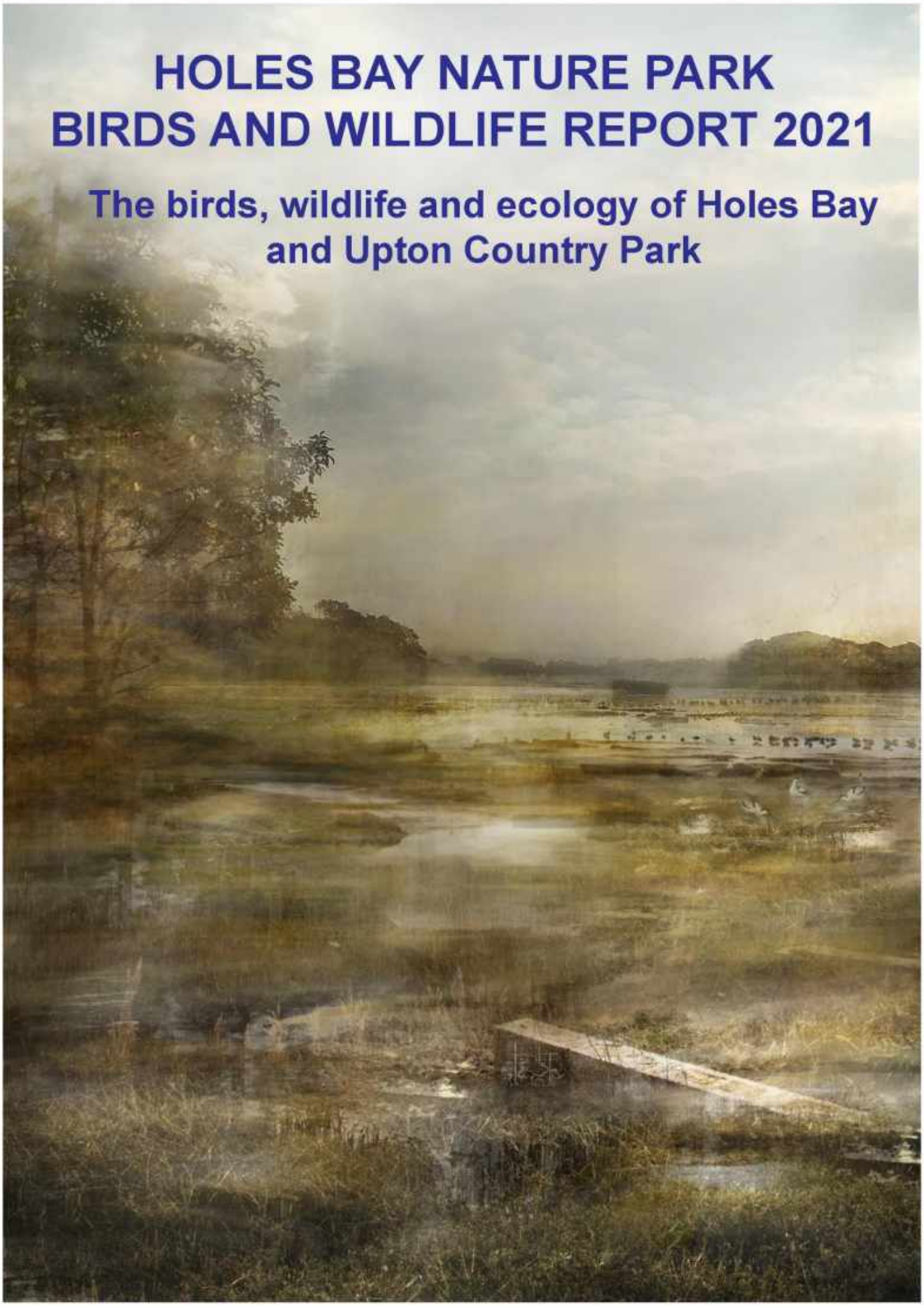
HOLES BAY NATURE PARK
BIRDS AND WILDLIFE REPORT 2021

The birds, wildlife and ecology of Holes Bay and Upton Country Park



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Cover artwork by Kira Bennett

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INTRODUCTION

Welcome to the 2021 Holes Bay Nature Park report.

The aim of this report is to document the year's wildlife sightings in Holes Bay and Upton Country Park. More than that, we hope to promote the area's importance for nature, and to allow as many people as possible to appreciate the richness of the local wildlife.

The introduction to 2020's report (https://www.birdsofpooleharbour.co.uk/surveys/) provided a brief overview of the history and ecology of the area, whilst the report itself concentrated on the birdlife; it is as a wintering site for nationally and internationally important numbers of waders and wildfowl that the site really comes into its own. As well as this year's species-by-species bird report, we have a month-by-month account of the birds recorded and a detailed account of the local Peregrines by Martin Adams. A total of 137 bird species were recorded in 2021, including several species (most notably a party of Tundra Bean Geese) rarely, if ever, recorded in the area before. There were also some great counts of the 'usual suspects'.

This year however, we have also tried to look a little closer and widen the scope of the report to include more of the flora and fauna of Holes Bay and the surrounding area.

During 2021 a number of rare fungi were recorded in Upton Country Park and Jack Menzies has produced an account of some of the most interesting species. The surprisingly varied flora along the Holes Bay Road has been surveyed by Stephen F. Smith. Moth traps have been running at Upton Country Park over the last two years and Sally Grant and Nick Woods have written an account of some of the 250 species recorded so far.

Finally, Kira Bennett has taken a wider look at the area and the relationship between development, architecture and nature. A perspective particularly relevant with the development of the area occupied by the former Poole Power Station. This 'brownfield' site, despite its history, has been colonised by species such Common Lizard and the scarce Small Blue Butterfly. The development of this site for housing will provide both challenges and opportunities for the area's wildlife, and for its appreciation and enjoyment by an increasing number of local residents.



Some of the less common species seen in 2021 – from left to right: Coral Tooth Fungus (Nick Woods), Small Blue Butterfly (Martin Adams) and Grey/Common Seal (Martin Adams)

The last year has also seen some interesting mammal records – e.g. of Seals in Holes Bay, a Badger and Weasels in Upton Country Park. A single record of a Common Lizard in Upton Country Park, suggesting there may be more species present than last year's reptile survey revealed.

A new recording project to capture as much as possible of this information has been set using the on-line recording system, *Living Record*, which links directly to the Dorset Environmental Records Centre, ensuring the long-term preservation of the information collected and its use in protecting the local area. Records of over 380 species of plant and animal were added to this database during the year. With the bird species recorded – that makes a total of over 500 species recorded in 2021.

Of course, this is only beginning to scratch the surface of what is likely to occur. As the great nature writer and patch watcher Nan Shephard said: "Knowing another is endless… the thing to be known grows with the knowing."

To illustrate this, one of the most exciting bird records this year was of a bird that probably hadn't been seen over Holes Bay for hundreds of years - a White-tailed Eagle flew over the Bay in March. We know it was here because it was satellite tagged as part of the Isle of Wight reintroduction program. How much else passes unseen through the area? – the feeding records for the local Peregrines included Woodcock and Cuckoo – species otherwise not recorded in 2021.

For this we need your help.

Please share any wildlife sightings on our Twitter account @bayholes or email us at nick.woods4@btinternet.com

The authors would like to acknowledge the assistance of Paul Morton and The Birds of Poole Harbour for hosting this report and Adrian Bicker and Jez Martin (Bournemouth, Christchurch and Poole Council) for help in setting up the Living Record Project.

Martin Adams, Sally Grant, Tony Grant, Jackie Hull, Nick Hull, Stephen F. Smith and Nick Woods

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THE BIRDS OF HOLES BAY – A MONTHLY ROUND UP FOR 2021
Martin Adams

JANUARY

The year started with big numbers of wintering waders on Holes Bay. It's hard to believe in the cold, dark windy mornings that they come here partly for the warmth and shelter. The Bay is however a lot more temperate, and perhaps more importantly, more food rich, than the Arctic breeding grounds of many of our winter visitors.

Most, if not all, of the Black-tailed Godwit that winter here breed in Iceland, and a count of 1334 on the 3rd represented over 2% of the world's population of the *islandica* race, an internationally important number.

Other big wader counts included 754 Dunlin on the 3rd, 107 Curlew on the 10th, 170 Avocet on the 27th, and 283 Redshank recorded on the 10th.

Goldeneye © René Goad

Avocet © Mark Wright

Small numbers of Lapwing were regular in the North East, with 5 on the 7th. There were 40+ Knot on the 1st, although numbers dropped off quickly as the month went on, and just 1 Grey Plover was recorded on the 6th. A single Common Sandpiper - a bird that is a relatively uncommon wintering bird in Poole Harbour- was a regular feature in the NE.

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Wintering duck numbers were also still spectacular, with counts of 1721 Wigeon on the 27th, 420 Teal on the 10th, c100 Pintail on the 25th, 130 Shoveler on the 5th, and 8 Gadwall on the 10th. There was a single Tufted Duck on the 22nd.

There were 145 Shelduck on the 10th. Up to 6 Red Breasted Merganser and 4 Goldeneye could be seen in the South East, with a Goldeneye also frequent in the North East. Up to 8 Brent Geese could also often be seen in the South East, and Little Grebe were regular under the railway bridge in the North West with 9 on the 11th the high count.

Kingfishers and Grey Wagtail continued to add much needed colour round The Bay, especially in the North East, along with the more subdued tones of the Rock Pipit.

Foraging winter finch and tit flocks were frequent in Upton CP, Bullfinch being a particular highlight. Up to 5 Lesser Redpoll were regular along the North shore of Holes Bay at the start of the month, along with the occasional Siskin.

Redwing © Martin Adams

Lesser Redpoll © Martin Adams

Flocks of Redwing, a winter visitor from Scandinavia, were a common sight around Upton CP, with a high count of 120+ on the 19th. There were up to 20 Chiffchaff, including at least 1 of the paler Siberian subspecies in The PC World Drain.

FEBRUARY

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Wader numbers continued to be strong: Avocet hit a high of 238 on the 7th, and there was a high count of 406 Dunlin, 58 Curlew on the 27th and 1297 Black-tailed Godwit on the 9th. There was a notable record of Bar-tailed Godwit on the 8th.

180 Redshank on the 28th were joined by the less common Spotted Redshank and a Greenshank between the 9th and 13th. 'Spot Reds' are a lot less frequent in the Bay than they used to be, coinciding with a national decline. The Common Sandpiper was still present, and Knot were still frequently seen in small numbers with 6 reported on the 8th and 9th.

Spotted Redshank & Greenshank © Martin Adams

11 Lapwing on the 1st and 9th were good counts for the Bay. These rapidly declining birds actually used to breed where the Upton bypass is now. *2* Snipe flushed off the Asda Saltmarsh from the cycle path at night were another good spot for the Bay, one of three records this month.

Wildfowl numbers were slightly down, but still impressive, with 834 Wigeon on the 4th, 259 Teal on the 21st, 23 Pintail on the 11th, and 95 Shoveller on the 22th.

2 White Fronted Geese briefly touched down in front of the stone bench on the 7th and Brent Geese were still frequent in the South West, with 7 on the 4th the highest count. Goldeneye were still sighted occasionally in the South East until the 26th.

Redwing flocks were still common with c150 on the 10th and Male and Female Reed Bunting (on different dates admittedly) were a sign of Spring to come.

Kingfisher © René Goad

Reed Bunting © Martin Adams

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MARCH

The winter waders and wildfowl continued to disperse as they started their long journeys back to their breeding territories, and the spring birds began to appear, many heading in the opposite direction on the way to their own breeding grounds.

Wigeon © Mark Wright

Teal © René Goad

There were still 320 Wigeon on the 4th and 95 Shoveler on the 22th, and 19 Pintail on the 20th, and the occasional Brent Goose in the South West, but by the end of the month they were almost all were gone. Numbers of Teal, which are more likely to stay local, peaked at 268 on the 20th. There were 70 Shelduck on the 28th

There were still counts of 873 Blackwit on 7th, plus a single Bar-tailed Godwit on the 24th; and 145 Redshank on the 7th but numbers gradually dwindled as the month went on. The 4 Avocet seen on the 1st were the last record of the winter, as was 30 Dunlin on the 2nd. There was still the occasional Common Sandpiper, plus a Spotted Redshank on the 14th and 20 Knot on the 24th, with a single Ruff on the 30th.

Mediterranean Gulls © Martin Adams

Great Crested Grebe © Martin Adams

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As birds returned to the harbour to breed, with counts of over 1000 BH Gulls, with 29 of the less common Mediterranean Gulls seen on the 23rd. Both these birds breed in Poole Harbour, the latter in nationally important numbers. Up to 2 Sandwich Tern were regular at the end of the month, another bird with an important breeding colony, along with Common Terns, on Brownsea Island.

2 Wheatear were recorded on the 29th, birds are only seen on passage here, and Chiffchaff, Blackcap and Willow Warblers were all recorded in the PC World Drain and Upton Country Park.

Great Crested Grebe courting in the SE before moving on to freshwater breeding grounds were perhaps the most delightful sign of Spring. The Bay resembled a disco, with pairs 'dancing' briefly together then one wandering off to check out another partner, or chasing off an unwanted interloper!

Two Buzzards were recorded mating on Pergins Island on the 20th, an Osprey was spotted flying over on the 23rd. The best record of the month however was a bird that no-one saw: A satellite tagged White Tailed Eagle was logged flying over on the 22nd.

APRIL

An early swallow on the 3rd was a definite sign that summer was around the corner, although 'bird winter' wasn't quite over as their seasons overlap considerably.

Wader numbers continued to drop with Black-tailed Godwit numbers going from 459 on the 9th to below 92 on the 29th and just 10 Redshank on the 2nd.

20 Knot were still around at the start of the month, and singles of Spotted Redshank and Greenshank were logged on the 26th, with Common Sandpiper on the 27th. There was also one record of Green Sandpiper.

Whimbrel, a smaller cousin of the Curlew and another classic passage bird, were first seen on the 17th, with a high count of 7 on the 29th. Grey Wagtails were also seen on the 20th and 22nd.

Of the winter wildfowl, there were 46 Teal left on the 4th, and the occasional Wigeon. There was a high count of 70 Shelduck on the 28th. A Gadwall pair were regularly seen in the PC World Drain, leading to

hopes that they might breed, although it doesn't seem that they did. A single Coot, a rare record for the Bay, was seen on the 14th.

The irruptive call of Cetti's Warbler could still be heard from the PC World Drain throughout the month. 2 were also logged around Holes Bay, along with at least 15 singing Reed Warblers setting up their breeding territories after making the long journey back here from Africa. A pair of Reed Bunting were also sighted in Holes Bay.

Mute Swans © Martin Adams

Cattle Egret © *Andy Collyer*

A pair of swans were seen on eggs by the PC World Drain on the 12th, and 2 Moorhen chicks were spotted on the 14th. In Upton CP the birds were in full song, most notably Firecrest. 2 Cattle Egret were a notable visitor to the farm fields on the 22nd.

A Red Kite was seen on the 1st and the 4th, an Osprey passed through on the 12th, and Sandwich Tern noted on the 25nd.

Sandwich Tern © René Goad

MAY

Swallows returned in force marking the start of summer, along with the occasional Swift seen flying over from the 11th. Up to 20 Reed Warblers were recorded singing around The Bay on the 6th, with a pair of Reed Bunting recorded again, and a Sedge Warbler was present in the PC World Drain on the 12th, probably passing through. Common Whitethroat were also noted in Holes Bay SE.

A Garden Warbler was logged in the PC World Drain on the 5th, along with Chiffchaff, Blackcap and Cetti's Warblers - the Cetti's was even heard after midnight from the road! Another nocturnal record was a Tawny Owl heard on the 9th.

Chiffchaff and Blackcap also returned to breed along with the resident birds in Upton CP, and the first juvenile Chiffchaff were recorded on the 26th.

Mute Swans © Martin Adams

Shelduck © Rene Goad

Sadly, the male of the Swan pair incubating by the mouth of the PC World Drain was shot by an air rifle on the 13th. It's injuries were so severe that the RSPCA had to put it down. The female did however manage to hatch 5 cygnets, and by the 27th had paired up with another male.

Shelduck breeding was also noted with a brood by Pergins Island. Shelduck breed in old rabbit holes so it is likely that they bred on Pergins.

Meanwhile, the Bay was a lot quieter for waders, the occasional Oystercatcher, Redshank and Curlew, and a high count of just 23 Blackwit on the 14th. 8-10 Whimbrel were also passing through on the 6th, and a pair of Common Sandpipers were logged on the 31st.

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Another Osprey passed through on the 11th, A Kestrel was seen hovering over the verges of the South East hunting for small mammals on the 3rd and 30th. A rarer record was a Nightjar hunting in the twilight on the 14th. These unique birds are nocturnal hunters that hunt insects at night. They breed on Dorset's precious heathland in the summer, before returning to winter in Africa.

JUNE

With one full wader counts in the entire Bay of producing 6 individuals (Oystercatchers) June was definitely a quiet month on Holes Bay compared to the riches of the winter months.

Numbers did start a tentative upward curve by the end of the month however, with 14 Godwit on the 23rd, 12 Curlew on the 24th and 10 Redshank on the 30th.

Oystercatcher chick © Martin Adams

Juvenile Shelduck © René Goad

2 Oystercatcher chicks were seen on the Asda Saltmarsh on the 16th. Oystercatchers were also seen on the roof of the RNLI building on the 24th and flying up against Raven in the wasteland by Kerry Foods on the 28th.

Less birds meant there was inevitably less attention on The Bay, and it was definitely all about the Peregrines as the Juveniles started to fledge. A Kestrel was also seen on the 24th.

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Further evidence of Shelduck breeding was noted on 9th with a brood of 10 around Pergins Island, and further broods of 7+ in the North West and 3+ in the North East were noted on the 11th.
There were 224 Canada Geese on the 28th, along with 24 Little Egret and 3 Grey Herons as (probably mostly local) post-breeding birds started to disperse.

Cetti's, Blackcap and Chiffchaff were a constant presence in the PC World Drain, as was the sound of Reed Warblers around The Bay.

Juveniles of common woodland birds like Blackbirds and Robin were seen in Upton CP, and Juvenile Pied Wagtails were seen around Asda.

A pair of Common Whitethroat were seen feeding a juvenile just South of the railway bridge in Holes Bay SE, suggesting they bred here or nearby.

This was part of the area that BCP Council have left unmown this year, undoubtedly providing more insects for them to feed on.

Finally, a Nightjar was once again logged on the 19th.

JULY

Bird autumn began in earnest on the first of July with Redshank numbers increasing again to 33 on the first and peaking at 137 on the 15th. *A* colour-ringed individual was identified as a bird ringed as a breeding adult in the Avon Valley, Hampshire on the 14th of May 2021. Waders seen this early are often assumed to be non-breeders or failed breeders but this relatively local bird had successfully fledged a chick before making the short trip to Poole Harbour.

Redshank © Martin Adams

Whimbrel © Martin Adams

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The month started with just 6 Black-tailed Godwit, but numbers gradually built up through the month, with 173 recorded on the 22nd.

Curlew numbers peaked at 46 on the 30th, and the first Whimbrel of the autumn was sighted on the exact same part of the Asda Saltmarsh as the first spring sighting 82 days before. 1 or 2 Whimbrel were a regular sight for the rest of the month after this, and between 1-3 Common Sandpiper were a fixture mostly on or around the Railway Embankment in the East. A single Greenshank was recorded on the 4th.

A pair of Oystercatchers were seen with 2 chicks on the roof of a building near the Twin Sails Bridge on two dates.

Little Grebe were recorded on the 1st, and Canada Goose numbers peaked at 172 on the 15th. The 2 Shelduck broods in the North were still 9 strong on the 8th.

Shelduck © René Goad

Swifts, Swallows and Reed Warblers remained, as a reminder that the summer wasn't quite over, with breeding of Swallows in Upton CP and Reed Warblers on Holes Bay NW was confirmed.

Swallow © René Goad

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Juvenile Black-headed Gulls were first logged on the first, and a Yellow-legged Gull was seen on the 12th.

A juvenile Peregrine was recorded on a pylon in the south west on the 1st and on the Osprey platform on the 14th, and a Juvenile Black headed Gull was taken from Holes Bay NW on the 11th probably by an adult bird. A Kestrel was seen hunting in Holes Bay South on the 7th and 9th, and a Juvenile Tawny Owl was heard on two occasions.

AUGUST

Wader numbers continued to increase with Black-tailed Godwit going from 210 on the 3rd, once again passing the 1000 mark before the end of the month, with 1085 on the 24th. Many of these would be passage birds, passing through on an even longer journey south. Redshank also steadily increased, with 202 on the 17th.

50 Curlew were logged on the 28th, and Whimbrel were still a regular sight. Although often hard to pick out from their larger cousins at a distance, 3 were recorded on the 29th. There was a single Ruff recorded on the 29th.

Dunlin were recorded for the first time this autumn on the 17th, with a high count of 14 on the 31st, and 3 Knot were also noted on the 24th. Common Sandpiper continued to be sighted, with 4 birds on the 3rd.

Shoveler © Martin Adams

Kingfisher © Martin Adams

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The wintering ducks also started to return with a 2 Shoveler on the 11th and Teal numbers reaching 61 by the 24th. The first 6 Wigeon were recorded on the 25th, rapidly reaching 75 by the end of the month as the weather got colder

Kingfisher also returned, first logged on the 17th, with 2 on the 29th. Gull numbers increased as post-breeding flocks of Black-headed Gulls moved in with 1000+ logged on the 3rd, and there was a high count of Common Gulls on the 28th. A Common Tern was present in the NE on the 12th.

Up to 2 Willow Warblers were seen in Upton Country Park or in the PC World Drain on 3 occasions. Another former resident now only seen as a passage migrant, Spotted Flycatcher also returned to Upton CP with 4 on the 24th the highest count. Wheatears were also logged both in the park and along the edge of The Bay on the 26th.

An Osprey was seen over the bay on the 24th, and a Kestrel was noted on the 26th. Ravens were seen from the 14th scavenging around the Peregrine's larder on the Asda building.

SEPTEMBER

Black tailed Godwit numbers continued to be strong with a high count of 1348 on the 24th.

Redshank numbers were also up with 262 across the Bay on the 2nd, with the Avon Valley CR bird re-sighted on the 3rd. Common Sandpipers continued to live up to their name with 1 or 2 seen regularly throughout the month. 4 Dunlin on the 4th was a high count, and a sign of bigger things to come.

Less common on the Bay, 2 Turnstone were logged in the South West on the 2nd. 2 Knot were recorded on the 15th, one of only 2 records in contrast to the regular flock of 20+ from last September. A Lapwing was present on the 2nd, a Common Snipe on the 4th and Grey Plover on the 17th.

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Wigeon © Martin Adams

Wigeon numbers rapidly increased from 98 on the 2nd to reach 532 by the 19th. Shoveler returned on the 10th, with Pintail joining them on the 12th increasing to 16 and 9 respectively by the 28th.

Water Rail, a bird that is often heard but rarely seen, was spotted on the 2nd. Little Egret numbers were high, especially on high tide roosts, with 64 on the 3rd.

Little Egret © Martin Adams

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Even rarer, a flock of White Stork from the Knepp reintroduction program which flew along the coast on the 16th were reported over the Bay, and 4 Black Swans flew over on the 20th.

White Storks had not bred in Britain since medieval times prior to the reintroduction program, so it is probably a long time since they were seen in the Bay! Black Swans are actually native to Australia, and as with a lot of wildfowl species, have been introduced in Britain. 2 of another introduced, but now naturalised bird, Egyptian Geese, were recorded on the 15th.

Sandwich Tern were seen 4 times, with an impressive 8 in poor weather on the 14th and 30th and more excitingly a probable Roseate Tern was spotted on the 3rd in Holes Bay NE, a first for The Bay.

Swallow, House Martin and Sand Martin were recorded in the Bay as post breeding flocks fed up before heading South, and a Common Redstart was recorded in the PC World Drain, along with 2 Spotted Flycatchers and a Willow Warbler on the 8th.

Wheatear were logged in the South East of the 7th, 8th and 10th. Kingfishers again became a regular fixture in every sector of the Bay and Grey Wagtail were again semi-regular.

There were 5 Yellow-legged Gull on the 23rd. Holes Bay was the site of what is believed to be the largest ever count of Yellow-legged Gulls in Britain with 210 in August 1999.

There wasn't the late flurry of Osprey sightings that have graced The Bay the last few years, but there was a Red Kite on the 19th, and a brief White-tailed Eagle sighting in Holes Bay South on the 29th made up for the lack of Osprey.

Extraordinarily, these birds had become almost a common sight in Poole Harbour as the autumn went on!

OCTOBER

Wigeon numbers kept rapidly increasing, reaching 1178 on the 17th. Pintail and Shoveler numbers also increased with 18 Pintail on the 30th and 28 Shoveler on the 22nd.

Shelduck started to return from their autumn moult from the 23rd. Shelduck have an interesting migration pattern, with most of the British population flying across the North Sea to the Heligoland Bight in Germany to moult in the autumn.

Avocet were another welcome regular visitor, with these iconic birds returning on the 6th, increasing to 108 on the 14th. Black-tailed Godwit continued to be numerous, with 1077 on the 11th the highest count, and there were 243 Redshank on the 17th. 38 Dunlin were recorded on the 14th, and there were 54 Oystercatcher on the 7th.

Black-tailed Godwit © Clare Slade

Shoveler © René Goad

Lapwing were recorded on 3 occasions starting on the 14th, and there were 2 Greenshank on the 28th.

Large flocks of Canada Geese were regular, usually flying in early and leaving late, with a probable site record of 610 counted on the 28th. They were occasionally seen with a single Barnacle Goose, and up to 6 Greylag Geese.

Greylag Goose © Martin Adams

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A flock of 300+ Jackdaws was present around Pergins Island on the 8th, and large evening Gull roosts also started to build.

3 Spoonbill were seen on the 27th, with 2 on the 28th, and a Great White Egret was briefly present on the 7th.

Kingfishers became a regular sight, with 2 on the second the highest count, but it is hard to get a true count of these mobile and sometimes elusive birds.

A Wheatear was recorded on the 11th, and Redwing were heard over the Bay at night from the 23rd Nov. 2 Bearded Tits were recorded on the 22nd in the northwest and 4 on the 25th, and there were 3 Rock Pipits on the 19th.

A possible site first was a Juvenile Dartford Warbler on the 14th, dispersing from the local heaths.

NOVEMBER

Wigeon numbers continued to be spectacular, with 1635 on the 14th the high count. The rest of the wintering ducks also achieved milestone figures on the 28th, with 515 Teal, 54 Pintail and 50 Shoveler recorded. Shelduck numbers also passed 50 during the month.

A pair of Gadwall were regularly present from the 10th, and a couple of less common ducks for the Bay were a single Tufted Duck on the 29th and a Goosander on the 30th. Little Grebe were seen increasingly frequently (but distantly!) under the railway bridge from the Stone Bench with 8 on 29th the high count.

Canada Geese numbers thinned out, with 226 on the 4th but generally less than 100 after that. The Barnacle Goose was present with the Canada flock on the 1st and 2nd, and a single Brent Goose was seen in the South East on the 25th.

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Avocet © Clare Slade

Turnstone © Martin Adams

Avocet numbers continued to increase, passing 100, with 108 on the 14th. Blackwit numbers weren't quite as spectacular, with 844 from the WeBS count on 14th the peak. This is normal, as the Bay tends to get a lot of passage birds in the Autumn then a second peak late in the winter as passage birds start to return and local birds seek the relative warmth of the Bay in the colder months.

A colour-ringed Godwit 'YG-OZ' was seen on the 5th and 29th. This bird was ringed as an adult in Iceland and has regularly been seen in Holes Bay and Lytchett Bay since, although it bucked the trend by spending this autumn in France.

Redshank peaked at 306 on the 14th and there were 332 Dunlin on the 24th. Oystercatcher numbers also built up with 54 roosting on the railway embankment on the 7th. Last but certainly not least for the regular waders, there were 74 Curlew on the 26th.

November also saw more variety than is often the case when it comes to wader sightings. A Common Sandpiper was again regular, with 2 on the 30th, and more rarely there were 2 records of Green Sandpiper in the North East.

Lapwing were seemingly ever present (if not always easy to spot) from the Stone Bench with 5 on the 24th the highest count.

There were 3 records of Snipe, a good record of an elusive bird that is almost certainly under-recorded in The Bay. There was only one autumn record of a Turnstone last year, but 2 in the South West on the 21st, and 3 records of a single bird in the North East at the end of the month was a surprise in a noticeably stone-free habitat

There were also singles of Spotted Redshank on the 12th, Green Sandpiper on the 17th and Greenshank on the 28th

As well as Grey Wagtail and Rock Pipit sightings, 4 Bearded Tits were seen in the reeds by the Creekmoor Drain on the 17th. Kingfishers were a regular sight, with a pair displaying in Holes Bay SE on the 29th the highlight.

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Kingfisher © Martin Adams

Large, mobile Cormorant flocks were seen regularly at the start of the month with c 210 on the 10th the high count and probably a site record. This cooperative hunting behaviour is characteristic of the wintering continental birds.

There were 6 Spoonbill on the 28th, including a colour-ringed juvenile NBNZ (ringed 11/9/21 in Vlieland, Holland) and 2 on the 30th.

Spoonbill © René Goad

Wintering flocks of tits and finches were more common, with Siskin notable on the 25th. 3 Stonechat, birds that breed on the local heaths, were seen from the Screen Hide on the 12th.

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DECEMBER

By this time of year, it can often be a case of 'the usual suspects' being recorded with 1000+ Wigeon, 500+ Blackwit, 100+ Avocet etc, etc being almost routine! In total 4325 wetland birds were recorded by the WeBS counters on the 12th, numbers that can never be taken for granted!

From the 20th however, Upton CP hosted one of the birding highlights of the year - for Poole Harbour as well as the Bay - when 3 Tundra Bean Geese turned up in 13 Acre Field. These birds were last seen in the Harbour in 2014, so it was a great tick for the Bay. They stuck around until the end of the year, moving to the field off Longmeadow Lane then to Upton Park Farm after Christmas, giving great views to a regular stream of 'twitchers.'

Tundra Bean Goose © Mark Wright

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Another unusual bird, although one that caused less excitement due to its introduced status, was a Black Swan on the 3rd and 4th in Holes Bay NE.

Black Swan © Martin Adams

Of the usual suspects, an incredible 2324 Wigeon were recorded across the Bay by the WeBS counters, along with 234 Teal, 79 Shelduck, 51 Pintail and 38 Shoveler.

These were all the high counts for the month. Generally, the wintering ducks tend to stay in the Bay whereas the Waders move around the harbour more with the tides. Teal are the exception, although how much is due to them moving with the tides, and how much to them being hard to spot around the edges of the saltmarsh is an open question.

Black tailed Godwit© Mark Wright

Common Sandpiper © Mark Wright

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Of the less usual suspects, Tufted Duck were again seen on 3 dates with 3 birds on the 9th. Gadwall and Little Grebe were regular, with 5 Gadwall on the 3rd and 12 Little Grebe on the 10th the highest count.

Turnstone became almost regular after November's unexpected bonanza: They were recorded on 4 dates, with a flock of 10 in the South West on the 11th the best count.

There were high counts of 732 Blackwit on the 3rd, 228 Avocet on the 2nd, 371 Dunlin on the 21st and 200 Redshank on the 9th. 65 Oystercatcher were roosting on the railway embankment at high tide on the 5th.

Lapwing were slightly less regular than in November, but there was a high of 6 on the 24th. These are birds that flushed from behind the reeds opposite the screen hide, so it is likely that they lurk there out of sight more commonly!

1 Knot was recorded on the 3rd, and there were 3 records of Common Sandpiper. These are not common wintering birds in Poole Harbour, so this is probably the same overwintering individual, keeping itself inconspicuous between sightings around the rocky margins.

A single Spoonbill was reported with the Avocet on Boxing Day, the only record for the month.

A male Kestrel was seen in Holes Bay NE on the 11th and 24th, feeding on a rodent on the first date. Between these sightings, a dead Vole was found apparently cached in a flower pot on a balcony in Holes Bay S and a 'long tailed' bird of prey seen flying from another balcony. This is not far from the Peregrine's larder/roost on Asda!

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Rock Pipit © Martin Adams

Rock Pipits were a frequent sight, and Pipit flocks were also regular, if not always possible to pin down to species at a distance.

In Upton Country Park, Redwing became regular, with 71 on the 30th the highest count. There were also 5 Fieldfare, a Siskin, and a Grey Wagtail on the 5th (also present on the 8th.)

The year ended back where it began, with the winter birds feeding and sheltering ready to return to the frozen North, while further South the summer breeders are doing the same, ready to return to or through here.

Holes Bay is a modest but important part of a flyway that stretches from Southern Africa, through Europe then up to Canada, Iceland, Scandinavia and Russia, and East to Northern Europe.

It is an awesome, humbling thought that this flyway is just one part of a connected Global ecosystem that we are all part of.

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BIRDS RECORDED IN HOLES BAY AND UPTON COUNTRY PARK IN 2021

Martin Adams, Jackie Hull, Nick Hull, Stephen F. Smith and Nick Woods

The following list of birds includes all those species known to have occurred in the recording area in 2021.

Records have been obtained from individual recorders, from accessible records on the E-bird online recording system, from the Websites maintained by the Birds of Poole Harbour and the Dorset Bird Club. In some cases, records have been downloaded by observers from the Birdtrack online recording system managed by the British Trust for Ornithology.

The Holes Bay Nature Park was established in 2015 by a partnership of the Poole Harbour Commissioners, Dorset Wildlife Trust and the Borough of Poole (now Bournemouth, Christchurch and Poole Council).

Upton Country Park is owned and managed by Bournemouth, Christchurch and Poole Council. A map showing the names used for different locations within the Country Park is included within the report. There is no public access to the fields of Upton Park Farm.

Abbreviations:

BoPH - Birds of Poole Harbour

BTO – British Trust for Ornithology

WeBS – Wetland Bird Survey (carried out by volunteers from the BTO)

SANG – Suitable Alternative Natural Greenspace

This report is based on records and information from the following observers:

Martin Adams, Peter Ashley, Casper Badenhorst, the Birds of Poole Harbour, Ian Ballam, Tom Beer, Andy Collyer, Alison Copland, Terry Elborn, Jason Fathers, Mike Darke, Nerea Del Estal, David Forsdike, David Foster, Rene Goad, Kevin Guest, Tanya Hart, Garry Hayman, Clive Hargrave, Jim Hen, Nicky Hoar, Jackie Hull, Nick Hull, Paul Kirby, Colin Lamond, Orrin Lancaster, Ian Lewis, John Lockwood, Jez Martin, Brittany Maxted, Peter Moore, Garry Moors, Paul Morton, Nick Mudge, Joe Parker, Roly Pitts, Andy Renton, Shaun Robson, Steve Smith, John Sullivan, Bruce Townsend, David Turner, Patrick Ward, Joe Watson, Martin Whitchurch, Nick Whitehouse, Liz Woodford, Nick Woods, Mark Wright and Ken Yeates.

The following photographers have also provided photos for use in the report:

Martin Adams, Ian Ballam, Birds of Poole Harbour (Paul Morton), Andy Collyer, Rene Goad, Nick Woods and Mark Wright.

The authors would like to thank all the observers and photographers who have contributed. Please accept our apologies for any errors or omissions.

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main entrance
front field
Bascombe's pond
Roper's Lane
SANG car park
Upton Park Farm
Upton House
east field
13 acre field
Creekmoor field
Creekmoor channel
car park
duck pond
Llewellin wood
walled garden
north-east shoreline
play area
kennel mead
the stone bench
the bridge
The Grove (Grove woodland)
drying ground field
bird hide (site of)
Pergins Island
back drive
Allens Lane
boardwalk
Grove pond
half-moon field
lambs leas field
bird screen (observation point)
Jack's wood
Symes Road
the lodge
UPTON COUNTRY PARK
Field names and other names used by bird watchers and others for particular areas or feataures within the Park.
Imagery ©2019 Google, Imagery ©2019 Getmapping plc.Infoterra Ltd & Bluesky. Maxar Technologies. Map data©2019

Brent Goose *(Branta bernicla)*
The scarcer of the two 'black geese' regularly recorded – small numbers occasionally recorded in Holes Bay.

An increase in records this year. The flock from December 2020 remained until March 2021, with maximum monthly counts of 8 on 17th January 2021, 7 on 4th February 2021and 10 on 4th March 2021; all these were south of the railway. The final record of the winter was of 1 in NE sector on 31st March 2021, and at the end of the year, 1 on 25th November 2021 was the only record.

Canada Goose *(Branta Canadensis)*
The commonest of the 'black geese' with flocks in the hundreds sometimes seen in Holes Bay and flocks also feeding on the fields at Upton Country Park; at least one pair has bred at Upton Country Park in the past (2011).

Recorded in all months of the year, although flocks are mobile and numbers vary widely. The count of 610 on 28th October 2021 far exceeds any others this year or last.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
30 (10th)	16* (28th)	1 (20th)	2 (26th)	39 (30th)	224 (28th)	172 (15th)	6 (26th)	32 (10th)	610 (28th)	226 (4th)	90* (12th)

Combined Holes Bay counts by WeBS counters shown by *

Canada Goose (left) and Barnacle Goose (right) © Andy Collyer

Barnacle Goose *(Branta leucopsis)*
A rare winter visitor or passage migrant to Dorset, though feral birds may also occur.

A single, bird usually with Canada Geese, was observed on 7 dates between 7th October 2021 and 2nd November 2021 in Holes Bay – often in the north half of the Bay. At least one record was of the bird flying in mid-morning from the north or west with the large numbers of Canada Geese.

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Greylag Goose *(Anser anser)*
The only 'grey goose' regularly recorded, the birds being part of a widespread feral population small numbers sometimes seen in Holes Bay, often with Canada Geese. Birds have been colour-ringed in Poole Park in a study of the local population (sightings of such birds can be reported to Pooleparkgreylags@gmail.com)

Noted on 3 dates in September 2021 and 8 dates in October 2021, with maximum of 6 on 11th October 2021.

Tundra Bean Goose *(Anser serrirostris)*
A very rare winter visitor to Dorset, with very few recent records from Poole Harbour.

The first record for the Holes Bay area, and arguably the 'bird of the year' for the site. Three were found on 20th December 2021 in 13 Acre Field, where they could easily be viewed from the metal gate. Over the Christmas period they moved between this field and the field immediately north of the A350 and beside Longmeadow Lane, also occasionally appearing in the large field at Upton Farm. They remained until 1st January 2022, when they were disturbed by the Upton Country Park Run and left the site, being seen the following day in Brand's Bay.

Tundra Bean Goose © Mark Wright

White-fronted Goose *(Anser albifrons)*
A rare winter visitor and passage migrant to Poole Harbour, with few if any recent records from Holes Bay.

Two birds arrived in Holes Bay, settling briefly in front of the stone bench at dawn on 7th February 2021, but were not recorded again.

Mute Swan *(Cygnus olor)*
A few pairs often breed around Holes Bay with larger numbers found in winter.

Two of last year's young noted on 28th Jan 2021. For the second year in succession, a pair nested at the mouth of the PC World channel in May 2021, and 5 small cygnets were seen there on 12th June. A second nest was built in reeds just east of the Stone Bench. Records of 3 fledged cygnets continued until 10th October 2021. Overall numbers were down this year; counts in 2020 had reached 50 or above in all of the last four months, with 104 in December 2020.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
38* (10th)	24 (1st)	12 (4th)	1 (13th)	12 (30th)	8 (26th)	8 (11th)	9 (27th)	37* (19th)	32 (27th)	45* (14th)	59 (12nd)

Combined Holes Bay counts by WeBS counters shown by *

Black Swan *(Cygnus atratus)*
An introduced Australian species, now seen in small numbers in Poole Park and at other sites across Dorset.

Four flew across Holes Bay on 19th September 2021; a single bird present on 3rd and 4th December 2021.

Egyptian Goose (*Alopochen aegyptiaca)*
A species introduced into Britain and now spreading, one or two occasionally recorded in recent years.

2 in NE and NW of Holes Bay (presumed the same birds) on 15th September 2021.

Shelduck *(Tadorna tadorna)*
A few pairs may breed around Holes Bay or nearby, with small groups of young birds seen in late summer; flocks in winter may increase in cold weather (650 recorded in Holes Bay in 1987)

Recorded in all months of 2021 except September, when birds are away moulting. After very poor breeding success in 2020, a much better season in 2021, with 2 broods (of 9 and 12 in the north part of the Bay) and a pair with at least 3 young in the south-west. Winter numbers, however, were lower than usual: the Holes Bay WeBS mean peak is currently about 235.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
145* (10th)	94* (28th)	70* (28th)	52 (15th)	36 (2nd)	34 (24th)	18 (8th)	15 (9th)	-	4* (17th)	40 (28th)	79* (12th)

Combined Holes Bay counts by WeBS counters shown by *


Shelduck (Rene Goad)


Shoveler © Rene Goad

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Shoveler *(Spatula clypeata)*
A regular winter visitor to Holes Bay with numbers increasing.

The counts of 130 in December 2020 and January 2021 may be the highest on record for Holes Bay; present until 27th Mar 2021, and then from 11th August to the end of the year.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
130 (5th)	95 (22nd)	10 (13th)	-	-	-	-	2 (11th)	16 (28th)	28 (22nd)	50 (28th)	38* (12th)

Combined Holes Bay counts by WeBS counters shown by *

Gadwall *(Mareca strepera)*
Mainly a winter visitor to Holes Bay, usually in small numbers.

As in 2020 a pair remained into spring 2021, but unusually no records in September or October 2021; monthly maxima shown below.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8* (10th)	7 (1st)	2 (15th)	4 (9th)	-	1 (14th)	-	1 (12th)	-	-	5 (24th)	5 (3rd)

Combined Holes Bay counts by WeBS counters shown by *

Wigeon *(Mareca penelope)*
A winter visitor to Holes bay, with numbers greatly increasing in recent years to outnumber all the other duck species, with counts of over 1,000 often made. The bird's loud whistling call is a characteristic sound on the salt marshes.

Approximately half of the Poole Harbour population of Wigeon now winters in Holes Bay. The WeBS count of 2324 in December 2021 is only the third time that numbers have topped 2000 in Holes Bay, and is exceeded only by 2534 in December 2018. The last bird in spring 2021 was a male which lingered until 27th April 2021, and the first birds of the autumn 2021 were 6 on 25th August 2021.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1721* (10th)	834 (22nd)	320 (4th)	4 (13th)	-	-	-	75 (31st)	532* (19th)	1178* (17th)	1635* (14th)	2324* (12th)

Combined Holes Bay counts by WeBS counters shown by *


Wigeon © Rene Goad


Mallard © Rene Goad

Mallard *(Anas platyrhynchos)*

The only duck to breed in the area with pairs often present on the larger ponds in Upton Country Park, small flocks also seen in Holes Bay. A variety of domesticated birds also occur as well.

Present all year. Breeding birds were reported from the PC World channel (2 ducklings on 28th April 2021). No reports of breeding were received from Upton Country Park.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
10 (8th)	4 (28th)	21* (10th)	5 (25th)	7 (30th)	19 (28th)	6 (14th)	18 (19th)	7 (2nd)	4 (27th)	10 (26th)	16 (11th)

Combined Holes Bay counts by WeBS counters shown by *

Pintail *(Anas acuta)*

A winter visitor to Holes Bay with numbers increasing in recent years, counts of 50 or more birds sometimes being made.

A count of c 100 in Holes Bay on 25th January 2021 was exceptional, with numbers exceeding 50 in November-December 2021. Most birds favoured the NW sector near the Stone Bench. Extreme dates this year were 27th March and 12th September.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
c100 (25th)	23 (11th)	23 (4th)	-	-	-	-	-	9 (28th)	18 (30th)	54 (28th)	53 (8th)

Combined Holes Bay counts by WeBS counters shown by *

Pintail © Mark Wright

Teal © Rene Goad

Teal *(Anas crecca)*

In winter usually the second most abundant duck (after the Wigeon) in Holes Bay with several hundred often present.

Numbers have been somewhat low over the past two winters. An apparent pair remained until the end of April 2021 and possibly into May, but no further sign of breeding was noted. A pair produced young at Lytchett Bay in 2020, and breeding at Holes Bay is not an impossibility. Prey remains recorded between September 2020 and December 2021 at the local Peregrine nest site (see separate article) included 2 Teal; the only wildfowl from 68 items identified.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
420* (10th)	259* (28th)	268 (20th)	46 (4th)	2 (20th)	- (22nd)	- (19th)	61 (24th)	124 (2nd)	100+ (28th)	515 (28th)	234* (12th)

Combined Holes Bay counts by WeBS counters shown by *

Tufted Duck *(Aythya fuligula)*
A few birds usually occur in Holes Bay in the winter, though this species and the other 'diving ducks' are much less abundant than the various species of 'dabbling duck'.

One on 22nd January 2021 and single birds present in NE sector near the mouth of the PC World channel between 29th November and 25th December 2021; 3 present on 9th December 2021.

Tufted Duck © Martin Adams

Goldeneye © Mark Wright

Goldeneye *(Bucephala clangula)*
A regular winter visitor in small numbers to Holes Bay.

One or two birds present in NE sector and south of the railway throughout January and until 26th February 2021. All records where the sex was given referred to females.

Goosander *(Mergus merganser)*
An uncommon winter visitor and passage migrant in Dorset; rarely if ever recorded in Holes Bay.

A single red-headed bird feeding off the PC World drain on 30th November 2021.

Red-breasted Merganser *(Mergus serrator)*
Regular winter visitor in small numbers to Holes Bay.

Small numbers recorded in the winter months, with most if not all birds south of the railway.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
6 (5th)	7 (16th)	-	-	-	-	-	-	-	-	1 (27th)	-

Combined Holes Bay counts by WeBS counters shown by *

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Swift (*Apus apus)*
A summer visitor to Britain which has declined greatly in recent years. Birds may be seen feeding over the recording area and measures are being taken to provide safe nesting sites on buildings nearby.

Recorded from 11th May to 13th July 2021 (14 dates), usually in small numbers (3-5) though maximum number recorded was 35+ on 18th June 2021. A juvenile was seen on 31st May 2021 and an adult feeding 4 juveniles on 13th July 2021. Possibly under-recorded. Around half the records were of birds seen around Barclays House in Serpentine Road.

Cuckoo *(Cuculus canorus)*
An uncommon passage migrant in the recording area.

Cuckoo feathers were found at the Peregrine nest site in May, though it is not known where the bird was caught.

Rock Dove/Feral Pigeon (*Columba livia)*
Feral pigeons, in various colour patterns, are thought to breed on many buildings and bridges (including Poole Bridge) and along the railway line around the recording area.

Usually present in the urban areas where breeding probably occurs maximum number recorded 21 on 2nd May 2021. A small flock of white 'doves' sometimes seen in the northern part of Holes Bay.

Stock Dove *(Columba oenas)*
Less conspicuous, lacking the white wing bars of the more abundant Wood Pigeon, the Stock Dove is found in much smaller numbers but its distinctive song can be heard from many wooded areas.

Recorded in most months of the year. The largest count recorded was only 3 in Upton Country Park on 26th February 2021, but probably overlooked amongst much commoner Wood Pigeon. Singing birds frequent and widespread in the woods and gardens of the Park, but no conclusive evidence of breeding.


Stock Dove © Nick Woods


Collared Dove © Nick Woods

Wood Pigeon *(Columba palumbus)*
A common breeding species, the Wood Pigeon also forms feeding flocks, often seen in the fields at Upton Country Park. Flocks apparently migrating sometimes recorded with a large roost sometimes noted on Pergins Island. Probably under-recorded.

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Always present at Upton Country Park; almost certainly bred in the Park (and probably elsewhere) but no records of confirmed breeding. Counts of 50 or more included 59 on 28th August 2021, 50+ on 15th September 2021,140 NW c 9.00 am on 2nd November 2021, 150+ on 2nd December 2021 and 760 flying to roost on Pergins Island on 30th December 2021 (birds mostly coming from the north-east and flying over the NE section of Holes Bay).

Collared Dove *(Streptopelia decaocto)*
Small numbers seen around the recording area, may breed.

Relatively few records, recorded in all months except June-July mainly along the shoreline and on the west side of the SANG (near Roper's Lane), with a maximum of 4 recorded on 31st December 2021. No evidence of breeding, but regular presence of birds in particular locations suggest this may occur.

Water Rail *(Rallus aquaticus)*
A secretive bird, rarely seen, its presence often revealed by its squealing call, present in the reed beds around Holes Bay and occasionally on the ponds in Upton Country Park.

Single birds recorded in all months of the year, except June, August and December, from the main reed beds around Holes Bay. No definite evidence of breeding though it is likely that this did occur; most records refer to birds heard.

Moorhen *(Gallinula chloropus)*
A few pairs breed around Holes Bay and on a number of the ponds at Upton Country Park.

Recorded in Upton Country Park or around the Bay in all months of the year. Breeding birds were reported from the PC World channel (2 young being fed on 14th April 2021, nest with 5 eggs on 25th July 2021 and one very young bird with adults on 23rd September 2021), the Upton Country Park duck pond (2 juveniles on 6th May 2021) and the Grove pond (2 adults with 4 young on 9th July 2021). Birds may also have bred at other sites around the Bay. Maximum number recorded was 11 from Holes Bay NE on 3rd February 2021.

Coot *(Fulica atra)*
Occasionally seen in Holes Bay and thought to have previously bred on the grove pond in Upton Country Park.

A single record of one bird seen at Upton Country Park on 14th April 2021.

Little Grebe *(Tachybaptus ruficollis)*
A small flock regular in Holes Bay (often seen near the railway line) in the winter, thought to have previously bred on the pond in the grove at Upton Country Park.
Small numbers in autumn/winter/spring, with last spring record 1 on 17th May 2021 and first autumn record 1 on 1st July 2021; usually seen close to the railway in Holes Bay.

Maximum monthly counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
9 (11th)	7 (26th)	2 (6th)	1 (26th)	2 (3rd)	-	1 (1st)	1 (6th)	1 (22nd)	4 (28th)	8 (29th)	12 (10th)

Combined Holes Bay counts by WeBS counters shown by *

Great Crested Grebe (*Podiceps cristatus)*
Small numbers present in Holes Bay, mainly in the winter but is seen almost the whole year. Nearby birds regularly breed on sites such as Hatch Pond.

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A few (usually less than 10) birds reported in Holes Bay (often south of the railway but sometimes venturing to the north part of the bay) January to the end of May, a single bird on 11th July 2021 and again from the end of September to November, maximum 11 on 16th March 2021. Two pairs were seen tentatively displaying in Holes Bay on 21st February 2021.

Black-necked Grebe *(Podiceps nigricollis)*
Rarely recorded in Holes Bay despite being an annual visitor to other parts of the Harbour and Studland Bay.

Two records (thought to be the first for many years): 1 on 2nd November 2021 and 2 on 22nd December 2021.

Oystercatcher *(Haematopus ostralegus)*
Occasional (usually unsuccessful) breeding bird around the margins of the Bay. Present all year round but more common in winter. The wintering population in Poole Harbour has declined since 1990.

Two chicks were seen with an adult on one occasion on the Asda Saltmarsh. The day before the adult was seen going up against an indifferent overflying Peregrine. The chicks were not seen the next day or subsequently and seem unlikely to have survived. A pair of birds were seen provisioning 2 chicks twice on the roof of a vacant building by Twin Sails Bridge. It is not known if the chicks survived to properly fledge from the roof. Birds were also seen behaving territorially in two further locations: chasing a Gull off on Saltmarsh in Hole Bay SW (just North of Cobb's Quay,) and chasing a Raven off on the wasteland by Kerry Foods near Holes Bay SE. Birds were also seen on the roof of the RNLI building during the breeding season. It is not known if they attempted to breed. Birds have previously been recorded breeding on the roof of PC World.


Oystercatcher with chicks © Martin Adams


Avocet © Mark Wright

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
110 (1st)	83 (13th)	30 (9th)	11 (15th)	12 (17th)	10 (11th)	19 (8th)	28 (2nd)	7 (12th)	33 (30th)	54 (7th)	65 (5th)

Combined Holes Bay counts by WeBS counters shown by *

Avocet *(Recurvirostra avosetta)*
Appearing in late autumn, flocks in Holes Bay can number over 200 in winter with numbers increasing in recent decades. Poole Harbour is one of the most important wintering sites in the UK for Avocet.

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Large numbers in winter, mainly in northern parts of Holes Bay. Last Winter sighting 1st March 2021 with birds returning from 6th October 2021. However, a wing from a bird predated by a Peregrine was found in Holes Bay SE on 24th May 2021.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
170 (27th)	238 (7th)	4 (1st)	-	-	-	-	-	-	62 (30th)	108* (14th)	228 (2nd)

Combined Holes Bay counts by WeBS counters shown by *

Lapwing *(Vanellus vanellus)*

A winter visitor to Holes Bay in small numbers, often best seen from the boardwalk or bird screen and sometimes found in the fields at Upton Country Park, especially in prolonged cold spells. Often seen when flushed from behind the reed clumps which suggests may be present more often than it is recorded.

Recorded slightly more regularly than in previous years, with 31 records against 23 last year. Recorded twice in 13 Acre Field, with c11 on 11th February 2021 and 9 on 13th February 2021. Extreme dates 22nd February and 2nd September. Lapwing remains were found underneath the Peregrine roost found in July, although these may be of birds taken outside the recording area as they do over summer (and breed in small numbers) in other parts of the Harbour. Lapwing formerly bred on the fields where the Upton bypass now goes through.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5 (7th)	11 (1st/9th)	-	-	-	-	-	-	1 (2nd)	2 (28th)	5 (24th)	6 (24th)

Combined Holes Bay counts by WeBS counters shown by *

Grey Plover *(Pluvialis squatarola)*

A passage migrant or winter visitor to Holes Bay, birds being reported more often in recent years and often most visible from the boardwalk in Upton Country Park.

Three records with 1 bird recorded on 6th January, 16th August, and 17th September 2021. 1-3 birds had been regular in the second winter period of 2020.

Whimbrel *(Numenius phaeopus)*

A regular spring and autumn migrant seen in Holes Bay singly or in small parties; some birds seem to favour the 'boat graveyard' south of Cobbs Quay.

In Holes Bay up 8 birds between 17th April 2021 and 13th May 2021, and up to 3 birds between 8th July and 29th August 2021. Recorded more frequently than last year, partly due to more focus on the south of The Bay and the "boat graveyard" between Cobb's Quay and the old Power Station site which they seem to favour. The first birds of the Spring and Autumn period were recorded in almost the exact same place on the Asda Saltmarsh 82 days apart.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-	-	-	7 (29th)	8 (6th)		3 (30th)	3 (29th)	-	-	-	-

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Curlew *(Numenius arquata)*
Can be seen in Holes Bay in all months of the year with counts of 50 or more in the winter. Often seen on the saltmarsh south of the railway and the edges of Pergins Island will also feed in the fields of Upton Park Farm.

Recorded in all months of the year; monthly maxima given below. Frequently seen feeding in the fields of Upton Park Farm, especially 13 Acre Field (maximum number recorded 48 on 17th February 2021)

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
107* (10th)	58 (27th)	59* (28th)	9 (9th)	1 (18th)	14 (13th)	46 (30th)	50* (28th)	24* (19th)	73* (17th)	74 (26th)	79 (12th)

Combined Holes Bay count by WeBS counters shown by *

Curlew © Mark Wright

Turnstone © Mark Wright

Bar-tailed Godwit *(Limosa lapponica)*
Occasional winter visitor to Holes Bay. In Poole Harbour this species is more characteristic of the area adjacent to the Sandbanks peninsula, one to a few birds found in winter or on passage in Holes Bay but vastly outnumbered by the Black-tailed Godwit.

Three records of single birds on 8th February, 24th March and 25th October 2021.

Black-tailed Godwit *(Limosa limosa)*
One of the Harbour's most important wintering birds. Can be seen in all months of the year in Holes Bay but numbers much greater on passage and in winter, with regular counts of over 1,000, an internationally important figure. Can also be seen feeding in the fields of Upton Park Farm. The Poole Harbour wintering population is thought to be exclusively of the Icelandic race (Limosa limosa islandica.) the population of which is estimated at 50-70,000 individuals.

Recorded in all months of the year with numbers dwindling to low double figures in June (see monthly maxima in table below.) Numbers recorded this year were up with counts of 1000+ in 5 separate months as opposed to just 1 in 2020. Many of these counts are from high tide roosts which exceed the low tide WeBS Counts in all but 1 month, suggesting that Holes Bay is more important as a high tide roost to the Black- tailed Godwit.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
c2000 (25th)	1297 (9th)	873 (7th)	459 (9th)	23 (14th)	14 (23rd)	173 (22th)	1085 (24th)	1348 (24h)	1077 (11th)	844* (7th)	732 (3rd)

Combined Holes Bay counts by WeBS counters shown by *

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For some years Black-tailed Godwit have been colour-ringed in a number of European countries to enable the migratory movements of individual birds to be tracked. The convention when reporting such birds is to give the (bird's) left leg first followed by the right leg, some rings may also have a letter printed on them or a protruding 'flag'. One colour-ring bird was recorded in Holes Bay in 2021.

Black-tailed Godwit YG-OZ © Ian Ballam

The colour ringed Black-tailed Godwit "YG-OZ" was seen on the 5th and 29thNovember 2021. This bird was ringed as an adult in Iceland in 2016 and has regularly been seen in Holes Bay and Lytchett Bay on subsequent winters, although it bucked the trend by spending this autumn in France. This does show however that even the impressive monthly maxima don't show the full picture: there are different birds at different times of the year, so the true number of birds that use the Bay is even higher.

Turnstone *(Arenaria interpres)*
A usually scarce visitor to Holes Bay probably as this species usually prefers stony or rocky areas to feed.

A big increase in records from the one bird recorded last year, with birds recorded on 10 dates. Several of these records were of a single bird in the North East between 25th November and 5th December 2021, and a flock of 10 in the South West on 11TH December 2021 was the highest count.

Knot *(Calidris canutus)*
An occasional winter visitor to Holes Bay, probably appearing more regularly in recent years.

Forty were present on the 1st January 2021, after a flock had been regular in the North of Holes Bay from September 2020. This was the peak count, although there were double figure counts on another 8 dates until April 11th 2021. The second winter period was less prolific, with 3 birds the highest count and records far less regular than in 2020 when 51 was the highest count.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40 (1st)	6 (8th/9th)	20 (24th)	12 (11th)	-	-	-	3 (24th)	2 (15th)	-	-	3 (21st)

Ruff *(Calidris pugnax)*
Occasionally seen in Holes Bay or on the fields of Upton Park Farm, but not recorded every year.

Two records of single birds in north-west Holes Bay on 30th March 2021 and 29th August 2021.

Dunlin *(Calidris alpina)*
The smallest wader commonly found in Holes Bay, winter flocks may number 500 or more and when disturbed will from tight flocks.

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Frequently present often in large numbers until 24th March 2021 and from 16th August 2021. The maximum count of 754 on 3rd January 2021 easily exceeded the previous year's high count of 458, also in January.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
754 (3rd)	406 (9th)	30 (2nd)	-	- -	- -	- -	14 (31st)	4 (16th)	38* (17th)	332 (24th)	371 (21st)

Combined Holes Bay counts by WeBS counters shown by *

Common Sandpiper © Mark Wright

Dunlin © Martin Adams

Woodcock *(Scolopax rusticola)*
Rarely recorded and then usually single birds flushed from some of the less disturbed woodland areas in winter.

Recorded as Peregrine prey in March and December, most likely from birds taken while flying over Poole at night.

Snipe *(Gallinago gallinago)*
An inconspicuous wader often lurking on the edges of the reed beds in Holes Bay with only one or a few birds seen in winter. Birds may be heard calling as they fly out of the saltmarsh at dusk.

Ten records from around the Bay (including one of 2 birds flushed from the Asda Saltmarsh at 4a.m.) Recorded in February (3 records,) March (3 records,) September (1 record) and November (3 records) All were single figure records except for 24 recorded on 29TH March 2021. Combined with the occasional report of birds seen on the saltmarsh or mudflats, these suggest that there may be more Snipe present than these records than is often apparent.

Common Sandpiper *(Actitis hypoleucos)*
Mainly a spring or autumn migrant in Poole Harbour (and more rarely a winter visitor); usually seen around the edge of Holes Bay, sometimes frequenting the railway embankment or the shore along the Holes Bay cycleway.

One bird overwintered 2020/21 and 1, possibly 2, were over-wintering in the second winter period of 2021. A significant increase in records compared to 2020. Recorded on 20 dates up to 9th April 2021 compared to no records in the first winter period of 2020. Recorded on 32 dates from 14th July 2021 compared to 15 records in the second winter period of 2020. 2 records in the South West, but usually seen along the rocky shores of the North East, in the PC World Drain and either side of the Railway Embankment. Was also seen on at least one occasion on the

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cycle path on Holes Bay NE. Because of the small numbers and habit of staying close to the edges may still be under-recorded despite the increased records.

Monthly maxima recorded:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 (m)	1 (m)	1 (m)	2 (9th)	-	-	3 (14th)	4 (3rd)	2 (m)	1 (m)	2 (30th)	1 (m)

m = multiple dates

Green Sandpiper *(Tringa ochropus)*
A scarce passage migrant or winter visitor, usually of single birds. Sometimes frequents the channels entering Holes Bay on the east side of the bay.

Single birds recorded at the PC World drain on 20th March 2021, in Holes Bay NE near the PC World drain on 30th July 2021 and one on the 14th November 2021 on the land cleared for development between south of the railway line and to the east of the Holes Bay Road. In 2019 and 2020 there seemed to be an association with the Creekmoor channel, the ecology of which has changed since flood prevention works were carried out there a few years ago. However, both of the records in north-east Holes Bay this year were from around the PC World drain.

Redshank *(Tringa totanus)*
Present in Holes Bay for most of the year, and may have bred in the past, it's piping call is one of the signature sounds of wetland habitats. Passage or wintering flocks can number more than 200.

Recorded in all months of the year, with few birds in summer and no records of breeding. Large numbers, and ever present in autumn and winter. 112 on 2nd September 2021 in Holes Bay south-west the highest count in the South.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
283* (10th)	180* (28th)	145 (7th)	10 (2nd)	1 (13th)	10 (30th)	137 (15th)	202 (17th)	262 (2nd)	243* (17th)	306* (14th)	200 (9th)

Combined Holes Bay counts by WeBS counters shown by *

This colour ringed Redshank photographed in Holes Bay NW on 13th July 2021 was ringed as a breeding adult in the Avon Valley on 14th May 2021 as part of the WadersForReal program. https://www.gwct.org.uk/wadersforreal/. This was the first re-sighting since it left in late June after successful breeding. It was seen in Holes Bay North West again the next day, then on 3rd Sept 2021.

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Spotted Redshank *(Tringa erythropus)*
Once a regular winter visitor or passage migrant with one or two birds being regularly seen along the edge of Holes Bay, this species has become much less frequent in recent years.

Seven records of single birds in 2021, 6 of which were in the first winter period, including 4 between 9-14th February 2021 presumably of the same bird. The other record was on 12th November 2021. An increase on the 2 records in 2020.

Left to right: Redshank, Spotted Redshank and Greenshank © Mark Wright

Greenshank *(Tringa nebularia)*
An uncommon but annual passage migrant or winter visitor to Holes Bay, most records of one or two birds.

Recorded in Holes Bay on 10 dates in 2021. This is one date less than in 2020, but a maximum of 4 on the 26th April 2021 beat the maximum of 2 birds in 2020. As with Spotted Redshank, this is a bird that has become less common in recent years.

Black-headed Gull (Chroicocephalus ridibundus)
Present all year in Holes Bay, flying over and on the fields of Upton Country Park. Breeds elsewhere in Poole Harbour and the strikingly patterned juveniles may attract attention in late summer. Large flocks may be seen flying to and from Holes Bay

Seen in all months of the year with numbers boosted by juveniles in late summer. Often not counted but 51 in late April 2021 included 2 mating on the salt marsh. They breed elsewhere in the harbour and with a high count of 1200 across the bay on the 3rd August may show that breeding was highly successful. Also notable count of 750 leaving the roost from Holes Bay N/E heading north east.

Maximum monthly counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
476* (10th)	702* (28th)	1000+ (13th)	51 (27th)	n/c	39 (28th)	750 (18th)	1200* (3rd)	100 (19th)	370* (21st)	209* (14th)	750 (9th)

Combined Holes Bay counts by WeBS counters shown by*

Mediterranean Gull *(Ichthyaetus melanocephalus)*
The distinctive calls of overflying birds of this species are a feature of early spring and birds may also be seen in Holes Bay or on the fields of Upton Park Farm.

Only recorded in Holes Bay between late February and April with an exception of one seen on 12th July 2021 (an adult), though they breed in the Wareham Channel of Poole Harbour. Highest count was on 51 on 11th April in Holes Bay.

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Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-	7	29 (23rd)	51 (11th)	-	-	1 (12th)	-	-	-	-	-

Combined Holes Bay counts by WeBS counters shown by*

Mediterranean Gulls © Nick Woods

Common Gull © Mark Wright

Common Gull *(Larus canus)*
Small numbers of birds, often just a single bird recorded in spring, winter and autumn, usually in Holes Bay but probably under-recorded.

Passage peak times for Common Gull is late spring and August with 19 recorded on the WeBS count. A German colour-ringed bird was observed from the Stone Bench but we have no further details.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5* (10th)	9 (6th)	10* (28th)	18* (25th)	0	0	0	19* (28th)	0	5* (17th)	2* (14th)	2* (12th)

Combined Holes Bay counts by WeBS counters shown by*

Great Black-backed Gull *(Larus marinus)*
This large and intimidating gull is usually present in low numbers in Holes Bay.

Present all year in small numbers, often seen on development land to east of Holes Bay Road. On the 27th March 2021 four were seen fighting in Holes Bay.

Monthly maximum counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
9* (10th)	7* (28th)	17* (28th)	4 (2nd)	3 (6th)	2 (10th)	2+ (6th)	2 (29th)	2	6* (17th)	5* (14th)	6* (12th)

Combined Holes Bay counts by WeBS counters shown by*

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Herring Gull *(Larus argentatus)*
Common resident and winter visitor

Almost always present in Holes Bay. Breeds on buildings in Poole town and on industrial buildings to the west of Upton Country Park and can be seen gathering nest material, with at least one nest with two or three small young seen on a factory roof in Factory Road. On 9th July 7 2021 juveniles seen on top of Asda. A high count on 21st May 2021 of 135 on land cleared for development immediately south of railway and west of Holes Bay Road.

Maximum monthly counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
119* (10th)	250+ (13th)	220* (28th)	n/c	135 (21st)					179* (17th)	17* (14th)	177 (3rd)

Combined Holes Bay counts by WeBS counters shown by*

Great Black-backed Gull (left) and Yellow-legged Gull (right) © Martin Adams

Yellow-legged Gull *(Larus michahellis)*
Once a regular visitor to Holes Bay in small numbers, this species is now only seen occasionally.

Four records for Holes Bay: singles on 3rd May 2021 and 12th July 2021 present on 23rd September 2021. and 5 on 24th September 2021.

Lesser Black-backed Gull *(Larus fuscus)*
Regularly present in small numbers in Holes Bay.

Recorded in every month often seen loafing on the lampposts at Holes Bay roundabout.
On 25th January 2021 one was seen to take, kill and eat a Black-tailed Godwit. On 21st April 2021 one seen gathering nest material though breeding was not confirmed. An unusually high count of 37 during WeBS count on 28th March 2021.

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Maximum monthly counts:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2 (8th)	4 (28th)	37* (28th)	8 (25th)	16 (21st)	5 (28th)	6 (5th)	5 (29th)	5 (3rd)	2* (17th)	1* (14th)	5 (31st)

Combined Holes Bay counts by WeBS counters shown by*

Sandwich Tern *(Thalasseus sandvicensis)*
Breeding locally on Brownsea Island and an occasional visitor to Holes Bay particularly during passage time.

Recorded on five days at the end of March 2021 (27th-31st) with maximum of 2 seen. Other spring record of 2 on 25th April 2021. Single bird on 6th September 2021, 2 on 10th September 2021, (a remarkable record) of 8 on 14th September 2021 and 1 on 30th September 2021.

Remains of a ringed bird were found at the base of the Asda building on 17th August 2021. It was ringed as a juvenile on 18th June 2019 at Cemlyn, Isle of Anglesey, 345km from Poole.

Roseate Tern *(Sterna dougallii)*
Generally an uncommon passage migrant in Dorset – very rare in Holes Bay.

A record of a probable Roseate Tern in Holes Bay NE near the PC World Drain on 3rd September 2021.

Common Tern *(Sterna hirundo)*
A summer migrant breeding on Brownsea Island but relatively few visit Holes Bay.

Only one record: a single bird seen fishing in Holes Bay NE on 12th August 2021.

White Stork *(Ciconia Ciconia)*
A rare passage migrant to the UK. There are re-introduction projects in various places. Satellite tracked birds from the Knepp estate in Sussex have been recorded in Dorset.

A flock of 36 birds from the Knepp re-introduction project were seen passing along the Dorset coast on 16th September 2021. Satellite tracking data indicates these passed over Poole and 30 were reported over Holes Bay.

Cormorant *(Phalacrocorax carbo)*
Often present in small numbers in Holes Bay, much larger flocks are occasionally recorded.

Present in Holes Bay throughout the year, usually with 20 or less birds being recorded but with the following large counts: 134 in SE Holes Bay on 9th November 2021, c 40 in NE Holes Bay and c 210 in Holes Bay south on 10th November 2021, 33 in SE Holes Bay on 26th November 2021 and c 140 seen over Poole Quay flying from the direction of Holes Bay on 7th December 2021.

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Cormorant © Rene Goad

Spoonbill *(Platalea leucorodia)*
An occasional visitor to Holes Bay though now regularly seen in some numbers in Poole Harbour as a whole.

Small numbers (usually 1-3 birds) recorded in Holes Bay on 8 dates in January-April and October-December 2021, with a maximum of 6 on 28th November 2021. An increase from 2020 when the species was only recorded on two dates. A colour-ringed bird with a white leg ring reading NBNZ was recorded on 28th November 2021.

Spoonbill © Rene Goad

Cattle Egret *(Bubulcus ibis)*
Once a rare passage migrant, the Cattle Egret is now regularly recorded at sites across Dorset and has bred in the county.

A single record of 2 birds in the farm fields at Upton Country Park on 22nd April 2021.

Cattle Egret © Andy Collyer

Little Egret © Mark Wright

Grey Heron *(Ardea cinerea)*
Usually present in Holes Bay, with birds sometimes seen roosting at high tide along the railway line; sometimes visits the grove pond in Upton Country Park.
Recorded (usually in single figures) in all months of the year in Holes Bay with maximum count of 12 on 28th November 2021. Birds were seen roosting on the railway embankment at high tides on a number of occassions.

Grey Heron © Mark Wright

Great White Egret *(Ardea alba)*
Rarely recorded from Holes Bay, though with increasing numbers being reported in Dorset (as a passage migrant and winter visitor) perhaps likely to become more frequent.

A single record of one bird settled in Holes Bay, seen from the stone bench on 7th October 2021; the bird only remaining for a few minutes.

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Little Egret *(Egretta garzetta)*

Usually present in Holes Bay, sometimes with large high tide roosts along the railway line or in the trees along the shore of Upton Country Park.

Usually present around Holes Bay with small numbers of birds sometimes feeding in the fields of Upton Park Farm. Monthly maxima are given below, though these may not be truly representative of the numbers present, since largest counts are often of birds flying to or from roosts; daytime visits may not therefore record the maximum number present. A regular roost is believed to occur on Pergins Island with birds sometimes seeming to assemble nearby on the saltmarsh.

Monthly maxima

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
25 (23rd)	25 (12th)	9 (31st)	14 (2nd)	6 (30th)	24 (28th)	25 (4th)	36 (26th)	64 (3rd)	35* (17th)	18* (14th)	6 (31st)

Combined Holes Bay counts by WeBS counters shown by *

Osprey *(Pandion haliaetus)*

Regularly seen in Holes Bay on migration, with sightings having increased in recent years. In the autumn, one or more birds may be present for several weeks. A platform on the Upton Country Park side of Pergins Island was erected in 2020 and was used by at least one Osprey in the autumn. A project to reintroduce the Osprey to Poole Harbour is currently being run by the Birds of Poole Harbour.

Only three records in 2021, 1 each in March, May and August, all of birds passing over. This in in big contrast to the last 2 years, when there had been a late flurry of sightings in the Autumn as migrant birds (believed to be Scottish-born juveniles) spent some time hunting and roosting in the Bay, giving excellent views.

Sparrowhawk *(Accipiter nisus)*

Regularly seen in flight around the recording area – probably breeds locally.

Recorded in all parts of Holes Bay and Upton Country Park, with 30 records from every month except July. 2 birds (probably Male and Female) seen on 1st February 2021. 5 records of birds with prey flying to Pergin's Island, including 1 each in May and June, suggesting a possible breeding location. Also 3 records of birds taking Sparrows or Starlings in Holes Bay South West, where both species are abundant.

Sparrowhawk © Rene Goad

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Red Kite *(Milvus milvus)*
Increasing numbers seen in south-east Dorset, especially in spring of 2020, several records for Holes Bay, Upton Country Park and nearby areas.

Four records in 2021: 2 in April, 1 in June and 1 in September, all of birds passing over.

White-tailed Eagle *(Haliaeetus albicilla)*
Extinct in Dorset for many years, occasional birds seen in Dorset are probably from the Isle of Wight re-introduction project.

Single birds on 22nd March 2021 and 29th September 2021 – the former known only from tracking data and the latter seen 'near ASDA' in the south part of Holes Bay.

Buzzard *(Buteo buteo)*
The most frequently seen bird of prey in the recording area and has bred in Upton Country Park, once scarce it spread rapidly in south-east Dorset in the 1980s and 1990s.

Recorded mating on Pergins Island on 20th March 2021. Recorded in all months except July, and widely present in the recording areas with 3 birds recorded on 3 occasions. Closer study of the plummages of these highly variable birds could give further insight into their populations and movements. Two birds are common in the Upton Park field (often "worming" in the winter,) and 1 in the field behind the Stone Bench. Singles can often be seen in the Western corner of Holes Bay north-west, over the SANG, in Holes Bay north-east (sometimes roosting on a lampost) and less frequently in Holes Bay south-east.

Tawny Owl *(Strix aluco)*
Heard from woodland areas notably in Upton Country Park

Few records, but birds recorded from Upton Country Park in February-March, May, July, September, October and DecemberJanuary, March-April, June and November. Both males and females were heard, and birds were heard calling from the direction of Upton Park Farm, Llewellin Wood, and Pergins Island. A juvenile was reported calling on 8th and 9th July 2021. Birds were also recorded perched on the electricity pylons. These records suggest at least one pair bred at the Park.

Little Owl *(Athene noctua)*
A declining bird in Dorset and thought to have bred in Upton Country Park in the past, but not normally recorded now.

A 'possible' was reported in the scrub opposite the entrance to Upton Country Park on 1st February 2021 but views were insufficient to confirm the identification of the bird.

Nightjar *(Caprimulgus europaeus)*
Although breeding widely on local heathlands a bird rarely if ever reported from the recording area, though given its crepuscular or nocturnal habits, it may be under-recorded.
Records were received of single birds at Upton Country Park on 14th May 2021 and 19th June 2021 (one or possibly both records were from the SANG)

Kingfisher *(Alcedo atthis)*
A winter visitor to Holes Bay (when at least one bird is often present), birds starting to appear in August. Often seen perched on posts (or a shopping trolley) close to the Holes Bay cycleway and also visits ponds in Upton Country Park.

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Recorded on 78 dates from 1st January to 22nd March 2021 and from 17th August to 17th December 2021 from edges of Holes Bay and PC World channel; usually a single bird but occasionally 2 or 3 birds with 3-4 birds thought to be present on 19th January 2021. No records for the ponds within Upton Country Park though one was seen flying from Holes Bay towards the Grove pond on 22nd March 2021. A pair was seen displaying on 29th November 2021.

Kingfisher © Mark Wright

Great Spotted Woodpecker © Nick Woods

Great Spotted Woodpecker *(Dendrocopos major)*
Widespread and conspicuous in woodland areas and gardens, breeding at Upton Country Park and probably other areas.

Regularly recorded in Upton Country Park with 6-7 drumming birds recorded on 17th January 2021, although no records of confirmed breeding were received.

Green Woodpecker *(Picus viridis)*
The distinctive 'yaffle' call of this species is frequently heard in Upton Country Park (often from the fields behind the stone bench) and the bird probably breeds in the Park and possibly at other sites.

Recorded in most months of the year at Upton Country Park, often from near the duck pond/east field or in the vicinity of Upton House. A fledged juvenile was seen in the east field on 27th August 2021, suggesting at least one pair bred in Upton Country Park.

Kestrel *(Falco tinnunculus)*
Seen occasionally overflying Upton Country Park and along the Holes Bay Road.

Thirteen records, all in the north-east or south-east part of the recording area, except for 1 in the south-west. Often seen hovering over the grass verges by the cyclepath or perched on lampposts, and twice recorded taking rodent prey. A dead vole was found possibly cached in a flower box on the balcony of a residential tower block in Holes Bay south, and a bird of prey, probably Kestrel, was subsequently seen flying from another balcony in December.

Peregrine *(Falco peregrinus)*
Frequently reported over Holes Bay at most times of the year – often alarming the waders and wildfowl. Birds breed on the coastal cliffs and also sometimes on tall buildings.

A Pair bred on Barclays House in Poole this year, producing 3 juveniles.1 of these died after colliding with a building, but the other 2 were present in the area until mid-August. The adults

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were present all year, usually roosting on Asda or Barclays House, and occasionally reported hunting over Holes Bay. See separate article below for more details.

Correction to 2020 Holes Bay Nature Park Report: the female hatched from the New Milton water tower in 2017, not 2018 as stated in the 2020 Holes Bay Report.

Peregrine © Martin Adams

Kestrel ©Mark Wright

Jay *(Garrulus glandarius)*
A common breeding bird in Dorset with additional birds often arriving in autumn and conspicuous in the woodland and parkland of Upton Country Park.

Recorded in small numbers in most months of the year maximum count of 5 on 6th March 2021 and 7th October 2021 at Upton Country Park. No records of confirmed breeding but nest building recorded at Upton Country Park on 9th April 2021.

Magpie *(Pica pica)*
A common bird, probably breeding around the recording area.

Recorded in and around Upton Country Park in most months, maximum 8 on 12th February 2021. No records of breeding but it is likely that birds bred in a number of locations.

Jackdaw *(Coloeus monedula)*
Often the most abundant member of the crow family, with flocks frequenting the fields of Utpon Park Farm – probably breeds in trees and buildings in the recording area.

Usually present in and around Upton Country Park with counts of 40 or more on the following dates: 48 near Upton Park Farm on 11th January 2021, 74 in fields adjacent to the car park at Upton Country Park on 12th July 2021, 300+ roosting at Pergins Island on 8th October 2021, 200+ on 14th October 2021, 374 in fields near Upton Park Farm on 6th November 2021, c 150 on the north-east shoreline on 24th November 2021, c 70 near the Upton Country Park car park on 8th December 2021 and 40 on 22nd December 2021. Likely to have bred at Upton Country Park and possibly elsewhere but no reports received.

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Rook *(Corvus frugilegus)*
Recorded much less often than the Jackdaw, with which it will feed, thought to have previously bred on the Upton Estate.

Possibly under-recorded, though the increase from records on 2 dates in 2020 to 14 dates in 2021 suggests a genuine increase. Small numbers (usually under 10) were recorded from 6th August 2021 to 8th December 2021, maximum 22 on 6th August 2021. Birds were usually recorded in the fields adjacent to Upton Park Farm or in 13-acre field.

Carrion Crow *(Corvus corone)*
A resident species probably breeding in the recording area.

Usually present in Upton Country Park, with birds recorded from the recording area in most months. High counts (30 or more) included: 65 on saltmarsh south of the railway on 13th May 2021,41 on land cleared for development between the railway and the Holes Bay Road on 21st May 2021, 38 in SE Holes Bay on 11th June 2021, 48 on 30th October 2021, 56 at Pergins Island roost on 3rd December 2021 and 39 on land cleared for development between the railway and the Holes Bay Road on 5th December 2021.

Raven *(Corvus corax)*
In recent years the Raven has been recorded regularly in the area and is believed to have bred on Pergins Island, reflecting the bird's increasing presence in Dorset. Its distinctive call is often heard over Upton Country Park.

Recorded in most months of the year in small numbers (1-2). Records often refer to birds overflying Holes Bay or Upton Country Park but also include birds on the site cleared for development between the railway and the Holes Bay Road and on the ASDA building.

Coal Tit *(Periparus ater)*
Frequent in woods and gardens and probably breeding widely in the recording area.

Recorded in all months of the year (except July). Maximum recorded count was 4 at Upton Country Park on 25th January 2021. No reports of breeding were received but it is likely the bird bred at Upton Country Park and possibly elsewhere.


Coal Tit © Nick Woods


Great Tit © Martin Adams

Blue Tit *(Cyanistes caeruleus)*
Widespread and common as a breeding bird.
Recorded in most months of the year. Probably bred in Upton Country Park as birds were seen visiting a probable nest site. Maximum count was 8 made on 26th February 2021 and 31st December 2021.

Great Tit *(Parus major)*
Probably widespread and common as a breeding bird around the recording area.
Regularly recorded in Upton Country Park with a maximum count of 11 birds on 24th January 2021 in Upton Country Park. Probably bred in Upton Country Park and possibly elsewhere in the recording area though no breeding records were received.

Bearded Tit *(Panurus biarmicus)*
A very scarce autumn or winter visitor to the more extensive reedbeds – often only one or two birds and not recorded in every year.

An increase in records over 2020, with 1-4 birds recorded on four dates in October, November and December 2021. All the records were from the reed beds in Holes Bay with three from Upton Country Park and one from the Cobbs Quay area.

Skylark *(Alauda arvensis)*
Rarely if ever reported from the recording area though a possible migrant.

A single record of one bird flying over Holes Bay on 10th October 2021.

Sand Martin *(Riparia riparia)*
The scarcest of the three hirundines (Swallows and Martins) which are regular summer visitors, though a few are usually seen over Holes Bay on migration.

Only four records received – 10 at Upton Country Park on 19th August 2021, 5+ on 2nd September 2021, 2 on 15th September 2021 and 30 plus over the reeds at Symes Road on 16th September 2021. Maybe under-recorded.

Swallow *(Hirundo rustica)*
A few pairs often breeds on buildings at Upton Country Park with flocks seen feeding over Holes Bay and the fields of Upton Park Farm.

Regularly recorded from 1st April to 13th September 2021, usually in small numbers (10 or fewer birds) though a flock of c 100 birds (probably on migration) were recorded at Upton Country Park on 22nd September 2021. The previous breeding site in the car park toilets at Upton Country Park was again not accessible and there were no records of birds breeding in the tearooms courtyard. However, an occupied nest with at least two young was present in the 'ice-house/turret' in the north-east corner of the Park's walled garden on 9th June 2021. In fact, it is thought that birds bred in both this and the other 'ice-house/turret' in the walled garden, though this may have been a second or third brood of the same pair.

House Martin *(Delichon urbicum)*
Regular on migration with flocks often assembling in autumn, sometimes resting on prominent buildings such as Upton House.

Recorded on 10 dates from 28th April 2021 to 2nd September 2021. Only two records of 10 or more birds (12+ on 6th August 2021 and c 10 on 19th August 2021). There were no reports of the

large migrating flocks which sometimes feed near, or rest on Upton House, though the bird maybe under-recorded.

Cetti's Warbler *(Cettia cetti)*
The sudden, indignant song of this inconspicuous resident warbler has been heard regularly along the shoreline since 2017 when a pair is first thought to have bred at Upton Country Park.

Possibly for the first time, this bird was recorded in every month of the year, with records of 1-3 birds. Most records from Upton Country Park or from the vicinity of the PC World drain, often of singing birds. In the Country Park birds were regularly heard singing from the Grove Pond and the boardwalk along the shoreline, with one singing bird also heard in dry scrub in the SANG near the Roper's Lane footpath. Although breeding was not confirmed it may well have occurred both in the Country Park and at the PC World drain.


Cetti's Warbler (left) © Martin Adams and Swallow (right) © Rene Goad

Long-tailed Tit *(Aegithalos caudatus)*
Probably a widespread breeding bird, the noisy flocks formed in the winter and roving around woodlands and gardens are more conspicuous.

Recorded in most months (usually 1-10 birds) with the largest flock 11 birds at Upton Country Park on 18th October 2021. Probably bred at Upton Country Park (nest reported on 13th March 2021) and possibly elsewhere in the recording area.

Willow Warbler *(Phylloscopus trochilus)*
Once thought to be a regularly breeding bird at Upton Country Park, the Willow Warbler has declined as a breeding birds and is now usually seen on spring or autumn migration, although the attractive song can sometimes be heard in spring and occasionally in autumn.

Four spring records from Upton Country Park and the PC World drain of 1-2 birds from 29th March 2021 to 20th April 2021 These included birds singing in widely separated locations in the Country Park, though these birds soon seemed to move on. Six autumn records (each of 1-2 birds) from 16th August 2021 to 12th September 2021, again most records from the Country Park or PC World channel (Fleets Channel).

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Chiffchaff *(Phylloscopus collybita)*
In recent years, far commoner than the similar Willow Warbler; difficult to see but the simple 'chiff-chaff' song can be heard from woodland and scrub. A common passage migrant and also found as a winter visitor.

Recorded in all months of the year. Wintering records were mainly from the PC World channel including 20 on 17th January, 10 on 27th January 2021 and 10 on 5th March 2021. Singing birds found widely around Upton Country Park suggesting a number of pairs bred; at least 6 singing birds were present there on 27th March 2021.

Siberian Chiffchaff *(Phylloscopus collybita tristis)*
The Siberian Chiffchaff is usually regarded as a different subspecies to the bird commonly found in Britain; difficult to distinguish on plumage it has a distinctive call and is regarded as a scarce autumn migrant and increasing winter visitor in Dorset.

Single birds reported on 12 dates from 6th January 2021 to 13th February 2021 (with two birds on 29th January 2021) Most of the records were from the PC World (Fleets Channel).


Chiffchaff © Rene Goad


Siberian Chiffchaff © Nick Woods

Sedge Warbler ***(Acrocephalus schoenobaenus)***
Usually reported as a migrant passing through, though sometimes singing in one place for a few days – much less frequent than the Reed Warbler.

A good series of records of single birds (often singing) on 6 dates from 23th April 2021 to 12th May 2021. Most of the records were from the PC World drain (Fleets Channel), including a bird present on 5th, 6th and 7th May 2021. One from Upton Country Park (a singing bird near the observation point on 28th April 2021).

Reed Warbler *(Acrocephalus scirpaceus)*
The song of this summer migrant is regularly heard from reed beds around the Bay and in wet habitats such as the Grove pond and duck pond at Upton Country Park.

Regularly recorded in low numbers (often less than 10 birds) from 15th April 2021 to 15th August 2021. Singing birds were recorded at the following locations in Upton Country Park: the Grove Lake, the boardwalk, duck pond, stone bench and observation point with c 20 singing birds found around Holes Bay as a whole on 6th May 2021. Two juveniles were being fed by an adult at the reed clump in front of the stone bench on 3rd August 2021.

Grasshopper Warbler *(Locustella naevia)*
A migrant only very rarely reported from the recording area.

One record – a bird reported from the PC World drain on 17th August 2021.

Blackcap *(Sylvia atricapilla)*
Mainly a summer migrant, with a few birds sometimes being found in winter, the clear, tuneful song is widely heard from woodland and scrub.

Regularly recorded from 27th March 2021 to 8th September 2021, with singing birds widespread in woodland and scrub areas at Upton Country Park and at the PC World channel (Fleets channel). It is thought a number of pairs bred, with recently fledged young being seen at the PC World channel on 20th July 2021 and 10th August 2021.

Garden Warbler *(Sylvia borin)*
Much scarcer than the similar sounding Blackcap, the Garden Warbler may occur occasionally on passage but tends not be breed in the recording area.

Single birds at the PC World channel (Fleets channel) on 18th and 27th April 2021 and 5th May 2021 in the spring. In the autumn single birds on 24th August and 4th September 2021, both at Upton Country Park. All were presumed to be migrants.

Lesser Whitethroat *(Sylvia curruca)*
Rarely reported as a migrant – not known to breed in the recording area.

One record of a singing bird at the PC World drain on 18th April 2021.

Whitethroat *(Sylvia communis)*
Much more frequent than the Lesser Whitethroat on passage recorded most years, with birds sometimes singing and possibly breeding.

Seventeen records (usually of single birds) from 21st April 2021 to 12th September 2021 from various locations (including Upton Country Park, the PC World channel and other sites around Holes Bay, probably mainly reflect migrant birds. However, a pair with a young bird on 29th June and a male feeding a young bird on 2nd July 2021 suggest at least one pair may have bred in scrub along the Holes Bay Road.


Blackcap © Nick Woods


Whitethroat © Nick Woods

Dartford Warbler *(Sylvia undata)*
Only very rarely reported from the recording area, possibly as birds dispersing after breeding. Breeds widely on local heathlands

One record of a bird calling from the salt marsh in front of the site of the bird hide and then seen near the bird screen on 14th October 2021.

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Firecrest *(Regulus ignicapilla)*
Previously a scarce winter visitor to areas such as Upton Country Park, the Fircrest has greatly increased as a breeding bird in recent years, with singing birds heard in a number of locations. Wintering birds are widely found in woodland and garden areas with good cover.

Small numbers (up to 2) recorded on 29 dates in January-June 2021 with records of single birds on 22nd September 2021 and 14th October 2021. At Upton Country Park singing birds were recorded near Upton House, in the winter garden area, near the Grove Pond and (several times) on the path from Allen's Lane to the Grove Pond – suggesting several pairs may have bred. Also recorded from the PC World channel (Fleets channel) and the site of the old power station. It is not clear if the relative lack of records in the autumn and winter (in 2020 the bird was recorded in all months of the year) reflects a genuine lack of birds.


Goldcrest © Nick Woods


Firecrest © Nick Woods

Goldcrest *(Regulus regulus)*
A common breeding bird in woodland and gardens, still far outnumbering the Firecrest, which has recently increased as a breeding bird.

Recorded in most months from Upton Country Park and, occasionally the PC World drain (Fleets channel), maximum count 4 at the PC World drain (Fleets channel) on 27th January 2021. Birds regularly heard singing and a possible juvenile at Upton Country Park on 6th May 2021 suggest the bird may have bred. Probably under-recorded.

Wren *(Troglodytes troglodytes)*
Widespread and common in woodland, scrub and gardens as a breeding bird, occupying even small areas of suitable habitat.

Under recorded but probably widely present around the recording area. A bird was seen carrying food or a faecal sac at Upton Country Park on 19th April 2021, confirming nesting of what is probably a widespread breeding species.

Nuthatch *(Sitta europaea)*
Widely distributed as a breeding bird in woodland and gardens, one of the noisiest and most conspicuous woodland birds.

Recorded in most months of the year and widespread in woodland and gardens at Upton Country Park and possibly suitable habitat elsewhere around the Bay. An occupied nest (with

calling young) was found on the shoreline, fledged young were seen near the old bird hide and near Upton House on 21st May 2021, suggesting at least three pairs had bred within this part of Upton Country Park. Maximum count 6 in Upton Country Park on 8th January 2021.

Nuthatch © Mark Wright

Treecreeper *(Certhia familiaris)*
Much quieter and far less conspicuous than the Nuthatch, the Treecreeper is widely distributed in woodland, usually seen creeping up the trunks of the larger trees.

Recorded in January-March and October-December 2021– usually as single birds; most records from Upton Country Park, precise locations were not usually given but records were made from the Grove (near the pond) and from trees/ hedge across the east field.

Starling *(Sturnus vulgaris)*
Most obvious for the passage or winter flocks, often seen feeding on grassland or perched on pylons and electricity transmission lines, e.g. on the Hamworthy side of Holes Bay. Starlings are may also breed in trees or buildings.

Recorded in all months of the year, except July. Fledged young were reported on at least one occasion suggesting local breeding may have occurred. Counts of 50 or more included: 100+ on 15th and 20th August 2021, 113 on pylon cables in Hamworthy on 7th October 2021, 128 on powerlines near the SANG car park on 6th November 2021 and 200+ on 12th November 2021. Probably under-recorded.

Blackbird *(Turdus merula)*
A common breeding bird and prominent singer, the Blackbird is also a migrant and winter visitor though these are difficult to distinguish from the residents, often seems more abundant in winter.

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Recorded in most months of the year, mainly from Upton Country Park and the PC World channel. Several pairs probably bred with fledged young seen in Upton Country Park and at the PC World drain. Largest count was 10 on 12th February 2021 at Upton Country Park.

Fieldfare *(Turdus pilaris)*
Mainly a winter visitor with some birds also passing through, numbers may increase with flocks of over 100 birds being seen in really cold weather.

Surprisingly only three known records: 1+ with c 100 Redwing in trees near Upton House on 26th February 2021, 1 on 12th March 2021 in Upton Country Park and 5 with Redwing in Holes Bay south on 5th December 2021.

Redwing *(Turdus iliacus)*
Like the Fieldfare a winter visitor also seen on passage, often more abundant than the Fieldfare with birds present in woodland areas for much of winter and large flocks numbering several hundred in severe weather.

Recorded from 8th January to 12th March 2021 (maximum c 150 on 10th February 2021) and from 12th October 2021 to the end of the year (maximum 71 on 30th December 2021); frequently present at Upton Country Park during these periods.

Song Thrush *(Turdus philomelos)*
A widespread breeding species with its repetitive song of clear phrases heard from gardens and woodland.

Regularly present at Upton Country Park and probably other parts of the recording area as well, including singing birds. A bird was seen carrying food at the winter garden in Upton Country Park on 17th April 2021, indicating breeding in that area; also likely to have bred in other areas.

Mistle Thrush *(Turdus viscivorus)*
A widespread species, perhaps more comfortable away from cover than the Song Thrush it is often seen in the fields of Upton Park Farm.

Recorded in small numbers (1-3 birds) from Upton Country Park in most months of the year including singing birds. At the Park, birds were seen carrying nest material in Kennel Mead on 8th April 2021 and carrying food on the front field on 11th may 2021; it is likely that two or more pairs bred.

Spotted Flycatcher *(Muscicapa striata)*
A declining summer visitor in Dorset, the Spotted Flycatcher is now a characteristic autumn migrant often seen in scrub around the farm fields at Upton Country Park where individuals will make fly-catching sorties and usually return to the same perch.

Recorded on 6 dates from 24th August 2021 to 22nd September 2021, usually 1-3 birds with a maximum of 4 on 24th August 2021. Birds were most frequently recorded in the east field of Upton Country Park (the field behind the stone bench) or at the PC World channel.

Robin *(Erithacus rubecula)*
Widespread and common as a breeding bird and, where fed, happy to approach people; migrant birds probably increase numbers in winter.

Recorded for most of the year and with a number of pairs probably breeding but only one report of confirmed breeding (fledged young seen on 28th June 2021). Numbers probably higher in winter with a maximum count of 17 at Upton Country Park on 21st January 2021. Five adult birds close together in the east field of Upton Country Park on 24th August 2021 were thought to be migrants.

Redstart *(Phoenicurus phoenicurus)*
A scarce passage migrant around Holes Bay.

One record: a male at the PC World channel on 8th September 2021.

Stonechat *(Saxicola rubicola)*
A common breeding bird on nearby heaths but seen in the recording area mainly in autumn/spring and winter – when birds may occasionally be found on the shoreline or in the fields at Upton Country Park.

First winter period three records of single birds (12th and 27th February and 6th March 2021). Autumn/Winter recorded on 5 dates from 18th October 2021 to 17th November 2021; with 1-2 birds (including male and female birds). Most records from near the shoreline observation point and the adjacent areas of half-moon field.

Stonechat male and female © Nick Woods

Wheatear *(Oenanthe oenanthe)*
An uncommon passage migrant, sometimes seen in areas such as Upton Country Park and along the Holes Bay Road.

In spring, 2 on 29th March 2021 (half-moon field, Upton Country Park) and a single bird on 23rd April 2021. In autumn 2 on 26th August 2021 and single birds on 7th, 8th and 10th September 2021. Most records thought to be along the Holes Bay Road.

House Sparrow *(Passer domesticus)*
A once abundant bird that is known to have declined in many areas, probably still breeds in residential areas around Holes Bay and small flocks may be seen on the fringes of Upton Country Park.

Recorded on only 16 dates through the year - though maybe under-recorded. Noted on the edge of Upton Country Park around Symes Road and on the Hamworthy shoreline, maximum count 41+ in south-east Holes Bay on 9th February 2021.

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Dunnock *(Prunella modularis)*
A widespread breeding resident.
One or two birds recorded in most months of the year, most records from Upton Country Park or the PC World channel. Probably a common breeding bird, though no evidence of breeding was reported.

Grey Wagtail *(Motacilla cinerea)*
Usually a passage migrant or winter visitor, with one or two birds seen along the shoreline or on streams and ditches.


Grey Wagtail © Mark Wright

Small numbers (1-2) recorded on 39 dates in January-April and September-December 2021. Recorded from around Holes Bay and also wet areas within the fields at Upton Country Park.

Pied Wagtail *(Motacilla alba)*
A few pairs may breed and small parties are found on passage in winter, often in farm fields. Characteristic 'chis-ick' call often heard from birds flying over.

Recorded in most months of the year, usually in small numbers (10 or less). Juveniles were seen on a number of occasions, including birds near ASDA and at the Twin Sails Bridge suggesting local breeding. A bird was seen carrying nest material to the roof of the tearooms at Upton Country Park where it is believed a pair nested. Larger numbers were recorded in winter, maximum 12 in 13-acre field on 10th October 2021, the fields of Upton Country Park often holding a few birds.

Meadow Pipit *(Anthus pratensis)*
Seen on passage or in winter with occasional birds or small flocks seen, usually in grasslands or in farm fields.

Recorded in small numbers (usually 1-3 birds) on 19 dates in January-March and September-December, with maxima of 48 on 7th January 2021 and 20 on 25th January 2021 . Birds often on the open grassland of the farm fields or recently opened SANG areas at Upton Country Park; occasionally reported along the Holes Bay cycleway or on the school playing fields in Hamworthy.

Water Pipit *(Anthus spinoletta)*
A scarce passage migrant or winter visitor with very few records.

One record – a single bird in south-west section of Holes Bay on 11th December 2021.

Rock Pipit *(Anthus petrosus)*
Usually seen in winter along the shoreline, the rock used for coastal protection along the Holes Bay Road helping to provide suitable habitat.

Recorded on 22 dates in January-February and October-December (usually 1-3 birds). Records mainly from around Holes Bay – often along the Holes Bay Road. A count of 14 was made in the south-west part of Holes Bay on 11th December 2021.

Chaffinch *(Fringilla coelebs)*
A widespread and common breeding species with small flocks sometimes found at Upton Country Park.

Present all year but no confirmed records of birds breeding; largest count was of 6 birds at Upton Country Park on 8th January 2021; probably under-recorded.

Bullfinch *(Pyrrhula pyrrhula)*
Despite the colourful plumage of the male, the Bullfinch can be surprisingly inconspicuous and is probably under-recorded (helped by its weak song); may be seen all around the area and probably breeds.

One to two birds recorded in January-May and November-December with singing birds in Upton Country Park in the SANG near the Roper's Lane Footpath and behind the stone bench, so may well have bred.

Greenfinch *(Chloris chloris)*
A resident bird often breeding in loose colonies e.g. in the scrubby areas of Upton Country Park recently taken over from the adjacent farm.

Recorded in small numbers in most months of the year in Upton Country Park, maximum 10 on 13th March 2021. Singing birds were seen on the edge of the SANG close to the footpath from Roper's Lane, near the bird screen suggesting breeding in those locations and a small colony was also reported by the road bridge over the railway.

Linnet *(Linaria cannabina)*
Singing birds have been found along the edge of some of the fields of Upton Park Farm possibly indicating breeding. In winter flocks of 100 or more have also been recorded – possibly taking advantage of seeds from farming operations or weeds as areas have been taken out of agricultural production.

Recorded in January-May and August – maximum count 16 on 13th February 2021and on 29th March 2021. Most of the records were from the fields (lambs leas and half-moon) recently

incorporated into the SANG. Singing birds were also recorded on a couple of occasions where this area borders the shoreline.

Linnet © Nick Woods

Lesser Redpoll © Martin Adams

Lesser Redpoll *(Acanthis cabaret)*
Once thought of as an 'occasional winter visitor', now reported vary rarely.

Another good series of records from Upton Country Park: 5 on 6th January 2021, 2 near the stone bench on 7th January 2021, present (probably at the same location) on 22nd January 2021 and 1 at the stone bench on 23rd January 2021 and 2 on 25th January 2021.

Goldfinch *(Carduelis carduelis)*
Probably breeds locally and flocks occur in autumn and winter.

Recorded in most months of the year with birds singing along the old hedge between lambs leas and half-moon fields in the SANG and fledged young seen near Roper's Lane (in the SANG), suggesting possible breeding in Upton Country Park. Flocks present in winter and autumn months, maximum 30 on 9th and 27th August 2021.

Siskin *(Spinus spinus)*
Small flocks occasional in winter in Upton Country Park, often feeding on the Alders planted at Upton Country Park.

In Upton Country Park, six records of 1-4 birds in January-February and November-December 2021; most records from alders near the bird screen, along the east edge of the east field and in the car park (all in Upton Country Park).

Reed Bunting *(Emberiza schoeniclus)*
Although the male is strikingly marked, its song is easily overlooked but several pairs probably breed in the reed beds along the shoreline.

Records of 1-2 birds on 19 dates in January-June, October and December 2021. Singing birds reported from at least two locations in the shoreline reed beds at Upton Country Park, suggesting that one or more pairs may have bred there. A single bird was recorded feeding on food put down by visitors near the site of the old bird hide on 21st April 2021.

PEREGRINES AT HOLES BAY – HISTORY, PREY SELECTION AND FUTURE PROSPECTS

Martin Adams

2021 was a monumental year for Peregrines in Poole, with a pair successfully breeding on Barclays House and fledging three young.

© Martin Adams

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© Peter Twamley

Sadly one of the young died in the first week after flying into a window, but the other 2 thrived. Both juveniles were seen regularly until mid August before dispersing, with the adult pair remaining for the rest of the year.

© Karyn Cuglietta

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Although urban breeding Peregrines are a relatively recent phenomenon, Peregrines had previously bred in Poole on the now demolished Power Station in Holes Bay SW in the 1980's *(1)*

Peregrines naturally nest in scrapes on the ledges of cliffs or rocky outcrops, or less commonly (certainly in Britain) in old Crow or Raven nests in tall trees.

© Mark Wright

Tall modern buildings like Barclays House are not that dissimilar to these more traditional sites however, and Peregrines around the world have increasingly colonised urban areas since the 1980's.

There has been an extraordinary expansion of the Peregrine's range and population in England especially, with over a quarter of the breeding population now in urban areas. *(2)*

© René Goad

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There are now Peregrine pairs in over 50 British towns and cities, *(3)* with as many as 30 breeding pairs in London alone, on sites including Battersea Power Station and the Houses of Parliament. *(4)*

Locally, Peregrines first nested on the Lansdowne Clock Tower in Bournemouth in 2009 and on the New Milton Water Tower in 2017. These locations are significant as our female is from the latter, and our male is (most likely) from the former.

© Martin Adams

The female has a orange colour ring marked 20, showing that she was ringed as a juvenile in New Milton in 2018.

'20' (hiding back left) as a chick © Keith Betton

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The male has a metal BTO ring, but last year's resident male (who bonded with the same female) had a blue colour ring marked HF.

'HF' as a chick © Jason Fathers

He was ringed as a chick in Bournemouth in 2017 and it is possible that the colour ring has just been lost. It is hard to prove however, and only photo of the ring clear enough for a very partial reading shows a 6, which is at least consistent with HF's ring number (GR67960)

© Peter Twamley

In February 2020 a pair of Peregrines were seen investigating a Raven's nest on Pergin's Island by Jason Fathers of Wildlife Windows. They showed more consistent interest in Barclays House and Harbour Sail, a currently unoccupied residential tower block next to Asda in Poole (henceforth referred as 'Asda,' as has become customary amongst Poole Peregrine watchers!)

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Barclays House (left) and Harbour Sail AKA 'Asda' (right) viewed from Holes Bay

Peregrines have long been associated with the Asda building, built in 2004, as noted in last year's report. A video was taken of a Peregrine feeding on a Pigeon on a balcony from inside the building in 2009, but remains had been seen on the building since not long after it opened. *(5)*

© Jason Lees

This follows a well established pattern of urbanisation where a Peregrine (often a male) will occasionally visit a town, usually in winter at first, then become more regular and numerous, often favouring a particular perch, until joined by a female. *(6)*

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Harbour Sail (A.K.A. Asda)

The initial wintering records on Asda were of a female who would leave by February, possibly a local cliff breeding bird taking advantage of the warmth and food supply on offer in town, which explains why it has taken so long for breeding to occur. (7)

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'HF' March 2020 © Karyn Cuglietta

A male has often been seen on 'his' balcony on the North side of Asda for the last couple of years however. The female appeared in late 2019/early 2020, finding her spot on the East side.

Often they would call to each other from these perches, but they would also interact more directly: displaying to each other and flying together.

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The pair did attempt to breed on Barclays building but were unsuccessful as there wasn't the right substrate for them to make a scrape in and so the eggs almost certainly got wet and cold. *(8)* The advantage that cliff ledges have over buildings is that they have soil, stones and plant material into which Peregrines will scrape a shallow depression to contain the eggs.

Barclays House

Although this attempt to breed was unsuccessful, we have seen with the Osprey here in Poole Harbour the importance of pair bonding and site investigation in non-breeding birds. The pair - or a pair - were again present early in 2021 and were again frequently interacting. As mentioned above, although it was initially assumed that they were the same pair, on 24th February it was noted that the male was not colour ringed.

In February 2021 a nest tray with suitable gravel inside was put up on the top balcony of Barclays House. This was achieved through a partnership between Birds of Poole Harbour, Wildlife Windows, Dorset Police and Barclays. Although the Asda building was also considered as a potential breeding site, a tray wasn't put out as remedial work was due to be carried out on it. *(9)*

© Martin Adams

By 2021 the female was in her 3rd year and the male (if he is HF) in his fourth. 2-3 and 3-4 are usual first breeding ages for female and male Peregrines respectively. They need this time to become proficient

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enough at hunting in order to feed not just themselves but up to 5 young (although clutch sizes of 3-4 are more normal). The male needs the extra time as he will do the larger share of the hunting. *(10)*

There was one record of 3 Peregrines in Poole on 13th March. 'Satellite birds' - non-breeding individuals waiting for their chance - are common. Indeed, close study revealed that 10-11 different individual Peregrine were present at different times on Worcester Cathedral in 2013 *(11)*

The pair were increasingly seen together on Barclays House during March, and on the 21st the Male was seen delivering food to the female on Barclays. As with many species, this 'gift giving' is an important part of the pair bonding process. More than this however, the female needs to take on weight for the stressful incubation period, so at some point this symbolic gesture becomes a practical strategy.

© Martin Adams

The pair were photographed copulating on Asda on 29th and 31st March. They were however less frequently seen on Barclays at this point, instead favouring Asda again, and obviously not on eggs. It did seem as if the mating attempt might have failed.

Fortunately, on 22nd April it was confirmed that they had laid 3 eggs on Barclays House, although a changeover witnessed a few days earlier suggested they were already on eggs then. The female will do the majority of the incubation, as she is larger and therefore better equipped to keep the eggs warm. The male will however give her a break for about 30% of the daylight hours, often after delivering food. *(12)*

Several changeovers were seen over the next few weeks, with sightings on Asda a lot rarer and usually only of the male. On 9th May, the female was seen 'scolding' the male until he left to hunt. On 14th of May it was confirmed from within Barclays that all 3 eggs had hatched.

May was unusually wet and windy, and the male was often seen hunkered down on the Asda building, leading to fears that the adults would be unable to adequately provide for the young (known as eyases)

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There is a correlation between poor weather in May and nest failure*. (13)* Younger and less experienced parents also have a lower success rate *(14)* so the odds were not in their favour.

© Martin Adams

On the 24th of May, both adults were seen back on the Asda building, and therefore off the nest. Although concerning to novice Peregrine watchers, this is common at this stage as the eyases get big enough to keep themselves warm after 10 days. *(15)*

The female was again seen on Asda on the 25th, and frequently after this, with the male seen watching over the balcony from the top of Barclays on this date. He very aggressively chased off a Great Black-backed Gull that got too close to the nest from this perch, feinting as if to attack the larger bird several times.

Over the breeding season, the male was also seen chasing off Herring Gulls, Carrion Crows and Ravens that got too close to either Barclays or Asda later when the young were present.

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The male seemed to favour the top of Barclays, above the nest site, while the female was either seen on the nest balcony or with the male on the top of Barclays. The male was also seen a few times on a crane opposite Barclays.

© Martin Adams

The female can actively prevent the male from getting too close to the young, although there is considerable variation in this behaviour. *(16)* This behaviour was not observed, but interestingly on 2 occasions the male was seen to land on the balcony with prey (Starling on both occasions) when the female was not there, then fly off rather than provision the young himself! *(17)*

The male then flew to Asda, which seemed to serve as a food preparation and storage area. The adults were frequently seen taking prey to Asda, plucking it (and often removing heads and wings - see prey section below) before caching it or delivering it to the young.

On 31st of May a juvenile was spotted from outside Barclays for the first time, and on 4th June one was photographed for the first time. It was obvious on the 6th that there were at least 2 chicks, and all 3 were first seen on the 10th.

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© Martin Adams

From the 6th, wing flapping was observed, with the plumage already looking darker than that of the first bird observed just a week before, as the eyases' grew rapidly into their full juvenile plumage. On June 6th it was also announced publicly that the Peregrines had bred.

© René Goad

On the 9th, a Peregrine 'nearly had an early flying lesson,' after it slipped while perched on an aerial. From the 10th, calling was very evident as the juveniles could be heard begging the adults for food, and the juveniles became more active on the balcony itself, with all 3 often present and calling attention to themselves. There was some mild jostling for position, with the bigger female obviously dominant.

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Generally, siblings don't show much aggression towards each other - unsurprising for such well armed birds. *(18)*

© Clare Slade

The juveniles weren't always so activite however: on June 13th, a hot day, one of the Juveniles spent several hours 'corpsing' in the hot sun. This is common in birds of prey, but it certainly gave the impression of an ex-Peregrine until it eventually moved!

© Martin Adams

This mild aggression wasn't just between the siblings however: on the 19th one of the juveniles seemed to take a nip at the female after a food delivery, causing her to retreat to the lower balcony.

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© Tanya Hart

Early on the 14th of June, a mid-air changeover was observed as the male passed prey to the female right in front of the balcony, which she then landed on. This awesome display of precision flying was not even the highlight of the day however; later that morning, a juvenile was recorded flying for the first time. The Peregrines were starting to fledge!

This is a dangerous time for young Peregrines, especially in urban environments. (19)

© Paul Morton

Later that day, one became grounded at the bottom of Barclays House. At this stage, taking off from a high balcony and flying down is easier than taking off from the ground and flying up, especially after the exertion of the first flight. Paul Morton of Birds of Poole Harbour was called to rescue the fledgling and return it to the nest. He was also able to confirm that the juveniles were 2 males and a female.

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© René Goad

On the 16th, on a foggy morning, all 3 juveniles and both adults were visible on Barclays. Five Peregrine Falcons in the centre of Poole!

Sadly, on the 19th one of the males died after flying into the glass balcony of a building adjacent to Barclays. At this very early stage inexperienced birds simply don't have the flying skills to know how to maneuver and use their tails to stop.

© Martin Adams

Flights were frequently observed from the remaining fledglings, usually quick sallies out and back to the nest balcony, or onto one of the lower balconies, the top of Barclays, or the shopping centre opposite. The juveniles often faced harassment from Gulls or Magpies on these perches.

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© Martin Adams

June's drama wasn't over. On the 21st local birder René Goad spotted another juvenile trapped behind a glass balcony on a nearby building. Paul Morton once again rescued it after it became apparent it couldn't work its own way out.

© René Goad

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© Paul Morton

On the 24th, a juvenile was seen on Asda for the first time, and on the 25th both were there. By the end of June, the whole family were favouring Asda, with only the female occasionally seen in the nest ledge of Barclays.

Again the juveniles were often heard begging loudly, often nagging the parents until they flew off to provide for them, and were seen flying strongly. At this stage, the adults will still have to provide for the fledglings as they learn to hunt from themselves.

© René Goad

An example of how the parents can actively teach the young to hunt was seen on the 29th. The male flew out from Asda and went low over Holes Bay, before soaring up against a flight of Pigeons and taking one unawares.

It then flew back with its prey, and affected another mid-air changeover with the female. After this bit of precision flying, she then dropped the pigeon over Hunger Hill. This was not clumsiness however: there was also a juvenile in the air. Although not witnessed directly, the adult had almost certainly caught and released the prey for the juvenile to hunt, a much-observed behaviour. *(20)*

1st July a juvenile was seen on a pylon in Holes Bay South West, the first sighting of one away from the territory (although still within sight of it.) After being harassed by crows, it flew back towards Asda.

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© Martin Adams

On the 4th and 6th a juvenile was seen unsuccessfully going for a gull (although it is possible this practice hunting - juveniles will be seen making passes at other birds, the parents, each other, and even chasing leaves to hone their skills.)

The 5th was the last time both juveniles were seen together at the same time for a while (although on the 8th it wasn't clear if there were 1 or 2.) However, there were more frequent sightings on Barclays after this, often of one adult and a juvenile, and on 14th a juvenile was caught by the camera on the Osprey platform in Holes Bay NW.

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© Paul Morton/Birds of Poole Harbour

It seems that all 4 were still in the area, but were spread out more. On 22nd July 3 Peregrines were spotted in Holes Bay SW, and finally on the 28th both juveniles were back together again on Asda.

© Martin Adams

A juvenile was described as 'leisurely' chasing a Herring Gull around Barclays 14th and 'ineffectively' swooping at a Pigeon around Asda on 21st. On the 8th of August a juvenile failed to take another Pigeon over Asda, and still looked far less expert than the adults when hunting.

A successful hunt was not witnessed, but even most hunts by adults are unsuccessful. Of course, we only witnessed a very small part of their behaviour, but "woefully inadequate" was one eminent Peregrine watchers description of juvenile's hunting attempts. *(21)*

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© Martin Adams

The adult male was seen with blood on his breast, and struggling to regurgitate a pellet on 26th July. He also didn't move from the balcony all day. While worrying, the marks were identified as splatter from prey, and outside of the breeding season birds that are 'fed up' (ie have eaten all they need) will often not move all day.

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On 13th August 2 juveniles were seen interacting over Brownsea Island, but even though this is close to the breeding territory (Asda and Barclays are visible form the North shore) we have no way of knowing that these were 'our' birds

On the 14th both juveniles were seen again on Asda. There were a few more sightings of individual juveniles, the last on the 19th August. After this the juveniles weren't seen again in Poole. This is the time that they normally disperse, although they are sometimes witnessed returning to the natal area. *(22)*

There were sightings of juvenile Peregrines in Poole Harbour, including on Brownsea Island and Lytchett Bay, after this, but at this stage juveniles from other nests will also be dispersing. As the Poole Juveniles are unringed we will never know what became of them.

Life is tough for Peregrines, especially inexperienced juveniles, in the winter months. Many don't make it if they can't catch enough food during the short, cold, often unsettled days. Indeed, only 60% of juveniles make it through their first year. *(23)*

This, of course, is why a pair needs to produce 3-4 young a year, and the British population is, as noted, increasing away from persecution hotspots.

© Paul Watts

The adults meanwhile continued to be a regular sight on Asda and Barclays (seemingly favouring the former, although visits were also biased to this location.)

In September and October, the adults were often heard calling to each other and flying together. This is normal, even for established birds, although there were questions as to whether they are the same pair.

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They also seemed to favour the South side of Asda more, compared to before the breeding season when the male had his spot on the North.

© Mark Wright

The female was still identifiable from her colour ring, and it was eventually established that the male had a BTO ring. She is a very distinctive bird (with a lot of white behind her moustacial stripe) but he did look possibly different. Plumage variations are quite subtle however, and of course they had both gone through a moult through the summer, so he may or may not have been the same male that bred with her (who may or may not be 'HF!')

Major remedial work on the Asda building had to be carried out from the end of October. With scaffolding going up, and lots of noise and workmen the Peregrines were only seen on Asda 'out of hours', when work was not being carried out. On many nights at least one bird was seen roosting on one of the balconies.

© Martin Adams

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As November rolled on, they became accustomed to the work on 'their' building, and were increasingly seen on the upper levels while work was being carried out - sometimes quite loudly. After all, they have become used to a certain level of disturbance in a site surrounded by busy roads and a supermarket.

© René Goad

In December the male was often seen roosting overnight on 'The Discs' on the west side of Asda, occasionally joined by the female, who was also noted on Barclays. Sightings at this point were not as spectacular or exciting as in the breeding season: most sightings just noted the presence of the bird, but seeing a Peregrine can never quite become mere routine.

This is the extraordinary thing about urban Peregrines - the fact that we can witness a bird not too long ago seen as a rare and declining inhabitant of inaccessible wild places thriving in the last places anyone would think to go to enjoy nature. They bring something wild and untamed to increasingly nature-depleted urban areas, and nature deprived urban populations.

PREY SELECTION

© Peter Twamley

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Peregrines feed primarily, but not quite exclusively, on live birds caught on the wing. They have a deserved reputation for feeding on pigeons. Both Domestic and Feral Pigeons are descended from the Rock Dove, which naturally inhabits the cliffs that are the Peregrine's natural habitat. (Interestingly, the slightly larger Wood Pigeons seem to be less frequently taken, although we had one record this year.) *(24)*

A recent study of the Urban Peregrine prey in Southwest England *(25)* found that Feral Pigeons represent nearly 42% of prey items, providing over 60% of biomass.

© Peter Twamley

Pigeons therefore represent a significant part of the diet, but are clearly far from the whole story. In fact, Peregrines have been recorded as taking over 2000 bird species worldwide (*26)* & 137 species in Britain alone *(27)* British birds ranging in size from Goldcrest to Great Black backed Gull and even Greylag Geese have been taken.

This year in Poole we have had 65 records from 19 species.

Just as it was a first-time breeding for the birds, it was also the first time studying them for local observers. The news that they had bred in April, and the public announcement of their breeding success in June inevitably brought more focus on them, and this in turn led to greater understanding of their habits and more records.

Prey records were therefore sparser at the start of the year. A Dunlin head in February was the first, and feathers from Feral Pigeon, Grey Plover, and Woodcock were found in March, with Cuckoo feathers in May.

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Dunlin February © Martin Adams

feathers L-R Cuckoo, Woodcock, Whimbrel, Grey Plover, Redshank. © Tanya Hart

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Cuckoo and Woodcock feathers © Tanya Hart

Woodcock and Cuckoo are not birds usually associated with the centre of Poole, and they are most likely to have been taken flying over at night on migration. This is a common tactic with urban Peregrines. Birds migrate at night, partly to avoid predators, and they are attracted to the lights of urban areas. Woodcock have frequently been recorded on passage over Poole *(28)* Unfortunately for them, their counter shaded plumage shows up well when lit from below by these street lights.

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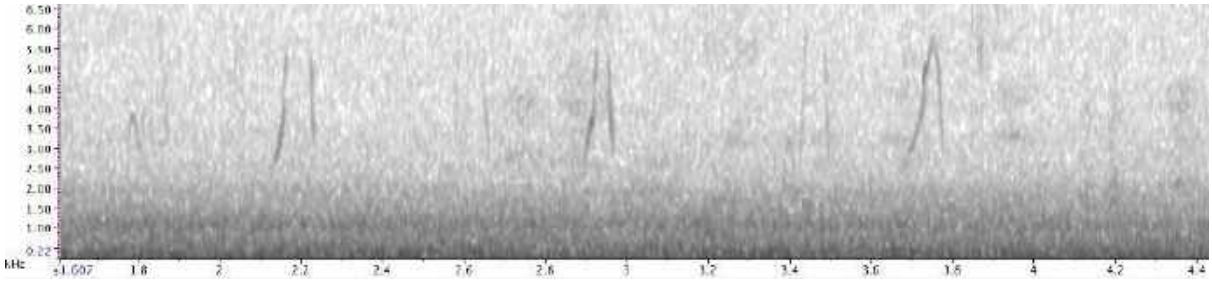

Sonogram of Woodcock recorded over Poole Town March 2016 © Paul Morton

One study in Taiwan where Peregrines nest on the tower of a well lit bridge found that they did nearly 80% of their hunting at night. *(29)* On the night of May 16th there was a tantalisingly Peregrine-like silhouette caught in the clouds above a street light like a bomber in a searchlight. It was however too distorted for a positive ID.

Redshank Leg. April © Martin Adams

A Redshank leg in April and Black Godwit leg in May showed the waders were still on the menu, but the prey seen being carried to the nest in the breeding season was almost exclusively Starlings and Pigeons, with one record House Martin.

© Martin Adams

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© Clare Slade

8 Starling and 9 Pigeons were recorded as prey between May and July (prey couldn't always be identified in the flash of delivery.) A disproportionate number of the Starlings were juveniles (the exact number wasn't recorded) as these young inexperienced birds provide easier pickings.

© Peter Twamley

A break in this pattern was 2 Herring Gull and 1 Avocet wings found on Holes Bay South cyclepath between May 24th and 30th, less than 1km from nest. Removing the wings before transporting larger kills is

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common behaviour in Peregrines, as it reduces weight and drag. The neatness of the cut was also characteristic of a Peregrine kill.

Avocet Wing (May) © Martin Adams

At this stage, the female was seen away from the nest more, and she was seen flying from Barclays in the direction of Holes Bay S on May 25th. Even without this evidence, these larger birds would possibly be more likely to have been her kills than the male's.

Peregrines will also return to kills of larger birds, *(30)* although given the numbers of generalised scavengers like gulls and crows, not to mention foxes, it seems this would unlikely to be a successful strategy in an urban site like Holes Bay. The fact that all 3 wings found in this period had been torn apart by scavengers by the next day would seem to bear this out.

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Herring Gulls are a relatively infrequent prey species for Peregrines. As well as being too large to comfortably carry, they are alert and social birds with a powerful beak, and thus well equipped to anticipate a Peregrine attack and defend themselves from it.

Herring Gull wing. May. © Martin Adams

There was also one record of Whimbrel feathers from June/July. This is one of numerous examples of birds not seen on the patch by human eye in that month (Avocet in May, Lapwing in July etc) or at all (Woodcock, Cuckoo) being taken.

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Of course, Peregrines can travel many miles to hunt, and it is possible that they took Lapwing from Lytchett Fields or the Terns from Brownsea Island. They are also better bird watchers than we are though: as well as having better eyesight and a far superior viewpoint, they put more time and effort in than even the most dedicated birder: For them it is literally a matter of life and death.

Starling Head. June. © Martin Adams

Pigeon head. June. © Martin Adams

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As the Peregrines started to frequent Asda again, more detritus from kills was found at the base of the building. Inevitably with 4 mouths to feed there were more kills, and with 4 noisy birds there was more focus on them. The base of this building is also a public footpath, whereas the car park in front of the nest ledge on Barclays is not publicly accessible

This change in location coincided with a change in prey. Pigeons were still found, and there was one House Sparrow, but Waders, Gulls and Terns became more predominant, giving the Poole Peregrines' menu a distinctly local flavour.

Remains from 2 Common Terns and 2 Sandwich Terns were found in July and August. Poole Harbour has nationally important breeding colonies of both on Brownsea Island.

Common Tern head. July. © Martin Adams

Sandwich Tern Head. July. © Martin Adams

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There was a late summer peak of Black-headed Gulls with 11 records in July and August, again showing a bias towards juveniles. Poole Harbour is home to important breeding colonies of these birds on Brownsea and in Wareham Channel, and these records co-incideded with their post-breeding dispersal. (There is also a record of Mediterranean Gull from 2020)

Juvenile Black-headed Gull head. July. © Martin Adams

Juvenile Peregrine with juvenile Black-headed Gull © René Goad

After that, waders dominated with 15 individuals from 7 species found between July and December. Black-tailed Godwit, Lapwing, Dunlin, Redshank, Knot, Woodcock and Avocet remains were all found or seen. Waders of course have to be highly mobile to follow the tides. The Peregrine's roost at the South of Holes Bay is ideally situated to intercept their movements between the Bay and the rest of the harbour (which is probably not a coincidence!)

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Redshank head. July © Martin Adams

Knot. December. © Martin Adams

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Pigeon was still on the menu with 5 from August onwards, including one record of a White 'dove,' a Pigeon that is likely to be a escaped captive bred bird with less experience of surviving in the wild. In addition, Trevelen observed that Peregrines seemed more likely to target Pigeons with more white in their plumage.

© Martin Adams

© Martin Adams

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Unfortunately the remedial work on Asda in the autumn meant that the base of the building was no longer publicly accessible, but the high winds occasionally brought remains clear of the building site. The Woodcock in December was also conveniently left on the balcony with the diagnostic head pattern and bill clearly visible.

Woodcock, December © René Goad

Teal remains were found in September and December, the only duck species taken by birds once known as "duck hawks" in some places. It seems this was an undeserved name: Teal is the only British duck species of the 'Goldilocks' size: big enough to provide a decent meal but light enough to carry. (31)

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Drake Teal head, December © Martin Adams

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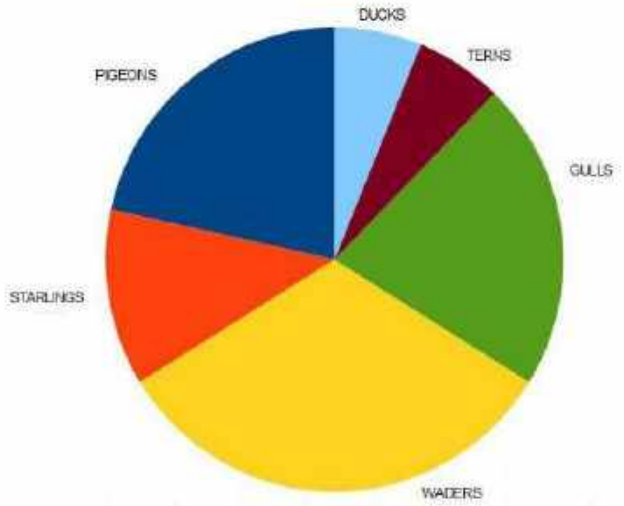

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	*Totals*
Pigeons			1			7	2	1		1	1	1	**14**
Starlings					1	7							**8**
Waders		1	2	1	2		8	3			1	3	**21**
Gulls					2		7	4				1	**14**
Terns							1	3					**4**
Ducks								2	1				**3**
Totals	**0**	**1**	**3**	**1**	**5**	**14**	**18**	**13**	**1**	**1**	**2**	**5**	
Other: 1 record each of Cuckoo, House Sparrow, House Martin													

Breakdown of prey selection. Data collated by Ed Drewitt, data visualisation by Richard Adams.

SUMMARY, AND A LOOK TO THE FUTURE

© René Goad

2021 has been an extraordinary year, and hopefully 2022 will be able to match it. Once a pair has successfully bred together, the experience of raising young and of each other's habits is invaluable, and a

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breeding pair will stay together until death does them part. Unfortunately with a life expectancy of around 7 years, death is sadly never far away. *(32)*

Even if one or both birds don't make it through the winter, the birds as a species are extraordinarily faithful to suitable nest sites. Some sites are known to have been occupied for as long as records began, with one study finding that 85% of eyries mentioned in Falconry literature from the 16th to 19th century onwards were still in use in the 20th century. (33)

Even with the unnatural attrition rates on grouse moors, where birds of prey have been - and continue to be - persecuted, the rate of reoccupation is extraordinary.
There are many examples, when this persecution was more openly recorded, of Peregrines being slaughtered at the nest site every year and then the nest site being reoccupied the next year for up to 18 years in a row. (34)

© René Goad

Hopefully this year's breeding success will be repeated, and will become a regular phenomenon. Barclays are committed to keeping the nest box in place and with the adult pair still on territory at the end of the year there is every chance of a repeat performance!

With this year's experience behind us we should be in an even better position to witness and document their behaviour. Hopefully the publicity from this year's breeding success will bring even more interest and even more sightings, and next year's report will be able to add to the story of these incredible birds.

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© Martin Adams

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© Martin Adams

Thanks to Paul Morton, Jason Fathers and Ed Drewitt.

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20. Treleaven (1977) As a sidebar, there was no sign of the Pigeon on Hunger Hill where it was dropped. It is possible therefore that it survived being handled by two Peregrines and chased by another one!
21. Treleaven, who also said "one cannot over-emphasise the difficulty the young find in catching Pigeons, and how vastly superior the more experienced adults are."
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23.https://app.bto.org/birdfacts/results/bob3200.htm
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31. Baker & Treleaven both record Wigeon as common winter prey. The fact that we don't have any records of them being taken despite counts of 2000+ suggests again that leaving birds in situ isn't a viable strategy.
32.https://app.bto.org/birdfacts/results/bob33 00.htm
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In addition to threats from gamekeepers, Peregrines have suffered from having their eggs taken by collectors, and their eyases taken by falconers. There are still cases, although seemingly less than in the past. There have however been cases of poisoning in urban Peregrines more recently, usually associated with Pigeon fanciers.

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NOTABLE FUNGI AT UPTON COUNTRY PARK
Jack Menzies (Apprentice Estate Worker)

Introduction

In this report I will highlight the abundance, variety and differing types of fungi that can be found growing at Upton Country Park. I have tried to make the information in this report accessible with a wide range of pictures along with information about each species found. Therefore, I have kept the types of fungi to three main categories: Bracket & Shelf fungi, Jelly fungi as well as Mushroom & Toadstools. This I feel will help individuals with little or no prior knowledge understand the variety of species out there. I have also included the common names as well as Latin so that interested individuals can research further.

The data set was initially started in March of 2021 and has been continually added to throughout the year, with more examples still being found. The purpose behind the records was originally for my personal development; a way to build my knowledge and understanding of fungi. An unexpected side effect was that the data collected could be used to mark the prevalence, and variety of species growing throughout Upton.

As there was no set survey area it means that the results gathered are estate wide, taking into account all the various habitats that the estate has to offer whether that be natural or man-made. Due to this, the report will highlight areas in which certain species can be found, the habitat they were growing in and the identification of each species along with some general knowledge to help educate the reader.

Regarding methods used to gain confirmation of each species found I used a variety of identification methods such as: my personal field guides – Collins Fungi Guide: *The most complete field guide to the mushrooms & Toadstools of Britain and Ireland,* All The Rain Promises and More…: *A Hip Pocket Guide To Western Mushrooms*, mobile phone apps, the internet and foraging forums. I have tried to be as certain as possible with each identification by cross referencing, however I am aware that as this was an initial exercise to build my own knowledge, some corrections may be required.

Acknowledgements

Some of the fungi in this report have been found by other individuals who access the site. In this case I have listed under the description the individual who found it. We have also had support with the identification of certain species from Bryan Edwards of the Dorset Environmental Records Centre (DERC). His support is gratefully acknowledged in confirming the identifications of Coral Tooth Fungus, Tiered Tooth Fungus and Parasitic Bolete.

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Species

In this section of the report, I will list the various species found within the estate, and where they can be found. I will list the location of each fungi in a table at the end of the report.

For the most part when people think of fungi, the first thing that comes to mind is a mushroom or toadstool. However, fungi are much more diverse with millions of species existing worldwide. Therefore, it is important to have some basic knowledge to help you understand what you are looking at and why fungi are so important. If we take the example of a simple stereotypical mushroom like a button or field mushroom – something you could buy in a supermarket. When these are growing in the wild what you are seeing is the reproductive structure often referred to as the 'fruiting body'. Most of these stereotypical mushrooms have a cap with a set of gills underneath. These gills contain millions of microscopic particles known as spores, which are released into the environment via the gills and fruiting body. These spores (the 'seeds' of the fungi) then hopefully land in suitable conditions, allowing for the fungus to spread. However only a small percentage will find suitable conditions to be able to grow and reproduce.

It is a common misconception that mushrooms (and fungi) are a type of plant, which they are not. Plants produce their own food through photosynthesis, whereas fungi must find their food from an outside source – just like an animal does. The fine web that allows it to do so is called Mycelium. Mycelium can live anywhere from a few days up to several hundred years. It will periodically, when the conditions are right (often when there is enough moisture present), produce mushrooms allowing it to release spores and hopefully spread.

Mushrooms or to be more accurate, the fungi that produce them are a vital part of our ecosystem. They act as a natural recycler, breaking down plant matter and turning it into usable nutrients. Due to this they play a crucial role within our forest where they live on the roots of the trees in a symbiotic relationship. They do this by exchanging nutrients with trees. Often fungi will prefer certain species of tree or certain wood types that they will grow upon. There are however a few parasitic fungi presented in the report below, which will use the tree as a host in turn slowly killing it. Species such as: *Fomitopsis betulina*, *Laetiporus sulphureus and Pseudoboletus parasiticus.* However for the most part most fungi are harmless to the plant or tree that they coexist with.

Bracket & Shelf Fungi

Bracket fungi are the fruiting bodies of fungi that live within dead or living trees. They can be identified by their bracket shaped fruiting bodies. There are many types found throughout the estate.

Artist's Bracket (*Ganodrema applanataum)* – The example in the picture was growing on an old oak in the Shoreline Woods. These however can be found growing in various locations throughout the site. I was lucky enough to find this example before and after it released its spores which can also be seen in the pictures provided. As a species they are extremely tough and grow on living and dead wood. As a fungus they are so dense that you can carve into their underside, in turn using them as a canvas.

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Birch Polypore

(*Fomitopsis betulina*) – The example in the picture provided was found growing in Grove Wood. They are an extremely common sight in grove woods and will often be found growing near the top of birch trees. They will mainly grow on dead Birch trees, however will grow on weak living examples, making them unfortunately parasitic in nature. When collected and dried they can be used to carry embers over large distances.

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Chicken Of The Woods (*Laetiporus sulphureus*) – This fungi is highly prized among foragers, as it is reported to be edible, although this is still not advised as it can be slightly toxic to some people. This example was found in Grove Woods growing on a dead tree that had fallen. It can be found in two locations on the site.

White Cheese Polypore (*Tyromyces chioneus*) – This example found growing on the edge of the orchards, it was growing on what I believed to be a dead standing Elm tree. It is the only one I have seen on site

A bracket fungus species (*Ganoderma resinaceum*) – The example pictured was found growing within Lodge Woods however they can be found in multiple places across the site. Identification to species level proved difficult though this fungus appeared very like the Artist's Conk These fungi are unusual, as unlike other mushrooms, the pores on their underside are so tightly packed together that they can (and have) been used by artists as a canvas, hence their name. Overall, they are a long-lived fungi that if left undisturbed can live for decades. A rare species though it was recorded at Upton in 2001.

Giant Polypore (*Meripilus giganteus*) – This example was found growing in an out of bounds area of the estate, and from memory is the only area in which I have found it growing. At the time of

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fruiting, it was growing upon a large tree stump. Another common name for this fungus is Black-Stainer. It gets this name as the flesh of the fruiting body will turn black if bruised. They are sometimes mistaken as an oyster mushroom when young. It also gets its name Giant Polypore as it can grow to a considerable size: this example was at least 60cm across and covered the whole stump.

Bleeding Oak Crust (*Stereum gausapatum*) – This example was found growing on a windblown oak in the shoreline woods. Most leaf fungi will grow on dead wood/leaf matter. They often grow flat and spread out along surfaces as opposed to other fungus that have larger fruiting bodies.

Coral Tooth Fungus *(Hericium coralloides)* **–** This example was found growing on a dead beech tree in the shoreline woods. A rare species that was recorded at Upton Country Park in 1980 and has also been found on Brownsea Island. Hericium are a protected species due to their rarity and are covered by section 41 of the 2006 Natural Environment and Rural Communities Act to ensure its protection. Such species should not be picked or collected.

Tiered Tooth Fungus *(Hericium cirrhatum)*

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Amazingly this fungus was found growing on the same dead beech as Coral Tooth Fungus (two rare fungi – one on either side of the same tree trunk!). Its more usual habitat is the New Forest with only around four records from Dorset.

Blushing Bracket (*Daedaleopsis confragosa)*

This example was found growing near the shoreline woods. This fungus mainly grows on dead or dying willow trees. It is one of the few fungi that will bloom in winter. It gets its name due to the fact they can turn red/pink, giving them the name 'blushing'.

Hairy Curtain Crust (*Stereum hirsutum)*

Found growing on a large dead oak in the shoreline woods, it gets its scientific and common name for its most obvious features. Firstly it is quite tough (Stereum) and when young it is quite hairy (hirsutum). As a fungus it prefers growing on dead oak. It is also known by its other common name 'False Turkey Tail' as it looks like another fungus called 'Turkey Tail'. This fungus was found by Nick Woods.

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Smokey Bracket (*Bjerkandera adusta*)

This example was found growing on a tree stump near the play area. It was mainly covered by leaf litter so it was not easy to find. It is a reasonably common species of bracket fungi. Smokey Bracket will fruit most of the year.

Beech Woodwart *(Hypoxylon fragiforme)*

This very unusual fungus was found growing in the Prickles, which is a woodland near the shoreline. This was a strange looking fungus growing in large ‘herds’. Their spores are so small they measure around 11-15 microns.

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Jelly Fungus

Jelly fungi are different to ‘traditional looking’ fungi that people would be more familiar with. Jelly fungi are interesting in that their structure looks more like a jelly or a gelatinous mass.

Witches Butter (*Tremella mesenterica*)

This example was found growing on a rotting tree branch near the pet cemetery. It is reported to be edible but does require to be steamed first. It has taste, however it can be used to thicken soups. It is nearly always found on the rotting wood of hardwood trees. Although this example is yellow its colour can vary from pale yellow to very bright vibrant yellow.

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Poor Man’s Liquorice/ Black Bulgar (*Bulgaria inquinas*)

The example in the picture was found growing upon an oak located on the back lawn of the house; its crown had been blown out in the wind. This jelly fungus is commonly found growing on dead oak. It is very toxic and some people can have an allergic reaction from ingestion, direct contact or even airborne contact.

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Jelly Ear (*Auricularia auricula-judae)*

This example was found growing upon a living Holly tree. It is a common sight throughout England. Jelly Ear is found fruiting all year round.

Crystal Brain (*Myxarium nucleatum)*

This example was found growing in a large rotting tree near Grove Lake. It is a very common woodland fungus and plays a big role in breaking down plant matter. If inspected closely you can see a granular structure within giving it its other common name of ‘Granular Jelly Roll’.

Mushrooms & Toadstools

These are the fresh spore-filled fruiting body of the mycelium living beneath the ground. They vary in size, shape and colour.

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Common Stinkhorn (*Phallus impudicus*)

This example was found at the base of a Sweet Chestnut, located on the edge of the play park. It is a very common mushroom, easily identifiable by their smell which is meant to smell like rotting dung. They are amazing in the fact that they can grow as fast as up to 1 foot a day in perfect conditions. This is the only example I have found on site.

Dead Man's Fingers (*Xylaria Polymorpha*)

This example was found growing on a rotting tree stump in Lodge woods. It gets its name from the fact that the fruiting body looks like a dead man's fingers coming out of the ground. There are a few examples of this in lodge wood, however only growing in isolated patches.

Scarlet Elf-Cup (*Sarcoscypha austriaca*)

This example was found growing in the hazel coppice of the estate. This fungus is often one of the first mushrooms seen and will often bloom in early Spring, which is why this is one of the first mushrooms I recorded at the estate. What was unusual about this example is that there were only a few in the local area. Normally this fungus produces large colonies.

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Common Bonnet (*Mycena galericulata*)

This example was found growing along the rhododendron tunnel of the estate. Although an extremely common mushroom found throughout most of Britain,they are quite small and delicate, with the lovely alternative common name of, ‘Rosy-gill Fairy Helmet’.

Yellow Stainer (*Agaricus xanthodermus*)

This example was found growing along the rhododendron tunnel of the estate. It belongs to the family of field mushroom which foragers often wish to pick; however this example is poisonous and easily mistaken. A clear tell is that the flesh of the fruiting body when bruised will turn a yellowish colour giving them their common name.

Sulphur Tufts (*Hypholoma fasciclare*) / **Conifer Tufts** (*Hypholoma capnoides*)

These examples were found growing along the rhododendron tunnel of the estate; however they have been found in multiple locations across the site. All the locations they have been found in have been upon decaying wood.

They are known as a tufting species due to the fact the fruiting body presents itself in a close clump/tuft like manner.

There are various species of *Hypholoma*, a key difference in identifying the subspecies is by knowing what wood it is growing on. Sulphur tufts prefer hardwood whereas Conifer Tufts prefer softwood. I would be confident in suggesting that within my results I have various subspecies. All of the Sulphur, Conifer or Brick tufts are extremely toxic if ingested and have been reported to cause temporary paralysis, distorted vision and stomach pains.

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False Chanterelle (*Hygrophoropsis aurantiaca*)

This example was found growing in the event space on the estate. This area is purposely covered in wood chips. When I found these funguses, they were very abundant, covering nearly the whole space. The common name given to this fungi refers to its close resemblance to the edible Chanterelle. However, this example is not edible, and a clear tell is by their gill structure which in this case extends to far down the stem.

Weeping Widow (*Lacrymaria lacrymabunda*)

This was found growing on the side of a pathway leading to a private area of the estate. It is the only example of this mushroom I have seen. It gets its common name from the black droplets that appear around the edge of the water cap when moist.

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Shaggy Ink Cap (*Coprinus comatus*)

This example grows in a few places across the estate, some of which are inaccessible to the public. It is a common mushroom throughout England and is sought after by foragers. It is technically edible when fresh. As it gets old and decays it produces a black ink-like substance making them inedible. It has a variety of common names; however, I personally believe ‘Lawyers Wig’ to be the best.

Smooth Parasol *(Leucogaricus leucothites*)

This example was found growing next to a public pathway on one of the SANGS. They often grow in fields and open patches in scattered numbers, and resemble other more poisonous mushrooms, so should be handled with care.

Fragrant Funnel (*Clitocybe fragrans*)

I found this example of what I believe to be a Fragrant Funnel growing near the pet cemetery. There were large quantities of this mushroom type growing here.

Olive Shaggy Parasol (*Chlorophyllum olivieri*)

This example was found growing on a patch of land between the back lawn of the house and the walled garden, in a very shady wet area. When found they were growing in a high abundance, however this is the only area of the estate I have seen them. Like most parasol mushrooms it gets its name from its distinct ‘parasol style’ shape.

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Trooping Funnel (*Infundibulicybe geotropa*)

This example was found growing on the front lawn of the house however it can be found in many places across the estate.

They get the name Trooping Funnels for a few reasons. Firstly their shape, as suggested they have a funnel like appearance. Secondly because of the way they grow. When the fruiting body appears from the ground, they appear in large circles known as 'fairly circles' which can be several metres across. They also hold the common name of 'Monks Head'.

Oyster Mushrooms (*Pleurotus ostreatus*)

Below are two examples of Oyster mushrooms I have found on the estate. The brown variety pictured below were found growing on a dead tree stump next to the tearoom. The other was on a dead Scots Pine located near the play area. Oyster mushrooms are very common and often cultivated for supermarkets, with a wide variety for sale. It is suggested you do your research if foraging as often other more deadly mushrooms can mimic these in early growth.

Brown Birch Bolete (*Leccinum scabrum*)

This example was found growing in Grove Wood, underneath a birch tree. It gets its name from the fact it has a brown top and grows underneath birch trees. They are interesting because they only grow underneath birch where the mycelium lives on the roots in a symbiotic relationship.

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Laughing Gym (*Gymnopilus junonius*)

This example was found growing on a tree stump in Prickle & Ponds, which is a woodland on the estate. This mushroom has many common names such as Rust-Gill or Giant Gymnopilus, its scientific name is most interesting. The Latin *Gymnopilus junonius* means ‘Naked Cap Sacred To Juno’.

Parasitic Bolete *(Pseudoboletus parasiticus)*

This uncommon fungus actually lives on another fungus (the Common Earthball, *Scleroderma citrinum*). It may be truly parasitic, growing at the expense of its host or the relationship may be symbiotic, without any damage being caused. This is a widespread but uncommon species. It was spotted and photographed by Martin Adams in September 2021, near Grove Pond and the identification confirmed by Sean Foote.

(photo courtesy of Martin Adams)

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Common Inkcap (*Coprinopsis atramentaria)*

Found growing on the edge of Grove woods. These common mushrooms are often found growing in leaf litter, solitary or in small groups. Like all inkcaps they are sought after by foragers but are only edible when young. It is advised not to drink alcohol before eating these, as if combined with alcohol it can cause illness and stomach upset.

Candlesnuff (*Xylaria hypoxylon)*

This example was found growing near Grove Lake.

It is a very common woodland fungus which has a very unusual shape. It grows what looks like antlers as opposed to a traditional mushroom shape. For this reason, it is also known as ‘Carbon Antlers’ or ‘Stag Horns Fungus’.

Common Laccaria *(Laccaria Laccata)*

This mushroom was found growing in very large quantities in the main car park, next to a hedgerow. It gets its name from the many different colours the caps can turn.

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Species and Locations

Below is a list of the fungus in this report with a rough location as to where on the estate they are prevalent. The map used is in keeping with the rest of the report, so can easily be cross referenced.

It is important to note that some of these locations are private, and should not be accessed by members of the public.

Species	Location
Ganoderma applanataum	Duck Pond / Back Lawn
Fomitopsis betulina	The Grove / Grove woodland
Laetiporus sulphureus	The Grove
Tyromyces chioneus	Play area (Orchard)
Ganoderma resinaceum	Jacks Wood
Meripilus giganteus	Upton House
Stereum gausapatum	Shoreline Woods
Hericium coralloides / Hericium cirrhatum	North-east Shoreline
Daedaleopsis confragosa	Stone Bench
Stereum hirsutum	Shoreline Woods (Windblown oak)
Bjerkandera adusta	Play area
Hypoxylon fragiforme	Bascombe's Pond
Tremella mesenterica	Walled Garden (Pet cemetery)
Bulgaria Inquinas	Duck Pond (back lawn, snapped out oak tree)
Auricularia auricula-judae	Shoreline Woods
Myxarium nucleatum	Grove Pond
Phallus impudicus	Play areas
Xylaria polymorpha	Jack's Woods
Sarcoscypha austriaca	Bird hide
Mycena galericulata	Car Park

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Agaricus xanthodermus	Car Park
Hypholoma fasciclare / Hypholoma capnoides	Car Park
Hygrophoropsis aurantiaca	Walled Garden (activity area)
Lacrymaria lacrymabunda	Upton Park Farm
Coprinus comatus	Upton Park Farm / Walled Garden
Leucogaricus leucothites	Llewellin Woods
Clitocybe fragrans	Walled Garden (pet cemetery)
Chlorophyllum olivieri	Walled Garden (pet cemetery)
Infundibulicybe geotropa	Upton House / Bascombe's Pond
Pleurotus ostreatus	Play area / Walled Garden (Tea rooms)
Leccinum scabrum	Grove Pond
Gymnopilus junonius	Upton House / Bascombe's Pond
Pseudoboletus parasiticus	The Grove
Coprinopsis atramentaria	The Grove
Xylaria hypoxylon	The Grove
Laccaria laccata	Car Park

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VASCULAR PLANTS OF HOLES BAY BETWEEN THE EASTERN GATE OF UPTON COUNTRY PARK AND STERTE, APRIL – JUNE 2021.

Stephen F. Smith

The A350 road along the eastern side of Holes Bay and the cycleway alongside it were constructed in the mid-1980s on what had been tidal saltmarsh. After a decade or so, the rough ground beside these roads, as well as the rock armour along the tidal shore, had developed a surprisingly rich flora, and this has been surveyed several times: the two studies that I am aware of were carried out by Bryan Edwards in 2000 and Robin Walls in 2015. Despite some apprehension at 'standing on the shoulders of giants', I have done my best to identify the vascular plant species present in summer 2021, omitting trees and grasses.

The flora has recently been enhanced in two ways: first, by the construction of the new cycle and footbridge across the Creekmoor Channel, which has allowed an untrampled area to develop where some unusual species have flourished, notably Kidney Vetch, Common Knapweed and Greater Knapweed. Secondly, the large area 01 opposite the end of Sterte Avenue West [see photo left] was left un-mown this summer, and this has led to the appearance of a really impressive flora which included Pyramidal Orchid in profusion [200 plants], and Common Broomrape [100 plants].

Such a rich flora must have supported an interesting variety of invertebrates. The butterfly species noted were Green-veined White, Small White, Common Blue and Small Copper, and Small Blue has been found by others.

I am very grateful to the local authority for its new management and mowing policy, and hope that this will continue in the coming years.

Areas surveyed [see maps 1 and 2]

Starting at Sterte, the southernmost point, the following nine areas were surveyed:

Area 01: the large open area between SZ 0062 9166 and SZ 0081 9142, extending north-east as far as the A350 and closest to the pedestrian crossing

Area 02: 'the orchid site' between the motorway sign and SZ 0062 9166. Although this site may seem to be arbitrarily defined, it has been kept separate here because of the stand of Pyramidal Orchids found here in 2019.

Area 03: between the cycleway junction at SZ 0064 9201 and the motorway sign at SZ 0062 9173

Area 04: between the railway and the cycleway junction at SZ 0064 9201

Area 05: all open grassland between PC World Drain and the railway

Area 06: between SZ 0045 9282 and the PC World Drain

Area 07: between the two channels, SZ 0033 9287 to SZ 0045 9282

Area 08: between Creekmoor Channel and SZ 0033 9287

Area 09: the western side of Creekmoor Channel as far as the gate to Upton Country Park

Area D: derelict land along western side of Creekmoor Channel, between A350 and A35

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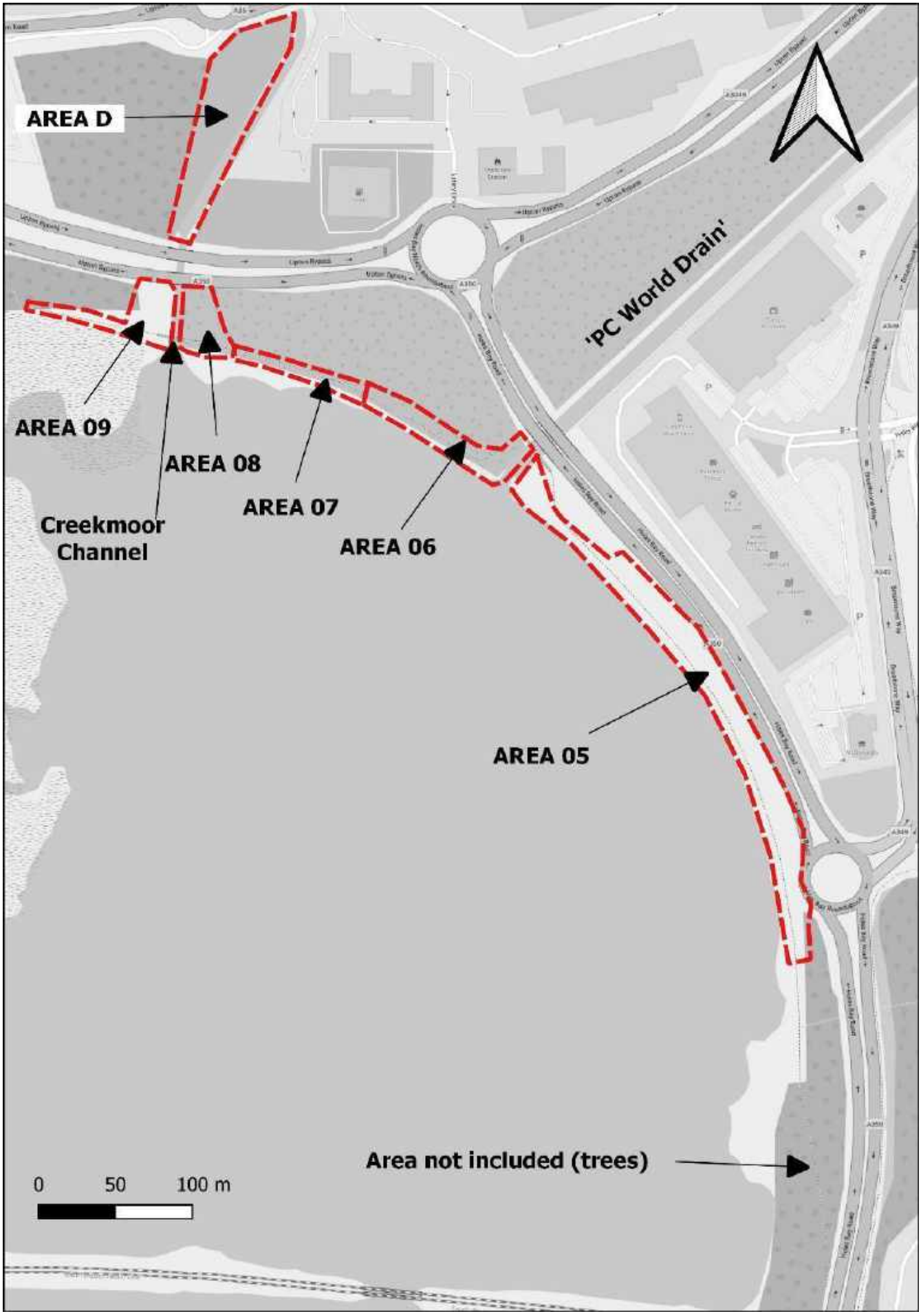

Map 1 – areas surveyed north of railway (Map data from OpenStreetMap © OpenStreetMap contributors)

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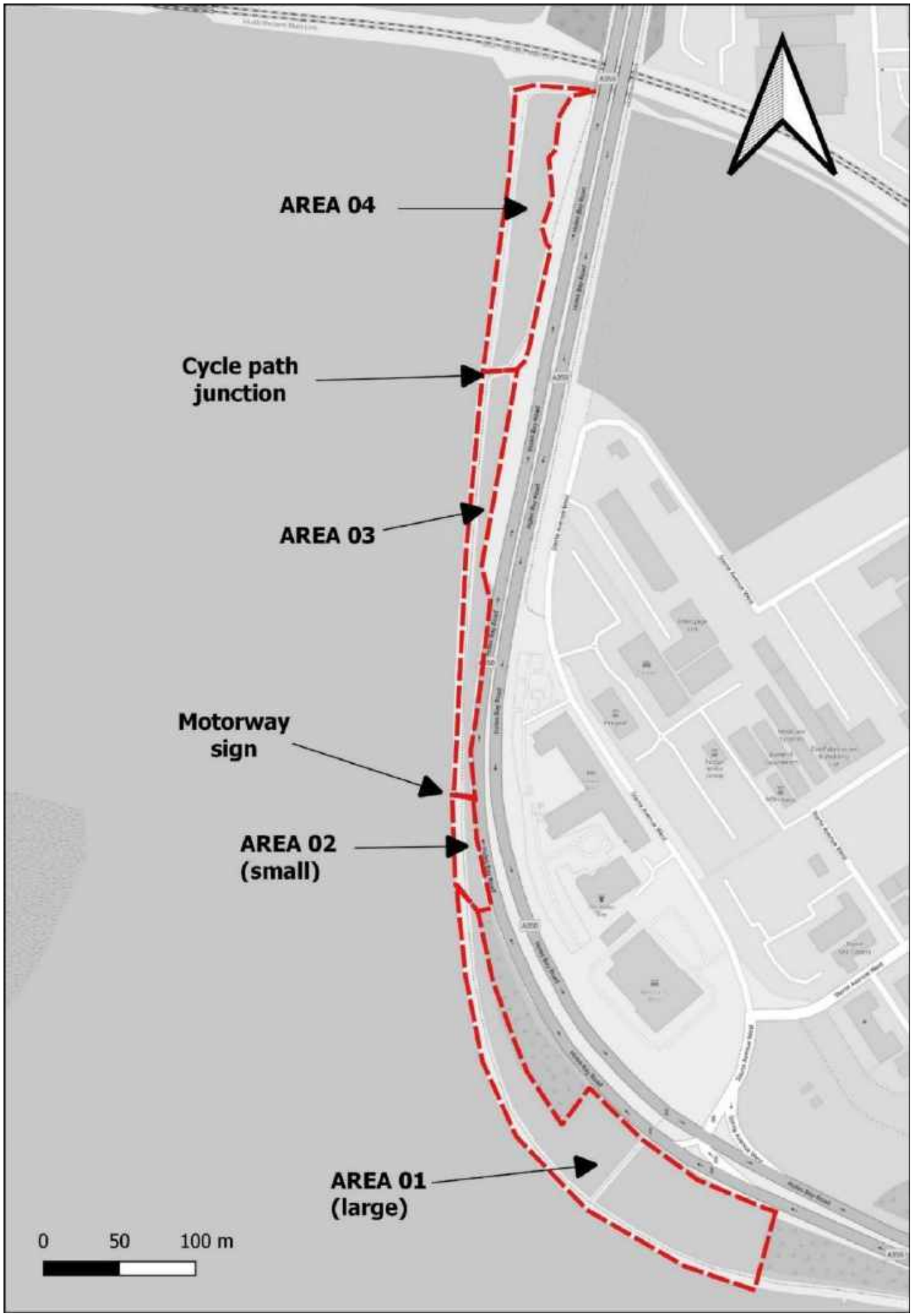

Map 2 – areas surveyed south of railway (Map data from OpenStreetMap © OpenStreetMap contributors)

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Notes on selected species [all photos taken in situ by the author]

Hairy Buttercup *Ranunculus sardous*
After several visits and consultation with Robin Walls, this species was finally identified in area D, with about 100 plants counted. It shares with Bulbous Buttercup the feature of reflexed sepals, but Hairy Buttercup is a smaller plant overall, with paler yellow petals and a palmate leaf shaped curiously like the footprint of an animal.

Greater Sea-spurrey *Spergularia media*
One plant of this species was found on the rock armour in area 05 [east of the PC World drain]. It was distinguished from Lesser Sea-spurrey by the larger flowers, which were over 10 mm across.

English Scurvy-grass ***Cochlearia anglica***

Previously identified here in 2015 by Robin Walls, this was found in good numbers between the Creekmoor Channel and the PC World Drain, with some more plants south of the railway.

Biting Stonecrop *Sedum acre*
Several large clumps were found on the rocks east and west of the PC World drain.

Hare's-foot Clover *Trefolium arvense*
Not identified in the two previous surveys but now featured on the signboard for the area, this large clover species was found in abundance in 2021 in the newly un-mown areas 01 and 02. The petals are pale pink but almost hidden by soft white hairs. Leaves are oval but narrower than in other clover species.

Kidney Vetch *Anthyllis vulneraria*
This species grows in numbers on both sides of the Creekmoor Channel and in the new area 01. It normally grows on calcareous soils, and its presence here indicates the chalk aggregate underlying the roadside. It is also the food plant for the Small Blue butterfly, which has been found by others beside the A350 and on the former power station site. .

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Buck's-horn Plantain *Plantago coronopus*
Named from the antler-shape of the leaves [see the lowest leaf in photo], two plants were found on the rocks west of the Creekmoor Channel and just north of the large 'motorway' sign.

Common Broomrape *Orobanche minor*
A new colonist of the now un-mown area 01, where about 100 plants were present. The Broomrapes are not easy to identify, and any comments about the species identification would be welcome.

Pyramidal Orchid *Anacamptis pyramidalis*
This species has been present since at least 2019, when 42 flower-heads were counted in the section of roadside closest to the Premier Lodge Hotel [area 02 – see photo]. By 2021 numbers had increased to 100 flower-heads in area 01.

Bee Orchid *Ophrys apifera*
16 plants between the PC World Drain and the railway provided a final flourish to an impressive range of species.

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Systematic list

This compares the findings of Bryan Edwards in 2000, Robin Walls in 2015 and myself in 2021.
Species in heavy type are noted in the 'species notes' above.

x = present - = not found by SFS in 2021

		2000 [BE]	2015[RMW]	2021 [SFS]
Meadow Buttercup	*Ranunculus acris*		x	present in area 04
Creeping Buttercup	*Ranunculus repens*	x	x	present in 09 and 06
Bulbous Buttercup	*Ranunculus bulbosus*			the dominant species in areas 02 and 01
Hairy Buttercup	*Ranunculus sardous*	x	x	about 100 plants in area D
Common Poppy	*Papaver rhoeas*	x	x	a few plants in areas 04 and 03
Common Ramping-fumitory	*Fumaria muralis*		x	-
Common Nettle	*Urtica dioica*	x	x	present beside Creekmoor Channel
Babington's Orache	*Atriplex glabriuscula*		x	identification uncertain
Common Orache	*Atriplex patula*	x		identification uncertain
Sea Purslane	*Atriplex potulacoides*	x		abundant in areas 03 and 01
Sea Beet	*Beta vulgaris*	x	x	on rock armour in area 02
Lesser Sea-Spurrey	*Spergularia marina*	x		-
Greater Sea-Spurrey	*Spergularia media*			one plant in area 05
Soapwort	*Saponaria officinalis*		x	-
White Campion	*Silene latifolia*		x	one plant in area 01, beside A350
Lesser Stitchwort	*Stellaria graminea*			present in 05
Common Mouse-ear	*Cerastium fontanum*		x	widespread, especially south of railway
Sticky Mouse-ear	*Cerastium glomeratum*		x	mainly in site 09 and 02
Thyme-leaved Sandwort	*Arenaria serpyllifolia*		x	-
Redshank	*Persicaria maculosa*	x		-
Knotgrass	*Polygonum aviculare*	x		-
Common Sorrel	*Rumex acetosa*	x	x	present
Sheep's Sorrel	*Rumex acetosella*			present in area 05
Curled Dock	*Rumex crispus*	x	x	numerous on rocks in area 03 and 09
Perforate St John's-wort	*Hypericum perforatum*	x	x	present in area D
Common Mallow	*Malva sylvestris*	x		-
Field Pansy	*Viola arvensis*	x		-
Hairy Bitter-cress	*Cardamine hirsuta*	x		-
Shepherd's-purse	*Capsella bursa-pastoris*	x		present
Lesser Swine-cress	*Coronopus didymus*	x		-
Black Mustard	*Brassica nigra*	x	x	-
Charlock	*Sinapis arvensis*		x	abundant
Hedge Mustard	*Sisymbrium officinale*			present in area 03
American Winter-cress	*Barbarea verna*		x	-
Weld	*Reseda luteola*	x		-
Wild Mignonette	*Reseda lutea*			numerous in area 01
White Mignonette	*Reseda alba*	x		-
English Scurvygrass	***Cochlearia anglica***		x	present on tideline in areas 07 and 03
Biting Stonecrop	***Sedum acre***		x	several large clumps in 06 and 05
Scarlet Pimpernel	*Anagallis arvensis*	x		a few plants in area 03
Dog Rose	*Rosa canina*			present in 09
Japanese Rose	*Rosa rugosa*		x	widespread [not native, invasive]
Bramble	*Rubus fruticosus*	x	x	dominant around edges of site
Creeping Cinquefoil	*Potentilla reptans*	x	x	scattered plants
Broom	*Cytisus scoparius*	x	x	present
Gorse	*Ulex europeus*	x	x	numerous around Creekmoor Channel

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Common Bird's-foot Trefoil	*Lotus corniculatus*	x	x	abundant throughout
Large Bird's-foot Trefoil	*Lotus pedunculatus*	x		widespread
Hairy Bird's-foot Trefoil	*Lotus subbiflorus*	x		-
Hop Trefoil	*Trifolium campestre*		x	-
Lesser Trefoil	*Trifolium dubium*		x	abundant throughout
Red Clover	*Trifolium pratense*		x	common throughout
White Clover	*Trifolium repens*		x	common throughout
Knotted Clover	*Trifolium striatum*		x	-
Subterranean Clover	*Trifolium subterraneum*		x	-
Hare's-foot Clover	*Trifolium arvense*			widespread in area 01
Common Vetch	*Vicia sativa*	x	x	abundant throughout
Tufted Vetch	*Vicia cracca*	x		fairly widespread
Grass Vetchling	*Lathyrus nissolia*		x	widespread
Meadow Vetchling	*Lathyrus pratensis*		x	-
Hairy Tare	*Vicia hirsuta*	x	x	present area D, widespread in 02 and 01
Smooth Tare	*Vicia tetrasperma*	x		-
Broad-leaved Everlasting-pea	*Lathyrus latifolius*		x	numerous in area 09
Ribbed Melilot	*Melilotus officinalis*	x	x	-
Tall Melilot	*Melilotus altissimus*	x		-
White Melilot	*Melilotus albus*	x		-
Spotted Medick	*Medicago arabica*	x	x	numerous south of railway
Black Medick	*Medicago lupulina*	x	x	found only in 09
Lucerne	*Medicago sativa*			common in areas 02 and 03
Kidney Vetch	*Anthyllis vulneraria*	x	x	fairly common in D, 09, 08, 04, 01
Large-flowered Evening-primrose	*O. glazoviana*	x	x	-
Annual Mercury	*Mercurialis annua*		x	-
Pale Flax	*Linum bienne*	x	x	plentiful in most areas
Cut-leaved Crane's-bill	*Geranium dissectum*	x	x	-
Dove's-foot Crane's-bill	*Geranium molle*	x	x	present in areas 09, 06 and 02
Round-leaved Crane's-bill	*G. rotundifolium*		x	present in areas D and 05
Herb-robert	*Geranium robertianum*		x	scattered plants in 06 and 05
Cow Parsley	*Anthriscus sylvestris*		x	present in areas 09 and 04
Corn Parsley	*Petroselinum siletum*		x	-
Hogweed	*Heracleum sphondylium*		x	-
Fennel	*Foeniculum vulgare*	x	x	common in area 04 and abundant in 01
Hemlock Water-dropwort	*Oenanthe crocata*		x	mainly in areas 04 and D
Wild Carrot	*Daucus carota*	x	x	odd plants in areas 09 and 02
Rock Samphire	*Crithmum maritimum*			several plants in area 03
Rough Chervil	*Chaerophyllum tenelum*		x	-
Wild Parsnip	*Pastinaca sativa*	x	x	one plant in area 05
Common Centaury	*Centaurium erythraea*	x	x	-
Bittersweet	*Solanum dulcamara*	x	x	found only in 09
Hedge Bindweed	*Calystegia sepium*		x	present
Field Forget-me-not	*Myosotis arvensis*		x	scattered plants in 09 and 05
Wood Forget-me-not	*Myosotis sylvatica*			one plant in 05
Early Forget-me-not	*Myosotis ramosissima*			one patch in area 04
Green Alkanet	*Pentaglottis sempervirens*		x	only in area 04
Viper's-bugloss	*Echium vulgare*	x		mainly found on central reservation on A350 [off-site] ; one plant in area 01
Hedge Woundwort	*Stachys sylvatica*	x		-
Marsh Woundwort	*Stachys palustris*			a few plants in area 05
Red Dead-nettle	*Lamium purpureum*	x	x	a few in area 09
Buck's-horn Plantain	*Plantago coronopus*		x	single plants on rocks in 09 and 03
Greater Plantain	*Plantago maior*	x		-
Ribwort Plantain	*Plantago lanceolata*	x	x	abundant
Sea Plantain	*Plantago maritima*	x		a few plants found in area 03
Purple Toadflax	*Linaria purpurea*	x		-
Foxglove	*Digitalis purpurea*	x		-

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Germander Speedwell	*Veronica chamaedrys*			widespread
Common Field Speedwell	*Veronica persica*	x		one plant in area 02
Thyme-leaved Speedwell	*Veronica serpyllifolia*			a few plants in 06
Hedge Bedstraw	*Galium molugo*		x	-
Cleavers / Goosegrass	*Galium aparine*	x	x	widespread, especially in area 04
Red Bartsia	*Odontides vernus*		x	-
Field Madder	*Sherardia arvensis*	x		-
Common Broomrape	***Orobanche minor***			c. 100 plants in area 01
Keeled-fruited Cornsalad	*Valerianella carinata*		x	-
Wild Teasel	*Dipsacus fullonum*	x	x	widespread on harbour side of cycleway
Field Scabious	*Knautia arvensis*		x	-
Common Ragwort	*Senecio jacobaea*	x	x	abundant in late summer
Oxford Ragwort	*Senecio squalidus*	x	x	not identified
Sticky Groundsel	*Senecio viscosus*	x		-
Scentless Mayweed	*Tripleurospermum inodorum*	x		-
Sea Aster	*Aster tripolium*	x	x	along high-water mark in area 07
Oxeye Daisy	*Leucanthemum vulgare*	x	x	widespread; abundant in area 01
Daisy	*Bellis perennis*	x	x	widespread
Yarrow	*Achillea millefolium*	x		widespread
Mugwort	*Artemisia vulgaris*	x	x	scattered plants
Pineapple-weed	*Matricaria discoidea*	x		-
Spear Thistle	*Cirsium vulgare*	x	x	common in 05
Musk Thistle	*Cirsium nutans*	x		-
Creeping Thistle	*Cirsium arvense*	x	x	widespread
Common Knapweed	*Centaurea nigra*	x	x	abundant
Greater Knapweed	*Centaurea scabiosa*	x		about 10 clumps each in areas 08 and 03
Cornflower	*Centaurea cyanus*	x		one, presumed escape from verge sowing
Cat's-ear	*Hypochaeris radicata*	x	x	-
Lesser Hawkbit	*Leontodon saxatilis*	x		-
Beaked Hawk's-beard	*Crepis vesicaria*	x	x	-
Smooth Hawk's-beard	*Crepis capillaris*	x		-
Bristly Ox-tongue	*Picris echioides*	x		a few in area 05
Prickly Lettuce	*Lactuca serriola*			-
Dandelion	*Taraxacum sp.*	x	x	widespread
Goat's-beard	*Tragopogon pratensis*		x	-
Prickly Sow-thistle	*Sonchus asper*	x	x	-
Smooth Sow-thistle	*Sonchus oleraceus*	x	x	-
Rosy Garlic	*Allium roseum*		x	small groups in sites 05 and 04
Wild Onion	*Allium vineale*	x		-
Pyramidal Orchid	*Anacamptis pyramidalis*			about 100 plants in area 02 and 200 in area 01 42 plants in summer 2019 in area 02
Bee Orchid	*Ophrys apifera*			16 plants at SZ 0060 9270 in area 05; one in area 01

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THE MOTHS OF UPTON COUNTRY PARK – MOTHS RECORDED IN 2020-2021

Sally Grant and Nick Woods

1. Introduction

1.1 During 2021 two moth traps were operated at Upton Country Park (UCP), a Robinson-style trap with a 125 watt mercury-vapour bulb ('the mv trap') and a Skinner-style trap ('the actinic trap') with a single 20 watt actinic bulb (at the end of the year this was fitted with two 20 watt actinic bulbs). The actinic trap was usually switched on and off by a photo-electric cell which malfunctioned on some occasions, meaning the light did not stay on all night. Some trapping with the actinic trap had been carried out in the same location in 2020 with the trap also operated for a few hours close to the shoreline. A few casual field records of moths were also made by the authors and Martin Adams in both 2020 and 2021.

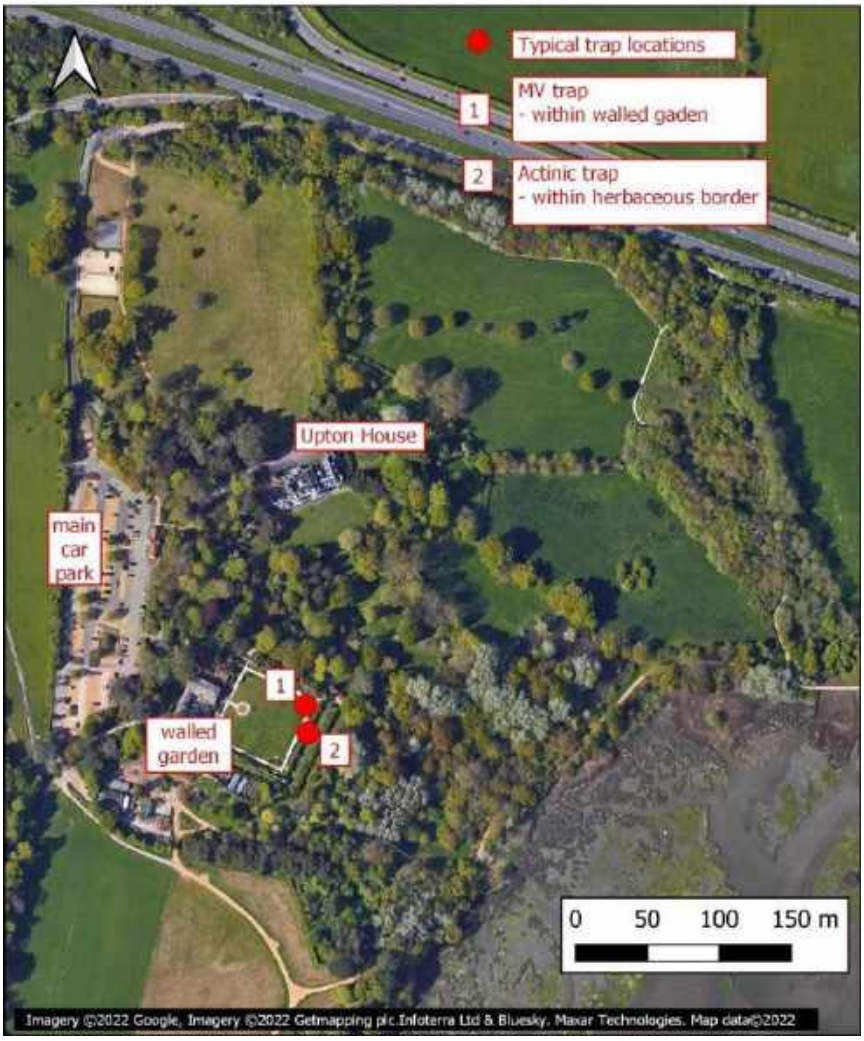


Fig. 1 - Upton Country Park – typical locations for moth traps

1.2 The traps were usually left overnight in the walled garden or adjacent herbaceous border as this area is secure. The location is shown in Fig. 1 which also gives an idea of the nearby habitats. The walled garden is largely amenity grass (turfed in 2012) with small beds of ornamental planting and is surrounded by areas of formal gardens and ornamental pleasure grounds. This area itself is set in a larger area of former parkland with some veteran oak trees and unimproved or semi-improved grassland and much mixed woodland, mainly of plantation origin. Slightly further away are the saltmarsh, reed beds and mudflats of Holes Bay. On the landward side the site is surrounded by grazed pasture or former farmland, much of which has

recently been laid down to grass with substantial areas of native tree and shrub planting to form a Suitable Accessible Natural Greenspace ('SANG').

1.3 The walled garden is popular with visitors and adjacent to the Park's tearooms. The catch from the traps was examined early in the morning in the walled garden and the opportunity taken to show different species to interested members of the public.

1.4 Records of the moths identified were entered on the 'Living Record' online recording system, used by the Dorset Environmental Records Centre, from which the National Moth Recording Scheme can draw records. Records submitted in this way are subject to verification by local experts but this report has been prepared prior to completion of this process.

1.5 In this article the first mention of a particular species will usually include both English and scientific names. Later mentions will use only the English name for those relatively well-known, usually larger, species typically regarded as 'macro-moths'. The English names used for many 'micro-moths' are less well known than the scientific names and both names are therefore used for those species, with the exception of the increasingly well-known micro-moth, the **Box-tree Moth** (*Cydalima perspectalis*) for which only the English name will be used.

2. Outline results

2.1 Appendix 1 at the end of this article lists the 260 moth taxa recorded in 2020/21. Most moths were identified to species level though a few critical species were only recorded as aggregates and a few only to genus level. In addition to the trapped moths, five species: **Cinnabar** (*Tyria jacobaeae*), **Six-spot Burnet** (*Zygaena filipendulae*), **Feathered Thorn** (*Colotois pennaria*), **Brown China-mark** (*Elophila nymphaeata*) and ***Agapetae hamana*** (Common Yellow Conch) were recorded in the field over the two years.

2.2 In 2021 either or both traps caught moths on 34 dates from 3rd March 2021 to 14th December 2021. The mv trap caught moths on 31 dates and the actinic on 20 dates (there were one or two dates on which no moths were caught but these were not recorded). The number of taxa identified from the traps in each month in 2021 and the number of trapping sessions is shown in Fig 2. Few trapping sessions were carried out in May due to poor weather conditions and other commitments.

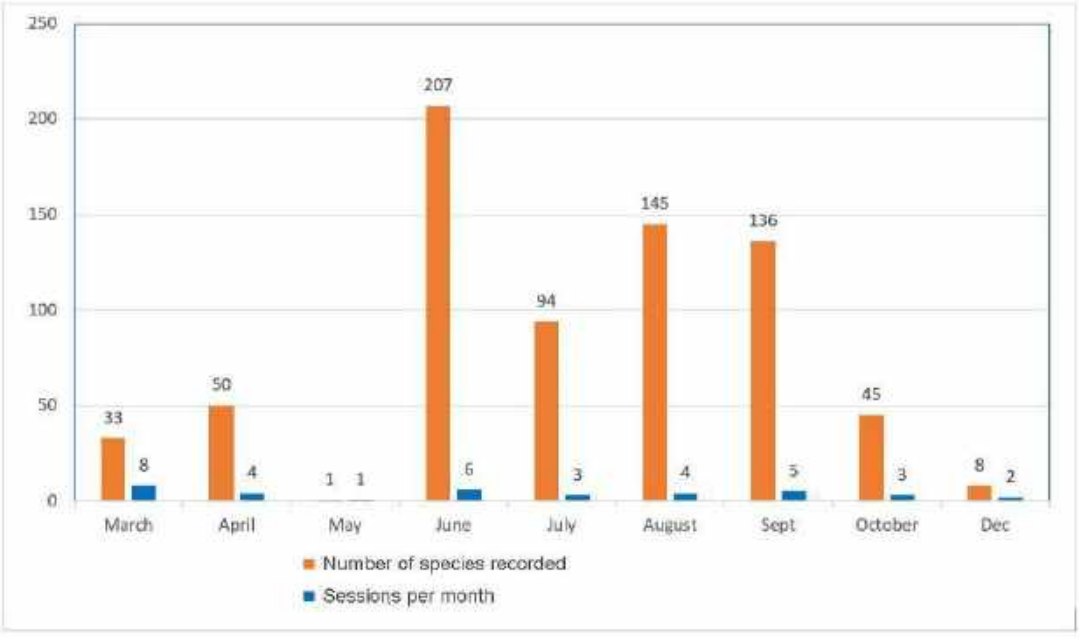


Fig. 2 – Number of species trapped and number of trapping sessions (2021)

2.3 In 2021 a total of 1601 moths of 240 species were recorded from the traps. The mv trap caught a total of 1,122 moths of 197 taxa on 31 dates and the actinic trap a total of 479 moths of 96 taxa on 20 dates. There were 96 taxa identified from both types of trap, with 101 only identified from the mv trap and 44 only from the actinic trap. The ten most trapped species in 2021 are shown in Table 1

English name	**Scientific name**	**Number caught**
Box-tree Moth (micro moth)	*Cydalima perspectalis*	159
Large Yellow Underwing	*Noctua pronuba*	77
Common Quaker	*Orthosia cerasi*	58
Garden Grass-veneer (micro moth)	*Chrysoteuchia culmella*	49
Treble Lines	*Charanyca trigrammica*	45
Heart & Dart	*Agrotis exclamationis*	*42*
Light Emerald	*Campaea margaritaria*	*42*
Lesser Broad-bordered Yellow Underwing	*Noctua janthe*	*42*
Hebrew Character	*Orthosia gothica*	38
Common Footman	*Eilema lurideola*	*35*
Willow Beauty	*Peribatodes rhomboidaria*	*35*
Dark Arches	*Apamea monoglypha*	26
Rosy Footman	*Miltochrista miniata*	25

Table 1 – Ten most prevalent trapped species (2021)

The ten most trapped species accounted for 673 (42%) of the total catch of 1601 moths. Perhaps even more remarkable and potentially significant, is the 159 **Box-tree Moths** caught (10% of the total catch). At the same time 104 taxa were only caught on a single occasion (43% of the total taxa identified in 2021). In addition of the 62 taxa caught in the actinic trap ran in 2020, 17 were not recorded at either trap in 2021.

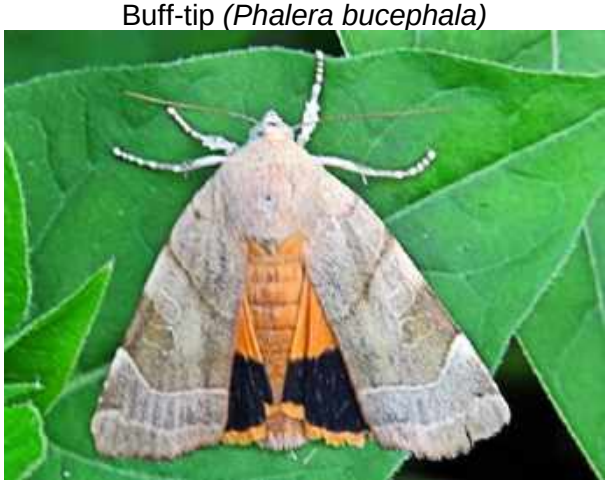
3. Macro-moths recorded

3.1 One hundred and seventy-two macro-moth taxa were identified in 2020/2021 out of approximately 900 species found in the UK [1]. There is a considerable amount of published information on the larger moths, including a very detailed account of their distribution in the UK, '*The Atlas of Britain and Ireland's Larger Moths'* [2] published in 2019 (referred to as '*The Atlas'* hereafter). This uses over 24 million individual records to plot the occurrence of moths by 10 x 10 km of the national grid, based on records from 97% of such squares in Great Britain. The maps also show records from different time periods, illustrating changes in range over the last half-century or so. Statistical techniques have also been applied to take account for the changes in the recording effort over time, to identify statistically significant (at the 5% level) changes in distribution.

Brimstone Moth *(Opisthograptis luteolata)*

Buff-tip *(Phalera bucephala)*

Burnished Brass *(Diachrysia chrysitis)*



Broad-bordered Yellow Underwing (*Noctua fimbriata*)

Lunar Marbled Brown *(Drymonia ruficornis)*

Black Rustic (*Aporophyla nigra*)

White Ermine – (*Spilosoma lubricipeda)*

Spectacle (*Abrostola tripartita*)

Fig. 3 - Some macro-moths recorded at Upton County Park in 2020/2021

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3.2 The *Atlas* also contains details in the changes in abundance of many species based on data collected by Rothamsted Research from a network of moth traps run at 539 sites across Great Britain from 1970 to 2016. Detailed modelling has also been used to identify statistically significant changes in abundance (at the 5% level). The distribution and abundance data subsequently referred to in this report are from this source. Unless otherwise stated, the changes in distribution and/or abundance in this report refer to statistically significant changes between 1970 and 2016 as reported in *The Atlas*. Butterfly Conservation have kindly permitted the reproduction in this article of a number of the maps from *The Atlas*.

3.3 The origins of the, sometimes strange, names of many moths have been explored in a recent book by Peter Marren [3]. Unless otherwise stated, information on the derivation of moth names in the following paragraphs is based on this source. Some of the more colourful macro-moths recorded are illustrated in Fig. 3 and details of these and some additional species are given below.

3.4 Although moths are sometimes perceived as dull, many have been named from their bright colours or other features, as can be seen in Fig. 3. The **Brimstone** *(Opisthograptis luteolata)*, like the butterfly of the same name is bright yellow and widely distributed; *the Atlas* showing a modest long-term increase in distribution (8%) and no significant change in abundance. Fourteen individuals were caught in the mv trap on six occasions between June and October in 2021, probably reflecting this moth's two or three generations a year. The larvae feeding on Blackthorn, Hawthorn, Plum and Bullace; the former two plants being widespread in UCP. Also widespread the **Buff-tip** ***(****Phalera bucephala)*, has shown a considerable long-term increase in distribution (48%) but a reduction in abundance (66%). Fifteen individuals were recorded from both the mv and actinic traps on five occasions in June and July 2021. The female is larger than the male but both are camouflaged by their striking resemblance to a broken silver birch twig – to the fascination of some of the visitors to the walled garden. Less colourful overall and with only one individual trapped (in September 2021), the **Burnished Brass** (*Diachrysia chrysitis)* is a striking moth when viewed from the right angle. Feeding on nettles, this is a widespread moth (with plenty of food plant at UCP); though only a single individual was caught in 2021.*The Atlas* shows a long-term decrease in abundance (43%) though only a modest decrease in distribution (7%). The **Broad-bordered Yellow Underwing** (*Noctua fimbriata)* was one of four types of Yellow Underwing recorded with individuals caught on three dates in 2021. These moths can appear quite dull – until the hind wings are seen (often as they fly away). This species has shown dramatic long term increases in both distribution and abundance (158% and 544% respectively). The populations of the other Yellow Underwing species recorded are generally more stable. The larvae of all feed on a range of herbaceous species.

3.5 In many cases, moths are named for their colours even if they are not bright in colour, but they make up for a lack of bling with intricate patterning. For instance, the **Lunar Marbled Brown** (*Drymonia ruficornis)*, which is primarily grey in colour, is attractively marked with a broad whitish band and dark lines across its wings. *The Atlas* shows that this species has increased significantly in distribution (23%) between 1970 and 2016 and also that its flight period, currently April and May, has become earlier over the same period. Although there is a plentiful supply of oak at UCP, the larvae's food source, May 2021 was very wet and cold, so it is perhaps not surprising that only three individuals were seen in total. The **Black Rustic** *(Aporophyla nigra)* is indeed very dark. There are a number of moths with the word 'rustic' in their name – probably a reference to the drab colours of many (though not all) of these insects. In the eighteenth century a poor countryman, unable to afford colourful clothes would be referred to as a 'rustic'. This species only received its English name in 1809 (courtesy of wealthy naturalist Adrian Haworth, author of *Lepidoptera Britannica* an early guide to moths and butterflies). Of all the moths recorded, this species shows the greatest discrepancy between *The Atlas* figures for changes in distribution and abundance – its distribution increasing by 82% and its abundance decreasing by 72%. The larvae

feed on heather, dock, grasses and herbaceous plants. At UCP only two individuals were seen on two dates in October.

3.6 Many moths have very descriptive names. The **White Ermine** ***(****Spilosoma lubricipeda)* is an obvious one, clearly named for its white, spotted ‘ermine cloak’ with ‘fur collar’. It has a wingspan of 18-23mm and a single generation during May-July. It feeds on herbaceous plants, including dock and nettles. *The Atlas* shows a significant increase in distribution (45%) but a significant decrease in abundance (55%). Seven individuals were counted on four occasions in June. It becomes apparent why **The Spectacle** *(Abrostola tripartite)* is so called when viewed head-on; the distinctive “eye” markings providing another obvious name. This moth has a forewing of 15-17mm and may have one or two generations. It feeds on the ubiquitous nettle. Eight individuals were seen on five occasions: seven in June and one in August. *The Atlas* shows a modest (20%) increase in the distribution of this species but no significant change in its abundance. Perhaps less obvious in modern times, **The Herald** *(Scoliopteryx libatrix)* is possibly so named because of its resemblance to the traditional tabard-shaped costume of a messenger bringing news. *The Atlas* shows no significant trends in its distribution or abundance. This moth overwinters as an adult in outbuildings and similar locations. One of the old bat roosts found in the Park was notable for the accumulation of the wings of this species, although only three individuals were seen during April. Uncommon in Dorset, this moth has one generation in August-November, indicating that the moths recorded at UCP would have over-wintered. With a forewing measuring 19-23mm, the larvae feed on aspen, poplar and willow. The unusual name of **Merveille du Jour** *(Griposia aprilina)* is French for ‘marvel of the day’, which was an everyday expression in eighteenth century England. With a forewing of 18-23mm, this moth is green in colour with strong dark markings, beautifully camouflaged as the lichen that grows upon its food plant; oak. Two individuals were seen on two occasions one week apart in October, towards the end of its single flight season. *The Atlas* shows this moth to be increasing its distribution (by 68%) but with no significant change in abundance between 1970 and 2016.

Fig 4 – Left: The Herald *(Scoliopteryx libatrix)* and right the Merveille du Jour (*Griposia aprilina*)

3.7 Yet other species are named for their very specific markings. One being **L-album Wainscot** *(Mythimna l-album)*, which is easy to identify from the clear L-shaped mark on its wings. Fig. 6 shows that this moth has a far more restricted distribution than the **Common Wainscot** *(Mythimna pallens)*. It prefers wet areas and brackish water, feeding on a variety of grasses, so UCP is the perfect habitat. Four individuals were recorded on four separate occasions. Another is the **Hebrew Character** *(Orthosia gothica)* named after the resemblance of the marking on its wings to the Hebrew equivalent of the letter ‘n’. Whilst the **Setaceous Hebrew Character** *(Xestia c-nigrum)* gains its extra qualifier as a reference to the white mark around the character mark – setaceous meaning ‘bristle bearing’. *The Atlas* indicates that the distribution of both these species

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is increasing, though the abundance of the Hebrew Character shows a significant decrease (31%). It has also shown to be emerging earlier in spring with some individuals even being found in late autumn or winter. At UCP thirty-eight individuals were recorded during March and April. With a wingspan of 30-35mm, the larvae feed on herbaceous plants, shrubs and trees.

Fig. 5 – (left) L-album Wainscot (*Mythimna l-album)* and (right) *C*common Wainscot *(Mythimna pallens)*

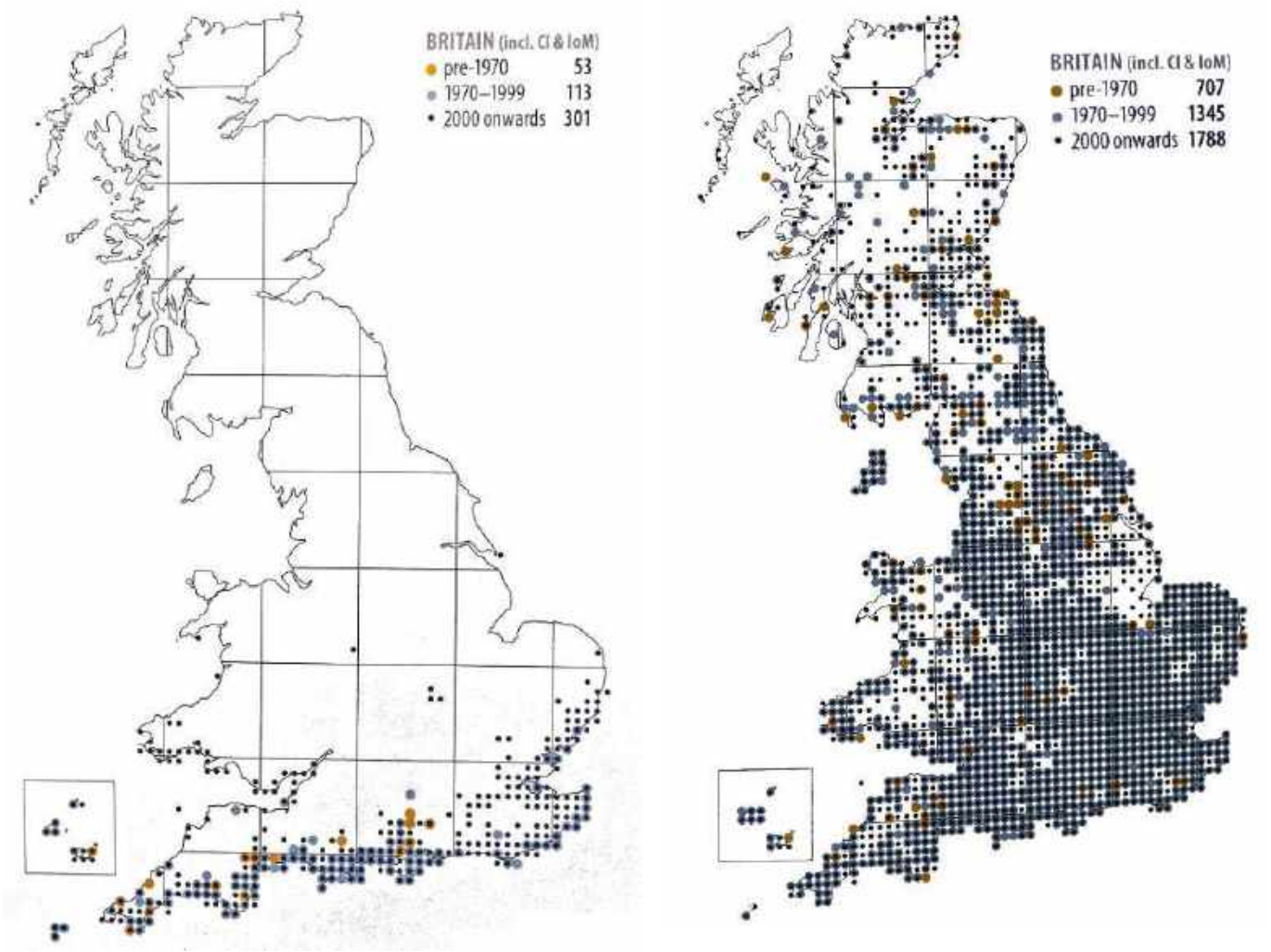

Fig. 6 L-album distribution (left) and Common Wainscot distribution (right). Reproduced from *The Atlas of Britain and Ireland's Larger Moths* (Courtesy of Butterfly Conservation)

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Fig. 7 (left) Hebrew Character *(Orthosia gothica)* and (right) **Setaceous Hebrew Character** *(Xestia c-nigrum)*

3.8 One of the most striking range of moths are the hawk-moths, three of which were recorded at UCP in 2021. The most prevalent was the **Poplar Hawk-moth** *(Laothoe populi)* with nine individuals on five occasions in June, and one in early August. They have two generations; May-June; July-August, so the single individual seen in August was likely to be from the second brood. Spectacular in appearance, and content to cling firmly to your hand, this large moth has a wingspan of 65-90mm, and always attracts much interest from visitors. One of the easiest species to identify, it feeds on aspen, sallow, willow as well as poplar. A single **Pine Hawk-moth** *(Sphinx pinastri)* was recorded in June. Only slightly smaller than the Poplar, it is far less conspicuous. However, in contrast to the dull brownish-grey of the adult, the larvae, which feeds, not surprisingly, on Scots pine, is bright green with yellow stripes. The larvae of the **Elephant Hawk-moth** *(Deilephila elpenor)* feeds on the common rosebay willowherb or fireweed. It's supposed similarity to an elephant's trunk is what gives the bright pink and green adult its name. The adult also feeds on the nectar of honeysuckle and other plants. One was recorded in July. *The Atlas* shows significant increases in distribution but no significant changes in abundance for these three species.


Fig. 8 - (Left) Poplar Hawkmoth *(Laothoe populi)* and (right) Elephant Hawk-moth *(Deilephila elpenor)*

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3.9 The six UK ‘Thorns’ in the genus *Ennomos* (four of which were recorded in 2020/21), have scalloped edges to their wings, and their larvae, that feed on trees including birch, alder, lime and elms, resemble twigs. The adults can be tricky to tell apart in some cases, but an easy one to identify is the **Canary-shouldered Thorn** *(Ennomos alniaria)* with its bright yellow ‘shoulders’. Three individuals were recorded on two occasions in August and September. It has one generation flying between July and October, and measures 16-20mm in length. *The Atlas* also shows that three of the ‘Thorn’ species have significantly declined in abundance between 1970 and 2016, though the Canary-shouldered Thorn does show a significant increase in distribution (15%) despite its relatively large decrease in abundance (66%). The **Dusky Thorn** *(Ennomos fuscantaria)* looks similar to its cousins, but holds its wings closed at rest like a butterfly. Two were recorded in September 2021. Atlas data for the Dusky Thorn shows no significant long term (1970-2016) trend in its distribution but a recent (2000-2016) significant increase (34%). This is despite a long-term decline (97%) in abundance. It is possible, therefore, that the population has started to recover from the long-term decline.

Fig. 9- (left) Canary-shouldered Thorn *(Ennomos alniaria)* and (right) Dusky Thorn *(Ennomos fuscantaria)*

3.10 Three ‘Footman’ moths (of the genus *Eilema*) were recorded. Each have a single generation, a wing length within the range of 14-18mm, and all feed on lichens. All came consistently to both Actinic and MV light. There are other ‘Footman’ moths in different genera, including the Rosy Footman. *The Atlas* shows all the distribution of all three species to have increased significantly between 1970 and 2016 and all (except the Common Footman) to have shown large increases in abundance over the same period. Although not seen during 2021, the Buff Footman showed the largest increase in distribution (524%) – the distribution map suggesting a substantial spread northwards. It also shows a massive increase in abundance, 84,589% over the same period; actually exceeded by the Orange Footman with an increase in abundance of 10,443%. The caterpillars of these moths are believed to feed on lichens and algae growing on tree trunks, and their increase in abundance and distribution is potentially linked to improved air quality (and the consequent increase in epiphytic lichen growth) and climate change. Thirty-five individuals of the **Common Footman** *(Eilema lurideola)* were seen on four occasions during July and August, with 18 and 11 being the highest number seen on two separate nights. The **Dingy Footman** *(Eilema griseola)* was recorded on five occasions with a total of twenty-three individuals between late June and mid-August, coming to both Actinic and MV. Twelve **Orange Footman** *(Eilema sororcula)* were recorded on six occasions in June only. A total of 25 individual **Rosy Footman** *(Miltochrista miniate)* were recorded on 5 occasions during July-September. At its peak in August the majority went to the MV, with 14 on one night. However, the Actinic was not available on that occasion, so there could well have been many more. Classed as having a single generation between June and August, with a partial second generation in some years, the larvae feed on dog lichen and other lichens. As with the Footman of the genus, Eilema, this moth shows a significant increase in both distribution (116%) and abundance (385%) between 1970 and 2016.

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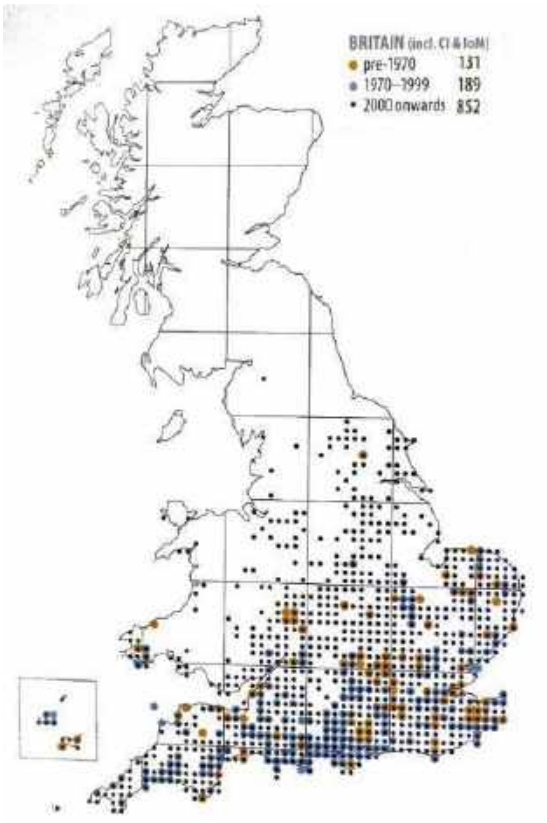
Common Footman *(Eilema lurideola)*

Dingy Footman *(Eilema griseola)*

Orange Footman (*Eilema sororcula)*

Rosy Footman *(Miltochrista miniata)*

Fig. 10 – the four Footman moths recorded in 2020/2021



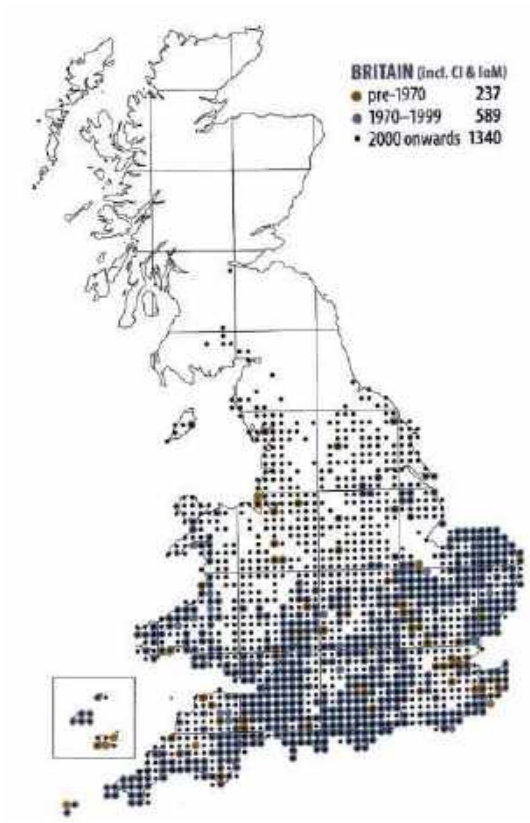


Fig. 11 Orange Footman distribution (left) and Dingy Footman distribution (right)). Reproduced from *The Atlas of Britain and Ireland's Larger Moths* (Courtesy of Butterfly Conservation)

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3.11 There are 54 species of ‘carpet moth’ in Britain though not all are closely related. It is thought the name is based on wing patterns resembling carpets. These particular moths do not eat carpets – thought here are some micro-moths whose caterpillars will feed on materials such as wool. In the sixteenth century the word ‘moth’ was apparently used for a variety of insects that damaged domestic items [3]. There are at least a couple of current websites dealing with pest control that misleadingly illustrate their sections on ‘carpet moth’ control with pictures of the wrong species – one probably a Spruce Carpet *(Thera britannica)* and one a Large Yellow Underwing *(Noctua pronuba).*

One **Broken-barred Carpet** *Electrophaes corylata* was recorded in June, late in its flight season of mid-April to June. With a wingspan of 22-30mm, the larvae feed on broadleaf trees. Only two **Common Carpet** *(Epirrhoe alternata)* were recorded; one from each of two generations, in June and October. One came to the Actinic, the other was seen ‘in the field’. With a wingspan of 20-25mm, the larvae feed on cleavers and bedstraw. Eight **Common Marbled Carpet** *(Dysstroma truncate)* were recorded on 5 occasions in June, July, September and October. This moth has two generations between May and October. The cold weather in May is likely to have delayed their emergence for both generations. The wingspan is 24-30mm, and the larvae feed on low-growing woody plants. The **Flame Carpet** *(Xanthorhoe designate)* delivered the highest number of ‘carpets’ with fourteen individuals recorded on seven occasions between June and September; covering both of the two generations. They have a wingspan of 25-28mm and the larvae feed on brassicas. Five **Spruce Carpet** *(Thera britannica)* were caught on three occasions. This double-brooded moth can be seen on the wing for over half the year. It has shown dramatic long-term increases in distribution and abundance of 557% and 3,363% respectively, and has probably benefitted from increased planting of conifers in both forestry and gardens.

Common Carpet (*Epirrhoe alternata)*

Common Marbled Carpet (*Dysstroma truncata)*

Flame Carpet (*Xanthorhoe designate)*

Spruce Carpet *(Thera britannica)*

Fig. 12 – Four ‘carpet’ moths which have shown long term increases in distribution

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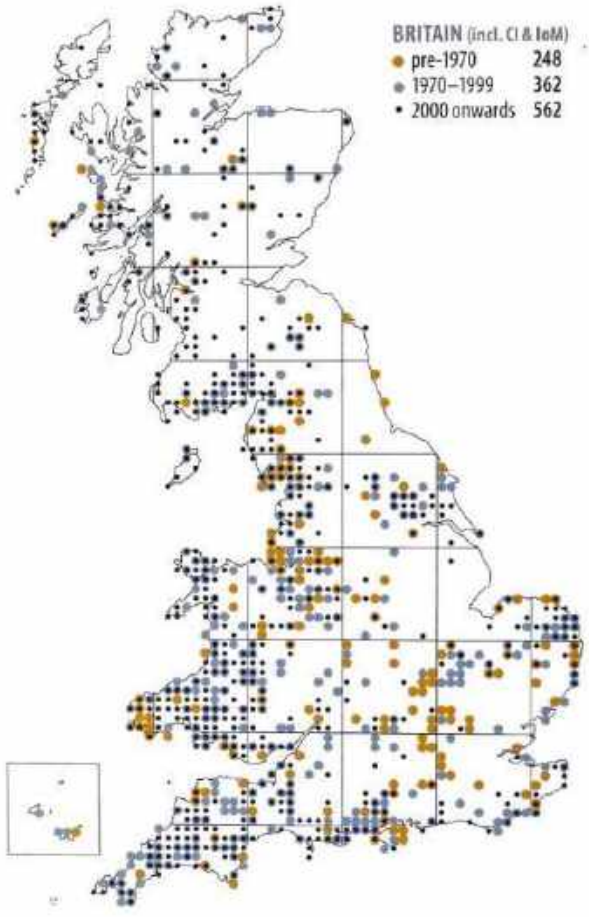
Of the twelve species of ‘carpet’ recorded only two, the **Broken Barred Carpet** *(Electrophaes corylata)* and the **Oblique Carpet** *(Orthonama vittate)* showed a significant decline in long-term distribution (36% and 50&% respectively) whilst, nine show significant increases. However, of the eight species that show a significant change in abundance, four show declines and four increases. The Garden Carpet showing the greatest decline (76%) and the Spruce Carpet the greatest increase (3,363%). The Spruce Carpet also shows a large increase (557%) in distribution. This species probably benefitting from the widespread planting of conifers both in commercial forestry and in gardens.

Broken-barred Carpet (*Electrophaes corylata*

Oblique Carpet *(Orthonama vittate*

Fig. 13 – Two carpet moths which show long term declines in distribution



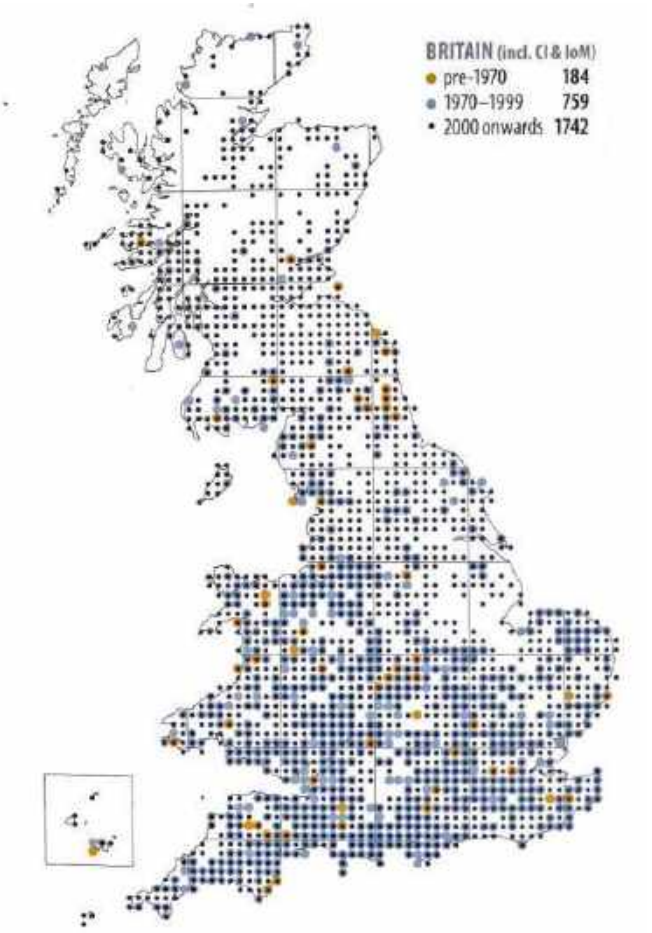


Fig 14 - Contrasting fortunes of two of the ‘carpet moths’- Oblique Carpet (left) and Spruce Carpet (right)). Reproduced from *The Atlas of Britain and Ireland’s Larger Moths* (Courtesy of Butterfly Conservation)

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From the same family as the ‘carpets’ and similar in appearance, the **Small Phoenix** *(Ecliptopera silaceata)* was recorded on four occasions; with one individual in June, and three in August. Again, probably from both of the two separate generations. The forewing is 13-17mm and the larvae feed on willowherbs, otherwise known as fireweed. The Small Phoenix is smaller but similarly marked (though of a different genus) to The Phoenix *(Eulithis prunata)* (not recorded), which probably gets its name as a result of its reddish-brown wings reminding someone of flames (and the emergence of the mythical bird). Interestingly, in traditional embroidery there is “flame” stitch, which echoes the zig-zag patterning on the Phoenix moth’s wings.

Fig. 15 - Left Small Phoenix (*Ecliptopera silaceata*) and right December Moth *(Poecilocampa populi)*

3.12 To demonstrate that moths don’t only fly in summer, eleven **December Moth** *(Poecilocampa populi)*, were recorded on 14th December 2021. This moth has a single generation spread across October-January, with the larvae feeding on broadleaved trees. Although widespread across the UK, it shows as uncommon in Dorset, which may be due to under-recording. *The Atlas* data shows no significant change in distribution in Great Britain but a significant decline in abundance between 1970 and 2016 (68%).

4. Micro-moths recorded

4.1 Eighty-eight taxa of micro-moth were identified in 2020/2021, a small proportion of around 1,600 species known from Britain. Micro-moths, by definition tend to be small, and not necessarily easy to identify, however figure 16 shows some of the species recorded and something of the range of shape, posture, colours and patterns that can be found even amongst the relatively modest number of species recorded (equal to that shown by better known butterflies or macro moths). The illustration of ***Yponomeuta sp.*** (Small Ermine) also shows just how small some of these moths are.

4.2 The largest group of micro-moths in Britain are the Tortrix moths, with broad forewings held horizontally, tent-like or wrapped around the body. Examples recorded included two species of ***Agapeta***, both probably associated with the Park’s grassland habitats. ***Agapeta zoegana*** (Knapweed Conch) is the more brightly marked species and, as its name suggests its caterpillars are likely to feed on Common Knapweed (a species which has been included in ‘wild flower’ seed mixes used in the Park). ***Agapata hamana*** (Common Yellow Conch) was only recorded once, an individual seen during the day in 2020. This caterpillars of this species are thought to feed on Thistles and it has been reared on Musk Thistle, a plant which grew abundantly on the agricultural fields in the early stages of their conversion to the SANG. A group of Tortrix moths, including

Yponomeuta sp. (Small Ermine)

Agapeta zoegana (Knapweed Conch)

Hedya nubiferana (Marbled Orchard Tortrix)

Argyresthia goedartella (Golden Argent)

Carcina quercana (Long-horned Flat-body)

Oncocera semirubella (Rosy-striped Knot-horn)

Crambus pascuella (Inlaid Grass-veneer)

Pterophorus pentadactyla (White Plume)

Fig. 16 - Some micro-moths recorded at Upton County Park in 2020/2021

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Hedya nubiferana (Marbled Orchard Tortrix), are known as ‘bird dropping moths’ due to their prominet white markings. This mimicry is presumably a way to avoid predators. These moths even have their own field guide [4]. Some of the other small Tortrix moths seem superficially very similar, perhaps the equivalent of the bird-watchers’ ‘little brown jobs’. However, close examinaton does show distinctive patterns on at least some of them, for example ***Notocelia uddmanniana*** (Bramble Shoot Moth) and ***Cydia amplana*** (Vagrant Piercer)

Notocelia uddmanniana (Bramble Shoot Moth)

Cydia amplana (Vagrant Piercer)

Fig. 17 - Two distinctive Tortrix moths – both of which could be regarded as ‘little brown jobs’

4.3 ***Argyresthia goedartella*** (Golden Argent) was one of the smallest micro-moths recorded with a forewing only c 5 mm long; it flies at night or on sunny afternoons and the caterpillars feed on catkins of Birch or Alder Trees. The similar ***Argyresthia brockeella*** (Gold-ribbon Argent) was also recorded. ***Yponomeuta.*** (Small Ermines) is a genus of white moths with black dots, also with a distinctive appearance though individual species can be difficult to separate, though many do have particular food plant preferences (e.g. Apple, Spindle or Bird Cherry). Many of the caterpillars live initially as leaf miners, feeding inside the leaf tissue; but then live communally in a silk web. Rearing caterpillars from known plants can help with identifying some species.

4.4 Though small some micros are strikingly coloured. ***Carcina quercana*** (Long-horned Flat-body) is an attractive though variable moth with the forewing ranging from cream to organge-brown to blackish pink held flat. It is the only British representative of its family (Peleopodidae). The caterpillars feed on a variety of trees and shrubs. ***Oncocera semirubella*** (Rosy-striped Knot-horn) has attracted the nick-name of ‘rhubarb and custard’ due to its yellow and pink colours. This is a more local species than many of the micros recorded, often associated with chalk/limestone downland, cliffs and shingle and sparse open grassland near heathland. Common caterpillar foodplants include Bird’s-foot-trefoil, White Clover and possibly other members of the pea family.

4.5 ‘Grass moths’ are small and often abundant moths appearing almost white and easily disturbed when walking through long grass. ***Crambus pascuella*** (Inlaid Grass-veneer) is one of several species of; close up the contrasting markings are striking. ***Pterophorus pentadactyla*** (White Plume) is one of a number of distinctive species which stand up on their legs with wings held horizontally at right angles to the body. The ghostly-white fore-wings of this species are split into tapering lobes, adding to the delicate impression.

4.6 Also referred to as a ‘plume moth’ is ***Alucita hexadactyla*** (Twenty-plume Moth). This distinctive moth is actually from a different family of moths, only one member of which occurs in Britain. When examined closely the wings are divided into feathery plumes; its caterpillars feed on

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Honeysuckle, in the flower buds, flowers and in mines in the leaves. Many of the micro-moths caught, whilst often inconspicuous, are probably widespread and common in a variety of habitats. However, one micro-moth caught in 2021, ***Loxostege sticticalis*** (Diamond-spot Pearl) was particularly unusual. Possibly resident in Norfolk in the past but now mainly known as a migrant , with only a few records in recent years in Dorset; this is one of the scarcest moths (macro or micro) found so far at Upton Country Park.

Alucita hexadactyla (Twenty-plume Moth)

Loxostege sticticalis (Diamond-spot Pearl)

Fig. 18 - A different sort of plume moth (left) and a scarce migrant micro-moth (right)

4.7 Ironically, the largest and probably the easiest to identify micro-moth found was also the most abundant moth caught in 2021, with 159 in total between August-October, with 53 and 68 on two of only 9 occasions. Perhaps surprisingly it is also absent from many identification guides. The **Box-tree Mot**h (Cydalima perspectalis) has a fascinating natural history and, potentially, a practical impact on the landscape of Upton Country Park.

A large moth with a wingspan of 38-42mm, it has silvery, translucent wings with a variable brown border. There is also a darker, melanic form, with both types recorded in MV and Actinic traps at Upton Country Park.

Fig. 19 – The Box-Tree Moth (*Cydalima perspectalis)*– Typical and Melanic Forms

Now considered a major horticultural pest, it is thought to have been imported from Asia on box plants (*Buxus*). The first UK sighting was in Kent in 2007, followed by a rapid increase in numbers recorded each subsequent year. A significant infestation was recorded at a garden nursery in Hampshire in 2013 with many other sightings across that county in the same year. By 2016-17 it was regarded as a resident, and continues to increase in number and spread across the whole of the UK; first sighted in Wales and Scotland in 2018 [5].

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The moth's life cycle of just 45 days from egg to adult, and the ability to go dormant and overwinter in the UK, is one of the reasons why it has been so successful. The caterpillars not only decimate the foliage, but also chew the bark, ultimately killing the plant. Whilst box plants may recover from de-foliation, they are slow growing and the process would take time, at the risk of further infestation.

Archive photographs show box hedging in the herbaceous and rose borders just outside the walled garden as early as 1910. This tradition was continued in 2012 when the walled garden was re-landscaped with approximately 380 metres of box hedging formed from 1900 plants. This decorative feature is now threatened by the influx of the Box-tree Moth; the first signs of damage already recorded. It is perhaps fortunate that there is no box topiary within the garden.

Fig. 20 – Early twentieth century photos of box hedging in the borders of the walled garden

Fig. 21 - Newly planted Box hedging (2012) and damage to mature box hedging (2022)

Buxus was originally thought to be the only food source for the Box-tree caterpillar in the UK, giving some vague hope that the moth would die out once this source was depleted. However, it is now known that they also feed on the more commonly found Butcher's Broom (*Ruscus aculeatus*), Euonymus (Spindle) and Ilex (Holly) species, both of which occur widely in the UK, including at Upton Country Park. They also feed on blackberries and raspberries.

There has been a great deal of research carried out by various agricultural, horticultural and environmental organisations across Europe and US, concerning the control of this pest, but with limited success. Removing the caterpillars by hand may be achievable in a residential garden, but not for gardens like that at Upton, or for commercial growers. Spraying with a bacterium, *Bacillus thuringensis* (Bt) ssp. *kurstaki*, has been trialled to good effect in the UK, although this

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method is not expected to eradicate the moth entirely. The timing of such treatment is crucial, to fit in with the moth's life cycle, and must be carried out by a qualified professional.
There are currently no plans to attempt to eradicate this pest at Upton Country Park.

5. Discussion and Conclusions

5.1 The 172 macro-moths and 88 micro-moths recorded in 2020/2021 represent around 19% and 6% respectively of the total number of species known from Great Britain. *The Atlas* indicates that between 451 and 500 species of macro-moth have been recorded from the 10 km national grid square (SY99) which, in its south-east corner, includes most of Upton Country Park. This square extends to Sturminster Marshall in the north and Morden in the west. As a result, the square will include records for a much wider range of habitats than is present in the Park, including as it does Upton Heath, Lytchett Bay, parts of Wareham Forest and the Stour Valley, areas which include some important wildlife habitats. However, it seems likely that considerable a number of moth species that may be present were not caught in 2020/2021.

5.2 It is also interesting to look at the number of times individual species recorded (see Fig. 22)

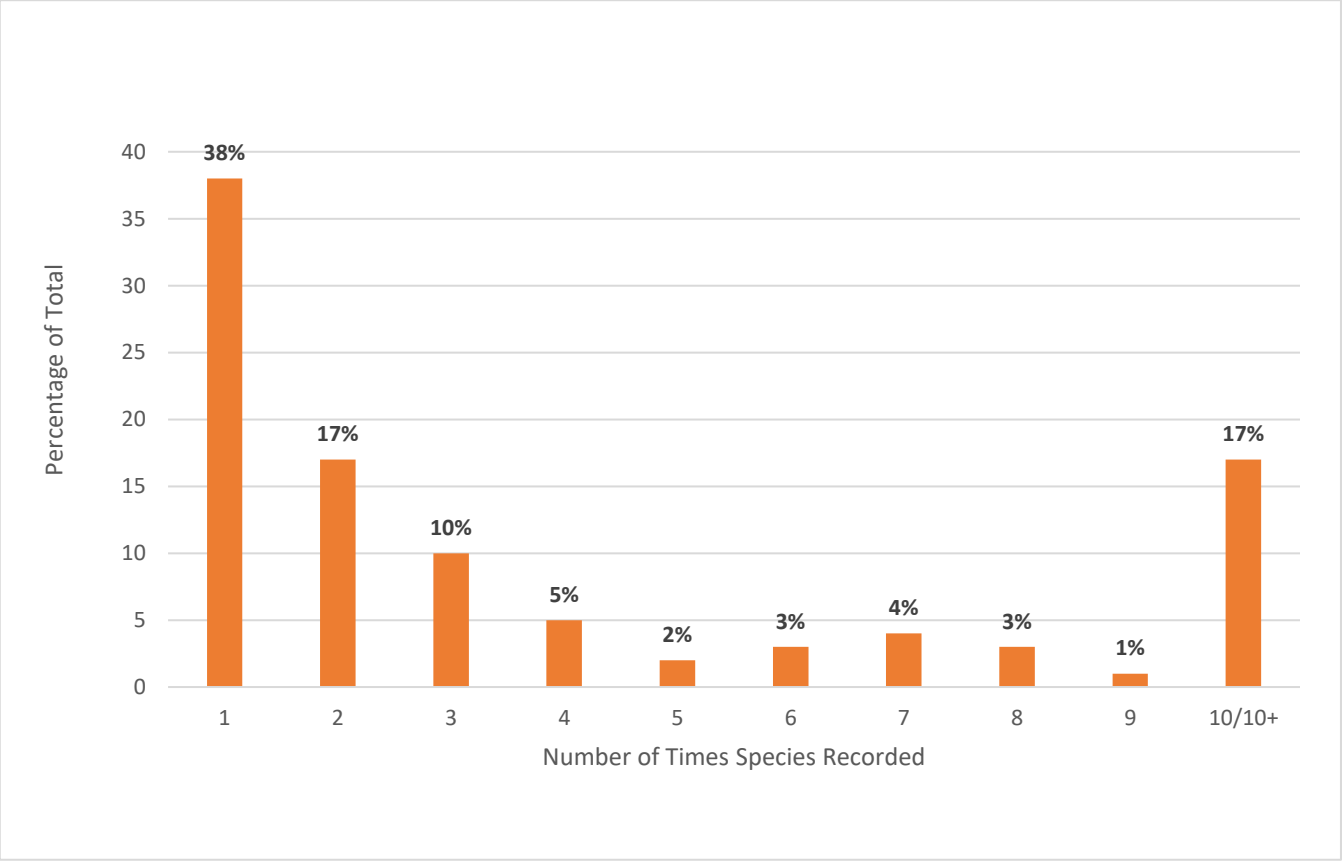

Fig. 22 - Proportion of species caught once, twice, three times etc (2021 trapping sessions)

Thirty-eight percent of the species caught in 2021 were represented by a single moth and 17% by only two individuals. Given the trapping location, in an enclosed area within the formal gardens of the Park, away from the more natural habitats present, this also suggests that many more moth species may be present than is apparent from the trapping carried out so far.

5.3 The *Atlas* does allow, for the larger moths at least, some assessment of whether or not what was caught is 'rare' or 'common'; one of the likeliest questions posed by visitors on seeing the range of moths that was caught. However, *The Atlas* points out that *'the larger moth fauna of Britain and Ireland is changing rapidly'*, noting that 38% of species had significant increases in

distribution and 31% significant decreases between 1970 and 2016. In terms of abundance, Rothamsted Research data showed that between 1970 and 2016, 11% of species increased and 34% decreased. Twenty-five species were actually shown to have increased in distribution but decreased in abundance. Of course, insect distribution and abundance are likely to fluctuate over time. However, the figures quoted in this report only refer to changes judged to be statistically significant and reflecting genuine trends, strongly supporting the assertion that the larger moth fauna is changing rapidly.

5.4 Table 2 shows the number of species recorded at UCP in 2020/2021 which showed statistically significant changes in GB distribution or abundance in *The Atlas*. The fluctuating fortunes of the larger moths recorded at UCP are clear – with over 2/3 being species that have increased their national distribution over the last half century but almost one-half having decreased in abundance nationally over the same period.

Number of larger moths showing statistically significant national changes in distribution			
	Increase	Decrease	Total
1970-2016	104 species (60%)	14 species (8%)	118 species (68%)
2000-2016	35 species (20%)	1 species (<1%)	36 species (21%)
Number of species showing statistically significant national changes in abundance			
	Increase	Decrease	Total
1970-2016	24 (14%)	50 (29%)	74(43%)

Table 2 – National changes in distribution and abundance for larger moths recorded at UCP in 2020/21 (proportion of all larger moths recorded at UCP in 2020/21 shown as %)

5.5 The accounts of some of the larger moths given above show the scale and complexity of some of these changes. The difficulty of answering the 'is it common or rare' – is illustrated by the case of the **Black Rustic**, with an 82% increase in distribution but a 72% decrease in abundance. At first sight it is difficult to reconcile the fact that the numbers of this moth seem to have declined greatly although it has become much more widespread. A glance at some of the distribution maps reproduced here suggests that increases in distribution may, in some cases, be due to moths previously found mainly in the south spreading north – a likely cause being climate change. The many decreases in abundance documented in *The Atlas* may be due to reductions in the extent and quality of natural habitats, which has affected many wildlife groups in recent decades. Another topical issue, the potential spread and impact of introduced species is will illustrated by the case of the Box Moth.

5.6 The number of moth species recorded in the last two years (and the likelihood that many more are present) illustrates how diverse the wildlife of the site is – especially of species that are rarely seen. The data from *The Atlas* also shows how dynamic populations of these insects are likely to be. The future of the Park's moth fauna is likely to be affected both by how the Park is managed and by wider environmental issues. Moth trapping at such a site can reveal something of the wildlife that is present and contribute information for future monitoring. It can also be used to encourage interest and appreciation of the Park's wildlife amongst visitors and an understanding of how the environment is changing.

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5.7 It is hoped to continue trapping next year at UCP, perhaps extending trapping into other areas and also to review historic information on moths at the Park. Casual records have been made and some trapping has taken place for around 40 years so it may be possible to show in more detail how the Park's wildlife has changed.

Acknowledgements:

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Photographs in this article unless otherwise stated by Sally Grant, Tony Grant and Nick Woods.

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Appendix 1

Moths recorded at Upton Country Park 2020/2021

Scientific Name	Common Name
Abrostola tripartita	Spectacle
Abrostola triplasia	Dark Spectacle
Acentria ephemerella	Water Veneer
Achlya flavicornis	Yellow Horned
Acleris laterana/comariana	Dark-triangle Button/ Strawberry Tortrix
Acleris sparsana	Ashy Button
Acleris variegana	Garden Rose Tortrix
Acrobasis advenella	Grey Knot-horn
Acronicta leporina	Miller
Acronicta rumicis	Knot Grass
Agapeta hamana	Common Yellow Conch
Agapeta zoegana	Knapweed Conch
Agonopterix arenella	Brindled Flat-body
Agonopterix heracliana/ciliella	Common Flat-body / Large Carrot Flat-body
Agriopis aurantiaria	Scarce Umber
Agriphila geniculea	Elbow-stripe Grass-veneer
Agriphila straminella	Straw Grass-veneer
Agriphila tristella	Common Grass-veneer
Agrochola circellaris	Brick
Agrochola lychnidis	Beaded Chestnut
Agrochola macilenta	Yellow-line Quaker
Agrotis clavis	Heart & Club
Agrotis exclamationis	Heart & Dart
Agrotis ipsilon	Dark Sword-grass
Agrotis puta	Shuttle-shaped Dart
Agrotis segetum	Turnip Moth
Alcis repandata	Mottled Beauty
Allophyes oxyacanthae	Green-brindled Crescent
Alsophila aescularia	March Moth
Alucita hexadactyla	Twenty-plume Moth, Many-plumed Moth
Amblyptilia acanthadactyla	Beautiful Plume
Amphipoea oculea agg.	Ear moth agg.
Amphipyra pyramidea agg.	Copper Underwing agg.
Anania hortulata	Small Magpie
Anorthoa munda	Twin-spotted Quaker
Apamea monoglypha	Dark Arches
Apamea scolopacina	Slender Brindle
Aphomia sociella	Bee Moth
Apoda limacodes	Festoon
Aporophyla nigra	Black Rustic

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Archips podana	Large Fruit-tree Tortrix
Archips xylosteana	Variegated Golden Tortrix
Argyresthia brockeella	Gold-ribbon Argent
Argyresthia goedartella	Golden Argent
Aristotelia ericinella	Heather Neb
Atethmia centrago	Centre-barred Sallow
Autographa gamma	Silver Y
Axylia putris	Flame
Bactra lancealana/lacteana	Rush Marble / Scarce Sedge Marble
Biston betularia	Peppered Moth
Biston strataria	Oak Beauty
Blastobasis adustella	Dingy Dowd
Blastobasis lacticolella	London Dowd
Bryotropha terrella	Cinerous Neb
Calliteara pudibunda	Pale Tussock
Campaea margaritaria	Light Emerald
Caradrina clavipalpis	Pale Mottled Willow
Caradrina morpheus	Mottled Rustic
Carcina quercana	Long-horned Flat-body
Cataclysta lemnata	Small China-mark
Celypha lacunana	Common Marble
Celypha striana	Barred Marble
Cerastis rubricosa	Red Chestnut
Charanyca trigrammica	Treble Lines
Chloroclysta siterata	Red-green Carpet
Chrysoteuchia culmella	Garden Grass-veneer
Cilix glaucata	Chinese Character
Cirrhia icteritia	Sallow
Clavigesta purdeyi	Pine Leaf-mining Moth
Cleorodes lichenaria	Brussels Lace
Clepsis consimilana	Privet Tortrix
Cnephasia agg.	Grey Tortrix agg.
Cochylis molliculana	Ox-tongue Conch
Colocasia coryli	Nut-tree Tussock
Colostygia pectinataria	Green Carpet
Colotois pennaria	Feathered Thorn
Conistra vaccinii	Chestnut
Cosmia trapezina	Dun-bar
Crambus pascuella	Inlaid Grass-veneer
Crambus perlella	Satin Grass-veneer
Craniophora ligustri	Coronet
Cryphia algae	Tree-lichen Beauty
Cyclophora linearia	Clay Triple-lines

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Cyclophora punctaria	Maiden's Blush
Cydalima perspectalis	Box-tree Moth
Cydia amplana	Vagrant Piercer
Cydia splendana	Marbled Piercer
Deilephila elpenor	Elephant Hawk-moth
Deltote pygarga	Marbled White Spot
Diachrysia chrysitis	Burnished Brass
Diaphora mendica	Muslin Moth
Diarsia mendica	Ingrailed Clay
Diarsia rubi	Small Square-spot
Dioryctria abietella	Dark Pine Knot-horn
Ditula angustiorana	Red-barred Tortrix
Diurnea fagella	March Tubic
Drepana falcataria	Pebble Hook-tip
Drymonia ruficornis	Lunar Marbled Brown
Dryobotodes eremita	Brindled Green
Dypterygia scabriuscula	Bird's Wing
Dysstroma truncata	Common Marbled Carpet
Ecliptopera silaceata	Small Phoenix
Eilema griseola	Dingy Footman
Eilema lurideola	Common Footman
Eilema sororcula	Orange Footman
Electrophaes corylata	Broken-barred Carpet
Elophila nymphaeata	Brown China-mark
Endotricha flammealis	Rosy Tabby
Endrosis sarcitrella	White-shouldered House-moth
Ennomos alniaria	Canary-shouldered Thorn
Ennomos erosaria	September Thorn
Ennomos fuscantaria	Dusky Thorn
Ennomos quercinaria	August Thorn
Epinotia bilunana	Crescent Bell
Epinotia ramella	Small Birch Bell
Epiphyas postvittana	Light Brown Apple Moth
Epirrhoe alternata	Common Carpet
Erannis defoliaria	Mottled Umber
Eucosma cana	Hoary Bell
Eudonia angustea	Narrow-winged Grey
Eudonia delunella	Pied Grey
Eudonia lacustrata	Little Grey
Eudonia mercurella	Small Grey
Eudonia truncicolella	Ground-moss Grey
Eupithecia abbreviata	Brindled Pug
Eupithecia centaureata	Lime-speck Pug

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Eupithecia icterata	Tawny Speckled Pug
Eupithecia nanata	Narrow-winged Pug
Eupithecia pulchellata	Foxglove Pug
Euplagia quadripunctaria	Jersey Tiger
Euproctis chrysorrhoea	Brown-tail
Eupsilia transversa	Satellite
Euzophera pinguis	Ash-bark Knot-horn
Glyphipterix thrasonella	Speckled Fanner
Griposia aprilina	Merveille du Jour
Gymnoscelis rufifasciata	Double-striped Pug
Habrosyne pyritoides	Buff Arches
Hadena bicruris	Lychnis
Hedya nubiferana	Marbled Orchard Tortrix
Helicoverpa armigera	Scarce Bordered Straw
Helotropha leucostigma	Crescent
Hemithea aestivaria	Common Emerald
Herminia tarsipennalis	Fan-foot
Hofmannophila pseudospretella	Brown House-moth
Homoeosoma sinuella	Twin-barred Knot-horn
Hoplodrina ambigua	Vine's Rustic
Hoplodrina octogenaria/blanda	Uncertain/Rustic agg.
Hypena proboscidalis	Snout
Hypsopygia glaucinalis	Double-striped Tabby
Idaea aversata	Riband Wave
Idaea biselata	Small Fan-footed Wave
Idaea fuscovenosa	Dwarf Cream Wave
Idaea trigeminata	Treble Brown Spot
Korscheltellus lupulina	Common Swift
Lacanobia oleracea	Bright-Line Brown-Eye
Lacanobia w-latinum	Light Brocade
Laothoe populi	Poplar Hawk-moth
Laspeyria flexula	Beautiful Hook-tip
Lithophane socia	Pale Pinion
Lomaspilis marginata	Clouded Border
Lomographa temerata	Clouded Silver
Loxostege sticticalis	Diamond-spot Pearl
Lozotaenia forsterana	Large Ivy Tortrix
Luperina testacea	Flounced Rustic
Lycia hirtaria	Brindled Beauty
Lycophotia porphyrea	True Lover's Knot
Lymantria monacha	Black Arches
Mamestra brassicae	Cabbage Moth
Mesapamea secalis agg.	Common Rustic agg.

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Miltochrista miniata	Rosy Footman
Mythimna albipuncta	White-point
Mythimna impura	Smoky Wainscot
Mythimna l-album	L-album Wainscot
Mythimna pallens	Common Wainscot
Noctua comes	Lesser Yellow Underwing
Noctua fimbriata	Broad-bordered Yellow Underwing
Noctua interjecta	Least Yellow Underwing
Noctua janthe	Lesser Broad-bordered Yellow Underwing
Noctua pronuba	Large Yellow Underwing
Nomophila noctuella	Rush Veneer
Notocelia uddmanniana	Bramble Shoot Moth
Nycteola revayana	Oak Nycteoline
Ochropleura plecta	Flame Shoulder
Odontopera bidentata	Scalloped Hazel
Oligia fasciuncula	Middle-barred Minor
Oligia strigilis agg.	Marbled Minor agg.
Omphaloscelis lunosa	Lunar Underwing
Oncocera semirubella	Rosy-striped Knot-horn
Opisthograptis luteolata	Brimstone Moth
Orthonama vittata	Oblique Carpet
Orthosia cerasi	Common Quaker
Orthosia cruda	Small Quaker
Orthosia gothica	Hebrew Character
Orthosia gracilis	Powdered Quaker
Orthosia incerta	Clouded Drab
Pandemis cerasana	Barred Fruit-tree Tortrix
Pandemis corylana	Chequered Fruit-tree Tortrix
Pandemis heparana	Dark Fruit-tree Tortrix
Parapoynx stratiotata	Ringed China-mark
Parectropis similaria	Brindled White-spot
Pasiphila rectangulata	Green Pug
Pediasia contaminella	Waste Grass-veneer
Peribatodes rhomboidaria	Willow Beauty
Petrophora chlorosata	Brown Silver-line
Phalera bucephala	Buff-tip
Pheosia gnoma	Lesser Swallow Prominent
Pheosia tremula	Swallow Prominent
Phlogophora meticulosa	Angle Shades
Phtheochroa rugosana	Rough-winged Conch
Phycita roborella	Dotted Oak Knot-horn
Plagodis dolabraria	Scorched Wing
Platyedra subcinerea	Mallow Crest

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Plemyria rubiginata	Blue-bordered Carpet
Pleuroptya ruralis	Mother of Pearl
Plutella xylostella	Diamond-back Moth
Poecilocampa populi	December Moth
Polyploca ridens	Frosted Green
Pseudargyrotoza conwagana	Yellow-spot Tortrix
Pseudoips prasinana	Green Silver-lines
Pterapherapteryx sexalata	Small Seraphim
Pterophorus pentadactyla	White Plume
Pterostoma palpina	Pale Prominent
Rhizedra lutosa	Large Wainscot
Rhodometra sacraria	Vestal
Rhopobota naevana	Holly Tortrix
Rivula sericealis	Straw Dot
Scoliopteryx libatrix	Herald
Scrobipalpa acuminatella	Pointed Groundling
Selenia dentaria	Early Thorn
Sphinx pinastri	Pine Hawk-moth
Spilosoma lubricipeda	White Ermine
Subacronicta megacephala	Poplar Grey
Synaphe punctalis	Long-legged Tabby
Tachystola acroxantha	Ruddy Streak
Teleiodes luculella	Crescent Groundling
Tethea ocularis	Figure of Eighty
Thera britannica	Spruce Carpet
Thera obeliscata	Grey Pine Carpet
Tiliacea aurago	Barred Sallow
Timandra comae	Blood-Vein
Tinea trinotella	Bird's-nest Moth
Tortrix viridana	Green Oak Tortrix
Tyria jacobaeae	Cinnabar
Udea ferrugalis	Rusty-dot Pearl
Udea olivalis	Olive Pearl
Watsonalla binaria	Oak Hook-tip
Xanthia togata	Pink-barred Sallow
Xanthorhoe designata	Flame Carpet
Xanthorhoe fluctuata	Garden Carpet
Xanthorhoe spadicearia	Red Twin-spot Carpet
Xestia agathina	Heath Rustic
Xestia c-nigrum	Setaceous Hebrew Character
Xestia sexstrigata	Six-striped Rustic
Xestia triangulum	Double Square-spot
Xestia xanthographa	Square-spot Rustic

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Xylocampa areola	Early Grey
Yponomeuta sp.	Small Ermine sp.
Ypsolopha sequella	Pied Smudge
Zeiraphera isertana	Cock's-head Bell
Zygaena filipendulae	Six-spot Burnet

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PATTERNS OF TENSION AND HARMONY BETWEEN ARCHITECTURE AND NATURE WITHIN HOLES BAY

Can architecture offer a solution to one of the greatest problems of our time?

Kira Bennett

Throughout the last five years, whilst studying both my bachelors and master's degree in architecture at the Arts University in Bournemouth, I have become more deeply connected with the story and ecology of Holes Bay. Over the last three years I have focused on building a body of architectural research that explores the complex interrelationship between people and nature, observing and analysing the impact that architecture and the development of urban landscapes has had on the surrounding natural context of Holes Bay. This article offers a glimpse into the research I have presented within my architectural thesis, to shine some light on the tensions that I have observed between the urban and natural landscape of the Bay. Learning of our mistakes in regards to how we have built alongside nature in the past offers us important information to evolve the way that we design the spaces we inhabit - to create architecture that is better integrated and more harmonious with landscape and wildlife. The aim within my research is to create architecture that brings us closer to nature, proposing a philosophy of design that establishes a deep connection to landscape whilst within the experience of the space; to establish better balance and harmony between us and the natural world.

Today as I write this in 2021, there is no shortage of research papers or reports documenting the global environmental crisis that is presently occurring. A quote published online from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) states that;

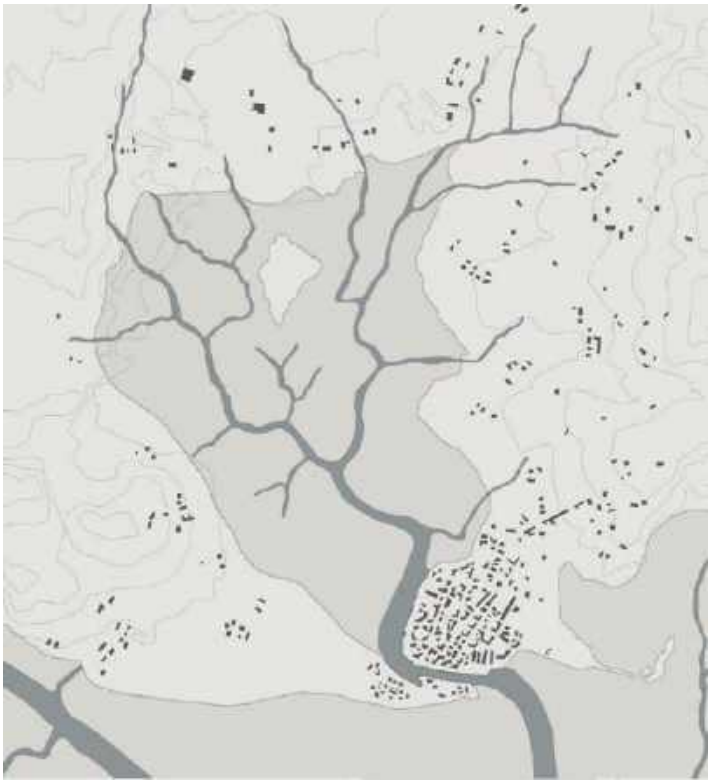
"*Nature is declining globally at rates unprecedented in human history – and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely*."[1] (IPBES, 2020)

Tackling something as huge as the global ecological crisis quickly became quite the challenge for one thesis project. When looking at a problem of this scale, you must start by looking locally at the issues and conditions that exist within our immediate surroundings, zooming in to understand and respond to smaller more manageable problems as part of the wider agenda.

Holes Bay quickly became rooted in my curiosity due to the intensely prominent tensions that can so easily be observed at first glance between the natural and urban landscapes as you walk along the Eastern periphery of the bay. Here two worlds have fully collided, a result of long-term overdevelopment of Poole which has gradually spread along much of the surrounding landscape of Holes Bay. To understand more about this, I started by researching its evolution and natural history over an approximately 65 million year timeline, followed by observing the patterns of urban growth through historic maps of Poole. Using this information, I was able to discover any potential impact that the urban growth of the town could be having on the ecological conditions, health, and biodiversity of Holes Bay.

Looking at map data between 1850 moving through to 2020 [images 1 – 3 below], the town can be seen to grow rapidly across the landscape, with increasing development concentrated along its southern and eastern periphery. Much of the southern urban development began as part of intense industrialisation movements within the town, with large expanses of wetland habitat being reclaimed to accommodate industrial works as well as additional land space for roads and buildings.

1. IPBES. (2020). *UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'* [online]. Available at: https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/ [Accessed: 02.11.2020]



1. Map of Poole [1850] Data courtesy of Poole History Centre

2. Map of Poole [1900] Data courtesy of Poole History Centre

3. Map of Poole [2021] Data courtesy of Poole History Centre

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The growth of the town alone is something of interest, but when you compare this with data collected from Natural England on the health and conditions of Holes Bay in terms of habitats and ecology, things really start to get interesting.

Holes Bay holds numerous environmental classifications that are designed to provide better management and protection of the area, due its international significance in terms of its ecology, biodiversity, and scientific interest. The designations of Holes Bay are; as a Nature Reserve (as of 2015),[2] a site on the Ramsar list for its international importance for wildlife conservation, a Site of Special Scientific Interest (SSSI) an Important Bird Area, as well as a Special Protection Area (SPA).[3]

4. 1:20000 map highlighting unfavourable and declining areas within Holes Bay. Data courtesy of Natural England 2020.

5. 1:20000 Map of Holes Bay Outlining Habitat Locations and Distribution Data courtesy of Natural England 2020.

Despite these internationally accredited classifications, many habitats within the bay remain in conditions that are unfavourable and declining. It can also be observed that most of the natural habitats situated there, as seen above in image five, have been entrapped within the ribbon of urban landscape that now surrounds the bay on all sides. For me these correlations are no coincidence. When you observe data such as this, it becomes quite clear that the way the town has been developed over the years is having significant impact on the native landscapes and wildlife. Wherever large-scale urban development has occurred, habitats and wild landscapes have become fragmented, damaged or in some cases destroyed entirely.

Whilst exploring this research and getting a deeper understanding of Poole and the existing landscape, I noticed that as a town it feels quite disconnected from its natural context. Walking through the town centre you would never know that habitats like that of Holes Bay are just a stone's throw away. Here the presence of nature can only really be felt within groups of Pigeons or Seagulls or the occasional Peregrine Falcon.

2. GovUK. (2015). Nature Park launched in Poole for wildlife and people. [online]. Available at: https://www.poole.gov.uk/newsroom/2015-news-archive/march-2015/nature-park-launched-in-poole-for-wildlife-and-people/ [Accessed: 24.02.2021]

3. Defra. (2021). Designations and Classifications Magic Map Data. [online]. Available at: https://magic.defra.gov.uk/MagicMap.aspx?startTopic=Designations&activelayer=sssiIndex&query=HYPERLINK%3D%271000110%27 [Accessed: 17.09.2020]

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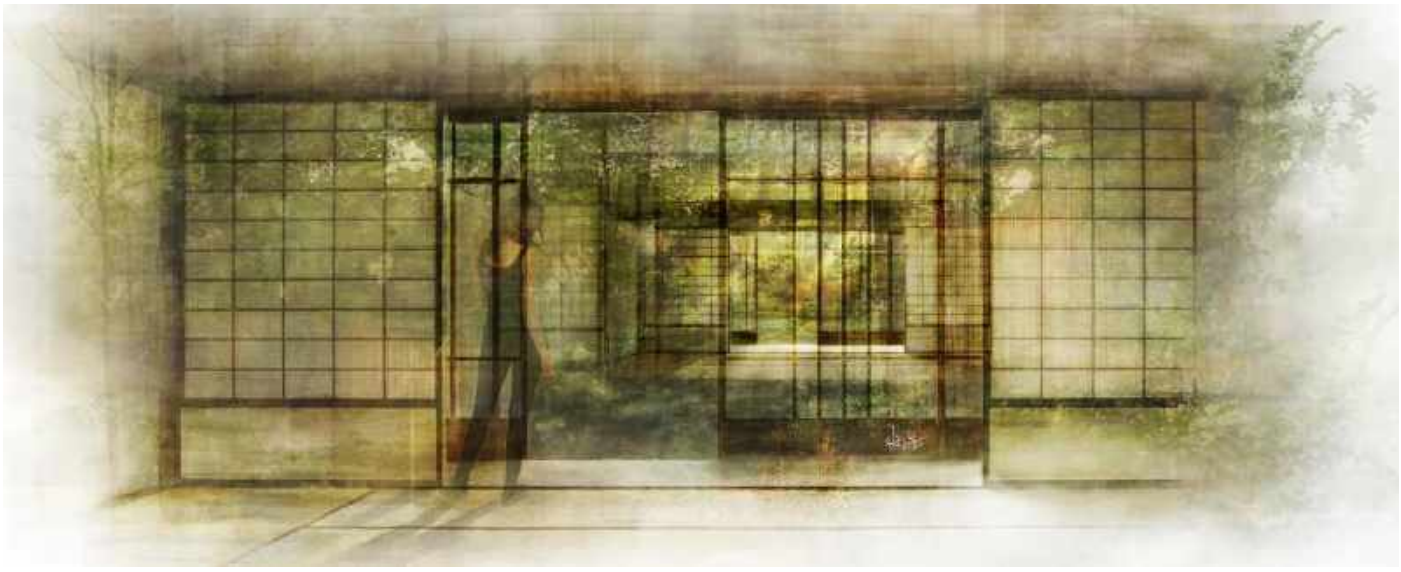
This action of opposition has driven nature out, and great care needs to be taken on how we continue to develop spaces along the periphery of the bay to prevent any further disruption or damage to the natural landscape. Perhaps the best approach would be to stop any further development along the coast? That seems highly unlikely, so instead we can begin by approaching design in a way that *truly* places the wellbeing of nature at the focus of each project, to ensure that ecology and biodiversity networks are integrated and considered as a part of the language of the architecture itself. We cannot rewrite any damage that has been done in the past, but by observing this data that illustrates a correlation between urban land distribution and the health and conditions of habitats like this, and many others around the world, we can move towards a better future where we use this to inform our approach to design, allowing us to exist in harmony with nature once again; to reawaken our sacred connection with nature and promoting the well-being of all life on Earth.



6. [Above] Conceptual painting by the author exploring how architecture and nature could become better integrated and in harmony, creating healthier spaces for both people and wildlife.

7. [Below] Painting by the author exploring moments between people, architecture, and nature; How can nature itself become part of the architectural experience of a space?

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