

DURLSTON COUNTRY PARK
PLEASURE GROUNDS PROJECT
ORNITHOLOGICAL MONITORING
MAY 2018-MARCH 2022

INTRODUCTION

One of the conditions of the HLF grant to the Durlston Country Park (CP) Pleasure Grounds Project was that monitoring be undertaken to determine whether the works associated with the Project had an adverse effect on wildlife. As part of the monitoring programme, ornithological surveys have been undertaken since May 2018. This Report describes:

- the approach taken to the surveys; and
- the results of three years of monitoring.

METHODS

The survey area was divided into five smaller areas (see *Figure 1* below):

- South End Woods (including Caravan Terrace);
- Holm Oaks;
- Mixed Wood;
- North End Wood; and
- Long Meadow.

It should be noted that Long Meadow is not part of the Pleasure Grounds Project. The area was included to provide context as it is an adjacent habitat.

Surveys were undertaken on an approximately forthrightly basis. In a limited number of cases, surveys were not undertaken because of unsuitable weather and surveyor unavailability. Where possible, surveys were carried out in calm or light winds with no rain. In 2019/20, surveys were normally carried out at weekends to avoid potential conflict with the works. As this limited the choice of potential survey dates, some surveys were carried out in higher winds than were ideal.

The above notwithstanding, a total of 22 surveys were carried out between May 2018 and March 2019, 25 between April 2019 and March 2020 and 25 between April 2021 and March 2022. The break in fieldwork between March 2020 and April 2021 was because of restrictions in place during the COVID-19 pandemic.

For each survey, the position and identity of all birds seen or heard using the woodland/scrub/hedgerow areas were recorded. A judgement was made on habitat usage - for example a Buzzard or a Sparrowhawk over a woodland area was deemed to be potentially using the habitat, an overflying Herring Gull was not. The data was input into the BTO's BirdTrack recording system. This had the advantages of generating a dataset for future use by Durlston CP staff and contributing to a national database that is used for a number of purposes including monitoring abundance, migrant arrival and departure dates, and long-term trends.

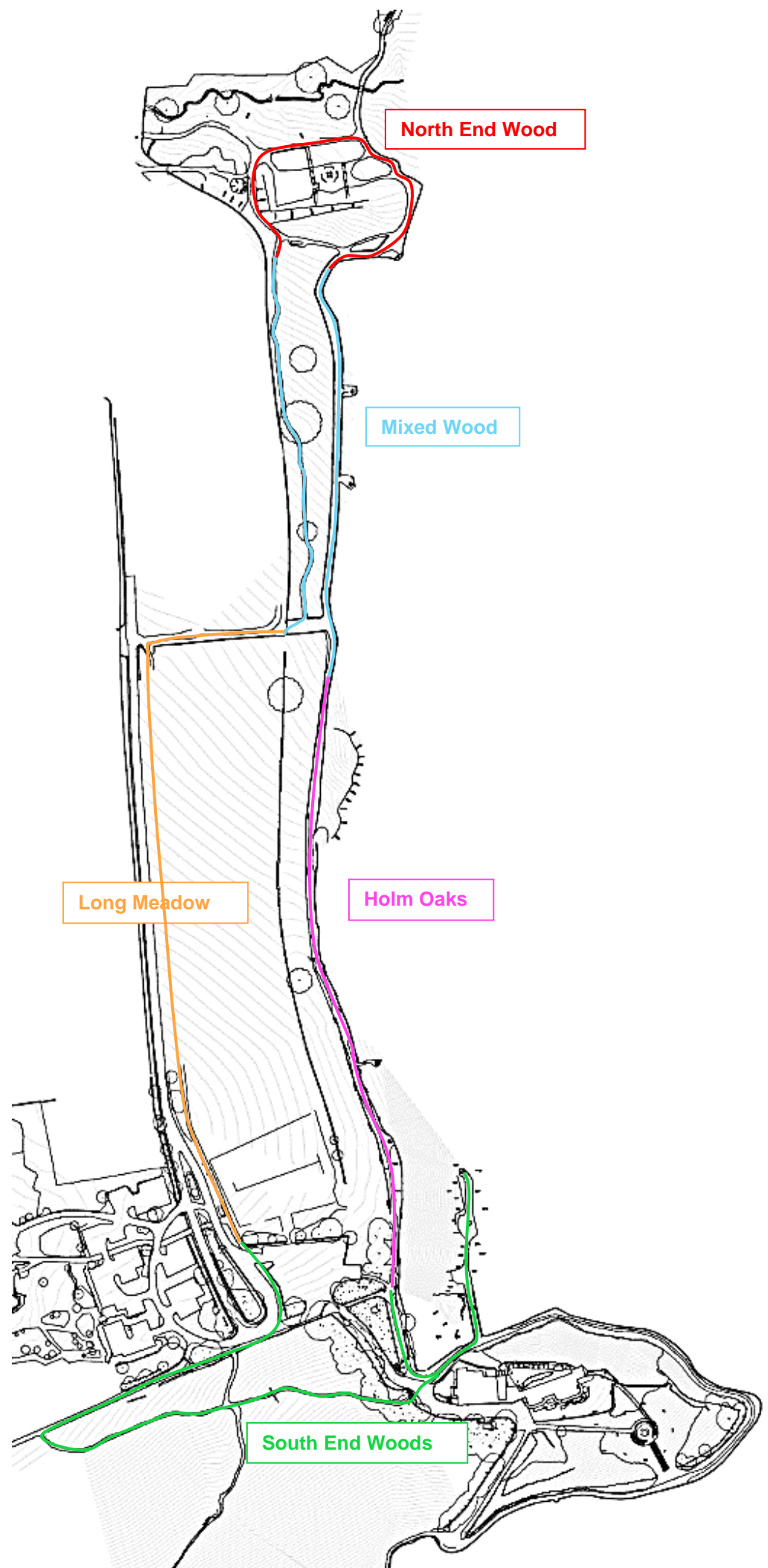
For the analysis, the following periods were used:

- May 2018 to March 2019;
- April 2019 to March 2020; and
- April 2021 to March 2022.

These periods were chosen to be representative of three breeding seasons, and to coincide with 'pre-works', 'during works' and 'post-works' phases.

Figure 1

**Durlston Woodland
Bird Survey areas**



Analysis of the data allowed the identification of:

- the numbers of species and birds seen or heard for each survey in each area;
- the average numbers of species and individuals per visit for each period;
- the total number of species recorded in each area for each period;
- the most abundant species in each area for each period – these are species which were recorded on more than half of the surveys, listed in order of occurrence; and
- noteworthy species (in a Durlston context); it should be noted that this is a subjective assessment.

RESULTS

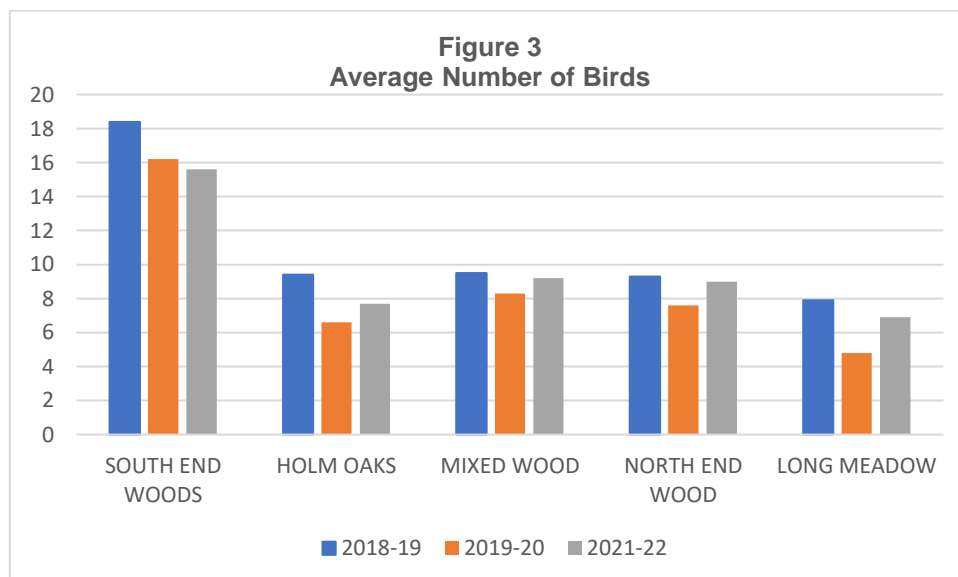
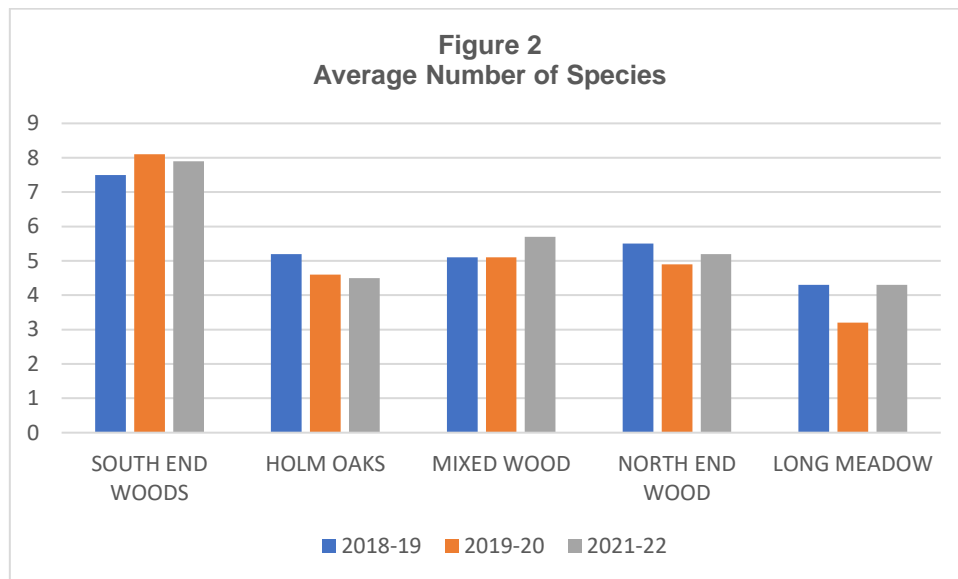
Overview

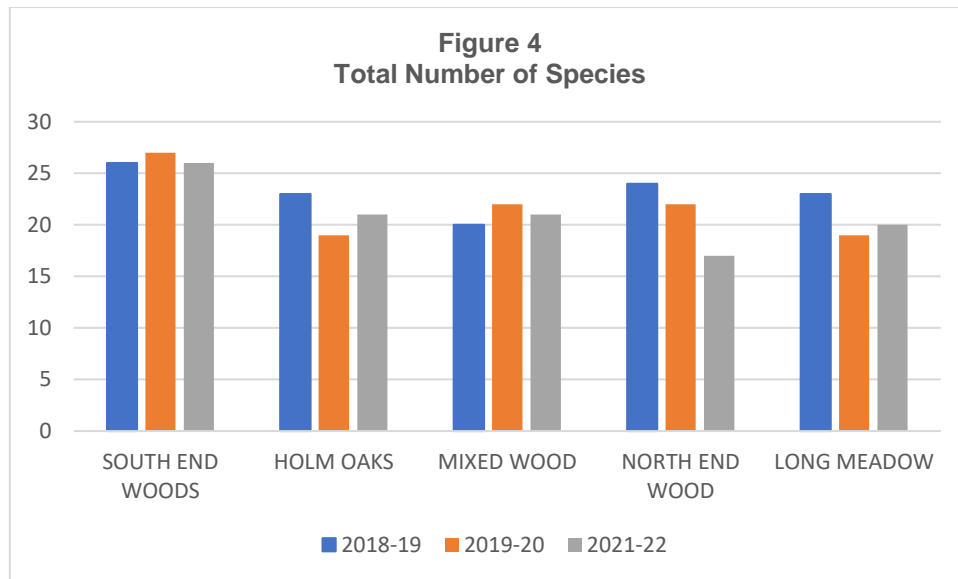
The table below summarises the results.

	2018-19	2019-20	2021-22
SOUTH END WOODS			
Average Number of Species	7.5	8.1	7.9
Average Number of Birds	18.4	16.2	15.6
Total Species	26	27	26
Most Abundant Species	Woodpigeon, Robin, Blue Tit, Great Tit, Jackdaw,	Woodpigeon, Robin, Blue Tit, Great Tit, Wren, Blackbird, Jackdaw	Woodpigeon, Robin, Magpie, Blackbird, Jackdaw, Great Tit Wren
Notable Species	Bullfinch, Sparrowhawk, Firecrest	Bullfinch, Firecrest, Garden Warbler, Treecreeper	Bullfinch, Firecrest, Treecreeper
HOLM OAKS			
Average Number of Species	5.2	4.6	4.5
Average Number of Birds	9.4	6.6	7.7
Total Species	23	19	21
Most Abundant Species	Woodpigeon, Blue Tit	Robin, Blue Tit	Robin, Woodpigeon
Notable Species	Buzzard, Sparrowhawk	Buzzard, Sparrowhawk, Bullfinch	Buzzard, Sparrowhawk
MIXED WOOD			
Average Number of Species	5.1	5.1	5.7
Average Number of Birds	9.5	8.3	9.2
Total Species	20	22	21
Most Abundant Species	Great Tit, Woodpigeon, Wren, Robin	Robin, Carrion Crow, Woodpigeon, Wren	Robin, Woodpigeon, Magpie
Notable Species	Nuthatch	Nuthatch, Sparrowhawk	Sparrowhawk, Treecreeper
NORTH END WOOD			
Average Number of Species	5.5	4.9	5.2
Average Number of Birds	9.3	7.6	9.0
Total Species	24	22	17
Most Abundant Species	Woodpigeon, Magpie, Wren	Woodpigeon, Wren, Magpie, Robin	Robin, Magpie, Wren
Notable Species	Sparrowhawk, Nuthatch, Treecreeper	Treecreeper, Sparrowhawk, Firecrest, Nuthatch	Firecrest, Buzzard

LONG MEADOW			
Average Number of Species	4.3	3.2	4.3
Average Number of Birds	7.9	4.8	6.9
Total Species	23	19	20
Most Abundant Species	Woodpigeon, Robin		Robin
Notable Species	Bullfinch, Sparrowhawk	Bullfinch, Spotted Flycatcher	

The results are presented graphically in *Figures 2-4* which show, for each survey area, and for each survey period, the average number of species recorded per survey, the average number of birds recorded per survey, and the total number of species recorded across the three survey periods.





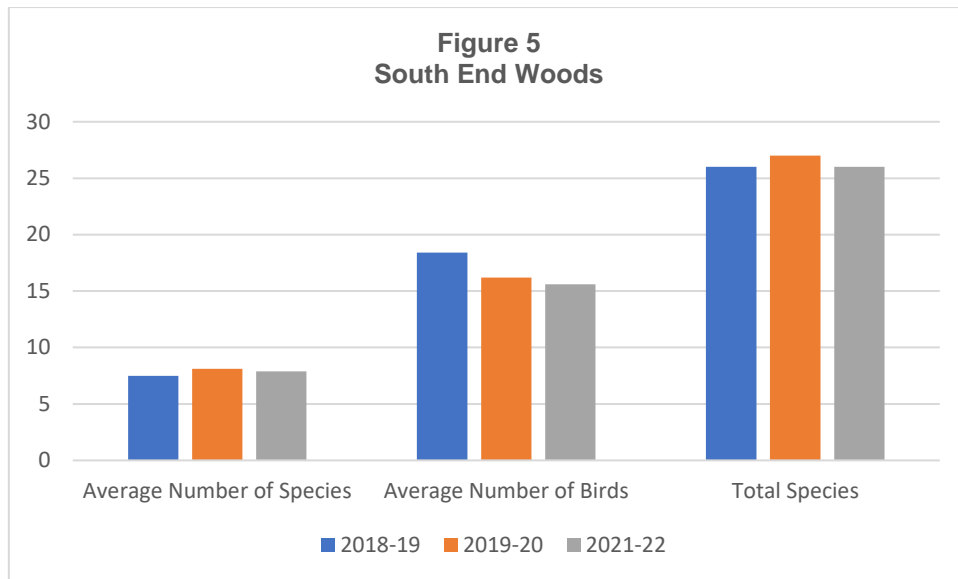
The principal overall conclusion from the data is that South End Woods are richer than the other four areas with respect to the average number of species and birds recorded per survey. The difference is less marked with respect to total number of species. The relative richness of South End Woods is apparent in all three survey periods.

With respect to the average number of birds recorded per survey visit, it is of note that for the four areas other than South Woods, numbers appear to decline during the works period, before recovering. This pattern is repeated in two areas with respect to average number of species per survey. The pattern is most marked in Long Meadow and is discussed in that section of the Report.

The following sections of the Report examine trends in each of the survey areas.

South End Woods

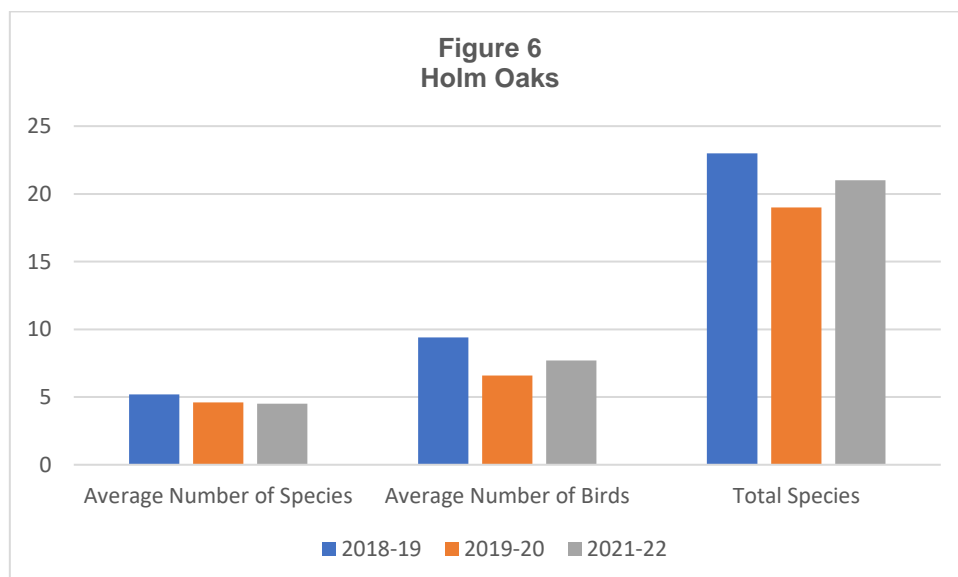
Examination of *Figure 5* shows that there appears to be little change with respect to the three parameters (average number of species, average number of birds, and total species) across the three survey periods. Although the average number of birds per survey decreases from 18.4 during the pre-works period to 15.6 during the post-works period (a decrease of 15%), the difference is not statistically significant at the 95% level (Mann-Whitney U test) ([Mann-Whitney U Test Calculator \(socscistatistics.com\)](https://www.socscistatistics.com/mannwhitneyu-test-calculator/)). Examination of the lists of abundant and noticeable species also shows no apparent differences in species composition.



The wooded area to the west of the Castle has experienced little habitat change during the Pleasure Grounds Project; there has, however, been extensive vegetative clearance in the Dell and the area to the east of the bridge. It is encouraging that this has not resulted in any apparent effect on bird populations.

Holm Oaks

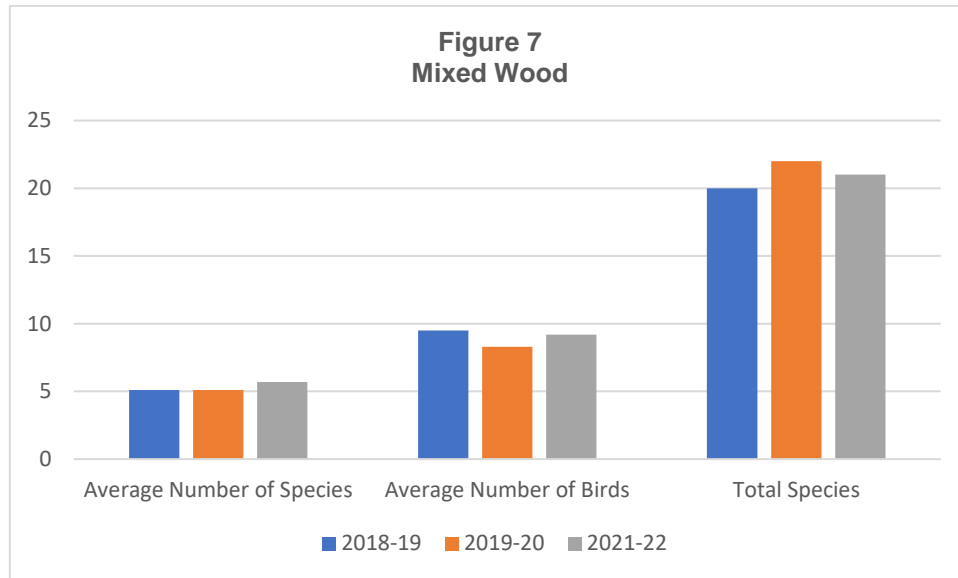
Examination of *Figure 6* shows that there appears to be little change with respect to the three parameters (average number of species, average number of birds, and total species) across the three survey periods. Although the average number of birds per survey decreases from 9.4 during the pre-works period to 7.7 during the post-works period (a decrease of 18%), the difference is not statistically significant at the 95% level (Mann-Whitney U test). There was a greater decrease between the pre-works and during works phases (from 9.4 to 6.6, a decrease of 30%), but this was not statistically significant either. Examination of the lists of abundant and noticeable species also shows no apparent differences in species composition.



As with South End Woods, it is encouraging that the Pleasure Ground Project has been carried out with no apparent effect on the bird populations. This is surprising when considering the extent of the works carried out – namely, dry stone walling, fence removal, the provision of a play trail, additional footpath and play equipment.

Mixed Wood

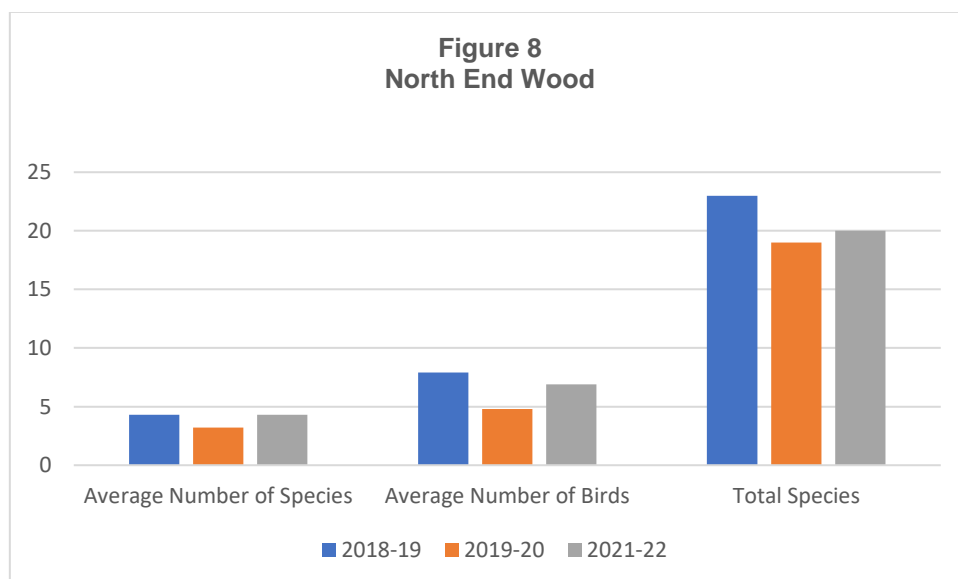
Examination of *Figure 7* shows that in common with South End Woods and Holm Oaks, there appears to be no change with respect to the three parameters other than a possible marginal decrease in the number of birds during the works. Examination of the lists of abundant and noticeable species also shows no apparent differences in species composition.



Very little management work was carried out in the area during the Project other than limited tree thinning, particularly with opening views to the sea.

North End Wood

Examination of *Figure 8* shows that there appears to be little change with respect to two parameters (average number of species and average number of birds) across the three survey periods. However, the total number of species recorded has decreased from 24 pre-works to 17 post-works, a decrease of 29%. It is not possible to test whether this is statistically significant as the parameter relates to the total number of species recorded in each survey period. Examination of the list of abundant species shows little apparent change; however, the list of noticeable species shows the absence of Treecreeper and Nuthatch, two specialist woodland species. Treecreeper populations are fluctuating but stable in the UK, Nuthatch populations are increasing (BTO BirdTrends ([Species | BTO - British Trust for Ornithology](#))).

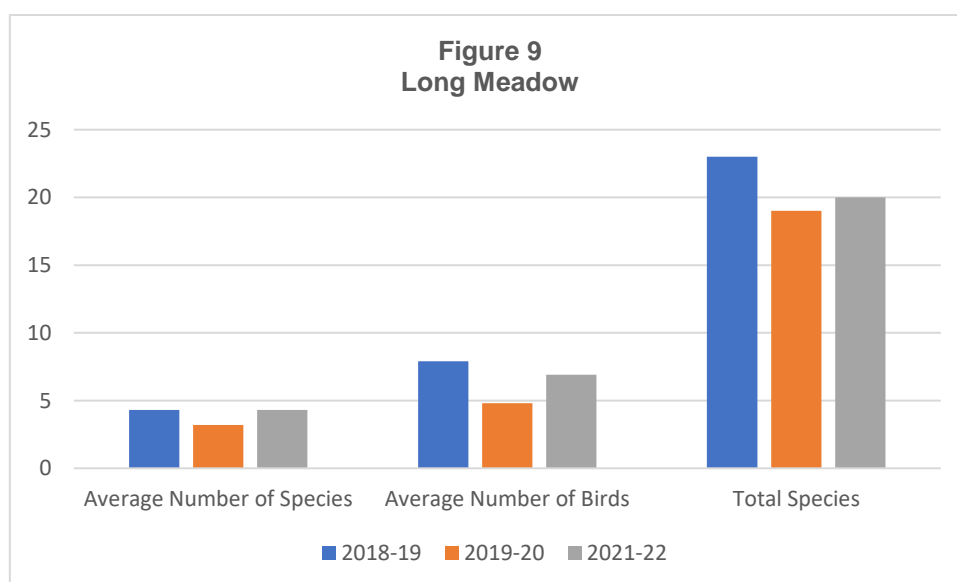


It may be the case that the two species have been overlooked during the post-works survey period although Treecreepers were recorded in both South End and Mixed Woods. Nuthatches were not recorded in any of the survey areas during the post-works period.

Compared with other survey areas, more extensive works associated with the Pleasure Grounds Project have been undertaken in North End Wood. This has involved the creation of additional paths, the erection of The Shed, and thinning of understorey. Further regular surveys will help ascertain whether the species are no longer using this area and if so, what the potential causes are.

Long Meadow

Examination of *Figure 9* shows that the average number of species per survey decreases from 4.3 to 3.2 during the works (statistically significant at the 95% level (Mann-Whitney U test)) before recovering to 4.3 in the post-works period. The average number of birds per survey shows a similar pattern, decreasing from 7.9 to 4.8 (a decrease of 39%, statistically significant at the 95% level (Mann-Whitney U test)) before recovering to 6.9 (the decrease from 7.9 to 6.9 is not statistically significant).



Long Meadow was not directly affected by any Pleasure Ground Project works. However, woodland areas were closed during the works potentially causing an increase in the number of pedestrians using the footpath adjacent to the meadow. This may have caused a degree of disturbance and an apparent reduction in the number of birds. During the works, surveys were carried out at the weekends, access to the woodland areas not being possible. Footfall to the Park is likely to be higher during the weekends resulting in greater disturbance and a decrease in birds in the Long Meadow area. Although the above may explain the apparent decrease during the work, it is speculation; the important finding is that post works, numbers returned to the pre-works levels.

CONCLUSIONS

Ornithological surveys were carried out over a period of three years at Durlston Country Park to determine whether the works associated with the Pleasure Grounds Project have had an adverse effect on bird populations.

The surveys found that:

- South End Woods are ornithologically richer than the other four areas with respect to all three assessment parameters.
- The works do not appear to have had any effect on bird populations in South End Woods.

- With respect to the average number of birds recorded per survey visit, bird numbers in Holm Oaks, Mixed Wood and North End Wood appear to decline during the works period, before recovering. However, these differences are not statistically significant.
- The total number of species in North End Wood appears to have declined and it is possible that Treecreeper and Nuthatch may not be using the area now.
- In Long Meadow, the average number of species and birds both showed statistically significant declines between the pre-works and works period, before recovering. Although the area was not directly affected by any Pleasure Ground Project works, an increase in the number of pedestrians using the footpath adjacent to the meadow may have caused a degree of disturbance and an apparent reduction in the number of birds. This may have been exacerbated by surveys being undertaken, by necessity, in less than ideal conditions.

It is recommended that surveys continue, on a monthly basis.

Jol Mitchell
April 2022