A survey of key insect species on selected SSSIs in South Wales in 2025

NRW Evidence Report No. 969

Author Names: Liam T. Olds & Christian M. Owen

Author Affiliation: Colliery Spoil Biodiversity Initiative

The parasitic wasp *Chalcis sispes*

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Cynhaliwyd arolygon wedi'u targedu o anifeiliaid di-asgwrn-cefn yn ystod tymor gwaith maes 2025 ar draws amryw o Safleoedd o Ddiddordeb Gwyddonol Arbennig (SoDdGA) yn ne Cymru. Bwriad yr arolygon hyn oedd darparu cofnodion cyfoes ar gyfer 10 rhywogaeth allweddol o anifeiliaid di-asgwrn-cefn sy'n nodweddion cymwys annibynnol o SoDdGA, ac yr oedd angen gwybodaeth gyfoes am eu gwasgariad a'u statws. Ym mhob safle, cofnodwyd presenoldeb neu absenoldeb rhywogaethau targed, tynnwyd ffotograffau o gynefinoedd cynrychioliadol, a nodwyd unrhyw fygythiadau amlwg i boblogaethau neu gyflwr cynefinoedd. Yn ystod y gwaith maes, defnyddiwyd ystod o dechnegau entomolegol safonol, gan gynnwys rhwydi ysgubo, chwilio gweledol, troi cerrig, samplu sugno a chwiliadau wedi'u targedu o blanhigion cynhaliol a microgynefinoedd.

Cadarnhaodd yr arolygon fod presenoldeb parhaus o'r rhywogaethau canlynol:

- y wenynen barasitig *Chalcis sispes* ar Dwyni Whiteford, gan gynnwys o fewn cors lled hallt a ffurfiwyd yn ddiweddar yn ne-orllewin y safle;
- y pryf hadau *Macroplax preyssleri* yng Nghlogwyni Horton, Clogwyn Owrtyn a Thrwyn Porth Eynon;
- Chwilen llwch y môr *Ochthebius poweri* yng Ngwyndynnydd Aberddawan, Clogwyni Ffontygari a Chwm Col-huw;
- Y tarianbryf *Odontoscelis fuliginosa* yn Nhwyni Aberllydan (un oedolyn);
- y chwilen *Plateumaris bracata* ar Bant-y-Sais; a
- *Tapinotus sellatus* yng Nghamlas Glan-y-wern ar Gors Crymlyn.

Yn y rhan fwyaf o'r achosion, cofnodwyd y rhywogaethau hyn mewn un lleoliad neu leoliadau cyfyngedig, sy'n dangos, er bod poblogaethau'n parhau yno, bod eu gwasgariadau'n lleol iawn, ac yn aml yn ddibynnol ar amodau microgynefin penodol. Ni chanfuwyd *Chalcis sispes* yn Allteuryn (Gwlyptiroedd Casnewydd), ni chofnodwyd *Macroplax preyssleri* o Slade i Drwyn Oxwich, ac ni chanfuwyd *Plateumaris bracata* ar Gors Crymlyn, Allteuryn (Gwlyptiroedd Casnewydd) a ffos ddraenio Percoed (o fewn SoDdGA Llansanffraid Gwynllŵg), a *Tapinotus sellatus* ar Bant-y-Sais a Chamlas Tennant. Yr achos o bryder mwyaf, oedd y ffaith na chanfuwyd y rhywogaeth *Odontoscelis fuliginosa* ar y safleoedd hynny lle gellid dod o hyd iddi o'r blaen, gan gynnwys Bae Barafundle, Twyni Broomhill a Kilpaison, Freshwater East, Cwm Mere Pool a Chwningar Ystagbwll, sy'n awgrymu naill ai dwyseddau poblogaeth isel iawn, cyfnod gweithgarwch tymhorol byrrach sy'n gysylltiedig ag amodau anarferol o gynnes a sych, neu ostyngiad posibl ym maint y boblogaeth. Roedd ei blanhigyn bwyd, pig y crëyr *Erodium cicutarium*, sy'n tyfu ar dywod noeth, yn brin yn y rhan fwyaf o'r safleoedd.

Canfuwyd poblogaethau cryf, os lleol, o'r rhywogaeth *Ochthebius poweri* mewn nifer fach o systemau tryddiferiad dŵr clogwyni lle ceir swbstradau sy'n feddal a llaith yn barhaol o hyd. Mae'r rhywogaeth *Macroplax preyssleri* wedi hen sefydlu ar draws rhannau o arfordir calchfaen Gŵyr lle mae'n gysylltiedig yn agos â glaswelltir calchfaen agored sy'n cynnal y cor-rosyn cyffredin *Helianthemum nummularium*.

Mewn cyferbyniad, methodd yr arolygon â chanfod y rhywogaethau canlynol:

- Y chwilen *Brachinus crepitans* ar arfordir dwyrain Aberddawan, sef ei hunig leoliad yng Nghymru;
- Y wenynen feirch â chynffon goch *Chrysis fulgida* a'i lletywr *Symmorphus crassicornis* yng Nghoedwig Pen-bre, Maes Awyr Pen-bre a Thwyni Whiteford;
- *Sphaerophoria loewi*, yn arfordir dwyrain Aberddawan a Lagŵn Aberddawan; ac
- y gwiddonyn *Tychius quinquepunctatus* ar Dwyni Cynffig.

Mae'n bosibl bod y prinder o gofnodion ar gyfer y rhywogaethau hyn oherwydd cyfuniad o amseru ffenolegol, lefel o ddatgeladwyedd isel naturiol a newid parhaus i'r cynefin, er nad oes modd diystyru'r posibiliad bod y rhywogaeth *Brachinus crepitans* wedi diflannu. Mae cofnodion diweddar o *Chrysis fulgida* a *Symmorphus crassicornis* o Goedwig Pen-bre a Thwyni Whiteford, ac mae'r ffaith bod cynefin sy'n ymddangos fel petai'n addas yn dal i fodoli yn awgrymu bod y ddwy rywogaeth yn dal yn y lleoliadau a arolygwyd, ond ar ddwyseddau isel.

Ar draws safleoedd, ymhlith y themâu a godwyd dro ar ôl tro a ddylanwadodd ar ganlyniadau oedd datgeladwyedd isel o rywogaethau targed, amseru tymhorol a shifftiau ffenolegol posibl sy'n gysylltiedig ag amodau cynnes y gwanwyn a/neu'r haf, mynediad cyfyngedig at y cynefin gorau posibl, ac argaeledd planhigion lletywr lleol neu ostyngiad ym maint y boblogaeth. Mewn systemau twyni tywod yn benodol, nodwyd yn aml fod sefydlogi cynefinoedd, ymlediad prysgwydd a llai o aflonyddwch yn ffactorau cyfyngol posibl.

At ei gilydd, mae'r canfyddiadau'n dangos, er bod nifer o rywogaethau allweddol o anifeiliaid di-asgwrn-cefn yn parhau i fodoli o fewn Safleoedd o Ddiddordeb Gwyddonol Arbennig de Cymru, bod llawer o boblogaethau'n ddarniog, yn lleol ac o bosibl yn agored i newid cynyddrannol i'w cynefinoedd. Mae hyn yn atgyfnerthu pa mor bwysig ydyw i fonitro a rheoli cynefinoedd yn barhaus er mwyn cynnal amodau ecolegol addas ar gyfer y rhywogaethau hyn. Argymhellir cynnal arolygon pellach ar gyfer *Brachinus crepitans*, *Sphaerophoria loewi*, *Tychius quinquepuntatus* ac, yn fwyaf brys, *Odontoscelis fuliginosa* i bennu eu statws a gwasgariad presennol.

Gwnaed cofnodion damweiniol pwysig o rywogaethau eraill yn ystod yr arolwg. Cofnodwyd corryn rafft y ffen *Dolomedes plantarius*, *Aromia moschata* a'r chwilod *Cerapheles teminatus* a *Thryogenes fiorii* ar Gamlas Tennant, chwilen deigr y twyni *Cicindela maritima* ar Dwyni Whiteford, y gardwenynen feinlais *Bombus sylvarum* yn Allteuryn, *Andrena hattorfiana* a *Phlegra fasciata* yng Nghlogwyni Horton, ac *Andrena pilipes* yng Nghwm Colhuw. Cafwyd hyd i'r corryn trapddor *Atypus affinis* yng Nghwm Mere Pool, *Calositticus inexpectus* ar arfordir Aberddawan, *Pionosomus varius* yn Freshwater East a Chwningar Ystangbwll, a'r chwilen rhombws *Syromastus rhombeus* ar Dwyni Aberllydan.

Executive summary

Targeted invertebrate surveys were undertaken during the 2025 field season across a range of Sites of Special Scientific Interest (SSSIs) in south Wales. The intention of these surveys was to provide contemporary records for ten key invertebrate species that are independently qualifying features of SSSIs and for which up-to-date distribution and status information was required. At each site, the presence or absence of target species was recorded, representative habitat photographs were taken, and any apparent threats to populations or habitat condition were noted. Fieldwork employed a range of standard entomological techniques including sweep netting, visual searching, stone turning, suction sampling and targeted searches of host plants and microhabitats.

The surveys confirmed the continued presence of:

- the parasitic wasp *Chalcis sispes* on Whiteford Burrows, including within recently formed brackish marsh in the south-west of the site;
- the seed bug *Macroplax preyssleri* at Horton Cliffs, Overton Cliff and Port Eynon Point;
- Spindrift Beetle *Ochthebius poweri* at Aberthaw Leys, Ffontygari Cliffs and Cwm Col-huw;
- Greater Streaked Shiedbug *Odontoscelis fuliginosa* at Broadhaven Dunes (a single adult);
- the reed beetle *Plateumaris bracata* on Pant-y-Sais; and
- *Tapinotus sellatus* at Glan-y-wern Canal on Crymlyn Bog.

In most cases, these species were recorded at single or limited localities indicating that, while populations persist, their distributions are highly localised and often dependent on specific microhabitat conditions. *Chalcis sispes* was not found at Goldcliff (Newport Wetlands), *Macroplax preyssleri* was not recorded from Slade to Oxwich Point, and *Plateumaris bracata* was not found on Crymlyn Bog, Goldcliff (Newport Wetlands) and Percoed Reen (within St. Brides SSSI), and *Tapinotus sellatus* on Pant-y-Sais and Tennant Canal. Of most concern, *Odontoscelis fuliginosa* was not found on previously occupied sites including Barafundle Bay, Broomhill & Kilpaison Burrows, Freshwater East, Mere Pool Valley and Stackpole Warren suggesting either very low population densities, a shortened seasonal activity period linked to unusually warm and dry conditions, or possible decline. Its foodplant, Common Stork's-bill *Erodium cicutarium*, growing on bare sand, was scarce on most sites.

Strong if localised populations of *Ochthebius poweri* were found at a small number of cliff seepage systems where permanently damp, soft substrates persist. *Macroplax preyssleri* remains established across sections of the Gower limestone coast where it is closely associated with open limestone grassland supporting Common Rock-rose *Helianthemum nummularium*.

In contrast, surveys failed to locate:

- Bombadier Beetle *Brachinus crepitans* at East Aberthaw Coast, its only Welsh locality;

- Shimmering Ruby-tail *Chrysis fulgida* and its mason wasp host *Symmorphus crassicornis* at Pembrey Forest, Pembrey Aerial Weapons Range and Whiteford Burrows;
- Saltmarsh Globetail *Sphaerophoria loewi* at East Aberthaw Coast and Aberthaw Lagoon; and
- the weevil *Tychius quinquepunctatus* on Kenfig Burrows.

The lack of records for these species are perhaps due to a combination of phenological timing, naturally low detectability and ongoing habitat change, although extinction cannot be discounted for *Brachinus crepitans*. There are recent records of *Chrysis fulgida* and *Symmorphus crassicornis* from both Pembrey Forest and Whiteford Burrows and the continued presence of apparently suitable habitat suggests that both species still occur at surveyed locations but at low densities.

Across sites, repeated themes influencing results included low detectability of target species, seasonal timing and potential phenological shifts linked to warm spring and/or summer conditions, restricted access to optimal habitat, and localised or declining host-plant availability. In dune systems in particular, habitat stabilisation, scrub encroachment and reduced disturbance were frequently noted as potential limiting factors.

Overall, the findings indicate that while a number of key invertebrate species continue to persist within south Wales' SSSIs, many populations are fragmented, localised and potentially vulnerable to incremental habitat change. This reinforces the importance of continued monitoring and habitat management to maintain suitable ecological conditions for these species. It is recommended that further surveys for *Brachinus crepitans*, *Sphaerophoria loewi*, *Tychius quinquepuntatus* and, most urgently, *Odontoscelis fuliginosa* are undertaken to determine current status and distribution.

Important incidental records of other species were made during the survey. Fen Raft Spider *Dolomedes plantarius,* Musk Beetle *Aromia moschata* and the beetles *Cerapheles teminatus* and *Thryogenes fiorii* were recorded on Tennant Canal, Dune Tiger Beetle *Cicindela maritima* on Whiteford Burrows, Shrill Carder Bee *Bombus sylvarum* at Goldcliff, Large Scabious Mining Bee *Andrena hattorfiana* and the jumping spider *Phlegra fasciata* at Horton Cliffs, and Black Mining Bee *Andrena pilipes* at Cwm Col-huw. Purse Web Spider *Atypus affinis* was found at Mere Pool Valley, the jumping spider *Calositticus inexpectus* on Aberthaw Coast, the seed bug *Pionosomus varius* at Freshwater East and Stackpole Warren, and Rhombic Leatherbug *Syromastus rhombeus* on Broadhaven Dunes.

1. Introduction

Liam Olds and Christian Owen were commissioned by Natural Resources Wales (NRW) to undertake targeted invertebrate surveys across a range of SSSIs in south Wales during 2025. The primary aim of these surveys was to provide contemporary records for selected priority and notable invertebrate species that are independently qualifying features of these SSSIs, for which up-to-date information on occurrence and status was required.

As outlined in the survey brief, the work focused on the following target species:

1.1 *Brachinus crepitans*

The Bombadier Beetle *Brachinus crepitans* (Linnaeus, 1758) (6.0-10.0mm) is widespread in southern and central Europe, although mostly absent from Scandinavia, where it is associated with calcareous grasslands and mountains in the north and in more humid places further south including wetland margins (du Chatenet, 2005). It can be abundant in vineyards on calcareous soils. It is also found in north Africa, Asia Minor and Russia as far as Lake Baikal (UK Beetles website). Adults occur throughout the year but are most abundant in the spring and are found under stones, in vegetation litter, at the foot of trees, the roots of plants or running rapidly over bare ground, often in small colonies. As with all *Brachinus* species, adults have a “highly-developed defence mechanism which involves a violent emission of hot toxic chemicals from the pygidium when the beetles are attacked, allowing them time to escape” (UK Beetles website). Adults are very variable in size as the larvae parasitise the pupae of other ground beetles (Carabidae) including *Amara* and probably *Harpalus* and *Ophonus* (Walters, 2010) as well as rove beetles (Staphylinidae) and water scavenger beetles (Hydrophilidae) (Luff, 2007; Saska & Honek, 2004).

It the UK, *Brachinus crepitans* is mostly found in southern and central England although generally absent from East Anglia and the south-west peninsula. Once more widespread both inland and on the coast, it has declined and most populations are now coastal (Duff, 2012; UK Beetles website). The beetle is associated with dry, open grassland on calcareous or loamy soils exposed to the sun, quarries and waste ground, spending the day under stones or vegetation and roaming among tussocks or shrubby vegetation at night.

In Wales, *Brachinus crepitans* was recorded from Aberdulais and Porthkerry in Glamorgan in the 1800s (Tomlin, 1913-1916) but not seen again until the mid-1960s when adults were found at East Aberthaw, a coastal site supporting saltmarsh, shingle, limestone grassland and cliffs and old lime works. It has been recorded from here on several subsequent occasions (Copestake, 1986; Edwards, 1984a&b) although there appear to be no records since 2003 (Table 1). Visits to Porthkerry in 1982 and 1983 failed to find the beetle (Copestake, 1986). There is an unverified record of two adults from reed beds at Parc Taf Fechan (ST1098) on 20th July 2004 (Aderyn website).

Brachinus crepitans is an independently qualifying feature of East Aberthaw Coast SSSI.

Table 1. Welsh records of *Brachinus crepitans,* excluding 2004 Parc Taf Fechan record.

Site	Grid Reference	Date	Abundance
Aberdulais Mill	SN80	1800s	-
East Aberthaw	ST02946656	1966 - 1976	-
East Aberthaw	ST042658	1970 - 1972	-
East Aberthaw	ST042658	05/05/1976	-
East Aberthaw	ST03036575	June 1978	-
East Aberthaw	ST03366616	05/05/1982	-
East Aberthaw	ST03366616	12/05/1982	-
East Aberthaw	ST03796618	1982 - 1985	-
East Aberthaw	ST0465	May 1983	several adults
East Aberthaw	ST035657	06/05/1992	-
East Aberthaw	ST035657	25/05/1992	-
East Aberthaw	ST0465	2003	-
Ffontygari	ST05286585	22/07/1971	-
Porthkerry	ST06	1800s	-

1.2 *Chalcis sispes*

The chalcid wasp *Chalcis sispes* (Linnaeus, 1761) is widespread in Europe including Bosnia, Finland, Hungary, Germany, Slovakia, Sweden, Finland and is also known from Tunisia (Bouček, 1951). It is a koinobiont endoparasitoid of the larvae of the soldierfly *Stratiomys*. Females lay up to 200 eggs probably either into the host's eggs, which are laid in clusters on waterside vegetation, or directly into submerged larvae. During the larval development of the host, the wasp larvae remain almost dormant inside the host but complete development when the host's larvae are ready to pupate and migrate to sites above the waterline. Pupation takes place within the host pupa, and adults emerge through holes cut into the hosts' calcified cuticle. The wasp overwinters as either adult females or mature larvae within the host (Gauld & Bolton, 1988). Female *Chalcis* may guard an egg mass until the eggs are about to hatch, contesting possession by raising their hind legs and fighting each other end to end. When laying eggs, they stand either on all six legs and oviposit directly into the host eggs or on their hind legs and use the other legs to pick up and hold the eggs or emerging larvae while ovipositing into them, placing processed eggs behind them in a heap (Stubbs *et al*., 2001).

In the UK, *Chalcis sispes* is restricted to southern England south of a line from the Severn to The Wash, and is locally frequent on brackish coastal marshes but rarer inland (Ferrière & Kerrich, 1958; Stubbs *et al*., 2001). It probably parasitizes more than one species of *Stratiomys* and at Cothill Fen in Oxfordshire, its main recent inland locality, may be associated with Clubbed General *Stratiomys chamaeleon*, Banded General *Stratiomys potamida* and/or Flecked General *Stratiomys singularior* (Stubbs *et al*., 2001; Webb, 2017). Flecked General is probably the main host at coastal localities (Stubbs *et al*., 2001).

Chalcis sispes was first recorded in Wales from Redwick & Llandevenny SSSI in 1985 (Drake, 1986; Table 2) although it had not been found on the Gwent Levels subsequently

despite a plethora of invertebrate surveys until records from Goldcliff, Newport Wetlands in June and July 2023. It was found on Whiteford Burrows in 2004 and has since been recorded episodically up to 2015 where it is associated with the brackish transitional marsh on the eastern flank of the dune system. Adults have been caught in a sweep net or observed nectaring on Parsley Water-dropwort *Oenanthe lachenalii*. Both Flecked General and Banded General have been recorded from the transitional marsh, with Flecked General being the more commonly encountered.

Chalcis sispes is an independently qualifying feature feature of Twyni Chwitffordd, Morfa Landimor a Bae Brychdwn/Whiteford Burrows, Landimore Marsh and Broughton Bay SSSI and Gwlyptiroedd Casnewydd - Newport Wetlands SSSI.

Table 2. Welsh records of *Chalcis sispes*.

Site	Grid Reference	Date	Abundance
Gwent Levels, Newport Wetlands	ST366829	16/06/2023	-
Gwent Levels, Newport Wetlands	ST364827	06/07/2023	-
Gwent Levels, Redwick & Llandevenny	ST420836	1985	1 adult
Whiteford Burrows	SS445946	29/07/2004	1 male
Whiteford Burrows	SS446948	23/07/2006	2 adults
Whiteford Burrows	SS446948	26/07/2006	3 adults
Whiteford Burrows	SS444946	29/07/2007	2 adults
Whiteford Burrows	SS444946	01/08/2007	2 adults
Whiteford Burrows	SS446946	04/07/2009	4 adults
Whiteford Burrows	SS4394	09/07/2009	-
Whiteford Burrows	SS446948	22/08/2009	1 adult
Whiteford Burrows	SS446948	12/08/2015	2 adults

1.3 *Chrysis fulgida & Symmorphus crassicornis*

The Shimmering Ruby-tail *Chrysis fulgida* Linnaeus, 1761 was once widespread although scarce in southern England as far north as Worcestershire (Morgan, 1984) but contemporary records are mostly restricted to scrubby heathland and open woodland in Hampshire and Surrey (Edwards & Telfer, 2002) with more recent records from the New Forest (Pinchen, 2008) and Dorset (Knight, 2009). This jewel wasp parasitizes the mason wasp *Symmorphus crassicornis* (Panzer, 1798), itself a rare species undergoing a significant decline (Archer, 2000, 2014), which feeds on the larvae of the Poplar Leaf Beetle *Chrysomela populi* Linnaeus, 1758. The mason wasp nests in cavities in plant stems, vacated burrows of wood-boring insects and vertical sand banks. An account of its nesting biology is given in Edwards & Telfer (1997). The main foodplants of the beetle larvae are Aspen *Populus tremula* and Creeping Willow *Salix repens*. *Chrysis fulgida* occurs throughout Europe and eastwards to central Asia, using a wider variety of hosts.

In Wales, *Chrysis fulgida* was first recorded on Pembrey Air Weapons Range in 2005 during a Countryside Council for Wales-funded survey of the dune system but the strongest population is likely to be within Pembrey Forest (Table 3). Both the jewel wasp and the mason wasp have been found nectaring on Wild Parsnip *Pastinaca sativa* growing

along the roadside verges within the forest, with *Chrysis fulgida* also recorded on Yarrow *Achillea millefolium* (Knight, 2009). A single adult jewel wasp was recorded on Whiteford Burrows in July 2007, and both jewel wasp and host were recorded here again in July 2023.

There is an additional record in the NBN Atlas Wales from Mitchel Troy (SO49361031) on 30th May 2020, but this seems very unlikely.

Chrysis fulgida is an independently qualifying feature feature of Arfordir Pen-bre/Pembrey Coast SSSI, although the population is mostly found in Pembrey Forest, and Twyni Chwitffordd, Morfa Landimor a Bae Brychdwn/Whiteford Burrows, Landimore Marsh and Broughton Bay.

Table 3. Welsh records of *Chrysis fulgida*.

Site	Grid Reference	Date	Abundance
Pembrey Air Weapons Range	SN36410470	29/06/2005 - 13/07/2005	1 female
Pembrey Air Weapons Range	SN36360490	27/07/2005 - 10/08/2005	1 male
Pembrey Forest	SN393039	24/07/2006	1 adult
Pembrey Forest	SN372043	10/08/2008	1 female
Pembrey Forest	SN383028	20/08/2013	1 adult
Pembrey Forest	SN371044	10/08/2015	2 adults
Pembrey Forest	SN371044	11/08/2015	2 adults
Pembrey Forest	SN371043	12/07/2017	1 adult
Whiteford Burrows	SS441943	29/07/2007	1 female
Whiteford Burrows	SS441945	12/07/2023	-

1.4 *Macroplax preyssleri*

The seed bug *Macroplax preyssleri* (Fieber, 1837) (3-4mm) is widespread in Europe with records from Albania, Andorra, Austria, Belgium, Bosnia, Bulgaria, Croatia, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Macedonia, Moldavia, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and the former Yugoslavia. It is also found in Kazakhstan (Lygaeoidea Species File website). It was first recorded in the UK in 1968 from Brean Down and Dolebury Warren in Somerset (Dolling, 1970) and has since been recorded from steep, south-facing limestone grassland with areas of sparsely-vegetated ground and rock in Gloucestershire (Rodborough Common, Daneway Banks), Somerset and the Gower peninsula in south Wales (British Bugs website; Kirby, 1992). Both adults and nymphs are associated with rock-roses *Helianthemum*, in particular Common Rock-rose *Helianthemum nummularium*. Adults are found throughout the year and there is a single generation per year. They are best found by either suction sampling or turning back luxuriant rock-rose growing over bare rock.

Macroplax preyssleri was first found in Wales at Horton Cliffs, with a single adult found under Common Rock-rose in September 1983 (Askew, 1985; Howe, 2004; Table 4). It was subsequently found Horton Cliffs and the adjacent The Sands during a Countryside

Council for Wales-funded survey of coastal soft cliffs throughout Wales (Knight & Howe, 2006). A single adult was found on Overton Cliff in May 2000 during a National Trust biological survey (Andy Foster, pers. comm.). The most recent record is of an adult at Limeslade in July 2019 collected in a small sample of Common Rock-rose seed from a small insolated sheltered depression along the top cliff path on cliffs largely dominated by gorse (Barry Stewart, pers. comm.). All sites are on the Gower peninsula.

Macroplax preyssleri is an independently qualifying feature feature of Gower Coast: Rhossili to Porteynon SSSI and Horton, Eastern & Western Slade SSSI.

Table 4. Welsh records of *Macroplax preyssleri*.

Site	Grid Reference	Date	Abundance
Horton Cliffs	SS4885	25/09/1983	1 adult
Horton Cliffs	SS483855	17/06/2004	2 adults + 1 nymph
Horton Cliffs	SS483855	30/07/2004	1 adult
Horton Cliffs	SS481855	02/06/2005	1 adult
Horton Cliffs	SS479855	23/06/2006	1 nymph
Horton Cliffs	SS479855	24/07/2006	1 adult
Horton Cliffs	SS481855	29/07/2007	1 adult
Horton Cliffs	SS479855	18/08/2009	2 adults
Limeslade	SS62148702	20/07/2019	1 adult
Overton Cliff	SS456848	25/05/2000	1 adult
The Sands, Slade	SS489854	17/06/2004	1 adult
The Sands, Slade	SS489854	30/06/2004	several adults

1.5 *Ochthebius poweri*

The Spindrift Beetle *Ochthebius poweri* Rye, 1869 (1.3-1.5mm) is restricted to the British Isles, Algeria, Morocco, Portugal, Spain and Tunisia where it is found mostly on coastal cliffs but from also a handful of inland, montane localities (Bilton *et al*., 2009; Jäch, 1999). In England, Ireland and Wales, it is associated with crumbly mud at the edge of seepages on vertical maritime cliffs that are subject to sea spray (spindrift) (Duff, 2012). The beetle appears to be amphibious, associated with madicolous habitats (flowing water levels thinner than 2mm) and their splash zones, and can be found where no liquid water is present but with patches of damp silts and clays on otherwise dry cliffs (Bilton *et al*., 2009). UK localities include both base-rich and base-poor bedrocks although most seepages are neutral or alkaline, with relatively high water temperatures due to rapid warming of exposed, insolated, typically south-facing rock faces. The presence of some soft bedrock such as clays or silts is typical but the beetle seems to avoid unstable cliffs or hard rock without infilled fault and fissure systems. Adults have been recorded in all months except November, with a peak of records in May, and mating pairs have been seen from February to August (Foster *et al*., 2020). Whilst larvae have been recorded, in August 1946 in Pembrokeshire (Balfour-Browne, 1947), the immature stages have not been described.

Ochthebius poweri is known from 22 hectads in Britain and Ireland, with 20 locations in Cornwall, Devon and Dorset, three on the Waterford coast in Ireland and three in Wales (Bilton *et al*., 2009; Foster, 2010). These populations are thought to be of international importance given its restricted and disjunct European distribution. Bilton *et al*. (2009) provides a list of associated taxa, most notably the water beetles *Georissus crenulatus* and *Laccobius striatulus*, trickle midges *Thaumalea*, the cranefly *Dicranomyia goritiensis* and the marshfly *Liancalus virens*.

It was first recorded in Wales at Whitesands Bay in Pembrokeshire in 1946 (Table 5) where it was "found only in the weakest trickles of water on vertical or near vertical cliffs on the coast, apparently beyond the reach of the highest tides, but within the limits of blown spindrift" (Balfour-Browne, 1947). Adults were restricted to trickles on bare substrates, with larvae also found in drier areas, but none was associated with stronger seepage flows. A single adult was found here in 1988 (Foster, 1988, 1990), and the beetle was recorded at a 2nd Welsh locality, Aberthaw Leys in Glamorgan in 1992 at tufaceous seepages on limestone cliffs.

A targeted survey in May 2008 funded by the Countryside Council for Wales and the Aquatic Coleoptera Conservation Trust refound *Ochthebius poweri* at Whitesands Bay and Aberthaw Leys, with additional populations recorded at Cwm Col-huw and Ffontygari Cliffs (Bratton & Foster, 2009). Three occupied seepages were recorded at the north end of Whitesands Bay, all within St. David's Peninsula Coast SSSI, with a combined area of 48 square metres – in contrast to the nine square yards found in 1946 (Balfour-Browne, 1947). Two seepages supported the beetle on Ffontygari Cliffs, one at ST04906587 within East Aberthaw Coast SSSI and the other at ST05066589 just 30 metres outside the SSSI boundary. Both are part of a complex of similar seepages stretching for hundreds of metres, most of which could not be accessed, and the population here was considered to number in many hundreds. The mouth of Cwm Col-Huw, 9km west of Ffontygari Cliffs, contained only a small area of seepage but the finding of 14 adults indicated a healthy population and a search of cliffs further to the west was recommended.

The conductivity of occupied seepages ranged from 527 to 1085 us/cm, the latter approximating to 1% seawater though still within the range of freshwater. The conductivities Ffontygari Cliffs (500 to 600 us/cm) were higher than would be found in hard-rock areas but not exceptional for water emerging from limestone. The conductivity of seepages at Whitesands Bay was approximately twice as high, perhaps as a consequence of sea spray reaching the low cliff top and raising the conductivity as it percolates through the soil (Bratton & Foster, 2009).

No beetles were found at The Bulwarks (ST078661), Craig Ddu (SN324100 & SN325100), Laques-fawr (SN327099) or Newgale (SM846782241, SM85412063 & SM85462045) during the 2008 survey (Bratton & Foster, 2009).

Two inland records from SO10 in April and July 2011 in the NBN Atlas Wales need verification given the strictly coastal distribution of *Ochthebius poweri* in the British Isles and are omitted from the recent atlas (Foster *et al*., 2020).

Ochthebius poweri is an independently qualifying feature of East Aberthaw Coast SSSI and St. David's Peninsula Coast SSSI.

Table 5. Welsh records of *Ochthebius poweri*.

Site	Vice County	Grid Reference	Geology	Date	Abundance
Aberthaw Leys	41	ST047658	Limestone	17/07/1992	-
Cwm Col-huw	41	SS95516748	Clay & Limestone	14/05/2008	14 adults
Ffontygari Cliffs	41	ST04906587	Limestone	10/05/2008	3 adults
Ffontygari Cliffs	41	ST05066589	Clay & Limestone	14/05/2008	6 adults
Whitesands Bay	45	SM7327	Rock	August 1946	40 larvae + adults
Whitesands Bay	45	SM732272	-	11/09/1988	1 adult
Whitesands Bay	45	SM73272728	Boulder Clay & Rock	13/05/2008	14 adults
Whitesands Bay	45	SM73282728	Boulder Clay	13/05/2008	47 adults
Whitesands Bay	45	SM73332726	Boulder Clay	13/05/2008	12 adults

1.6 *Odontoscelis fuliginosa*

The Greater Streaked Shieldbug *Odontoscelis fuliginosa* (Linnaeus, 1761) (6-8mm) is widely distributed in Europe, North Africa and Asia (Bantock, 2016). In the UK, there are historic records from coastal sites in Cornwall, Cheshire, Norfolk, Suffolk and the Isle of Wight (Kirby, 1992) but it is currently restricted to just two areas - the Sandwich Bay and Deal area of Kent and sand dune systems on the Castlemartin peninsula in Pembrokeshire. It has declined from 17 hectads before 1990 to just seven and is known from just ten locations. At Sandwich Bay, the shieldbug has survived extensive conversion of dune habitat to golf courses but is largely confined to a narrow zone of low-eroded sandhills behind the beach (Bantock, 2016). The shieldbug is a strongly ground-dwelling and burrowing species which inhabits open or semi-fixed sand dunes. It lives in small, discrete colonies in bare or very sparsely-vegetated areas and all life stages are associated with Common Stork's-bill *Erodium cicutarium*, probably the only host plant. There is a single generation each year, overwintering as 3rd or 4th instar nymphs and adults being found from June to September.

Odontoscelis fuliginosa was first recorded in Wales in September 1938 when two nymphs were found under Common Stork's-bill at Freshwater West (Daltry, 1939; Howe, 2004), with an adult recorded in September 1939 (Daltry, 1944) (Table 6). It was subsequently recorded at Mere Pool Valley on Stackpole Warren in 1983 (Skidmore & Burn, 1983) and adults were found "quite commonly beneath *Erodium cicutarium* .... in early July 1990" on Broomhill Burrows and Barafundle Bay (Kirby, 1992). A Countryside Council for Wales-funded survey of coastal soft cliffs throughout Wales recorded the shieldbug at Freshwater East and Great Furzenip in 2003 (Knight & Howe, 2006). The dunes at Freshwater East have no statutory protection.

A targeted survey in August and September 2003 and September 2004 found the bug at 17 stations on six sites (Broomhill Burrows, Brownslade Burrows, Freshwater East, Great Furzenip, Linney Burrows and Stackpole Warren), the majority of stations comprising bare sand with sparse, short vegetation and varying amounts of stork's-bill (Judd, 2004, 2005,

2006). However, adults and nymphs were not exclusively associated with *Erodium cicutarium*, being found under the basal rosettes of stork's-bill at only four stations, but were also associated with Melilot *Melilotus* sp. and Common Bird's-foot trefoil *Lotus corniculatus*. More recent records have been provided during recent assessments of the dune invertebrate fauna of Stackpole Warren (Boyce, 2011; Gibbs, 2010) and targeted searches for ground beetle *Harpalus melancholicus* (Hodgkins & Telfer, 2015). The most recent records are from 2019.

Odontoscelis fuligonosa is an independently qualifying feature of Broomhill Burrows SSSI, Castlemartin Range SSSI and Stackpole SSSI.

Table 6. Welsh records of *Odontoscelis fuliginosa*.

Site	Grid Reference	Date	Abundance
Broomhill Burrows (Freshwater West)	SM8800	08/09/1938	2 nymphs
Broomhill Burrows (Freshwater West)	SM8800	September 1939	1 adult
Broomhill Burrows	SM883004	03/07/1990	-
Broomhill Burrows	SM885003	08/06/2000	-
Broomhill Burrows	SM889004	10/09/2003	1 adult
Broomhill Burrows	SM882006	10/09/2003	1 adult
Broomhill Burrows	SM889001	10/09/2003	1 nymph
Broomhill Burrows	SM889004	10/09/2003	1 adult
Broomhill Burrows	SM900007	10/09/2003	1 nymph
Broomhill Burrows	SR887999	04/07/2019	-
Brownslade Burrows	SR895979	10/09/2003	1 adult
Brownslade Burrows	SR897977	11/09/2003	1 adult + 2 nymphs
Brownslade Burrows	SR890984	11/09/2003	3 adults + 1 nymph
Brownslade Burrows	SR897985	11/09/2003	1 nymph
Brownslade Burrows	SR8998	15/07/2006	3 adults
Brownslade Burrows	SR893980	20/06/2003	6 adults
Brownslade Burrows, Great Furzenip	SR888986	02/07/2003	8 adults
Brownslade Burrows, Great Furzenip	SR888986	05 - 14/06/2003	5 adults
Brownslade Burrows, Great Furzenip	SR886986	14/06/2003	2 adults
Brownslade Burrows, Great Furzenip	SR888986	14/06/2003	3 adults
Brownslade Burrows, Great Furzenip	SR888986	14/06/2003	7 adults
Brownslade Burrows, Great Furzenip	SR888986	14/06/2003 - 02/07/2003	6 adults
Brownslade Burrows, Great Furzenip	SR888987	June 2003	4 adults
Freshwater East	SS018981	08/09/2003	8 nymphs
Freshwater East	SS018980	08/09/2004	2 nymphs
Freshwater East	SS019981	08/09/2004	4 nymphs
Freshwater East	SS018980	19/06/2010	1 adult
Kilpaison Burrows	SM891003	02/07/2019	-
Linney Burrows	SR894971	11/09/2003	8 nymphs
Linney Burrows	SR890971	12/09/2003	1 adult
Linney Burrows	SR891971	12/09/2003	3 adults

Site	Grid Reference	Date	Abundance
Linney Burrows	SR893974	12/09/2003	1 nymph
Linney Burrows	SR8997	20/06/2003	9 adults
Linney Burrows	SR8997	20/06/2003	6 adults
Little Furzenip	SR886990	19/06/2003	1 adult
Stackpole Warren	SR978942	09/09/2003	2 nymphs
Stackpole Warren	SR978943	18/06/2010	6 adults
Stackpole Warren	SR9744694283	22/08/2009	1 adult
Stackpole Warren	SR9744694283	22/08/2009	1 nymph
Stackpole Warren	SR9752899283	22/08/2009	1 male
Stackpole Warren	SR9786694255	24/08/2009	1 adult
Stackpole Warren	SR9786694255	24/08/2009	1 nymph
Stackpole Warren	SR984945	03/07/2019	-
Stackpole Warren, Barafundle Bay	SR989951	02/07/1990	-
Stackpole Warren, Barafundle Bay	SR989951	02/07/1990	-
Stackpole Warren, Barafundle Bay	SR989951	02/07/1990	-
Stackpole Warren, Barafundle Bay	SR99	02/07/1990	-
Stackpole Warren, Barafundle Bay	SR99	July 1990	several adults
Stackpole Warren, Broadhaven dunes	SR977941	16/07/2010	1 adult
Stackpole Warren, Mere Pool Valley	SR9794	07 - 12/08/1983	-
Stackpole Warren, Mere Pool Valley	SR974943	10/09/2003	1 adult
Stackpole Warren, Mere Pool Valley	SR974943	12/09/2003	1 adult + 3 nymphs
Stackpole Warren, Mere Pool Valley	SR9752994284	22/08/2009	1 adult
Stackpole Warren, Mere Pool Valley	SR9764994280	28/05/2015	2 nymphs

1.7 *Plateumaris bracata*

The reed beetle *Plateumaris bracata* (Scopoli, 1772) (8.5-11.5mm) is a western Palaerctic species known from Norway to Siberia in the north, and Spain to Kazakhstan in the south (Cox, 2007) where it is associated with reed beds growing at the margin of lakes, canals, ditches and in fens. It was refound in Ireland in 2008, the first record since 1936 (Hubble, 2012). Adults feed on the young leaf shoots of Common Reed *Phragmites australis*, with larvae on the rhizomes of Common Reed and sedges *Carex*. The macropterous adults have been found from April to October, females scattering eggs at the base of reed leaves in July (Cox, 2007).

In the UK, there are post-1970 records from Berkshire, Huntingdonshire, Norfolk, Somerset, Sussex and Worcestershire although it was historically more widespread in Bedfordshire, Cambridgeshire, Essex, Gloucestershire, Kent, Leicestershire, Lincolnshire, Oxfordshire, Suffolk, Surrey and Yorkshire (Hyman & Parsons, 1992). It was recorded new to Wales from Techon Marsh, Llwynhendy in Carmarthenshire in June 1984 amongst willow carr adjacent to Common Reed *Phragmites communis* and Reedmace *Typha* sp. fen (Pavett, 1988). It has since been recorded from five localities in south Wales, including Rumney & Peterstone (Drake, 1986) and St. Brides on the Gwent Levels, Crymlyn Bog

and Pant y Sais (including a record during the Dipterists Field Meeting in July 2009) in Glamorgan, and Pen y Bryn and Techon Marsh in Carmarthenshire (Table 7). It was refound on Crymlyn Bog during the Nature Conservancy Council's Welsh Peatland Invertebrate Survey (WPIS) (Holmes *et al*., 1991). It is also known from Trwyn-y-garnedd in the Vale of Ffestiniog in an area of ditched grazing marsh immediately adjacent to the Afon Dwyryd SSSI. It is evidently scarce on the Gwent Levels and was not found by Boyce (2010, 2012, 2013), Drake (2004), EMEC Ecology (2019), Gibbs (1991, 2009, 2010, 2011, 2013a&b, 2014, 2015, 2016, 2017, 2018) or Rachel Hacking Ecology (2016), although a single adult was found on Wentlooge Level, St. Brides in May 2019 (Boyce, 2019).

Plateumaris bracata is an independently qualifying feature of Cors Crymlyn/Crymlyn Bog SSSI, Gwent Levels - Rumney & Peterstone SSSI, Gwent Levels - St. Brides SSSI and Pant-y-Sais SSSI.

Table 7. Welsh records of *Plateumaris bracata*.

Site	Grid Reference	Vice County	Date	Abundance
Gwent Levels, Rumney & Peterstone	ST258807	35	1985	-
Gwent Levels, St. Brides	ST278832	35	June 1997	-
Gwent Levels, St. Brides	ST30948438	35	01/06/2011	1 adult
Gwent Levels, St, Brides, Wentlooge	ST273811	35	May 2019	1 adult
Crymlyn Bog	SS69	41	pre-1829	-
Crymlyn Bog	SS693944	41	28/06/1989	1 adult
Pant-y-sais	SS7194	41	1988 – 1992	-
Pant-y-sais	SS7294	41	08/07/2009	-
Pant-y-sais	SS7194	41	10/07/2009	-
Pen y bryn	SS541986	44	1988 – 1990	-
Techon Marsh, Llwynhendy	SS5399	44	06/06/1984	-
Trwyn-y-garnedd, Afon Dwyryd	SH640399	48	20/06/2002	-

1.8 *Sphaerophoria loewi*

The Saltmarsh Globetail *Sphaerophoria loewi* Zetterstedt, 1843 (wing length 6-6.75mm) is found in Asia as far east as Mongolia and northern and central Europe (van Veen, 2004) where it is mostly restricted to the coasts of Denmark, Finland, France, Ireland, the Netherlands, Norway, Sweden, the UK and the Baltic Sea (GBIF website; Speight, 2014). The hoverfly is very scarce in the UK, with 13 post-1980 hectads (Ball & Morris, 2014), and there are records from Dorset (Studland Heath), Hampshire (Christchurch), Kent (Gravesend), Lancashire (Leighton Moss), Sussex (Rye) and Yorkshire (Barton-on-Humber) in England and Perthshire (Tay Reedbeds) and Sutherland (Dornoch Firth) in Scotland (Stubbs & Falk, 2002). It is mostly found on coastal brackish marshes and reedbeds of Common Reed *Phragmites australis* and Sea Club Rush *Bulboschoenus maritimus*, coastal lagoons and borrow-dykes behind sea walls, although it has been found in inland reedbeds near Aviemore and a clay pit in Bedfordshire (Ball *et al*., 2011; Ball & Morris, 2014). Adults are on the wing from June to September, peaking in July, and have been observed flying around stands of tall emergent vegetation and occasionally visiting flowers (Ball & Morris, 2014). Most records are of singleton adults. Larvae are unknown

but are likely to be predaceous on aphids (Ball *et al*., 2011; Ball & Morris, 2014; Stubbs & Falk, 2002).

In Wales, *Sphaerophoria loewi* was recorded at East Aberthaw in the Vale of Glamorgan in June 1997 during a Dipterists Field Meeting when a single male was swept from tall swamp fringing brackish water pools (Howe, 1998; Howe & Howe, 2001; Table 8). Recently, it was recorded from Goldcliff within Newport Wetlands SSSI.

Sphaerophoria loewi is an independently qualifying feature on East Aberthaw Coast SSSI.

Table 8. Welsh records of *Sphaerophoria loewi*.

Site	Grid Reference	Date	Abundance
East Aberthaw	ST0465	09/06/1997	1 male
Goldcliff, Newport Wetlands	ST369825	29/06/2023	-

1.9 *Tapinotus sellatus*

The weevil *Tapinotus sellatus* (Fabricius, 1794) (3.0-4.5mm) is found throughout Europe and central Asia (Morris, 2012) but is rare in the UK and restricted to southern England, with post-1970 records from Berkshire, Dorset, Hampshire, Norfolk, Somerset and Surrey (Hyman & Parsons, 1992; Morris, 2012). It feeds exclusively on Yellow Loosestrife *Lysimachia vulgaris* in wetlands and lake margins, with adults found on the foodplant between April and September and larvae both feeding and pupating inside the stems (Morris, 2008). Adults are very sensitive to disturbance and readily drop from the foodplant to the ground (Boyce, 2010).

Tapinotus sellatus was first found in Wales on Pant-y-Sais National Nature Reserve in May 1992, and subsequently recorded in May to June 1999 and in June 2009 (Boyce, 2010). All records are confined to stands of Yellow Loosestrife along the towpath at the edge of the Tennant Canal in a very small area of tall fen centred on SS717941, even though the foodplant is widely distributed across the fen. Two adults were recorded in May 2014, with good amounts of Yellow Loosestrife being present following scrub clearance (Dave Boyce, pers. comm.). It was thought to be restricted to Pant-y-Sais until a single adult was found on the bank of the Tennant Canal on the boundary of Crymlyn Bog in June 2016 (Table 9). A single adult was found subsequently on Crymlyn Bog away from the canal in May 2020.

A Countryside Council for Wales-funded survey in 2009 developed a Conservation Objective for the weevil at Pant-y-Sais but found the population to be in Unfavourable condition based on the number and distribution of adults and the paucity of suitable habitat (Boyce, 2010).

Tapinotus sellatus is an independently qualifying feature on Cors Crymlyn/Crymlyn Bog SSSI and Pant-y-Sais SSSI.

Table 9. Welsh records of *Tapinotus sellatus*, with the exception of Parc Slip.

Site	Grid Reference	Date	Abundance
Crymlyn Bog	SS686941	28/05/2020	1 adult
Pant-y-Sais	SS717941	29/05/1992	several adults
Pant-y-Sais	SS717941	08/05/1999	-
Pant-y-Sais	SS717941	09/06/1999	4 adults
Pant-y-Sais	SS71559406	18/06/2009	4 adults
Pant-y-Sais	SS71559406	19/06/2009	3 adults
Pant-y-Sais	SS717941	May 2014	2 adults
Tennant Canal, Crymlyn Bog	SS7107093815	30/06/2016	1 adult

1.10 *Tychius quinquepunctatus*

The weevil *Tychius quinquepunctatus* A.Hustache, 1931 (2.5-4.0mm) is found in the Palaearctic region and in north Africa (Morris, 2012) where it is associated with woodland rides and edges, scrub, grassland and stable sand dunes, feeding on a wide range of leguminous plants including vetches and peas. Larvae feed on the unripe seeds within the pods. In the UK, recent records are restricted to sites in west Norfolk and Glamorgan but it was formerly more widespread in Cambridgeshire, Devon, Hampshire, Middlesex, Surrey and Sussex (Hyman & Parsons, 1992; Morris, 2012). Here, it feeds on Bitter Vetch *Lathyrus montanus* and Common Vetch *Vicia sativa*. Adults have been found from April to July, peaking in May and June.

In Wales, it is known from Kenfig Burrows, where it was first found in 1983 (Table 10) and is invariably found in association with Common Vetch. It is widespread across the dune system in stable dune grassland, with a survey in May 2007 recording 55 adults typically on larger plants with larger seed pods (Boyce, 2008). At that time, Common Vetch was most frequent in relatively tall, scrubby areas of stable dune grassland, although too much scrub excluded the foodplant. A Conservation Objective was developed following the survey and the population was regarded to be in Favourable condition.

There are records from Merthyr Mawr Warren in 1992 and 2001 which require confirmation and a single recent record from Parc Slip Nature Reserve where its status needs to be determined.

Tychius quinquepunctatus is an independently qualifying feature on Cynffig/Kenfig SSSI.

Table 10. Welsh records of *Tychius quinquepunctatus*.

Site	Grid Reference	Date	Abundance
Kenfig Burrows	SS7981	20/05/1983	-
Kenfig Burrows	SS801808	07/06/1984	9 males + 7 females
Kenfig Burrows	SS7981	28/05/1988	-
Kenfig Burrows	SS804825	21/04/1992	-
Kenfig Burrows	SS804825	24/05/1992	-
Kenfig Burrows	SS790821	22/06/1994	1 adult
Kenfig Burrows	SS783828	07/07/1995	-

Site	Grid Reference	Date	Abundance
Kenfig Burrows	SS798819	31/05/1996	1 adult
Kenfig Burrows	SS789820	01/05/1998	several adults
Kenfig Burrows	SS794819	01/05/1998	1 adult
Kenfig Burrows	SS7980	12/06/1998	7 adults
Kenfig Burrows	SS7981	June 2002	-
Kenfig Burrows	SS781832	11/05/2004	-
Kenfig Burrows	SS78358203	25/05/2006	10 adults
Kenfig Burrows	SS79458310	25/05/2006	-
Kenfig Burrows	SS7981	25/05/2006	1 adult
Kenfig Burrows	SS80158102	25/05/2006	-
Kenfig Burrows	SS78338201	26/05/2006	7 adults
Kenfig Burrows	SS80048085	26/05/2006	1 adult
Kenfig Burrows	SS79318222	03/05/2007	2 adults
Kenfig Burrows	SS79568231	03/05/2007	2 adults
Kenfig Burrows	SS79948198	05/05/2007	2 adults
Kenfig Burrows	SS78318205	10/05/2007	1 adult
Kenfig Burrows	SS78488203	10/05/2007	2 adults
Kenfig Burrows	SS78548201	10/05/2007	2 adults
Kenfig Burrows	SS79148209	10/05/2007	2 adults
Kenfig Burrows	SS79268210	10/05/2007	1 adult
Kenfig Burrows	SS79398127	10/05/2007	1 adult
Kenfig Burrows	SS79398164	10/05/2007	14 adults
Kenfig Burrows	SS79618224	10/05/2007	2 adults
Kenfig Burrows	SS79768181	10/05/2007	3 adults
Kenfig Burrows	SS79858227	10/05/2007	2 adults
Kenfig Burrows	SS80078087	10/05/2007	1 adult
Kenfig Burrows	SS78118271	23/05/2007	2 adults
Kenfig Burrows	SS78258240	23/05/2007	6 adults
Kenfig Burrows	SS78318203	23/05/2007	6 adults
Kenfig Burrows	SS78528201	23/05/2007	3 adults
Kenfig Burrows	SS79108207	23/05/2007	2 adults
Kenfig Burrows	SS79358160	23/05/2007	8 adults
Kenfig Burrows	SS79408212	23/05/2007	3 adults
Kenfig Burrows	SS79418165	23/05/2007	5 adults
Kenfig Burrows	SS79658225	23/05/2007	12 adults
Kenfig Burrows	SS79858109	23/05/2007	5 adults
Kenfig Burrows	SS80418246	23/05/2007	3 adults
Kenfig Burrows	SS802825	06/05/2020	1 adult
Merthyr Mawr Warren	SS856765	04/05/1992	-
Merthyr Mawr Warren	SS871774	22/05/2001	-

1.11 Surveys in 2025

The contract specified surveys of:

- Broomhill and Kilpaison Burrows, Freshwater East, Little Furzenip and Stackpole Warren for *Odontoscelis fuliginosa*, with potential visits to Brownslade Burrows, Great Furzenip and Linney Borrows on Castlemartin MoD Range if access could be arranged;
- Crymlyn Bog and Pant-y-Sais for *Plateumaris bracata* and *Tapinotus sellatus*;
- East Aberthaw Coast for *Brachinus crepitans*, *Ochthebius poweri* and *Sphaerophoria loewi*, with additional surveys in adjacent areas such as Cwm Col-huw for *O. poweri*;
- Rumney & Peterstone and St. Brides on Gwent Levels for *Plateumaris bracata*;
- Horton Cliffs, The Sands and Overton Cliff for *Macroplax preyssleri*;
- Kenfig Burrows and Merthyr Mawr Warren for *Tychius quinquepunctatus*;
- Newport Wetlands for *Chalcis sispes* and *Sphaerophoria loewi*;
- Pembrey Coast and Forest, and Pembrey Air Weapons Range if access could be arranged, for *Chrysis fulgida*; and
- Whiteford Burrows for *Chalcis sispes* and *Chrysis fulgida*.

2. Methods

Efforts were made to visit all historical sites for each species; however, some were not surveyed for practical reasons. *Tychius quinquepunctatus* was not surveyed at Merthyr Mawr Warren due to apparent phenological shifts caused by the unusually warm spring and early summer of 2025, which likely led to peak adult activity occurring before survey visits. Access restrictions limited surveys for *Plateumaris bracata* on the Gwent Levels, and some sites for *Odontoscelis fuliginosa* on Castlemartin MoD Range were not visited as they were being surveyed by the 'Natur am Byth' project; in these cases, additional historic sites were targeted instead.

At each visited site, the presence or absence of the target species were recorded, representative habitat photographs taken, and notes made of any apparent threats to populations or habitat condition. Fieldwork employed a range of standard entomological techniques appropriate to each species, including sweep netting, visual searching, stone turning, suction sampling and targeted searches of host plants and microhabitats.

3. Results

3.1 *Brachinus crepitans*

Targeted searches for *Brachinus crepitans* were undertaken incidentally during surveys for *Sphaerophoria loewi* and *Ochthebius poweri* on 26th June 2025 and 8th July 2025. Survey effort focused on areas of open grassland and exposed bare ground along footpaths and around the buildings of the former Aberthaw Lime Works (Photo 1) within Aberthaw Nature Reserve (outside the East Aberthaw Coast SSSI), as well as along shingle ridges within the SSSI. No *Brachinus crepitans* individuals were recorded.

Survey methods included turning stones, suction sampling within grassland (particularly within tussocky and shrubby vegetation), and visual searching of open ground for adults that may have been active during daylight hours.
On 26th June 2025, a number of other invertebrate species were recorded during searches for *Brachinus crepitans*, including *Amara similata*, *Dilta littoralis*, *Ochina ptinoides*, *Porcellionides cingendus* and *Sermylassa halensis*. On 8th July 2025, targeted searching for *Brachinus crepitans* was again undertaken, but no individuals were located. Other species recorded during this visit included *Bembecia ichneumoniformis*, *Chrysolina staphylaea*, *Coriomeris denticulatus* and *Trichoniscus provisorius*.

In light of the failure to record *Brachinus crepitans* during these surveys, and the apparent absence of records from East Aberthaw since 2003 (which also appears to represent the most recent verified Welsh record), it is possible that the species is no longer present at this location. This potential loss may be associated with a reduction in the extent and quality of open grassland habitat within Aberthaw Nature Reserve, resulting from scrub encroachment in the general absence of active site management.

Photo 1. The largest extent of open grassland and bare ground around the Aberthaw Lime Works, as photographed on 8th July 2025.

3.2 *Chalcis sispes*

3.2.1 Whiteford Burrows

Brackish transitional marsh on the eastern flank of the dune system at Whiteford Burrows was surveyed for *Chalcis sispes* on 18th July 2025. Weather conditions were dry with light, occasional cloud; the maximum air temperature was 19°C, with a west to south-westerly wind of 7 to 10 mph.

Survey effort initially focused on the transitional marsh north of the sea wall at SS444945 (Photo 2), where an adult *Chalcis sispes* had been recorded by Mike Howe on 19th June 2025. Sweeping and visual searching for adults nectaring on umbellifers were undertaken in this area for just under two hours (c. 10:35–12:15), during which two adults were recorded (Table 11). One adult was recorded by sweeping at SS4446794538, while a second individual was observed nectaring on *Oenanthe lachenalii* at SS4445294521 (Photo 3). As the first individual was retained in a collecting pot during subsequent sampling, it is certain that the nectaring individual represented a second adult.

A single adult female *Stratiomys singularior* was also recorded at SS4449494565 (Photo 4) and represents a probable host species at this location. Sweeping additionally recorded three *Oplodontha viridula* adults within the SS444945 area.

Table 11. Records of *Chalcis sispes* at Whiteford Burrows in 2025.

Grid Reference	Date	Abundance	Comment
SS444945	19/06/2025	1	Adult found by sweeping
SS433943	19/06/2025	2	Adults found by sweeping
SS4446794538	18/07/2025	1	Adult found by sweeping
SS4445294521	18/07/2025	1	Adult nectaring on *Oenanthe lachenalii*
SS4350794466	18/07/2025	1	Adult found by sweeping
SS4349194478	18/07/2025	1	Adult found by sweeping
SS4346594461	18/07/2025	1	Adult found by sweeping

Over a period of approximately one and a half hours (c. 12:30–14:00), the brackish marsh was sampled at regular intervals along the eastern flank of the dune system northwards to SS451961, using the same survey techniques. No further *Chalcis sispes* adults were recorded during this period. A single adult female *Stratiomys singularior* was, however, recorded at SS4505695909, suggesting that *Chalcis sispes* may be present in this area, although the species has not previously been recorded this far north along the marsh at Whiteford Burrows.

Later in the afternoon (c. 15:30), the recently established marsh in the south-west corner of Whiteford Burrows, immediately outside the enclosure (SS43509445), was surveyed following the recording of two *Chalcis sispes* adults here by Mike Howe on 19th June 2025. Over a 30-minute period of sweeping and visual searching, three adults (all recorded by sweeping) were found (Table 11), one at each of the following: SS4350794466 (Photo 5); SS4349194478 (Photo 6); and SS4346594461 (Photo 7). Owing to the relative ease with which individuals were located and the number recorded over a short period, it appears that a well-established population is present at this location. This suggests that *Stratiomys* host species have also colonised this recently established habitat, which is encouraging.

No sampling was undertaken within the enclosure itself, where further individuals are likely to be present owing to the extent of suitable habitat available, due to time constraints. Future targeted surveys for *Chalcis sispes* and its host species within the enclosure would therefore be valuable.

Other species recorded during the survey included a final-instar nymph of *Dicranocephalus agilis* and at least 20 adult *Cicindela maritima* on the dunes around SS434945.

3.2.2 Goldcliff, Newport Wetlands

Following recent records of *Chalcis sispes* from Goldcliff within Newport Wetlands SSSI by Andrew McGleish in 2023 (ST364827 and ST366829), Goldcliff was visited on 24th August 2025. Survey effort initially focused on ST366829, before following the footpath south-west to ST361826, also encompassing the previously recorded locality at ST364827.

Over a period of approximately two hours (c. 10:00–12:00), sweeping and visual searching were undertaken within marshy grassland (this habitat was not, however, brackish marsh as was anticipated). No *Chalcis sispes* adults or *Stratiomys* species were recorded during this survey. The marsh was notably dry, with a near total absence of flowering plants

present (Photo 8). The adjacent sea wall had also evidently been recently mown (Photo 9), reducing the availability of nectar resources for *Chalcis sispes* and its host species.

The adjacent saltmarsh at ST361825 (Photo 10) was also sampled for just under one hour; however, no *Chalcis sispes* or *Stratiomys* individuals were recorded. Shrill Carder Bee *Bombus sylvarum* was present, foraging on flowering Sea Aster *Aster tripolium*, along with *Campiglossa plantaginis*.

Photo 2. View looking south across the transitional marsh north of the sea wall at SS444945 on 18th July 2025.

Photo 3. *Chalcis sispes* individual nectaring from *Oenanthe lachenalii* at SS4445294521 on 18th July 2025.

Photo 4. Female *Stratiomys singularior* nectaring at SS4449494565 on 18th July 2025.

Photo 5. *Chalcis sispes* habitat on Whiteford Burrows at SS4350794466; one adult was recorded here on 18th July 2025.

Photo 6. *Chalcis sispes* habitat on Whiteford Burrows at SS4349194478; one adult was recorded here on 18th July 2025.

Photo 7. *Chalcis sispes* habitat on Whiteford Burrows at SS4346594461; one adult was recorded here on 18th July 2025.

Photo 8. View looking south-west across marshy grassland at Goldcliff which was surveyed for *Chalcis sispes* on 24th August 2025.

Photo 9. View looking east at Goldcliff on 24th August 2025; note the recently mown sea wall to the right.

Photo 10. The saltmarsh at ST361825, which was surveyed for *Chalcis sispes* on 24th August 2025.

3.3 *Chrysis fulgida & Symmorphus crassicornis*

3.3.1 Pembrey Forest

Previous surveys in Pembrey Forest undertaken by Liam Olds for Buglife Cymru (as part of the Bumblebee Conservation Trust's 'Connecting the Carmarthenshire Coast' project) in 2023 and 2024 recorded *Symmorphus crassicornis* widely across the southern half of the forest. Records were made at SN3913701873, SN3903201846, SN4030601913 and SN4033601740 on 26th June 2023, and at SN3928001585 and SN3931300803 on 18th July 2024. Despite the presence of its host, no *Chrysis fulgida* individuals were encountered during these surveys. Neither species was recorded from the northern half of Pembrey Forest in 2023; access to this area was not possible in 2024 due to severe flooding within the forest.

During the current survey, Pembrey Forest was visited on 14th July 2025 with the primary aim of locating *Chrysis fulgida*, given the absence of records within the forest for several years (the most recent record dating from 2017 at SN371043). Weather conditions were generally favourable for aculeate surveying, with dry, sunny conditions and passing cloud, and a maximum air temperature of 21°C. Winds were strong (26 to 30 mph), though conditions were relatively sheltered within the forest.

Mountain bikes were used to access forestry tracks, starting at SN41510070 and cycling north-westwards to the entrance of Pembrey Air Weapons Range at SN36780462. All accessible forestry tracks were visited over the course of the day (c. 10:00–16:00). Umbellifers growing along track verges were visually inspected for nectaring *Chrysis fulgida* and *Symmorphus crassicornis*. Particular attention was given to umbellifers located close to Creeping Willow *Salix repens*, which represents potentially favourable habitat for *Symmorphus crassicornis*, a predator of the larvae of *Chrysomela populi*. Visual searching was also undertaken within and around stands of Creeping Willow for hunting *Symmorphus crassicornis*, and nearby dead wood resources were checked for evidence of nesting activity.

Despite the presence of apparently suitable habitat in several areas, no individuals of either species were encountered during the survey. Habitat suitability is, however, localised and not uniform across the forest. In particular, the wet dune slacks at SN394010 (Photo 11), SN39420149 (Photo 12) and around SN39090182 (Photos 13 to 15) support a combination of Creeping Willow, nectar resources and structural diversity that is likely to be especially suitable. Additional areas of high potential include the forestry track edges between SN394015 and SN389018 (Photos 16 to 18), and track edges around SN369045 (Photo 19), where Creeping Willow and flowering umbellifers occur in close proximity and where conditions appear favourable for both nesting and foraging activity.

A return visit was made on 16th August 2025, employing the same methodology and again covering all accessible forestry tracks across the forest. Once again, no individuals of either species were recorded. Weather conditions were dry, clear and sunny, with a maximum air temperature of 26 °C and wind speeds of 8-16 mph from the south-east. In

addition, opportunistic searches were undertaken on 11th August 2025 during the return from a survey at Pembrey Air Weapons Range, with stops made at intervals along the forestry track between the Air Weapons Range and Pembrey Airport; no individuals of either species were recorded.

Across both surveys, umbellifers were plentiful along the track verges in many areas, including Wild Parsnip *Pastinaca sativa* (Photos 20 to 24). However, this species appeared to have declined in areas affected by severe flooding in 2024; locations that remained largely inundated into mid-July 2024 were found to support little or no Wild Parsnip in 2025. In contrast, Wild Parsnip remained abundant along verges that had not been flooded. Where flooding had occurred, other umbellifers – most notably Wild Carrot *Daucus carota* – were still common, indicating that nectar resources were not entirely depleted in these areas.

One notable observation was the apparent scarcity of *Chrysomela populi* larvae on Creeping Willow in 2025 compared to 2023. In locations where larvae were abundant prior to flooding in 2023, few or none were encountered in 2025. Although speculative, it is possible that *Chrysomela populi* populations declined as a result of prolonged submergence of host plants during flooding events, and that these populations had not yet recovered by 2025. If correct, this would likely have implications for the reproductive success of *Symmorphus crassicornis*, by reducing the availability of prey larvae required to provision nests.

Given records of *Symmorphus crassicornis* from as recently as 2024, the species is undoubtedly still present within Pembrey Forest and, by association, *Chrysis fulgida* is also likely to persist. However, after three consecutive years of targeted survey effort, it is clear that *Chrysis fulgida* is extremely elusive. This is compounded by the large size of the forest, which represents an extensive search area for mobile species, and by access limitations that restrict survey effort largely to forestry tracks. Although these tracks cover a substantial area, they still allow only limited time to be spent within the most suitable habitat.

Future survey effort may therefore be more effective if focused on spending longer periods within the highest-quality habitat, rather than attempting to cover the entire forest within a single day, including areas where Creeping Willow is largely absent. Detection of *Chrysis fulgida* in particular likely involves a significant element of chance, relying on encounters with individuals during nectaring between periods of host nest searching, mating or oviposition. As with other cleptoparasitic species, it is most likely to be detected in close proximity to host nesting sites. However, potential nesting opportunities for *Symmorphus crassicornis* are abundant across the forest, owing to the prevalence of standing and fallen dead wood, particularly within commercially managed conifer stands (Photo 25), which limits the ability to focus survey effort in confined areas. In addition, scrub that has been removed from managed dune slacks and stacked along slack margins (Photo 26) and track edges is likely, over time, to decay and develop cavities suitable for nesting by *Symmorphus crassicornis*; the smaller *Symmorphus gracilis* was noted in numbers around this scrub on 14th July 2025 and may already be utilising the scrub for nesting. Such

features may therefore represent an increasing future resource for *Symmorphus crassicornis* and could help to concentrate nesting activity in more predictable locations.

The installation of trap nests may therefore represent a valuable additional survey and monitoring tool. Artificial nesting sites – such as bundles of hollow plant stems (e.g. reeds) housed within tubes, or untreated wooden posts drilled with holes of appropriate diameter – could help concentrate nesting activity by *Symmorphus crassicornis* and, in turn, attract *Chrysis fulgida*. Combined with complementary methods such as visual searching, such trap nests could create standardised monitoring stations that can be revisited annually to assess host–parasitoid interactions and track changes over time. These would be best positioned in sunny locations (e.g. south-facing forest edges) supporting Creeping Willow and nearby nectar sources, particularly in areas where *Symmorphus crassicornis* has previously been recorded.

3.3.2 Pembrey Air Weapons Range

Pembrey Air Weapons Range was visited on 11th August 2025 (c. 11:00–14:00) in an effort to locate *Chrysis fulgida* and *Symmorphus crassicornis*. Weather conditions were favourable for aculeate surveying, with dry, sunny conditions and a maximum air temperature of 26°C. Winds were generally light (2 to 12 mph) from the east to south-east.

Sampling involved walking the entirety of the large dune slack behind the foredunes, starting around SN365044 and working northwards to SN364050. This included locations where *Chrysis fulgida* (SN36410470) and *Symmorphus crassicornis* (SN3646104496) have been previously recorded. Creeping Willow is generally abundant within the dune slacks (Photos 27 & 28), with nectaring opportunities provided by flowering umbellifers also plentiful throughout, with Wild Parsnip locally abundant (Photo 29). Umbellifers were visually inspected for nectaring *Chrysis fulgida* and *Symmorphus crassicornis*, alongside visual searching around stands of Creeping Willow for hunting *Symmorphus crassicornis*.

Suitable nesting habitat for *Symmorphus crassicornis* is also present along the north–south tree line separating the dune slacks from the dunes (Photos 30 & 31), extending from approximately SN36450443 to SN36330504. Both species have been previously recorded along this tree line (e.g. SN36360490). Many of the trees within this linear feature are dead or decaying, providing abundant potential dead-wood cavity nesting resources for *S. crassicornis*. Stands of umbellifers were also present in close proximity to dead wood, and visible dead and decaying timber was inspected for evidence of nesting activity by either species.

Despite the presence of apparently suitable foraging and nesting habitat, no individuals of either species were encountered during the survey. Given the extent and quality of habitat present, it is considered likely that both species still occur at this location but were not detected during this visit, reflecting their apparently low population densities and the inherent difficulty of detecting both species during short survey windows.

3.3.3 Whiteford Burrows

During a visit to the eastern flank of the dune system at Whiteford Burrows while surveying for *Chalcis sispes* on 18th July 2025, a visual inspection of a fallen pine tree at SS44389451 was undertaken (Photo 32). This tree represents a known nesting resource, where *Symmorphus crassicornis* and several *Chrysis fulgida* individuals were recorded by Steven Falk on 11th July 2023 (Steven Falk, pers. comm.). Weather conditions were dry with light, intermittent cloud; the maximum air temperature was 19°C, with a west to south-westerly wind of 7 to 10 mph.

The pine tree was inspected for evidence of nesting activity by either species during the morning (c. 10:00-10:30) and again around midday (12:15-12:30) but no individuals were encountered. Nectar resources were not present within the immediate vicinity of the tree, and Creeping Willow was not observed nearby. This suggests that *Symmorphus crassicornis* individuals recorded here previously were likely travelling some distance from adjacent dune slacks to collect *Chrysomela populi* larvae with which to provision their nests.

The continued retention of both standing (where safe to do so) and fallen dead wood is therefore considered important at Whiteford Burrows, as such features provide valuable dead-wood cavity nesting resources for *Symmorphus crassicornis* and, by extension, *Chrysis fulgida*.

Photo 11. View looking east towards the wet dune slack with Creeping Willow in the south-west corner of Pembrey Forest at SN394010 on 14th July 2025.

Photo 12. View looking north across the managed wet dune slack in Pembrey Forest at SN39420149 on 16th August 2025.

Photo 13. View looking south-west across the managed wet dune slack in Pembrey Forest at SN39090180 on 16th August 2025.

Photo 14. View looking north-east across the managed wet dune slack in Pembrey Forest at SN39110182 on 14th July 2025.

Photo 15. View looking south-east along a forestry track passing bay in Pembrey Forest at SN39060183 on 14th July 2025.

Photo 16. View looking north-west along the forestry track in Pembrey Forest at SN39260167 on 16th August 2025.

Photo 17. View looking east along the forestry track in Pembrey Forest around SN39070184 on 16th August 2025.

Photo 18. View looking east to south-east along the forestry track in Pembrey Forest at SN38940186 on 14th July 2025.

Photo 19. View looking south-east along the forestry track in Pembrey Forest at SN36900456 on 14th July 2025.

Photo 20. View looking south-east along the forestry track in Pembrey Forest at SN36790462 on 11th August 2025.

Photo 21. View looking north-west along the forestry track in Pembrey Forest around SN369045 on 14th July 2025.

Photo 22. View looking north-west along the forestry track in Pembrey Forest at SN37130442 on 14th July 2025.

Photo 23. View looking north-west along the forestry track in Pembrey Forest around SN38380401 on 16th August 2025.

Photo 24. View looking north-west along the forestry track in Pembrey Forest at SN38600388 on 16th August 2025.

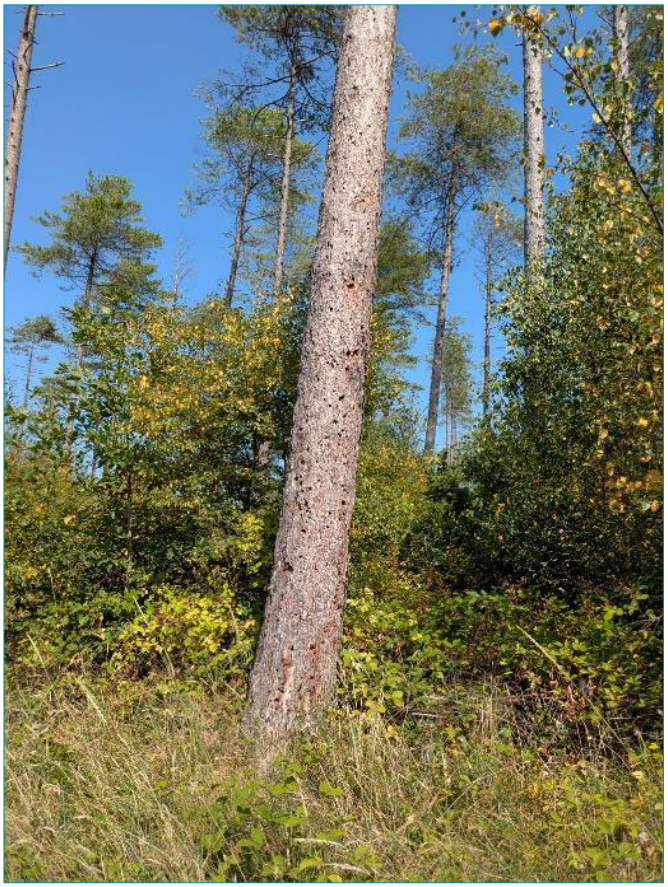

Photo 25. Standing dead conifer tree along the forestry track in Pembrey Forest at SN39320159 on 16th August 2025.

Photo 26. Scrub stacked at the edges of the dune slack in Pembrey Forest at SN39100180 on 16th August 2025.

Photo 27. View looking north-west across the dune slack on Pembrey Air Weapons Range from SN36530471 on 11th August 2025.

Photo 28. View looking north-east across the dune slack on Pembrey Air Weapons Range from SN36540471 on 11th August 2025.

Photo 29. A stand of Wild Parsnip within the dune slack on Pembrey Air Weapons Range on 11th August 2025.

Photo 30. Potential nesting resources along the tree line on Pembrey Air Weapons Range at SN36400464 on 11th August 2025.

Photo 31. Potential nesting resources along the tree line on Pembrey Air Weapons Range at SN36400455 on 11th August 2025.

Photo 32. Fallen pine tree on the eastern flank of Whiteford Burrows at S44389451 known to support *Chrysis fulgida* and *Symmorphus crassicornis*, as photographed on 18th July 2025.

3.4 *Macroplax preyssleri*

3.4.1 Horton Cliffs

Horton Cliffs was visited on 30th June 2025 to survey for *Macroplax preyssleri* within steep, south-facing limestone grassland.

Owing to the extensive development of gorse scrub across parts of the cliffs, survey effort focused on remaining areas of open limestone grassland at intervals across the site, progressing eastwards from Horton towards The Sands, Slade. Sampling was undertaken over several hours between approximately 10:20 and 13:00. Survey methods comprised suction sampling of the foodplant Common Rock-rose *Helianthemum nummularium*, together with targeted hand searching beneath plants. Weather conditions were dry, clear and sunny, with a maximum air temperature of 22°C and a light southerly breeze of approximately 5 to 6 mph. The cliffs at The Sands, Slade were not surveyed during this visit as access proved too difficult through dense gorse scrub.

A total of 38 *M. preyssleri* individuals were recorded across Horton Cliffs on 30th June 2025 (Table 12; Photo 33), comprising 32 adults and 6 nymphs. Despite repeated attempts to locate individuals through hand searching beneath and among Common Rock-rose, only a single adult was recorded using this method, with a further adult observed walking across exposed rock. The remaining 36 individuals were recorded through suction sampling of

Common Rock-rose, indicating that this method is substantially more effective for detecting *Macroplax preyssleri*. The species appears to be widely distributed across Horton Cliffs, occupying suitable areas of steep, south-facing limestone grassland, consistent with its known habitat preferences; habitat photographs are shown in Photos 34 to 37. In contrast, the flat plateau above the cliffs supports predominantly rank grassland vegetation and lacks Common Rock-rose (Photo 38); this area was therefore considered unsuitable for *Macroplax preyssleri* and was not targeted during the survey.

Incidental records of a wide range of non-target taxa were made during the survey, including *Agapeta zoegana*, *Altica helianthemi*, Large Scabious Mining Bee *Andrena hattorfiana* (a qualifying feature of Horton, Eastern & Western Slade SSSI), *Chilocorus bipustulatus*, *Dilta littoralis*, *Ectobius pallidus*, *Formica cunicularia*, *Heterocordylus parvulus*, *Hipparchia semele*, *Kolbia quisquiliarum* (second Welsh site), *Lasius alienus* sens. str., *Lasius flavus*, *Myrmecina graminicola*, *Myrmica sabuleti*, *Panurgus calcaratus*, *Phlegra fasciata* (a qualifying feature of Horton, Eastern & Western Slade SSSI), *Scymnus frontalis* and *Temnothorax albipennis*.

Table 12. Records of *Macroplax preyssleri* at Horton Cliffs on 30th June 2025, plus some absence records and incidental records of other noteworthy species.

Grid Reference	Date	Abundance	Comment
SS4799385574	30/06/2025	8	Seven adults and one nymph recorded; five adults and one nymph by suction sampling, one adult by hand searching beneath *H. nummularium*, and one adult observed on rock
SS4798785591	30/06/2025	2	Two adults recorded by suction sampling
SS4797085640	30/06/2025	1	One adult recorded by suction sampling
SS4798285640	30/06/2025	8	Eight adults recorded by suction-sampling
SS4820285578	30/06/2025	3	Two adults and one nymph recorded by suction sampling
SS47998555	30/06/2025	0	No individuals recorded; *Panurgus calcaratus* present
SS47978561	30/06/2025	1	One adult recorded by suction sampling
SS48038565	30/06/2025	0	No individuals recorded; *Heterocordylus parvulus* present
SS48028562	30/06/2025	3	Two adults and one nymph recorded by suction sampling
SS48068564	30/06/2025	3	Two adults and one nymph recorded by suction sampling
SS48098566	30/06/2025	0	No individuals recorded; female *Phlegra fasciata* recorded by suction sampling
SS48218555	30/06/2025	6	Four adults and two nymphs recorded by suction sampling
SS48208552	30/06/2025	1	One adult recorded by suction sampling; *Andrena hattorfiana* present
SS48378549	30/06/2025	1	One adult recorded by suction sampling
SS48288548	30/06/2025	1	One adult recorded by suction sampling; two *Phlegra fasciata* individuals present

3.4.2 Overton Cliff

During the afternoon of 30th June 2025 (c. 15:00–16:30), Overton Cliff was surveyed for *M. preyssleri*. Suction sampling of Common Rock-rose within areas of open grassland recorded a total of ten adult individuals (Table 13).

Individuals were recorded at two locations: high on the cliff at SS4616384837 (Photo 39), and at the base of the cliff adjacent to the footpath at SS46188479. Although fewer individuals were recorded compared with Horton Cliffs, Overton Cliff is a smaller site and therefore appears to support a population size proportionate to its extent. Areas of open limestone grassland are restricted to a network of small patches, which appear to be maintained through grazing but are otherwise constrained by gorse encroachment (Photo 40). Weather conditions were dry, clear and sunny, with a maximum air temperature of 22°C and a light southerly breeze of approximately 5 to 6 mph.

Table 13. Records of *Macroplax preyssleri* at Overton Cliff on 30th June 2025.

Grid Reference	Date	Abundance	Comment
SS46188479	30/06/2025	4	Four adults recorded by suction sampling
SS4616384837	30/06/2025	6	Six adults recorded by suction sampling

3.4.3 Port Eynon Point

During the afternoon of 30th June 2025, Port Eynon Point was surveyed whilst travelling to and from Overton Cliff. Suction sampling Common Rock-rose in areas of open grassland recorded a total of three adult *Macroplax preyssleri* individuals (Table 14). Weather conditions were dry, clear and sunny, with a maximum air temperature of 22°C and a light southerly breeze of approximately 5 to 6 mph.

Adults were recorded on both north-east-facing slopes of Port Eynon Point above the quarries (Photo 41), and the much steeper south-west-facing slopes (Photo 42), which appears to represent a new Welsh locality for the species. Given the limited survey effort at this site, particularly within quarry areas, it is likely that additional individuals were present. Survey effort at Port Eynon Point was intentionally limited in order to ensure sufficient time remained to survey Overton Cliff following earlier work at Horton Cliffs.

Table 14. Records of *Macroplax preyssleri* at Port Eynon Point on 30th June 2025.

Grid Reference	Date	Abundance	Comment
SS46638450	30/06/2025	1	One adult recorded by suction-sampling
SS4673584479	30/06/2025	2	Two adults recorded by suction-sampling

3.4.4 Slade to Oxwich Point

On 28th September 2025, the cliffs at The Sands, Slade, and those extending south-eastwards to Oxwich Point were surveyed for *Macroplax preyssleri*. No individuals were recorded during this visit. Weather conditions were dry, clear and sunny, with a maximum air temperature of 16°C and wind speeds ranging from approximately 3 to 13 mph.

Much of the lower cliff section along this stretch of coastline is dominated by scrub and appears unfavourable for *Macroplax preyssleri* (Photo 43). However, areas of potentially suitable habitat persist higher on the cliffs, particularly around rocky outcrops where open limestone grassland remains and the foodplant Common Rock-rose is present. Although these areas were sampled during the survey and no *Macroplax preyssleri* individuals were recorded, they warrant further investigation due to the presence of apparently suitable habitat.

While *Macroplax preyssleri* may be encountered throughout much of the year, it is possible that population densities are lower by late September compared with early and mid-summer. Consequently, it is possible that the species was present but not detected during this survey. Further targeted surveys earlier in the season, particularly in June or July, would help to clarify the status of *Macroplax preyssleri* along this section of coastline.

Areas of apparently suitable habitat for *Macroplax preyssleri* were noted at the following locations:

- SS4999285202 (Photo 44)
- SS5055684913 (Photo 45): Common Rock-rose present at low abundance.
- SS5003185250 (Photo 46): good abundance of Common Rock-rose.
- SS4998185242 (Photo 47): good abundance of Common Rock-rose.
- SS49968524 (Photo 48): good abundance of Common Rock-rose.
- SS4936085480 (Photo 49): low abundance of Common Rock-rose; heavily grazed, but some potential habitat remains.

Photo 33. One of 32 *Macroplax preyssleri* adults recorded at Horton Cliffs on 30th June 2025.

Photo 34. *Macroplax preyssleri* habitat at Horton Cliffs (at SS4799385574) on 30th June 2025; 7 adults and 1 nymph were recorded here.

Photo 35. *Macroplax preyssleri* habitat at Horton Cliffs (at SS4798785591) on 30th June 2025; 2 adults were recorded here.

Photo 36. *Macroplax preyssleri* habitat at Horton Cliffs (at SS4797085640) on 30th June 2025; 1 adult was recorded here, with a further 8 adults adjacent at SS4798285640.

Photo 37. *Macroplax preyssleri* habitat at Horton Cliffs (at SS4820285578) on 30th June 2025; 2 adults and 1 nymph were recorded here.

Photo 38. View looking west across unfavourable habitat for *Macroplax preyssleri* on the cliff-top plateau at Horton Cliffs (at SS48158565) on 30th June 2025.

Photo 39. *Macroplax preyssleri* habitat at Overton Cliff (at SS4616384837) on 30th June 2025; 6 adults were recorded here.

Photo 40. Gorse scrub encroachment at Overton Cliff (at SS46128483) on 30th June 2025.

Photo 41. *Macroplax preyssleri* habitat at Port Eynon Point (at SS4673584479) on 30th June 2025; 2 adults were recorded here.

Photo 42. *Macroplax preyssleri* habitat at Port Eynon Point (at SS46638450) on 30th June 2025; 1 adult was recorded here.

Photo 43. View looking north-west along the cliffs at Slade to Oxwich Point from SS50248509 on 28th September 2025.

Photo 44. Open grassland with *Helianthemum nummularium* at SS4999285202 (Slade to Oxwich Point) on 28th September 2025.

Photo 45. Open grassland with low abundance of *Helianthemum nummularium* at SS5055684913 (Slade to Oxwich Point) on 28th September 2025.

Photo 46. Open grassland with good abundance of *Helianthemum nummularium* at SS5003185250 (Slade to Oxwich Point) on 28th September 2025.

Photo 47. Open grassland with good abundance of *Helianthemum nummularium* at SS4998185242 (Slade to Oxwich Point) on 28th September 2025.

Photo 48. Open grassland with good abundance of *Helianthemum nummularium* at SS49968524 (Slade to Oxwich Point) on 28th September 2025.

Photo 49. Heavily grazed grassland with low abundance of *Helianthemum nummularium* at SS4936085480 (Slade to Oxwich Point) on 28th September 2025.

3.5 *Ochthebius poweri*

Targeted surveys for *Ochthebius poweri* were undertaken at three coastal cliff locations along the Vale of Glamorgan coast known to support historical records of the species: Aberthaw Leys (ST047658), Ffontygari Cliffs (ST04906587; ST05066589), and Cwm Col-huw (SS95516748). The most recent known records for these sites date from 17th July 1992 at Aberthaw Leys, 10th May 2008 at Ffontygari Cliffs, and 14th May 2008 at Cwm Col-huw.

3.5.1 Aberthaw Leys & Ffontygari Cliffs

On 26th June 2025, approximately four hours of visual searching and hand searching were undertaken within cliff seepages at Aberthaw Leys and Ffontygari Cliffs. No *Ochthebius poweri* individuals (adults or larvae) were recorded during this visit. Several other invertebrate species were recorded within the seepages, including *Helophorus brevipalpis*, *Laccobius striatulus*, *Lesteva longoelytrata* and *Stenus guttula*. Weather conditions were dry with sunny intervals, although rainfall had occurred within two hours prior to the survey. A strong westerly breeze was present (approximately 17 to 22 mph), and the maximum recorded air temperature was 19°C.

During the afternoon of 29th July 2025, approximately three hours (c. 12:00-15:00) were spent undertaking visual searching and hand searching of cliff seepages at Aberthaw Leys and Ffontygari Cliffs, progressing eastwards from Aberthaw Leys towards Ffontygari Cliffs.

At Aberthaw Leys, a total of four adult *Ochthebius poweri* were recorded across four separate cliff seepages, two of which were represented by remains of expired individuals (Table 15; Photos 50 to 52). At Ffontygari Cliffs, 58 adult *O. poweri* were recorded (Photos 53 to 63), with several observations comprising mating pairs. Individuals were observed both crawling over wet mud and within shallow pools of freshwater.

Observations indicated an apparent preference for ledges supporting soft mud, tufa deposits, and shallow freshwater pools beneath rock overhangs. These overhangs restricted light availability and are likely to aid moisture retention within the substrate and pools, reducing the risk of desiccation during prolonged dry conditions, such as those experienced during summer 2025. Access to many of these ledges was constrained by narrow gaps between the ledge surface and the overhanging rock, requiring surveyors to crawl into position. At the rear of these ledges, light levels were particularly low, necessitating the use of a torch to aid detection of individuals within pools and on the surface of soft mud and tufa deposits.

The difficulty of accessing these ledges may have resulted in under-recording by previous surveyors at this location. This may partly explain the substantially higher numbers recorded during the present survey comparative to the survey undertaken in 2008.

Weather conditions during the afternoon survey were dry with sunny intervals, although rainfall had occurred earlier in the morning. A strong west to north-west breeze was

present (approximately 12 to 18 mph), and the maximum recorded air temperature was 22°C.
These survey results indicate that a substantial population of *Ochthebius poweri* is present at Ffontygari Cliffs, with a smaller population occurring at Aberthaw Leys, where suitable habitat is more limited in extent. As individuals at both sites were recorded without disturbing loose mud within seepages, it is likely that additional individuals were present but undetected, and that true population sizes at both locations may exceed current recorded totals.

Additional invertebrate records made on 29th July 2025 included the ant *Tetramorium caespitum*, recorded on the cliffs at both Aberthaw Leys and Ffontygari Cliffs, which appears to represent a new record for this stretch of coastline. The jumping spider *Calositticus inexpectus* was also recorded on shingle adjacent to the saltmarsh at ST04366590 (a species already known from this location and a qualifying feature of East Aberthaw Coast SSSI), along with *Metoecus paradoxus* at Ffontygari Cliffs, a species with relatively few Welsh records.

Table 15. Records of *Ochthebius poweri* at Aberthaw Leys and Ffontygari Cliffs in 2025. Sites marked * lie within East Aberthaw Coast SSSI.

Site	Grid Reference	Date	Abundance	Comment
*Aberthaw Leys	ST04626591	29/07/2025	1	Single adult
*Aberthaw Leys	ST0464365910	29/07/2025	2	Single elytron from expired adults found in two separate seepages
*Aberthaw Leys	ST04756588	29/07/2025	1	Single adult
*Ffontygari Cliffs	ST0488665870	29/07/2025	1	Single adult
Ffontygari Cliffs	ST05066588	29/07/2025	17	Mating pairs encountered
Ffontygari Cliffs	ST05066587	29/07/2025	12	One adult had expired
Ffontygari Cliffs	ST05056587	29/07/2025	1	Single adult
Ffontygari Cliffs	ST05056586	29/07/2025	7	-
Ffontygari Cliffs	ST05046586	29/07/2025	20	Mating pairs encountered

3.5.2 Cwm Col-huw

On the morning of 29th July 2025, a two-hour survey was undertaken at Cwm Col-huw. A total of 25 adult *O. poweri* (including one expired individual) were recorded along a 13 m section of cliff centred on grid reference SS95506751, during a focused 30-minute recording period (Table 16; Photos 64 to 70). No additional suitable habitat was identified along the cliffs immediately east or west of this section.

Of the individuals recorded, 24 were observed on wet mud or within shallow, open water in seepages, with one individual found beneath a stone within a seepage. The majority of individuals were associated with wet mud and shallow pools on ledges at the base of the cliff, rather than on vertical cliff faces. Depending on the degree of overhang and the aspect of the cliff face, some of these ledges are shaded for much of the day, while others receive direct sunlight for limited periods. Owing to the south-west facing aspect of the cliff,

most seepages receive no direct sunlight during the morning but are exposed to sunlight from approximately midday onwards.

Despite the apparently restricted extent of suitable habitat at this site, *Ochthebius poweri* was present in relatively high numbers. As individuals were recorded without disturbing loose mud within the seepages, it is likely that additional individuals were present but undetected, and that the local population may be larger than indicated by the recorded count.

Weather conditions during the survey were dry and sunny, although heavy rainfall had occurred prior to commencement. Wind speed was estimated at 12 to 15 mph from a west to north-west direction, and the maximum recorded air temperature was 19°C.

An additional invertebrate record made during the visit was the Black Mining Bee *Andrena pilipes*, with a female observed associated with soft-rock cliff habitat at grid reference SS95506751.

Table 16. Records of *Ochthebius poweri* at Cwm Col-huw in 2025.

Grid Reference	Date	Abundance	Comment
SS9550567520	29/07/2025	25	25 individuals (including one expired specimen) recorded in seepages along a 13 m section of cliff

3.5.3 Other areas

Following the recommendations of Bratton & Foster (2009) to examine coastline west of Cwm Col-huw for *Ochthebius poweri*, three days were spent walking the coastline and assessing cliff habitat suitability and accessible seepages between Cwm Col-huw and St Donats (23rd September 2025), St Donats and Nash Point (24th September 2025), and Cwm Nash to Dunraven (1st October 2025).

Cwm Col-huw to St Donats

On 23rd September 2025, the cliffs west of the known *Ochthebius poweri* population at Cwm Col-huw to the village of St Donats were visually assessed for habitat suitability. All accessible tufaceous seepages were examined for the beetle; however, none was recorded.

Much of this stretch of coastline appears to be unfavourable for *Ochthebius poweri* when compared with occupied habitat at Aberthaw Leys, Ffontygari Cliffs and the restricted habitat at Cwm Col-huw. This is largely due to the general absence of accumulated soft substrate within seepages, particularly on ledges. Where tufa deposits were present on vertical cliff faces, these were typically hard and lacked the soft, damp substrate characteristic of seepages known to support the beetle.

The cliff ledges around grid reference SS9435567878 (between Tresilian Bay and St Donat's Bay) appear to support the most potentially favourable habitat along this section (Photo 71). However, these ledges are relatively exposed in comparison to most occupied seepages at Aberthaw Leys, Ffontygari Cliffs and Cwm Col-huw, which are typically partly

or largely shaded due to cliff aspect and/or overhanging rock. These ledges also appear to be subject to occasional inundation by high tides; although the frequency of inundation is unclear, it is unlikely to be regular. This location may warrant further examination in the future, particularly in late July, which appeared to coincide with a period of increased *Ochthebius poweri* activity in 2025.

St Donats to Nash Point

On 24th September 2025, the cliffs between St Donats and Nash Point were visually assessed for habitat suitability for *Ochthebius poweri*, and any accessible tufaceous seepages were examined. However, none was found.

This stretch of coastline appears to be largely unsuitable for *Ochthebius poweri* due to the general absence of tufaceous seepages. The exception is an area of extensive seepage on the cliffs around St Donat's Bay at SS939678 (Photo 72); however, the lower, accessible sections of these seepages appear to be regularly submerged by high tides, likely rendering them unsuitable for *O. poweri*. While potentially favourable habitat may exist higher on the cliff, this area is inaccessible.

No further surveys are recommended for this section of coastline.

Cwm Nash to Dunraven

On 1st October 2025, the cliffs between Cwm Nash and Dunraven were visually assessed for habitat suitability for *O. poweri*, with all accessible tufaceous seepages examined. No *O. poweri* individuals were recorded.

Extensive tufaceous seepages are present high on the cliffs at Cwm Nash at SS90437013 (Photo 73), Cwm Mawr at SS89257228 (Photo 74), and around Cwm y Buarth at SS89027260 (Photo 75). Although inaccessible, these seepages could potentially support suitable habitat for the beetle.

Several seepages were recorded at the base of an extensive landslip between Traeth Mawr and Traeth Bach (SS898713). These include a seepage measuring approximately 2 m² at SS8983571318 (Photo 76), and a further seepage of approximately 1 m² at SS8979671403 (Photo 77). These seepages appear potentially favourable for *Ochthebius poweri*, supporting soft, damp substrate of a similar consistency to that observed at occupied sites elsewhere. These locations warrant further examination in the future, particularly in late July, which appeared to coincide with peak adult beetle activity in 2025. It is possible, however, that as these seepages are associated with a large landslip, any population present prior to the landslip may have been lost.

On the cliffs on the south side of Dunraven Hillfort, a series of seepages of apparent suitability for *Ochthebius poweri* are present. These include a seepage measuring approximately 1 m wide and 3 m long at SS8887672671 (Photo 78), which supports soft, wet substrate of suitable consistency; a ledge around SS88867266 (Photo 79), the rear of which supports soft, damp substrate; and a series of smaller seepages in the vicinity of SS88867266 (Photo 80), some of which may support favourable habitat. This area

warrants further investigation and, as previously discussed, a survey in late July may be particularly informative.

Photo 50. Seepage at the base of the cliff at Aberthaw Leys (at ST04626591) found to support a single *Ochthebius poweri* individual on 29th July 2025.

Photo 51. Ledge at Aberthaw Leys (at ST04756588) found to support a single *Ochthebius poweri* individual on 29th July 2025.

Photo 52. Ledge at Aberthaw Leys (at ST04756588) found to support a single *Ochthebius poweri* individual on 29th July 2025.

Photo 53. Seepage at Ffontygari Cliffs (around ST0488665870) found to support a single *Ochthebius poweri* individual on 29th July 2025.

Photo 54. A closer view of the seepage at Ffontygari Cliffs (around ST0488665870) found to support a single *Ochthebius poweri* individual on 29th July 2025.

Photo 55. View looking north across Ffontygari Cliffs from around ST05056586 on 29th July 2025.

Photo 56. A closer view of the seepages on the ledges at Ffontygari Cliffs from around ST05056586 on 29th July 2025.

Photo 57. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 58. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 59. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 60. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 61. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 62. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 63. Seepage at Ffontygari Cliffs (centred around ST05066587) found to support *Ochthebius poweri* on 29th July 2025.

Photo 64. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

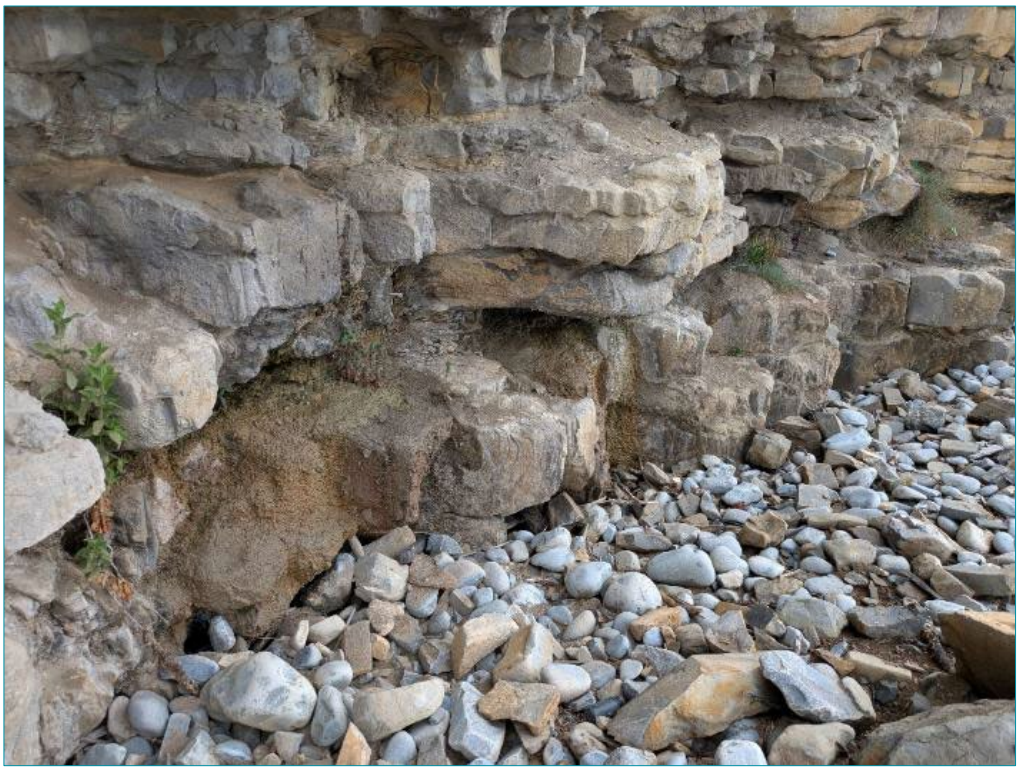

Photo 65. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 66. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 67. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 68. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 69. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 70. Seepage at Cwm Col-huw (centred around SS9550567520) occupied by *Ochthebius poweri* on 29th July 2025.

Photo 71. Seepage on a cliff ledge between Tresilian Bay and St Donat's Bay (around SS9435567878) supporting potential habitat for *Ochthebius poweri*, as photographed on 23rd September 2025.

Photo 72. Tufaceous seepages on the cliffs around St Donat's Bay (at SS939678), as photographed on 24th September 2025.

Photo 73. Tufaceous seepages present high on the cliffs at Cwm Nash (at SS90437013), as photographed on 1st October 2025.

Photo 74. Tufaceous seepages present on the cliffs at Cwm Mawr (at SS89257228), as photographed on 1st October 2025.

Photo 75. Tufaceous seepages present high on the cliffs near to Cwm y Buarth (at SS89027260), as photographed on 1st October 2025.

Photo 76. Seepage at the base of an extensive landslip between Traeth Mawr and Traeth Bach at SS8983571318, as photographed on 1st October 2025.

Photo 77. Seepage at the base of an extensive landslip between Traeth Mawr and Traeth Bach at SS8979671403, as photographed on 1st October 2025.

Photo 78. Cliff seepage near to Dunraven Hillfort at SS8887672671, as photographed on 1st October 2025.

Photo 79. A cliff ledge with seepage near to Dunraven Hillfort around SS88867266, as photographed on 1st October 2025.

Photo 80. Cliff seepages near to Dunraven Hillfort around SS88867266, as photographed on 1st October 2025.

3.6 *Odontoscelis fuliginosus*

3.6.1 Freshwater East

Freshwater East was visited on 4th August 2025 (13:00-16:30) to survey for the Greater Streaked Shieldbug *Odontoscelis fuliginosa*, which was last recorded at this site as a single adult on 19th June 2010. Weather conditions were dry, clear and sunny, although heavy rainfall had occurred prior to the visit. The maximum air temperature was 20°C, with west to north-westerly winds of 14 to 17 mph.

Bare or very sparsely vegetated dune areas were surveyed for the presence of Common Stork's-bill *Erodium cicutarium*, including areas associated with previous records of *Odontoscelis fuliginosa* at SS018980, SS018981 and SS019981. As the shieldbug is a strongly ground-dwelling and burrowing species, when stork's-bill plants were located, the sand beneath the basal rosettes was carefully examined. Sand around the rosettes was also excavated to a depth of several inches and passed through a fine mesh sieve over a white plastic tray in an effort to detect any burrowing adults (Photo 81).

Initial searches located a small number of stork's-bill plants along path edges at SS01799810. Further plants were subsequently found along the upper reaches of sandy paths within SS018980 and SS017980, typically occurring at the edge of bracken scrub where conditions were relatively shaded but the plants appeared healthy. An *Arenocoris fallenii* nymph and adult were recorded beneath the basal rosettes of stork's-bill at SS0180998092 and SS0179598091 respectively.

The sandy path from SS01839806 was then followed north-eastwards, with path edges and adjacent bare or sparsely vegetated areas checked for stork's-bill, including connecting paths. Several small plants, likely representing individuals that had germinated earlier in the summer, were located along the centre of the footpath at SS01989813 (Photo 82), with additional plants found in disturbed sand around a bench at the same location (Photo 83).

All sandy paths and areas of bare or sparsely vegetated dune were then searched while working south-west along the foredunes from approximately SS02029809 to SS01629777. Despite the presence of extensive open sand in parts of the dune system, particularly towards the north-east, very few stork's-bill plants were encountered. The main exception was a small number of plants at the base of the dunes around SS01999807 (Photo 84), beneath which an *Arenocoris fallenii* adult was recorded at SS0199798070. A single individual of the rare lygaeid *Pionosomus varius* was also recorded during the survey and is believed to have occurred at this location, although the precise grid reference was not noted.

The return route followed the sandy path forming part of the Wales Coast Path from SS01589777 north-eastwards (Photo 85). Several larger and healthier stork's-bill plants were encountered sporadically along this path to approximately SS0175997921, where an *Arenocoris fallenii* nymph was found associated with one of the plants.

Despite locating a reasonable number of stork's-bill plants across Freshwater East during the visit on 4th August 2025, no *Odontoscelis fuliginosa* adults or nymphs were detected.

Following departure from Freshwater East, additional stork's-bill plants were noted in short sandy verges around Thorntrees car park at SS0172198226 (Photo 86). Plants at this location were larger, healthier and occurred at higher density than those found elsewhere during the survey. These were also examined using the same methods, but again no shieldbug individuals were located.

A return visit was made to Freshwater East on 10th September 2025 (c. 14:00-17:00), during which the same survey techniques were employed. Weather conditions were dry but overcast, with a maximum air temperature of 17°C and westerly winds of 17 to 20 mph; it had rained heavily prior to the survey commencing.

All areas where stork's-bill had been recorded during the August visit were revisited. An additional area supporting stork's-bill was identified at SS01629778 (Photo 86), where numerous very small plants were present within a short, rabbit-grazed lawn subject to frequent trampling by walkers; evidence of use as a campfire site was also observed. No *Odotoscelis fuliginosa* adults or nymphs were recorded at this location or elsewhere during the September visit.

Given that the much smaller *Arenocoris fallenii* and *Pionosomus varius* – also stork's-bill associates – were successfully located during the 2025 surveys, it is unlikely that *Odontoscelis fuliginosa* adults or nymphs would have been overlooked if present beneath the basal rosettes of stork's-bill plants or within the surrounding sand. The absence of records across two visits in August and September therefore suggests that *Odontoscelis fuliginosa*, if still present at Freshwater East, occurs in very low numbers or is highly localised. This is a cause for concern.

The apparent scarcity of Common Stork's-bill across much of the dune system may represent a limiting factor for *Odontoscelis fuliginosa* at this site. Targeted surveys earlier in the season (especially June and early July), when adults are likely to be more active, may be required to confirm the current status of the species at Freshwater East.

3.6.2 Broadhaven Dunes

Broadhaven Dunes was visited on 5th August 2025 as part of a full day of surveying (09:00–17:00) for *Odontoscelis fuliginosa* across a number of sand dune sites, namely Broadhaven Dunes, Mere Pool Valley, Stackpole Warren, and Barafundle Bay. The four sites were surveyed in that order, starting at Broadhaven Dunes (SR976939) and walking progressively north-east to the dunes at Barafundle Bay (SR989951), which were reached around 14:45. With the exception of Mere Pool Valley, the sites were also sampled on the return journey to Broadhaven car park (SR975938), following different routes where possible to maximise site coverage. Weather conditions were dry and largely sunny, with only occasional cloud. The maximum air temperature was 19°C, with westerly winds of 10 to 18 mph.

The same methodology as used at Freshwater East on 4th August 2025 was employed. Bare or very sparsely vegetated dune areas were checked for the presence of Common Stork's-bill, including locations supporting previous records of *Odontoscelis fuliginosa* (at Broadhaven Dunes, SR977941; record from 16th July 2010). When Stork's-bill plants were located, the sand beneath the basal rosettes was carefully examined. Sand around the rosettes was also excavated to a depth of several inches and passed through a fine mesh sieve over a white plastic tray in an effort to detect any burrowing adults.

At Broadhaven Dunes, Common Stork's-bill was largely absent, with only several small plants located along a well-trodden sandy path at SR97709426 and on a trampled ledge used as a step up from the beach at around SR97689428, on the margin of Mere Pool Valley; at the latter location, a single *Arenocoris fallenii* adult was recorded. These plants were likely individuals that had germinated earlier in the summer.

No *Odontoscelis fuliginosa* individuals were found during the daytime survey on 5th August 2025. An incidental record of the Rhombic Leatherbug *Syromastus rhombeus* was made at SR9765994119, where an adult was encountered along a sandy path at the rear of the dunes approaching Mere Pool Valley.

Later that evening, Christian Owen revisited Broadhaven Dunes after dark using a head torch. Surprisingly, a single adult *Odontoscelis fuliginosa* was encountered along a sandy path at SR97679414 (Table 17; Photo 87). No additional individuals were located during this nocturnal survey.

Table 17. Record of *Odontoscelis fuliginosa* on Broadhaven Dunes in 2025.

Grid Reference	Date	Abundance	Comment
SR97679414	05/087/2025	1	Single adult on sandy path at night

A return visit was made to Broadhaven Dunes on the evening of 10th September 2025 to undertake a targeted night survey for *Odontoscelis fuliginosa* using torches, prompted by the adult found on 5th August 2025. Sandy paths and other areas of bare or sparsely vegetated sand were searched, and areas known to support stork's-bill were revisited, with the sand beneath basal rosettes again carefully examined. No *Odontoscelis fuliginosa* individuals were encountered.

On 11th September 2025, Broadhaven Dunes was surveyed again during the daytime using the same methodology as on 5th August 2025, as part of a full day of surveying (09:00–17:00) that also included Mere Pool Valley and Stackpole Warren. Barafundle Bay was not visited on this occasion due to habitat unsuitability (see Barafundle Bay section). No *Odontoscelis fuliginosa* were found at Broadhaven Dunes during this survey. Weather conditions were dry and partly sunny, with a maximum air temperature of 16°C and westerly winds of 15 to 24 mph.

Although unexpected, the discovery of an adult during the evening survey on 5th August 2025 confirms the continued presence of the species at Broadhaven Dunes, and likely also within the adjacent Mere Pool Valley. The reasons for its apparent absence during daytime

surveys remain unclear. However, the popularity of Broadhaven Dunes with tourists may be a contributing factor, as the few stork's-bill plants present were heavily trampled, which is likely to negatively affect adults and nymphs feeding, resting, or sheltering beneath these plants.

It is possible that adults spend time away from foodplants during the daytime to avoid trampling pressure, or that plants become unsuitable as a result of disturbance, although this remains speculative. The very low abundance of stork's-bill plants is of particular concern. Immediately behind the foredunes, the dunes are largely fixed, with very limited areas of bare or sparsely vegetated sand, which is likely a significant limiting factor for the species. Increased disturbance to create and maintain such conditions would be beneficial.

Despite the negative impacts of trampling, recreational pressures may also play a limited positive role by creating and maintaining areas of open sand suitable for the germination of stork's-bill. Plants occurring in less intensively trampled areas would likely provide the most suitable conditions for *Odontoscelis fuliginosa*.

3.6.3 Mere Pool Valley

Mere Pool Valley was visited on 5th August 2025 as part of a full day of surveying (09:00-17:00) across a number of sand dune sites. Weather conditions were dry and largely sunny, with only occasional cloud. The maximum air temperature was 19°C, with westerly winds of 10 to 18 mph.

Locations supporting previous records of *Odontoscelis fuliginosa* were visited, these being SR9764994280, SR9752994284 and SR974943. The sandy footpath into Mere Pool Valley from Broadhaven Dunes was walked westwards from SR97679427 to SR97569425. Bare and sparsely vegetated sand along the south-facing ridge above the valley (Photo 88) was visually checked by both surveyors over a period of several hours for Common Stork's-bill, including along the footpath up the ridge and into the adjacent field.

Despite the presence of extensive areas of open sand along the ridge, Common Stork's-bill was found in surprisingly low numbers, with only around five individual plants encountered from the gate at SR97569425 west to approximately SR97319423. This included the valley floor, where bare sand is limited. Given the scarcity of its foodplant, it was perhaps unsurprising that no *Odontoscelis fuliginosa* individuals were recorded.

The cattle-grazed field above Mere Pool Valley to the north (SR974943) was also surveyed and was found to be very sandy, supporting large numbers of Common Stork's-bill associated with areas of sand disturbed by cattle (Photo 89). This field was surveyed over a period of 1–2 hours. Despite the abundance of stork's-bill – far greater than observed at any other site during the surveys – no *Odontoscelis fuliginosa* individuals were encountered. Three *Arenocoris fallenii* nymphs (two beneath one plant and a single individual beneath another) were recorded at SR9748394341, and *Stictopleurus* nymphs were also recorded beneath stork's-bill rosettes around SR973943.

A return visit was made to both Mere Pool Valley and the cattle-grazed field on the evening of 10th September 2025 to undertake a targeted night survey for *Odontoscelis fuliginosa* using torches. Given the abundance of stork's-bill in the field, some time (at least one hour) was spent visually searching open sand and examining sand beneath basal rosettes (Photo 90). No *Odontoscelis fuliginosa* individuals were encountered. The Nationally Scarce Purse Web Spider *Atypus affinis* was, however, encountered along the sandy footpath at SR97629425 (Photo 91).

On 11th September 2025, Mere Pool Valley and the cattle-grazed field were surveyed again during the daytime using the same methodology as on 5th August 2025, as part of a full day of surveying (09:00-17:00) that also included Broadhaven Dunes and Stackpole Warren. No *Odontoscelis fuliginosa* were recorded during this visit. Weather conditions were dry and partly sunny, with a maximum air temperature of 16°C and westerly winds of 15 to 24 mph.

The sparsity of Common Stork's-bill within Mere Pool Valley is deeply concerning and unexpected given the extent of bare and sparsely vegetated sand present, particularly on the south-facing ridge around SR974942. The absence of the plant led the surveyors to consider whether recent climatic conditions may have played a role. The generally cool and wet conditions experienced in 2024 may have negatively affected germination or establishment; it seems unlikely that the warm and dry spring and summer of 2025 would have had a detrimental effect, and such conditions may even have been beneficial given the drought tolerance of the species. As such, the current scarcity of stork's-bill within the valley remains unexplained.

Around SR976942, however, the dunes are largely fixed, with little obvious open sand beyond that present along footpaths (Photos 92 to 94), and the lack of disturbance in this part of the valley is therefore likely to be a contributing factor to the low numbers of Stork's-bill recorded here. Bracken encroachment (a classic symptom of stabilisation) is also a potential cause for concern at Mere Pool Valley, particularly where it is advancing up the sandy ridge (Photo 95), and may warrant careful monitoring and, where appropriate, light management to prevent further loss of open sandy habitat.

In contrast, the cattle-grazed field above Mere Pool Valley supports large numbers of stork's-bill plants of varied age, with plentiful open sand and habitat that appears favourable for *Odontoscelis fuliginosa* (Photos 96 & 97), despite none being recorded. Common Stork's-bill here is seemingly benefiting from regular disturbance by cattle, which maintains open conditions suitable for germination. The absence of *Odontoscelis fuliginosa* in this field may be best explained by a later-than-ideal survey period, particularly given the warm and dry conditions in spring and summer 2025, which may have advanced the phenology of the species and made adults more difficult to detect during August and September.

Targeted surveys earlier in the season – particularly during June and early July, when adults are likely to be more active – are recommended to clarify the current status of *Odontoscelis fuliginosa* at this site and within Mere Pool Valley. However, the very low

abundance of stork's-bill within the valley itself suggests that any remaining population there is likely to be small and potentially in decline.

3.6.4 Stackpole Warren

Stackpole Warren was visited on 5th August 2025 as part of a full day of surveying (09:00–17:00) across a number of sand dune sites. Weather conditions were dry and largely sunny with only occasional cloud. The maximum air temperature was 19°C, with westerly winds of 10 to 18 mph.

The same methodology as previously described was employed; this involved checking areas of bare or very sparsely vegetated dune for the presence of Common Stork's-bill and, when found, carefully examining the sand beneath the basal rosettes and sieving the surrounding sand to a depth of several inches in an effort to detect any burrowing adults. Sampling initially focused on areas of open sand to the west of the Warren at SR978942, SR978943 and SR979942 (Photos 98 & 99), as these supported the most extensive areas of open sand and also previous records of *Odontoscelis fuliginosa*. Common Stork's-bill was largely absent on this occasion, with no more than a few plants recorded. Areas of open sand were checked progressively eastwards, with only a small number of plants located at SR98379438 (Photo 100) and SR98479437 (Photo 101).

No *Odontoscelis fuliginosa* individuals were recorded during the survey, though a single *Arenocoris fallenii* adult was found at SR9804294238. The rare lygaeid *Pionosomus varius* (a qualifying feature of Stackpole SSSI) was also recorded during the survey and is believed to have occurred around this same location, although the precise grid reference was not noted.

A return visit was made to Stackpole Warren on the evening of 10th September 2025 to undertake a targeted night survey for *Odontoscelis fuliginosa* using torches. Though few, known locations supporting Common Stork's-bill were revisited and examined, no *Odontoscelis fuliginosa* individuals were encountered.

On 11th September 2025, Stackpole Warren was surveyed again during the daytime using the same methodology as on 5th August 2025, as part of a full day of surveying (09:00–17:00) that also included Broadhaven Dunes and Mere Pool Valley. No *Odontoscelis fuliginosa* individuals were recorded during this visit. Weather conditions were dry and partly sunny, with a maximum air temperature of 16°C and westerly winds of 15 to 24 mph.

Much of the dune system at Stackpole Warren appears stabilised with limited areas of open sand (Photo 102). The increasing stability of the dunes, mirrored across many Pembrokeshire dune systems, is of concern and has likely contributed to the reduction in bare sand and the corresponding loss of suitable habitat for *Odontoscelis fuliginosa*. While rabbit grazing was noted (Photo 103) and is considered beneficial, increased grazing pressure may be beneficial in limiting scrub encroachment. The site may also benefit from large-scale dune rejuvenation work similar to that undertaken at other Welsh dune systems in recent years to increase the extent of early successional habitats for this species and other dune invertebrates.

3.6.5 Barafundle Bay

Barafundle Bay was visited on a single occasion on the afternoon of 5th August 2025 as part of a full day of surveying (09:00–17:00) across a number of sand dune sites. Weather conditions were dry and largely sunny with only occasional cloud. The maximum air temperature was 19°C, with westerly winds of 10 to 18 mph.

The dunes were found to be largely stabilised and dominated by scrub (Photos 104 & 105), particularly Bracken. While small areas of exposed sand persist along footpaths and in a few other limited locations, no Common Stork's-bill plants could be located. Given that the most recent record of *Odontoscelis fuliginosa* from these dunes dates from July 1990 at SR989951, it appears likely that the species has since been lost from this location. No return visit was undertaken owing to the apparent unsuitability of the habitat, with greater survey effort instead directed towards sites considered to retain higher potential to support *Odontoscelis fuliginosa*.

The dune system would likely benefit from large-scale rejuvenation works similar to those implemented at other Welsh dune sites in recent years, which aim to restore areas of open and early-successional dune habitat. Such interventions would be expected to improve conditions for Common Stork's-bill and, in turn, increase the potential suitability of the site for *Odontoscelis fuliginosa* and other dune-associated invertebrates.

3.6.6 Broomhill & Kilpaison Burrows

Broomhill Burrows and Kilpaison Burrows at Freshwater West were visited on 7th August 2025 (10:00-16:30) to survey for *Odontoscelis fuliginosa*, deploying the same methodology as that adopted at other Pembrokeshire dune systems. Weather conditions were dry with light cloud and occasional sunshine. The maximum air temperature was 19°C, with westerly winds of 12 to 14 mph.

The survey initially targeted areas of open sand persisting as a small number of sand pits within the stabilised dunes east of Freshwater Beach Car Park around SR887997; however, only a single Common Stork's-bill plant could be located.

The survey then progressed north-east, sampling around SM888000 where small areas of open sand occur on the dunes at SR887999, likely maintained by cattle movement across the dunes. This location supports a previous record of *Odontoscelis fuliginosa* at SR887999. Only a small number of Common Stork's-bill plants were found.

Continuing northwards, a reasonable number of Common Stork's-bill plants were located in disturbed ground at SM8873200194, measuring approximately 15 m² and appearing to function as a cattle feeding station (Photo 106). Here, regular trampling by cattle appears effective in maintaining a continuity of bare and sparsely vegetated sand conducive to germination. Approximately 20-30 plants of varied size were present, some likely germinated that summer and others potentially from the previous year. An *Arenocoris fallenii* nymph was recorded nearby at SM8871600208.

The sandy footpath, apparently also used by cattle, was followed north-west from the aforementioned feeding station, along which several Common Stork's-bill plants were found. Small areas of open sand persist along this path at SM88590038 and SM88540043 (Photo 107). The sandy path centred at SM88650039 was also walked, where a small number of plants were again recorded.

A second cattle feeding station towards the field entrance at SM8845400540 (Photo 108) supported a very high abundance of Common Stork's-bill, estimated at approximately 1,000 individual plants across an area measuring at least 25 × 35 m. Many plants were small and likely represented current-year germination. These extended beyond the immediate feeding station into the surrounding field.

Across all of the above locations, no *Odontoscelis fuliginosa* individuals were recorded. The dunes west of Broomhill Dunes Car Park were visited in the afternoon. The sandy path forming the Wales Coast Path from SM88270043 north-west to the gate at SM88140056 supported a small number of readily trampled plants at intervals, with several healthier individuals at the margins (Photo 109). Open sand is plentiful along the foredunes from SM882004 south-east to SR885997 (Photo 110); however, Common Stork's-bill was generally scarce and largely confined to the north-western section, with a few plants at SM88220044 and SM88230042. An *Arenocoris fallenii* adult was found nearby at SM8818300521. The Dune Spurge Bug *Dicranocephalus agilis* (adults and nymphs) was numerous throughout the foredunes, particularly around SM882003, with the lygaeid *Henestaris laticeps* also recorded as a single individual within the foredunes around SM882004. No *Odontoscelis fuliginosa* individuals were recorded at these locations.

Broomhill and Kilpaison Burrows were revisited on 12th August 2025, returning to known Common Stork's-bill locations identified during the previous survey. Suction-sampling was adopted in addition to hand searching beneath basal rosettes in an effort to increase detection probability. Over several hours (c. 10:00-13:00), the same survey route was followed, with plants suction-sampled and the contents sieved over a white tray. Given the abundance of Common Stork's-bill plants at the two cattle feeding stations – one supporting at least 1,000 individuals – it was anticipated that this method would detect *Odontoscelis fuliginosa*. However, no individuals were recorded at this location or elsewhere during the survey. No stork's-bill associates, such as *Arenocoris fallenii*, were encountered during this visit either.

The inability to detect *Odontoscelis fuliginosa* across both surveys is both frustrating and perplexing. Although the dunes are largely fixed with only limited open areas with bare or sparsely vegetated sand, the high abundance of Common Stork's-bill in one of the two cattle feeding stations would ordinarily be expected to support the species. It is possible that cattle trampling is excessively concentrated at certain times of year and, together with dung deposition, renders these areas temporarily unsuitable; however, this remains speculative.

In common with other sites, Broomhill Burrows and Kilpaison Burrows would likely benefit from large-scale dune rejuvenation works similar to those implemented at other Welsh dune systems in recent years, which aim to restore areas of open, early-successional

habitat. Such interventions would be expected to improve conditions for Common Stork's-bill and, in turn, increase the potential suitability of the site for *Odontoscelis fuliginosa* and other dune-associated invertebrates. Increased cattle grazing pressure to control established scrub would also likely enhance habitat quality for both the species and its foodplant.

Photo 81. Sand around the rosettes of Common Stork's-bill being sieved by Christian Owen on Freshwater East on 4th August 2025.

Photo 82. Footpath with Common Stork's-bill on Freshwater East at SS01989813, as photographed on 10th September 2025.

Photo 83. Disturbed sand with Common Stork's-bill around a bench on Freshwater East at SS01989813, as photographed on 10th September 2025.

Photo 84. Sand dune supporting a few Common Stork's-bill plants on Freshwater East around SS01999807, as photographed on 4th August 2025.

Photo 85. Sandy footpath forming the Wales Coast Path on Freshwater East, as photographed on 4th August 2025.

Photo 86. Short sandy verges around Thorntrees car park at SS0172198226 found to support a number of Common Stork's-bill plants, as photographed on 4th August 2025.

Photo 87. *Odontoscelis fuliginosa* adult recorded encountered along a sandy path at Broadhaven Dunes (SR97679414) on the evening of 5th August 2025.

Photo 88. View looking west along the sandy ridge within Mere Pool Valley on 5th August 2025.

Photo 89. Open sand within the cattle-grazed field above Mere Pool Valley on 5th August 2025.

Photo 90. Christian Owen searching beneath the basal rosettes of Common Stork's-bill at Mere Pool Valley on the evening of 10th September 2025.

Photo 91. Purse Web Spider *Atypus affinis* recorded along the sandy footpath at SR97629425 at Mere Pool Valley on the evening of 10th September 2025.

Photo 92. Fixed dune at Mere Pool Valley (SR976942), as photographed on 11th September 2025.

Photo 93. Fixed dune at Mere Pool Valley (SR976942), as photographed on 11th September 2025.

Photo 94. Fixed dune at Mere Pool Valley (SR976942), as photographed on 11th September 2025.

Photo 95. Bracken encroachment up the sandy ridge at Mere Pool Valley, as photographed on 11th September 2025.

Photo 96. Open sand with Common Stork's-bill within the cattle-grazed field at Mere Pool Valley on 11th September 2025.

Photo 97. Open sand with Common Stork's-bill within the cattle-grazed field at Mere Pool Valley on 11th September 2025.

Photo 98. View looking west at Stackpole Warren from around SR979942 on 5th August 2025.

Photo 99. View looking north-east at Stackpole Warren from SR97899431 on 5th August 2025.

Photo 100. Sandy pit at Stackpole Warren (SR98379438) supporting a small number of Common Stork's-bill plants, as photographed on 11th September 2025.

Photo 101. Sandy path at Stackpole Warren (SR98479437) along which several Common Stork's-bill plants were found at the edges among Bracken scrub, as photographed on 11th September 2025.

Photo 102. View looking west across the dunes at Stackpole Warren from around SR981944 on 11th September 2025.

Photo 103. Rabbit-grazed dune at Stackpole Warren on 11th September 2025.

Photo 104. Fixed dunes at Barafundle Bay on 5th August 2025.

Photo 105. Fixed dunes at Barafundle Bay on 5th August 2025.

Photo 106. View looking south-east across the cattle feeding station on Broomhill Burrows at SM8873200194 found to support approximately 20-30 Common Stork's-bill plants, as photographed on 7th August 2025.

Photo 107. View looking south-east along the sandy path on Broomhill Burrows at SM885003, as photographed on 12th September 2025.

Photo 108. View looking east across the cattle feeding station on Broomhill Burrows at SM8845400540 which was found to support approximately 1,000 Common Stork's-bill plants, as photographed on 7th August 2025.

Photo 109. View looking south-east along the sandy path forming the Wales Coast Path on Broomhill Burrows from around SM88150056 on 8th July 2025.

Photo 110. Foredunes at Broomhill Burrows around SM882003, as photographed on 8th July 2025.

3.7 *Plateumaris bracata*

3.7.1 Pant-y-Sais & Tennant Canal

Tennant Canal was visited on 1st July 2025, surveying the length of the towpath from Jersey Marine (SS71199389) to the railway bridge (SS71889421) for *Plateumaris bracata* and *Tapinotus sellatus* over much of the day (10:00–16:00). Weather conditions were dry and initially overcast, becoming brighter later in the day, with a maximum air temperature of 21°C and westerly winds of 14 to 16 mph.

As *Plateumaris bracata* is monophagous on Common Reed *Phragmites australis*, visual inspection of Common Reed along the towpath was undertaken on the outward journey, with sweeping of reed stands conducted on the return journey. No *Plateumaris bracata* individuals were recorded during this initial survey effort.

On the return journey, the reedbeds adjacent to the boardwalk providing access to the Pant-y-Sais fen were visually searched. A single adult female *Plateumaris bracata* was recorded several metres into a dense stand of Common Reed at SS71419406 (Photos 111 & 112; Table 18); the individual was observed resting on Yellow Loosestrife *Lysimachia vulgaris* among the reeds. No additional individuals were found elsewhere on the fen or along the towpath. This included the length of towpath within Cors Crymlyn/Crymlyn Bog

SSSI south-westwards from the B4290 (SS71189386), which was surveyed using a combination of visual searching and sweeping.

Table 18. Record of *Plateumaris bracata* on Pant-y-Sais in 2025.

Grid Reference	Date	Abundance	Comment
SS71419406	01/07/2025	1	Single adult on Yellow Loosestrife *Lysimachia vulgaris* among a stand of Common Reed *Phragmites australis*

A return visit to both Pant-y-Sais and the Tennant Canal was undertaken on 13th August 2025, employing the same survey methods and again in conjunction with targeted searches for *Tapinotus sellatus*. No *Plateumaris bracata* individuals were recorded during this visit, including at the location where the species was observed on 1st July 2025.

Despite its broad distribution and the widespread availability of its food plant, recent records of *Plateumaris bracata* are extremely scarce (Geiser, 2023), and the species is evidently highly elusive, even at known sites. This is supported by the frequent recording of only single individuals at Welsh localities and the limited number of records throughout its documented history in Wales. The detection of a single individual at Pant-y-Sais is therefore encouraging. Given the extensive and abundant stands of Common Reed present at Pant-y-Sais and along the Tennant Canal towpath, it is considered likely that the species is more widespread and abundant than suggested by the single 2025 record. The location of the individual within a dense reedbed that could not be readily accessed for visual inspection or sweeping further suggests that additional individuals remain undetected where survey access is constrained by dense vegetation and/or a high water table.

3.7.2 Crymlyn Bog

Crymlyn Bog was visited on 4th July 2025, surveying as much of the south-west corner of the site as possible between 10:00 and 15:20 for *Plateumaris bracata*, in conjunction with targeted searches for *Tapinotus sellatus*. Access to other parts of the site was constrained by a high water table, including around the Glan-y-wern Canal, which supports a previous record of *Plateumaris bracata* at SS693944. Weather conditions were dry with sunny intervals, with a maximum air temperature of 19°C and a west to south-westerly wind of 11 to 14 mph.

Initial sampling targeted Common Reed at the water's edge at SS687940 and SS687941 (Photo 113), using a combination of visual inspection and sweeping. No *Plateumaris bracata* individuals were recorded here, although the more widespread *P. sericea* was present.

Accessible stands of Common Reed adjacent to the boardwalk (centred around SS68819422) were also sampled using the same methods but similarly yielded no *Plateumaris bracata* individuals.

Dense reedbeds along the eastern side of the track at SS687943, SS687944, SS688944 and SS688945 were entered at intervals and sampled (Photo 114). This involved visual searching and sweeping along the margins of the reedbeds, as well as entering the stands for distances of up to approximately 50 m eastwards from the track. No *Plateumaris bracata* individuals were recorded during this effort.

Further visual searching and sweeping of Common Reed was undertaken around SS68679445, again with no *Plateumaris bracata* detected.

On 13th August 2025, Liam Olds and Christian Owen joined Jamie Bevan (NRW), Clare Dinham (Buglife Cymru) and Tawny Clark (Natur am Byth) during a visit to the Glan-y-wern Canal, undertaken primarily as part of a Fen Raft Spider survey. Visual searching and sweeping for *Plateumaris bracata* was carried out along the eastern side of the canal northwards to approximately SS693946. No individuals were recorded, including within the area around SS693944, where *Plateumaris bracata* had previously been recorded on 28th June 1989.

These surveys indicate that *Plateumaris bracata* is difficult to detect at Crymlyn Bog despite the extensive availability of apparently suitable habitat. It is considered likely that the species is more widely distributed across the site than current records suggest, but that detection is constrained by the challenging survey conditions associated with a consistently high water table and extensive reedbeds. The abundance and spatial extent of suitable habitat may also, somewhat counterintuitively, reduce survey efficiency by limiting the ability to focus effort on a small number of discrete locations.

3.7.3 Goldcliff, Newport Wetlands

Goldcliff, within Newport Wetlands SSSI, was visited on 24th August 2025. Over a period of approximately two hours (c. 10:00–12:00), and while also searching for *Chalcis sispes* within adjacent marshy grassland, visual searching and sweeping of Common Reed was undertaken along the reen for *Plateumaris bracata*, starting at ST366829 and working south-westwards to ST361826.

No *Plateumaris bracata* individuals were recorded during the survey. However, adult *Donacia versicolorea* were encountered at ST366829 in association with Pondweeds *Potamogeton*. Lesser Marsh Grasshopper *Chorthippus albomarginatus* was also recorded at this location.

3.7.4 Percoed Reen, St. Brides

Percoed Reen, within St. Brides SSSI, was visited on 6th September 2025, surveying almost its entire length. Survey effort began near the centre of the reen at ST283834 (accessed from the Road to Nature to the north-west) and proceeded both north-eastwards to the housing estate at ST290839 and south-westwards to the junction with Hawse Lane and Church Lane at ST275830. A previous record of *Plateumaris bracata* exists for this location (ST278832) from June 1997.

The reen was visually searched on the outward journey, with sweeping of Common Reed conducted on the return journey. No *Plateumaris bracata* individuals were recorded. Reeds along the south-western section of the footpath had been cut relatively recently, as indicated by short regrowth (Photo 115), which may have reduced suitability for the species at the time of survey. In contrast, reedbeds to the east of the footpath were taller and more mature, particularly closer to the reen channel (Photo 116), but again yielded no records.

The failure to detect *Plateumaris bracata* during this visit should not be taken as evidence of absence. As demonstrated throughout the wider survey programme, the species appears to be highly elusive, even at sites where it has previously been recorded.

No additional known locations for *Plateumaris bracata* within the Gwent Levels SSSIs were surveyed during this study, partly because several records are associated with reen and ditch systems on private land, where access was not possible.

Given the extensive network of reens and ditches across the Gwent Levels, it is considered likely that *Plateumaris bracata* is more widely distributed than current records indicate. However, in light of the substantial invertebrate survey effort undertaken across the Gwent Levels in recent years, the species appears to be genuinely scarce within the SSSI.

Photo 111. Adult *Plateumaris bracata* recorded at Pant-y-Sais fen at SS71419406 on 1st July 2025.

Photo 112. Location at Pant-y-Sais fen where *Plateumaris bracata* was recorded at SS71419406 on 1st July 2025.

Photo 113. Habitat around SS687941 surveyed for *Plateumaris bracata* at Crymlyn Bog on 4th July 2025.

Photo 114. Habitat around SS687943 surveyed for *Plateumaris bracata* at Crymlyn Bog on 4th July 2025.

Photo 115. View looking south-west along Percoed Reen from around ST28328343 on 6th September 2025.

Photo 116. View looking south-west along Percoed Reen from around ST28638361 on 6th September 2025.

3.8 *Sphaerophoria loewi*

Two visits were made to East Aberthaw Coast SSSI in 2025 to survey for *Sphaerophoria loewi*. Surveys were undertaken on 26th June 2025 and 8th July 2025 and targeted two areas: saltmarsh within the SSSI around grid reference ST041659 (Photo 117), which was surveyed on both dates; and a saline lagoon behind the sea wall at Aberthaw Nature Reserve (Photo 118) around grid reference ST037660, located outside the SSSI and surveyed on 8th July 2025. No *Sphaerophoria loewi* individuals were recorded on either visit.

On 26th June 2025, sweep netting was undertaken for approximately two hours within the saltmarsh around grid reference ST041659. Weather conditions were dry with sunny intervals, although rainfall had occurred within two hours prior to the start of the survey. A strong westerly breeze was present (approximately 17 to 22 mph), and the maximum recorded air temperature was 19°C. The saltmarsh at this location appears largely unfavourable for *Sphaerophoria loewi* due to the scarcity of Sea Club-rush *Bolboschoenus maritimus* and the absence of Common Reed *Phragmites australis*, both noted as important associates. During the survey, the coastal carabid *Dicheirotrichus gustavii* was recorded; this individual was observed to host the obligate ectoparasitic fungus *Laboulbenia giardii*.

On 8th July 2025, the saline lagoon behind the sea wall at Aberthaw Nature Reserve (ST037660) was thoroughly surveyed, including along the margins of islands within the lagoon (Photo 119). No individuals were recorded, despite an abundance of hoverflies present along the lagoon margins. These were observed visiting stands of Common Reed, which supported high densities of the aphid *Hyalopterus pruni*; leaves were heavily coated in honeydew, which appeared to attract adult hoverflies. The lagoon appears to support suitable habitat for *Sphaerophoria loewi*, owing to the presence of both Sea Club-rush and extensive stands of Common Reed (Photos 120 & 121). Given the apparent suitability of the habitat, it is possible that *Sphaerophoria loewi* persists at this location but is present at low density and/or is highly localised, making detection challenging. Weather conditions were dry, clear and sunny, with a maximum air temperature of 19°C and a westerly wind of approximately 8 to 17 mph. The ladder gall of the infrequently-recorded mite *Steneotarsonemus phragmitidis* was recorded on Common Reed around much of the lagoon.

Later on 8th July 2025, the saltmarsh around grid reference ST041659 was resurveyed, despite continuing to support habitat considered largely unsuitable for *S. loewi*. No individuals were recorded. A range of other saltmarsh-associated invertebrates were recorded during this visit, including *Campiglossa plantaginis*, *Nemotelus notatus*, *Pentastiridius leporinus* and *Sarcophaga sinuata*.

Sampling undertaken on 8th July 2025 for *Sphaerophoria loewi* across both locations comprised the majority of the day.

Photo 117. View looking east across the saltmarsh within East Aberthaw Coast SSSI from ST04146593 on 26th June 2025.

Photo 118. View looking southwest across the lagoon within Aberthaw Nature Reserve (outside of the SSSI) on 8th July 2025.

Photo 119. Christian Owen visually searching and sweeping along the margins of an island within the lagoon on 8th July 2025.

Photo 120. View looking southwest along the southern margin of the lagoon (around ST03766598) within Aberthaw Nature Reserve on 8th July 2025.

Photo 121. View looking southwest along the northern margin of the lagoon (around ST03786604) within Aberthaw Nature Reserve on 8th July 2025.

3.9 *Tapinotus sellatus*

3.9.1 Tennant Canal

Tennant Canal was visited on 1st July 2025, surveying the length of the towpath from Jersey Marine (SS71199389) to the railway bridge (SS71889421). Weather conditions were dry and initially overcast, becoming brighter later in the day, with a maximum air temperature of 21°C and westerly winds of 14 to 16 mph.

As adults of *Tapinotus sellatus* are highly sensitive to disturbance and readily drop from their foodplant when disturbed (Boyce, 2010), visual inspection of Yellow Loosestrife *Lysimachia vulgaris* for adult weevils was undertaken on the outward journey (Photo 122). On the return journey, beating, suction sampling, and occasional sweep netting were also employed. Beating involved positioning a white plastic tray beneath the foliage of one or several plants and gently shaking the stems to dislodge any weevils, which would fall into the tray for counting. Suction sampling was undertaken around the base of plants following beating, in an attempt to locate any weevils that may have dropped prior to sampling or missed the tray. Sweeping of Yellow Loosestrife plants was also undertaken in some sections, followed by suction sampling.

Despite the use of multiple survey techniques, no *Tapinotus sellatus* individuals were recorded, despite the presence of several stands of Yellow Loosestrife along the towpath and therefore apparently suitable habitat. Several limitations may have influenced this result. Firstly, the towpath was overgrown at the time of survey, and access to Yellow Loosestrife plants was often restricted by dense growth of Common Reed and other waterside vegetation. Earlier in the season, before these species are fully developed, Yellow Loosestrife is likely to be more accessible and visible for sampling. Secondly, the towpath was well used by the public during the survey period, including walkers and cyclists. Given the species' sensitivity to disturbance, it is possible that adult weevils present prior to the survey had already dropped into the dense vegetation at the base of plants, making them difficult to detect.

A third limitation was that, during the return leg from the railway bridge (SS71889421) working south-westwards, another entomologist was sweep-netting along the towpath while sampling for Auchenorrhyncha. This individual had already swept approximately half to three-quarters of the towpath by the time paths crossed, which will likely have caused additional disturbance and may have further reduced the detectability of any *Tapinotus sellatus* present.

A range of other noteworthy invertebrates was recorded along the towpath, including three females of Fen Raft Spider *Dolomedes plantarius* (two with nursery webs at SS71529407, and a further female with a nursery web at SS71509407), a female *Thryogenes fiorii* at SS71399404 (with Pant-y-Sais SSSI appearing to represent the only known Welsh locality, with two records in 2009), Musk Beetle *Aromia moschata*, and the Nationally Rare *Cerapheles terminatus* at SS713940.

Visual searching, suction sampling, and sweeping of Yellow Loosestrife plants were also undertaken on the adjacent fen, accessed from the boardwalk, where the plant is widespread and locally abundant (Photo 123). No *Tapinotus sellatus* individuals were recorded here.

From mid-afternoon (c. 15:00), the towpath along the Tennant Canal within Cors Crymlyn/Crymlyn Bog SSSI was surveyed along its full length south-westwards from the B4290 (SS71189386), using the same methodology. Visual inspection of Yellow Loosestrife was undertaken on the outward journey, including a particularly large stand at SS71149383 (Photo 124). No *Tapinotus sellatus* individuals were recorded. As with the towpath at Pant-y-Sais SSSI, this section is heavily used by the public – particularly cyclists – owing to its surfaced nature, and disturbance is therefore likely to represent a significant limitation to survey effectiveness. An incidental record of the Nationally Scarce jumping spider *Marpissa nivoyi* was made at the canal edge at SS71149383 during sweeping.

On the afternoon of 13th August 2025 (c. 13:00–16:00), a return visit was made to the Tennant Canal, surveying both the Pant-y-Sais SSSI and Cors Crymlyn/Crymlyn Bog SSSI sections using the same methods as previously. No *Tapinotus sellatus* individuals were recorded. At the time of this visit, the towpath had been recently cut along both sections (potentially that same day judging by the still green and unwilted arisings), removing or heavily reducing many stands of Yellow Loosestrife (Photos 125 & 126). This represented a major limitation, substantially reducing the number of plants available for visual inspection, beating, or sweeping. Some suction sampling of cut Yellow Loosestrife arisings on the ground was undertaken but did not reveal any individuals.

It would be beneficial if contractors undertaking vegetation cutting were able to recognise stands of Yellow Loosestrife and retain them where possible. An additional limitation at Pant-y-Sais during this visit was the presence of a dog trainer repeatedly throwing a toy into the canal for retrieval along the towpath. This will have caused further disturbance to any *Tapinotus sellatus* present on canal-side vegetation and may also negatively affect Fen Raft Spiders, particularly where nursery webs are present. The installation of signage discouraging dogs from entering the canal would help reduce disturbance and limit other risks, such as contamination of the watercourse by neonicotinoids from flea treatments.

Additional Fen Raft Spider records were made during this visit (prior to the arrival of the dog trainer), including an adult female and three nursery webs (one empty and two containing spiderlings) at SS7164694094, an adult female with egg sac at SS7157994077, and an adult female at SS7149994063.

3.9.2 Crymlyn Bog

Crymlyn Bog was visited on 4th July 2025, surveying as much of the south-west corner of the site as possible between 10:00 and 15:20 (access to other parts of the site were not possible due to the high-water table). This visit also included sampling for *Plateumaris braccata*. Weather conditions were dry with sunny intervals, a maximum air temperature of 19°C, and a west to south-westerly wind of 11 to 14 mph.

The water's edge at SS687940 and SS687941 was initially surveyed, though little Yellow Loosestrife was present. Good stands of Yellow Loosestrife were, however, noted around SS68819422 (Photo 127), accessed from the boardwalk. Here, plants were initially visually inspected, followed by beating and suction sampling, using the same methodology as that employed at the Tennant Canal on 1st July 2025. Further substantial stands of Yellow Loosestrife were recorded along the edge of the footpath at SS6878594430 (Photo 128) over a distance of several metres, and around SS68679445 (Photo 129). Across all areas surveyed, no *Tapinotus sellatus* individuals were recorded.

There were no obvious limitations to the survey. Given a previous record of *Tapinotus sellatus* at SS686941 on 28th May 2020, the species is evidently present in this part of Crymlyn Bog. All verified Welsh records, however, are from May and June, and oviposition is reported to occur from early May to mid-June (Gosik, 2009). Given the warm and dry spring and early summer conditions in 2025, it is possible that the peak period of adult abundance had already passed by the time of this visit.

Other invertebrates recorded during the survey included *Aristotelia ericinella* (swept from Cross-leaved Heath *Erica tetralix*), a female *Cordilura ciliata*, and a male *Tephritis neesii*. On 13th August 2025, Liam Olds and Christian Owen joined Jamie Bevan (NRW), Clare Dinham (Buglife Cymru) and Tawny Clark (Natur am Byth) during a visit to the Glan-y-wern Canal, undertaken as part of a Fen Raft Spider survey. Although there are no Welsh records of *Tapinotus sellatus* later than 30th June 2025, a visit at this time was considered worthwhile, as the new generation of adults is reported to appear during the second half of August (Gosik, 2009).

At the starting point for both surveys, Tawny Clark located a fresh adult *Tapinotus sellatus* on Yellow Loosestrife at SS6939594249 (Photos 130 & 131; Table 19). Liam Olds and Christian Owen subsequently searched a substantial section of the eastern margin of the canal northwards to approximately SS693946, but no additional individuals were recorded. As this survey followed behind the Fen Raft Spider survey team in order to minimise disturbance to spiders and nursery webs, it is possible that further *Tapinotus sellatus* individuals were disturbed and dropped from host plants, reducing detectability.

Table 19. Record of *Tapinotus sellatus* at Glan-y-wern Canal, Crymlyn Bog, in 2025.

Grid Reference	Date	Abundance	Comment
SS6939594249	13/08/2025	1	One adult on Yellow Loosestrife *Lysimachia vulgaris*

Survey effort was also constrained by limited time availability, with no more than two hours available before the Fen Raft Spider survey team had to leave the site, and access to the area was dependent on shared transport. Additional survey time may therefore have resulted in further records. Nevertheless, confirmation of *Tapinotus sellatus* along the Glan-y-wern Canal is encouraging and demonstrates that surveys conducted in mid- to late August can be productive, extending the effective survey window for this species in Wales. Further targeted survey effort in this area is recommended to clarify the status and distribution of the species within Crymlyn Bog.

Photo 122. Stands of Yellow Loosestrife along the towpath at the edge of the Tennant Canal, Pant-y-Sais, around SS71249394 on 1st July 2025.

Photo 123. Yellow Loosestrife among Common Reed on the fen on Pant-y-Sais around SS71409405 on 1st July 2025.

Photo 124. Stand of Yellow Loosestrife along the towpath at Pant-y-Sais at SS71149383 on 1st July 2025.

Photo 125. Mown towpath within Pant-y-Sais SSSI on 13th August 2025.

Photo 126. Mown towpath within Cors Crymlyn/Crymlyn Bog SSSI on 13th August 2025, where a large stand of Yellow Loosestrife (shown in Photo 3) had been largely removed.

Photo 127. Yellow Loosestrife at Crymlyn Bog around SS68819422 on 4th July 2025.

Photo 128. Yellow Loosestrife along the edge of a footpath at Crymlyn Bog around SS6878594430 on 4th July 2025.

Photo 129. Fen habitat supporting Yellow Loosestrife (not readily visible in the photo) on Crymlyn Bog around SS68679445 on 4th July 2025.

Photo 130. Adult *Tapinotus sellatus* on Yellow Loosestrife along the Glan-y-wern Canal on Crymlyn Bog at SS6939594249 on 13th August 2025.

Photo 131. Location at the Glan-y-wern Canal, Crymlyn Bog, where *Tapinotus sellatus* was recorded at SS6939594249 on 13th August 2025.

3.10 *Tychius quinquepuntatus*

3.10.1 Kenfig Burrows

Kenfig Burrows was visited on 27th June 2025 (10:20-16:30) to survey for *Tychius quinquepunctatus*, covering a substantial proportion of the dune system north-west of Kenfig Pool, which appears to support the majority of previous records. Weather conditions were characterised by light cloud, with a maximum air temperature of 21°C and a west to south-westerly wind of 13 to 16 mph.

The burrows were entered at SS80368187, with the footpath followed north-west to SS80108200, before turning west and following the path to the eastern edge of a large dune slack at SS79328205. The path at SS79358207 was also walked north-eastwards to approximately SS79758224 to ensure that no suitable habitat was overlooked, as *Tychius quinquepunctatus* has previously been recorded in this area (e.g. SS79408212, SS79618224, SS79658225). Stable dune grassland along these paths was searched for Common Vetch *Vicia sativa*, and any plants encountered were swept and suction-sampled (Photo 132). However, Common Vetch proved difficult to locate at this stage, and no individuals were found during this initial phase of the survey.

The route was then retraced to the dune slack, where several Common Vetch plants were located along the path running east-west along the northern edge of the slack between approximately SS793820 and SS790820. This area supports more plants than those encountered earlier in the day and has yielded previous records of *Tychius quinquepunctatus* (e.g. SS79268210, SS79148209 and SS79108207). Most plants here had already gone to seed (Photo 133), with only a small number still in flower, and were swept and suction-sampled where present. Sampling was also extended to stable dune grassland around the full periphery of the dune slack in an effort to locate additional host plants. No *Tychius quinquepunctatus* individuals were recorded.

The footpath was then followed west to its junction with the vehicle track at approximately SS783820, an area associated with several previous records of *Tychius quinquepunctatus*. This verge was sampled, extending northwards for a short distance, before following the track south to south-east towards SS78958033 near the southern edge of Kenfig Sands. Sampling was undertaken at intervals along the verge wherever Common Vetch was encountered. Common Vetch was more frequent in this area and was still flowering in some locations, although many plants had already set seed. No *Tychius quinquepunctatus* were found.

Seed pods from several plants that had already gone to seed – both at the forementioned dune slack around SS792820 and on the verge alongside the vehicle track – were opened in an attempt to locate *Tychius quinquepunctatus* larvae, which feed on developing seeds; however, no larvae were detected. On several occasions, however, adult *Oxystoma pomonae* were found within the seed pods, and so this species could prove to compete with *Tychius quinquepunctatus* for the same limited resources. Several galled seed pods were also collected and reared on the basis that they could contain *Tychius*

quinquepunctatus larvae, but only *Oxystoma pomonae* larvae emerged (emergence took no more than one week from collection).

Adults of *Tychius quinquepunctatus* are known to peak in May and June, with only a single previous Welsh record in July (7th July 1995). It is therefore likely that adults were missed during this survey owing to its timing in late June. This may have been exacerbated by the warm and dry conditions experienced during May and June 2025, which likely accelerated plant phenology and may have resulted in an earlier peak in adult activity.

Despite only one confirmed record of *Tychius quinquepunctatus* since 2007 (6th May 2020), it is considered likely that the species remains widespread within stable dune grassland at Kenfig Burrows but was not detected during this survey. The relatively low abundance of Common Vetch in some areas is of concern and may be linked to extensive flooding within the dune system during the late summer and winter of 2024-25 (Chris Jones, pers. comm.). In addition, the predominance of plants that had already gone to seed likely reduced detectability, as non-flowering plants are more difficult to locate. It is therefore possible that some host plants were overlooked.

Although a visit to Merthyr Mawr Warren had initially been planned, this was not undertaken owing to the apparent late timing of the survey in relation to peak adult activity. Instead, additional survey effort was allocated to other target species during the 2025 field season.

Future surveys for Tychius *quinquepunctatus* would be best undertaken earlier in the season (especially in May), with particular focus on flowering Common Vetch within stable dune grassland.

Photo 132. Liam Olds suction-sampling within stable dune grassland supporting Common Vetch on Kenfig Burrows on 27th June 2025.

Photo 133. Common Vetch plant which had gone to seed in the verge alongside the vehicle track on Kenfig Burrows on 27th June 2025.

4. Discussion & conclusions

During the 2025 field season, targeted invertebrate surveys were undertaken across a range of coastal, dune, wetland and woodland sites in south Wales. The surveys focused on a suite of scarce or rare species spanning Coleoptera, Hemiptera and Hymenoptera. The principal aims were to confirm continued presence at historic localities, identify additional populations where possible, and assess current habitat suitability and management needs.

For ***Brachinus crepitans***, surveys were undertaken at Aberthaw Nature Reserve and East Aberthaw Coast SSSI. Despite extensive searching across open grassland, bare ground, shingle ridges and around former industrial structures using visual inspection, turning stones and suction sampling, no individuals were located. In light of the absence of verified Welsh records since 2003 and the apparent reduction in open, sparsely vegetated habitat due to scrub encroachment and limited disturbance, it is possible that the species has been lost from this locality, although its naturally cryptic behaviour must also be considered.

Targeted surveys for ***Chalcis sispes*** confirmed the species at Whiteford Burrows, where adults were recorded in both established and recently formed brackish marsh. The concurrent presence of *Stratiomys* host species indicates functioning parasitoid–host relationships and suggests that newly developing transitional marsh can rapidly attain

conservation value. In contrast, surveys at Goldcliff failed to detect the species or its hosts, most likely owing to dry habitat conditions and recent management reducing nectar availability. The results indicate that *Chalcis sispes* is locally established where suitable brackish marsh persists but may be sensitive to short-term habitat condition and management influences.

Surveys for the aculeate wasps ***Chrysis fulgida*** and ***Symmorphus crassicornis*** were undertaken at Pembrey Forest, Pembrey Air Weapons Range and Whiteford Burrows. Despite the presence of apparently suitable habitat at Pembrey Forest and Pembrey Air Weapons Range, including Creeping Willow stands, umbellifer nectar sources and abundant dead wood resources suitable for nesting, neither species was encountered during the 2025 fieldwork. Previous records from recent years indicate that both species are likely still present here, but detection is clearly challenging. Contributing factors include low population densities, the large and fragmented nature of suitable habitat, restricted off-track access, and potential fluctuations in prey availability, particularly the apparent reduction in *Chrysomela populi* larvae observed in some areas.

For ***Macroplax preyssleri***, surveys along the south Gower limestone coast confirmed the species at Horton Cliffs, Overton Cliff and Port Eynon Point, with Horton supporting the largest and most continuous population. The species showed a strong association with open, well-grazed limestone grassland supporting Common Rock-rose, and suction sampling proved markedly more effective than hand searching. A later visit to The Sands, Slade and adjacent cliffs failed to detect the species despite scattered areas of apparently suitable habitat, likely reflecting a combination of seasonal timing and increasing habitat fragmentation through scrub encroachment. Overall, the species appears locally viable but vulnerable to progressive loss of open limestone turf.

For ***Ochthebius poweri***, surveys of coastal cliff seepage systems along the south Glamorgan coastline recorded strong local populations at Aberthaw Leys, Ffontygari Cliffs and Cwm Col-huw following an initial negative visit earlier in the season. Individuals were consistently associated with soft wet mud, shallow freshwater pools and tufa deposits on shaded or partially shaded ledges where moisture was retained. Additional coastline searches failed to locate further colonies, indicating that although the species can be locally abundant, its distribution is highly fragmented and closely constrained by the availability and continuity of permanently damp seepage microhabitats. Most records of the beetle at Ffontygari Cliffs (Table 5) lie just outside East Aberthaw Coast SSSI and a boundary extension of the SSSI could be considered to encompass these populations. There is no SSSI in close proximity to Cwm Col-huw (Table 6).

The most extensive survey effort was directed towards ***Odontoscelis fuliginosa*** across multiple Pembrokeshire dune systems, including Freshwater East, Broadhaven Dunes, Mere Pool Valley, Stackpole Warren, Barafundle Bay, and Broomhill and Kilpaison Burrows. The species was recorded only once, as a single adult encountered during a nocturnal search at Broadhaven Dunes in August, while repeated daytime and evening surveys failed to locate further individuals at the other sites. Surveys targeted Common Stork’s-bill plants through visual inspection and sieving of sand beneath basal rosettes. Across most sites, the principal limiting factor appeared to be the scarcity of the foodplant,

this scarcity strongly associated with ongoing dune stabilisation, scrub encroachment and insufficient disturbance. Following discussion with Tristan Bantock, it was suggested that adults may have experienced a shortened activity period in 2025 due to the prolonged warm and dry spring and summer conditions, potentially reducing the window of detectability. It was nevertheless notable that no dead individuals were encountered despite thorough examination of plants and surrounding sand. The general absence of records across historically occupied dunes is concerning and may indicate a combination of very low population densities, phenological shifts, and genuine decline linked to habitat change. **Further surveys are required urgently to determine current status and distribution and to undertake habitat management to secure its status**.

Targeted work for ***Plateumaris bracata*** was undertaken at the Tennant Canal, Pant-y-Sais SSSI, Crymlyn Bog SSSI, the Glan-y-wern Canal, Goldcliff within Newport Wetlands SSSI, and Percoed Reen within St Brides SSSI. A single adult female was recorded at Pant-y-Sais, confirming the species' continued presence there, while no individuals were found at the remaining sites despite apparently extensive stands of Common Reed. The absence of records elsewhere is not necessarily indicative of true absence, as the species is widely recognised as elusive even at known sites. Detection is likely constrained by dense reedbeds, high water tables limiting access, and naturally low population densities. Nevertheless, the overall pattern suggests that the species remains genuinely scarce despite the widespread occurrence of its foodplant.

For ***Sphaerophoria loewi***, targeted surveys at East Aberthaw Coast SSSI and the adjacent saline lagoon at Aberthaw Nature Reserve failed to record the species despite several hours of sweep netting and visual searching. The core saltmarsh within the SSSI appeared structurally suboptimal owing to the scarcity of key associate plants, whereas the lagoon supported more suitable reed-dominated habitat and abundant aphid resources yet still produced no records. The absence is therefore considered more likely to reflect very low population density, high localisation or reduced detectability under prevailing weather conditions rather than definitive site loss, and repeat survey effort is warranted.

Surveys for ***Tapinotus sellatus*** focused on Yellow Loosestrife stands on the Tennant Canal, Pant-y-Sais SSSI, Crymlyn Bog SSSI and the Glan-y-wern Canal. A single fresh adult was recorded at Glan-y-wern Canal in mid-August, extending the known Welsh activity period later into the season than previously documented. Earlier surveys in July at other localities failed to detect the species. This pattern is likely influenced by seasonal timing, potential phenological shifts associated with the warm spring and early summer of 2025, and the inherently low detectability of the species. The confirmation of its presence at Glan-y-wern Canal is encouraging, but the overall findings suggest that populations are sparse and highly localised.

For ***Tychius quinquepunctatus***, surveys were undertaken at Kenfig Burrows (Kenfig SSSI), concentrating on Common Vetch within stable dune grassland. No individuals were recorded. Many foodplants had already gone to seed by the time of survey, and it is considered likely that adult activity had already peaked earlier in the season. The warm and dry spring conditions of 2025 may have advanced phenology, thereby reducing detectability during late-June survey dates. Reduced abundance and visibility of Common

Vetch in some areas, possibly linked to winter flooding and seasonal plant senescence, may also have contributed to the negative result. It is considered likely that *Tychius quinquepunctatus* still occurs at Kenfig Burrows but further surveys are recommended.

Across all species surveyed, several consistent themes emerged. Detectability was a recurring challenge, with many target species naturally occurring at low densities or exhibiting cryptic behaviour. The unusually warm and dry conditions in spring and early summer 2025 are likely to have advanced the phenology of several taxa, increasing the likelihood that peak activity periods were missed for some species. In many instances, host plants or apparently suitable structural habitat were present, but habitat quality and distribution were patchy rather than continuous. Dune stabilisation, scrub encroachment, winter flooding impacts, and a general reduction in disturbance were repeatedly identified as factors influencing foodplant abundance and microhabitat suitability. Access constraints, including high water tables, dense vegetation and restrictions on off-path access, further limited survey coverage and increased the potential for false absences.

In summary, the surveys confirmed the continued presence of *Chalcis sispes*, *Macroplax preyssleri*, *Ochthebius poweri*, *Odontoscelis fuliginosa*, *Plateumaris bracata* and *Tapinotus sellatus*. However, *Chrysis fulgida*, *Sphaerophoria loewi*, *Symmorphus crassicornis* and *Tychius quinquepunctatus* were undetected although populations may persist at surveyed locations given recent records and the availability of apparently suitable habitat. *Brachinus crepitans* was not recorded despite targeted effort and is presumed lost from its historic site and lost as a Welsh species. The principal limiting factors across species appear to be habitat stabilisation, reduced disturbance, host plant scarcity, phenological timing and intrinsic detectability challenges. Collectively, the findings indicate that while several target species persist in Wales, many are highly localised, scarce and potentially vulnerable to ongoing habitat change, underlining the importance of continued monitoring alongside proactive, site-specific habitat management.

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Appendix 1. Other invertebrates recorded by Liam Olds & Christian Owen in 2025

Species	Date	Location	Grid Reference	Abundance	Comment
Helophorus brevipalpis	26/06/2025	Aberthaw Leys / Ffontygari Cliffs	ST047658	-	Found within tufaceous cliff seepages. Grid reference centred
Laccobius striatulus	26/06/2025	Aberthaw Leys / Ffontygari Cliffs	ST047658	-	Found within tufaceous cliff seepages. Grid reference centred
Lesteva longoelytrata	26/06/2025	Aberthaw Leys / Ffontygari Cliffs	ST047658	-	Found within tufaceous cliff seepages. Grid reference centred
Stenus guttula	26/06/2025	Aberthaw Leys / Ffontygari Cliffs	ST047658	-	Found within tufaceous cliff seepages. Grid reference centred
Amara similata	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Dicheirotrichus gustavii	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Dilta littoralis	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Laboulbenia giardii	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	On *Dicheirotrichus gustavii*. Grid reference centred
Ochina ptinoides	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Porcellionides cingendus	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Sermylassa halensis	26/06/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Oxystoma pomonae	27/06/2025	Kenfig Burrows	SS792820	-	Adults encountered within the seed pods of Common Vetch *Vicia sativa* plants at several locations
Agapeta zoegana	30/06/2025	Horton Cliffs	SS480856	-	-
Altica helianthemi	30/06/2025	Horton Cliffs	SS480856	-	-
Andrena hattorfiana	30/06/2025	Horton Cliffs	SS48208552	1 ♀	Foraging on Field Scabious *Knautia arvensis*
Chilocorus bipustulatus	30/06/2025	Horton Cliffs	SS480856	-	-
Dilta littoralis	30/06/2025	Horton Cliffs	SS480856	-	Very numerous and widespread across the cliffs
Ectobius pallidus	30/06/2025	Horton Cliffs	SS480856	-	-
Formica cunicularia	30/06/2025	Horton Cliffs	SS480856	-	-
Heterocordylus parvulus	30/06/2025	Horton Cliffs	SS48038565	1	Swept from gorse *Ulex* sp
Hipparchia semele	30/06/2025	Horton Cliffs	SS480856	-	-
Kolbia quisquiliarum	30/06/2025	Horton Cliffs	SS480856	-	-
Lasius alienus	30/06/2025	Horton Cliffs	SS480856	-	-
Lasius flavus	30/06/2025	Horton Cliffs	SS480856	-	-
Myrmecina graminicola	30/06/2025	Horton Cliffs	SS480856	-	-
Myrmica sabuleti	30/06/2025	Horton Cliffs	SS480856	-	-
Panurgus calcaratus	30/06/2025	Horton Cliffs	SS47998555	1	-

Species	Date	Location	Grid Reference	Abundance	Comment
Phlegra fasciata	30/06/2025	Horton Cliffs	SS48098566	1 ♀	Found by suction-sampling
Phlegra fasciata	30/06/2025	Horton Cliffs	SS48288548	2	Found by suction-sampling
Scymnus frontalis	30/06/2025	Horton Cliffs	SS480856	-	-
Temnothorax albipennis	30/06/2025	Horton Cliffs	SS480856	-	-
Aromia moschata	01/07/2025	Tennant Canal	SS715940	1	Adult encountered along towpath
Cerapheles terminatus	01/07/2025	Tennant Canal	SS713940	1	Adult swept from vegetation along the towpath
Dolomedes plantarius	01/07/2025	Tennant Canal	SS71529407	2 ♀♀	Each with a nursery web with spiderlings
Dolomedes plantarius	01/07/2025	Tennant Canal	SS71509407	1 ♀	Adult female with a nursery web with spiderlings
Marpissa nivoyi	01/07/2025	Tennant Canal	SS71149383	1	Adult swept from vegetation along the towpath
Thryogenes fiorii	01/07/2025	Tennant Canal	SS71399404	1 ♀	Adult swept from vegetation along the towpath
Aristotelia ericinella	04/07/2025	Crymlyn Bog	SS688942	1	Adult swept from Cross-leaved Heath *Erica tetralix*
Cordilura ciliata	04/07/2025	Crymlyn Bog	SS68759434	1	Female encountered in wet, shaded wooded
Tephritis neesii	04/07/2025	Crymlyn Bog	SS688942	1	Male encountered by sweeping ground vegetation
Bembecia ichneumoniformis	08/07/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Chrysolina staphylaea	08/07/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Coriomeris denticulatus	08/07/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Hyalopterus pruni	08/07/2025	Aberthaw Nature Reserve	ST037660	-	Abundant on Common Reed *Phragmites australis*
Steneotarsonemus phragmitidis	08/07/2025	Aberthaw Nature Reserve	ST037660	-	Galls on Common Reed *Phragmites australis*. Grid reference centred
Trichoniscus provisorius	08/07/2025	Aberthaw Nature Reserve	ST03806609	-	Grid reference centred
Campioglossa plantaginis	08/07/2025	East Abethaw	ST041659	1	Swept from the saltmarsh
Cistogaster globosa	08/07/2025	East Abethaw	ST041659	1 ♀	Swept from the saltmarsh
Conosanus obsoletus	08/07/2025	East Abethaw	ST041659	1 ♂	Swept from the saltmarsh
Herina lugubris	08/07/2025	East Abethaw	ST041659	1 ♀	Swept from the saltmarsh
Meliscaeva auricollis	08/07/2025	East Abethaw	ST041659	1 ♀	Swept from the saltmarsh
Nemotelus notatus	08/07/2025	East Abethaw	ST041659	1 ♂ + 1♀	Swept from the saltmarsh
Pentastiridius leporinus	08/07/2025	East Abethaw	ST041659	50+	Very abundant within the saltmarsh
Platycheirus scutatus sl	08/07/2025	East Abethaw	ST041659	1 ♀	Swept from the saltmarsh
Rhinophora lepida	08/07/2025	East Abethaw	ST041659	1 ♀	Swept from the saltmarsh
Sarcophaga sinuate	08/07/2025	East Abethaw	ST041659	1 ♂	Swept from the saltmarsh
Sphaerophoria interrupta	08/07/2025	East Abethaw	ST041659	1 ♂	Swept from the saltmarsh
Tetragnatha extensa	08/07/2025	East Abethaw	ST041659	1 ♂	Swept from the saltmarsh
Argynnis paphia	14/07/2025	Pembrey Forest	SN394015	3-5	Several adults seen nectaring along forestry track
Symmorphus gracilis	14/07/2025	Pembrey Forest	SN39100180	2-5	Several around scrub stacked at edges of dune slack
Cicindela maritima	18/07/2025	Whitford Burrows	SS434945	20+	At least 20 adults seen in dunes
Dicranocephalus agilis	18/07/2025	Whitford Burrows	SS434945	1	Final instar nymph within the dune
Oplodontha viridula	18/07/2025	Whitford Burrows	SS444945	3	Three adults swept from within the transitional marsh
Stratiomys singularior	18/07/2025	Whitford Burrows	SS4449494565	1 ♀	Female seen nectaring in the transitional marsh

Species	Date	Location	Grid Reference	Abundance	Comment
Stratiomys singularior	18/07/2025	Whitford Burrows	SS4505695909	1 ♀	Female seen in the transitional marsh
Tabanus autumnalis	18/07/2025	Whitford Burrows	SS4494	1 ♂	-
Calositticus inexpectus	29/07/2025	East Aberthaw	ST04366590	5+	Numerous individuals seen along the shingle ridge
Metoecus paradoxus	29/07/2025	Ffontygari Cliffs	ST05126590	1	Single adult
Arenocoris fallenii	04/08/2025	Freshwater East	SS0180998092	1	Nymph found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	04/08/2025	Freshwater East	SS0179598091	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	04/08/2025	Freshwater East	SS0199798070	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	04/08/2025	Freshwater East	SS0175997921	1	Nymph found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Pionosomus varius	04/08/2025	Freshwater East	SS01999807	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	05/08/2025	Broadhaven Dunes	SR97689428	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Syromastus rhombeus	05/08/2025	Broadhaven Dunes	SR9765994119	1	Adult encountered along a sandy path
Arenocoris fallenii	05/08/2025	Mere Pool Valley	SR9748394341	3	Three nymphs recorded beneath the basal rosettes of Common Stork's-bill *Erodium cicutarium*
Atypus affinis	05/08/2025	Mere Pool Valley	SR97629425	1	Adult encountered along a sandy path at night
Arenocoris fallenii	05/08/2025	Stackpole Warren	SR9804294238	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Pionosomus varius	05/08/2025	Stackpole Warren	SR980942	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	07/08/2025	Broomhill Burrows	SM8871600208	1	Nymph found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Arenocoris fallenii	07/08/2025	Broomhill Burrows	SM8818300521	1	Adult found beneath the basal rosette of Common Stork's-bill *Erodium cicutarium*
Dicranocephalus agilis	07/08/2025	Broomhill Burrows	SM882003	20+	Adults and nymphs numerous thoroughout foredunes
Henestaris laticeps	07/08/2025	Broomhill Burrows	SM882004	1	Single adult found by suction-sampling
Amblyjoppa proteus	16/08/2025	Pembrey Forest	SN39460154	1	Single adult encountered resring on foliage of *Salix*
Metopius citratus	16/08/2025	Pembrey Forest	SN3704	1	Single adult encountered along the forestry track
Bombus sylvarum	24/08/2025	Goldcliff	ST361825	2-5 ♀♀	Workers foraging on flowering Sea Aster *Aster tripolium*
Campiglossa plantaginis	24/08/2025	Goldcliff	ST361825	1	Adult swept from Sea Aster *Aster tripolium*
Chorthippus albomarginatus	24/08/2025	Goldcliff	ST366829	-	Adults present in the grass sward
Donacia versicolorea	24/08/2025	Goldcliff	ST366829	-	Adults on vegetation along the ditch

Data Archive Appendix

The data archive contains:

[A] The final report in Microsoft Word and Adobe PDF formats.

~~[B] A full set of maps produced in JPEG format.~~

~~[C] A series of GIS layers on which the maps in the report are based with a series of word documents detailing the data processing and structure of the GIS layers.~~

~~[D] A set of raster files in ESRI and ASCII grid formats.~~

~~[E] A database named [name] in Microsoft Access 2000 format with metadata described in a Microsoft Word document [name.doc].~~

~~[F] A full set of images produced in [jpg/tiff] format.~~

[G] Species records are held in the Welsh Invertebrate Database (WID).

Metadata for this project is publicly accessible through Natural Resources Wales' Library Catalogue https://libcat.naturalresources.wales (English Version) and https://catllyfr.cyfoethnaturiol.cymru (Welsh Version) by searching 'Dataset Titles'. The metadata is held as record no. NRW_DS161496.