

PEAK DISTRICT BIRD OF PREY INITIATIVE – 2021 YEAR-END REPORT

Overview of Results 2021 Season

The Initiative continues to be dependent for monitoring data on the local Raptor Groups, partner staff and volunteers, and on those gamekeepers who report sightings to the Raptor Groups. The partners on the Initiative would like to record their thanks for the considerable amount of work that goes into this.

Arguably the most notable feature of 2021 was the very successful breeding season for **Short-eared Owls**. Clearly 2021 was a good year for voles, and this resulted in at least 30 pairs of breeding Short-eared Owls- at least double the previous highest annual count (of 15) since 2012 and exceeding the target of 25 pairs. Although detailed monitoring was only possible for a limited number of nests, this suggested good breeding success.

Also of particular note was the successful fledging of 4 young from a **Hen Harrier** nest on moorland owned by the National Trust, the third successful nest in the last 4 years. A second pair displayed territorial behaviour but were not subsequently seen despite extensive monitoring across the Peak District. These events highlight the potential for Hen Harrier to re-establish as a regular breeding species in the Peak District.

The number of nesting pairs of **Peregrines** remains low with 8 occupied territories- just less than half the target number. The excellent nesting success in 2020 was not sustained in 2021, with only 3 of the 8 territories successfully fledging young. Theft of eggs/young, which has been an issue in the White Peak previously, shows some signs of spreading to the BoPI area this year.

Goshawk numbers continued an increase to 13 pairs, from the low of 7 pairs in 2018, though the proportion of territories which successfully fledged young has dropped significantly over the same period.

The status of **Merlin** in the Peak District continues to be of concern. Although numbers increased slightly (to 17 pairs) for the second successive year following a decline in 2019, this remains below the 2012-18 average of 22.6 pairs and well below the target (based on late 1990s population) of 37 pairs. Nesting success in 2021 was average for the last 10 years, and fledging success per occupied territory remained relatively high. The relatively large number of young successfully fledging from Peak District moors is still not translating through to the larger breeding population that might be expected, highlighting the need to discover what happens to the fledged chicks.

Two incidents of illegal bird of prey persecution were confirmed by the police within the area covered by the Initiative during 2021- the theft of 3 Peregrine chicks from one nest, and the shooting of a Buzzard. Seven or eight further breeding failures remain unexplained- 3 or 4 further nest failures where theft of eggs/young is suspected (2 Peregrine, 1 or 2 Merlin) and 4 cases where birds were not subsequently seen following initial territorial behaviour and display (3 Goshawk and 1 pair of Hen Harrier), despite extensive monitoring.

Past data on persecution incidents recorded by the Raptor Persecution Priority Delivery Group and by the RSPB is presented in the 2019 report- see

https://www.peakdistrict.gov.uk/_data/assets/pdf_file/0028/99712/Bird-of-Prey-Initiative-2019-report.pdf.

Updates are currently unavailable.

2021 Season- Summary

Species	Territories occupied by pairs	Pairs known to have laid eggs	No. of pairs known to have fledged young	No. young fledged	Agreed Targets (based on figs. at SPA designation)*
Peregrine	8	6	3	10	17 prs
Short-eared Owl	30+	?	6+ (only 6 nests fully monitored)	21+ (only 6 nests fully monitored)	5-yr ave. 25 prs
Merlin	17	17	12	45	37 prs
Goshawk	13	10	7	17	None set
Hen Harrier	2	1	1	4	None set

* Targets were originally set for 2015 for the Dark Peak only, but the figures here include an additional 2 pairs of Peregrine and 5 pairs of Merlin for the South West Peak, which was included from 2016 onwards.

Peregrine Falcon (*Falco peregrinus*)

2021 results

- 8 territories were occupied by pairs, of which 6 pairs attempted to breed.
- 3 pairs bred successfully (one at second nesting attempt, following likely theft of first clutch), fledging a total of 10 young. Strong evidence of 2 further pairs having had their eggs or young stolen

Measurement against the Initiative's targets

- The number of pairs (6 occupied territories) remains well below the target of 17 pairs.
- The number of young fledged per occupied territory was 1.25, below the target of 2.07 young (based on national average).

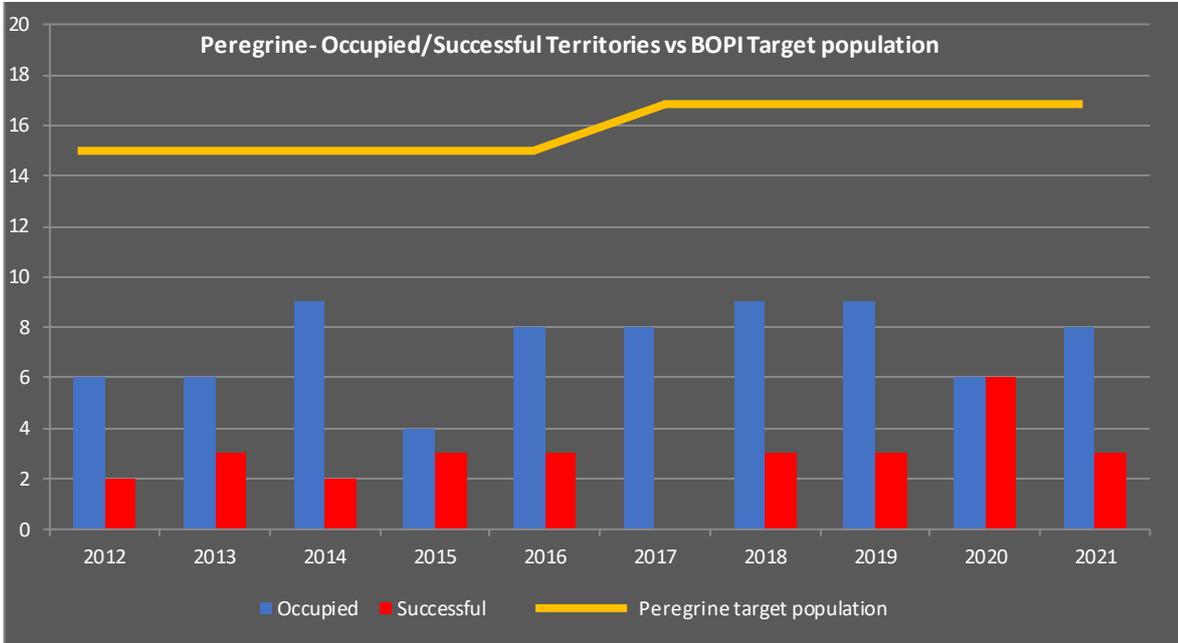
Trend

During the lifetime of the Initiative, the number of occupied territories has averaged 7.3 pairs* (range 4-9 pairs) (Fig. 1). The 2021 figure of 8 pairs is slightly above the average. There is therefore no discernible trend. The number of pairs that successfully fledged at least one young has

varied between 0-3 pairs except for 2020, when all 6 nesting pairs successfully fledged young. This improvement was not sustained in 2021, when only 50% of nests (3 nests) were successful. Again there is therefore no discernible trend.

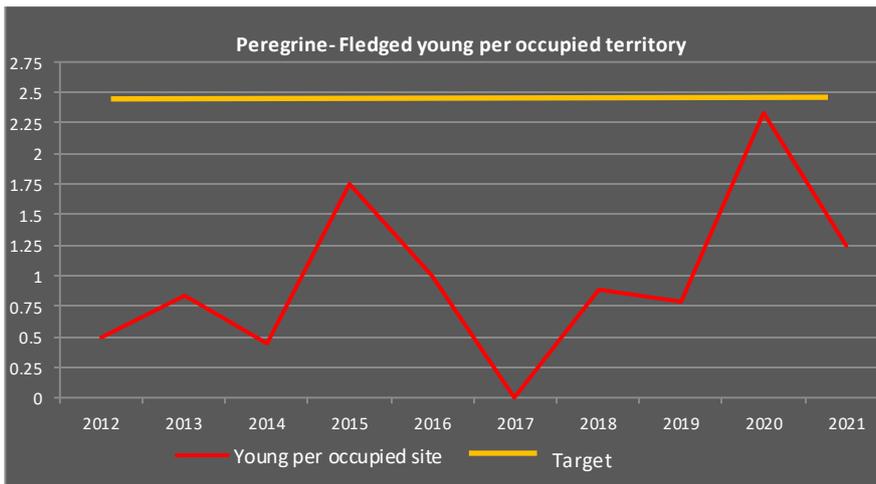
**Note this average excludes the SW Peak prior to 2015.*

Figure 1



The productivity has ranged from no successful nests in 2017 to 2.33 young per occupied territory in 2020. The 2021 figure of 1.25 young per occupied territory is higher than the 2012-21 average of 0.9, reflecting the fact that those nests which did fledge young had a very successful breeding season (Fig. 2).

Figure 2



Comparison with national data

- The proportion of occupied territories which successfully fledged young (37.5%) is lower than both the national average of 63% (Wilson et al, 2018), and the figure of 71% for the Peak District as a whole during the period 1984-2006 (Amur et al, 2011).

- The number of young successfully fledged per occupied territory (1.25) is below the national average of 1.35 (Wilson et al, 2018) despite the high fledging rate for those nests which were successful. This reflects the high proportion of nesting attempts in the BoPI area which failed. Both the 2021 figure and the 2012-21 average (0.9) nevertheless exceed the range of 0.71-0.83 young per occupied territory which Ratcliffe (1993) gives as an indication of the level needed to sustain existing population levels, suggesting that recruitment should be ample to allow population increase on the Peak District moors without recruitment from elsewhere. Despite this the population remains less than half of the expected numbers.

Additional Notes

There was one confirmed incident of illegal persecution- the theft of three young from a nest- and 2 further Peregrine nests failed with circumstances suggesting that eggs or young had been taken, rather than natural predation.

Short-eared Owl (*Asio flammeus*)

2021 results

- At least 30 pairs reported. Only 6 nests could be fully monitored, and these 6 nests fledged 21 young.

Measurement against the Initiative's targets

- For the first time since the BoPI began in 2012 the number of Short-eared Owls (30+ pairs) exceeded the target of 25 pairs.

Trend

Numbers of Short-eared Owls fluctuate considerably from year to year, with high numbers in “good vole years” and sometimes with no birds in “poor vole years”, making it impossible to identify short-term trends. During the lifetime of the Initiative numbers appear to have followed this fluctuating pattern, with between 0-15 pairs in any one year. 2015 and 2018 were relatively good years, 2012 and 2014 were moderate years and 2013, 2016, 2017 and 2020 were poor years. 2021 appears to have been a good vole year across the Peak with some particularly good localised hotspots, resulting in an excellent year for Short-eared Owl- the total of over 30 pairs is double the next highest annual count since 2012.

Additional Notes

Monitoring of Short-eared Owls continues to prove difficult as it has throughout the Bird of Prey Initiative due to the nocturnal habits and remote nesting locations. In addition, breeding success is largely thought to be related to the wide annual fluctuations in the populations of short-tailed voles. The cyclical changes in vole populations and the nomadic behaviour of Short-eared Owls means they are less associated with traditional nesting sites than the other species. Establishing comparative population figures therefore relies more on comprehensive survey coverage of the entire open moorland area, which is beyond the scope of the Initiative.

Persecution incidents affecting this species seem to have diminished in 2021, with no recorded incidents.

Merlin - (*Falco columbarius*)

2021 results

- 17 territories were occupied by pairs, all of which attempted to breed.
- 12 occupied territories successfully fledged young, with a total of 45 young fledged. At one, or possibly two, nests the young disappeared with no signs of predation.

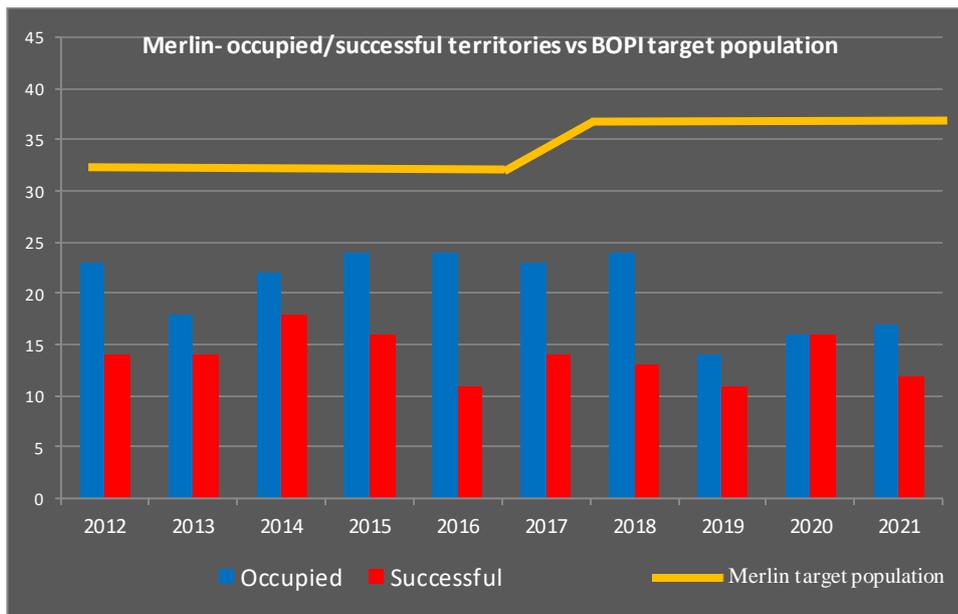
Measurement against the Initiative's targets

- The number of pairs (17 occupied territories) remains well below the target of 37 pairs.
- The success of those pairs that did establish territory however was again well above target, with 45 young fledged- an average of 2.65 young fledged per occupied territory compared to the target of 2.1-2.4.

Trend

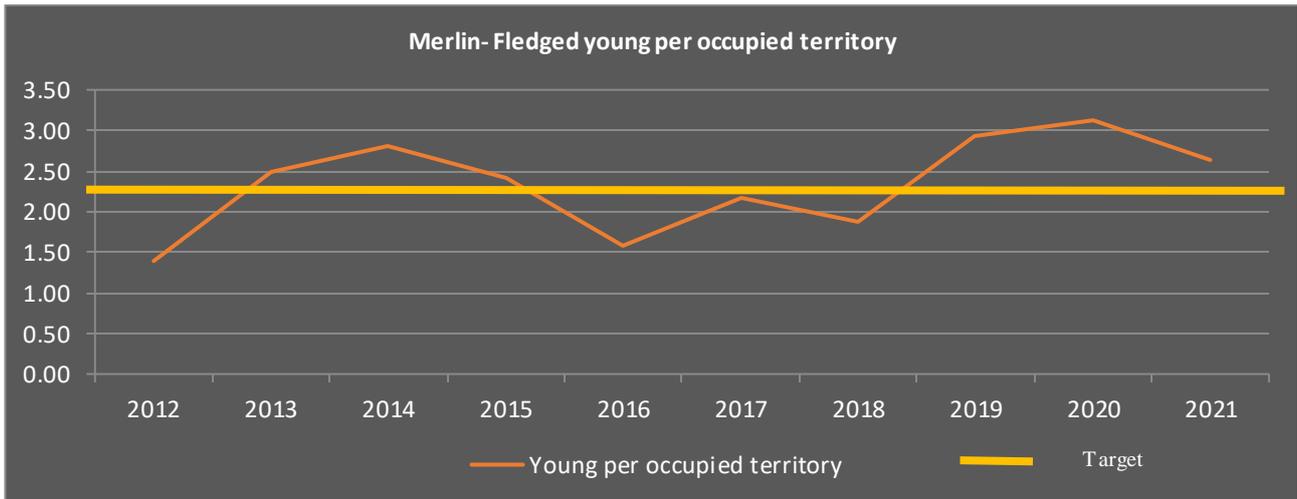
During the period 2012-18 the number of occupied territories appeared relatively stable, with an average of 22.6 pairs/year. There was then a sharp drop to a low of 14 pairs in 2019, since when numbers have continued to show a slight improvement to 17 pairs in 2021 (Fig. 3).

Figure 3



The productivity per occupied territory remains above target but dipped slightly from the previous two years (Fig. 4), due principally to the lower proportion of nests which successfully fledged young this year (12 out of 17 nests, or 70%, compared to 78% and 100% in 2019 and 2020). Productivity of those pairs that do breed successfully, however, continues to be high. Overall the productivity for the 2019-21 period has been higher than 2015-18.

Figure 4



Comparison with national data

- The proportion of nests that successfully fledged young (70.6%) remains higher than the national average of 65% (Bibby & Nattrass, 1986).
- The number of young successfully fledged per occupied territory (2.65) is also significantly higher than the national average of 2.25 (Bibby & Nattrass, 1986). National data suggests that an average of less than 2 young fledged per pair may be associated with a declining population (Bibby & Nattrass, 1986), suggesting that the fledging success in 2021 should be ample to allow population increase on the Peak District moors.
- Merlin are known to have declined over a long period nationally. Overall, across the 10-year period of the Initiative, the Peak District population has also shown some decline (following an even larger decline since the 1990s). The slight recovery over the past 3 years is therefore welcome.

Additional Notes

Theft of young was suspected from one nest, with signs suggesting failure for unknown reasons at the chick stage for a further unconfirmed nesting attempt. The private estate on whose land the two sites lie has expressed an interest in working with the raptor group to increase the chances of breeding success in the future.

Goshawk (*Accipiter gentilis*)

2021 results

- There were ten breeding attempts. Display was recorded at a further 3 sites but no subsequent breeding was recorded.
- Seven pairs bred successfully, fledging 17 young.

Measurement against the Initiative's targets

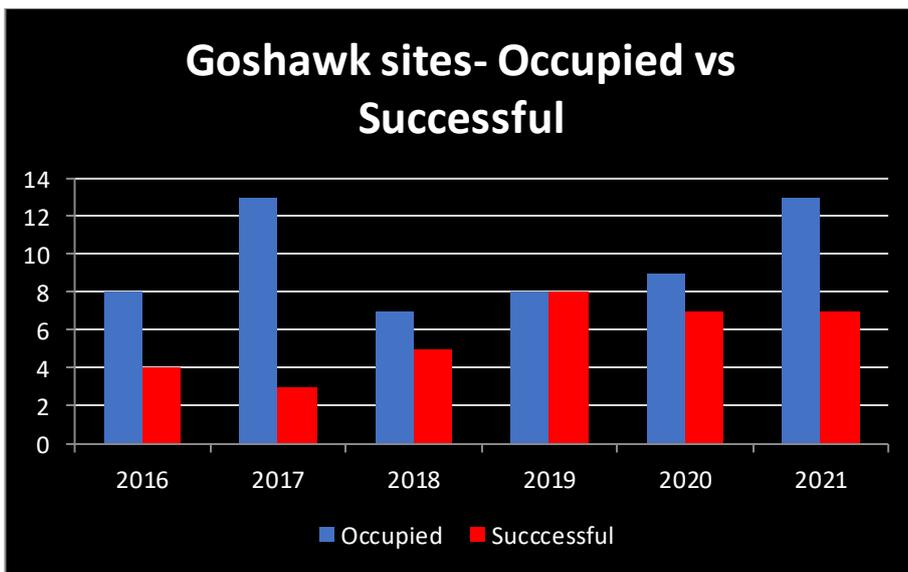
No quantitative targets were set for Goshawk; however in 2016 the Initiative added Goshawk to its remit, and agreed that we wished to see “sustainable breeding population of Goshawks present at traditional moorland-edge breeding sites, with no illegal persecution”. It is difficult to assess

progress against this ambition, other than to note the population and breeding trends, and the *Additional Notes* below.

Trend

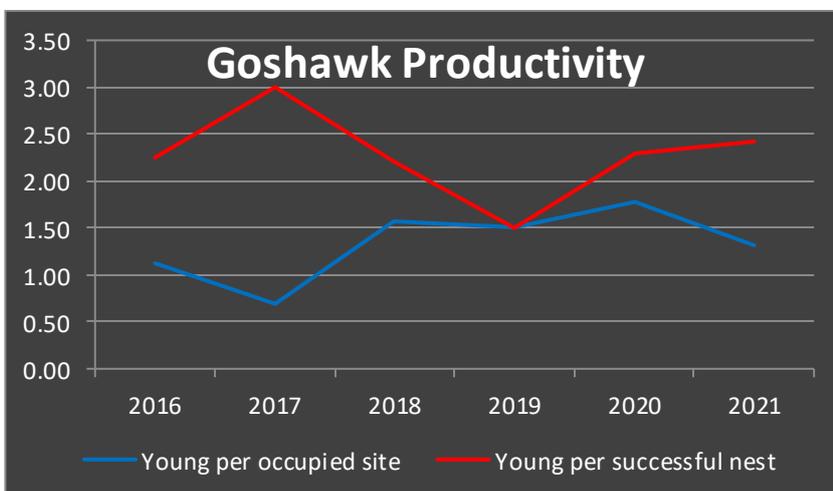
Of the 5 years in which the Initiative has included Goshawk in monitoring figures, numbers peaked at 13 pairs in 2017, dropping to nearly half that number (7 pairs) in 2018. In 2021 the number of occupied sites returned to the 2017 peak of 13 pairs (Fig. 5). Whilst the number of successful nests for the period 2019-21 (7-8 nests) remains higher than the 3-5 successful pairs/year in 2016-18 (Fig. 5), the proportion of occupied territories which have been successful has declined from 100% to 54% over the last 3 years.

Figure 5



The number of young fledged per occupied site rose between 2017-20, mainly reflecting the higher proportion of nests that successfully fledged young (70-100% in 2018-20, compared to 23-50% in 2016-17) (Fig. 6). However in 2021 that figure dropped due to the high number of occupied territories with no subsequent successful breeding.

Figure 6



Comparison with European and national data

- The proportion of confirmed nests that successfully fledged young in 2021 (70%) is slightly lower than the average of 77% across Western Europe (Kenward et al, 2007).
- The number of young successfully fledged per occupied territory (1.3) is also lower than the average of 1.8 for Western Europe, and is below the range of 1.68-1.71 young per clutch that Kenward et al. (2007) give as an indication of the level needed to sustain existing population levels.

Additional Notes

Display was noted at 3 sites which showed no subsequent signs of breeding. This pattern has been repeated at all 3 sites regularly over the years.

Hen Harrier (*Circus cyaneus*)

2021 results

- One pair successfully nested and fledged 4 young on NT land. Elsewhere a further pair were seen going through all the preliminaries of nesting- mating/courtship behaviour/ prospecting/ mobbing intruders, but neither the male nor the female were subsequently seen despite extensive monitoring across the Peak District.

Measurement against the Initiative's targets

No quantitative targets were set for Hen Harrier; however in 2016 the Initiative added Hen Harrier to its remit, and agreed that we wished to see Hen Harrier “*return as a regular breeding species*”. Single pairs have now bred for 3 of the past 4 years.

Trend

Hen Harriers are regularly sighted in low numbers in the Peak District, but breeding remains sporadic with only seven successful nesting attempts in the last 24 years since they returned to the Peak District. 6 of the 7 successful nests have been on National Trust land, and 3 of the 7 have been over the last 4 years.

Additional Notes

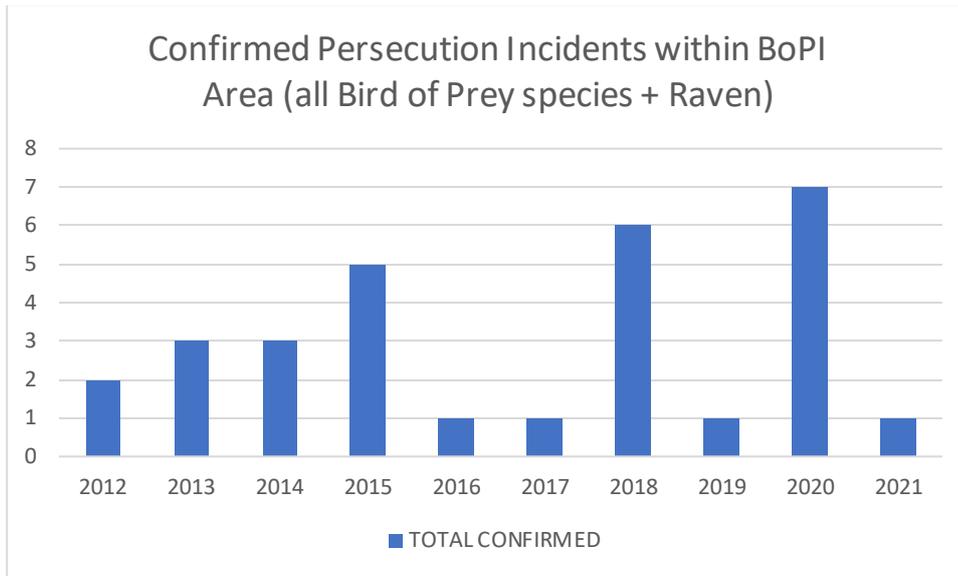
A second pair showed territorial behaviour but were not subsequently seen despite extensive monitoring.

CONFIRMED ILLEGAL PERSECUTION

In 2021 there were 2 confirmed illegal persecution incidents affecting birds of prey within the BoPI area- the theft of 3 Peregrine chicks from a nest, and the shooting of a Buzzard.

The number of confirmed illegal persecution incidents fluctuates significantly from year to year (Fig. 7), and depends on detection as well as level of occurrence. Whilst trends are therefore difficult to discern, there is no evidence that the level of incidents is declining.

Figure 7



OTHER BREEDING FAILURES

The cause of breeding failure was not established in 7-8 cases. These comprised:

- 2 Peregrine nests at the eggs/young stage.
- 1 or possibly 2 Merlin nests at the young stage.
- 3 Goshawk territories which showed display and pre-nesting behaviour, but with no birds subsequently seen despite extensive monitoring.
- 1 Hen Harrier territory which showed display and pre-nesting behaviour, but with no birds subsequently seen despite extensive monitoring.

References

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APPENDIX 1- PROJECT BACKGROUND

Five leading land management and conservation organisations in the Peak District National Park got together in 2011 to develop an initiative to boost birds of prey populations in the Dark Peak.

In 2011, the organisations involved - the Peak District National Park Authority, Moorland Association, the National Trust, Natural England and RSPB*- with support from local Raptor Groups and Derbyshire Constabulary, set five-year targets for healthy sustainable breeding populations of three target species - Merlin, Peregrine Falcon and Short-eared Owl- based on population levels in the 1990s, and from 2016 extended to include Hen Harrier and Goshawk (without targets).

Together the five organisations funded an independent field worker from 2012-18 to help ascertain accurate breeding data and to facilitate co-operation between raptor workers and shooting interests. Since 2019 data has been collated by the two raptor groups - the Peak District Raptor Monitoring Group (PDRM) and South Peak Raptor Study Group (SPRSG) - who work together to monitor and record the breeding success of raptors in the Peak District. This data was collated both from their own fieldwork and from reports from gamekeepers.

The survey methods being used are in line with those documented in Raptors: A field guide for surveys and monitoring, Jon Hardey, Humphrey Crick, Chris Wernham, Helen Riley, Brian Etheridge and Des Thompson - Section 2.2.1 Counts of occupied home ranges and active nests.

The report data comprises verified nesting attempts and their outcomes based on the agreed best practice survey methods. Unverified nesting attempts such as isolated reports of fledged birds late in the season have been noted, but are excluded from the totals as they may be dispersing young that have fledged elsewhere. We encourage early reporting of sightings to obtain more accurate figures for confirmed pairs. With the exception of Short-eared Owls (as discussed in the species summary), we are confident a very high percentage of nesting attempts are located, and that the data published is statistically robust.

The initial targets were set for the Dark Peak in 2011 based on confirmed numbers in the late 1990s, and average nesting success nationally. These were expanded with the inclusion of the South West Peak in 2016 and are as follows:

- Peregrine- 17 breeding pairs. Target nesting success rate of 2.07 young per occupied territory.
- Short-eared owl- 25 breeding pairs on average. No target nesting success rate.
- Merlin- 37 territorial pairs. Target nesting success rate of 2.1-2.4 young per occupied territory.

* The RSPB discontinued their involvement in the Initiative in January 2018.

APPENDIX 2- BIRD OF PREY INITIATIVE PROJECT AREA

Project area (also includes adjacent woodland from Moscar north for Goshawk)

