

Niwbwrch

Site: Niwbwrch (Newborough) and Ynys Llanddwyn National Nature Reserve

Date of survey: 25/06/2021 and 29/06/2021

Survey areas: Llyn Parc Mawr, Niwbwrch forest and Ynys Llanddwyn



Yellow Shell moth (*Camptogramma bilineata*) on Ynys Llanddwyn.

1. Survey details

To cover the sizeable area that makes up Niwbwrch and the island of Ynys Llanddwyn, the surveys focussed on four main sites in the area (see figure 1 below). These were chosen during the initial 2020 baseline surveys and comprised Llyn Parc Mawr (at the sites' northernmost boundary), the Pwll Pant Mawr area, Ynys Llanddwyn and its adjacent strip of coast near the car park, and the Niwbwrch 'beach car park' at the south-east edge of the site (see the map in figure 1 below). Two survey visits were carried out: one on 25th June and another on 29th June 2021.

The main surveys carried out during the visits to Niwbwrch included birdlife (especially signs of breeding activity), vegetation condition in various locations, litter abundance and any incidental sightings (for example insects or mammals).

Weather conditions: on 25th June there was light drizzle turning to heavy rain by 09:00, with a moderate north wind (15mph) and temperatures of 13°C. Conditions on the second survey visit (29th June) were clear (<20% cloud cover), with calm winds (<5mph NW) and warm temperatures (18°C – 22°C).

See below for the survey route around Niwbwrch and the survey sites covered.



Figure 1. A map of the Niwbwrch survey area showing the main survey sites (orange points) covered on the survey visits, and the transect route taken in between (red line).

2. Results

A summary of the results for each of the different surveys are given below. Figures 2a – 2d below provide an overview of the locations of more noteworthy sightings, the key survey points and the locations of fixed-point images. These numbered points are referred to in the results text.



Figure 2a: Overview of Niwbwrch survey area with the main survey points referred to in the results text below.

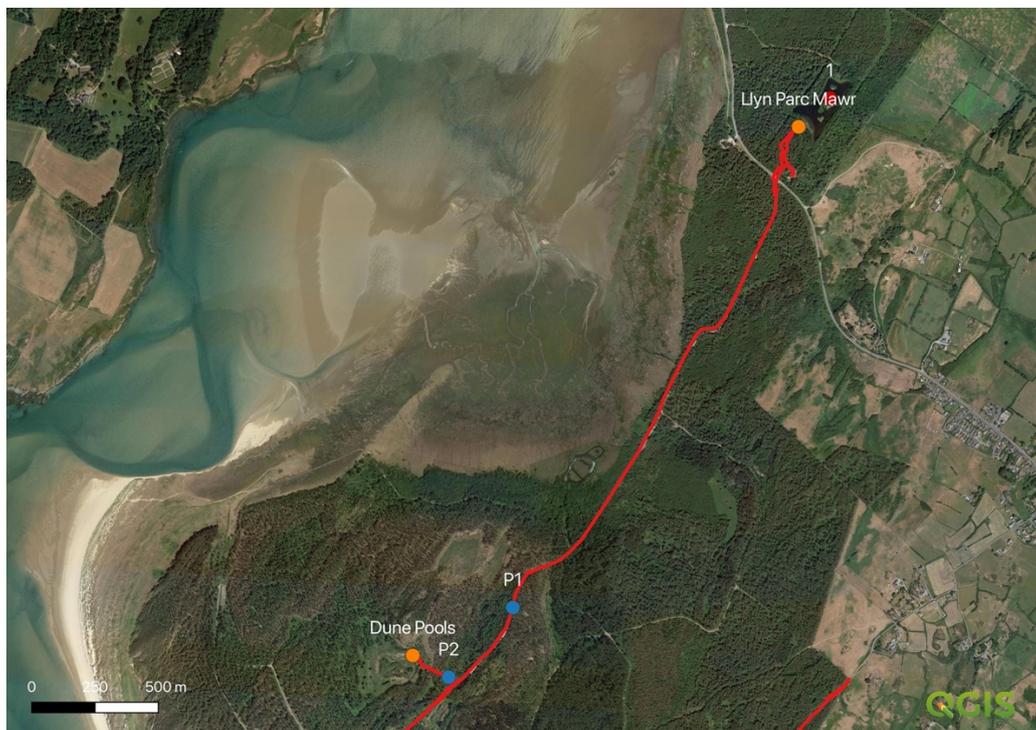


Figure 2b: a closer view of the northern area of the site and transect to show the Llyn Parc Mawr and Pwll Pant Mawr survey points.



Figure 2c: a closer view of Ynys Llanddwyn survey area with the different survey points and transect outlined.



Figure 2d: Niwbwrch Bach Car Park site and vegetation survey area.

Figures 2a – 2d (above). Satellite imagery showing each of the survey sites within Niwbwrch. The **red** line shows the route taken through the area; **red** points are target notes referred to in the results summary below, **blue** points are fixed-point photography sites and the **green** point is the location of a vegetation survey.

2.1 Birdlife

A total of 383 individual birds of 42 species were recorded across all four survey sites around Niwbwrch (see table 1 below). This included 16 species of 66 individuals at Llyn Parc Mawr, nine species of 15 individuals around the Pwll Pant Mawr, 22 species of 283 individuals around Ynys Llanddwyn (including some seabird colonies on the offshore islands) and 10 species of 19 individuals near the Beach Car Park. The most common breeding birds seen (excluding seabirds on the offshore islands of Ynys yr Adar) were Chaffinches (49 in total), Meadow Pipits (31), Linnets (24) and Rock Pipits (13). Other numerous bird species included 59 Herring Gulls, 65 Cormorants and ten Shags breeding on the offshore islands such as Ynys y Clochydd (point 3 on figure 2c) and Ynys yr Adar (point 5 on figure 2c).

More noteworthy sightings recorded during the survey included one Crossbill near the Pwll Pant Mawr, four Sandwich Terns off Ynys Llanddwyn, a pair of Choughs near Twr Mawr on Ynys Llanddwyn (point 4 on the map in figure 2c), a Spotted Flycatcher at Llyn Parc Mawr, a pair of Great Crested Grebes and two Eider ducks off Ynys Llanddwyn.

There were ten species recorded in 2021 that were not seen during the 2020 survey: Coot, Jay, Garden Warbler, Little Grebe, Great Crested Grebe, Common Sandpiper, Curlew, Little Egret, Mistle thrush and Raven. Conversely, there were 14 different bird species recorded in 2020 that were not seen in 2021, comprising Great Tit, Gadwall, Grey Heron, Moorhen, Wood Warbler, Long-tailed Tit, Mallard, Goldcrest, Swallow, House Martin, Great Black-backed Gull, Ringed Plover, Gannet and Carrion Crow. Overall, however, the species total of 42 is the same for both 2020 and 2021, and the abundance of 383 individual birds is 19% higher than the total of 323 for 2020 (see figures 3 and 4).



Male Stonechat (*Saxicola torquata*) on Ynys Llanddwyn

Potential visitor impacts on birdlife

In terms of visitor impacts to the birdlife, there was little immediate evidence of such effects across the sites in the Niwbwrch forest area (Llyn Parc Mawr, Pwll Pant Mawr and beach car park area). However, there were some signs around Ynys Llanddwyn that increased visitor numbers compared to spring 2020 might be affecting some of the nesting birdlife in this area. The popular circular pathway around this tidal island means visitors have access to a significant proportion of the island and coastline, where nesting birdlife (particularly more sensitive waders) breed and can be prone to disturbance. It was noted in 2020 that a pair of Ringed Plovers were attempting to nest near the tip of Ynys Llanddwyn on a sandy beach, where there was no sign of birds in 2021 (very likely a consequence of disturbance). A total of 14 Oystercatchers (seven breeding pairs) were recorded around the coast of Ynys Llanddwyn in 2020, whereas just a single pair was noted during the 2021 survey. Four Common Eider ducks were seen on Ynys y Clochydd in 2020, during the quiet spring period, but just two birds far offshore were seen in 2021; the area on the south of the island was occupied by seven sailing boats and many smaller kayaks along the coast.

In contrast, a pair of Red-billed Choughs present on the tip of Ynys Llanddwyn displayed remarkably tolerant behaviour in the presence of many people at the time of the survey, remaining present even when people were less than 10 metres away. Similarly, songbird species breeding around Ynys Llanddwyn seemed less affected by the presence of people, and were present in good numbers: three pairs of Stonechats (each with a brood of up to five chicks) were recorded, along with 31 Meadow Pipits, five Whitethroats and 22 Linnets (including several fledged broods).

Table 1. Results of bird survey around Niwbwrch.

Site Name		Niwbwrch / Newborough					
Survey type		Breeding birds					
Surveyors		Ben Porter and Nigel Brown					
Dates of surveys		25/06/2021 (Llyn Parc Mawr and Pwll Pant Mawr) 29/06/2021 (Ynys Llanddwyn and beach car park area)					
Species	Scientific name	Transect or site					Evidence of breeding during visits
		Llyn Parc Mawr	Pwll Pant Mawr	Ynys Llanddwyn	Beach car park and dunes	Total number	
Blackcap	<i>Sylvia atricapilla</i>	1				1	Singing male
Robin	<i>Erithacus rubecula</i>	1			3	4	
Chaffinch	<i>Fringilla coelebs</i>	45			4	49	
Great Spotted Woodpecker	<i>Dendrocopos major</i>	1			1	2	
Chiffchaff	<i>Phylloscopus collybita</i>	2			1	3	Singing males
Garden Warbler	<i>Sylvia borin</i>	1				1	Singing male
Goldcrest	<i>Regulus regulus</i>	1				1	Singing male

Linnet	<i>Carduelis cannabina</i>		2	22		24	Singing males, families with fledged young
Blackbird	<i>Turdus merula</i>	1			2	3	
Wren	<i>Troglodytes Troglodytes</i>	2	1		3	6	Singing males
Jay	<i>Garrulus glandarius</i>	2				2	
Treecreeper	<i>Certhia familiaris</i>		1	1		2	Singing male
Song Thrush	<i>Turdus philomelos</i>	2	1		1	4	Singing males
Tufted Duck	<i>Aythya fuligula</i>	1				1	
Oystercatcher	<i>Haemotopus ostralegus</i>	1		31		32	Pairs on territory around Ynys Llanddwyn
Coot	<i>Fulica atra</i>	3				3	
Little Grebe	<i>Tachybaptus ruficollis</i>	1	3			4	Pair and juveniles
Common Whitethroat	<i>Sylvia communis</i>			5		5	Singing males
Willow Warbler	<i>Phylloscopus trochilus</i>		1			1	
Crossbill	<i>Loxia curvirostra</i>		1			1	
Coal Tit	<i>Parus ater</i>		1			1	
Goldfinch	<i>Carduelis carduelis</i>		4	2		6	
Siskin	<i>Carduelis spinus</i>				1	1	
Pied Wagtail	<i>Motacilla alba yarrellii</i>			2		2	
Skylark	<i>Alauda arvensis</i>			5		5	Singing males
Herring Gull	<i>Larus argentatus</i>			59		59	Breeding pairs with young on Ynys y Clochydd and Ynys yr Adar.
Rock Pipit	<i>Anthus petrosus</i>			13		13	Singing males
Meadow Pipit	<i>Anthus pratensis</i>			31		31	Singing males and fledged young
Stonechat	<i>Saxicola torquata</i>			16		16	Three pairs with broods of fledged young
Cormorant	<i>Phalacrocorax carbo</i>			65		65	Breeding colonies on Ynys yr Adar to west of Ynys Llanddwyn
Shag	<i>Phalacrocorax aristotelis</i>			10		10	Breeding pairs in colonies to west of Ynys Llanddwyn
Sandwich Tern	<i>Sterna sandvicensis</i>			4		4	
Chough	<i>Pyrrhocorax</i>			2		2	Pair in suitable

	<i>pyrrhocorax</i>						breeding habitat
Black-headed Gull	<i>Chroicocephalus ridibundus</i>			2		2	
Spotted Flycatcher	<i>Muscicapa striata</i>	1				1	
Common Sandpiper	<i>Actitis hypoleucos</i>			3		3	
Curlew	<i>Numenius arquata</i>			1		1	
Eider	<i>Somateria mollissima</i>			2		2	
Great Crested Grebe	<i>Podiceps cristatus</i>			2		2	
Little Egret	<i>Egretta garzetta</i>			3		3	
Mistle Thrush	<i>Turdys viscivorus</i>			2	2	4	
Raven	<i>Corvus corax</i>				1	1	
Total number of species		16	9	22	10	42	
Total number of individuals		66	15	283	19	383	



Goleudy Twr Mawr on Ynys Llanddwyn. Ringed Plovers were seen nesting on the beaches here in 2020, but were not present in 2021



Figure 3. Bird abundance (i.e. number of individual birds recorded) along the main transect routes in 2020 (pale grey) and 2021 (darker grey) around Niwbwrch.

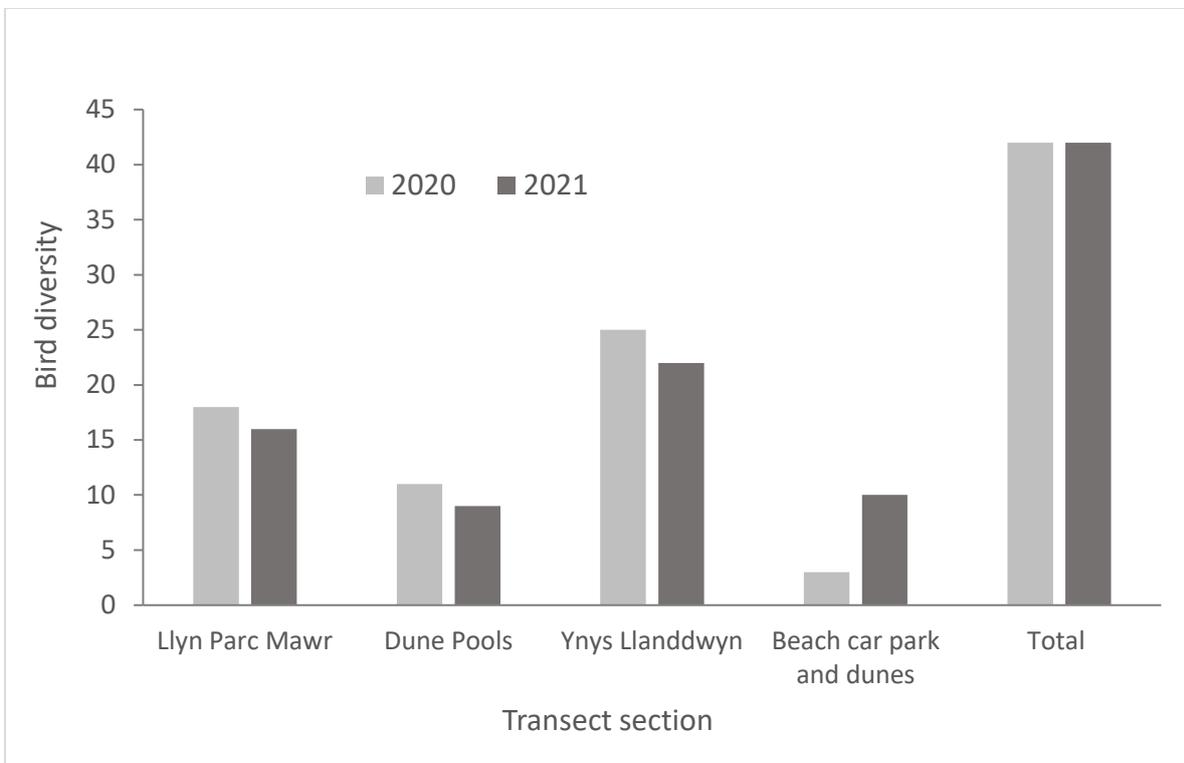


Figure 4. Bird diversity (i.e. total number of species) along the main transect routes in 2020 (pale grey) and 2021 (darker grey) around Niwbwrch.

2.2 Vegetation

During the 2020 surveys of this area, we attempted to survey a variety of sites to assess how a period of lessened human usage might have impacted upon the vegetative communities that make the Niwbwrch region so important and special in a national context. To compare the results of these surveys to the higher visitor usage experienced in 2021, we revisited some of the key sites and attempted to capture any key changes observed. These comparisons include the use of fixed-point imagery in a variety of locations around Niwbwrch, which are presented in section 2.5 below.

Exact comparisons between the two years were made very difficult by the vastly different spring weather conditions experienced in 2020 compared to 2021: with a very dry, warm spring in 2020 leading to a prolific growth of plantlife and early flowering times; whereas the very cold spring of 2021 resulted in much reduced growth and a 2-3 week shift in the season (much later flowering, growth and emergence of species than 2020).

Below are a variety of observations made during the 2021 surveys at sites surveyed specifically for analysis of vegetation condition in 2020.

Flowering plants along the forest tracks

A vivid assemblage of plantlife was present along the sides of the forest 4x4 tracks along the transect route, similar in nature to the 2020 surveys but with somewhat less Viper's Bugloss (*Echium vulgare*) – a very noticeably abundant species during 2020. The main species observed were Kidney vetch (*Anthyllis vulneraria*) and black medick (*Medicago lupulina*), with some pyramidal orchids flowering in some sections.



Pyramidal orchid (*Anacamptis pyramidalis*) beside the forest track through Newborough forest.

Pathside flora around Ynys Llanddwyn

Whilst the pathway itself and some of the popular gathering spots were more compacted and trampled than in 2020, overall the vegetation communities around Ynys Llanddwyn were spectacular and in similar abundance and diversity to 2020. For example, Ivy Broomrape (*Orobanche hederæ*) was present in four or five different locations with hundreds of individual plants present; the scarce Maiden Pink (*Dianthus deltoides*) flowering plant was even more verdant than seen in 2020, with over 150-200 flowers in the colony at the beginning of the circular footpath around Ynys Llanddwyn (point 2 on the map in figure 2c). Species like Bloody Cranesbill (*Geranium sanguineum*) were abundant along the pathways, with Viper's Bugloss (*Echium vulgare*) and a proliferation of Cats-ear and Hawksbeard species (*Crepis sp./Hypochaeris sp.*) around many locations such as the ruins close of St Dwynwen's Church.

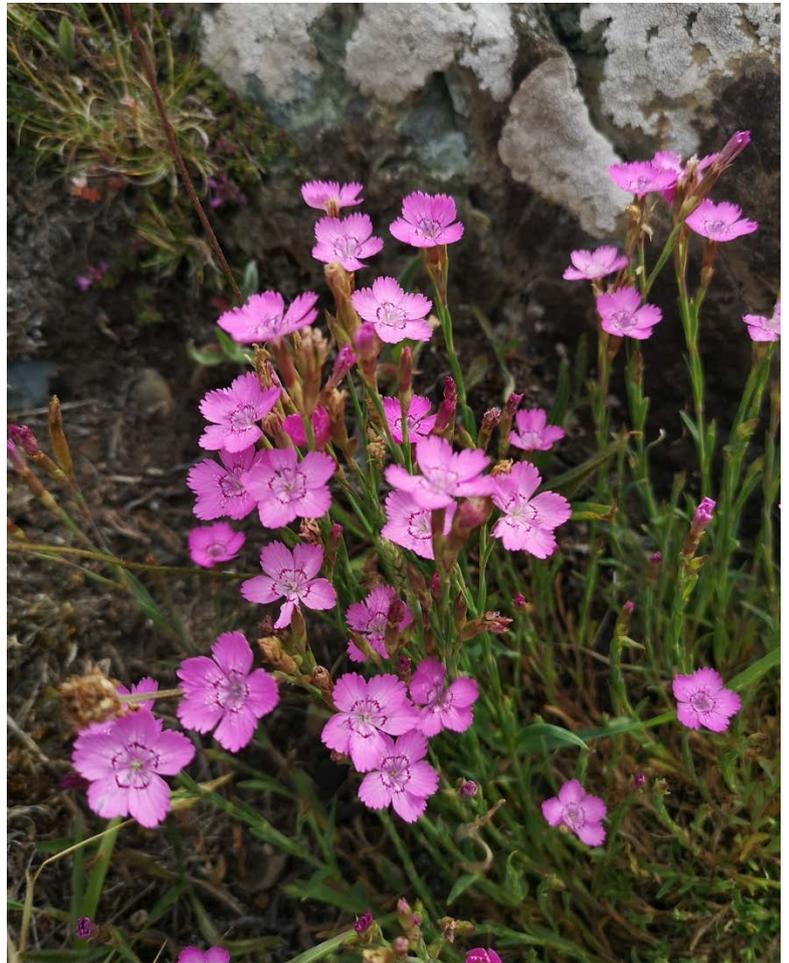
The fixed-point images taken along the perimeter pathway of Ynys Llanddwyn (see section 2.5) give a visual comparison of differences between the vegetation communities at this site between 2020 and 2021.



Flowering Bloody Cranesbill (*Geranium sanguineum*) and Bird's-foot Trefoil (*Lotus corniculatus*) on the southern side of Ynys Llanddwyn.



Images of the flora around Ynys Llanddwyn: top image on north side of Ynys Llanddwyn with flowering Hawksbeard (*Crepis* sp.); bottom left: Viper's Bugloss (*Echium vulgare*) flowering near St Dwynwen's Church; middle bottom: Common Centaury (*Centaurium erythraea*); bottom right: Ivy Broomrape (*Orobanche hederæ*).



The beautiful Maiden Pink (*Dianthus deltoides*) is a Nationally Scarce species, occurring in less than 100 hectads in the country. It is similarly very scarce in North Wales, with just two populations (on Newborough and Deganwy). The species has been known from Newborough since 1915, the main colony being known from the open dunes, and this patch on Ynys Llanddwyn (at grid reference SH390632) being something of an outlier. This patch was rediscovered in 2017 after an absence of over 50 yrs, but is seemingly increasing each year, with ~25 flowering shoots in 2017, ~50 in 2020 and between 100-200 in 2021.



Above: more compacted and trampled ground around the ruins of St Dwynwen's church on Ynys Llanddwyn, reducing the extent of wildflower cover here.

Plantlife around the Niwbwrch beach car park

One of the most noteworthy effects of lockdown 2020 on the plantlife in this area was that of the vegetation cover around the main 'beach car park' of Niwbwrch (grid reference SH405635; see the map in figure 2c). After a spring of minimal usage of this site, the area was covered in verdant growth of plants and wildflowers by June 2020, including species such as Viper's Bugloss (*Echium vulgare*) growing up within the plastic corrugated parking bays. The surveys in 2021 revealed a less flourishing scene in this area, as might be expected following a return to high numbers of visitors in this popular spot (see the images below). However, despite areas of the banks around the car park being more compacted than 2020, there was still an overall diverse selection of wildflowers to be found, but in a much more restricted distribution. Species like Horse Radish (*Armoracia rusticana*) were still present, alongside flowering species such as Common Restharrow (*Ononis repens*), Lady's Bedstraw (*Galium verum*) and Wild Thyme (*Thymus polytrichus*). See table 2 below for a full species list recorded in this area.



Flowering plantlife on the verge at the main beach car park in Niwbwrch.

Table 2. Plant list for beach car park area in Niwbwrch.

Site Name	Niwbwrch	Location	'Beach car park'
Survey type	Vegetation survey	Survey area	~50m radius
Surveyors	Ben Porter	Grid ref at centre	SH405635
Date of survey	29/06/2021		
Species	Scientific name	Notes	
Stork's-bill sp.	<i>Erodium sp.</i>	Generally much less growth of wildflowers and plants on the banks around the car park compared to 2020, but a diversity species are still present, just in very reduced abundance and in far fewer locations than in 2020.	
Common Restharrow	<i>Ononis repens</i>		
Bramble	<i>Rubus fruticosus</i>		
Horse Radish	<i>Armoracia rusticana</i>		
Rosebay Willowherb	<i>Chamaenerion angustifolium</i>		
Cat's-ear	<i>Hypochaeris radicata</i>		
Mouse-ear sp.	<i>Cerastium sp.</i>		
Marram Grass	<i>Ammophila arenaria</i>		
Creeping Willow	<i>Salix repens</i>		
Ribwort Plantain	<i>Plantago lanceolata</i>		
Viper's Bugloss	<i>Echium vulgare</i>		
Lady's Bedstraw	<i>Galium verum</i>		
Yarrow	<i>Achillea millefolium</i>		
Ragwort	<i>Jacobaea vulgaris</i>		
Wild Thyme	<i>Thymus polytrichus</i>		
Bird's-foot Trefoil	<i>Lotus corniculataus</i>		
Dock	<i>Rumex obtusifolius</i>		
Sticky Chickweed	<i>Cerastium glomeratum</i>		
Mouse-ear Chickweed	<i>Cerastium fontanum</i>		
Total number of species	19		



2021



2020



2021



2021

Images from main beach car park: top showing Horse Radish (*Armoracia rusticana*) and Viper's Bugloss (*Echium vulgare*); middle row comparing the scene in 2020 (right hand image) and in 2021 (left hand image) and bottom image showing reduced plantlife cover on the verge.

2.3 Litter

A total of 78 different litter items of 15 different types were found across the Niwbwrch survey area (see table 3 below). The most littered site was the main beach car park (52 items), followed by the car park area for Ynys Llanddwyn (17 items) and Ynys Llanddwyn itself (9 items). There was no litter found at Llyn Parc Mawr or the Pwll Pant Mawr area. The most common litter items found were plastic sweet wrappers (16 items), tissues (11 in total, associated with people using sites as toilets and leaving these after use); cigarette butts (nine items) and plastic bottles (seven items).

This total is a large increase to the three items found across all Niwbwrch sites in 2020, and reveals the issue of littering is certainly affecting these areas, despite the presence of bins and recycling stations at the main car park.

Table 3. Results from a litter survey around Niwbwrch survey area.

Site Name	Niwbwrch / Newborough			
Survey type	Litter survey			
Surveyors	Ben Porter			
Date(s) of survey	25/06/2021 and 29/06/2021			
Litter type	Quantity			
	Car park for Ynys Llanddwyn	Ynys Llanddwyn	Niwbwrch beach car park	Total
Tin can	3	1		4
Plastic bottle	6		1	7
Glass bottle	1			1
Face mask	2		4	6
Cigarette butt	5		4	9
Dog poo bag		4	2	6
Tissues		1	10	11
Towel		1		1
Plastic bag		1	3	4
Plastic wrapper		1	2	3
Sweet wrapper			16	16
Wet wipe			1	1
Plastic bottle top			1	1
Crisp packet			5	5
Clothing items			1	1
Total number of litter types	5	6	12	15
Total number of litter items	17	9	52	78

2.4 Other sightings

Due to the hot and sunny conditions experienced on the second survey visit to the area (29/06/2021), there were a host of insect species seen and recorded as incidental records during the survey work. These were mostly around Ynys Llanddwyn, and included eight Small Tortoiseshell butterflies (*Aglais urticae*), a possible Dark Green Fritillary (*Speyeria aglaja*) flying past, one Painted Lady butterfly (*Vanessa cardui*), 14 Small Heath butterflies (*Coenonympha pamphilus*), a Meadow Brown butterfly (*Maniola jurtina*), a Common Blue butterfly (*Polyommatus icarus*), nine Six-spot Burnet moths (*Zygaena filipendulae*), three Yellow Shell moths (*Camptogramma bilineata*), three Cinnabar moths (*Tyria jacobaeae*) and two Brambleshoot moths (*Notocelia uddmanniana*).



Yellow Shell moth (*Camptogramma bilineata*) on Ynys Llanddwyn.



Pyramidal Orchid (*Anacamptis pyramidalis*) near Ynys Llanddwyn.

2.5 Fixed-point images to record vegetation condition

For this year's report, images from 2020 (left hand column) are shown alongside those from 2021 (right hand column) in the same locations to allow for comparison.



Image locations: **top row** on forest track between Llyn Parc Mawr and Pwll Pant Mawr (point **P1** on figure 2b); **middle row** on forest track approaching Pwll Pant Mawr (**P2** on figure 2b) and **bottom row** picnic bench at car park for Ynys Llanddwyn (**P3** on figure 2c).



Image locations: **top row** viewpoint area looking over to Ynys Llanddwyn (P4 on figure 2c); **middle row** entrance track onto Ynys Llanddwyn (P5 on figure 2c) and **bottom row** beginning of pathway around Ynys Llanddwyn (P6 on figure 2c).



Image locations: all above taken along pathway around Ynys Llanddwyn, with **top row** at **P7** on figure 2c; **middle row** at **P8** and **bottom row** at **P9**.