

Butterflies of RSPB Conwy

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Conwy nature reserve is a 50-hectare site on the east bank of the Conwy estuary in Llandudno Junction, most of which lies within vice-county 50 (Denbighshire). The nature reserve was created in the early 1990s from three million tonnes of estuarine silt that had been removed from the bed of the estuary during the construction of the A55 road tunnel and dumped on the saltmarsh and mudflats.

Around half of the reserve area is water, in the form of two freshwater lagoons and an inter-tidal frontage, but since the site has been managed by RSPB Cymru (1993), the terrestrial parts of the reserve have been managed as woodland, scrub and grassland.

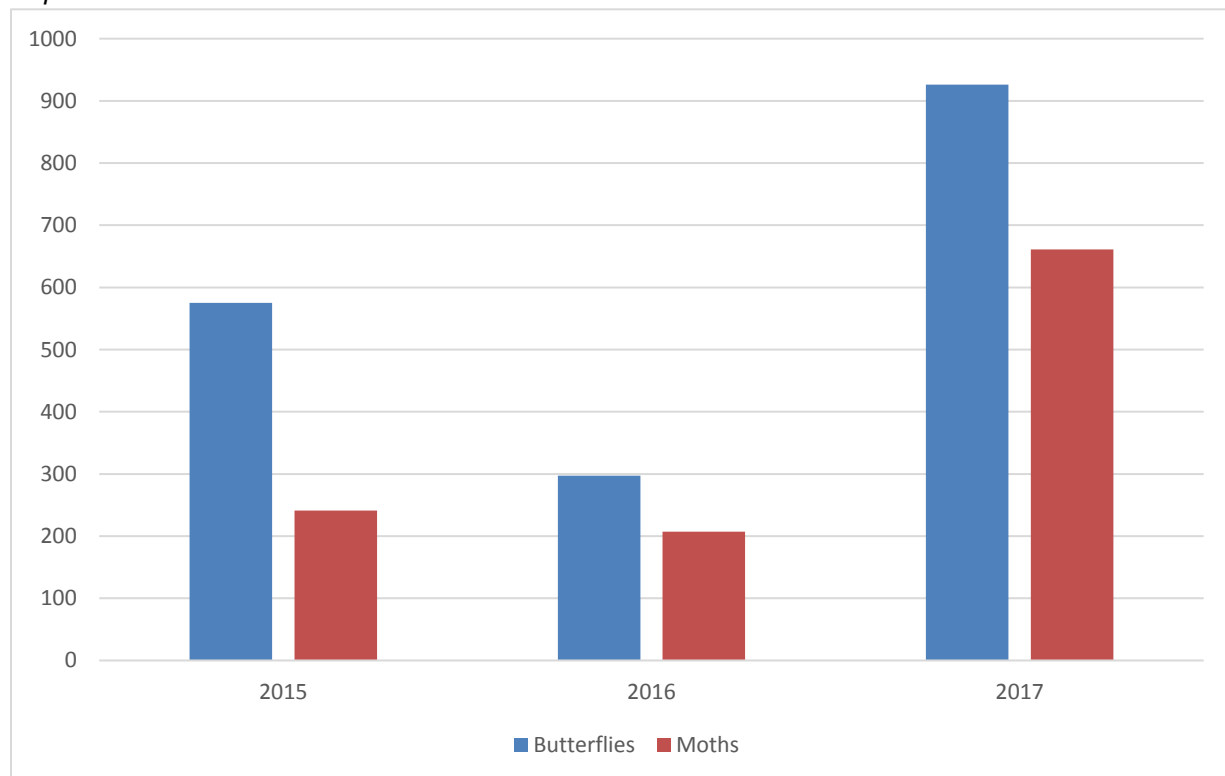
Fig. 1. Aerial view of RSPB Conwy nature reserve, showing the route taken for the weekly invertebrate survey. © Crown Copyright. All rights reserved. RSPB licence 100021787. RSPB Permit Number: 60271



During the 22 years since the nature reserve opened to the public, *ad hoc* butterfly records have been gathered by visitors, volunteers and staff. Since 2015, two volunteers (RAM and RWM) have undertaken a weekly transect, walking 2,700 metres once each week between early April and the end of September, recording butterflies, dragonflies, bumblebees and a small number of day-flying moth species. The transect (shown as a yellow line in Fig.1) is undertaken in the best weather (dry, sunny, warm, calm) available during each week, subject to availability of the volunteers. Butterflies are observed and the species and number recorded, but not caught, as the species present regularly at Conwy cause little identification challenge.

In 2016, JH produced a simple checklist of the butterflies recorded at the site (this, and a checklist of moths and other taxonomic groups, are downloadable from <http://tinyurl.com/conwylists>). This article expands on that checklist, and uses the first three years of transect surveys to make an initial assessment of the status of each species.

Fig.2. Lepidoptera registrations during RSPB Conwy nature reserve invertebrate survey, April to September.



From the limited data collected so far, several species had a much better 2017 than the previous two years, particularly Green-veined White, Speckled Wood, Red Admiral, Comma and Common Blue. Cinnabar and Six-spot Burnet Moths were also more numerous in 2017. Ringlet appears to be establishing itself as a regular presence on the reserve, but Peacock and Small Tortoiseshell were marginally scarcer. Fig.2 shows that butterflies recorded on the transect were over three times more abundant in 2017 than 2016.

Dingy skipper *Erynnis tages*

Recorded once, on 18 May 1998. The reserve lies a few miles to the southwest of Bryn Pydew, a limestone ridge with a small population of Dingy Skippers. The species favours open, sunny habitats, including brownfield and old industrial sites, so Conwy looks, on the face of it, ideal. The reserve has abundant Common Bird's Foot Trefoil (*Lotus corniculatus*), the primary caterpillar food plant, so it is somewhat surprising that it has not been recorded in 20 years.

Small skipper *Thymelicus sylvestris*

Recorded on two dates in 2016 (17 and 25 July) during the weekly transect survey, the first records for the reserve. It is widespread but localised in this part of North Wales, with the Great Orme hosting the only established population nearby. Small skipper has increased in abundance and slightly increased its geographic range in the last decade, so perhaps we can expect to see more records in the future.

Large skipper *Ochlodes Sylvanus*

Aside from a single sighting in June 1996, there were no further records until three in July 2015 and one in August 2016 during transect surveys. Records around the Conwy estuary are sporadic, but there is a greater abundance of records from the Great Orme, Bryn Pydew and Bryn Euryn. The UK population has increased during the last decade, and with its caterpillar food plant (Cock's foot, *Dactylis glomerata*) growing on the reserve, this may be another species likely to increase providing the grassland remains sufficiently open.

Orange-tip *Anthocharis cardamines*

Present in small numbers: earliest date 9 April 2017, latest date 25 July 2009.

	2015	2016	2017
Total transect count	3	6	8
Date range	20 Apr-13 May	5 May-6 Jun	9 Apr-31 May

Large white *Pieris brassicae*

Present in moderate numbers: earliest date 21 April 2014, latest date 19 September 2017.

	2015	2016	2017
Total transect count	33	20	23
Date range	23 Jul-10 Sep	12 May-2 Aug	31 May-19 Sep



Volunteers play a crucial role in monitoring butterflies and moths at RSPB Conwy nature reserve, and in managing the habitat for them, at both a large- and small-scale.

Small white *Pieris rapae*

Present in moderate numbers: earliest date 25 March 2012, latest date 23 September 2016.

	2015	2016	2017
Total transect count	18	13	18
Date range	20 Apr-18 Sep	12 May-23 Sep	9 Apr-28 Aug

Green-veined white *Pieris napi*

Present in moderate numbers, occasionally numerous (as in 2017): earliest date 9 April 2014, latest date 25 September 2015.

	2015	2016	2017
Total transect count	14	17	165
Date range	4 Jun-25 Sep	24 May-2 Aug	10 May-28 Aug

Clouded yellow *Colias croceus*

Occasional migrant, tending to occur in 'big' years. Individuals on four dates in August 1996, two dates in late June/early July 1998, up to three individuals in August 2000, and one in August 2005.

Brimstone *Gonepteryx rhamni*

Present in small numbers: earliest date 9 April 2017, latest date 19 October 2012.

	2015	2016	2017
Total transect count	2	0	2
Date range	20 Apr-3 Jun		9 Apr

Wall *Lasiommata megera*

Recorded on three occasions, always along the estuary track: 17 May 2014, 14 June 2015 and 23-24 July 2017. There are occasional records from adjacent 1-km squares (aderyn.lercwales.org.uk), and regular records from the Great Orme, and Iolyn Park (3 km to the southwest of the reserve).

Speckled wood *Pararge aegeria*

Present in moderate numbers, primarily in the wooded areas close to the A55: earliest date 28 March 2012, latest date 28 September 2017.

	2015	2016	2017
Total transect count	23	13	53
Date range	8 Jun-25 Sep	20 Apr-2 Aug	10 May-28 Sep

Small heath *Coenonympha pamphilus*

Recorded twice, on 29 July 2008 and 19 June 2014. Usually found at higher altitude along the northern foothills of the Carneddau mountains and on the plateau of the Great Orme.

Ringlet *Aphantopus hyperantus*

A relatively recent arrival (first record 28 July 2013), now becoming established. Present in small numbers: earliest date 14 June 2017, latest date 16 August 2016. As caterpillars use a range of grass species present at the reserve, there is every likelihood that they are now established as a breeding species.

	2015	2016	2017
Total transect count	0	1	7
Date range		27 June	14 Jun-12 Jul

Meadow brown *Maniola jurtina*

Present in large numbers, primarily in the grazed southern part of the reserve: earliest date 6 June 2016, latest date 25 September 2015.

	2015	2016	2017
Total transect count	161	65	186
Date range	15 Jun-25 Sep	6 Jun-2 Aug	20 Jun-28 Aug

Gatekeeper *Pyronia tithonus*

Present in large numbers, primarily in the grazed southern part of the reserve: earliest date 7 July 2015, latest date 19 September 2017.

	2015	2016	2017
Total transect count	200	191	247
Date range	10 Jul-10 Sep	17 Jul-2 Aug	12 Jul-19 Sep

Marbled white *Melanargia galathea*

One on 22 August 2012 is the sole sighting. There are only a handful of records in North Wales (aderyn.lercwales.org.uk), and it is suspected that this relates to a captive-bred release.

Grayling *Hipparchia semele*

Recorded on 28 August 2008 and 5 September 2015. It is presumed that these individuals were not of the *thyone* subspecies, found uniquely on the western side of the Great Orme, as that form usually ceases to fly beyond the end of July.

Dark green fritillary *Argynnis aglaja*

Recorded on 20 July 1997 and 2 August 2008; this is the most abundant fritillary in the locality, found on several limestone headlands and escarpments within a few kilometres of the reserve, so it is perhaps surprising that it has not been recorded more frequently.

Red admiral *Vanessa atalanta*

Present in variable numbers. 2017 appears to have been a particularly good year. Earliest date 27 April 2013, latest date 15 October 2013.

	2015	2016	2017
Total transect count	3	1	19
Date range	18 Jul-25 Sep	17 Jul	31 May-28 Sep

Painted lady *Vanessa cardui*

Recorded on 8 dates between 1998 and 2017, sometimes in multiples: earliest date 31 May 2015, latest date 31 August 2015.

Peacock *Aglais io*

Present in small numbers: earliest date 10 March 2015 (exceptionally one on 22 Jan 2016), latest date 19 October 2012.

	2015	2016	2017
Total transect count	12	7	6
Date range	20 Apr-20 Aug	17 May-2 Aug	10 May-15 Aug

Small tortoiseshell *Aglais urticae*

Present in moderate numbers: earliest date 12 March 2015 (exceptionally one on 14 Feb 2015), latest date 10 September 2015.

	2015	2016	2017
Total transect count	18	12	12
Date range	20 Apr-10 Sep	20 Apr-19 Jul	31 Mar-12 Jul

Comma *Polygonia c-album*

Present in small numbers: earliest date 22 March 2011, latest date 15 October 2013.

	2015	2016	2017
Total transect count	8	5	21
Date range	20 Apr-27 Aug	20 Apr-19 Jul	9 Apr-28 Aug

Small copper *Lycaena phlaeas*

One record each year during 2012-15, ranging between 7 August and 7 September.

**White-letter hairstreak *Satyrium w-album***

One photographed on a thistle behind the Bridge Pond on 22 July 2016 is the sole record – and thankfully it was posted to Facebook so we learned of it! *Image: Dennis McCann.*

Holly blue *Celastrina argiolus*

The only records on our database are singles in May 1996, 2008, 2012 and 2015, and a pair on 15 August 2017; it has yet to be recorded on the transect survey, but it is thought that these under-represents the true status and that small numbers are present each Spring.

Brown argus *Aricia agestis*

One on 19 August 2013 is the sole record. The Great Orme is the local hotspot, but there are a handful of records from gardens in Deganwy and Llandudno Junction (aderyn.lercwales.org.uk).

Common blue *Polyommatus icarus*

Present in moderate to large numbers: earliest date 10 May 2017, latest date 16 September 2016.

	2015	2016	2017
Total transect count	76	42	158
Date range	4 Jun-18 Sep	24 May-2 Aug	10 May-28 Aug



Common blues can be abundant in some years, their larvae taking advantage of the plentiful Bird's Foot Trefoil in the grazed parts of the nature reserve. Image: Brian Mottershead.

Moth records

In addition to butterflies, the transect fieldwork also records easily identifiable macro-moths, including Silver-Y (*Autographa gamma*) and Common nettle-tap (*Anthophila fabriciana*). Three species are recorded sufficiently regularly to merit reporting here:

Shaded broadbar *Scotopteryx chenopodiata*

	2015	2016	2017
Total transect count	14	16	12
Date range	25 Jun-31 Aug	27 Jun-2 Aug	1 Jul-15 Aug

Cinnabar *Tyria jacobaeae*

This count is solely of larvae, usually feeding on Common Ragwort (*Senecio jacobaea*).

	2015	2016	2017
Total transect count	3	1	19
Date range	18 Jul-25 Sep	17 Jul	31 May-28 Sep

Six-spot burnet *Zygaena filipendulae*

	2015	2016	2017
Total transect count	220	188	628
Date range	30 Jun-31 Aug	17 Jul-2 Aug	8 Jul-28 Aug

Management for butterflies

The scrub and grassland are managed for a variety of invertebrates, with the objective of keeping a diversity of sward length and scrub structure. A small herd of Carneddau mountain ponies are the primary management tool, supplemented by mechanical cutting of vegetation to create micro-habitats and sheltered sunny bays within the scrub. Over time, it is hoped that the transect surveys (which are divided into habitat-defined sectors) will inform and monitor the effectiveness of the management.

Acknowledgement

Thanks to Tony Gallon for undertaking a number of the transect surveys when RAM and RWM were unavailable.