

# An assessment of the wildlife response to Covid-19 lockdown in north-west Wales: summary of 2022 survey findings



## 1. Introduction

In spring 2020, a number of popular sites across north Wales were closed to the public following the implementation of a nation-wide lockdown in response to the health crisis of the Coronavirus. Many areas were entirely closed off to the general public, whilst other areas experienced greatly reduced visitation due to the nature of lockdown regulations and its limits to travel. This reduction in human traffic within these areas provided a unique opportunity to evaluate how the wildlife, landscape and vegetation responds to such conditions. In a national context, this so-called period of ‘anthropause’ led to reduced air and noise pollution in urban areas which enabled the sound of birdsong to permeate areas usually filled with the sound of traffic; reports hit the headlines of goats descending from the Great Orme into the town of Llandudno and Harbour Porpoise swimming up the River Severn.

To evaluate how wildlife was responding to this exceptional period in the Snowdonia National Park and across north-west Wales, a series of biodiversity surveys were commissioned by Natural Resources Wales, the National Trust and the Snowdonia National Park Authority in June 2020. These surveys looked at birdlife, mammal activity, vegetation condition and litter prevalence across a number of key sites in North Wales, and a report was produced in July 2020 that documented the findings. However, to fully examine how the 2020 period of lockdown affected these areas, it was recognised that a repeat of these surveys over subsequent years was necessary, which would enable a comparison to contrasting years when visitor usage of these areas had resumed.

After the lifting of the nation-wide lockdown on 6th July 2020, the National Park and other sites included in these surveys were fully open to the public with government guidelines on social distancing in place. The following summers of 2020 and 2021 were some of the busiest the area had witnessed in many years, particularly due to restrictions on overseas travel, which led to issues such as queues of people for up to 2 hours to take a summit photograph on top of Yr Wyddfa in August 2020. There was a sharp rise in fly-parking, fly-camping, littering and unpermitted swimming, with many feeling the need to re-connect to nature after such a long period of restriction. The 2022 visitor season has been less extreme in visitor numbers, with generally a more continuous level of visitation more typical of years prior to the coronavirus, yet still witnessing peaks of intense visitor pressure at honey-pot sites, particularly at sites which are close to, or with access, to water.

The three years of contrasting visitor numbers in the area provide a good opportunity for comparing the data from these surveys and assessing what effects there might be on the wildlife, levels of littering and general impacts on the landscape within the national park. A synthesis of the key findings from across the three years are outlined in a separate evaluation document, whilst the annual reports from 2020, 2021 and 2022 can be found online at: [www.snowdonia.gov.wales/protect/conservation-work/wildlife-in-lockdown/](http://www.snowdonia.gov.wales/protect/conservation-work/wildlife-in-lockdown/).

This document presents a summary of the 2022 survey results.



A view from the final stretch of the Llanberis and Miner's track pathways to Yr Wyddfa summit in June 2022.

## 2. Methods

### 2.1. Study sites and survey methods

The repeat surveys took in a total of seven different sites across Snowdonia and north Wales (figure 1): four of these sites were located in the upland, mountainous areas and comprised of Yr Wyddfa / Snowdon, the Ogwen Valley, the Carneddau and Cader Idris; whilst three sites were in more wooded, lowland sites and comprised Coed-y-Brenin, Coed Llennyrch and Niwbwrch (Newborough Warren). Within each of these large areas, surveys took place along a series of transect routes chosen in 2020, which followed main footpaths through these regions. To allow for meaningful comparisons across the three years, the exact same routes and survey points were visited in subsequent years. The detailed site-by-site results outline the exact routes taken within each area.



Figure 1. Map of North Wales showing the locations of the seven sites surveyed in 2020, 2021 and 2022.

Broadly, the surveys along these transect routes involved recording breeding birds, vegetation condition along pathways and at popular gathering points (including fixed-point imagery), mammal activity and litter abundance. Any other additional notes or sightings relevant to the study were also recorded, including insects, the presence of people and associated activity such as camping, and notes on grazing levels in some of the upland sites. A handheld GPS was carried to mark any useful target notes and record the specific location for any rare or noteworthy sightings.

The surveys in 2022 took place on ten days between 12<sup>th</sup> June and 4<sup>th</sup> July 2022 to cover the seven sites, and to allow for more than one transect in some of the larger upland sites. The surveys were spread out across this period due to changeable weather conditions and the need for appropriate weather to survey the higher altitude, more mountainous areas.



A Meadow Pipit with a Common Heath moth above Llyn Bochlwyd (Ogwen Valley).

## 2.2. Considerations and limitations

The survey methods were designed to detect potential changes in the wildlife, landscape and habitats in the selected areas as a result of the lockdown period induced by covid-19 in 2020. However, with a lack of equivalent baseline data on which to base any comparisons, the subsequent two years (2021 and 2022) of surveys have been used to assess any differences observed. Three years is a limited period of time to assess changes in the populations of species of birds and of vegetation communities, which vary from year to year and follow longer term fluctuations in numbers in relation to a variety of factors (such as weather conditions). However, the surveys and comparisons still serve to indicate potential changes underway and can be used as a way of spotlighting issues or trends which are worthy of closer inspection and monitoring. Similarly, these surveys only covered seven sites across a relatively large area, and so some site-specific issues may not necessarily be indicative of changes across the whole area. Nevertheless, the results below provide informative data on the effects of an exceptional period of time in this iconic area of Wales, and can supplement the surveys and monitoring underway already in some of these areas.

## 3. Summary of key findings from 2022

A summary of the key findings from the 2022 surveys are presented below, first for the four upland sites and then for the three lowland areas. Please see the individual site-by-site reports for a more detailed presentation of results for these surveys.

### 3.1. Uplands

#### Birdlife

##### **Reduced abundance and diversity of birdlife**

For the second year running, the abundance and diversity of breeding birds across the upland survey sites was greatly reduced compared to 2020 (see figures 3 and 4). The total number of birds recorded in 2022 was 20% less than in 2020 (1,285 birds overall in 2022 compared to 1,609 in 2020), with common species such as Meadow Pipits and Wheatears recorded in much lower numbers. Similarly, there were 16 fewer species recorded across the area in 2022 compared to 2020, demonstrating a substantial drop in the diversity of birdlife found during the surveys. The exact reasons for this widespread reduction are difficult to determine without more detailed investigation into the different variables that could influence species breeding in the area – impacts that might be both within the breeding season and outside of the breeding season. Weather conditions are likely to play a large role, with 2020 experiencing an unusually calm, warm and settled spring that coincided with the period of lockdown; in contrast, 2021 saw a very cold and late spring which delayed the breeding season of upland birds by several weeks in some areas. A potentially poorer breeding season from 2021 due to these conditions could have had knock-on effects on the number of birds returning to breed in 2022. Such extremes of weather from one year to another are being experienced far more frequently as a result of human-induced climate change, and so should be a key factor to consider in ensuring these important sites are as resilient as possible when it comes to facing such challenges in the years to come.

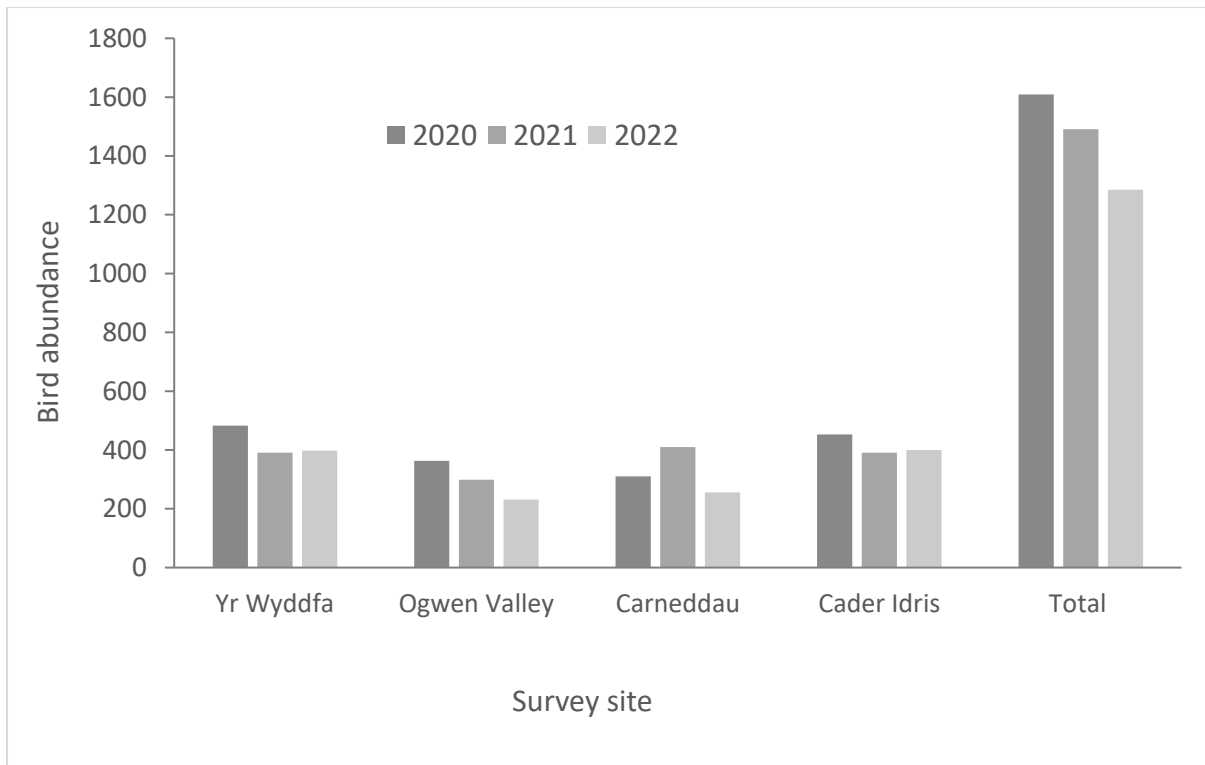


Figure 2. The abundance of birdlife recorded in upland areas for 2020 (dark grey), 2021 (grey) and 2022 (paler grey).

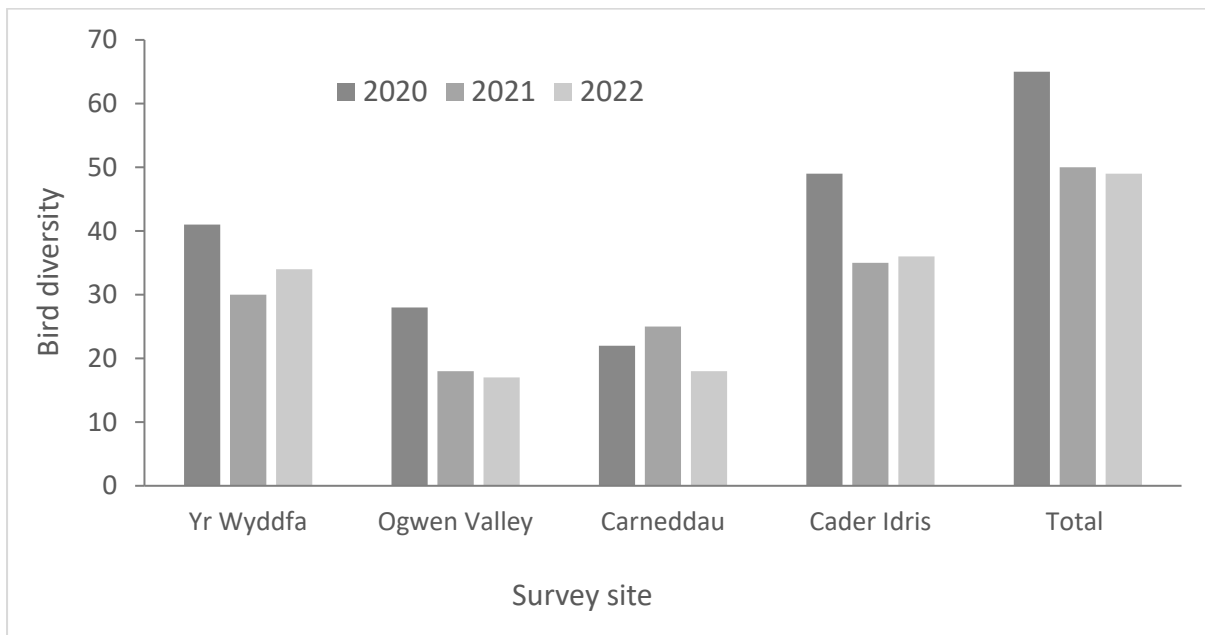


Figure 3. The diversity of birdlife (i.e. total number of species) recorded in upland areas for 2020 (dark grey), 2021 (grey) and 2022 (paler grey).

### Breeding birds around small upland lakes

A target habitat to assess within the breeding bird surveys were that of the small upland lakes dotted across the upland sites, such as Llyn Llydaw (Yr Wyddfa), Llyn Idwal (Cwm Idwal) and Llyn Cau (Cader Idris). These lakes can often support small numbers of breeding species such as Common Sandpipers, but such species are quite timid to the presence of people and so can be easily disturbed if such areas become too busy in breeding season. Sightings on these lakes in the 2022 surveys included the following: four Common Sandpipers on Llyn Llydaw (Yr Wyddfa), one Common

Sandpiper each on Llyn Idwal and Llyn Bochlywd, a nesting pair of Great Crested Grebes on Llyn Idwal (Cwm Idwal National Nature Reserve), one pair of Common Sandpipers on Llyn Gafr (Cader Idris) and three Goosander chicks also on this lake. These findings are similar to 2021, but are reduced compared to 2020. For instance, eight Common Sandpipers were seen around Llyn Llydaw during 2020, but half that number have been observed in each of the subsequent years. This could be attributed to increased disturbance following a return to higher visitor numbers. However, the presence of nesting Great Crested Grebes on Llyn Idwal is very positive to report, once again, and indicated they have not experienced too great a disturbance to prevent them from nesting.



Llyn Llydaw below Yr Wyddfa, taken from the Watkin Path on ascent to the summit.

## Vegetation

There were no major differences in the 2022 surveys relating to vegetation changes and the impacts of visitors in the areas surveyed. Any impacts to vegetation due to visitor pressure seemed more constrained to a handful of popular gathering sites, widening footpaths in some areas or footpath erosion in other places. Overall, the main factor influencing the vegetation communities in most of these upland areas is that of their broader management and grazing by sheep and livestock. Such pressures were beyond the scope of these surveys, but are discussed briefly in the overall synthesis from the three years of surveys, presented in a separate accompanying document.

### **Trampling and pathway erosion in Cwm Llan**

After an extremely busy series of visitor seasons following lockdown 2020, one site seeing a particularly concentrated aggregation of visitors is the waterfalls that run down from Cwm Llan beside the Watkin Path. In 2022, it was observed that one major new pathway and several smaller paths have been trampled across the fields as a short cut to access different areas along the waterfalls from the Watkin Path. The sides of some parts of the gorge have also now become heavily trampled by the pressure from so many people visiting to gather near the river and go swimming here. Whilst no direct surveys have been undertaken to assess the impact of this heightened

pressure on the site's vegetation communities along the riverside, there is certainly some cause for concern as to the impacts of this pressure.



One of the main new pathways that has been created as a short cut to access the Cwm Llan waterfalls from the Watkin Path on Yr Wyddfa.



Another view of this area from above, showing two new footpaths through the grassland coming off the Watkin Path to access different sections of the waterfalls along Cwm Llan.

### Widening footpaths and impacts on dwarf willow on Y Garn

As was also noted in 2021, the pathways leading up Y Garn from Cwm Idwal are increasingly 'spilling out' into a braided series of paths on the mountainside. This not only creates something of a visual scar on the landscape, but is also in danger of impacting the constrained patches of Dwarf Willow (*Salix herbacea*) which grow along the south-western sides of this mountain's summit area. This willow species barely grows higher than an inch off the ground, and is already suppressed by grazing pressure here. However, the widening of these pathways here might also cause damage to the populations of this scarce upland willow species in Eryri and intervention options could be considered to raise awareness of this species and help alleviate the added pressure of trampling.

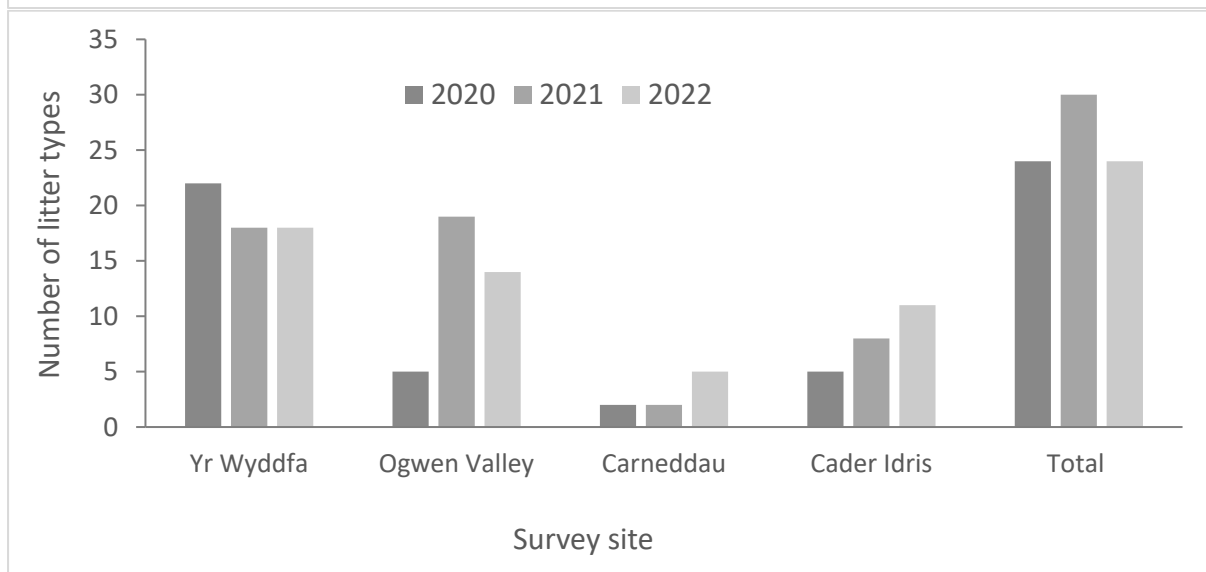
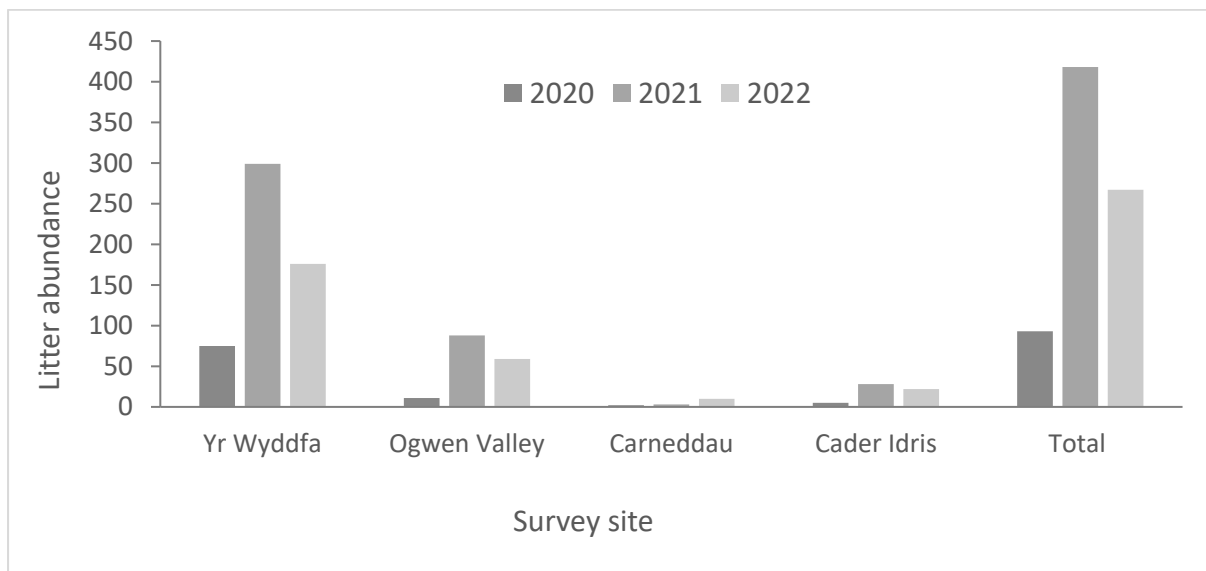


The footpaths leading up Mynydd Moel above Cwm Idwal (top image) have the potential to increasingly splay outwards and affect the delicate Dwarf Willow (*Salix herbacea*) plant communities along these slopes (lower two images), which take many years to establish and grow very slowly.



## Litter

Overall, this year’s surveys revealed a reduction in littering compared to the spike of 2021 levels (see figures 4 and 5 below). However, there was still a significant amount of litter recorded in a number of these sites, with 267 items found across the transects in the upland sites in total. Yr Wyddfa and the Ogwen Valley were again found to be the worst for littering, with 176 and 59 items recorded respectively. Within these sites, the summits of Yr Wyddfa and Tryfan were found to be some of the largest hotspots for litter. The slightly lower totals in 2022 compared to 2021 might well be a reflection of lowering levels of littering, however it was also noted that groups such as *Caru Eryri*, volunteers from the *Parc Cenedlaethol Eryri* and other groups such as *Trash Free Trails* have likely had a large impact across these areas and therefore also to the numbers recorded in these surveys. Regular clean-up parties from these groups have put in an enormous amount of time and energy across the visitor seasons to clear up popular areas and footpaths of litter. Such work must be celebrated for its impact on these special areas of the uplands; however, it also reveals that there is still much work to be done in influencing visitor behaviour to stem the throw-away mentality that leads to such litter issues in the first place.



Figures 4 (top) and 5 (bottom). Figure 4 shows the overall abundance of litter items and figure 5 the number of different types of litter found in the four different survey sites across the three years of these surveys: for 2020 (dark grey), 2021 (grey) and 2022 (paler grey).



A discarded plastic bottle beside the Rhyd Ddu pathway on Yr Wyddfa.

In terms of the litter types, the pie chart in figure 6 below gives an overview of some of the most abundant items recorded during these surveys. Discarded cigarettes and cigarette butts were again one of the most numerous litter types recorded (64 in total), followed by plastic packets and sweet wrappers (44), tissues and wet wipes (41), organic items (such as banana peel – 26 in total), hard plastic pieces (20), tin cans (19) and plastic bottles (14).

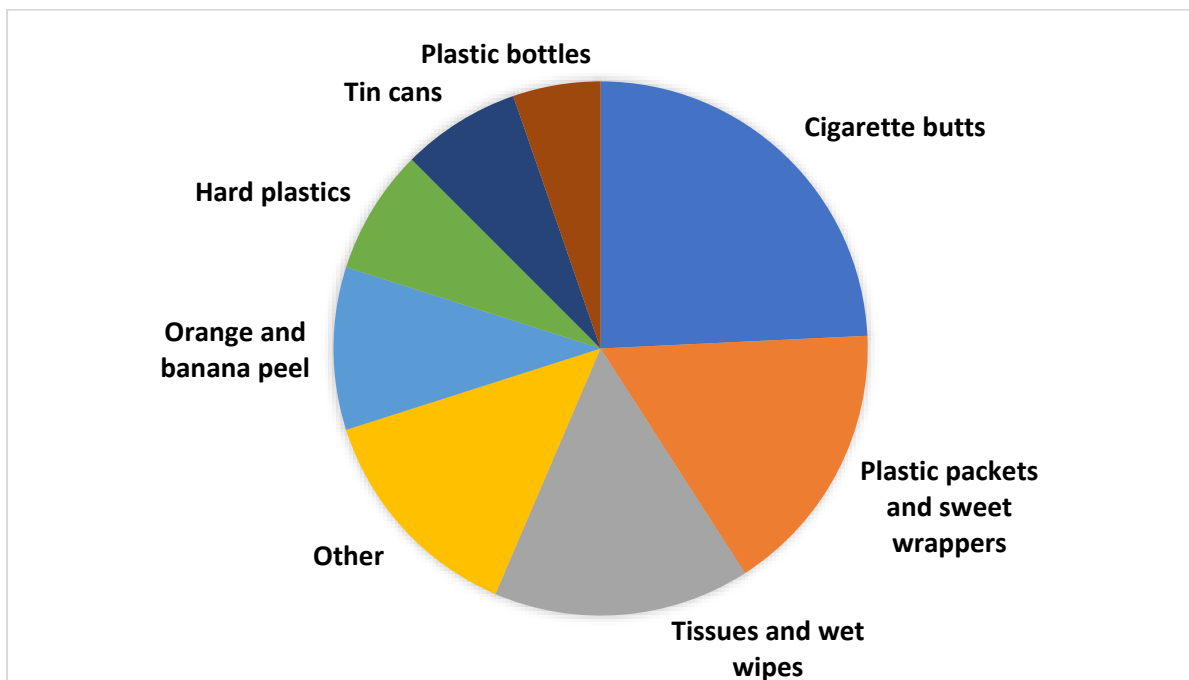


Figure 6. A pie chart illustrating the most abundant litter items found across the upland sites in the 2022 surveys.

## Other notes from the surveys

'Fly camping' was noted as a particular issue following the lifting of lockdown in 2020 and 2021, with large numbers of people camping around popular sites such as Cwm Idwal in the Ogwen Valley, and often leaving large amounts of litter, waste and toiletries in the immediate area. There were 4 tents noted in Cwm Idwal this year which marks a reduction but still an issue on NNR land.



### 3.2. Lowlands

#### Birdlife

##### Reduced abundance of birdlife

The overall abundance of birdlife across the lowland survey sites was much lower than both in 2020 and 2021, especially in the two woodland sites (Coed y Brenin and Ceunant Llennyrch – see figure 7). The total number of birds recorded in these two woodland sites in 2020 amounted to 314 in Coed y Brenin, and 360 in Ceunant Llennyrch. In contrast, the 2022 surveys recorded just 211 birds in Coed y Brenin and 205 in Ceunant Llennyrch along the transects. It was noted that common breeding species such as Blue Tits and Great Tits, as well as scarcer woodland specialists such as Pied Flycatchers and Wood Warblers, were present in lower numbers and with fewer fledglings than was seen in 2020 and 2021. The Niwbwrch survey site did not experience this same reduction in bird abundance, with a similar total of birds recorded to previous years (see figure 7). The overall diversity of birdlife (i.e. the total number of species) at each of the survey sites was not markedly different to the previous years; if anything, it was greater than that recorded in the lockdown period in 2020 (see figure 8). The decrease in abundance of birdlife mirrors the findings in the upland areas from this season, and the reasons behind such changes could be due to a number of different factors. Disturbance from people is likely to play a minimal role in the lowland and wooded sites covered in these surveys, and so such changes are more likely to reflect wider effects due to climate

change, year-to-year differences in weather conditions and pressures at other times during the species' annual life cycles.

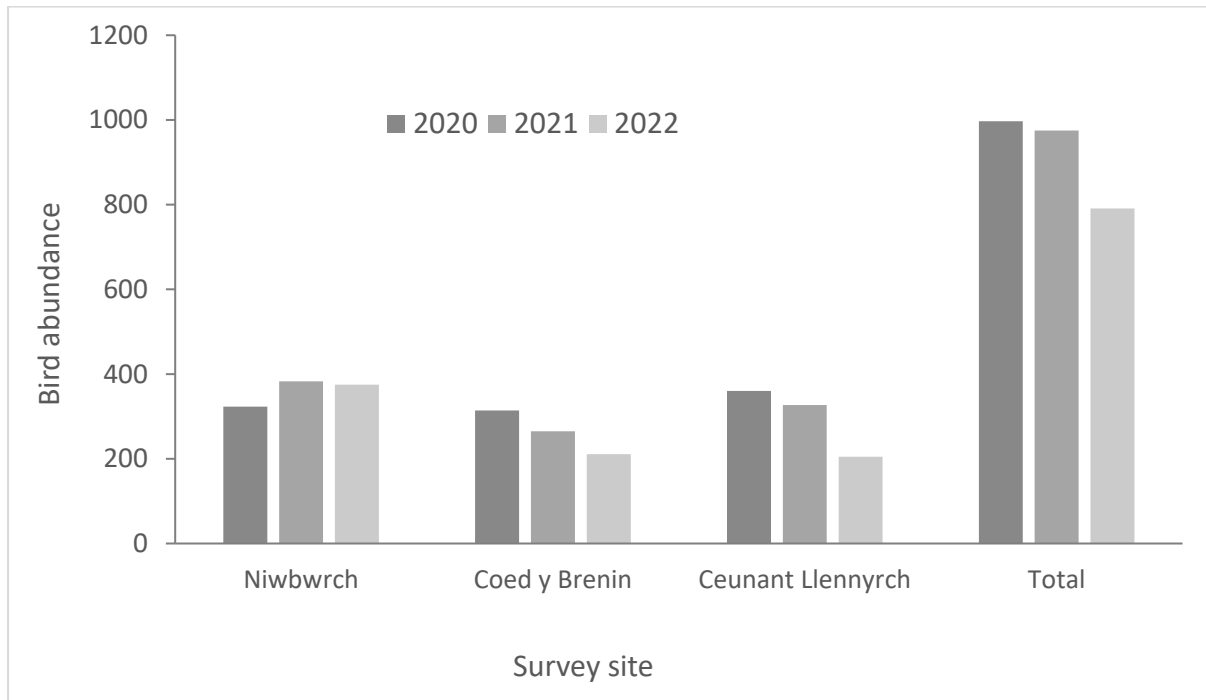


Figure 7. Comparison of bird abundance (i.e. number of individual birds recorded) across the three years of surveys: 2020 (dark grey), 2021 (grey) and 2022 (pale grey).

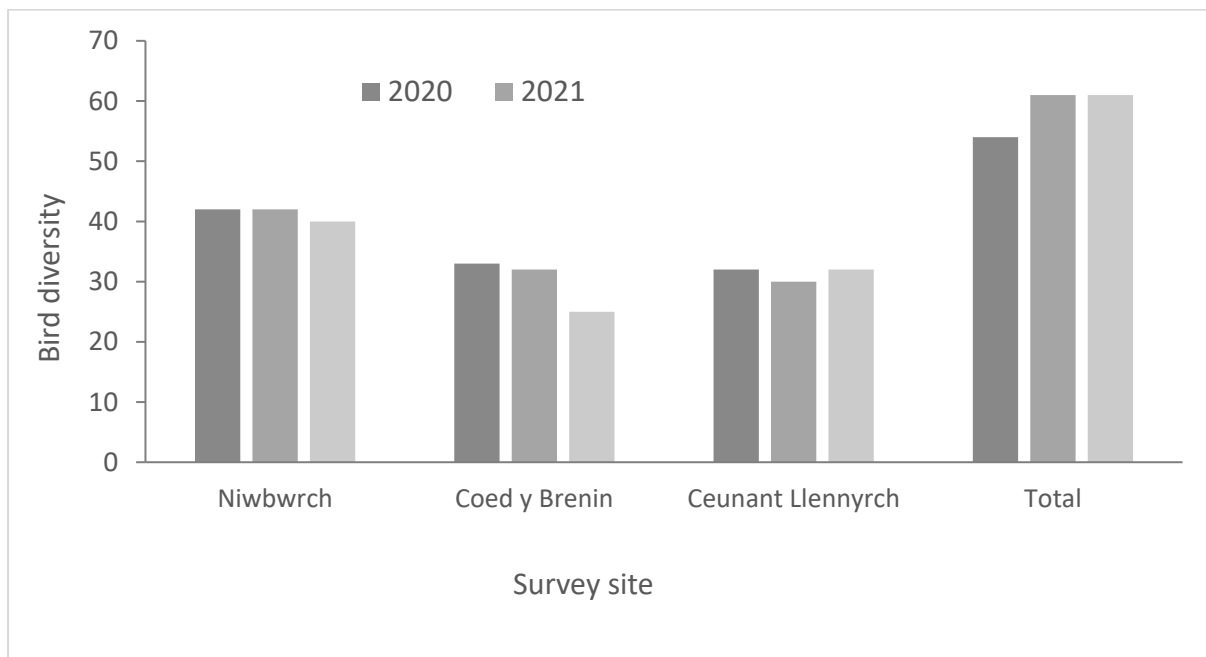


Figure 8. The diversity of birdlife recorded across the lowland sites in each of the three years (2020 is dark grey, 2021 is grey and 2022 is pale grey).

#### Disturbance to nesting shorebirds around Ynys Llanddwyn

One of the key sites where disturbance from visitors was seen to be a potential issue for breeding birds was around the popular site of Ynys Llanddwyn at Niwbwrch. A number of shorebirds nest

around the coast of this tidal island, including Oystercatchers and one or two pairs of Ringed Plovers. However, both of these species are prone to disturbance from people, and the nests themselves are very exposed to being trampled if care is not taken. This issue was raised in the 2021 report, after a pair of Ringed Plovers were seen nesting near Twr Mawr in 2020 but were absent in the busier 2021 season. It was positive to see two sections of electric fencing had been erected around potential breeding areas for Ringed Plovers during the 2022 breeding season (see images below). Indeed, birds were seen in each of these enclosures, although due to the brief nature of this survey we were unable to confirm whether the birds were successful or not in their breeding attempt. It is a great move in the right direction to see less disturbance of these sensitive shorebirds during the key nesting period. However, it was also noted that a number of dogs off leads were present on Ynys Llanddwyn and the nearby beaches during the brief survey visit in 2022. The disturbance caused from dogs running around the coastal areas here could cause adverse disruption to the shorebirds attempting to breed here, as well as all the other ground-nesting birdlife on the island. Increased engagement and interpretation notices to inform visitors of the importance to keep dogs on leads would be a big help to this issue.



One of the sections of electric fencing that has been fixed in place on Ynys Llanddwyn to help protect the nesting areas of Ringed Plovers.

### **Disturbance to birdlife from recreational watercrafts**

Another issue of disturbance to birdlife along the coastal areas that was noted during the 2022 surveys is that of the effect of the increased usage of recreational watercrafts along the coastline and its potential impact on breeding, roosting and feeding birdlife (as well as marine mammals). Recreational crafts, both motorised (such as jet skis) and non-motorised (in particular, stand-up paddle boards, 'SUPs'), are being used much more commonly across the coastline in some areas following the lift of lockdown in 2020 and the reduced ability for people to travel abroad. Jet skis have been identified as a particular issue across the coast of Ynys Môn during 2021 and 2022, with sensitive seabird colonies disturbed and some birds even killed by irresponsible use of these watercrafts. The recent explosion in the use of 'SUPs' by recreational water users has also provided a new challenge for assessing how the widespread use of these crafts along the coast might impact species of shorebirds which often depend on undisturbed periods to rest and feed.

## Vegetation

Overall there were few noticeable differences in vegetation assemblages in 2022 compared to the previous two years. However, one or two key sites were identified where increased trampling and wearing of the ground from higher visitor numbers might be having an impact on some of the vegetation communities.

### **Impacts of gorge walking in Ceunant Llennyrch**

At Ceunant Llennyrch, there was evidence that the usage of pathways and gorge sides beside the river were having an impact on the delicate moss and fern communities and woodland flora in certain areas. This particular issue was not considered in the original planning of the survey work, and so there is no data to quantify or assess to what degree the gorge walking activities may be affecting these sites. It would be of great use to have a dedicated survey of this area to help inform any mitigation measures that might be taken.

### **Trampling and erosion of popular viewpoints on Ynys Llanddwyn**

Another issue related to the increased human footfall following lockdown 2020 is that of the erosion and trampling of diverse coastal vegetation communities at a number of specific points around the island of Ynys Llanddwyn. Some viewpoints seem to have experienced a significant amount of footfall, often popular as sites for photographing the surrounding landscape of Ynys Llanddwyn. For example, a rocky promontory towards the tip of Ynys Llanddwyn, overlooking Twr Mawr, has seen a large amount of usage in the last two years, resulting in the degradation of the delicate vegetation communities and erosion of the sandy underlying soils here. The image below outlines an example of one such site along the island's coast experiencing this issue.



A viewpoint overlooking Twr Mawr, on the tip of Ynys Llanddwyn, where increased footfall has affected the vegetation and ground here.

## Litter

Whilst not as severe as in the upland areas, littering was again found to be an issue in some of the lowland sites surveyed in 2022. Very low levels of litter were seen in Ceunant Llennyrch and Coed y Brenin, despite the latter being a very popular site for visitors through the year; in contrast, Niwbwrch recorded over 75 items across the site, including 29 items around Ynys Llanddwyn and 38 items in the ‘beach car park’ area. This number is comparable to that found in 2021 (see figure 9 below) but is still substantially higher than the very low levels of litter seen during lockdown in 2020. In terms of the number of different items of litter found at the different sites, there was an increase in this litter diversity in 2022 compared to the previous two years (see figure 10). This was primarily found to be the case at Niwbwrch, with a lesser variety of litter types recorded at the two woodland sites inland compared to 2021 (see figure 10).

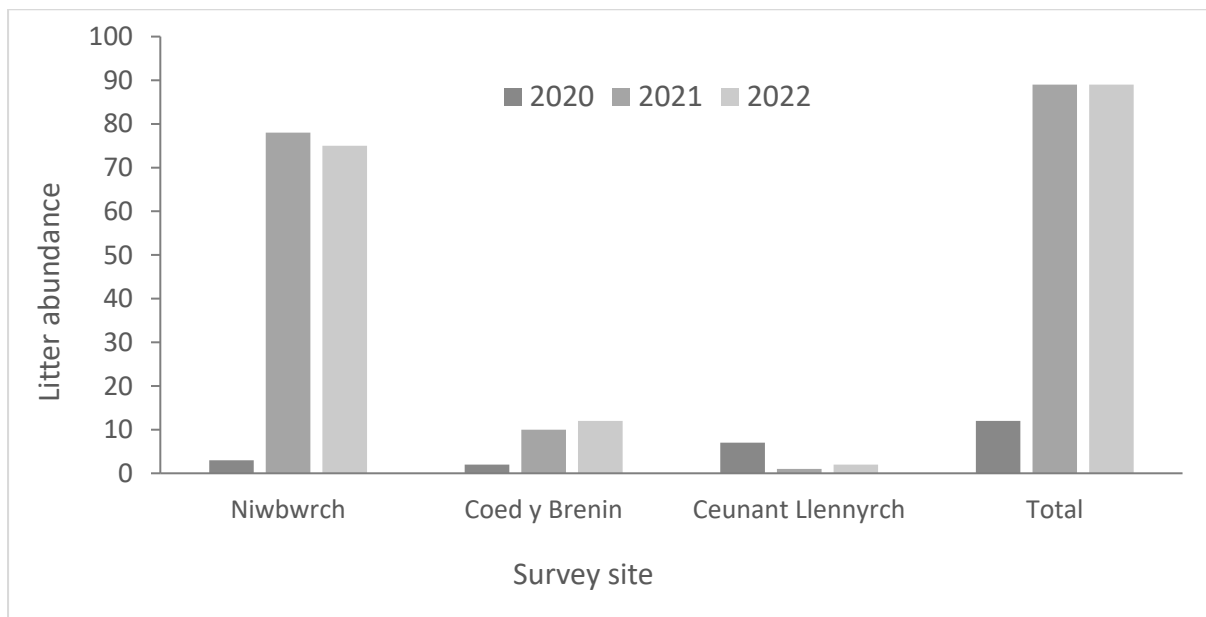


Figure 9. Totals for litter abundance across the three lowland survey sites in 2020 (dark grey), 2021 (grey) and 2022 (lighter grey).

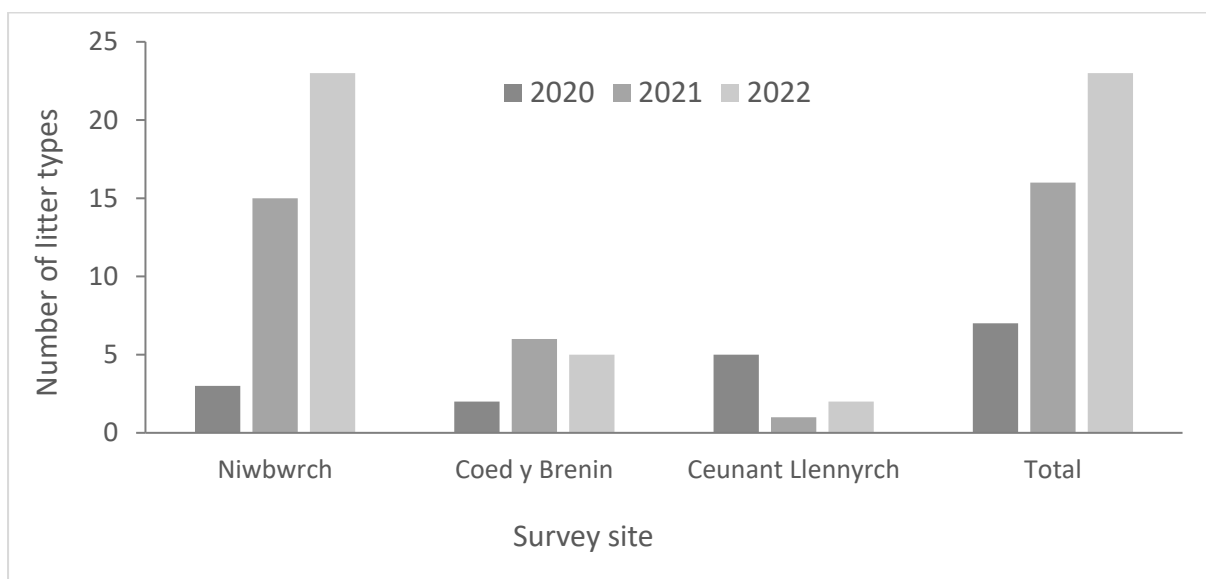


Figure 10. Totals for the number of litter types recorded across the three lowland survey sites in 2020 (dark grey), 2021 (grey) and 2022 (lighter grey).

In terms of the composition of the litter recorded in the lowland sites in 2022, the most abundant items were that of plastic packets, plastic bags and sweet wrappers (36 overall). Other numerous items were that of sanitary tissues and wet wipes (16 items overall), dog poo bags (six) and plastic bottles (four). The 'other' category in figure 11 below includes items such as bottle tops, cigarette butts, face masks, polystyrene pieces and plastic straws.

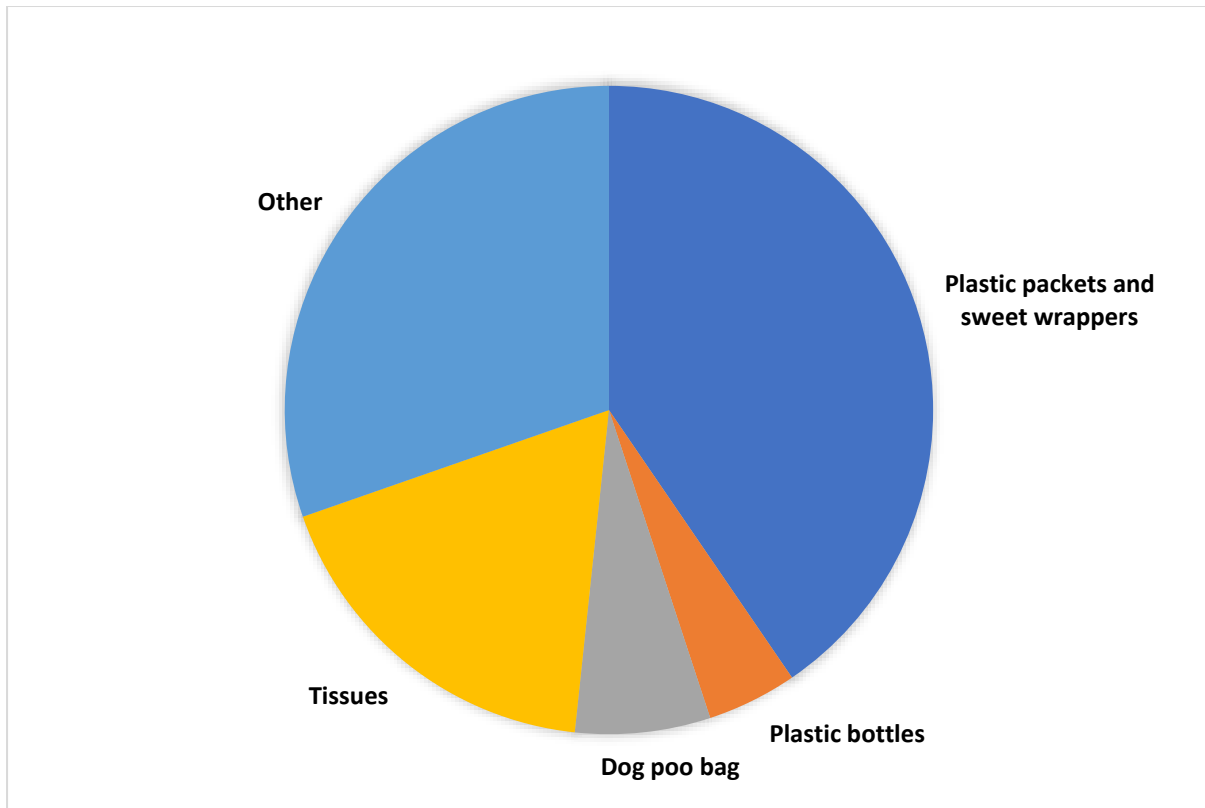


Figure 11. An overview of the most numerous litter types recorded across the lowland survey sites during the 2022 surveys.

## Acknowledgments

I would like to thank a number of people who assisted with the field surveys for the 2022 research work, and also those who provided wider advice to inform the surveys, including Jo Porter, Steve Porter, Dani Robertson, Nigel Brown, Stephen Hinde, Malcolm Davies, Iago Thomas and Catrin Glyn. I would also like to thank the various landowners across the survey areas who agreed for access to these sites to allow for the work to take place.