> Freshwater pearl mussel Misglen berlog yr Afon</p> <p>©Pearlsinperil</p>		<ul style="list-style-type: none"> Freshwater Most recent records are from the River Tywi but it is now thought to be extinct. Previously also recorded in the Taf. 	<ul style="list-style-type: none"> Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Nigrobaetis niger</i> Iron Blue Mayfly Gwybedyn Mai haearnlas</p>		<ul style="list-style-type: none"> Wetlands/ Freshwater Record from the River Tywi 	<ul style="list-style-type: none"> Threats are: changes to the structure and management of marginal and riparian vegetation; low flows caused by abstraction; high levels of suspended silt; unsympathetic dredging Specialist survey is needed to

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<p><i>Panagaeus cruxmajor</i> Crucifix ground beetle Chwilen ddaear</p> <p>© Roger Key</p>	 <p>Length: 8–10 mm</p>	<ul style="list-style-type: none"> • Coastal (Carms) – recorded from dune slacks. In S and E England it used to occur locally in marsh and fen habitat. • Recorded at Tywyn Point in April 1985 having been previously thought to be extinct in the British Isles (with the last record being at Wicken Fen). It has been seen since during surveys from Tywyn Burrows from 1985 to 1998. The new early-successional slack where it occurred was lost by erosion. It may still occur. • It has since been found at a tiny handful of other sites in Britain and in Northern Ireland; it may be associated with certain species of chrysomelid beetles (<i>Cassida</i> spp?) in wet situations. It has been recorded on north Gower (Llanrhidian Marsh) in 1915 and it may very conceivably occur at MOD Pendine, where there is a greater extent of wet fen habitat. 	<p>check formerly known sites and other potential new sites</p> <ul style="list-style-type: none"> • Access difficulties has meant that casual recording has ceased at Tywyn Point. • Loss of dune slack habitat • Specialist survey is needed to check formerly known sites and other potential new sites.
<p><i>Spiriverpa lunulata</i> A fly</p> <p>© Roger Key</p>	 <p>Length: 10-11 mm</p>	<ul style="list-style-type: none"> • Freshwater – lives on depositional stretches – associated with sandy river banks. • Recorded new to Carmarthenshire on the Llanwrda shingles in the late 1980s; here it is found on sandy areas within the shingle habitat and it is just one species within an important shingle assemblage. The site is part of the Afon Tywi SSSI/SAC and has been subject to monitoring. 	<ul style="list-style-type: none"> • Specialist survey is needed to check formerly known sites and other potential new sites
<p><i>Thinobius newberyi</i> Newbery's Rove Beetle Chwilen grwydr</p>		<ul style="list-style-type: none"> • Freshwater – subterranean, species living deep in stream side gravel. Has been found under stones and amongst fine grass roots on stream and river banks. • Has been found on the banks of the River Tywi. Probably under recorded due to its small size and elusiveness. 	<ul style="list-style-type: none"> • Its habitat is at risk from river management both directly (sand and gravel removal) or by actions that affect fluvial processes. • Specialist survey survey is needed to check formerly known sites and other potential new sites
<p><i>Vertigo angustior</i> Narrow-mouthed Whorl snail Malwen droellog geg gul</p> <p>© John Harper</p>	 <p>From left to right <i>Vertigo angustior</i> and <i>V. substriata</i></p> <p>NB. Note that the <i>V. angustior</i> shell twists to the left (sinistral) whereas <i>V. substriata</i> are 'right-handed' (dextral).</p> <p>Both <i>angustior</i> and <i>substriata</i> are ribbed but obviously differ in their 'whorling'.</p> <p>The shells are about 1.5mm long</p>	<ul style="list-style-type: none"> • The shell is pale yellow-brown in colour with many thin growth ridges and five whorls. The mouth of the shell has five to six teeth and is thickened. The shell is sinistral, which means the body whorls are coiled in a clockwise direction with the mouth opening on the left-hand side of the body. • Largest known population in Wales found in Whiteford Burrow NNR(CCS). In Carmarthenshire it has been found in Pembrey Forest and on RAF Pembrey. It normally occupies the interface between sand dune and upper saltmarsh habitats as at Whitford Burrows. The site at the rear of Pembrey Forest where it has been found was, historically, an arm of the sea, i.e. the saltmarsh–sand dune interface favoured by this species. 	<ul style="list-style-type: none"> • Vulnerable to changes in hydrological conditions, reduced grazing pressure and physical disturbance. • Specialist survey is needed to check other potential new sites

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	and 1mm wide	<ul style="list-style-type: none">• Such an easily overlooked tiny snail may still be present at the latter Carmarthenshire sites.	