



South West Bees Project Survey Report 2014

*Habitat and species surveys for target bee species in Cornwall,
Devon, Bristol and North Somerset*

2014

Rory Dimond, Steven Falk, Patrick Saunders and Andrew Whitehouse

Saving the small things that run the planet

Contents

Summary	3
Introduction	4
Methods	4
Section 1-Species surveys	5
1.1 -Tormentil mining bee (<i>Andrena tarsata</i>) and Tormentil nomad bee (<i>Nomada roberjeotiana</i>) in Cornwall and Devon.	5
1.1.1 Species overviews	5
1.1.2 Species Survey Results	6
1.1.3 Limitations	12
1.2 Large scabious bee (<i>Andrena hattorfiana</i>) and Small scabious bee (<i>Andrena marginata</i>) in Devon and Cornwall	12
1.2.1. Species overviews	13
1.2.2 Species survey results	14
1.2.3 Limitations	16
1.3 Carrot mining bee (<i>Andrena nitidiuscula</i>)in Bristol and Avon	17
1.3.1 Species overview	17
1.3.2 Species Survey Results	17
1.3.3 Limitations	20
1. 4 Long-horned bee (<i>Eucera longicornis</i>) and Six-banded Nomad bee (<i>Nomada sexfasciata</i>) in Devon	21
1.4.1 Species overviews	21
1.4.2 Species Survey Results	22
1.5 General Survey limitations	26
2. Conclusions and further actions	27
3. Acknowledgements	29
4. References and further reading	29

Buglife South West
southwest@buglife.org.uk

THINQTANQ
Fairbairn House
Higher Lane
Plymouth, PL1 2AN

Summary

- Seven of 23 target bee species in the South West Bees Project were surveyed for during summer 2014 on or near sites with previous records; Tormentil mining bee (*Andrena tarsata*), Tormentil nomad bee (*Nomada roberjeotiana*), Small scabious bee (*Andrena marginata*), Large scabious bee (*Andrena hattorfiana*) Carrot mining bee (*Andrena nitidiuscula*), Long-horned bee (*Eucera longicornis*) and Six-banded nomad bee (*Nomada sexfasciata*).
- Of these species, Tormentil mining bee, Tormentil nomad bee, Long-horned bee and Six-banded nomad bee were found.
- Both Tormentil mining bee and Tormentil nomad bee were active in record numbers on an established site on Bodmin Moor. Tormentil mining bee presence was confirmed on two other Bodmin sites and at Venford reservoir, the first Dartmoor record in 41 years. The species was not found on the Pebblebed Heaths or Bovey Heathfield LNR.
- Habitat for the Small scabious bee and Large scabious bee in Penhale and on Dartmoor has apparently become unsuitable due to grazing, succession or inappropriate cutting regimes.
- The Carrot mining bee was not found on a recently recorded site in Bristol where the habitat condition has declined due to succession. A number of nature reserves in North Somerset were also surveyed but Carrot mining bee was not found, possibly also due to a lack of suitable habitat or inappropriate management.
- The Long-horned bee and Six-banded nomad bee appear to be in decline at Prawle point due to a lack of foraging habitat.

This report and further information is available at
www.buglife.org.uk/south-west-bees-project



Introduction

The first South West Bees Project report was produced by Buglife in November 2013. The report identified 23 target bee species for regional conservation efforts in the counties of Bristol and Avon, Cornwall and the Isles of Scilly, Devon, Dorset, Gloucestershire, Somerset and Wiltshire - based on UKBAP designation, rarity and national and local declines. A [summary](#) and the [full report](#) are available online.

This report presents the findings of the project's first ground-truthing surveys from May to August 2014. The objectives of these surveys were:

- To confirm the presence of target species on sites with historic records
- To evaluate habitat suitability on surveyed sites
- To add to information on the autecology of target species

The project aims to provide information that informs and underpins the conservation of the target species on a site and regional level, which will include the publication of species management sheets to advise land owners and land managers.

Surveys were conducted for five species; Tormentil mining bee (*Andrena tarsata*), Tormentil nomad bee (*Nomada roberjeotiana*), Small scabious bee (*Andrena marginata*), Large scabious bee (*Andrena hattorfiana*) and Carrot mining bee (*Andrena nitidiuscula*). Surveys were conducted in Cornwall (Bodmin and Penhale), Devon (South Dartmoor and East Devon) and Bristol.

Section one of this report outlines the survey results structured according to species or species associations. Section 2 outlines and suggests further actions for the conservation of all target species based on the outcomes of these surveys.

Methods

Historic records for target species were obtained from BWARS in 2013 when compiling the [South West Bees Report](#). Survey sites were selected using satellite imaging and through communication with local entomologists and site managers to confirm whether suitable habitat remained. Presence surveys were carried out visually, by checking flowers for nectaring bees (all species surveyed are oligolectic, only utilising pollen from a narrow range of plants or a single plant species) as well as sweeping low vegetation and nesting banks. Weather conditions were noted. Records of both target and non-target aculeates were sent to site managers and to the Bees, Wasps and Ants Recording Society (BWARS).

In addition, a casual character assessment was carried out for each site, noting the floral resource, possible and confirmed nesting sites, vegetation type, soil type and evidence of management. Further information on management regimes and site history was gained from communications with local experts and site managers.

Section 1-Species surveys

1.1 -Tormentil mining bee (*Andrena tarsata*) and Tormentil nomad bee (*Nomada roberjeotiana*) in Cornwall and Devon.

1.1.1 Species overviews



Andrena tarsata © Steven Falk.....*Nomada roberjeotiana* © Steven Falk

Andrena tarsata is a UK Biodiversity Action Plan (UKBAP) Priority Species and Section 41 Conservation Priority Species in England due to dramatic declines in the number of occupied sites post 1970. (JNCC 2010) The species is almost entirely reliant on Tormentil (*Potentilla erecta*) as a source of pollen and nectar, requiring high densities of flowers to survive. It favours bare earth banks as nesting sites, but may also use other areas of bare ground. South West England is an important region for the species. It occurs sporadically across Cornwall (Bodmin Moor and St Austell china clay pits are particularly important areas). In Devon, the majority of records are pre-1980 from Dartmoor (Horsley, Whitehouse and Falk, 2013).

Nomada roberjeotiana is a nest parasite ('cuckoo bee') specific to *A. tarsata*. It is much scarcer than *A. tarsata*, since it only occurs where populations of its host are particularly strong. It is classed as Rare (RDB3) in Falk, 1991. Action to conserve this species has been assumed to be broadly covered by targets for *Andrena tarsata*, though whether this provides adequate provision is debateable. Throughout the entire South West region, *N. roberjeotiana* is currently known from only two sites in Cornwall: Davidstow Woods and Cornwall Wildlife Trust's Bartinney Nature Reserve (the latter

discovered by Patrick Saunders in 2014). Historical records suggest a previously wide but sparse distribution across Cornwall, Devon and Dorset.

For more information on both species, refer to the [Buglife Species Management Sheet](#), [BWARS information sheets](#) (National), the [South West Bees Project](#) (Regional) [Kernow Ecology](#) and the [Cornish Red Data Book](#) (Cornwall). Steven Falk's Flickr page has images available of [Andrena tarsata](#) and [Nomada roberjeotiana](#) as well as their sites.

1.1.2 Species Survey Results

Andrena tarsata presence was confirmed on four of nine sites surveyed (three on Bodmin Moor and one on Dartmoor). *Nomada roberjeotiana* was confirmed on the site where it was previously known to occur and is regularly monitored by Patrick Saunders (Davidstow, Bodmin). Site-specific details are given below:

Davidstow Woods, Bodmin, Cornwall SX142841 (23/06/2014)

Weather: Bright, sunny, warm

Most Recent records: *Andrena tarsata* 2013 (P. Saunders)

Nomada roberjeotiana 2011 (P. Saunders)

Species found: *Andrena tarsata* (Several females nectaring and nesting)

Nomada roberjeotiana (>10 individuals of both sexes around host nesting areas, thefemales usually investigating nest holes)

Habitat: Wet acid grassland. An area of clearfell on the edge of a conifer plantation. Poorly drained with Tormentil occurring in scattered, but dense, clumps in raised areas (e.g. around cut stumps) (Figure 1). An old, south-facing nesting bank with Tormentil growth above, about 100m from other Tormentil clumps (Figure 2). Both species have also been recorded in Woodland rides and suitable clearings elsewhere in Davidstow Woods.

Existing management: The Forestry commission has greatly improved the site for these species by recent tree felling and brush cutting. Light pony grazing has kept bramble scrub in check. The area is fenced from sheep.

Other notes: The best site for *Andrena tarsata* of those surveyed, and one of only two known sites for *Nomada roberjeotiana* in the South West.



Figure 1 *Andrena tarsata* and *Nomada roberjeotiana* habitat at Davidstow Woods



Figure 2-Nesting bank of *Andrena tarsata* and *Nomada roberjeotiana* at Davidstow woods

Lower Moor Plantation, Bodmin, Cornwall, SX139820 (23/06/2014)

Weather: Bright, sunny, warm

Most Recent records: *Andrena tarsata* 2013 (P. Saunders)

Species found: *Andrena tarsata* (1 female nectaring)

Habitat: An acid grassland ride through a young Spruce plantation. Tormentil occurs in dense, tall clumps on the edge of a bare earth path (Figure 3).

Existing management: Conifer Plantation

Other notes: The rides and open areas of this plantation may provide a favourable habitat corridor and refuge for the species compared to the neighbouring Roughtor Moors which are heavily sheep-grazed. A habitat restoration project to the South at Stannon Works (SX139820) may increase the extent of suitable open habitat. It is recommended that the site managers are offered advice on the inclusion of target features for *Andrena tarsata*.



Figure 3 Andrena tarsata habitat at Lower Moor Plantation © Steven Falk

Colliford Lake, Bodmin, Cornwall, SX139820 (23/06/2014)

Weather: Overcast and cool with warm sunny spells

Most Recent records: *Andrena tarsata* 2013 (P. Saunders)

Species found: *Andrena tarsata* (1 male)

Habitat: A wildflower-rich, acid grassland roadside verge with a steep ditch providing a possible nesting site. Tormentil occurs as an even spread and in clumps (Figure 4). The verge is on the edge

of a wider acid grassland-moorland area to the east with a lower density of Tormentil.

Existing management: Receives light grazing by free-roaming sheep and ponies

Notes: A remnant of floristically-rich hay meadow-like habitat which was formerly widespread on agricultural fields in Bodmin. It may form part of a corridor of Tormentil-rich road verges across the moor. The ditch floods in rains.



Figure 4-*Andrena tarsata* habitat at Colliford Lake © Steven Falk

Venford Reservoir, Dartmoor, Devon, SX681705 (24/06/2014)

Weather: Warm and sunny with overcast spells

Most Recent records: Nearby historical record of *Andrena tarsata* 1972 (G.M.Spooner) at SX7070

Species found: *Andrena tarsata* (1 female near nesting bank)

Habitat: Open, short, acid grassland with Tormentil widespread, low-growing and evenly distributed, frequently under a canopy of bracken (Figure5). The Nesting bank is East-facing alongside a temporarily wet ditch with Tormentil growth above (Figure 6).

Existing management: Moderate to heavy sheep grazing

Notes: The first time *Andrena tarsata* has been recorded in Dartmoor for 41 years. The wide area of suitable habitat suggests that the bee may be numerous but at a low density and therefore difficult to find. Nesting bank is on South West Water land but is unfenced from the adjacent common.



Figure 5 Andrena tarsata habitat near Venford Reservoir.



Figure 6 Possible nesting bank of Andrena tarsata at Venford Reservoir.

Bovey Heathfield, Devon, SX 823 765 (24/05/2014)

Weather: Hot and sunny

Most Recent records: *Andrena tarsata* 1956 (G.M.Spooner)

Species found: Neither

Habitat: The southern section of the site is dry, acid grassland with a tall sward. Tormentil growth is in dense clumps with an uneven distribution across the site. The number of flowers appears

sufficient. Several sandy paths and exposed banks were being utilised by other bee species.

Existing management: Manual bracken and scrub clearance.

Other notes: The Northern *Erica* heath section of the reserve does not contain sufficient Tormentil. The grassland area is the most likely origin of the previous G.M.Spooner record.

Chudleigh Knighton Heath, Devon, SX 838 772 (24/05/2014)

Weather: Warm, partly cloudy

Most Recent records: No previous records

Species found: Neither

Habitat: Unsuitable. *Molinia*-dominated wet and dry heathland with even but sparse Tormentil. The soils are too wet for nesting.

Existing management: Cattle grazing.

Other notes: This is the only known site in England for the Narrow-headed ant (*Formica exsecta*).

Hawkerland, Pebblebed Heaths, East Devon, SY057897 (16/07/2014)

Weather: Warm and sunny with overcast spells and a little precipitation

Most Recent records: Tormentil mining bee 1987 (Edwards)

Species found: Neither

Habitat: Dry, stony heath. Largely *Molinia* and heather-dominated. Dense, tall Tormentil in 1-2m firebreaks along footpaths. Open sandy paths with some nesting aculeates.

Existing management: Cattle grazing, burning and cutting of fire breaks

Other notes: The site appears to have interest for heathland aculeates, but floral resources may be insufficient for the Tormentil mining bee. It is unclear where the past record was found as the grid reference lies within the car park.

Collaton Raileigh, Pebblebed Heaths, East Devon, SY050865 (16/07/2014)

Weather: Warm and sunny with overcast spells

Most Recent records: No previous records

Species found: Neither

Habitat: Dry, stony heath, largely *Molinia* and heather-dominated with areas of conifer plantation and birch scrub. 2-3m firebreaks adjacent to footpaths have widespread Tormentil. Possible nesting areas include open, sandy paths and a steep sandstone nesting bank at SY045868 with many nesting aculeates.

Existing management: Cattle grazing, burning and herbicide treatment of birch.

Other notes: This site appears the most promising for *Andrena tarsata* of the four Pebblebed Heath sites surveyed. There appears to be interest for other heathland aculeates based on surveys of the nesting bank.

Bicton Common, Pebblebed Heaths, East Devon, SY032858 (16/07/2014)

Weather: Warm, overcast with sunny spells.

Most Recent records: No previous records

Species found: Neither

Habitat: Wet and dry heath, largely heather-dominated with conifer plantation. A high density of Low-growing Tormentil growing within 2-3m firebreaks between sandy footpaths and the plantation and some taller plants scattered in adjacent wet heath. Floral resource may be too limited.

Existing management: Cutting as firebreaks, cattle grazing.

Other notes: Tormentil has been reduced in the wet heath area through succession (Lesley Kerry.pers.comms). Future clear-felling of the plantation may offer an opportunity for increased Tormentil growth.

Dalditch Plantation, Pebblebed Heaths, East Devon SY 038 835 (16/07/2014)

Weather: Warm, and sunny.

Most Recent records: No previous records

Species found: Neither

Habitat: Unsuitable. Too little Tormentil cover. Regenerating wet and dry heathland from clearfell of conifers. Largely *Molinia* and heather dominated with scattered Tormentil and areas of dense birch (*Betula pendula*), gorse (*Ulex europaeus*) and bramble (*Rubus fruticosus*) scrub.

Existing management: Grazing with Exmoor ponies.

Other notes: The site was clear-felled in 1999. The site may benefit from more intensive management, perhaps increasing grazing pressure to maintain the matrix of heathland and grassland

1.1.3 Limitations

the majority of survey work was carried out in good weather, however some visits were undertaken in sub-optimal conditions for the species (e.g. during overcast spells). *Andrena tarsata* also has a short flight period (~10 days) and the phenology of populations varies, so their presence may have been missed.

Good stands of Tormentil are not a reliable indicator of occurrence of *Andrena tarsata* (JNCC2010), so even where potential habitat has been found, the species presence cannot be inferred.

1.2 Large scabious bee (*Andrena hattorfiana*) and Small scabious bee (*Andrena marginata*) in Devon and Cornwall

Surveys for both species of bee were carried out at some historic sites in Dartmoor and Penhale (North Cornwall). The bees were not found on any site – thought to be due to the loss of suitable scabious-rich habitat through unsympathetic management regimes or succession. There is an urgent need to identify remaining areas of suitable habitat and prioritise the conservation of these two bee species, as well as to restore habitat and improve connectivity.

1.2.1. Species overviews



.....*Andrena hattorfiana* ©Steven Falk



Andrena marginata (Dark form) ©Steven Falk

Andrena hattorfiana is listed as nationally rare (RDB3) in Falk, 1991. It is widespread across southern England but has declined across its UK range with the exception of Wiltshire. *Andrena marginata* is a nationally scarce (Na) species (Falk 1991). It is widespread but localised in Britain and Ireland as well as a small Scottish population with most of the populations in southern England.

The species are oligolectic on scabious flowers, both using Field scabious (*Knautia arvensis*). *Andrena marginata* also uses Small scabious (*Scabiosa columbaria*) and Devil's bit scabious (*Succisa pratensis*). *Andrena hattorfiana* will occasionally use Small scabious. Since scabious plants are late-flowering, poor competitors and sensitive to grazing, the bees are largely restricted to unimproved grasslands with low disturbance or late cutting regimes where the flowers can grow in high densities. Habitats include calcareous, clay and coastal grasslands and moorland edges. The Small scabious bee is also found in more acid habitats such as heaths, moors and woodland clearings rich in Devil's bit scabious.

Both *A. marginata* and *A. hattorfiana* are parasitised by specific nomad bees in the South West. The Armed nomad bee (*Nomada armata*) is a BAP species cleptoparasitic on *Andrena hattorfiana*. It is known to occur in Wiltshire and Dorset. The Silver-sided nomad (*Nomada argentata*) is a rare (RDB3) Falk, 1991 species cleptoparasitic on *Andrena marginata*, recorded from East Cornwall, Devon, Dorset, Somerset and Wiltshire in the South West (It is not currently a target species of the South West Project, but is recommended for inclusion).

For more information on all species, refer to [BWARS information sheets](#) (national) the [South West Bees Project](#) (regional, except for *Nomada argentata*) and the [Cornish Red Data Book](#). For further information on *Andrena hattorfiana* and *Nomada armata* see the Buglife [Species Management Sheet](#). Steven Falk's Flickr page has images available of [Andrena hattorfiana](#), [A. marginata](#), [Nomada armata](#) and [N. argentata](#) as well as their sites.

1.2.2 Species survey results

Jurston, Dartmoor, Devon, SX6984 (15/08/2014)

Species found: Neither

Most Recent records: *Andrena marginata* 1973 (G.M.Spooner)

Weather: Warm and sunny with overcast spells

Habitat: Unsuitable. Dense bracken scrub with birch and hawthorn saplings. Sparse Devil's-bit scabious. The site appears to have succeeded from favourable habitat.

Management: Appears unmanaged and is unfenced, though grazing cattle have 'topped' scabious in open areas (Figure 7).

Other Comments: *Andrena marginata* has probably been lost from this site due to the decline in floral resource. There are recent local records from Fernworthy of Marsh fritillary (*Euphydryas aurinia*) which relies on Devil's bit scabious, but the butterfly often occurs in habitats with soils that are too wet for nesting mining bees.



Figure 7 Part of a former site for Andrena marginata at Jurston, showing encroachment of bracken and cropping of scabious flowers by cattle

Vogwell, Dartmoor, Devon, SX7281 (15/08/2014)

Most Recent records: No previous records

Species found: Neither

Weather: Warm and sunny with overcast spells

Habitat: Favourable for *Andrena marginata*. Unimproved wildflower-rich grassland with plentiful Devil's-bit scabious. Bordered by a stream and mature hedge banks (Figure 8).

Existing Management: Unknown

Other notes: The habitat appears highly suitable, but there was a general lack of aculeates, perhaps due to isolation within a matrix of sheep pasture.



Figure 8 Potential Andrena marginata habitat at Vogwell, Dartmoor

Penhale (MOD) Part of Penhale Dunes SSSI, Cornwall, SW775573 (28/08/2014)

Most recent records: *Andrena hattorfiana* 2004 (Dr P.A.Gainey)

Andrena marginata 1996 (Mr E.C.M. Haes).

Species found: None

Weather: Warm and sunny

Habitat: A coastal dune system. Areas surveyed were neutral to slightly calcareous grassland on the flats of fixed dunes. An area of tall grassland with formerly good numbers of scabious bees at SW775573 (P.Gainey 2004) now has only a few Field scabious plants

widely scattered in the hedgerow. Another anecdotally wildflower-rich area at SW777572 had been cut before the survey.

Management: The site is heavily rabbit-grazed. Conservation grazing using Exmoor ponies was also introduced in 2005. The cut area is topped by a farmer to remove ragwort.

Other comments: Though the timing of the survey was probably too late to find the bees, it is clear that habitat condition at this former stronghold has declined and become unsuitable for the bees in the areas surveyed. Pony grazing is a likely cause of the decline in condition at SW77555641, since Field scabious is highly sensitive to grazing and can be easily lost from a site. It is also likely that the flailing of meadows during the flowering season of scabious and other wildflowers has impacted on the bee populations on this site. The early successional and short turf habitats on the dunes are well managed for aculeates and other specialist invertebrates (including other South West Bees Project Species, *Bombus humilis* and *B. muscorum*). Care should be taken to preserve habitat variability on the site so that species of taller wildflower meadows are also conserved. Guidance on habitat management will be provided to site stakeholders. Other scabious-rich areas have been identified nearby and should be prioritised for surveying in 2015.

1.2.3 Limitations

Surveys coincided with peak flowering time of Field scabious and Devil's bit scabious, so were likely to be within the active period. Cutting before the survey at Penhale prevented finding the bee species or assessing the habitat suitability. Further surveys of the wider Penhale dunes are needed.

1.3 Carrot mining bee (*Andrena nitidiuscula*) in Bristol and Avon

1.3.1 Species overview



Andrena nitidiuscula © Steven Falk

Andrena nitidiuscula is listed as Rare (RDB3) in the UK (Falk, 1991), where it is restricted to southern England (excluding Cornwall). The bee relies on high densities of Apiaceae (Umbellifer) flowers, particularly Wild carrot (*Daucus carota*) as a food source, and nests in clay-based soils. Its reliance on a few late flowering plants has contributed to its decline due to habitat loss and inappropriate cutting regimes in wildflower areas.

A. nitidiuscula is parasitised by the very rare (RDB 1 Endangered) (Falk, 1991), and possibly Nationally extinct Purbeck nomad bee *Nomada errans*, which was last recorded in Dorset in 1982 (Edwards 2011).

For more information on both species, refer to [BWARS information sheets](#) (National). Further information on *A. nitidiuscula* is provided in the [South West Bees Project](#) (Regional). Steven Falk's Flickr page has images available of [Andrena nitidiuscula](#) and [Nomada errans](#) as well as their sites.

1.3.2 Species Survey Results

A single-day survey covered an amenity area in Bristol with recent records of *Andrena nitidiuscula* and four Avon Wildlife Trust Reserves around Bristol and north Somerset which were recommended based on an abundance of Wild carrot. *Andrena nitidiuscula* was not found at any of the sites surveyed, and they did not support sufficient numbers of carrot flowers at the time of surveying.

Hengrove Leisure Park: SS852355 (18/08/2014)

Most recent record: 2008 (DJ Gibbs)

Weather: Warm and sunny with overcast spells

Species found: Not found

Habitat: Area of ruderal vegetation and rank grassland on edge of playing fields with clay soils. Scattered clumps of wild carrot, but widely spaced. Some succession into creeping thistle (*Cirsium arvense*) stands and bramble (*Rubus fruticosus*) evident around the edges (Figure 9).

Existing management: Unmanaged. Site would benefit from an appropriate cutting regime

Other notes: D.J.Gibbs has repeated records of *A.nitidiuscula* from this site, though this survey was possibly too late to detect the bee. This is not a designated conservation area but a margin left to grow wild. However it contains a good mix of wildflower species so could be attractive for pollinators and the community if managed.



Figure 9 Previously recorded site for Andrena nitidiuscula at Hengrove Leisure Park

Hellenge Hill LNR, ST 344 573 (18/08/2014)

Last record: No previous records

Species found: not found.

Weather: Warm and sunny

Habitat: South facing and north-facing slopes of rank calcareous/neutral grassland. No wild carrot found, and few other wildflowers.

Existing management: Cattle grazing October to December and manual scrub clearance.

Other notes: The site would benefit from more intensive grazing or cutting regime to suppress rank grasses.

Purn Hill LNR, ST 332 573 (18/08/2014)

Most recent record: No previous records

Species found: not found.

Weather: Warm and sunny

Habitat: Wildflower-rich, calcareous grassland with a single dense patch of carrot (2x6m) which could provide a suitable foraging patch (Figure 10). However, the distribution of wild carrot is too restricted on the site to support a sustainable population of *A. nitidiuscula*. The site has steep slopes with some exposed banks that could offer nesting habitat.

Existing management: Cattle grazing from October to December.

Other notes: The site is very floristically diverse, and likely beneficial to a variety of hymenoptera.



Figure 10-Potential Andrena nitidiuscula habitat at Purn Hill

Walborough LNR and Uphill Hill SSSI, ST 315 578 (18/08/2014)

Most recent record: No previous records

Weather: Warm and sunny

Habitat: Extensive calcareous and acid grassland. Uphill Hill is designated for its floristic diversity. However, the site has been subjected to hard grazing this season so few flowers were observed and subsequently there is little nectar and pollen resource for aculeates. Only a few, scattered wild carrot plants were found along hedgerows and near the cliffs.

Existing management: Cattle grazing

Other notes: Uphill Cliff SSSI is designated for its limestone grassland flora. It was declared favourable in 2009, so this may be a year of heavy grazing management to suppress grasses and not reflect the usual condition. However, this management is not conducive to the annual lifecycle of the carrot mining bee and other wild bees. A better approach would be rotational management of different areas of the site.

1.3.3 Limitations

Surveys were carried out late in the *Andrena nitidiuscula* flight season, so the active period might have been missed, especially considering the early warm summer conditions.

The hard grazing this season at Walborough and Uphill Hill prevented an assessment of the site's general habitat suitability.

1. 4 Long-horned bee (*Eucera longicornis*) and Six-banded Nomad bee (*Nomada sexfasciata*) in Devon.



Eucera longicornis (male, female) and *Nomada sexfasciata* (female). Images © Steven Falk

1.4.1 Species overviews

Eucera longicornis is listed as Nationally Scarce (Notable A) in Falk (1991) and likely to qualify as Near-threatened in any IUCN-based re-grading as it has shown a substantial decline across southern Britain. Females gather pollen exclusively from larger legume flowers, with the plant species and habitat preferences varying geographically. Habitats include dry, unimproved pasture and meadows, coastal grazing marsh, woods with good ride systems, and brownfield sites such as flower-rich derelict quarries. *E. longicornis* has declined due to the loss of these legume-rich habitats and the loss of soft cliff nesting areas.

In South West England, there is a strong dependence on cliffs (often south-facing soft-rock cliffs) as nesting sites alongside large, dense patches of Narrow-leaved everlasting-pea (*Lathyrus sylvestris*), Kidney vetch (*Anthyllus vulneraria*) and Bitter vetch (*Lathyrus linifolius*).

In South East England, Meadow vetchling (*Lathyrus pratensis*) is the main pollen source, sometimes augmented by clovers (*Trifolium* spp.), bird's-foot-trefoils (*Lotus* spp.) and *Vicia* vetches.

South West England is the national stronghold for *E. longicornis*. The South Devon cliffs between Start Point (SX 827371) and Prawle Point (SX 772350) support one of the strongest populations. These cliffs are also the only known place where the nationally endangered (RDB1) Six-banded nomad bee *Nomada sexfasciata*, survives in the UK. *N. sexfasciata* is a specific nest parasite of

Eucera bees and also feeds on kidney vetch amongst other species. It has never been common, but was historically known from scattered sites across southern England.

For more information on both species, refer to [BWARS information sheets](#) (National) and the [South West Bees Project](#) (Regional). For more information on *Eucera longicornis*, see the Buglife [Species Management Sheet](#), research article '[Eucera longicornis The long horned mining bee in Cornwall.](#)' by Patrick Saunders and the wildlife notebook entry '[Long-horned bees](#)' by John Walters. Steven Falk's Flickr page has images available of [Eucera longicornis](#), [Nomada sexfasciata](#) and their sites

1.4.2 Species Survey Results

Eucera longicornis and *Nomada sexfasciata* were both found at Prawle point, but the amount of *E.longicornis* foraging habitat has decreased and both species are in decline at the site. Only six *N.sexfasciata* were found. Urgent conservation action is needed at Prawle Point to prevent the national extinction of *Nomada sexfasciata*.

Prawle Point, Devon: SX 780354 (21 & 22/06/2014)

Most recent record: *Eucera longicornis* 2013 (John Walters)

Nomada sexfasciata 2006 (M.E.Archer)

Weather: Warm and sunny

Species found: *Eucera longicornis* and *Nomada sexfasciata*

Habitat: South and east-facing soft rock cliff with cliff top pasture, arable and scrub (especially Common Gorse (*Ulex europaeus*) and Blackthorn (*Prunus spinosa*)).

Existing management: Cliff tops managed as improved pasture and as conservation-sensitive arable for Cirl Bunting.

Other notes: This survey constituted a 2-day gathering of local entomologists. John Walters has also been monitoring both species in the area.



Figure 11 Nesting habitat of *Eucera longicornis* at Prawle point © Steven Falk

The *Eucera longicornis* nesting colonies were not as large or extensive as expected (based on descriptions from past decades), and there is evidence that some nesting areas have declined in recent years (John Walters pers comms). The only strong nesting aggregation observed (a few hundred nests) was on a few metres of south-facing cliff around SX 78524 35692 with a few scattered small aggregations north and east of here

Female *E. longicornis* were mainly foraging on Narrow-leaved everlasting-pea near the main nesting area, occurring in small clumps on a very narrow strip between path-side herbage and scrub and the cliff edge. Males were also visiting some of the small patches of Tufted vetch (*Vicia cracca*) nearby.

Kidney vetch on the undercliff slopes, which can be an important forage plant here at the start of the *E. longicornis* flight period (John Walters pers comms), was predominantly finished, though the old and worn appearance of most males and some female *bees* suggested they had been flying for 2-3 weeks before the survey. The lack of suitable legumes on the cliff tops is possibly the reason for the lack of nesting activity and records around Start Point.



Figure 12 Tufted vetch (Vicia cracca) foraging habitat of Eucera longicornis at Start point © Steven Falk.



Figure 13 Start Point, South Devon 2014. Though this area supports a strong *Eucera longicornis* population there is currently a lack of legume herb-rich areas to support them.

Only a single female *Nomada sexfasciata* was encountered (1 female, 22 June). Another female was recorded by John Walters on June 13th. Since the surveys were during the ideal period for finding the nomad bee, and other *Nomada* spp. were reasonably active, this suggests that the *N. sexfasciata* population is very low. It has been stated that the population of *E. longicornis* and *N. sexfasciata* is relatively stable along this coast (M. Edwards – pers. comm.), but our observations suggest that both species are declining, vulnerable and require interventional management by increasing the quantity of food plants. This could be done within discrete plots at regular intervals along the cliffs as well as integrated with the arable habitat managed for Cirl bunting (e.g. in-field Clovers could also be useful). In addition, encouraging gardeners to plant *Lathyrus* species at the coastguard cottage gardens and other gardens in East Prawle could also benefit the species.

Other scarce bees recently recorded along the cliffs include *Andrena pilipes* and its cuckoo *Nomada fulvicornis fulvicornis*, which appear stable. The host relies heavily on spring-blossoming shrubs and crucifers (brassicaceae) for its first (spring) generation with brambles (*Rubus fruticosus* agg.) and Hogweed (*Heracleum sphondylium*) for the second (late summer) generation.



Andrena pilipes and *Nomada fulvicornis fulvicornis* © Steven Falk

1.5 General Survey limitations

The high spring temperatures of 2014 could have resulted in early flight periods for all species so later surveys might have missed the active periods. Given that all species in this report are oligolectic, appropriate timing can generally be inferred from the phenology of the food plants, and by referring to local records. However, the phenology of the bees varies between populations and can be shorter than the flowering period.

The short flight season also imposed a time limit on organising the surveys, particularly regarding the later-flying species. Further liaison with recorders and site managers could have helped to narrow down search areas and identify other potential sites. The grid references of previous records were generally too coarse and required further communications to identify a survey area.

With the exception of the Bodmin sites for Tormentil bees monitored by Patrick Saunders and Pebblebed Heath sites due to unfavourable weather conditions in the first instance, these were single surveys, often considerably later than previous investigations, so they cannot be taken as confirmation of absence except where habitat is clearly unsuitable. Wider surveys would need to be carried out to establish if other remnants of a previous metapopulation are surviving outside the sites covered in this report.

2. Conclusions and further actions

There is a general lack of awareness of solitary bees and their needs within conservation areas, even where the species have been recorded. In many cases this has resulted in management that is detrimental to the species, such as overgrazing (Penhale, Uphill Hill), or insufficient cutting or grazing (Pebblebed Heaths). Site managers often overestimated the floral resources available. Alongside this, remnants of undesignated habitat with historic records are becoming unsuitable through neglect or isolation.

It is clear that if these solitary bees are to be conserved in the South West, awareness needs to be increased amongst site managers, at least in designated conservation areas, both in terms of recording and habitat management. The following actions are proposed:

- Provide feedback to site managers and landowners of survey results and habitat management recommendations where applicable.
- Disseminate species management sheets to site managers. [Andrena hattorfiana](#) and [Eucera longicornis](#) are already available and a sheet on [Andrena tarsata and Nomada roberjeotiana](#) was completed in 2014 as part of the project.
- The creation of a South West Bees Project webpage on the Buglife website to raise public awareness and provide an information portal for project partners. Available at <https://www.buglife.org.uk/south-west-bees-project>
- Review independent records for all other target species of the South West Bees Project from county record centres, the Bumblebee Conservation Trust and others.
- Organise further surveys for 2015 in key areas, including local, funded projects based on the information presented in this report.
- Apply survey results to direct conservation action, either conducted by or partnered by Buglife such as habitat restoration at or near historic sites. Several local projects are being drafted.
- Incorporate species-specific habitat restoration, creation or enhancement targets into Buglife B-Lines projects in the West of England and South Devon.
- Ongoing monitoring of *Eucera longicornis* and *Nomada sexfasciata* populations along the South Devon coast and South Cornwall coast (the latter for *E. longicornis* only)

Other actions to be carried out by Buglife in relation to the South West Bees Project, beyond the target species described in this report include:

- Developing stronger partnerships with other aculeate specialists e.g. South West County Recorders, Bumblebee Conservation Trust and Hymettus to effectively communicate records and research and deliver conservation action on target species.
- The addition of further target species to the project, including but not limited to *Andrena simillima*, *Bombus monticola* and all Nomad bees specifically parasitic on current target species where they occur in the region.
- Applying the format of the South West Bees Project to a suggested Midlands Bees Project beginning in 2015.
-
- Producing an updated Oil beetle distribution report for Buglife's 'Oil Beetle Hunt', based on data submitted by the public from 2012-2014. All five recorded UK Oil beetle species are listed in the South West Bees Project since they are nest parasites of solitary bees.

3. Acknowledgements

Buglife is grateful to the following organisations and persons for their help with the production of this report: The Bees, Wasps and Ants Recording Society (BWARS), Clinton Devon Estates, Devon Wildlife Trust, Cornwall Wildlife Trust, Avon Wildlife Trust, Dartmoor National Park Authority, South West Water, John Walters (Ecologist) and David Gibbs (Pan-Species Recorder). In addition, the Authors would like to thank Buglife Wales Conservation Officer Claire Dinham for her help with the field surveys for *Andrena nitidiuscula* and Lesley Kerry for her help with surveys of Clinton Devon Estates.

4. References and further reading

Edwards, M.J. (2011) *Nomada errans* *Lepeletier, 1841*. BWARS. Available from:

<http://www.bwars.com/index.php?q=bee/apidae/nomada-errans>

Falk, S.J. Steven Falk Flickr/Collections/Insects/Hymenoptera/Bees
available from:

<https://www.flickr.com/photos/63075200@N07/collections/72157631518508520/> Falk, S.J (1991) *A review of the scarce and threatened bees, wasps and ants of Great Britain*. Research & survey in nature conservation, No. 35. JNCC. Available from:

http://jncc.defra.gov.uk/pdf/Pub91_Review_of_threatened_bees_wasps_ants_PRINT.pdf

Horsley, C., Whitehouse, A. and Falk, S. (2013) *South West Bees Project*. Buglife. Available from:

https://www.buglife.org.uk/sites/default/files/South%20west%20bees%20project%20final_1.pdf

Saunders, P. (2014) The long-horned mining bee in Cornwall. BWARS Newsletter Spring 2014: pp 6-9.

^[JNCC] Joint Nature Conservation Committee. (2010) *UK Priority Species data collation Andrena tarsata version 2*. JNCC. Available from: <http://jncc.defra.gov.uk/speciespages/2037.pdf>

This report and other information on the South West Bees Project can be found at the South West Bees Project webpage: <https://www.buglife.org.uk/south-west-bees-project>

For more information on Hymenoptera of the UK refer to the Bees, Wasps and Ants Recording Society: <http://www.bwars.com/> and Hymettus <http://www.hymettus.org.uk>

Contact us: Buglife South West, THINQTANQ, Fairbairn House
Higher Lane, Plymouth, PL1 2AN

www.buglife.org.uk

Tel: 01733 201210

Email: info@buglife.org.uk



@buzz_dont_tweet

Cover photo credits L-R; Ladybird spider (*Eresus sandaliatus*) © S. Dalton, Jellyfish © D. Huffman, Tansy beetle (*Chrysolina graminis*) © S. Falk and Large garden bumblebee (*Bombus ruderatus*) © S. Falk



Saving the small things that run the planet

Buglife - The Invertebrate Conservation Trust is a registered charity at Bug House, Ham Lane, Orton Waterville,
Peterborough, PE2 5UU

Company no. 4132695, Registered charity no. 1092293, Scottish charity no. SC04004