

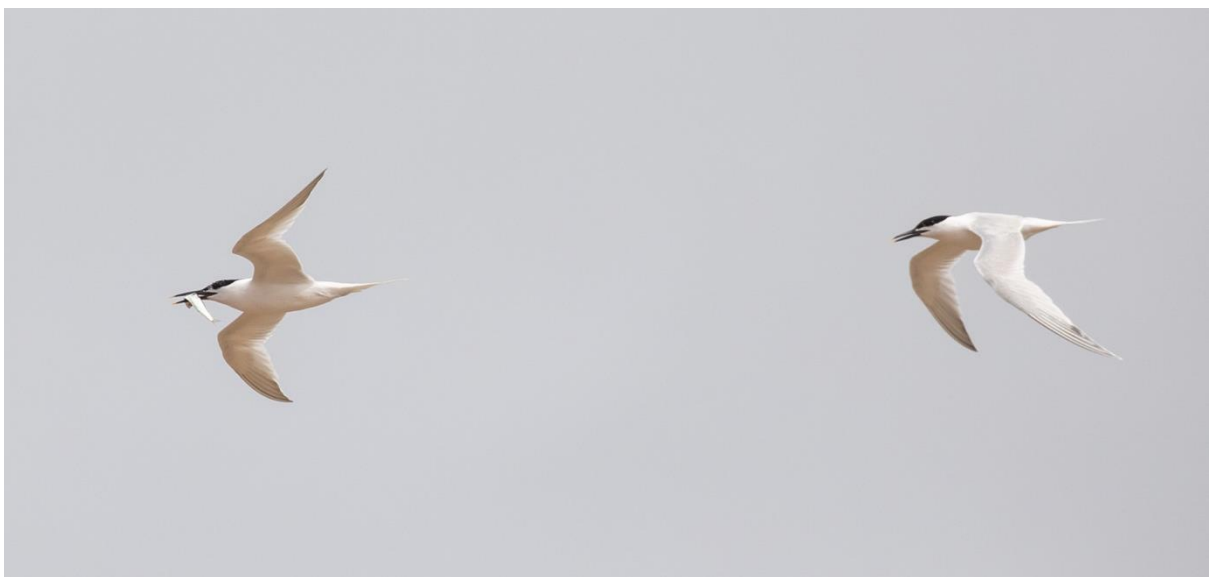
Niwbwrch



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

Date of survey: 04/07/2022

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



Sandwich Terns (*Sterna sandvicensis*) flying west over Ynys Llanddwyn towards one of their Anglesey breeding colonies.

1. Survey details

To cover the sizeable area that makes up Niwbwrch and the island of Ynys Llanddwyn, the surveys here have focussed on four main sites in the area over the three years of this monitoring work (see figure 1 below). These sites were chosen during the initial 2020 baseline surveys and comprise the following areas: Llyn Parc Mawr (at the sites' northernmost boundary), Pwll Pant Mawr (the 'Dune Pools' 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. In 2022, the surveys of these sites took place on 4th July 2022. The surveys of these sites were focussed on assessing birdlife (especially signs of breeding activity), vegetation condition in various locations, litter abundance and any incidental sightings (for example, of insects or mammals of note).

Weather conditions: there were moderate north-westerly winds (15-20mph), with overcast conditions at the start of the survey (95%) and clear skies by midday. Temperatures were mild (between 15°C and 19°C).

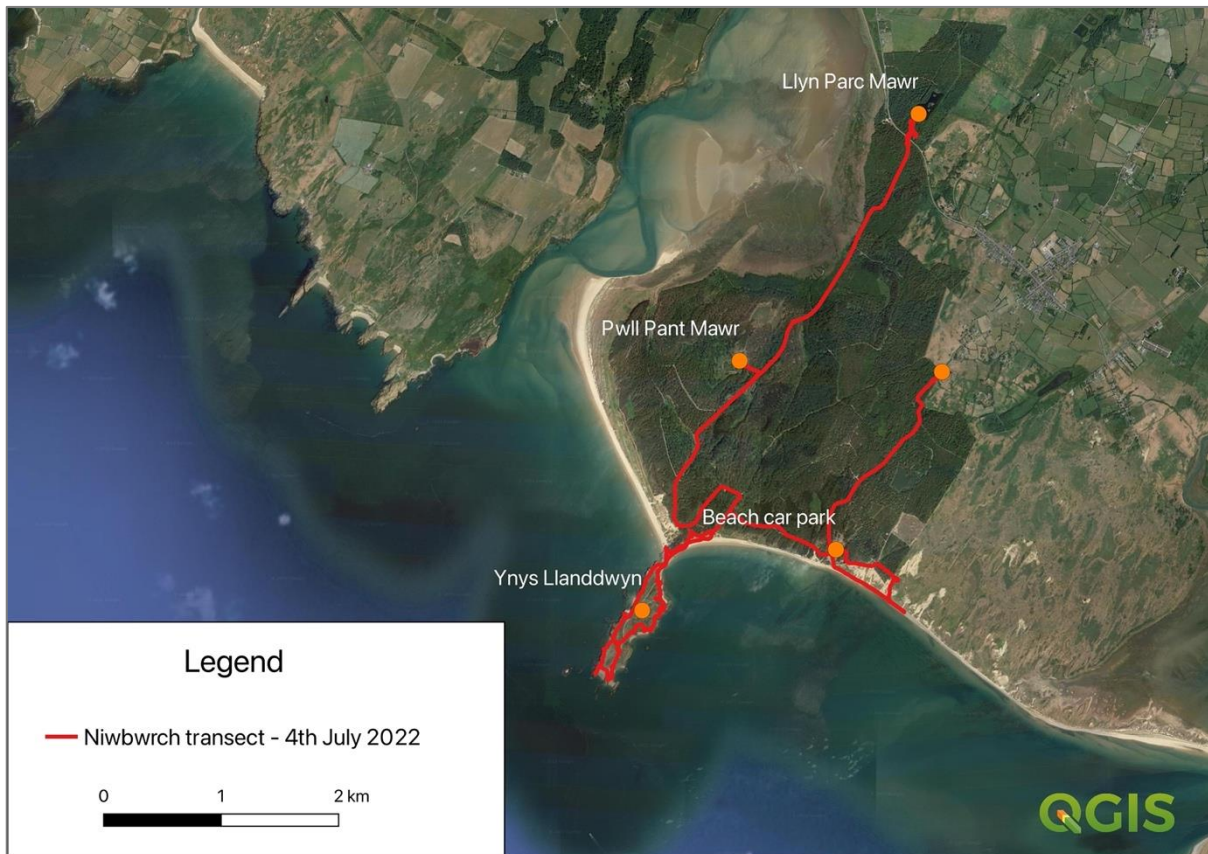


Figure 1. A map of the Niwbwrch survey area showing the main survey sites (orange points) covered on the survey visits, and the transect route taken in between (red line).

2. Results

A summary of the results for each of the different surveys are given below. Figures 2a – 2c 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 that follow.



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

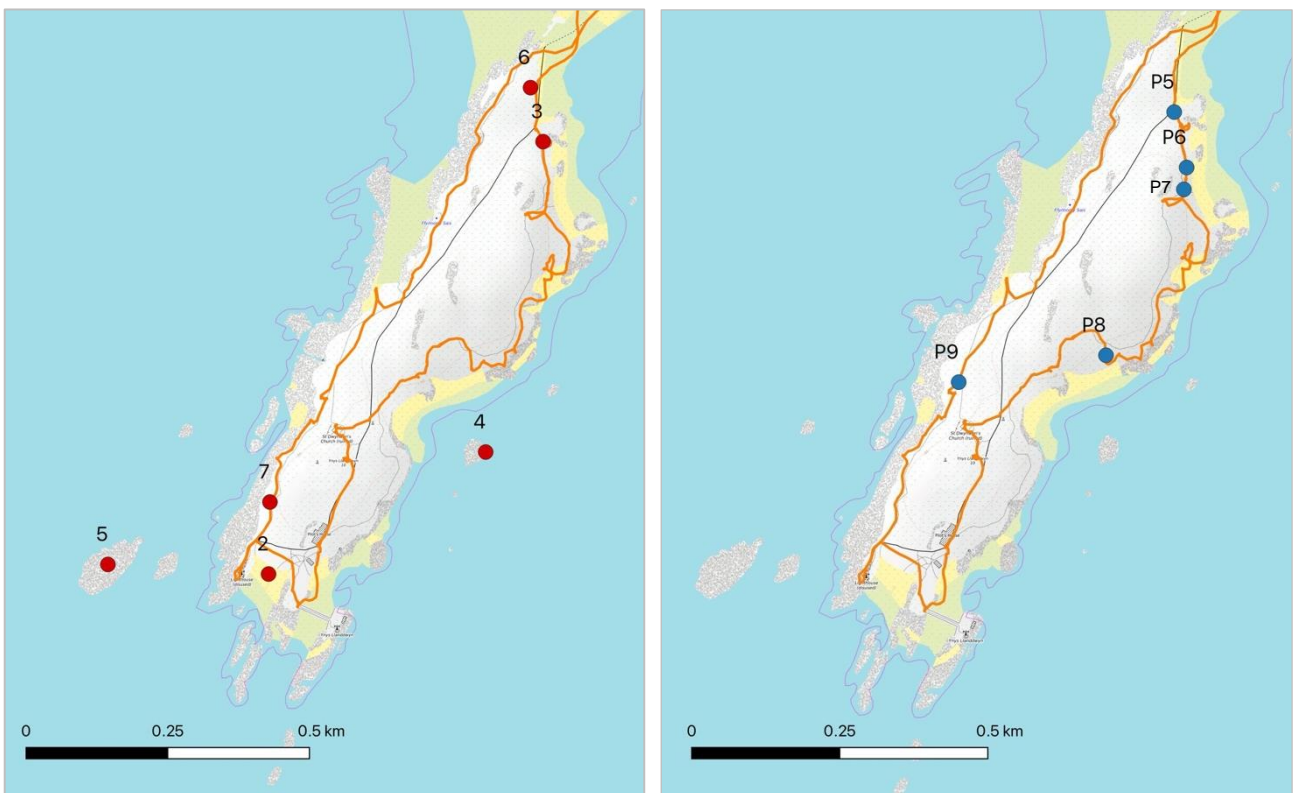


Figure 2b (above left): locations of target notes on Ynys Llanddwyn referred to in the results section below; figure 2c (above right) shows the locations of fixed-point images, illustrated in section 2.5.

2.1 Birdlife

A total of 375 individual birds of 40 species were recorded across the four sites around Niwbwrch during the 2022 survey (see table 1 below). This included 18 species of 75 individuals at Llyn Parc Mawr, eight species of 28 individuals around Pwll Pant Mawr, 16 species of 257 individuals around Ynys Llanddwyn (including some seabird colonies on the offshore islands) and 10 species of 15 individuals near the Beach Car Park. The most common breeding birds seen (excluding seabirds on the offshore islands of Ynys yr Adar) were Linnets (29 in total), Chaffinches (24) and Meadow Pipits (16). Other numerous bird species included 59 Sandwich Terns feeding close inshore off the island and flying north towards their colonies on Anglesey; and 67 Cormorants and 25 Shags breeding on the offshore islands such as Ynys y Clochudd (point 4 on figure 2b) and Ynys yr Adar (point 5 on figure 2b).

Some of the more noteworthy sightings recorded during the survey included eleven Crossbills near Pwll Pant Mawr, two Tufted Ducks on the pools at Llyn Parc Mawr, and breeding evidence of Ringed Plovers around Ynys Llanddwyn at point 2 and 6 on the map in figure 2b. A single pair of Ringed Plovers were noted breeding near Twr Mawr in 2020, with none found in the 2021 surveys. However, up to four breeding pairs are known to utilise the coastline around Ynys Llanddwyn, as recorded by staff from Natural Resources Wales.

The overall total of 375 individual birds is marginally less than recorded in 2021, but still higher than the total in 2020 (see figure 3). This is partly due to the inclusion of some of the seabird populations on the offshore islands around Ynys Llanddwyn in 2021 and 2022, which were not well surveyed during the 2020 survey. This can be seen in the difference between the total birdlife seen around Ynys Llanddwyn, which was 140 in 2020, but 283 and 257 in 2021 and 2022 respectively. In terms of species diversity, the total of 40 species is two less than recorded in 2021 and 2020. The Niwbwrch site demonstrates the least change over the three years of surveys compared to any of the other sites covered in the breadth of this monitoring work – where both upland and lowland sites have experienced quite dramatic reductions in both diversity and abundance of birdlife through the three years.

Whilst the total of 40 species is comparable to that of 2020 and 2021, there was a marked amount of turnover in the variety this total included: 14 species seen in 2021 were not recorded this year, which included Black-headed Gull, Chough, Common Sandpiper, Coot, Curlew, Eider, Garden Warbler, Great Crested Grebe Little Egret, Little Grebe, Siskin, Spotted Flycatcher, Treecreeper and Willow Warbler. Conversely, there were 12 species seen in the 2022 surveys that were not recorded in 2021: Carrion Crow, Common Swift, Dunnock, Gannet, Great Black-backed Gull, Kestrel, Long-tailed Tit, Mallard, Moorhen, Ringed Plover, Rook and Wheatear. Some of these species may well have been present on the island during the spring and breeding season overall, but were simply absent during the time of this survey. For example, Chough were known to breed during 2022 at the site, but we did not record any birds during the 2022 survey visit.

Potential visitor impacts on birdlife

- **Ground-nesting bird disturbance around Ynys Llanddwyn:** in terms of the potential for visitors to impact upon the area's birdlife, the most apparent site for this to occur was around Ynys Llanddwyn. It was noted in 2020 and 2021 that ground-nesting birds and, in particular, wading birds such as Ringed Plovers and Oystercatchers would be particularly susceptible to the effects of disturbance from people. These species nest along the rocky shore and sandy beaches around Ynys Llanddwyn, and continual high numbers of people can prevent breeding attempts or lead to complete abandonment in some circumstances. It was

very positive to see that two electric fences had been erected around Ringed Plover breeding areas for the 2022 season (at points 2 and 6 in the map in figure 2b – see images below). These fences will hopefully have enabled the Ringed Plovers to try nesting with less risk of nest trampling or disturbance from visitors. Three Ringed Plovers were indeed seen during the survey, and were seen to be utilising these sites. The continuation of this, and potential fencing off, of additional sensitive sites around Ynys Llanddwyn, would be a worthwhile intervention to continue in coming years.

- **Dog disturbance to nesting birdlife:** dog walking around Ynys Llanddwyn is a common activity, and several notices are present to inform dog walkers to ensure dogs are kept on leads. However, this message is not always conformed to, and so dogs walking around the island loose and off leads does occur. During the two hours of the survey on Ynys Llanddwyn on 4th July 2022, at least six dog walkers were seen on the island, and two of these were off lead. The potential effects of this to disturb breeding birds (especially during the breeding season, from March to July) is high, and so increasing awareness amongst visitors regarding this issue would be worthwhile.
- **Recreational watercraft disturbance:** whilst not specifically seen as an issue during the scope of this single day survey, the usage of recreational water crafts (such as stand-up paddle boards and jet skis) around popular areas such as this could have an adverse effect on some of the important breeding populations of shorebirds and seabirds. Jet skis have increasingly proven to be causing adverse disturbance (and direct death in some cases) to seabird colonies around Ynys Môn, and the colonies off Ynys Llanddwyn would similarly be vulnerable to this disturbance.



Sandwich Tern (top image) and Oystercatchers (bottom image) on Ynys Llanddwyn.



The electric fences that have been placed around Ringed Plover nesting grounds to prevent trampling and disturbance. Top image is at Gwddfwr Llanddwyn at the beginning of Ynys Llanddwyn (point 6 on the map in figure 2b), and the lower image shows the area near Twr Mawr at the tip of the island (point 2 in the map in figure 2b).

Table 1. Results of breeding bird survey around Niwbwrch in 2022.

Site Name		Niwbwrch / Newborough					
Survey type		Breeding birds					
Surveyors		Ben Porter and Dani Robertson					
Date of survey		04/07/2022					
Species	Scientific name	Transect or site					Evidence of breeding during visits
		Llyn Parc Mawr	Dune Pools	Ynys Llanddwyn	Beach car park and dunes	Total number	
Mistle thrush	<i>Turdus viscivorus</i>	4				4	Fledged young
Wren	<i>Troglodytes troglodytes</i>	7	3			10	Singing males
Blackbird	<i>Turdus merula</i>	2	3			5	Singing males
Chaffinch	<i>Fringilla coelebs</i>	24				24	
Robin	<i>Erithacus rubecula</i>	4			1	5	Alarm calling adults
Goldcrest	<i>Regulus regulus</i>	1			1	2	
Chiffchaff	<i>Phylloscopus collybita</i>	1	3			4	Singing males
Dunnock	<i>Prunella modularis</i>	1				1	
Jay	<i>Garulus glandarulus</i>	1				1	
Coal tit	<i>Periapus ater</i>	1	2			3	
Long-tailed Tit	<i>Aegithalos caudatus</i>	3				3	
Song Thrush	<i>Turdus philomelos</i>	2	4			6	Singing males
Great Spotted Woodpecker	<i>Dendrocopos major</i>	1				1	Fledged young
Moorhen	<i>Gallinula chloropus</i>	6				6	Fledged young
Mallard	<i>Anas platyrhincos</i>	3				3	
Oystercatcher	<i>Haemotopus ostralegus</i>	2		25		27	
Common Swift	<i>Apus apus</i>	10				10	
Tufted Duck	<i>Aythya fuligula</i>	2				2	
Raven	<i>Corvus corvax</i>		1			1	

Common Crossbill	<i>Loxia curvirostra</i>		11			11	
Blackcap	<i>Sylvia atricapilla</i>		1			1	Singing male
Great Black-backed Gull	<i>Larus marinus</i>			2		2	
Pied Wagtail	<i>Motacilla alba yarellii</i>			2		2	
Goldfinch	<i>Carduelis carduelis</i>			2	1	3	Singing male and fledged young
Sandwich Tern	<i>Sterna sandviscensis</i>			59		59	
Ringed Plover	<i>Charadrius hiaticula</i>			3		3	
Linnet	<i>Carduelis cannabina</i>			29		29	Fledged young
Skylark	<i>Alauda arvensis</i>			5	1	6	Singing males
Meadow Pipit	<i>Anthus pratensis</i>			15	1	16	Singing males
Rock Pipit	<i>Anthus petrosus</i>			6		6	Singing males
Herring Gull	<i>Larus argentus</i>			6	1	7	Fledged young
Gannet	<i>Morus bassanus</i>			5		5	
Cormorant	<i>Phalacrocorax corvo</i>			67		67	
Shag	<i>Phalacrocorax aristotelis</i>			25		25	
Stonechat	<i>Saxicola torquatus</i>			5		5	Fledged young
Wheatear	<i>Oenanthe oenanthe</i>			1		1	Fledged young
Carrion Crow	<i>Corvus corone</i>				4	4	
Rook	<i>Corvus frugilegus</i>				1	1	
Whitethroat	<i>Sylvia commune</i>				3	3	Singing male
Kestrel	<i>Falco tinnunculus</i>				1	1	
Total number of species		18	8	16	10	40	
Total number of individuals		75	28	257	15	375	

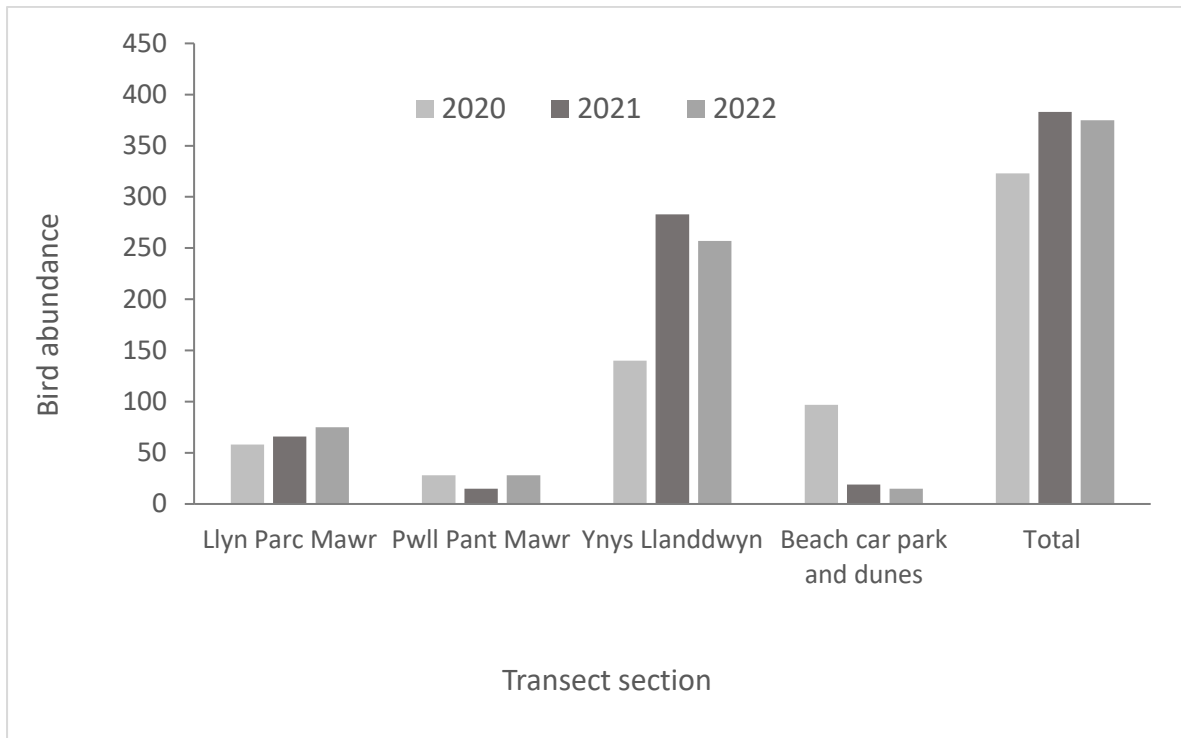


Figure 3. Bird abundance (i.e. number of individual birds recorded) along the main transect routes in 2020 (pale grey), 2021 (darker grey) and 2022 (grey) around Niwbwrch.



Figure 4. Bird diversity (i.e. total number of species) along the main transect routes in 2020 (pale grey), 2021 (darker grey) and 2022 (grey) around Niwbwrch.

2.2 Vegetation

Surveys around the Niwbwrch area to assess any changes in vegetation communities involved the following: a vegetation survey carried out around the beach car park area to compare with data from 2020 and 2021; fixed-point images taken at a number of key sites to allow for visual comparisons across years (see section 2.5), and a general assessment of areas particularly popular with visitors where vegetation might show particular signs of impact from human pressure (such as around the headland on Ynys Llanddwyn).

Exact comparisons between years have been made very difficult by the highly contrasting spring weather conditions across these years, with an early season and verdant growth in 2020, a late spring and growing season in 2021, and a more 'typical' spring season in 2022 somewhere in between these two extremes.

The observations outlined below present some of the findings from the 2022 surveys across the site.

Compaction and erosion of hotspot vantage points around Ynys Llanddwyn

In general, the vegetation communities around some areas of Ynys Llanddwyn were in good condition, with a number of the scarcer species recorded during the survey: species such as Ivy Broomrape (*Orobanche hederæ*) and Maiden Pink (*Dianthus deltoides*). However, it was evident that a number of popular, scenic vantage points at key locations towards the tip of the island had experienced a lot of human footfall, leading to erosion of the vegetation and compaction of the ground. These sites were located largely in the area overlooking the south-westernmost tip of Ynys Llanddwyn, around point 7 on the map in figure 2b. The image below highlights one such promontory where the vegetation community has been heavily impacted by trampling. Additional trampling and widening of pathways around the island has also been noted by staff from Natural Resources Wales around Ynys Llanddwyn, evident following the pandemic as people attempted to socially distance when passing in opposing directions along pathways.



One of the sites experiencing erosion and a loss of vegetation diversity from the high trampling and use from visitors on Ynys Llanddwyn.

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; point 8 in the map in figure 2a). 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, and this year (2022) demonstrated similar findings: greatly reduced plant life along the banks and areas surrounding this busy site (see table 2). Whilst such a busy car park might not be expected to allow for flourishing plant communities, the sandy banks in between car parking spaces here do offer a particular ecological niche which would become full of a colourful diversity of flowering plants (as was seen in 2020). As such, it could be considered that some rope fences and interpretation could be installed here to explain to visitors the flowers present and why use of the banks should be reduced.

Table 2. Plant list for beach car park area in Niwbwrch in 2022.

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	04/07/2022		
Species	Scientific name	Notes	
Bramble	<i>Rubus fruticosus</i>	Limited growth of wildflowers and plants on the banks around the car park compared to 2020 and 2021, but many species still present; just in lesser abundance and restricted to specific verges where compaction is limited.	
Common restharrow	<i>Ononis repens</i>		
Sea Stork's-bill	<i>Erodium maritimum</i>		
Catsear sp.	<i>Hypochaeris sp.</i>		
Tree Mallow	<i>Lavatera maritima</i>		
Ragwort	<i>Jacobaea vulgaris</i>		
Common nettle	<i>Urtica dioica</i>		
Lady's Bedstraw	<i>Galium verum</i>		
Viper's Bugloss	<i>Echium vulgare</i>		
Creeping willow	<i>Salix repens</i>		
Horseradish	<i>Armoracia rusticana</i>		
Marram Grass	<i>Ammophila arenaria</i>		
Total number of species	12		



The 'beach car park' area of Niwbwrch, where the verges and banks have seen a much lesser diversity and abundance of plant life in 2022, along with greater erosion in some areas.

2.3 Litter

A total of 75 different litter items of 23 different types were found across the Niwbwrch survey area in 2022 (see table 3 below). The most littered site, as in previous years, was the main beach car park (38 items), followed by Ynys Llanddwyn (29 items). There was no litter found at Pwll Pant Mawr, and eight items were found around Llyn Parc Mawr. The most common litter items found were sanitary tissues and wet wipes (16 items in total) and plastic sweet wrappers / plastic pieces (13 items).

This total is comparable to the 78 items found in 2021, when the visitor hotspots of the beach car park and Ynys Llanddwyn were found to represent hotspots for littering. There was a marginally lower tally of litter for the beach car park in 2022 (38 items) compared to in 2021 (52 items). However, this total could vary from day to day depending on potential litter pickups from volunteers and especially busy days (the 2022 survey was carried out on a week day, compared to a weekend day in 2021).

Table 3. Results from the litter survey around the Niwbwrch survey area in 2022.

Site Name	Niwbwrch / Newborough				
Survey type	Litter survey				
Surveyors	Ben Porter and Dani Robertson				
Date of survey	04/07/2022				
Litter type	Quantity				
	Llyn Parc Mawr	Pwll Pant Mawr	Ynys Llanddwyn	Niwbwrch beach car park	Total
Dog Poo Bag	1		2		3
Balloon	2				2
Plastic pieces	3		2	8	13
Paper waste pieces	2				2
Foil pieces			1		1
Hard plastic pieces			2		2
Plastic packet			4	1	5
Clothing item			4	1	5
Polystyrene			1		1
Tissues			10	6	16
Tetrapack packet			1		1
Banana peel			1		1
Can			1		1
Sweet wrapper				3	3

Cigarette Butt				2	2
Bottle top				2	2
Sponge				1	1
Plastic straw				2	2
Plastic bags				5	5
Disposable cup				1	1
Face mask				2	2
Crisp Packet				3	3
Dog leash				1	1
Total number of litter types	4	0	11	15	23
Total number of litter items	8	0	29	38	75

2.4 Other sightings

A variety of other noteworthy sightings were recorded during the survey on 4th July 2022. Insects were in particular abundance due to the warm, sunny conditions (especially around Ynys Llanddwyn). Insects recorded during the day included a large emergence of 40-50 Six-spot Burnet moths, Cinnabar moth caterpillars on Ragwort around Ynys Llanddwyn, a Hummingbird Hawkmoth, 10-15 Small Skipper butterflies and 5-10 Meadow Brown butterflies. The Leafcutter Bee *Megachile maritima* was also recorded, along the sandy pathways on Ynys Llanddwyn. A single Grey Seal was seen on the south-eastern edge of Ynys Llanddwyn.



Small Skipper (*Thymelicus sylvestris*) on Ynys Llanddwyn.



Six-spot Burnet moth (*Zygaena filipendulae*) newly emerged from its pupal case.



It was a particularly good year for Marsh Helleborines (*Epipactis palustris*), with hundreds of flowering spikes around the area of Pwll Pant Mawr.

2.5 Fixed-point images to record vegetation condition

The fixed-point images selected across the suite of sites covered across Niwbwrch are presented with images from the two previous years to allow for comparison.

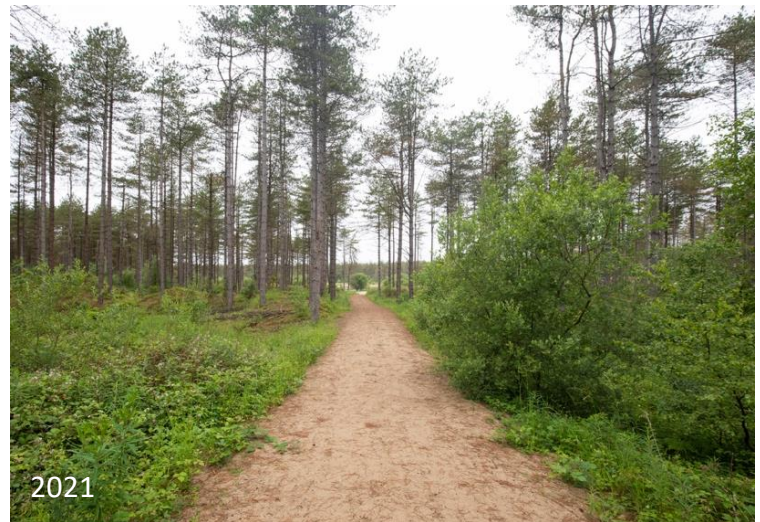


Image locations: **left-hand column** on forest track between Llyn Parc Mawr and Pwll Pant Mawr (point **P1** on figure 2a); **right-hand column** on forest track approaching Pwll Pant Mawr (**P2** on figure 2a)



Image locations: **left-hand column** picnic bench at car park for Ynys Llanddwyn (**P3** on figure 2c); and **right-hand column** at viewpoint area looking over to Ynys Llanddwyn (**P4** on figure 2c).



Image locations: **left-hand column** at entrance track onto Ynys Llanddwyn (P5 on figure 2c) and **right-hand column** at beginning of pathway around Ynys Llanddwyn (P6 on figure 2c).



Image locations: at various points along the pathway around Ynys Llanddwyn; **left-hand column** at **P7** on figure 2c and **right-hand column** at **P8**.



Images taken at **P9** on the map in figure 2c.