

Northern England Raptor Forum



Annual Review 2010

Acknowledgements

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Northern England Raptor Forum

Annual Review 2010

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Useful telephone numbers

If you discover a wildlife crime please report the details to the Police, obtain an incident number and ask that, in addition to sending an Officer to the scene, the report is brought to the attention of the Force Wildlife Crime Officer. If the incident is a 'crime in progress' dial 999.

Cheshire Constabulary	0845 458 0000	South Yorkshire Police	0114 220 2020
Cleveland Police	01642 326326	West Yorkshire Police	0845 606 0606
Cumbria Constabulary	0845 330 0247	National Wildlife Crime Unit	01506 833722
Derbyshire Constabulary	0345 123 3333	Crimestoppers	0800 555111
Durham Constabulary	0345 606 0365	RSPB Investigations Dept.	01767 680551
Humberside Police	0845 125 3545	Wildlife Incident Investigation Scheme	0800 321600
Lancashire Constabulary	0845 125 3545	Predatory Bird Monitoring Scheme	01524 5959830
Manchester Police	0161 872 5050	Please report Hen Harrier sightings to:	
Northumbria Police	0345 604 3043	Stephen Murphy,	
North Yorkshire Police	0845 606 0247	Natural England HHRP	07932 662258

Foreword



WHILST THERE are still some wonderfully remote parts of the English uplands, the absence of some iconic birds of prey from our heather moorlands undoubtedly detracts from the sense of wildness. There is a sad irony in the fact that having stopped working in the uplands, I am now fortunate enough to see Peregrines and Harriers on a very regular basis; albeit the Peregrines nest on a cathedral rather than a rocky crag, and the Harriers rear their young in reed beds and cereal fields rather than a heather clad valley. On a winter's evening many times more Marsh Harriers can be seen dropping into a single Broadland roost than there are breeding Hen Harriers in the whole of England.

Chances are, if you are reading the Northern England Raptor Forum's Annual Review, then you are already all too familiar with the conflict between the driven shooting of red grouse and birds of prey. Although now well over a century old, sadly this conflict continues today. At times, a solution appears as elusive as the illegal persecution is incontrovertible, and it is difficult to discuss the Forum's work without mention of this conflict, with which bird of prey work in northern England is so unavoidably intertwined.

The most difficult aspect of raptor work in the North of England is not the biting wind and rain sweeping across the Pennine hills, or freezing conditions during a dusk vigil over-looking a winter roost. To my mind, it is dealing with the frustrating pace of change. It is therefore perhaps understandable why others, out-with the Forum, may choose to follow a different path. The apparent lack of progress no doubt fuels arguments which become increasingly personal and stray towards issues of class unrelated to Aves. My own view is that such subjective beliefs should not be presented as facts alongside monitoring data. By association, the credibility of the data can be called into question, the argument is weakened and the overall case is undermined. Therefore, what I applaud the Forum's Raptor Study Group members for most is their dedication; dedication which enables them to maintain their optimism despite the apparent lack of progress and to maintain their passion without losing their objectivity. This surely has to be the way forward for a group seeking to bring their monitoring and science to a wider audience in order to further

the conservation of birds of prey.

Although the pros and cons of shooting have already been widely debated, there is one point that is rarely touched upon. As shooting groups proudly proclaim, every year millions of pounds are pumped into rural economies – shooting taking place on an industrial scale. Nature tends to find little breathing space underneath the concrete and steel footprint of industrial development, yet here is an industry whose bi-product does not involve emission levels or discharge consents, but swathes of semi-natural habitat. Arguably farming is the nearest equivalent, but subsidised field margins do not compare favourably with tens of thousands of hectares of continuous moorland. Such large continuous areas of semi-natural habitat in lowland England have long since been drained, or have disappeared under the plough. Whilst remaining lowland sites might be free from conflict and optimally managed for conservation, sadly what often remains is a fragmented patch of lowland heath encroached by housing development, or a hay meadow surrounded by intensive arable farmland.

I believe, hopefully not too naively, that there are glimmers of hope for birds of prey in the English uplands. Those who continue to break the law north of the border might be brought to book through introduction of the tougher legal measure of vicarious liability – a gamekeeper does not always work independently of his employer. In addition, slowly but surely, the opinions of moderates on both sides of the debate appear to be moving towards some sort of consensus. A process of dialogue, facilitated by the Environment Council and at which the Forum play a key role, is very gradually showing signs of progress. Behind closed doors, grouse moor managers and representatives from shooting groups are sincerely and genuinely debating the way in which they can return Hen Harriers to England's grouse moors. Such discussion would have been unimaginable just a few years ago. Whilst ultimately any success will be measured by numbers of birds and not quality of platitudes, a quick fix was never an option.

Birds of prey evoke differing emotions and unfortunately there are voices who seek to condemn rather than marvel. The Northern England Raptor Forum can act as an advocate for birds of prey and their data and science can help to underpin conservation efforts for years to

come. When the regional Raptor Study Groups choose to work cooperatively in this manner, towards a common goal, then the sum can be greater than the parts. My final note is that these Raptor Study Groups are not large impenetrable conservation bodies but groups of local enthusiasts who need your support. The perception to the outsider is that on occasion monitoring birds of prey can appear to be a peculiar sub-culture within the ornithological world; a secretive bunch of bearded hill-folk, each closely guarding an intimate knowledge of their own patch of the English uplands, acquired over decades of study. Whilst the levels of experience

are undeniable, your support would be welcomed and could make a real difference. For all the difficulties, raptor monitoring can be hugely rewarding and the highs always outnumber the lows. So, if you are reading this at home or in a conference, and you are not a member of your local raptor study group, pick up the phone or go and introduce yourself and get involved.

Richard Saunders
Ornithologist

Chairman's Report



IT GIVES me great pleasure to introduce the 2010 Northern England Raptor Forum Annual Review. This is our second Annual Review detailing the status of birds of prey, owls and Ravens in each Raptor Study Group across the NERF region. This area stretches from Derbyshire in the south along the Pennine Chain to the Scottish Border and includes the North York Moors in the east and Greater Manchester in the west. The data collected by members of the Forum has been combined to give the overall picture of raptors in the northern uplands during 2010. NERF is also grateful to the independent Raptor Workers who have shared their data with the Forum and granted permission for the details to be published in this Review.

The data gathered during 2010 is, once again, a testament to the incredible amount of voluntary fieldwork that is being undertaken by a wide range of Raptor Group members and other fieldworkers throughout northern England. Working to the national guidelines for monitoring raptors, fieldworkers undertake tens of thousands of hours of unpaid work every year and their collective efforts are an excellent example of the 'big society' in action. [Downing S.E & NERF *et al.* 2009 & 2010].

The NERF Annual Review is an important vehicle for highlighting the importance of long-term fieldwork and the value of continued species specific studies. The publication of data by NERF is being used to monitor population trends in the North of England and I would

encourage Raptor Workers to attempt to fill data gaps where they exist within their own study area to improve our overall knowledge of local and regional populations. On behalf of the Forum I would like to publicly recognise the commitment of Steve Downing, NERF Annual Review Editor, and thank him for the very significant amount of time that he has invested to produce such a high quality document.

In reading through the species accounts it is depressing to see that once again there is a recurring theme of poor breeding success of a number of raptor species in areas of grouse moor management. The absence of breeding Peregrines from traditional heather moorland sites across much of northern England and the perilous state of the English Hen Harrier breeding population are, in our opinion, indicative of widespread illegal persecution.

It is very disappointing to read that during 2010 the English Hen Harrier population followed the normal pattern and failed to break out of its relatively safe stronghold in the Forest of Bowland, in any meaningful way. There were only two successful nests outside of Bowland; just two, in habitat with a carrying capacity 150 times greater.

Although we like to think that we live in a more enlightened society, in relation to many Raptor species this is clearly not the case. It is a national disgrace that illegal persecution means that this Red Listed bird is once

again on the brink of disappearing from the English uplands, as a breeding species, for a second time. The bleak future for Hen Harriers is a direct consequence of persecution, resulting from the irrationally perceived conflict with commercial game management. Ironically this perceived conflict flies in the face of all of the scientific evidence amassed and published by eminent ornithologists who are experts in the field. This evidence clearly demonstrates that the population in the northern English uplands should be between 323 and 340 pairs [JNCC Report No 441: A Conservation Framework for Hen Harriers in the United Kingdom] and yet each year there are rarely more than a handful of breeding attempts. Although the scientific evidence shows that Hen Harriers do predate grouse chicks the research also confirms that they can co-exist together side by side without decimating the commercial viability of grouse shooting as is often claimed by grouse moor managers.

Whilst the Forum continues its participation with the Hen Harrier Dialogue, facilitated by the Environment Council, the lack of progress to achieve modest goals in a timely manner is extremely frustrating. None-the-less NERF is determined to continue to raise the concerns of Raptor Workers within the Dialogue and to press for the end of the criminal slaughter of this totemic species. We will also continue to call for affirmative action by the Police and the Courts when offenders are identified.

Of course it is not just Peregrines and Hen Harriers that have 'disappeared' from their traditional upland territories. In areas where these species are absent Raptor Workers also note that there are often gaps in local populations of Short-eared Owls, Goshawks, Common Buzzards and Ravens despite the fact that the habitat is ideally suited to their needs. Red Kites, already under threat from secondary poisoning from rodenticides, continue to succumb to direct, targeted poisoning, the most dangerous and indiscriminate form of persecution, which also has the potential to kill non-target species, including humans.

Without evidence to the contrary it is impossible to dismiss the assertion that persecution is the most credible explanation when species gaps are analysed. Criminal activity targeting birds of prey takes place over vast tracts of land; on thousands of hectares of open countryside, often miles from the nearest roads. Finding relatively small brown dead birds, each covering less than 500cm² of the ground, in a huge expanse of brown vegetation, is almost impossible. In fact taking into account the difficulty of locating the carcasses of birds of prey killed in this type of environment, if they are left in-situ, it is surprising that any are found at all. That several are found annually is a very good indication that many, many more go undetected.

Despite all of the evidence that raptor persecution is a continuing problem in the northern uplands much of the game shooting lobby is in denial, at least in public. Whenever Raptor Workers and conservation organisations raise the issue of persecution they are invariably confronted with a barrage of demands for more proof. This is despite the fact that the evidence is irrefutable; gamekeepers are frequently prosecuted for persecut-

ing birds of prey and the Wildlife Incident Investigation Scheme and the Predatory Bird Monitoring Scheme deals with many incidents of illegal poisoning annually.

There is a maxim, which points out that "The absence of evidence is not evidence of absence" [Carl Sagan: *The Demon-Haunted World - Science as a Candle in the Dark*]. As we have already seen, although finding evidence of persecution is extremely difficult, it is not impossible. If persecution is not the cause it is perhaps appropriate to ask questions such as 'Where have all the raptors gone?', or 'Why are large areas of suitable habitat that were previously occupied by raptors now vacant?', or 'Why are these areas invariably involved with commercial game-shoot management?' or 'Why are we more likely to see a Peregrine on a town centre building than on a traditional crag on a grouse moor?' Answers to these questions are very relevant if we are to understand why there are species gaps in our uplands, i.e. birds that we would expect to see but are missing. In searching for answers to these questions NERF acknowledges that it would be irresponsible to suggest that everyone working in game management is involved in raptor persecution, which is clearly not the case.

Those of us directly involved with, or concerned about, raptor conservation are fully aware of the contentious nature of the issue of persecution, and how difficult it is to tackle the issues. Whilst the Forum does not seek to stifle debate or wish to suppress valid criticism of statutory authorities or conservation bodies, we condemn, in the strongest possible terms, individuals or groups that persist in distributing negative propaganda, half-truths and downright lies designed to undermine the excellent work undertaken by dedicated Raptor Workers, the RSPB, the Hen Harrier Recovery Project, United Utilities, Wildlife Crime Officers and the Forum whilst deflecting attention away from their own shortcomings.

The continued threat to birds of prey comes against a backdrop of severe budget cuts imposed by the Government on organisations such as Defra, Natural England, National Park Authorities and Police Forces across the region.

Raptor persecution has featured on the National Wildlife Crime Unit's Conservation priorities in one form or another since 2002 and yet we see very little proactive crime prevention or self generated wildlife crime investigations being undertaken by our local Police Forces. Research carried out for this Review indicates that all of the Police Forces within the NERF region have nominated Wildlife Crime Officers in post. However; the research also reveals that these Officers are employed on a variety of other duties that diverts their attention from wildlife crime. NERF members currently have little or no contact with WCOs and it is noticeable that the situation has deteriorated in recent years. Whilst NERF acknowledges that the Police are experiencing difficult times it is reasonable to point out that, in our opinion, the current policy of disengagement is ill-advised and the matter will be raised with the ACPO lead on wildlife crime.

The on-going fallout from the financial crisis is also likely to impact on charities such as the RSPB and Wild-

life Trusts. Other organisations with a statutory duty of care for wildlife and the environment may be tempted to see conservation as a 'Cinderella' activity rather than a responsibility and therefore a valid target for deep budget cuts. The Forum will encourage such organisations to resist these temptations. In light of these emerging threats NERF will continue to press Government to ensure that birds of prey are pushed further up the political agenda. At the present time it is evident that the English legislature is falling behind its Scottish counterpart in relation to wildlife protection. NERF believes that this position is untenable and will continue to engage with the relevant authorities with the aim of improving the legal protection for birds of prey.

NERF has much to be proud of and 2010 was a milestone for our organisation. We published our first An-

nual Review, published our first single species report looking at the plight of Peregrines in the northern uplands in association with Arjun Amar, RSPB and held an excellent Conference hosted by Calderdale. However; there is much more to do; fortunately I am sure that Forum members are equal to the task and our contribution to raptor surveying, monitoring and protection will continue to grow and develop to meet new challenges as they emerge.



Paul Irving

Chairman, Northern England Raptor Forum

Secretary's report

THE NORTHERN England Raptor Forum [NERF] was established in 2006 with the overall objective of providing one effective voice to represent the conservation interests of raptors, including owls and Raven, in the uplands of northern England.

In order to achieve our objectives the Forum acts, where appropriate, as the parent body co-ordinating surveying and monitoring work across all of the member Groups. In addition NERF develops centralised policies and methods of working that will further enhance the high standard of research currently being undertaken by Raptor Workers in the North of England.

During 2010 the Forum continued to build upon previous years work by bringing together the collective knowledge and experience of raptor fieldworkers from across northern England. Since the publication of the 2009 Annual Review there have been some changes in the membership of the Forum. We are pleased to report that the Manchester Raptor Group joined the Forum in 2010 and we extend a warm hearted welcome to the Group and their members; we can also report that the North West Raptor Protection Group is no longer a member of the Forum.

NERF policy decisions are taken during bi-annual meetings by a Committee, consisting of two members



from each of the affiliated Groups, under a majority voting system that allows for one vote per Group. Whilst NERF is, and will remain, an independent voice, speaking on behalf of raptors, the Forum benefits from contributions made by invited representatives from the National Wildlife Crime Unit, representing regional Wildlife Crime Officers, RSPB Northern Region, RSPB Investigations and the Natural England Hen Harrier Recovery Project [HHRP]. Whilst the contribution from members of this Advisory Group is invaluable they do not hold voting rights within the Forum.

Currently the membership of NERF consists of the following individual Raptor Groups:

- Calderdale Raptor Study Group
- Durham Upland Bird Study Group
- Manchester Raptor Group
- Northumbrian Ringing Group
- North York Moors Upland Bird [Merlin] Study Group
- Peak District Raptor Monitoring Group
- South Peak Raptor Study Group
- Yorkshire Dales Upland Bird Study Group

However; within the Forum we are always looking to expand our geographical coverage in the north of England and would welcome applications for membership

from Raptor Study Groups that are able to demonstrate that they would add value to the aspirations of NERF. For more information please contact the NERF Chairman, the Chairman of your local Raptor Study Group or email contact@raptorforum.org

Once again, this Annual Review highlights the extraordinary amount of fieldwork that is carried out by Raptor Workers and emphasises just how important it is to make sure that this data is placed within the public domain. It is vital that we continue to publish our findings in order that we are in a position to corroborate our 'gut feelings' about what is happening to raptor populations with sound, scientifically robust data.

Our first collaborative scientific paper has now been produced, combining Peregrine breeding data collected by experienced Raptor Group members over a 10 year period with the analytical skills and statistical knowledge of RSPB research biologists. We believe that the results set out in the paper clearly show the negative impact of grouse moor management on bird of prey populations and highlights the challenges faced by raptors that occupy this habitat. With the publication of this paper we have clearly demonstrated the benefit of collaborative research and with the on-going support of Raptor Workers the Forum can continue to contribute valuable scientific data that can be used to highlight the threats faced by upland raptors.

The 2010 NERF Raptor Conference was hosted by the Calderdale Raptor Group on the 20th November at the prestigious Rishworth School, Halifax. One hundred and forty-four delegates attended the all-day conference where we benefitted from interesting and stimulating lectures, which concentrated on four topics each presented by two experts in their respective field:

- **habitat management:** presented by Dr John Edwards, a Raptor Biologist followed by Simon Thorp, of the Heather Trust
- **analytical science:** presented by Lee Walker, Centre for Ecology and Hydrology and Arjun Amar, RSPB who gave an overview of a joint paper compiled by NERF members entitled 'Peregrine persecution in the NERF region, a 10 year study'

- **raptor monitoring:** presented by Stephen Murphy, Natural England who outlined the situation in relation to Hen Harries in 2010, followed by James Leonard, RSPB who advised delegates of the benefit of using cameras as a monitoring aid
- **species studies:** presented by Duncan McNiven, RSPB who discussed his work into the future release of White-tailed Eagles in the south east of England and Paul Castle, Wiltshire Raptor Group who outlined details of his long-term studies into Montagu's Harriers and lowland Hen Harriers

The delegate feedback form, introduced for the first time in 2010, was a tremendous success and the suggestions from delegates were used to inform the decisions made by organisers of the 2011 Conference. This exercise will be repeated at future events in order to ensure that delegates needs are given due consideration when future Conference programs are being set.

The Northern England Raptor Forum is grateful to the Calderdale Raptor Study Group for the hard work that was undertaken to both promote and host the Conference. NERF is also indebted to staff of Rishworth School, the RSPB, Natural England and Pennine Prospects for supporting the event.

On behalf of all of the NERF members I would like to thank PC Mark Rasbeary, Force Wildlife Crime Officer, North Yorkshire Police, for his long-term contribution and commitment to the development of the Forum. Mark, who spent many years as a part-time and four years as a full-time Wildlife Crime Officer and was seconded to Natural England for 12 months, was highly respected by his peers and Raptor Workers across the North of England and his advice will be sadly missed.

We all wish Mark well in his retirement and would like to welcome Andy McWilliam from the National Wildlife Crime Unit, who has joined the NERF Advisory Group.



Ian Court

Secretary, Northern England Raptor Forum

NERF: geographical coverage

Calderdale Raptor Study Group

Study Group

Extent of coverage: Part uplands and part lowland areas.

Covers some, or all, of the following grid squares SD91:92:93, SE01:02:03 & SE11:12.

Effectively the southern border is the M62, with the Worth Valley in the north. In the east the Group covers Brighouse [between Bradford in the north and Huddersfield in the south]. The western border is the Pennine county boundary with Lancashire.

Durham Upland Bird Study Group

Study Group

Extent of coverage: Whole county.

In this report the Durham Upland Bird Study Group comments refer principally to the Durham uplands [defined here as the North Pennine SPA and adjoining valley systems generally west of easting NZ10 to the county boundaries with Northumberland, Cumbria and North Yorkshire].

Manchester Raptor Group

Extent of coverage: The area is bounded on the north and west by Lancashire, on the north east by Calderdale, by Derbyshire in the south east and by Cheshire in the south west.

The work previously undertaken by the Mosslands Barn Owl Conservation Group has been absorbed into the MRG.

Northumbrian Ringing Group

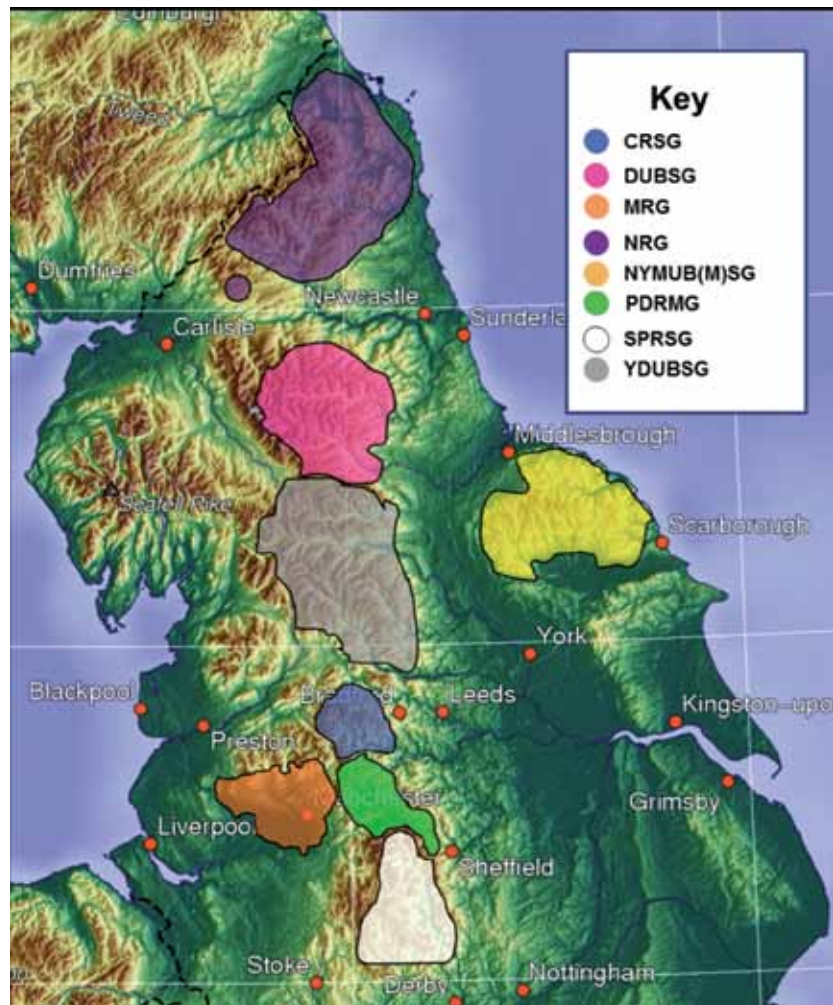
Extent of coverage: Part uplands and part lowland areas.

The group is active throughout the county of Northumberland. The data in this report primarily refers to the Cheviot uplands, the Kielder Forest, the Border Forest and a small section of eastern Cumbria around Keshope where the forested area straddles the county boundary.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

The area studied covers the upland



areas, gills, dales, forests and farmland within the boundaries of the North York Moors National Park.

Peak District Raptor Monitoring Group

Extent of coverage: Part uplands and part lowland areas.

The PDRMG covers the Derbyshire Peak District, including the Goyt Valley; and the Macclesfield Forest, including the low lying areas.

Glossop forms the western boundary and the north-east of the Peak Park is bounded by Huddersfield, Sheffield, Barnsley and Wakefield.

The Group does not cover the limestone areas, within the Peak Park or Derwent Dale.

South Peak Raptor Study Group

Extent of coverage: In the north; National Trust land in the Upper Derwent Valley, west to the River Alport and east to the National

Trust boundary.

In the south; all of the White Peak, with the exception of the Goyt Valley. The Staffordshire Moors, Eastern Moors, North Lees Estate, Chatsworth Estate and the Haddon Estate. In addition the Group covers Central Derbyshire as far as the Nottinghamshire border and South Derbyshire [mainly Hobby].

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Covers the central Pennine block from the southern boundary between Skipton, Harrogate and Otley, north to the Durham county boundary, and west to the Cumbria and Lancashire county boundaries.

Annual review

THE NORTHERN England Raptor Forum [NERF] was formed in 2006 with the specific objective of speaking on behalf of birds of prey, with one collective voice. Members of the Forum survey all 23 species of raptor, including owls and Raven, an honorary raptor, occurring in, or transiting through, the northern uplands.

The uplands of the North of England are wild, often inhospitable, the terrain can be difficult to negotiate and many bird of prey nests are, inevitably, in remote locations. Within each individual member Group resources are extremely limited and the time required to study all of the 23 species, in any depth, is very considerable. Despite the resourcing issues there are several NERF members who have been undertaking long-term detailed studies of specific species, often for very many years.

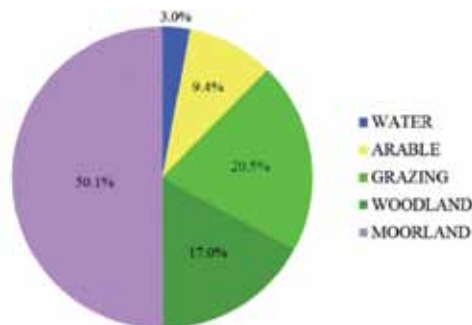
The problems associated with the difficulties of accessing remote breeding areas are exacerbated by the fact that the majority of the monitoring takes place during the breeding season, which is a very small window of opportunity to complete a very large body of work.

In 2010 all of the NERF Groups used the same criterion to record their monitoring activities; however due to resource constraints not all species were recorded fully, and in some cases they were not recorded at all. This, the second NERF Annual Review, combines all of the available data from each Group in one document.

Data gaps are shown as 'NR' [no records] in the NERF species tables. This notation merely indicates that no records were kept by the originating Group, or that the records are irretrievable for the purpose of this report. The notation should not be interpreted to conclude that the species does not occur in that study area. Where specific numbers are given they refer to the number of birds monitored and should not be interpreted as a definitive population count for the area.

These same criteria also apply to persecution data. The numbers in the persecution bar-chart refer only to evidence-based cases recorded by the members, during 2010, in respect of both species and type of persecution categories. Once again the figures in each bar should not be seen as definitive, they simply reflect the number of Groups that have experienced each specific category of persecution. Nor should the fact that no persecution is recorded in some of the categories, or for some of the species, be interpreted that no persecution occurs in respect of that species; it merely indicates that none was discovered by NERF members.

NERF regional habitat coverage



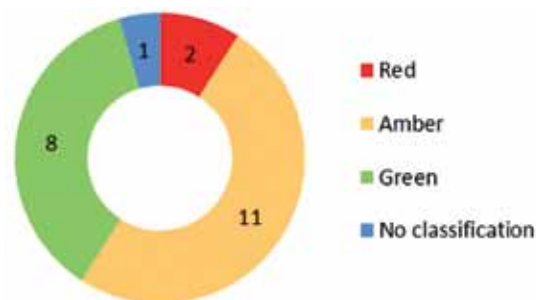
Northern England Raptor Forum members monitor 23 raptor species across the northern uplands. It is perhaps not surprising therefore that almost 50% of the habitat monitored consists of moorland and that together moorland and woodland, often situated on the moorland fringe, account for c70% of the habitat monitored.

Although c20% has been categorised as grazing much of this habitat comprises of white moor, sheepwalk and 'in-by'. It is evident that very little, less than 10%, of the monitored habitat is arable land.

From the data supplied by the individual Groups it is clear that if the species monitored by NERF are to prosper they are dependent on sensitive management of moorland, moorland fringe and forestry. Whilst many of the upland SSSIs are not in 'favourable' status, overall upland land management practices do provide vast areas of suitable habitat for raptors.

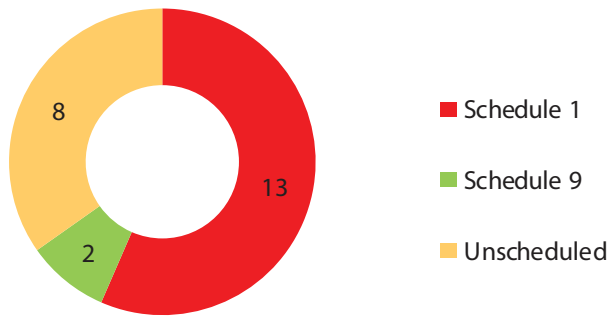
Conservation status of raptors in the NERF Region

Conservation status of the 23 raptors surveyed by NERF members



Many of the raptors monitored by NERF are vulnerable and the conservation status of 13 of the 23 species is listed as red or amber, which emphasises the importance and benefit of the work being undertaken for raptor conservation by the Groups. Data collated by NERF is extremely valuable when the conservation status of each species is being considered whether at the local, county, national or international level.

WCLA scedule status



Thirteen of the species studied are listed on Schedule 1 of the Wildlife and Countryside Act 1981 and work on these species is undertaken under the appropriate licence issued by Natural England or the BTO.

Barn Owl, Eagle Owl and White-tailed Eagle are listed on Schedule 9 and cannot be released without first obtaining a licence from Natural England.

NERF regional species monitoring

Given that the membership of each constituent Group of NERF has historically consisted of a small number of dedicated volunteers the volume of monitoring undertaken across the NERF region is quite remarkable.

The chart below graphically indicates the level of monitoring undertaken by NERF. In this Review there is a small but significant change to the 'traffic light' system used to depict the monitoring process. In 2009 3 colours, green, amber and red were used with red being used to identify the species that were absent from individual study areas. However; this system indicated that species such as Montagu's Harrier and Osprey were absent i.e. red, and whilst this is true the species is better depicted as a 'passage bird' rather than absent. The red colour visually emphasised this distortion in the data. In this Review blue has been added to represent birds that

are only observed on passage and therefore extremely unlikely to be recorded as a potential breeding species in the foreseeable future.

Analysis of the species breeding & monitored / breeding & not monitored / absent / passage data identifies the areas in which NERF will be able to focus future monitoring efforts more effectively. This will provide an opportunity to expand the overall dataset in a more meaningful way. This improved dataset, when combined with the persecution dataset will be used to set and / or modify NERF's monitoring priorities over time.

Rough-legged Buzzards are recorded as passage birds by 4 Groups and the species has been added to the list of birds recorded by NERF members for completeness.

In 2009 NERF set priorities to improve the monitoring of both Kestrel and Sparrowhawk. Both priorities have been fulfilled. In relation to Kestrel the number of Groups monitoring this species has increased from 2 to 5 and in relation to Sparrowhawks the number of groups monitoring the species has increased from 3 to 4. Whilst these improvements are welcome there remains an opportunity for additional monitoring, which would complete the datasets across the NERF region.

In 2009 Little Owls were not monitored by any NERF Group. In 2010 this situation was greatly improved when 4 of the 8 Groups were able to dedicate time to this charismatic species.

When comparing the number of species, monitored by all Groups, it is encouraging to note that in 2009 42 species were reported as being 'present & not monitored' and in 2010 this number was reduced to 24.

In 2011 the Rare Breeding Birds Panel [RBBP] added LEO and SEO to their list of species that are believed to have a population of less than 1,500 breeding pairs in the UK and are therefore deserved of more extensive monitoring. Whilst NERF members were already active in monitoring both species in 2010 only 6 pairs of SEOs and 35 pairs of LEOs are recorded as fledging young. With regard to the expanse of suitable habitat within the

GROUP	Buzzard Common	Buzzard Honey	Buzzard Rough-legged	Eagle Golden	Eagle W-tailed	Goshawk	Harrier Hen	Harrier Marsh	Harrier Montagu's	Hobby	Kestrel	Merlin	Osprey	Owl Barn	Owl Eagle	Owl Little	Owl Long-eared	Owl Short-eared	Owl Tawny	Peregrine	Red Kite	Sparrowhawk	Raven
CRG	Green	Red	Red	Red	Red	Yellow	Blue	Blue	Red	Blue	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
DUBSG	Green	Blue	Red	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
MRG	Green	Blue	Red	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
NRG	Green	Blue	Red	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
NYMRSG	Yellow	Green	Blue	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
PDRMG	Green	Blue	Red	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
SFRSG	Green	Blue	Red	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
YDUBSG	Yellow	Green	Blue	Red	Red	Red	Blue	Blue	Red	Yellow	Green	Blue	Yellow	Red	Green	Yellow	Green	Yellow	Green	Blue	Yellow	Green	Blue
	Breeding & monitored						Breeding & not monitored						Absent		Passage only								

NERF region it is possible that this species is under-recorded; if not it may be under threat. In either case both species are deserved of increased attention by all upland Raptor Workers.

Further information and advice in relation to the criterion for categorising breeding evidence for both species can be found on the RBBP website at www.rbbp.org.uk

NERF regional persecution data

Of all the data gathered by Raptor Workers the number of persecution cases consistently invokes discussions in relation to the claims. Proven persecution is relatively easy to assert in cases where birds have been shot or poisoned or in cases where traps have been recovered adjacent to nests.

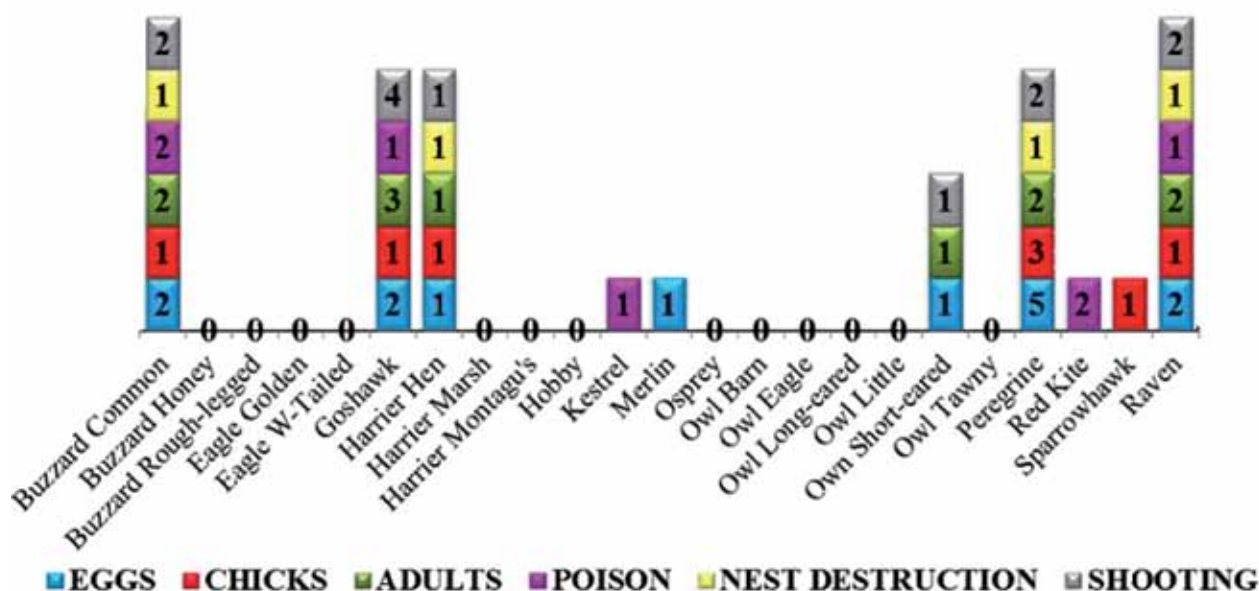
It is self-evident that claims of persecution would be

contentious where birds are reported to have 'disappeared' from a given location, perhaps during the breeding season. A similar situation arises when the absence of a particular species from a given area, where there is ample suitable habitat and prey, cannot be explained unless human interference is the cause.

No matter how contentious these issues are it is the responsibility of Raptor Workers to raise their concerns in the public domain. It is then a matter for others to make evidence based challenges to the assertion that persecution is affecting several species, particularly in areas associated with game shooting rather than to simply state that it does not occur.

The values shown in the bar chart refer to the number of individual NERF member Groups reporting persecution in each category.

Number of NERF groups reporting persecution by species and category



Editor's note

The values shown in the bar chart indicate the number of individual NERF member Groups reporting persecution within each separate category.

'0' values have been attributed to some species under circumstances where they either do not occur within the NERF area, or, where no persecution was detected by Group members. In this second classification readers should not infer that no persecution took place, merely that it may have gone undetected.

It is encouraging to note that when the 'all species / all Groups / all category' data is combined, the total number of reports appears to have reduced by 53% from 119 in 2009 to 56 in 2010. However; in the 2009 Annual Review member Groups recorded incidents that had occurred in 2009 together with historical data to highlight the categories of persecution that are normally observed in their respective study areas. The statistics published

in the 2010 Annual Review refer only to the persecution categories that were recorded in 2010. Consequently the apparent reduction in persecution from 2009 to 2010 is not actually as large as the chart implies.

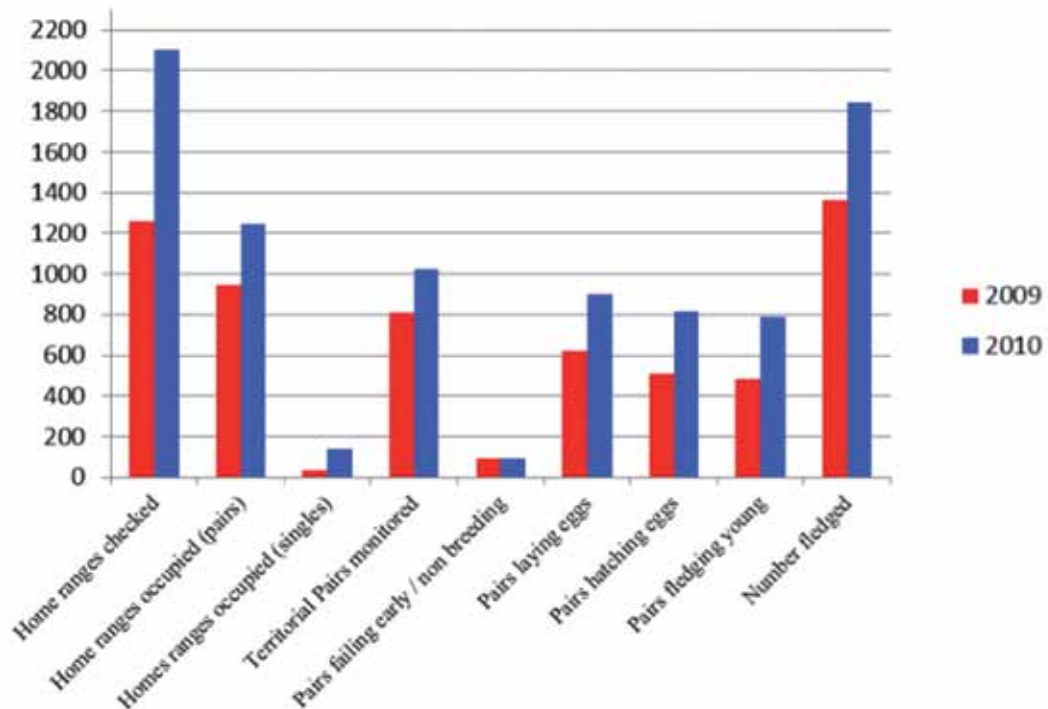
Common Buzzard, Goshawk, Hen Harrier, Short-eared Owl, Peregrine and Raven continue to give cause for concern. Interestingly all of these species occupy the same moorland habitat.

Summary

Within the NERF region 21 of the 23 raptor species were monitored and / or recorded by Group members during 2010. Full details of the work undertaken is set out in the 'species reports,' however for quick reference the combined data for all of the species has been collated into a single table. See Appendix I.

For ease of comparison the overall statistics for 2009 v 2010 are presented in the table on page 13.

NERF combined statistics 2009 v 2010



Collectively NERF members checked 2,104 home ranges, an increase of 66.98% over 2009. Of these 1,243 were occupied by pairs of birds and 1,026 pairs [82.5%] were monitored throughout the season. A minimum of 792 pairs are known to have fledged in excess of 1,846 young birds.

Records also reveal that the overall breeding rates for the combined species for 2010 were:

- 900 pairs laid eggs and 90.3% [813 pairs] hatched eggs
- 813 pairs hatched eggs and 97.4% [792 pairs] fledged young
- 88% of pairs laying eggs went on to fledge young

Comparisons between the 2009 and 2010 fledging rates for pairs laying eggs and pairs monitored are provided in Appendix II.

Using the recommended survey / monitoring guidelines, i.e. 3 visits per nest per season [4 visits if the birds are fitted with rings], the above data clearly indicates that NERF members made in excess of 4,500 individual nest visits during the 2010 breeding season. For some species, such as Short-eared Owls and Hen Harriers, locating a nest may take several visits, each lasting many hours in the field.

Taking into account travelling time and the distance to some of the remote locations, over rough terrain, it is estimated that each Raptor Worker commits 5 hours per nest visit. For health and safety reasons nest visits are invariably made by 2 Raptor Workers, which doubles the time to 10 hours per nest visit.

To achieve this number of nest visits NERF members committed in excess of 45,000 hours to monitoring and protecting raptors during 2010. This is a conservative estimate and does not take into account the number of hours of 'passing attention' spent on the other 217 nests

that were not fully monitored throughout the season. Nor does it take account of the many hundreds of hours spent monitoring and protecting passage birds transiting the North of England outside of the breeding season.

Using an average of £150 per day for professional survey work, the voluntary contribution of NERF Group members during the 2010 breeding season is valued at approximately £850,000.

Although NERF members completed an extraordinary amount of monitoring during 2010 there is more to do and anyone interested in joining one of the Groups should contact the relevant Group representative. Contact details are provided in Appendix V.

Some very interesting conclusions can tentatively be drawn from the 2009 and 2010 datasets and these baseline figures will aid the NERF Committee to make strategic decisions for future monitoring projects, including the publication of single species reports.

When additional data is available, via future Annual Reviews, a more detailed analysis will be undertaken and comparisons and trended information will provide the Forum with a better overall understanding of the status of birds of prey in the region.

The main body of the Annual Review identifies each of the 23 species in alphabetical order, concluding with Raven. Rough-legged Buzzard has been added to the list in 2010. The sub-sections then examine the national perspective for each bird, including the UK population estimate, the species overview, the national threat assessment and the conservation status. The Review then outlines the monitoring activity undertaken by NERF, including individual Group reports, Group species summary and the NERF regional threat assessment.

Finally the species section concludes with data kindly provided by non-NERF members.

Species reports

Buzzard, Common *Buteo buteo*



Overview

The Common Buzzard was first recorded in the 11th century; however the fossil evidence from the Middle Pleistocene period reveals that this species was already present approximately 500,000 years ago.

The nominate species was first described as 'Falco buteo', rather than *Buteo buteo*, by the Swedish biologist Carl Linnaeus [1707 – 1778], [Linnaeus, C (1758) *Systema Naturae*]. Linnaeus, who is widely acknowledged as the father of taxonomy, was later ennobled and became known as Carl von Linné.

The British population estimate of between 31,000 and 44,000 is derived from research undertaken by Clements in 2000 [Clements, R (2002) *British Birds* 95: 377 – 383]. In 2000 the European population was estimated to consist of between 510,000 and 700,000 pairs in summer [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

As their name suggests this species is very common and by the beginning of the 19th century they could be found across the length and breadth of the UK. Seventy-five years later, following a persistent campaign of persecution by Game Managers, they were limited to the western fringes of mainland UK. Ironically it took two World Wars to improve their fortunes. During these periods a great many gamekeepers were absent from their estates for long periods, fighting in foreign fields. As a consequence persecution was significantly reduced,

UK population estimate

In 2000 the British population was estimated to contain between 31,000 and 44,000 territories, occupied by 14,200 pairs in summer. (BTO)

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	3	3	0	3	0	3	3	3	NR	NR	NR
DUBSG	41	41	0	41	0	10(+) ¹	10(+)	10(+)	17(+) ²	1.70	0.41
MRG	58	50	8	9	1	8	8	5	8	1.00	0.89
NRG	122	122	0	90	0	90	90	90	116(+)	1.29 ³	1.29 ⁴
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	24	24	0	24	2	22	20	20	39(+)	1.77 ⁵	1.63 ⁶
SPRSG	3	3	0	3	0	3	3	3	7	2.33	2.33
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	251	243	8	170	3	136(+) ⁷	134(+)	131(+)	187(+) ⁸	1.37	1.10

Notes:

- 1 to calculate the number of pairs laying eggs n = 10
- 2 to calculate the number of young fledged n = 17
- 3 & 4 to calculate the number of young fledged n = 116

- 5 & 6 to calculate the number of young fledged n = 39
- 7 to calculate the number of pairs laying eggs n = 136
- 8 to calculate the number of young fledged n = 187

birds were allowed to prosper once again and the population began to recover.

Regrettably their good fortune was not to last and after WWII, along with renewed persecution, they had to contend with a far larger threat to their survival. Rabbits form a large part of the Buzzard's diet and in the 1950s and 1960s the rabbit population was decimated by Myxomatosis. Prior to the crash the rabbit population was estimated at 60 – 100 million animals. By 1953 the disease, spread by the rabbit flea [*Spilopsyllus cuniculi*], had caused 99% mortality. [Lloyd H.G., 1970, Post-Myxomatosis rabbit populations in England & Wales. EPP0 Publ. Ser. A. 58: 197 - 215].

The almost total collapse of the rabbit population had a tremendous negative impact on the Buzzard population, which led to a dramatic turn-around in their ability to consolidate their previous expansion. The effect was most dramatic in 1955 when most pairs failed to breed. By this time the impact of Myxomatosis, coupled with increased levels of persecution, reduced the population by c50%. [Sumption K.J & Flowerdew J.R (1985) The ecological effects of the decline in rabbits due to Myxomatosis. Mammal Review 15: 151-186].

The species was already under stress when their ability to breed came under another sustained attack. They began to suffer from secondary poisoning caused by the widespread use of organochlorine pesticides. The threat of secondary poisoning was lifted when these pesticides were eventually banned and by 1992 the rabbit population had recovered to c33% of the pre-1950s levels. This increase in the rabbit population, together with an acceptance by many Game Managers that Buzzards actually pose little threat to their industry, led to reduced levels of persecution and allowed the Buzzard population to flourish once more.

In 2010 Buzzards were the most widespread of all raptors in the UK and are found breeding in every county. Regrettably it has taken over 200 years to regain this status and yet this is not the time to be complacent. There are calls from some sections of the game shooting industry to allow lethal control of 'nuisance' birds that are identified by Game Managers to be a threat to the commercial viability of their estates.

National threat assessment

Persecution continues to threaten Buzzard populations in some parts of the UK with several cases of shooting and poisoning being reported annually. The call for lethal control of 'nuisance' birds and the removal or destruction of eggs, by pricking or shaking and potentially the use of birth control drugs to reduce clutch sizes will undoubtedly damage local populations, if the proposals are approved by the Government.

Conservation status (BTO)

UK	Green ●
Europe	Not of concern
Globally	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Whilst this species is not monitored in depth within the study area it is known that a minimum of 3 pairs successfully reared young in 2010. In geographical terms Calderdale consists of 1 large valley running west to east with deep, very steep, wooded side valleys running north and south penetrating the adjacent moorland. It is not surprising therefore that the surveying of this species is difficult; nor is it surprising that the 3 pairs which were located were hidden within these side valleys.

Monitoring the nests is difficult and the actual productivity at all 3 sites is unknown. Although only 1 juvenile was seen on the 30th July it is likely that 6 or more young fledged in total. However; speculation of this nature is scientifically unhelpful and therefore the data in the table shows 'no record' for number fledged and both productivity rates.

There is ample available habitat within the study area and it is likely that other pairs avoided detection.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Common Buzzards had been absent for many years before the area was re-colonised in 1991. Throughout the last 20 years the species has continued to establish itself across the region, primarily in areas of the County that fall outside of the Group's study area.

During 2010 Group members located 41 occupied territories; however the actual number of active nests in the area is believed to be significantly higher.

The Group reported 33 fledglings from 17 nests during 2009. Whilst the number for 2010 is reduced to 17 young fledging from 10 nests it is most likely that the figures reflect lower observer coverage rather than a change in the actual number of young produced. Therefore it is unsafe to draw comparisons between these 2 years.

Common Buzzards are also recorded, rarely, on passage during autumn.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Reasonable coverage; at least one long term monitoring study.

Within the Study Group there is systematic monitoring of the species on Chat Moss and at 2 other sites by 2 of the Group's members. Although 50 sites are known to have been occupied by pairs, 1 failed and only 8 were subsequently monitored to the end of the season. Taking into account the proven productivity of the 5 pairs that did fledge young it is not unreasonable to predict that in excess of 70 chicks fledged from the study area overall.

There were also several records of passage birds in the county.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

During 2010 members checked an additional 31 territories in the Border Forest, an increase of 34% when compared with 2009. Ninety territorial pairs were monitored and in excess of 116 chicks are known to have fledged, this reflects a 251% increase on the number recorded in 2009.

In an attempt to calculate the total number of young fledging from within the study area the model assumes that the 32 pairs which were not monitored produced young at the average fledging rate of the 90 pairs that were recorded. Using this formula an additional 41 chicks would have entered the local population during 2010.

Throughout Northumberland the population is estimated to be between 300 and 500 pairs.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Common Buzzards continue to consolidate their position in the study area as a resident species. Individuals can be encountered at any time of the year in most areas of the North York Moors but they are most numerous on the southern fringe of the moorland.

A minimum of 4 pairs are known to have nested in 2010, however the outcomes of these nests remains unknown. Pairs are much more likely to nest unmolested on the farmlands in the NYM dales and in the forests than they are elsewhere in the study area.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

The local Common Buzzard population is rapidly increasing, particularly away from grouse moors where persecution continues to have a detrimental impact on both colonisation and breeding success.

A minimum of 39 young fledged from the 20 nests monitored by the Group, of which 29 pulli were ringed.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Common Buzzards are present throughout Derbyshire, however the species is not monitored extensively and therefore the breeding data for the study area is incomplete. Seven pulli were ringed from 3 broods during 2010.

Regrettably persecution continues to pose a threat in some areas, particularly in the Upper Derwent Valley.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Common Buzzards are now widespread in many parts of the study area but no formal monitoring work was undertaken during 2010. Without undertaking a species specific survey it is not possible to make a population estimate.

NERF regional summary

In keeping with other parts of England the species continues to re-colonise former breeding areas lost through persecution, Myxomatosis and the impact of secondary poisoning in the mid-20th century.

Although Common Buzzards are distributed widely throughout the NERF region they receive limited formal monitoring in some study areas. Whilst the population expansion is particularly evident in the study areas in the south and east of the NERF region population growth has been noted by all Groups.

The largest increase in 2010 was recorded in the Northumbrian Ringing Group area where a minimum of 116 chicks fledged from 90 pairs. These figures reflect an increase of c30% in each category monitored when compared to the 2009 data.

Regrettably persecution is still evident in some areas.

NERF regional threat assessment

It is evident from the data received from all Groups that Common Buzzard numbers are increasing throughout the region. At the same time it is with regret that reports from some of the NERF members indicate that persecution continues to be a problem. Furthermore there are sections of the NERF study area where the absence of Common Buzzards is difficult to explain. Taking all other considerations into account, i.e. the availability of suitable habitat and prey, the inevitable conclusion is that without evidence to the contrary this absence is as a result of human interference.

No Groups report potential threats from egg collectors at the present time.

The call from some sections of the shooting community for lethal control of 'nuisance' birds is being monitored closely and NERF will make the appropriate response to Government should this proposal be actively pursued.

Buzzard, Honey *Pernis apivorus*



UK population estimate

In 2000 the British population was estimated to be 51 pairs. (BTO)

Overview

Although Honey Buzzards were first recorded in 1675, they were first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

They are secretive birds and consequently it is difficult to give an accurate estimate of the numbers visiting Britain in summer. However; in 2000 the population was estimated to be between 33 and 69 pairs [Batten, L.A (2001) *British Birds* 94: 143 – 144]. Within naturally occurring fluctuations overall the British population is believed to be stable. The European population is estimated to be between 50,000 and 80,000 in summer [Burfield, I & Van Bommel, F (2001) *Birds in Europe*,

Birdlife International].

The name of this bird is somewhat of a contradiction in terms. Firstly it is not a Buzzard and secondly it does not feed on honey! They are closely related to Kites and whilst their diet predominantly consists of wasp larvae they also prey upon reptiles, amphibians and the nestlings and eggs of small birds. Taking into account their primary source of food, perhaps the German name, *Wespenbussard*, [Wasp Buzzard] is more appropriate.

After over-wintering in equatorial Africa third calendar year Honey Buzzards return to the UK in late April / early May. They time their arrival to coincide with the explosion of the bee and wasp populations. Feeding on ferocious stinging insects is not without its dangers and to overcome the problem they have developed feathers on their heads that are scale-like and offer protection against stings whilst they excavate wasp larvae to feed to their young.

The southern migration begins in late August, peaks in September and is complete by early October.

National threat assessment

The majority of the birds migrate over the eastern and western Mediterranean flyways where they are relatively safe from persecution. This is not the case for those birds that choose the longer sea crossing on the central flyway and need to stop and rest on the Maltese Islands. Once on the Islands they face a very real risk of being shot and large numbers are illegally killed annually. The risk is particularly acute for juveniles who may need to spend longer periods on the Islands, resting and feeding, to regain their strength before continuing their long journey. BirdLife Malta organise camps, staffed by international volunteers, in spring and autumn each year to protect raptors as they migrate over Malta. Further information

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRS	3	2	0	2	1	1	1	1	2	2.00	1.00
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	3	2	0	2	1	1	1	1	2	2.00	1.00

about volunteering at either of the camps can be found at www.birdlifemalta.org

The fact that Honey Buzzards are secretive by nature makes them extremely sensitive to disturbance during the breeding season. With less than 50 pairs breeding in the UK their eggs are objects of desire for egg collectors. In an effort to safeguard the birds the locations of the nests are kept confidential and they are closely monitored by volunteers.

Conservation status (BTO)

UK Amber ●
Europe Not of concern
Global Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of passage migrants crossing the study area in 2010.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no reports from the upland areas where birds have occasionally lingered in past years. Elsewhere, there was a very light showing for the County as a whole with several single passage birds being reported in the east in April and May. Single juveniles were also reported in September and October.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

This species occurs only rarely on passage. A single record was submitted to the County Rarities Committee for 27th August 2010, however the sighting was considered not proven and the record was rejected.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species in Northumberland during 2010.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

All 3 known territories were checked during 2010

and 2 were found to be occupied. Unfortunately only 1 of these is known to have been successful, producing 2 chicks. Although it can not be verified it is believed that the other pair failed. Overall the fledging rate remains the same as in 2009.

In spring a minimum of 5 males and 4 females were also noted, however they are believed to have been non-breeding wanderers.

This species is monitored by a Raptor Worker who is not a member of the Study Group. He consistently declines to share data with the Group and although we can once again confidently predict that other pairs were active in the area regrettably the details are not available.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

This species is not known to breed within the Group's study area, although there were sightings of migrant birds as they transited the region during spring and autumn.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Honey Buzzards are only recorded as passage birds during spring and autumn.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There are very occasional sightings of this species in the study area, mainly in autumn, however no records were submitted for 2010.

NERF regional summary

The Honey Buzzard is a scarce migrant passing through the lower elevations of the NERF region in spring and autumn. Sightings in the uplands are extremely rare. Although migrants were seen by 4 of the 8 member Groups once again the only proven breeding took place in North Yorkshire, where 2 chicks fledged.

Other pairs may have bred in North Yorkshire; however the Raptor Worker monitoring this species declines to share his data with the local RSG.

NERF regional threat assessment

With only 1 Group reporting a single pair breeding in 2010 the species is very vulnerable locally. The loss of a single clutch of eggs to collectors or the abandonment of a nest due to disturbance at the breeding site would be disastrous.

Buzzard, Rough-legged *Pernis lagopus*



UK population estimate

This species does not breed in the UK; however there are c70 records of passage and over-wintering birds per year. (BTO)

Overview

Pontoppidan is credited with identifying this species in 1763. However; the first record dates back to 1792 [Montagu, G (1802 – 1813) Ornithological Dictionary or alphabetical synopsis of British Birds] However; because this species can be confused with the pale morph of Common Buzzard it was probably often misidentified in the past, just as it is today.

In 2004 the European population of Rough-legged Buzzards was estimated to be between 8,000 and 19,000 pairs in summer [Burfield, I & Van Bommel, F (2004) Birds in Europe, Birdlife International]. As with many other species productivity is linked to prey availability during the breeding season and in years with low num-

bers of lemmings or voles, which can form up to 80% of their prey, many pairs fail to breed.

They are uncommon visitors to the UK and are usually seen on passage to and from their breeding grounds in the arctic tundra regions of Finland, Norway, Russia and Sweden to their over-wintering sites in North Central Europe and the UK. They arrive in England in September and October and remain until March or April. Over winter they can most regularly be seen on the coastal marshes and agricultural land on the east coast, primarily in Kent, Yorkshire and Northumberland. They can also be seen on parts of the Pennines.

Passage and over-wintering numbers can be variable, ranging from 10 to 150 pairs. The occasional large influxes occur in prey plague years when there is a high prey density during the breeding season, followed by a low prey density in winter. The last major influx occurred over the winter of 1974 / 1975 when in excess of 250 birds were reported in autumn. It is believed that around 100 of these birds remained throughout the winter. In the spring of 1975 pairs were seen displaying at 2 sites but they did not go on to breed.

National threat assessment

In Sweden post mortems carried out on many of the 'ring recovery' birds have revealed that they had been shot. Other deaths occurred as a result of collisions with overhead power lines and motor vehicles. It is self-evident that the risk of collision with both vehicle and power lines also threatens birds that visit the UK to over-winter or pass through on migration. However; it should also be remembered that several over-wintering birds occupy the same habitat as other species that face persecution and are therefore susceptible to fall victim to persecution either as a result of misidentification or by design.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MARG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRSRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR

Conservation status (BTO)

UK	Not assessed ○
Europe	Not a species of concern
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Durham Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

The species is by no means an annual visitor, although it has been observed for the last 2 consecutive years. In 2009 2 birds lingered over moorland in the Upper Tees Valley between the 5th and 18th March.

In 2010 there were no records from the Durham uplands and only a single report for the County as a whole. In autumn a migrant was observed on 2nd October flying north-west over Hurworth Burn Reservoir. This sighting coincided with the national influx of birds, many of which were recorded by members of other NERF Groups.

Passage birds are recorded regularly in both spring and autumn.

Manchester Raptor Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Rough-legged Buzzards are very rare migrants in the study area and in common with previous years there were no records during 2010.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no reports of sightings of Rough-legged Buzzards in the study area during 2010.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

During the 1970s Rough-legged Buzzards were regular visitors to Bransdale on the North York Moors. The highest concentration involved 7 individuals in a single year. However; they are generally recorded as rare autumn migrants, predominantly on the Cleveland and North Yorkshire Coast. Since 1991 records show that the species has been observed regularly, if infrequently, on the North York Moors and over the last 20 years they have been recorded on 13 separate occasions.

During 2010 there were 2 sightings at Bransdale and at another, undisclosed, location 4 individuals were noted. The undisclosed location, where the habitat is similar to arctic tundra, holds a large rabbit population during winter and is generally accepted as a magnet for these birds.

All of the birds observed in the study area were juveniles and there were no records of repeat wintering birds in the region.

Peak District Raptor Monitoring Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Rough-legged Buzzards are classified as 'occasional visitors' in the study area and there were no records for 2010.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

This species is only recorded as a regular, but infrequent, passage migrant in spring and autumn. There were no records in 2010.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

All Rough-legged Buzzard descriptions reported in the study area are assessed by the Yorkshire Naturalists Union Bird Section before being accepted or rejected. There was only 1 report accepted within the study area during 2010 when a single bird was observed on 10th November by Ian Court as he monitored a flock of waxwings in Grassington.

NERF regional summary

Rough-legged Buzzards are regularly, if infrequently, recorded on passage across the whole of the NERF region. 2010 was a particularly quiet year with just 2 Groups, both in North Yorkshire, reporting sightings. A single bird was seen in Grassington and several birds were observed on the North York Moors.

NERF regional threat assessment

Collisions with overhead lines have been identified as a threat to this species and Raptor Study Groups may wish to map their locations whilst monitoring over-wintering birds. In the event that danger areas are identified it may be prudent to raise the issue with the appropriate owners in an effort to persuade them to install high visibility aviation warning markers on the wires.

Even though numbers may be low the threat of persecution may be an issue in areas where other raptor species face this problem.

Eagle, Golden *Aquila chrysaetos*



UK population estimate

The UK population estimate was 442 pairs in 2003, all but one of which was located in Scotland. (BTO)

Overview

The first record of Golden Eagle was made in the 10th century, however there is fossil evidence indicating that they were present as far back as 10,000 years ago in the Holocene Period. Golden Eagles were first described as '*Falco chrysaetos*' by Linnaeus in 1758 [Linnaeus, C. (1758) *Systema Naturae*]. This designation was later amended to '*Aquila chrysaetos*' by the French zoologist and natural philosopher Mathurin Jacques Brisson [1723 – 1806] in 1760 [Brisson, M. J (1760) *Ornithologie; ou, Méthode contenant la division des oiseaux en ordres, sections, genres, espèces & leurs variétés. &c.* Paris: C.J.B. Bauche pp 28, 419].

The UK population estimate of 442 pairs was derived from work undertaken by Eaton *et al.* in 2003 [Eaton, M. A *et al.* (2007) *Bird Study* 54: 212 – 220]. Previous surveys in 1982 and 1992 estimated the population to be 424 and 422 respectively. This apparent stability in the population is masking a shift in distribution. Golden Eagle numbers are increasing in parts of Caithness, Sutherland and on the Western Isles, however the population is decreasing

in the central and eastern Highlands.

Golden Eagles are widespread throughout Europe and North America where the population is estimated to contain between 7,900 and 10,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International]. In the UK these totemic birds can only be found breeding in Scotland where they continue to exist in low numbers. A single bird has occupied the traditional Cumbrian breeding site for a number of years and in Northumberland, following 30 years of occupation, the birds have been absent from the traditional breeding site since 2009.

The 2 primary factors limiting the UK population are believed to be the lack of prey and persecution. Unfortunately these 2 negative impacts are not new. In the 1700s sheep farmers who feared that their livelihoods were being threatened began killing Eagles. The persecution intensified during the 1800s when Game Managers also began to kill the birds. By the mid-19th century they were extinct in Wales and England with only small numbers surviving in the western highlands of Scotland.

During the 1950s and 1960s secondary poisoning by organochlorine pesticides devastated many raptor populations and being carrion eaters Golden Eagles were not immune. As with other raptors these chemicals accumulated in adult Eagles resulting in either infertile eggs or eggs with thinner shells being laid. The eggs that developed with thinner shells were frequently broken during incubation, killing the potentially otherwise healthy embryo.

The Scottish population began to recover after the poisons were banned, although the recovery has been very slow and there are vast tracks of suitable habitat that remain unoccupied. In an effort to better understand the behaviour of Golden Eagles a research program was instigated in 2004 and as part of the program over 30 birds were fitted with tracking devices between 2004 and 2009. During 2010 a further 4 satellite trackers were fitted to

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	1	0	0	0	0	0	0	0	0	0.00	0.00
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	1	0	0	0	0	0	0	0	0	0.00	0.00

birds in the Cairngorm National Park and an additional 5 were fitted to birds in other parts of Scotland. Once the research program has amassed and analysed sufficient data it may be possible to introduce management schemes that will be of benefit to this species.

Perhaps the most famous of the Golden Eagles fitted with a radio tracker is 'Alma'. She was fitted with the device in the Cairngorms in 2007 and was tracked for 2 years before she was found dead on the Mildren Estate, Angus in July 2009. She had been poisoned. This tragic death once again highlights a major threat that these birds have to face on a daily basis. For further information on this and other research projects visit www.roydennis.org

National threat assessment

The small population of Scottish Golden Eagles is targeted by egg collectors. They are also persecuted in areas where there is perceived conflict with game management. Undoubtedly persecution is a serious problem in some areas and is limiting both population growth and expansion into other zones of suitable habitat. The current drive to increase the amount of renewable energy generated by wind farms is causing concern amongst many conservationists who believe that they pose a serious threat when they are sited inappropriately.

Habitat loss, through upland afforestation and the loss of large tracts of open land for foraging, also increases the pressure on the species.

In summary: persecution of Golden Eagles, habitat loss and the threat of collision with wind turbines in Scotland is limiting the numbers and impacting upon the dispersal of juveniles. It is therefore highly unlikely that they will naturally re-colonise their traditional territories in the North of England in the foreseeable future. These factors are also likely to affect the number of Golden Eagles overwintering in northern England.

Conservation status (BTO)

UK	Amber ●
Europe	3: concern, most not in Europe; rare
Global	Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.
Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Durham Upland Bird Study Group

Extent of coverage: Whole County.
Level of monitoring: Not known to occur here as a breeding species.

All potential Golden Eagle territories were checked during surveys for other species and there were no records of birds being present across the whole County in 2010.

The last Golden Eagle report in County Durham was of

a single bird seen in April 2002 and prior to that in 1984.

Manchester Raptor Group

Extent of coverage: Whole County.
Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Northumbrian Ringing Group

Extent of coverage: Upland areas only.
Level of monitoring: Excellent coverage, all or most sites receive annual coverage.

After being continually present for 30 years this is the second consecutive year that Golden Eagles were not recorded in Northumberland.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Part upland & part lowland areas.
Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.
Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.
Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.
Level of monitoring: Not known to occur here as a breeding species.

There are no recent confirmed sightings of this species in the YDUBSG area.

NERF regional summary

For the second year in succession Golden Eagles have been absent from their traditional breeding site in the Border Forest, Northumberland. The last sighting in County Durham was recorded in April 2002.

NERF regional threat assessment

Whilst persecution in the south-east of Scotland continues to limit population growth north of the border the re-colonisation of the North of England by natural expansion is likely to be some time away.

With just a single bird in Cumbria and the failure of birds to return to Northumberland a regional threat assessment is largely inapplicable. Members will continue to monitor the situation closely and the threat assessment will be updated if and when the circumstances change and birds occupy breeding territories.

Eagle, White-tailed *Haliaeetus albicilla*



F (2004) Birds in Europe, Birdlife International].

The White-tailed Eagle, often fondly referred to as the 'flying barn door', is the largest bird of prey in the UK and it was once widespread across much of Scotland and Ireland.

It was recorded as a breeding species in England and Wales during the 18th century; unfortunately this situation was not to last and by 1800 they were extinct in England. One hundred years later the UK population contained just a few pairs, hidden away in the more remote and isolated pockets of Scotland. It is to our collective shame that the last known successful breeding in the UK was recorded on the Isle of Skye in 1916. Two years later the last known UK bird was dead; shot on Shetland.

From a position of strength across the UK it was driven to extinction as a result of persecution by skin and egg collectors, shepherds, Game Managers and Fishery Managers before the end of World War 1. This was hardly mankind's finest hour.

After an absence of over 40 years the first re-introduction program commenced in 1959 when 3 birds were released in Argyllshire. In 1968 a further 4 birds were released on Fair Isle and whilst the release was successful and the birds readily took to their new home they failed to breed. It was not until 1975 that a full-scale re-introduction commenced on the Isle of Rum and 8 years elapsed before the first breeding success was recorded [Brown, A (2007) British Birds, 100: 214 – 243]. Following a further release in 1990 that population is now self-sustaining.

A further re-introduction scheme commenced in 2008, involving the release of 15 individuals on the east

UK population estimate

The White-tailed Eagle population was estimated to be 36 pairs in 2006. (BTO)

Overview

Whilst the first UK record of the species was made in the 7th century there is evidence from the fossil records that they were present c150,000 years ago in the Wolstonian Glaciation Period.

The species was first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*]. The UK population of 36 pairs was derived from research undertaken by Eaton *et al.* in 2006 [Eaton, M. A *et al.* (2007) The State of the UK's Birds 2006, RSPB]. However; following the Fife re-introduction scheme this figure is now out of date. The European population is estimated to be between 4,000 and 5,000 pairs [Burfield, I & Van Bommel,

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRSRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR

coast of the Kingdom of Fife, has proven to be extremely successful. To date a total of 63 young birds have been released and this sub-population was originally intended to be one element of a UK east coast revival.

In 2009 Natural England and the RSPB undertook research into the possibility of re-introducing birds into East Anglia, which would have resulted in the return of WTEs to England after an absence of 200 years. Regrettably because of the economic constraints imposed on Natural England following the global financial crisis the plans have been put on hold for the foreseeable future.

The lack of progression with the East Anglian release is disappointing. The NERF region sits squarely between Fife and The Wash and is bounded on the east by a spectacular coastline. This coastal habitat may very well have proven attractive to these magnificent birds giving members the opportunity to see them on their doorstep. Not only would the sight of these wonderful birds be popular with birdwatchers, their economic value to local communities should not be under-estimated. By and large birdwatchers have disposable income to spend on their passion, e.g. it is estimated that the Ospreys in Cumbria bring an extra £2 million annually into the local community.

Using the Cumbrian model it is clear that many local businesses on the east coasts of Yorkshire, Cleveland and Northumberland would greatly benefit from the potential 'WTE £s' that could be generated from Eco-tourism in general and birdwatchers in particular if the scheme to release birds on The Wash is reinstated.

National threat assessment

Whilst the population is self-sustaining, in or adjacent to the release sites, it is still very small and consequently any loss of either adults or young will have a significant detrimental impact on this species. Being carrion eaters they are susceptible to both accidental and deliberate poisoning. WTE eggs are highly prized by collectors and they are likely to be targeted, therefore the location of active nests is kept a closely guarded secret. The use of CCTV not only offers a high level of protection to the nests it also allows the public to become intimately involved with these magnificent birds. Knowledge is power and the more knowledgeable the public become the more they will appreciate these totemic birds and paradoxically the safer they will be.

To reduce the threats to the birds from irate shepherds who occasionally lose lambs to troublesome pairs, a positive management plan, including a compensation scheme has been introduced on Mull and in parts of the Isle of Skye, by Scottish Natural Heritage [SNH]. A similar scheme may be required when the English re-introduction takes place at some time in the future.

Conservation status (BTO)

UK ●
Europe 1: Global Conservation Concern; rare
Global Near threatened
Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Listed on Schedule 9 of the Wildlife and Countryside Act 1981

Listed on CITES Appendix 1

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no reported sightings of this species during 2010. Indeed there are no recent records of this species for the County.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species in Northumberland in 2010.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no reports of this species within the study area during 2010.

South Peak Raptor Study Group

Extent of coverage: Part of upland areas.

Level of monitoring: Not known to occur here as a breeding species.

After an absence of 69 years a single bird was recorded by Mick Taylor on 29th January 2005. Regrettably there have been no sightings since that date.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

During Hen Harrier survey work being undertaken by Ian Court and Andy Jowett at 1050 hours on Satur-

day 10th April 2010 they observed an immature White-tailed Eagle over Pock Stones Moor in the Washburn Valley. Following a phone call to observers at the nearby Barden Raptor Watch Point 2 other observers were treated to stunning views as the bird passed overhead.

It subsequently transpired that this was a third calendar year bird from the Scottish east coast re-introduction program. This bird had embarked on a grand tour of the North of England and had previously been seen near Newcastle and also at Leeming Bar on the A1 before moving west through the Dales. The bird was later seen over Wray, Lancashire then Leighton Moss and Haweswater before presumably completing its circular tour and returning home to the east coast of Scotland.

NERF regional summary

Only the Yorkshire Dales Group recorded sightings of White-tailed Eagles in 2010. As this Group is land locked there is no doubt that the bird in question went unobserved as it crossed territory monitored by other NERF members. Unfortunately the cancellation, or hopefully postponement, of the East Anglian re-introduction program is likely to ensure that sightings in the North of England will be somewhat limited in the foreseeable future.

NERF regional threat assessment

The UK population is extremely small and restricted to Scotland at the present time. Until the species re-colonises or is re-introduced in England there are no threats applicable to this bird within the NERF region.

Goshawk, Northern *Accipiter gentilis*



UK population estimate

The population is now believed to be about 400 pairs in summer. (BTO)

Overview

The first record for the species was made in the 10th century; however the fossil records show that this species was already present in the last Devensian Glaciation Period from 10,000 to 120,000 years ago.

Along with many other species the Northern Goshawk was first described by Linnaeus in 1758 [Linnaeus, C (2007) *Systema Naturae*].

The British summer population of 400 pairs was derived from work undertaken by Baker *et al.* in 1995 [Baker, H (2006) *British Birds* 99: 25 – 44]. The European population is estimated to contain between 70,000 and 110,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International]. Goshawks were once widespread throughout the UK but by the begin-

ning of 1800 as a result of persecution they were probably extinct as a breeding species in England and Wales. Between 1841 and 1888 there were just 19 records, 17 of which were in eastern counties, 8 in Norfolk alone, and Goshawks were described as 'a great rarity' [Journal of Zoology]. Their demise took a little longer in Scotland but persecution by gamekeepers was taking its toll. Records from one estate in Glengarry reveal the huge scale of the problem. Between 1837 and 1840 the staff reported killing 63 Goshawks, 98 Peregrines, 275 Red Kites, 27 White-tailed Eagles and 18 Ospreys [Richmond 1959]. The problems caused by persecution were also exacerbated by large scale clearance of their forest habitat and the activities of specimen collectors.

There were only sporadic claims of breeding success between 1900 and 1965 with the first accredited breeding taking place in 1938 [Brown, A (2007) *British Birds*, 100: 214 – 243]. Ironically as a consequence of the extremely low numbers the UK population did not suffer the large scale impact of secondary poisoning by DDT in the 1950s and 1960s that was experienced by other species. In continental Europe this species did succumb to large scale poisoning by organochlorine and other contaminants. By examining the recovery rates of the European populations following the implementation of a ban on the use of these chemicals it is possible to predict the rate of both growth and expansion in the UK population following the re-introduction of the species.

During the 1960s and 1970s falconers imported birds from Scandinavia and Finland, some escaped into the wild whilst others were deliberately released. It is most likely that the plan behind this unofficial re-introduction scheme was predicated upon an ulterior motive. The plan was for this new 'wild' population to be allowed to breed and then a proportion of their wild bred offspring would be 'harvested' back into the falconry trade.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	1	1	0	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	7	5	1	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	47	35	0	34	6	28	23	22	48	1.71	1.41
NYMMSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	15	0	0	0	0	0	0	0	0	0.00	0.00
SPRSG	24	15	0	15	3	12	12	12	25	2.08	1.67
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	94	56	1	49	9	40	35	34	73	1.83	1.49

It is not possible to know how many birds were released into the wild or how many chicks were taken back into captivity. However; it is known that after releases the 'wild' population did not expand in line with the post pesticide model observed on the Continent. The expansion has been slow and 40 years later the population has not increased to the predicted level and there are large 'black holes' in otherwise suitable habitat where Raptor Workers would expect to see an active population. It is clear that there is another influence affecting population dynamics in the North of England. As the population has slowly increased the birds have inevitably come into conflict with Game Managers and persecution has once again become a factor in some areas creating a 'sink population' for this bird of prey.

National threat assessment

In 1995 the BTO reported that the UK population was estimated to be c400 pairs in summer. They also report that on average 300 chicks are ringed annually. At this rate it is estimated that in excess of 4,000 will have been ringed since 1995. It should also be remembered that not every chick will be ringed during the intervening period. Even taking into account that these figures are only estimates, perhaps they are a little out of date and ignoring the un-rung chicks or the fact that a great many of the fledglings will die during their first winter it is self-evident that a large number of young 'disappear' in the UK after fledging. It is reasonable for Raptor Workers to ask; 'if the population is not expanding in accordance with the predicted model, where are these birds?'

Nationally Goshawks continue to face persecution in some areas, particularly those areas associated with commercial game shooting, at levels that can lead to localised extinctions. Egg collectors also continue to threaten the species and their activities may have a significant local impact.

Conservation status (BTO)

UK Green ●
 European Not of concern
 Global Least concern
 Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The status of Goshawk in Calderdale is somewhat of an enigma. That birds are present on the moorland fringe in spring is not in doubt; however they do not go on to breed. The habitat is eminently suitable, the birds occupy territory; the question is 'what becomes of them after that?'

The pattern in 2010 followed that of previous years. In spring Group members monitor 2 heavily wooded valleys in the north west of the study area. Although they are separate valleys they are in fact 2 arms of a 'U' shaped system, with both arms, 1 kilometre apart, and extending northwards into grouse moor. A pair was seen together soaring over the woodland in the eastern arm on the 7th April. The female was seen again on the 17th April and then again on the 2nd May over a different section of the woodland. An un-sexed bird was reported on the 24th April in the same general area and the female was seen once again on the 23rd May.

There is no doubt that all sightings of a female in the area referred to the same bird, which had several broken feathers and a badly worn tail. Opinions differ on the likely cause of the feather damage varying from the result of being shot to the suggestion that she is a captive bred escapee, even though she was not wearing jesses.

This twin valley system covers approximately 10km² and as a result of the size of the area, the heavily wooded nature and steepness of the terrain, the nest, if in fact one had ever existed, was not located. Observations continued over the area post breeding season but they did not result in young being seen.

The only other sighting during 2010 was of a male 10 kilometres to the east of the potential breeding site on the 2nd June.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Observations in the uplands are based mainly on early season pair-bonding flight displays over the larger conifer plantations. Allowing for 1 territory where only a displaying male was seen these observations suggest that there are 5 pairs in the uplands. There was no clear information in relation to breeding success.

There are no records of birds being observed on passage.

Although the exact number is not known a few more pairs are believed to breed in the eastern lowlands.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There are occasional rumours of breeding in the east of the study area and more recently in the north, however to date these reports remain unconfirmed. There are several sightings reported to the Group each year which, following investigation, are subsequently classified as large Sparrowhawks.

Goshawks are only rarely seen on passage.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The Northumberland study area includes a small section of eastern Cumbria around Kershope, where the forested area straddles the County boundary.

During 2009 a total of 33 pairs hatched eggs, this figure was down to 23 pairs in 2010. However; the number of chicks fledging remained almost unchanged at 53 in 2009 and 48 in 2010. Whilst the number of chicks fledging is down by 5, interestingly, the differences in the fledging rates between 2009 and 2010 are statistically irrelevant.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The individuals responsible for monitoring this species have once again declined to release their records to the Group; consequently it is not possible to report the productivity details.

Overall it is known that the species had a successful season in 2010. Regrettably there were also incidents of

persecution in the pre-breeding season. One bird was shot, a second bird was poisoned and the nest of a third was deliberately disturbed, which led to the birds abandoning the site.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland areas.

Level of monitoring: Good coverage, at least two monitoring studies or large representative study area.

During 2010 the Study Group checked the 15 traditional Goshawk breeding territories. Whilst there were scattered sightings of birds displaying early in the season over these traditional sites, once again they were all found to be unoccupied during the breeding season.

Without evidence to the contrary the only possible explanation for this 'black hole' is that the primary cause for the breeding failures of Goshawks in the region is persecution on kept grouse moors and in the adjacent woodland.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The Group recorded a 92.3% increase in productivity from 2009 to 2010. Productivity in 2010 was close to the European average and with only 1 extra pair being monitored during 2010 the increase is probably due to low productivity induced by poor weather during 2009.

In the Upper Derwent Valley once again persecution was significant and had a serious detrimental effect on the local population.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There are no formal studies of Goshawks undertaken in the YDUBSG recording area, partly as a result of the sensitivities and difficulties in approaching private landowners for permission to gain access. This problem is particularly acute in areas managed for game shooting. Consequently no attempts have been made to try and locate nests and therefore no definitive nesting territories have been identified.

However; a number of general areas are checked each year when displaying birds are observed. As a result of these observations the Group is able to report that at:

- site 1** a pair was seen displaying
- site 2** only a single bird was observed
- site 3** only a single bird was observed
- site 4** two birds were seen at this location, however there is still no confirmation that breeding took place. There are also fewer records from this site in recent years when compared to the 1990s despite comparable coverage being undertaken by the Group members
- site 5** separate sightings of a male and a female were recorded at a former breeding site. A pair, presumed to be the same birds, was also noted in autumn

site 6 several sightings were recorded outside of the breeding season in an area of potentially suitable breeding habitat

NERF regional summary

There are 3 main Goshawk study areas; one in the South Peak area, 1 in Northumberland [which includes part of eastern Cumbria] and 1 in North Yorkshire. In respect of the latter study area the Raptor Workers responsible for monitoring the birds decline to share their data with the local Raptor Study Group. Whilst information from other sources confirms that this population is 'doing well' without the data from the NYM it is not possible to give an accurate assessment for the species across the NERF region as a whole.

The Northumberland population is the largest within the NERF study area and is relatively stable with 48 young fledging in 2010, which is similar to the productivity recorded in 2009.

Notwithstanding that the Northumberland and South Peak Groups are producing a significant number of chicks annually the situation across the whole of the North of England raises a number of questions. The statistics from the last two years starkly highlight the differences within the NERF region.

In 2009 from the 51 pairs monitored 31 pairs fledged 66 young and in 2010 from the 49 pairs monitored 34 pairs fledged 73 young; a total of 139.

Using the 33% first year mortality rate model we could have reasonably expected to see an additional c90 chicks entering the population over the two years, 2009 and 2010. However; this expectation was not fulfilled and the additional chicks have not been located by Raptor Workers. It is apparent from the data that the popula-

tion did not grow in line with the predictions for 2010 when the population remained stable at the 2009 level. Whether or not the 2010 chicks will enter the population will not be known until the data is processed in the 2011 Annual Review, however early indications are that once again the population in the NERF region did not grow in line with the model.

There is a vast amount of suitable habitat on the Pennines between the South Peak and Northumberland; however between these 2 Study Groups there is almost a Goshawk breeding 'black hole'.

Goshawk Distribution in the NERF Region

	Chicks fledged	Northumberland	South Peak
2009	66	53 (80.30%)	13 (19.70%)
2010	73	48 (65.75%)	25 (34.24%)
Totals	139	101 (72.66%)	38 (27.34%)

Outside of the South Peak and Northumberland study areas there were reports of pre-season sightings from every Group with the exception of Manchester.

NERF regional threat assessment

There are large areas of suitable habitat and food availability across the whole of the NERF region which can and should support healthier populations than we currently enjoy. Goshawks thrive in some areas and they are absent from others with very similar habitat and food supply. Taking these and other factors into consideration it is very difficult to find any reasonable explanation, other than human interference, to account for these anomalies.

Harrier, Hen *Circus cyaneus*



UK population estimate

The population in the UK, including the IoM, is estimated to be in the region of 646 breeding pairs. (2010 Hen Harrier Survey)

Overview

Hen Harriers were first recorded in the UK in 1544; however the species was undoubtedly present long before that date. The species was first described in 1766 [Linnaeus, C (1766)].

The European population is estimated to contain between 12,000 and 19,000 pairs in summer [Burfield, I & Van Bommel, F (2004) Birds in Europe, Birdlife International]. With this number of birds in continental Europe Raptor Workers are entitled to ask “we have the habitat so why are they there and not here?” Regrettably the answer to “why aren’t they here?” is readily identifiable; persecution. The reasoning behind the ‘why’ is much more difficult for Raptor Workers to comprehend. The reason why persecution remains an apparently intractable problem is mainly due to a perception amongst grouse moor managers that Hen Harriers will decimate their industry rather than the reality that although they do take grouse chicks they can co-exist at relatively high densities without impacting upon the commercial viability of grouse shooting. At the present time a solution appears to be a very long way off.

The 2010 national Hen Harrier survey estimated the UK population, including the IoM, to be 646 pairs, down from 807 in 2004; this represents a decline of 19.95% in just 6 years.

2010 National Hen Harrier Survey

Country / Region	Territorial Pairs 2004	Territorial Pairs 2010	% Change 2004 - 2010
England	11	12	9
Isle of Man	57	29	-49.1
Northern Ireland	63 (58 - 68)	59	-6.3
Scotland	633 (563 - 717)	489 (401 - 592)	-22.7*
Wales	43	57	32.5
UK total	749 (675 - 832)	617 (534 - 724)	-17.6
UK & IoM total	806 (732 - 889)	646 (563 - 753)	-19.9*

Notes:

Source: RSPB

* = statistically significant

Whilst there were only 12 pairs in England in 2010 recent research indicates that there is sufficient habitat to support a minimum of 323 pairs

Editor's note:

A 13th pair was reported post season and after the Survey results had been published. See the data from the Northumbria Ringing Group for a fuller explanation.

The Hen Harrier is the most persecuted bird of prey in the UK and as a result is facing extinction as a breeding bird in England. The majority of the English population is located in a tiny stronghold in the Forest of Bowland, Lancashire, predominantly on land owned by United Utilities. Occasionally other pairs breed outside of this core population, however success is sporadic and has a limited impact on securing a future for the species overall.

There was a marked decline in the UK population during the 19th century precipitated almost entirely as a result of persecution by grouse moor managers. At the start of the 20th century their illegal activities ensured that the species was restricted to the Scottish Western Isles and Orkney and it took 70 years before they were able to re-colonise the mainland. The birds did not return to northern England until 1968 and since that time the numbers have remained pitifully low despite the fact that there is a vast area of suitable habitat available to them.

Current research indicates that the English uplands can sustain a population of 323 pairs; however this figure represents the minimum figure only. It is imperative that persecution is brought to an end and that the population is allowed to achieve its natural level, no matter what that number may be. It is regrettable that the numbers very rarely exceed a dozen or so pairs and they seldom breed outside of a very small area within the Forest of Bowland.

Even this pathetically low population in Lancashire only exists because the principle landowner, United Utilities, is sympathetic to Hen Harriers and given the

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	10	0	0	0	0	0	0	0	0	0.00	0.00
MRG	3	0	0	0	0	0	0	0	0	0.00	0.00
NRG	10	1	0	1	0	1	1	1	3	3.00	3.00
NYMMSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	23	1	0	1	0	1	1	1	3	3.00	3.00

vagaries of weather and prey availability they generally breed successfully on the company's land. These nests also benefit from a very high level of security and it is debatable whether or not these successful outcomes would continue without the support of United Utilities and the added security provided by Natural England's Hen Harrier Recovery Project, the RSPB and a small band of dedicated volunteers.

It is erroneous to imply from the success rates experienced on the United Utilities Estate that this is the norm throughout the Forest of Bowland. This is not the case and when considering the productivity of the English population as a whole it is essential that the numbers fledging from United Utilities land are accounted for separately. Only then will a true picture for the whole of the Forest of Bowland and for that matter the remainder of the North of England be revealed.

Productivity rates for Hen Harriers are published annually and the data shows that a substantial number of chicks have fledged from Bowland over recent years. Even allowing for a first year mortality rate of 50% the overall English population can at best be described as extremely low and never more than 5% of the estimated carrying capacity. These facts beg the question; if they have not been persecuted, as some individuals in the grouse shooting industry claim, where are they?

Hen Harriers undoubtedly predate grouse, however their main food source consists of voles and meadow pipits and the actual impact that Hen Harriers have on the number of surplus grouse available for shooting is a matter of continued contention. Recent research indicates that Hen Harriers can co-exist with driven grouse shoots with a population of 133 grouse per km². At this density the research also indicates that there is little difference in the commercial impact caused by 1, 2 or 3 Hen Harriers per km² [Redpath *et al.* 2011]. The failure of the shooting community to accept this research is more likely to be driven by perception, emotion and a refusal to break with old habits rather than empirical

scientific evidence.

Hen Harrier persecution exists in the south and east of Scotland, therefore the potential for the population to expand from that region into the North of England is severely restricted.

National threat assessment

The latest data shows that there is sufficient habitat in upland England to support a minimum of 323 pairs and yet there are rarely more than a dozen or so breeding attempts each year. Undoubtedly productivity at sites where breeding takes place is dependent upon the impact of the weather and the availability of prey during the breeding season. The survivability of fledglings over their first winter is similarly dependent of these same factors coupled with the young birds' ability to hunt. Notwithstanding these influences it is generally accepted, outside of the shooting community, that the single most important limiting factor affecting Hen Harriers in northern England is persecution by individuals connected to commercial driven grouse shooting.

During early spring anecdotal evidence indicates that outside of their stronghold, on the United Utilities Estate in the Forest of Bowland, Hen Harriers are 'moved on' as they return to the breeding grounds by a variety of methods. This anecdotal evidence suggests that in some areas the adults are 'flagged off' to ensure that they don't settle. Whilst in other areas there is proven evidence to show that in 3 cases between 2002 and 2008 the heather patch selected as the nesting site was burnt out illegally after the birds had moved in. There is further evidence to show that territorial Hen Harriers have 'disappeared' during breeding attempts; 12 of these 'disappearances' occurred under suspicious circumstances [Natural England (2008) A future for the Hen Harrier in England?]. Not unsurprisingly these methods of displacing potential breeding pairs are vigorously denied by grouse moor managers.

During winter the birds are semi-colonial and information received from a variety of sources strongly indicates that the birds are killed in relatively large numbers whilst they are roosting. Evidence from Natural England's radio and satellite tracking projects have provided evidence that birds tracked from the Bowland Fells travelled in a north easterly direction and entered areas managed for driven grouse shooting in the Northern Pennines. At that point the transmissions ceased and the birds were never recorded again [Natural England (2008) A future for the Hen Harrier in England?]. Was it just a coincidental series of equipment malfunctions that resulted in all of the tracking devices simply developing faults and then failing as they entered a small geographical area? Is this the North Pennine equivalent of the 'Bermuda Triangle' for Hen Harriers? Alternatively is it more likely that the birds are first discovered, then killed and the tracking devices destroyed?

The perilously low number of pairs laying eggs makes them particularly vulnerable to persecution by egg collectors. Fortunately every nest is protected and therefore the number of cases of egg theft is extremely low. However; because the breeding population in the North of England is so small the theft of a single clutch of eggs would have a disproportionate effect than would otherwise be experienced with other species suffering a similar loss. Until the English population achieves natural levels every known nest will need to be protected for the foreseeable future.

All of the evidence available shows that the perilously low English Hen Harrier population is directly attributable to persecution by grouse moor managers. With vast tracks of suitable habitat and sufficient available prey the situation will not change until the grouse moor owners either instruct their employees to stop killing the birds or no longer turn a blind eye to the illegalities that are taking place in their name on their land. At that point the species will flourish. Unfortunately this course of action is unlikely to occur without the real risk of prosecution, a criminal conviction and public humiliation bearing down upon them to influence their behaviour and bring persecution to an end. At the present time the perception, perhaps reality, is that this is unlikely and they can carry on with 'business as usual'. Therefore until the Government and the Police take the issue of wildlife law enforcement seriously and dedicate sufficient resources to address the problem of persecution it is unlikely to be resolved in the near future. NERF is disappointed that the present Minister of the Environment and Fisheries, Richard Benyon, has recently rejected calls for an amendment to the Wildlife and Countryside Act which would introduce an offence of vicarious liability for landowners where the criminal offences take place. This amendment has already been introduced in Scotland.

Conservation status (BTO)

UK	Red ●
European	3: Concern, most not in Europe; depleted
Global	Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Natural England Data

The following data is reproduced courtesy of Stephen Murphy, Natural England Hen Harrier Recovery Project.

The plight of Hen Harriers in England is well documented and 2010 was to prove another challenging year for the Hen Harrier Recovery Project as it got off to a disappointing start. A female, known unflatteringly as 90691 was tracked over the North Yorkshire Moors for approximately 3 weeks before her untimely death on the 11th February. Although it can not be proven with 100% confidence this death was almost certainly as a result of human persecution specifically targeted at birds of prey. An early morning visit to the location of the last fix from her satellite tracker revealed nothing but a set of boot and dog prints in the snow. Further corroboration that this was a targeted attack came several days later when the body of a Goshawk that had been shot was found within the same 1 kilometre square in which 90691 'disappeared'.

A national Hen Harrier Survey was conducted during 2010 and a seasonal worker was employed by the RSPB and seconded to the Hen Harrier Recovery Project. The appointment of this additional member of staff allowed extra coverage of the peripheral breeding sites and areas of other suitable breeding habitat in the English uplands. Despite all of this extra effort no birds were observed attempting to breed outside of the core areas.

Pre-breeding Hen Harrier activity

Location	Activity
Bowland	Promising early signs. Most of the traditional breeding sites at Bowland were occupied. There were an estimated 18 adults in the SSSI by end of April. Many of the adults were 'old' individually marked birds of Bowland provenance
North Cumbria	1 pair and 1 female were observed
Hepple Haugh [RSPB led]	1 male and 1 female in the general area on separate days
Gloucestershire	Female Hen Harrier and displaying male Montagu's were observed. Several days later a male Hen Harrier arrived and displayed alone. Pre-cursor of future breeding establishment?
Yorkshire Dales	1 female at Colsterdale was reported to be in the area for a week in mid-April and other intermittent records were received from Yorkshire Dales National Park staff
Geltsdale	1 male was seen intermittently; however no females were observed
Wessenden Moor	1 pair was observed displaying, however they did not establish a breeding attempt

Unfortunately many of these pre-season observations came to nothing and breeding was confined to just 2 lo-

cations, in north Cumbria and in the Forest of Bowland, Lancashire, where we experienced the first successful nest on the Duchy of Lancaster Estate for approximately 19 years.

By the end of the breeding season 23 young fledged from 12 breeding attempts. Whilst this compares favourably with 2009 when just 15 birds fledged from 10 attempts the overall number remains unacceptably low for England.

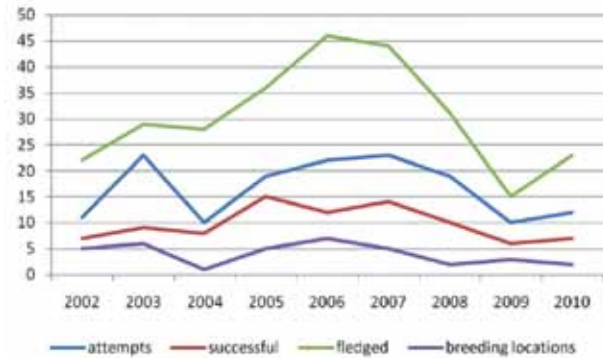
The disappointment experienced by the low numbers of breeding attempts was compounded by the low productivity rate of only 1.3 young per nesting attempt. This low figure was a consequence of 50% of the nests on United Utilities land, in the Forest of Bowland, failing followed by a low hatch rate at the remaining nests. The low productivity was unexpected as the optimal weather during the chick rearing stage together with high vole density would normally result in a prolific year for Hen Harriers. This combination of optimal weather conditions coupled with a vole plague last occurred in 2006 when 46 young fledged. However; freak overnight frosts in May that resulted in the death of a nearby brood of young Peregrines may also have caused some of the 'well sat' Hen Harrier eggs to chill during the time that the female was away from the nest to feed, collect nest material or during occasional disturbance.

Along with the losses that were probably attributable to the harsh weather 1 nest, containing 4 eggs, failed as a result of an attack by an Eagle Owl that was filmed on CCTV. A second nest at a traditional Hen Harrier site on the Abbeystead Estate failed for the first time since 2002. An Eagle Owl nest, subsequently deserted, containing 1 egg was later found in the vicinity. The cause of 2 other nest failures is unknown; 1 of these nests was being monitored by a CCTV camera and at the second a licenced photographic hide had been installed approximately 100m away. When considering the potential impacts of both the CCTV and the photographic hide it is essential to also consider that the use of CCTV cameras to monitor nests is now well established and at Langholm a pair of Hen Harriers succeeded at a nest with a photographic hide positioned only 4m away.

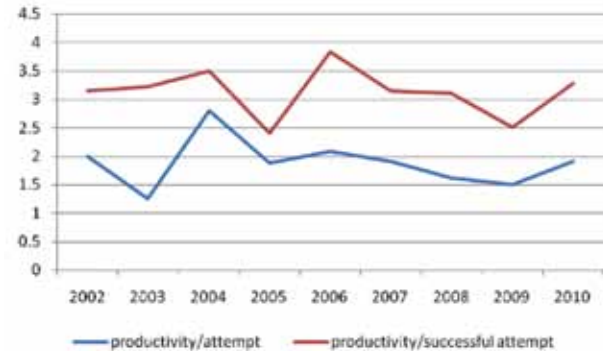
Breeding data for Hen Harrier in England in 2010

Location	Attempts	Successful	Fledged	Fledging rate per attempt	Fledging rate per success
Bowland UU	10	5	13	1.30	2.60
Bowland GM	1	1	5	5.00	5.00
Lake District	1	1	5	5.00	5.00
Totals	12	7	23	1.92	3.28

Breeding data for Hen Harrier in England 2002 - 2010



Breeding productivity for Hen Harrier in England 2002 - 2010



Group Reports

Calderdale Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Hen Harriers are annual visitors to the study area and away from the occasional winter roosts they are regularly, if infrequently, seen on the eastern slope of the Pennines.

In 2010 the first sighting was reported on 14th January when a female was seen flying through the M62 corridor. A ringtail was noted in roughly the same area on the 25th March.

Perhaps the most significant sighting, at least the sighting that gave the Group the most hope that a breeding attempt had been missed earlier in the season, was on the 2nd June when an adult female was seen on a stretch of heather moorland just north of the Calder Valley. Unfortunately as quickly as hope arose disappointment followed; she was a wandering bird and the sighting was not related to a breeding attempt.

Following the usual annual pattern in Calderdale the species was not noted again until the autumn, following dispersal from their breeding grounds on the western side of the Pennines. In October there were sightings of a female on the 15th, a ringtail was seen on the 21st, 2 ringtails were noted on the 24th and an adult male was seen in the same area on the 30th. In November 1 female was seen on the Pennines eastern slope on the 7th and an immature female was seen on the same moor on the 24th.

Monitoring continued at the traditional and potential winter roosts throughout November, however there were no further sightings until the end of the year.

There are vast tracts of heather moor in the study area, i.e. thousands of hectares of suitable Hen Harrier breeding habitat, all of which remains unoccupied. With the English population at a perilously low level, facing extinction as a breeding species, it is difficult to see the situation being reversed in the foreseeable future.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

There is no evidence of any breeding attempts in 2010. The last recorded breeding attempt, in 2005, was unsuccessful and the last successful breeding was in 1999.

During 2010 an extensive survey was conducted by members of the Durham Upland Bird Study Group, within the County boundary, in support of the national survey. Almost all suitable Hen Harrier habitat was surveyed by 8 members who made a total of 127 location visits and amassed 389 hours of observation in the field between late March and late July 2010. No breeding attempts were recorded during this period. Indeed no pairs were seen and no display flights were noted.

An adult male was present in 1 area between 10th and 14th March but was not subsequently seen at that location. Another male, or possibly the same bird, was observed nearby on 2nd April. A ringtail Hen Harrier, thought to be a female was reliably reported on 11th May in the same general area.

Elsewhere a female was seen flying high over a plantation on 9th May but she continued on her journey. A second calendar year male was seen on 10th May but was not seen subsequently.

The 3 reports on consecutive days in May were of some interest; however there were no other sightings of Hen Harriers during the remainder of the season.

Observations in September and October resulted in sightings of ringtails on autumn passage at 4 / 5 upland locations.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Annual checks are made at 3 potential Hen Harrier territories on the Dovestone RSPB Reserve, Smithhills Moor and Winter Hill. There were no reports of birds in these areas during 2010.

Hen Harriers are regular but infrequent winter visitors to all of these areas in addition to the Mosslands, Chat Moss and Carrington Moss.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

In 2009 2 pairs made breeding attempts within the study area, unfortunately both attempts were abandoned.

During the 2010 pre-breeding season 10 territories were checked and although a pair of birds was observed interacting in the west of the study area they were not believed to have been making a breeding attempt. Unfortunately the observer is inexperienced with Hen Harriers and having failed to observe nesting behaviour presumed that no breeding attempt occurred. Several weeks later a different person visited the same area looking for butterflies and saw 3 chicks on the wing. Later observations confirmed that they were Hen Harriers. Regrettably this information only came to light after the national survey data had been collated and therefore this successful breeding attempt is not included in the English dataset.

For any other species including an additional 3 fledglings into the national population would barely deserve a mention in any data set. However; this is not any other species, this data refers to Hen Harriers, a bird facing extinction as a breeding species in England. This pair was only the second pair that successfully reared young outside of the Forest of Bowland and with just 26 chicks fledging in England in 2010 the 'Northumberland 3' represents 11.5% of the English productivity for the year.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

There was no known breeding during 2010; indeed the last known successful nesting occurred during the mid-1990s.

Wandering birds, mostly ringtails, were recorded during winter and spring.

One incident of suspected persecution took place on Bransdale Moor in March. A satellite-tagged bird, which had been monitored across virtually the whole of the North of England for 6 months, stopped transmitting for no apparent reason. The site was later visited by Natural England staff. The bird was not found, however a fresh pair of human foot prints and a set of dog foot-prints were found in the snow.

Several days after the satellite tagged Hen Harrier 'disappeared' a dead Goshawk, that had been shot, was found in the same 1km².

Peak District Raptor Monitoring Group

Extent of coverage: Part of upland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Once again all suitable habitat was surveyed by the Group during 2010, however no breeding attempts were recorded.

Hen Harriers are recorded across the study area outside of the breeding season.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Although Hen Harriers have not bred in the area since 2006, all suitable areas were checked thoroughly

throughout the year to no avail.

The Group recorded a 'ringtail' and a grey male on the Eastern Moors on 2 separate occasions during March; however they were passage birds and did not remain in the area.

Five different birds were seen on the Eastern Moors from mid-September to the end of the year. Additional birds were also recorded on passage in other parts of the study area.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Given the lack of recent nesting records in the Yorkshire Dales it is not possible to identify specific territories. None-the-less all moorland areas where Hen Harriers have been known to display or breed in the last 30 years are checked annually.

Of the 6 primary areas birds were absent from 4. At a 5th site in the core of the suitable Hen Harrier habitat within the study area only a single bird was seen flying across the moor in spring. A displaying male was recorded at the 6th site for the third year in succession but despite his best efforts he failed to attract a mate. In 2009 the same location attracted an adult male and a first year male. Hopefully it will only be a matter of time before there is a breeding attempt at this site. Whilst local Raptor Workers may cross their collective fingers, having regard to the poor state of the English population, it would be inadvisable for them to hold their collective breath.

Given the paucity of winter sightings across the area as a whole it was notable that several birds were present in the Washburn Valley during the second part of the season. There were also reports of several other birds seen on passage.

NERF regional summary

Only one NERF Group, Northumberland, reported successful breeding during 2010.

Parts of the Forest of Bowland continue to hold the core English population with occasional additional pairs

located in other areas in some years. New research indicates that there is sufficient suitable habitat to support an English upland population of c323 pairs, more than 25 times greater than at present. If these numbers were realised a large proportion of the population would be resident in every study area monitored by NERF member Groups.

There are so few birds in the English population that when single birds are noted in an area their chances of finding a mate are very limited. These birds eventually move on to search in other areas, only to fail again.

NERF regional threat assessment

Natural England report that the biggest single factor limiting Hen Harrier numbers in northern England is persecution by individuals connected with driven grouse shooting.

With the very rare exception of a pair breeding in the far south-west the entire English population is to be found in the North of England, on land monitored by NERF members. Consequently the threat assessment for Hen Harriers, at the national level, mirrors that for the NERF region. The future for this species in the northern uplands is bleak at the present time and the situation is unlikely to improve until persecution is brought to an end. The Hen Harrier Dialogue, facilitated by the Environment Council, has been taking place for 6 years and although a little progress has been made the pace of change is frustratingly slow.

History will judge this period of wildlife persecution i.e. pushing a species towards extinction in England, not in the third-world, in England. Future generations will undoubtedly ask 'Why did you allow this to happen?' This is a question that no one, not conservationists, not grouse moor owners or gamekeepers should have to answer.

Harrier, Marsh *Circus aeruginosus*



UK population estimate

In 2005 the summer population was estimated to contain 360 females. (BTO)

Overview

The species was first recorded in the UK in 1544 [Turner, W (1544) *Avium praecipuarum quarum apud. Plinium et Aristotlem mentio est & succinta historia*]. However; they were undoubtedly present before that date. The species was first described in 1758 by Linnaeus [Linnaeus, C (1758) *Systema Naturae*].

The British population of 360 females in summer, 2005, was derived from research undertaken by Eaton [Eaton, M.A (2006) *The State of the UK's Birds 2005*, RSPB]. The European population is estimated to be between 53,000 and 80,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Before the 19th century all Harriers were subjected

to the ornithologist's 'lumpers' policy and recorded as a single species. Therefore whilst Marsh Harriers were not recorded separately as a breeding species they were undoubtedly present and breeding in several regions of England and Wales and throughout the Island of Ireland.

Historically Marsh Harriers were also known as Moor Buzzards and it is possible that some birds may have been misidentified as Buzzards leading to the possibility that there may have been other, unrecorded breeding attempts in some years.

Changes in agricultural policy led to the draining of reed beds, the traditional habitat used by Marsh Harriers, and this loss of habitat coupled with persecution eventually restricted their range to the east coasts of Norfolk and Northumberland by 1870. Thirty years later they had completely disappeared from mainland UK. Although a small population remained in Eire, the species was extinct in Northern Ireland and has not been recorded in the Six Counties since 1917.

Marsh Harriers were next recorded in England in 1911 and sporadic breeding attempts were reported during the following 15 years. By the 1930s breeding records were being submitted every year from the area surrounding The Wash in eastern England. By the early 1940s 5 pairs were breeding successfully and 20 years later this figure had risen to 15 pairs.

The devastating impact of secondary poisoning induced by pesticides in the 1950s and 1960s has been well documented and Marsh Harriers were not immune from those effects. Once the pesticides were withdrawn from use the population began a slow recovery. The recovery and expansion in range was aided, in part, by an influx of birds from the near continent and a reduction in persecution. They also benefitted from another shift in farming policy which led to an increase in the pro-

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MARG	1	0	1	0	0	0	0	0	0	0.00	0.00
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRSRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	1	0	1	0	0	0	0	0	0	0.00	0.00

duction of oil seed rape. The shift in production created new breeding habitat which is now utilised by breeding pairs.

Marsh Harriers can now be found breeding in the eastern counties of Kent, Suffolk, Norfolk and Cambridgeshire with occasional sightings being reported in Yorkshire. They can also be found on the Somerset Levels and on the Lancashire Nature Reserve at Leighton Moss. In 1995 87% of breeding Marsh Harriers were found to nest within 10k from the sea or a large estuary [Underhill-Day 1998]. Recently records show that more individuals, predominantly females, are remaining in the east and south of England during the winter months.

Marsh Harriers are prone to desert active nests during both the egg laying and brood rearing stages. Consequently nest visits should be avoided during these periods unless it is absolutely essential. Ideally the nest should be observed from a distance and the first visit should coincide with ringing when the chicks are 3 – 4 weeks old. If a reed bed nest is to be visited the approach should be made from the water and in all cases care should be taken to avoid damage to vegetation surrounding the nest [Raptors: A field guide to survey and monitoring 2006].

In 2011 Phil Littler commenced a wing tagging project in Norfolk where the current population is estimated to be in excess of 100 females. The birds are fitted with green wing tags and Phil would welcome sightings of any birds seen in the NERF region. Sightings should be forwarded to Phil at phillittler10@yahoo.co.uk, or by mobile on 07748 556758. Please include the tag number, letter and number, time and date, location, including the grid reference if possible, age and sex in the report.

National threat assessment

The UK population is more secure now than at any other time during the last 100 years. However; significant habitat loss could reverse this trend. As with any small population the impact of egg collecting could be locally significant.

Conservation status (BTO)

UK	Amber ●
European	Not of concern
Global	Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland areas.

Level of monitoring: Not known to occur here as a breeding species.

This species occurs only as a passage migrant in the study area in both spring and autumn.

During 2009 there was just 1 record in October. Observers were more successful during 2010 and the Group recorded 2 birds heading north; 1 on 7th May and the 2nd on the 17th. Interestingly although they

were recorded at 10 days intervals they were seen at locations just 1 kilometre apart on a flyway less than 500 meters wide.

On 1st October 1 bird was seen during the southern migration at exactly the same place as the bird flying north on 7th May.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Despite being seen on regular passage along the eastern coastal strip, where birds occasionally linger, Marsh Harriers are not known to occur anywhere in County Durham as a breeding species.

The only upland sighting was of an individual hunting along a moorland edge in August.

There were also other occasional sightings of passage birds on the lowlands in the east of the County.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

In 2010, for the first time, a female summered on Astley Moss / Chat Moss from 24th June to 29th August. During this period she was seen on 15 occasions. The presence of this female coincided with a possible breeding attempt not too far away at Woolston Eyes, Cheshire. Hopefully these 2 areas of activity will lead to colonisation of the MRG study area in future years.

The species is also noted on passage outside of the breeding season.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

A single pair raised 4 young in 2009. However; Marsh Harriers are rare breeders in Northumberland and no birds were recorded during 2010.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Several adult birds were noted passing through the North York Moors during spring and autumn of 2010.

Wandering juveniles, possibly dispersing from nest sites in the south of the county, were recorded over the late summer months. Passage birds were also recorded outside of the breeding season.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no breeding attempts in the study area during 2010. The Group did however; record several sightings of migratory birds outside of the breeding season.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Marsh Harriers are regular migrants in the study area and during 2010 birds were recorded on passage in both spring and autumn.

Following a dearth of sightings during 2009 numbers were back to normal levels in 2010. The Group recorded 4 sightings in spring between 21st April and 2nd June and a further 11 sightings were recorded between 2nd August and 27th October. With the exception of 1 sighting on the limestone plateau at Wormhill, the remainder were recorded on the Eastern Moors or in the Upper Derwent Valley.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

This species is predominantly a passage migrant within the study area, although it is suspected that in recent years some birds are lingering for longer periods and possibly summering in the area.

The number of sightings of migrant birds has increased over the years in line, no doubt, with the growth of the national population.

NERF regional summary

Only the Northumbrian Ringing Group reported a successful breeding attempt in 2010; however all other NERF Groups observed passage migrants in spring and autumn.

NERF regional threat assessment

The NERF regional threat assessment mirrors that of the national threat assessment.

Harrier, Montagu's *Circus pygargus*



UK population estimate

The population is estimated to contain 7 territorial females (summer). (BTO)

Overview

The species was first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*]. The first British record was made by the English ornithologist George Montagu [1753 – 1815] in 1802 when he identified the species as breeding in southern England [Montagu, G (1802 – 1813) *Ornithological Dictionary*, or, alphabetical synopsis of British Birds].

The British population estimate of 7 females was deduced from work undertaken by Baker who examined records obtained between 1998 and 2002 [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. The European population is estimated to range between 15,000 and 35,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International]. Historically they were much more widespread than today, breeding in England, Wales and occasionally in Scotland. At the present time they are very rare breeding birds in England.

The birds return to the UK from late April through to late May to occupy territories that are predominantly located in a broad swath stretching from Dorset in the west through Hampshire and Oxfordshire to The Wash in the east where they usually nest in winter cereal and oil seed rape fields. In recent years 1 pair has attempted to breed at several locations in the North of England, unfortunately these attempts have invariably been fruitless. However; fortunes changed in 2010 when a pair fledged 2 young on moorland that is not used for grouse shooting.

Unlike Marsh Harriers, all of the UK's summer Montagu's Harrier residents return to Africa in autumn to over-winter.

Having regard to the very small UK population Raptor Workers are advised to follow best practice by monitoring the birds from a distance and not visiting nests until late in the breeding season unless the visit is absolutely necessary.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRS	2	1	0	1	0	1	1	1	2	2.00	2.00
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	2	1	0	1	0	1	1	1	2	2.00	2.00

National threat assessment

In Western Europe approximately 75% of Montagu's Harriers nest in cereal crops and whilst this generally allows them to produce more chicks per breeding pair it also leaves them vulnerable to unintentional disturbance. Consequently once located the nests have to be either safeguarded during the harvest season, by enforcing an exclusion zone which has been agreed in advance with the landowner, or alternatively the chicks need to be relocated to a safer area.

The eggs are especially vulnerable to egg thieves and the location of each nest must be kept a closely guarded secret. The nests may also require protection throughout the season.

Conservation status (BTO)

UK Amber ●
 European Not of concern
 Global Least concern
 Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

A single bird was recorded flying through the M62 corridor at Scammonden during 2009; unfortunately this record was inadvertently omitted from the 2009 NERF Review.

There were no records of this species within the study area during 2010.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Although birds are occasionally seen on passage there were no records of this species in either the uplands or lowlands of County Durham during 2010.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species within the study area during 2010.

Northumbrian Ringing Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

For several years this species has been pushing north, from the more traditional breeding sites in the south of England, into North Yorkshire and Northumberland where a pair recently attempted to breed near to Hadrian's Wall.

The breeding attempt in Northumberland failed; however following the recent success in North Yorkshire there is potentially an opportunity for a further attempt in the study area in the not too distant future.

The local Study Group also records birds on passage annually, during the summer months.

North York Moors Upland Bird

(Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Montagu's Harrier is a regular passage migrant and also occurs as an occasional breeding species on the North Yorkshire Moors. The last recorded attempt failed in 2007 when the nest was washed out in a torrential downpour.

As in 2007 the 2010 nest was located on a non-grouse moor although it was at a different location. On this occasion all 5 eggs hatched, unfortunately only 2 of the chicks survived. The male appeared to leave most of the provisioning to the female once she had stopped brooding and this may have contributed to the death of the 3 chicks.

Eggs normally hatch asynchronously; although the first 2 may hatch together, and at times of poor prey provision the later chicks have a lower chance of survival. It is worth noting that there was a wide disparity in the development of the chicks; 3 were of a similar size whilst the remaining 2 were less well developed.

The species is also recorded on passage outside of the breeding season.

Peak District Raptor Monitoring Group

Extent of coverage: Part of upland areas.

Level of monitoring: Not known to occur here as a breeding species.

Whilst there were no breeding attempts for this species during 2010 passage birds were noted during both spring and autumn.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

An adult male was noted on the Eastern Moors from late April until the middle of May. This bird was seen flying in full display on Leash Fen on 11th May. Regrettably his efforts to attract a partner were to no avail.

The last known Montagu's Harrier successful breeding attempt took place in the South Peak study area in 1953.

Passage birds are rarely seen by Group members.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Montagu's Harriers are very occasional migrants with the only confirmed breeding, within the study area, being recorded in 1983.

The most recent record relates to an adult male seen in Nidderdale on 20th May 2010. Unfortunately this sighting occurred on an area of moorland that historically has an appalling record of Hen Harriers 'disappearing' during the breeding season.

NERF regional summary

Montagu's Harriers are rare migrants in the North of England, however in 2010 5 of the member Groups reported sightings and 1 Group, North York Moors, reported a successful breeding attempt. As the number of sightings increase and are reported from the more northerly latitudes, within the NERF region, it is not unreasonable to anticipate that further pairs will breed in the area in the future.

NERF regional threat assessment

Breeding attempts within the NERF recording area are extremely rare, with only 1 success in recent years. Montagu's Harriers normally breed in cereal fields, however the success on the North York Moors in 2010 is a strong indication that they can adapt to moorland habitats. Offspring from these areas may be habituated to moorland and return in subsequent years mirroring the habitat selection of Hen Harriers in northern England. Unfortunately taking into account the high persecution levels experienced by Hen Harriers this may be a blessing in disguise and may threaten northern populations rather than enhance them.

To counter the threats from egg collectors and excessive disturbance it is essential that the location of future breeding attempts is kept confidential and nest protection is activated where required and practically possible.

Hobby *Falco subbuteo*



UK population estimate

In 2000 the UK population was estimated to be 2,200 pairs. (BTO)

Overview

The species was first recorded in the UK in the 12th century, although it was undoubtedly present for some considerable time before this date. Linnaeus first described the species in 1758 [Linnaeus, C (1758) *Systema Naturae*].

Clements is responsible for producing the current British population estimate [Clements, R (2001) *British Birds* 94: 402 – 40]. The European population is estimated to be between 41,000 and 60,000 in summer [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Hobby is a scarce summer visitor to the UK arriving from late April through to early May and at the end of the breeding season, in late summer, they return to Africa.

In the mid-20th century the UK population was estimated to be only 60 to 90 pairs. This number increased by almost a factor of 10 over the next 40 years and by 1990 the population was being estimated to be between 500 and 1000 pairs. This estimation doubled again over the next 10 years and in 2000 the population was believed to be 2,200. Together with the dramatic increase in the population they have expanded their breeding range considerably, dispersing out of the traditional southern stronghold as far north as Yorkshire and Lancashire where they now breed regularly.

Despite there being in excess of 2000 pairs in Britain the BTO report that on average only 72 birds are ringed annually. Interestingly c70 chicks were ringed by NERF Group members during 2010, which is a significant contribution to the study of this species. None-the-less it

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	1	0	0	0	0	0	0	0	0	0.00	0.00
DUBSG	1	0	0	0	0	0	0	0	0	0.00	0.00
MRG	15	4	11	1	NR	1	1	1	1(+)	1.00 ¹	1.00 ²
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	12	12	0	12	0	5(+) ³	5(+)	5(+)	12(+) ⁴	2.40	1.00
SPRSG	41	39	2	39	5	34	26	26	64	1.88	1.64
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	70	55	13	52	5	40(+)⁵	32(+)	32(+)	77(+)⁶	1.93	1.48

Notes:

1 & 2 to calculate the number of young fledged n = 1

3 to calculate the number of pairs laying eggs n = 5

4 to calculate the number of young fledged n = 12

5 to calculate the number of pairs laying eggs n = 40

6 to calculate the number of young fledged n = 77

would appear that Raptor Workers could further enhance our knowledge of these elusive birds by increasing the level of monitoring across the region. On average the Nest Record Scheme receives 38 records annually and more would be welcome.

Hobbies are sensitive to disturbance and therefore, in accordance with the guidelines set out in the Field Guide to Survey and Monitoring, if desertion is to be avoided it is advisable not to visit the nest during the first week of incubation. Indeed nest searches are best carried out after the young have hatched, however to avoid premature fledging nest visits should cease after the chicks are 25 days old.

A colour ringing scheme was in operation for this species from 2004 until 2010 and to assist with this project Raptor Workers are requested to report all sightings of colour ringed birds via the website at www.ring.ac or alternately the information can be passed by email to Jim Lennon at lennons@shearwater50.fsnet.co.uk.

National threat assessment

There are no specific threats associated with this species at the present time, however whilst the population has increased significantly in recent years it still remains relatively low and Fieldworkers should be mindful of the continuing threat posed by egg collectors.

Conservation status (BTO)

UK	Green ●
European	Not of concern
Global	Least concern
Listed on Schedule 1 of the Wildlife and Countryside Act 1981	

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

This species is regularly, if infrequently, observed in the study area, normally outside of the breeding season when they are found on the heather moors hawking moths. In 2009 there were 12 sightings whilst only 8 records were received between 2nd May and 10th October 2010.

The most encouraging records came during the summer. On 21st June an adult bird and a first summer bird were highly vocal as they were observed chasing each other around the tree tops. One bird was seen in the same area on 21st July. It is possible that breeding did take place, however this cannot be confirmed.

All other records during spring and autumn are most likely to relate to migrants.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Historically Hobbies have occurred very infrequently

in the upland study area, primarily along river valley systems. During 2010 a solitary bird, probably on passage, was seen at a conifer plantation on a single day in May. Additionally a single bird was seen twice in June, hunting over heather moorland. The nearest tree sites were checked extensively to no avail.

Elsewhere in the county a pair bred at a lowland site for the second year in succession. This was in fact only the second confirmed breeding in County Durham.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Although no nest has ever been located within the study area, in 2010 a large Sand Martin colony on the edge of the County's largest private woodland was regularly visited by adults who then took prey back towards the adjacent woodland. Whilst the Group was unable to gain access to the area to monitor the nest it was later confirmed that a minimum of 1 young fledged from the site.

Birds are also recorded on passage.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Whilst this species is not known to breed in the area Hobbies are regularly seen during the summer migration period.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

During 2010 birds were noted during the breeding season in all areas of suitable habitat. Disappointingly however, no evidence of breeding was recorded.

Passage birds are also recorded during most years in spring and autumn, particularly in the vicinity of Scaling Dam Reservoir.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

There are several small studies in the lowland farmland adjacent to the Group's study area in South Yorkshire, North Nottinghamshire and Cheshire. Within these study areas 12 pairs were recorded, 5 nests are known to have been successful fledging a minimum of 12 young of which 6 were ringed. The outcome of the remaining 7 nests is unknown.

Passage birds were recorded during both spring and autumn.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

During 2010 Ant Messenger and Mick Lacey con-

tinued their extensive study of this elusive species. Five pairs failed due to natural causes and the outcome of a further 8 pairs is unknown. The total number of young known to have fledged in both 2009 and 2010 was 64.

Birds on passage were also recoded.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as breeding species.

As with previous years the Group continues to record a small number of birds seen at widely scattered sites throughout the study area during the summer months.

Sightings are more frequent in some years than others and breeding has been tentatively suspected in the past. Unsurprisingly trying to find the first breeding pair in the area has become the 'Holy Grail' for a number of local Fieldworkers. 2010 proved unfruitful; perhaps 2011

will be the breakthrough year.

NERF regional summary

A considerable amount of work is undertaken by NERF Group members, particularly in the South Peak. Hobbies were observed across the region and known to have bred successfully in 3 study areas.

NERF regional threat assessment

The threat assessment for this species in the NERF region mirrors that of the national threat assessment; therefore Raptor Workers are advised to take the appropriate actions, as necessary, to safeguard local populations.

Kestrel, Common *Falco tinnunculus*



UK population estimate

In 2007 the British summer population was estimated to be between 53,000 and 58,000. (BTO)

Overview

Fossil evidences reveal that this species was already present 150,000 years ago in the Wolstonian Penultimate Glaciation Period. The species was first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

The British population estimate was derived following work by Clements in 2007 [Clements, R (2007) *British Birds* 101: 228 – 234]. The European population is estimated to contain between 290,000 and 440,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Kestrels are widespread and perhaps because of their ubiquitous presence hovering above our motorways and other major road networks they are the species

most readily identified by the general public. Countless numbers of middle-aged birdwatchers were brought up with the image of Billy Casper, a wayward youth bullied both at home and school, and his endearing relationship with a Kestrel that he took from the wild. The 1969 film 'Kes', based on the novel 'A Kestrel for a Knave' by Barry Hines, directed by Ken Loach depicts the relationship between the boy and the bird. As their relationship develops so does the character of young Billy and for the first time in his life he receives praise from his teacher after he enthusiastically tells his classmates about his adventures with Kes.

Kestrels rarely prey on game bird chicks, none-the-less in common with many other raptors they were extensively persecuted by gamekeepers at the turn of the 19th / 20th century. Persecution of all species of birds of prey, by gamekeepers, reduced during WWII and this facilitated an increase in their numbers. However; this recovery was reversed during the 1950s and 1960s when the impact of organochlorine pesticides severely affected this and other raptor species. After these chemicals had been withdrawn from use the population began to recover once again. The UK population was affected further during the 1970s and 1980s when the species began to decline once more. This decline may be linked to changes in farming practices, driven by the EEC Common Agricultural Policy, which adversely affected both their habitat and the availability of prey.

It is very well documented that predator populations are dependent on prey availability; but imagine what would happen to prey populations if they were not influenced by predators. Before doing so a number of assumptions need to be made in respect of Kestrels. These include that the British population is 55,000 pairs [BTO],

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	7	5	0	5	0	5	2(+)	2(+)	4(+)	0.80 ¹	0.80 ²
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	29	29	0	29	0	29	27	27	57	1.96	1.96
NRG	10	3	NR	1	NR	1	1	1	2	2.00	2.00
NYMRSG	20	6	0	5	1	5	5	4	20	4.00	4.00
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	12	12	0	12	0	12	12	12	48	4.00	4.00
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	78	55	0	52	1	52	47(+)	46(+)	131(+)	2.52 ³	2.52 ⁴

Notes:

1 & 2 to calculate the number of young fledged $n = 4$

3 & 4 to calculate the number of young fledged $n = 131$

each adult bird eats 6 voles / mice / shrews per day; each pair produces 4 young, each of which in turn eat 4 prey items per day [Steen *et al.* 2011]. The survivability rate for Kestrels is 69% per year [BTO].

Using this data it can be calculated that the adults consume 240,900,000 voles etc. per year and chicks consume 321,200,000; a staggering collective total of 562,100,000. After applying the survivability factor the number is reduced to c400 million per year. It should also be remembered that Kestrels not only impact upon vole numbers per se by consuming this huge number, but by doing so they are preventing them from breeding and producing millions more. What would life without Kestrels be like? Well from the vole's point of view, life may be pretty good; from the human perspective, now that could be a different story.

National threat assessment

The Kestrel population fluctuates and the fluctuation is linked closely to the availability of prey, largely voles etc., which contributes c75% of their main food supply. When vole numbers are low a significant percentage of Kestrels may not breed. However; the main threat to the species is associated with incompatible farming practices that reduce available habitat and adversely affect food supply. With the rapidly increasing global demand for food this situation is unlikely to change without intervention from the EU and the UK Government.

The 'amber' conservation status has been awarded because the species is in decline, as evidenced by the 2009 British Bird Survey which has reported a 36% reduction in the Kestrel population. Ironically the ubiquitous presence of Kestrels seen hovering or perched above grass verges may induce Raptor Workers and birdwatchers

alike to divert their attention away from them whilst concentrating on even more vulnerable species. Consequently a decline in the local population may go unnoticed for some time.

Conservation status (BTO)

UK Amber ●
 European 3: Concern, most not in Europe; declining
 Global Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Kestrels are widespread throughout Calderdale and are recorded year round in all habitat types from high moorland fringe through in-by into semi-urban areas.

The fledging rate of 0.80 per pair, both monitored and laying, is the best data available; however these figures do not reveal the whole picture. What is known is that 5 pairs bred and 2 of these pairs each fledged 2 young. In relation to the remaining 3 pairs the outcome is unknown; however juveniles were recorded in the area late in the season. It would, therefore, be reasonable to assume that young also fledged from the 3 sites originally located at the beginning of the season.

There were additional records of adults birds seen carrying food at 2 other sites. However; whilst no further monitoring was undertaken it is highly likely that breeding occurred.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

The species occurs widely in all of the upland areas and whilst passing attention is paid to them no formal monitoring takes place.

Kestrels are also widespread in the Durham lowlands in the east of the County.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Kestrels occur throughout the study area and are relatively well monitored. Within the Group Peter and Norma Johnson have been conducting a long-term study for several years. In 2010 they monitored 7 nests which produced 22 young. The productivity per pair laying at these sites had a significant positive impact on the study area productivity overall. Within their study productivity per pair laying was 3.14, compared to 1.59 at the remaining 22 sites. This disparity represents a reduction of c50%.

One of the pairs monitored has produced 27 young over a 5 year period; an average of 5.4 chicks per year.

There are also widespread records of the species across the County outside of the breeding season.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The breeding situation of Kestrels in the Kielder Forest, where they suffer severely from predation by Goshawks, continues to give cause for concern. Once again only 3 territories were found to be occupied, however only 1 of these was monitored throughout the season. This pair fledged 2 young.

A second study was undertaken in the NRG study area. Unfortunately no information has been received from the Raptor Worker involved for the 2010 season and therefore the data is not represented in the overall Group results.

Despite the lack of data to substantiate the assumption, it is generally believed that the population is most likely to be decreasing on the high ground, whilst remaining stable on the lower ground.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

This species tends to favour farmland as the preferred breeding habitat but also breeds along forest edges, in the wooded gills which criss-cross the moorland plateau and on rock faces.

In other parts of the North York Moors Kestrels often use the old nests of other species, principally crow nests. These birds nest outside the study area and are therefore not included in this report.

The South Cleveland Ringing Group's nest box scheme reveals a slight improvement over the figures from 2009. Whilst the number of pairs occupying nest boxes is down by 1 this pair did spend spring and summer in the vicinity of the box. A brood of 4 chicks was found dead in 1 box. It is assumed that their deaths were due to starvation following the death of, or desertion by, their parents.

Within the study, datasets are calculated over 5-year band widths. The current dataset refers to 2007, 2008, 2009 and 2010. For comparative purposes it will not be possible to give an accurate assessment until the figures for 2011 have been added. The 2010 data has been segregated from the current 'year band' dataset and is produced in the NERF data table below.

North York Moors Large Nest-box Scheme Annual Productivity Data

Year bands	No of sites	No occupied	% Occupied	No successful	No of young ringed	Av. per successful nest	Av. all nests
1977 / 81	202	10	4.95	8	32	3.84	3.35
1982 / 86	174	12	6.90	11	53	4.86	4.50
1987 / 91	169	22	13.0	21	90	4.09	4.00
1992 / 96	150	20	13.3	19	83	4.50	4.25
1997 / 01	109	17	15.6	16	68	4.32	4.16
2002 / 06	128	19	14.8	15	62	4.10	3.15
2007 / 10	106	18	17.0	16	70	4.38	3.89

The datasets reveal that the initial number of sites occupied averaged 11 in the band widths between 1977 and 1986. In the bandwidth 1987 to 1991 the number of occupied sites has doubled and since that time has stabilised at an average of 18.5. Throughout the 33 year study the median average productivity per successful nest has stabilised at 4.32.

Peak District Raptor Monitoring Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

No formal monitoring of Kestrels was undertaken by the Group during 2010. This species is worthy of a detailed survey to establish the current breeding status in the study area.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The Group's statistics are taken from member's BTO ringing returns. Ten of the 12 pairs monitored occupied nest boxes. The increase from 3.44 young per pair laying in 2009 to 4.00 in 2010 is in line with historical data and therefore the variation is not believed to be statistically significant.

A number of other pairs were noted, however no

monitoring took place and the data is not included in this report. Overall the population appears to be stable at the present time; however the heavy snowfall in December 2010 may have had a detrimental impact during the 2011 breeding season.

Passage birds were also recorded by the Group.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Passing attention to a few pairs was undertaken early in the season, however no further monitoring took place and the outcomes are unknown.

NERF regional summary

Nationally the Kestrel population is known to be declining. However; from the data collected across the NERF region it appears that the species is faring reasonably well in some areas. All Groups report Kestrels present in their respective study areas, however only 5 Groups undertake any monitoring with the best results being produced by Groups with nest box schemes.

Across the NERF region productivity was down from 2009 by 0.7 in respect of pairs laying eggs and by 0.5 in respect of pairs monitored. These declines are not believed to be statistically significant.

The North York Moor dataset may possibly be indicating decreasing productivity but it is too early yet to determine this conclusively until the 2011 data has been included.

It is difficult to assess the current status of this species without comparative quantitative data from all areas, and perhaps this is an issue that needs to be addressed by all NERF members.

NERF regional threat assessment

The population is in decline nationally, however because three of the NERF member Groups do not study this species the national decline may be being mirrored within the NERF region and going unnoticed.

There are no additional specific threats associated with this species in the NERF region, other than those experienced at the national level.

Merlin *Falco columbarius*



UK population estimate

The current UK population in summer is estimated to be 1,300 pairs. (BTO)

Overview

Fossil records indicate that Merlin were present in the Devensian Glaciation Period from 10,000 to 120,000 years ago and they were first recorded in the UK in the 12th century.

From some quarters there is a suggestion that Merlin should be split into two species; one in North America and another in Eurasia. In 1758 Linnaeus described his species, *Falco columbarius*, as originating from North

America. Thirteen years later, in 1771, the ornithologist Marmaduke Tunstall recognised the Eurasian species as *Falco aesalon*, rather than *Falco columbarius* [Tunstall, M (1771) *Ornithologia Britannica*]. It is arguable that these two populations were once one, which separated c1 million years ago [Wink *et al.* 1998], perhaps more time, and DNA analysis, will aid the decision making process.

The British population estimate of 1,300 pairs was derived from research by Rebecca in 1993 / 1994 [Rebecca, G. W & Bainbridge I. P (1998) *Bird Study* 45: 172 – 187]. This population estimate is out of date following the 2008 National Merlin Survey and the new data will be published in a future NERF Annual Review. The European Merlin population is estimated to be between 11,000 and 19,000 [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

From the late 19th century Merlin went into decline largely as a result of both persecution and increased disturbance on their breeding grounds. Historically Merlin have also been taken for falconry purposes, primarily for the pursuit of larks. At the end of each hunting season many of these birds were returned to the wild by the falconers.

In common with many other species reported in this Review, Merlin were affected by organochlorine pesticide poisoning during the 1950s and 1960s. The problem was so severe that the population had crashed to an es-

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	5	5	0	1	NR	1	1	1	3	3.00	3.00
DUBSG	54	30	2	30	2	28	24	22	81	2.89	2.70
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	62	23	2	23	5	18	17	17	51	2.83	2.22
NYMRS	41	17	0	17	1	16	16	14	40	2.50	2.35
PDRSG	19	13	2	11	4	7	4	4	12(+)	1.71 ¹	1.09 ²
SPRSG	21	7	2	7	2	5	5	5	21	4.20	3.00
YDUBSG	20	6	2	5	1	4	4	4	10	2.50	2.00
Totals	222	101	10	94	15	79	71	67	218(+)	2.76 ³	2.32 ⁴

Notes:

1 & 2 to calculate the number of young fledged n = 12

3 & 4 to calculate the number of young fledged n = 218

timated 550 pairs by the mid-1960s; less than half of the current population estimate. It took 20 years before an observable recovery was recorded.

The birds are present in the UK all year round, however they undergo a relatively short migration in late summer from their upland breeding grounds to the warmer coastal areas. Over winter the UK population is boosted by an influx of continental birds seeking respite from harsher winters in their home ranges.

National threat assessment

The loss of moorland habitat continues to pose a major threat and sympathetic land management in the uplands, including the forests, is of benefit to the species and will mitigate against the threats.

Egg collecting and illegal killing of these birds continues, but not at a level that is likely to affect the overall population.

Conservation status (BTO)

UK Amber ●

European Not of concern

Global Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

There are large tracts of Merlin habitat within the study area and the Group undertakes 1 long-term study.

Throughout the year Merlin were recorded at 16 separate sites from spring to autumn and 5 territorial pairs were located at the start of the breeding season. Only 1 pair was proven to have bred successfully and they fledged 3 young. The outcomes at the other sites are unknown; however it is reasonable to assume that a small number of additional chicks also fledged within the study area.

At 1 traditional site the whole area was destroyed by a large moorland fire during the breeding season and it is believed that the clutch failed as a result.

No information was received from the north west of the study area which is monitored by an independent Raptor Worker who does not share his data with the Group.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Slightly fewer territories were visited in some parts of the study area than in 2009; none-the-less overall coverage remained high. The data shows that whilst the number of chicks recorded by the Group is down 20% from 102 in 2009 to 81 in 2010 the fledging rates for 2010 were almost identical to those of 2009. The number fledged per pair laying was 3.09 in 2009 and 2.89 in 2010. The number fledged per territorial pair monitored was 2.61 in 2009 and 2.70 in 2010.

A young bird ringed in the nest on 30th June 2010 was found dead at Lulworth, Dorset; 428 kilometres due south, just 50 days later on 19th August.

A second young bird, ringed in the nest during 2009 was found dead in August in suitable Merlin habitat in Powys, Wales.

Manchester Raptor Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Historical records attest to the fact that the species occasionally breeds in the uplands in low numbers, i.e. 1 or 2, however there has been no proven breeding in recent years. This failure is undoubtedly due in part to the large moorland fires that occur annually, destroying suitable breeding habitat in their wake.

Merlin are fairly common on the Mosslands during the winter.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

The Group monitors Merlin in 6 separate areas across Northumberland. During 2010 members checked 62 territories representing an increase of 55% on the previous year. Interestingly, and somewhat disappointingly, the extra 22 territories checked yielded just 3 extra breeding pairs.

Of the 23 pairs monitored 6 are known to have failed; 5 pairs failed early in the breeding season and 1 pair failed to hatch a clutch of eggs. The remaining 17 pairs fledged a total of 51 young, an increase of 31% over 2009.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

There is generally excellent coverage across the whole of the study area for this species, with the exception of the north west of the region.

Of the 41 home ranges checked 17 were found to be occupied, and from these territories 16 pairs successfully fledged 40 young.

Peak District Raptor Monitoring Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Many of the territories that were occupied in the early 1990s remain abandoned and after a cursory pre-season visit to confirm that they are indeed unoccupied no further visits take place. Consequently these sites are not included in the Group's 'home ranges checked' dataset. Within the study area the species continues to appear to be in a long-term decline.

A minimum of 12 young fledged from the 4 nests that were known to have been successful and 8 chicks were ringed by the Group.

Suspected persecution continues to cause concern within the study area.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Once again the Group checked all suitable habitat for Merlin in 2010. At 2 sites pairs were present, however

they failed to breed. Whether this failure was due to lack of prey or an inability to reach breeding condition as a consequence of the adverse weather during the previous winter is not known.

The 2 single birds identified in the data as occupying territories were both males that failed to attract mates.

Although the number of young is down from 24 in 2009 to 21 in 2010 the fledging rate per pair laying increased from 3.43 to 4.20 giving the impression that the overall position is in balance. However; these statistics need to be viewed in context and it appears that over the longer-term the population continues to decline. This decline may be linked to habitat degradation.

In 2010 the Group were notified that a bird ringed as a nestling on 27th June 2009 was recovered 122 days later on 27th October 2009. The bird was found 682 kilometres from the ringing site at Lavau Sur Loire, France. A post mortem revealed that it had been shot.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

There are 3 study areas within the YDUBSG area.

Study area 1 consists of 3 discrete territories. These 3 territories have historically held breeding pairs; however they were all unsuccessful in 2010. In the first a single male was noted on the 20th April and again on 15th May. In the second territory a single male was also recorded on the 20th April. In the third a single female was present on 21st July.

Study area 2 consists of 7 discrete territories. Two of the sites were occupied early in the year and 1 pair went on to successfully fledge a brood. The other pair was absent from mid-May onwards.

Study area 3 consists of 10 discrete territories, 4 of which were occupied. One pair failed at egg stage. A second moorland block contained a pair that fledged 3 chicks. A third pair also fledged 3 chicks. A pair was observed in the 4th block but despite extensive searches the nest was not located.

There were additional sightings of single birds on a number of moors tentatively suggesting that breeding pairs were present. Other reports suggest that 3 pairs were present on a separate large expanse of moorland. Whilst no formal monitoring of these pairs took place it is believed that some or all will have been successful.

Taken in isolation the 2010 results are disappointing when compared with 2009. The total number fledged is down by 41.18% from 17 to 10. The fledging rate is down from 4.25 to 2.50 per pair laying. Long-term comparisons may smooth out these figures to more normal levels.

NERF regional summary

Merlin are monitored across the NERF region by every Group, with the exception of Manchester, and local populations are reported to be doing well despite the fact that the total number of chicks fledging is down 15.2% from 257 in 2009 to 218 in 2010. The largest fall occurred in County Durham where 21 fewer chicks

fledged.

Forum members made a significant contribution to the 2008 national Merlin survey. They were heavily involved in the co-ordination of the survey and also undertook an enormous amount of fieldwork to collect the required data. A full account of the 2008 national survey is produced by Steven Ewing and Mark Eaton, Royal Society for the Protection of Birds, in the 'Articles Section' of this Review.

NERF regional threat assessment

There are no specific pressures that threaten this species throughout the NERF study area.

Egg collecting and illegal killing of these birds is recorded occasionally and whilst these activities can have a significant local impact, they are not likely to affect the general population base.

OSPREY *Pandion haliaetus*



UK population estimate

The current UK population is estimated to be c150 pairs. (BTO)

Overview

Fossil evidence suggests that Osprey were present in the Devensian Glaciation Period, some 10,000 to 120,000 years ago. Whilst the first UK observation was recorded more than 1,000 years ago, in the 10th century, the spe-

cies was not described until 1758 [Linnaeus, C (1758) *Systema Naturae*].

The BTO's population estimate is based on figures produced between 1998 and 2002 [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. However; in recent years the population has been increasing and spreading throughout many parts of England. Consequently the population may be significantly higher than that predicted by the BTO. The RSPB suggests that it may actually be in the region of 250 – 300 pairs in summer.

The current European population is estimated to contain between 5,600 and 7,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Once widespread throughout Europe the Osprey population was severely affected by persistent persecution during the 19th and early 20th centuries by egg collectors, skin collectors and by individuals with fishing interests. The persecution was on such a large scale that it led to a dramatic reduction in the overall population and local extinctions. By 1840 it was extinct as a breeding species in England. They maintained a tenuous hold in

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	2	2	0	2	1	1	1	1	3	3.00	1.50
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	2	2	0	2	1	1	1	1	3	3.00	1.50

Scotland and are known to have successfully bred there until 1916, after which they were also classified as extinct as a breeding species.

Following a recent re-examination of the historical records it is suggested that this classification may have been premature. Passage migrants were recorded regularly, almost annually, and initially it was thought that pairs may have bred periodically after 1916. It is now believed that they bred more frequently than was originally suggested. Whether or not this new data actually substantiates this modern view, that Osprey did breed in the intervening years, it is still generally accepted that the re-colonisation of Scotland began in 1954 when the first breeding took place [Brown, *A British Birds* 100: 214 – 243]. It is likely that the birds that re-colonised Scotland originally came from the Scandinavian population.

Following the successful re-colonisation of Scotland, population growth was initially quite slow, as may be expected, and by 1976 only 14 breeding pairs were known. Even this small number did not deter the egg collectors, many of whom were from England, and they not unsurprisingly resumed their illegal activities, by stealing these highly prized eggs. However; the introduction of the Protection of Birds Act 1954, which included Osprey on Schedule 1 [Part 1], together with the provision of custodial sentences, may have deterred some potential offenders. Not surprisingly this new legislation did not deter every egg collector and a detailed description of a raid on an Osprey nest in Glen More, Scotland on 18 May 1975 is provided by James Whittaker, a convicted egg collector, from page 473 onwards, in his book “*A Natural History Journal 1950 – 1975 A record of the first 26 years of Oological & Ornithological study and memories*”. In the book he describes in graphic detail how he was dropped off by his wife at 2200 hours and walked to the nest tree, which he had to ascend using climbing irons to cross a long stretch of barbed wire that had been wrapped around the trunk. He then goes on to describe how he took the 3 Osprey eggs, which he replaced with chickens eggs, before returning to the road to be collected by his wife.

Despite the very real threat from persecution the population grew rapidly from 1976 onwards and by 1990 it stood at 71 pairs. Ospreys were once found widespread in England more than 150 years earlier and the newly established Scottish population was known to migrate over England between their over-wintering grounds in Africa to their breeding grounds in the Scottish Highlands. With this in mind the first attempt to attract Ospreys to naturally re-colonise England commenced at Rutland Water near Oakham, Leicestershire in 1986. The scheme was enhanced in 1994 by a joint venture between Anglian Water and the Leicestershire and Rutland Wildlife Trust. Unfortunately for 10 years the scheme failed to entice birds to take up residence at Rutland Water. In 1996 the first of a series of translocations of Scottish birds to Rutland took place. In 2001 the project was finally successful and 1 chick fledged from a single nest. In 2010 12 chicks fledged from 5 nests.

At the start of the 21st century the UK population

had increased to more than 150 pairs. Whilst Scotland still holds the main population, in 2001 Osprey's bred in England for the first time, after a 160 year gap. The birds now breed in the Lake District, in Northumberland, at Rutland Water in England and also in parts of Wales.

Satellite tracking of young birds as they migrate between West Africa and the UK has brought a significant amount of new information to the attention of ornithologists working with this species. This on-going research will undoubtedly help to protect the birds as they migrate along dedicated flyways and encourage habitat protection / enhancement in the resting areas on route and at their over-wintering sites.

National threat assessment

Historically the birds have been persecuted by shooting and by egg collectors and whilst these threats have been dramatically reduced, nests still need to be monitored closely and in some locations they continue to require round the clock protection.

Ospreys can be surprisingly tolerant of regular human activity close to the eyrie but they are extremely nervous of anything out of the ordinary. Consequently there is a threat from disturbance at their breeding sites whilst they are incubating eggs or whilst they are brooding small young. Organised watch points can be used to successfully alleviate this problem and modern, tiny CCTV cameras enable Raptor Workers to closely monitor nest activity from a distance. Raptor Workers who are required to visit the nests should make sure that the adult birds can see them clearly as they both approach and leave the area.

Coastal and estuary management plans that fail to take into account the needs of Ospreys can also have a detrimental impact on the species.

Conservation status (BTO)

UK	Amber ●
European	3: Concern, most not in Europe; rare
Global	Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Osprey is a passage migrant in the Calderdale study area. There were 3 sightings reported in 2010, all in spring. The first was seen on 27th March over Walshaw Dean, leaving the area and heading in a westerly direction. The second was seen heading through the eastern side of the study area on a north-east track on the 6th April. The third was sighted on the 15th April at Walshaw Dean on the same flight path that the first Osprey was using 20 days earlier.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

Whilst Ospreys do not occur as a breeding species in County Durham they may be seen in upland areas on their spring passage from March through to late May and on their southerly migration in August and September. During these periods passage birds may occasionally linger in the County and 1 bird stayed for several days at the Derwent Reservoir in July.

Similar patterns of behaviour are noted across the lowlands and overall Osprey sightings are becoming more common year on year.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Although Ospreys do not breed in the County there are regular sightings of birds on passage. During 2010 there were 12 records of migrant birds in spring with 1 bird, ringed at Kirriemuir, Angus in 2007, lingering at the Dover Basin from the 15th to the 18th May.

There were a further 5 sightings in autumn as birds returned to their wintering grounds in Africa.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Subsequent to 2009 when the first breeding pair was recorded in Northumberland the Group located 2 pairs in 2010. Of these only 1 pair was successful, rearing 3 young.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

The species is only recorded on migration. In 2010 Ospreys were recorded at Lockwood Beck Reservoir to the north of the North York Moors and at Pickering Fish Farm in the south.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no breeding attempts during 2010, however once again the group did record individuals passing over the area on their migration routes during spring and autumn.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

The pattern during 2010 followed that of previous years. Ospreys are only rarely recorded by the Group during spring and autumn as the birds travel to and from West Africa to their breeding grounds in the north of the UK.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There has been an increase in the number of passage birds seen in the Dales in recent years. This trend continued during 2010, which was also a relatively good year for observing migrants. Several birds once again lingered in the area during spring. These observations correspond with the increase in sightings noted elsewhere in the County.

NERF regional summary

In 2008 a pair of Ospreys built a foundation nest in the Kielder Forest, Northumberland. They returned to the site in 2009 and fledged 3 young. This was the first breeding record for the County. In 2010 2 pairs attempted to breed in Northumberland, unfortunately only 1 pair was successful, once again fledging 3 chicks. A number of nesting platforms have now been constructed in the County and it is hoped that the local population will increase accordingly in the near future.

Ospreys are recorded on passage by every Group and several report birds lingering for protracted periods. With nesting birds in Rutland, Wales, Cumbria and Northumberland and migrants seen in all other NERF regions it can only be a matter of time before passage birds seek breeding territories in other NERF study areas. One of the limiting factors may be the lack of suitable nest sites and the provision of nesting platforms by RSGs working in partnership with habitat owners / managers at locations with adequate food availability could prove successful.

Evidence from Cumbria reveals that a pair of nesting Osprey will attract large numbers of visitors and whilst this can have a positive impact on the public perception of birds of prey and have a significant beneficial bearing on the local economy Raptor Workers will have to formulate extensive plans and designate suitable watch points to control the anticipated influx of birdwatchers.

NERF regional threat assessment

As the species extends its breeding range within the NERF region there will be an increased requirement for members to provide nest protection against both egg collectors and disturbance at their breeding sites. There is a large body of expertise developing in the North of England and in the event that Ospreys attempt to breed in new territories within the NERF region advice from the local Raptor Workers in Northumberland and Cumbria is readily available.

Owl, Barn *Tyto alba*



UK population estimate

The current population estimate is 4,000 birds (summer). (BTO)

Overview

The first record of Barn Owls in the UK was made in the 12th century; however the fossil records reveal that this species was present in the Devensian period some 10,000 to 120,000 years ago.

Barn Owls were first described by Scopoli in 1769 [Scopoli, G. A (1769 – 1772) *Anni Historico-Naturales*]. Giovanni Antonio Scopoli [1723 – 1788] was an Italian physician and naturalist who published various works on plants and insects in addition to writing the first de-

scriptions of many bird already held in a number of collections.

The current British population estimate of between 3,000 and 5,000 pairs is a result of work undertaken between 1995 and 1997. [Toms, M *et al.* (2001) *Bird Study* 48: 23 – 37]. Using these figures the UK holds between c2% and 4% of the rather wide European estimate of between 110,000 and 220,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Today Barn Owls are found throughout most of the UK but their numbers are believed to be declining, a suspicion that is reflected in the European conservation status, 'amber'. It is more than likely that this decline commenced at the beginning of the agricultural revolution in the 17th century when engineers designed and developed the embryonic farmland machines that led to the sophisticated machines that we all take for granted today. Along with the new machines came huge changes in farming practices which continued up to the start of WWII and then accelerated as new chemical pesticides were developed. After the Second World War the increased demand for vast amounts of high quality, cheap food accelerated the loss of habitat. Originally this demand for higher volumes of better quality food was UK based however today this demand is global and the spread of vast swathes of agricultural monoculture continues to take its toll on wildlife and the wider environment.

The clearance of low quality back to back terraced housing to make way for large council housing estates, containing 10s, if not 100s, of thousands of semi-de-

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	1	0	1	0	0	0	0	0	0	0.00	0.00
DUBSG	3	3	0	0	NR	NR	NR	NR	NR	NR	NR
MRG	38	18	1	18	0	18	17	13	24(+)	1.33 ¹	1.33 ²
NRG	224	71	1	71	7	64	59	59	166	2.59	2.34
NYMRSRG	32	13	1	13	0	13	13	11	34(+)	2.62 ³	2.62 ⁴
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	20	20	0	20	0	20	20	20	45(+)	2.25 ⁵	2.25 ⁶
YDUBSG	1	1	0	1	1	0	0	0	0	0.00	0.00
Totals	319	126	4	123	8	115	109	103	269(+)	2.34⁷	2.19⁸

Notes:

1 & 2 to calculate the number of young fledged n = 24

3 & 4 to calculate the number of young fledged n = 34

5 & 6 to calculate the number of young fledged n = 45

7 & 8 to calculate the number of young fledged n = 269

tached houses, in the 1950s and 1960s absorbed a huge amount of land on green field sites. No one would argue that the improved housing was not long overdue but in future, developers formulating other large scale development policies must take into account that the land lost to building projects will have an adverse impact on many species. Such policies include the development of out of town shopping centres and business parks across the length and breadth of the UK which have already resulted in thousands of hectares of eminently suitable wildlife habitat disappearing under concrete, steel and tarmac.

The current Conservative / Liberal Democrat Coalition Government is in the process of amending the majority of the current planning policy to dismember the bureaucracy that is allegedly stifling economic growth and disrupting the UK's attempt to reduce the fiscal deficit following the banking crisis and the resultant stock market crash. Freeing up the planning processes will undoubtedly see a shift from developing the more expensive brown field sites to the more lucrative, cheaper green field options. It is clear that when there are many 10s of thousands of people, particularly young people, who have little hope in finding employment in the current economic climate that the Government must do everything possible to reverse the trend. The easing of the planning process may go some way to achieve this; but at what cost? It is vital that rural communities benefit from sensitive, sustainable growth if they are to remain vibrant living communities where affordable housing is available to young people who can find employment locally. Throughout history mankind has shaped the countryside and all of these modern changes continue to affect the rural landscape and collectively to date they have invariably had an adverse impact on our wildlife. Barn Owls and other birds of prey are not immune to these changes and Raptor Workers will need to remain vigilant, including monitoring local planning applications and making the appropriate objections were necessary.

The problem has been exacerbated by the relatively recent phenomenon of a growing middle class with the money and desire to leave their urban lifestyle and head for the good life in the countryside. Green belt planning regulations, which restricted the availability of land for new build houses, led to a demand for barn conversions to fill the housing gap for the wealthy. These conversions became, and still remain, very popular. Whilst barn conversions may make excellent houses for human beings, from the Barn Owl perspective they often come at the cost of eviction for them.

Rough estimates of the size of the Barn Owl population were made during the 1930s and again in the 1980s. Comparison between these two estimates indicate that the population declined by c70% during this period. However; the first reliable estimate was not produced until the late 1990s. The accuracy of the population estimates may be open to debate but in many ways this is tinkering with the problem around the edges. There is no doubt that the population is in decline and a formula to reverse this trend is long overdue.

Harsh winters with a heavy snowfall make it difficult for Barn Owls to locate their prey which can result in high mortality rates. The severe weather during the winter 2009 / 2010 was the coldest on record for 37 years and resulted in a record 81 dead ringed Barn Owls being reported to the BTO in January 2010. Although this number was high it was self-evident that the actual number of fatalities would have been considerably higher. The BTO Nest Record Scheme [NRS] data also indicates that in 2010 the brood sizes were c11% lower than the 5 year average. Unfortunately the winter of 2010 / 2011 showed no improvement and in December 2010 a further 100 dead ringed Barn Owls were reported to the BTO. This number is 2_ to 3 times higher than the annual average [BTO Ringing News, Vol. 12, No 9, 2011].

The full impact of these 2 consecutive severe winters will not be fully understood until the data for the 2011 breeding season has been analysed. However; there is no doubt that the population is in decline and steps need to be taken to reverse this trend. This could take the form of Planning Authorities insisting on mitigation for Barn Owls being mandatory in the design process for future 'out of town' commercial developments and barn or agricultural building conversions, where appropriate.

Barn Owls readily take to nest boxes and the provision of boxes in suitable areas is known to benefit this species. This gives Raptor Groups an opportunity to make a positive contribution to Barn Owl conservation, which may aid them in their attempts to stage a local recovery.

National threat assessment

It is very well documented that the loss of habitat and reduced food supply are the largest threats faced by these birds. To make matters worse in recent years the small scale, mixed farming sector has become less economical and this had led to an increase in the number of huge farms being turned over to monoculture. To counter these threats farming practices that are more sensitive to the needs of Barn Owls will be required if these negative impacts are to be reversed. The popularity of converting old barns and large semi-derelict farm buildings into dwelling houses has undoubtedly improved the lives of people wanting to leave towns and cities for a country lifestyle, but such conversions do nothing to aid the plight of Barn Owls. Smaller farm buildings have either been removed from the land altogether or left to fall completely into disrepair becoming unsafe nesting sites. These changes have led to a significant loss of natural nesting sites in some areas. As with several other species Barn Owls readily take to artificial sites and the provision of nest boxes by RSGs could help to mitigate against these shortfalls and aid local populations.

Conservation status (BTO)

UK	Amber ●
European	3: Concern, most not in Europe; declining
Global	Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Listed on Schedule 9 of the Wildlife and Countryside Act 1981, Barn Owls cannot be released into the wild without a licence from DEFRA

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Whole County.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

The situation in relation to Barn Owls is giving the Group some cause for concern. The last breeding record in the study area was reported in 2007. Birds were present in 2008, however they failed to breed. There were no birds present in 2009 and in 2010 observers reported a single bird at a former breeding site on 4 separate days in August.

In an effort to improve the situation the Group is embarking upon a nest box scheme.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Barn Owls are known to be present in small numbers breeding along some of the higher, western river valleys where they adjoin the uplands; however no routine monitoring takes place.

Despite the prolonged period of severe winter weather 3 breeding pairs were later noted in the uplands; however the outcome of these nests is unknown. One bird was seen hunting at 420 metres above sea level in late autumn.

The species is more common in the lowland areas of the County.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

The former Mosslands Barn Owl Conservation Group has been absorbed into the newly formed Manchester Raptor Group. The Mosslands Barn Owl Group took part in the BTO Barn Owl Monitoring Program and erected a number of Barn Owl nest boxes throughout the County.

Reliable information was received that breeding took place at 4 of the sites monitored by the Group; however the outcome at the sites is unknown. One of the pairs that hatched eggs failed to fledge chicks when they were predated by a squirrel that had entered the barn.

Northumbrian Ringing Group

Extent of coverage: Part upland and part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

A huge effort was made by Group members who surveyed 224 territories during 2010, an increase of 147 from 2009. Despite this extra effort just 71 territories were found to be occupied by pairs; down by 6 from the previous year. This resulted in a small reduction in the overall productivity, which was down by 17 chicks from 2009.

Despite the minor changes in the number of pairs monitored and the number of chicks fledged the overall productivity rate per pair monitored remained the same as 2009 at 2.36 ± 0.02 .

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Editor's note:

Two Barn Owl projects operate in the North York Moors National Park area; one by NYMUB(Merlin)SG and a second by Pawl Willet of Forest Enterprise. To ensure consistency across all of the species tables in the NERF Annual Review the figures for both schemes have been combined for the whole area. However; for a fuller understanding of both schemes the details are separated below.

NYMUB(Merlin)SG

The species continued their revival in the northern sector of the NYM despite the severity of the winter months which saw at least 4 birds die from starvation in January. The horrendous December 2009 snow and ice conditions accounted for the death of at least 10 birds; undoubtedly more birds will have perished, undetected, from starvation during this period.

The species may well suffer a further setback in 2011 due to mortality resulting from the even harsher winter conditions of 2010 / 2011.

The following data summarises the breeding fortunes of the species to date:-

Year	No sites checked	No nests	Nest type / comment	Chicks
2006	3	2	boxes	5
2007	3	1	dovecote: double brood. 2 single bird sites. The female from 1 of which is believed to have been a road casualty	7
2008	11	4	1 box, 1 dovecote and 2 trees	19
2009	14	4	1 box, 1 dovecote and 2 trees. 2 single bird sites	13
2010	22	8	3 boxes, 1 dovecote, 3 trees and 1 quarry face 1 single bird site; the female died but the cause of death is unknown	22

In 2010 8 nests produced in excess of 22 young. Two of the nests were inaccessible and the number of fledglings from these sites is not known, therefore to calculate the number of young fledged $n = 22$. Consequently the productivity rates, from the known outcomes of 6 nests, in both categories, are 3.67 for this scheme.

Forest Enterprise Scheme

The long-term nest box scheme in the south of the NYMs, run by Pawl Willet of Forest Enterprise, also saw the species suffer winter casualties. Additionally brood sizes were small from those pairs which did nest successfully.

There was a scarcity of rodent prey and in all probabil-

ity this caused the females to fail to achieve good physical condition prior to nesting.

In 2010 10 sites were checked of which 5 nests were found to be occupied. These nests produced a total of 12 chicks and therefore the productivity rate per pair laying and per pair monitored within this scheme was 2.40.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

There were no records of birds breeding within the Peak Park area studied by the Group.

Whilst the Group is aware that Barn Owls breed in the lowlands adjacent to the study area they are not monitored.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Reasonable coverage; at least one monitoring study.

One member of the Group concentrates on Barn Owls and therefore there may be a statistical bias favouring the South Peak when considering the size of the population within the NERF region as a whole.

The local population of this species continues to grow, possibly assisted by the increase in nest box provision. In addition to the nest boxes 2 further sites were monitored during 2010.

Forty-five pulli were ringed from 16 nests. The remaining 4 nests are known to have been successful, however they were too difficult to reach and the number of fledglings is unknown.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

There is no formal monitoring of this species. In the north west of the study area 1 failed breeding attempt was recorded in Mallerstang. Several single birds were noted in the adjacent areas, however whilst it is possible that breeding pairs were present this cannot be con-

firmed.

In the south east an adult was seen carrying food in the Washburn Valley. At a separate site a pair was present at a pole mounted nest box during May. However; they left the box and were not subsequently seen.

Single birds were also seen at several other sites in the Washburn Valley suggesting that there were a small number of breeding pairs in this part of the study area.

At another site a single bird was present from October to the end of the year.

NERF regional summary

Barn Owls occur in every Group's study area; however the data for the NERF region is incomplete, with no monitoring being undertaken by either the Durham or the Peak District Groups. The species appears to be relatively scarce in Calderdale, County Durham, the Dark Peak and the Yorkshire Dales.

Despite the fact that there was an almost 3-fold increase in the number of home ranges checked by members only 16 additional occupied territories were located. Overall only 3 additional chicks fledged in 2010 when compared to 2009. The combined data from 2009 and 2010 indicates that during this period the population was stable in the study areas where the species is monitored.

It is clear from the work undertaken in Northumberland, where 61.71% of the 2010 fledglings were produced, in Manchester, the South Peak and on the North York Moors that nest box schemes are very beneficial and the introduction of similar schemes in other areas may prove to be similarly advantageous.

NERF regional threat assessment

Other than habitat loss there are no specific regional threats to this species.

Owl, Eurasian Eagle *Bubo bubo*



UK population estimate

The current UK population is unknown, but is likely to be small.

Overview

Eurasian Eagle Owls were first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*]. The species occurs widely throughout Europe, where the population is estimated to be in excess of 11,000 pairs [Hagemeijer, E. J. M & Blair, M. J 1997]. Across the North Sea they breed in 32 European countries, including our nearest continental neighbours.

There is perhaps no other species more likely to induce heated debate amongst Raptor Workers in the early 21st century than the status of the UK's population of Eurasian Eagle Owls. One theory insists that they are an extinct native species, which has re-colonised the UK via the short sea crossings from the near continent,

and must be recognised as such. In the Popular Handbook of British Birds the species is designated as 'a very rare vagrant', which has occurred in a number of English and Scottish counties ranging from the Shetland Isles to Devon. [P.A.D Hollom, first published 1952, reprinted 1953 and revised 1955]. Taking the last publishing date into account it is clear Eagle Owls were being recorded as 'very rare vagrants' more than 55 years ago.

Another theory insists that the current population of 'wild' birds were all originally captive bred and released many years ago. Over the intervening years they have been reproducing in the wild for several generations and in doing so they, and perhaps more importantly their off-spring, have become naturalised.

An alternative opinion takes the entirely opposite view; i.e. that the Eurasian Eagle Owl was never a native species and all of the so called 'wild birds' were deliberately released or they escaped from captivity. Therefore they should be 'managed' and not allowed to breed and the eggs should be pricked or shaken to destruction. Some people call for the birds to be caught and returned to captivity. These are long-lived birds and the cost of capturing and keeping them in aviaries for many years will be considerable. The more extreme version of 'managed' demands that as an invasive alien species that is damaging the viability of native vulnerable species, primarily Hen Harriers, all Eagle Owls in the wild should be hunted and killed. Under current legislation this course of action would be unlawful and would therefore require a change to, or derogation from, the Wildlife and Countryside Act 1981. A great many Raptor Workers are likely to oppose this course of action.

The proponents of all points of view use scientific facts and the lack of scientific facts, often in equal parts, to validate their opinions. In reality the arguments are

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR

based more on emotion than fact. What is not in dispute is that:

- these birds are protected by both domestic and European legislation
- captive bred Eagle Owls have been illegally released into the wild
- Eagle Owls are known to have been breeding in Morayshire since 1996
- Eagle Owls have been breeding in northern England for many years
- a pair in North Yorkshire reared 23 young prior to 2006 when the female was shot
- third generation 'wild' birds, originally the offspring from illegally released captive bred birds, are now breeding in the wild
- unless every 'wild' Eagle Owl is killed, birds will continue to breed in the wild, the problem will be self-sustaining and the killing will have to continue ad infinitum

In addition to the on-going alien species argument is the debate about the damaging impact they may or may not be having on the very small and very vulnerable English Hen Harrier population. Although not universally accepted it is generally acknowledged that film of an Eagle Owl caught on camera standing in a Hen Harrier nest in the Forest of Bowland confirms that it caused the nest to fail. It is also widely acknowledged that the remains of an adult and feathers from a juvenile Hen Harrier found along with other prey items were the result of predation by an Eagle Owl.

It is self-evident that the loss of a single Hen Harrier nest is very serious. However; the plight of English Hen Harriers is directly attributable to illegal killing by individuals connected with driven commercial grouse shooting. They are facing extinction as a breeding species in England as a result of persecution not as a result of conflict with Eagle Owls. It should be remembered that both species have been living side by side in Bowland for many years. The solution to the Hen Harrier problem will not be found through culling or capturing a few pairs of Eagle Owls. If Hen Harrier numbers in England were at or near the carrying capacity for the species any interaction between Hen Harriers and Eagle Owls would only be of particular interest to ornithologists specialising in these birds. Whilst it would be of general interest to Raptor Workers the incident would merit little more than passing attention.

As a result of the incidents between Eagle Owls and Hen Harriers Natural England proposed a cull / capture policy for the Owls, which was set out by Defra in a public consultation exercise. Members of the Northern England Raptor Forum have considered these proposals at length and produced a position paper opposing a cull until further research has been carried out. The conclusion of the NERF deliberation is presented below.

NERF Eagle Owl Position Statement:

Conclusion

The Forum acknowledges that there is a risk in delaying any decision on undertaking management of Eagle Owls. However; we believe that there is credible evidence that

Eagle Owls should be classed as a native species, and that new evidence suggests that some, albeit a very small number, of Eagle Owls may be of natural continental origin. As there is only one area of the country where Eagle Owls and Hen Harriers nest in close proximity there is currently insufficient evidence to support a national cull even if the precautionary principle is applied.

In addition to the above points, we believe any population increase of Eagle Owls in Bowland is likely to be very slow, particularly as ringing records suggest that the young disperse widely. Therefore at present the Forum does not support Natural England's stance in taking a precautionary position in removing [culling or otherwise] Eagle Owls in Bowland to prevent the loss of any SPA citation species. Instead we believe that in order to address the perilously low population of Hen Harriers, additional measures need to be implemented in order to reduce the effects of persecution associated with grouse moor management.

The Forum believes that there is a need for a better understanding of the relationship between Eagle Owls and Hen Harriers in Bowland and that this could be done without jeopardising the short to mid-term survival of Hen Harriers. If there is additional evidence that this is a significant problem, then the Forum would welcome the opportunity to discuss management solutions with Natural England.

It is likely that the polarised arguments will rage on for some time and that these arguments will intensify before a solution is found. A long-term program of DNA testing may resolve some of the more technical questions in respect of their UK status but even if the DNA results show that some of the wild birds are released foreign birds it is unlikely that every bird will be located and tested. The results will also be unable to counter the argument that they have been breeding here for many years, a planned cull would never eradicate them all and they are protected by the law.

The results of stable isotope analysis of feathers from an Eagle Owl, found dead in Norfolk, by Kelly *et al.* have so far disappointingly failed to clarify the native / non-native arguments. [Kelly, A, Leighton, K & Newton, J (2010) Using stable isotopes to investigate the provenance of an Eagle Owl found in Norfolk. *British Birds* 103: 312-223].

National threat assessment

Eagle Owls are under threat from persecution where they come into conflict with Game Managers. It is perhaps no coincidence that, in the uplands, it appears that Eagle Owls only breed regularly in areas that are not managed for grouse shooting.

There is evidence to show that an Eagle Owl was responsible for killing Hen Harriers in 2008 in the Forest of Bowland, although this is disputed by some Raptor Workers. There is further evidence that they were responsible for causing the desertion of a Hen Harrier nest containing 4 eggs in 2010. However; in both of these years Hen Harriers still produced enough young to maintain the population. There is no evidence that

Eagle Owls were responsible for poor Hen Harrier productivity in 2009.

None-the-less the biggest threat to the species in England is likely to come from the Government Departments, including Natural England, and some conservation groups who believe that these birds pose a threat to native species, principally the Hen Harrier.

Any threat to nesting Hen Harriers is of serious concern given the perilously low breeding population. However; the Forum believes that conservation efforts should be focused on increasing the breeding range and numbers of Hen Harriers away from United Utilities land, rather than considering capturing or culling another protected species. Scape-goating Eagle Owls and removing them from the wild will not resolve the over-riding problem limiting the number of Hen Harriers, i.e. persecution on grouse moors.

Following the consultation process, undertaken by Defra, the proposal that all birds currently in the wild should either be reduced into captivity or culled is not being actively pursued by Government at the present time.

Eagle Owls are very susceptible to disruption when rearing young and they are likely to abandon eggs or young chicks if disturbed during this period. Adding the species to WLCA, Schedule 1 would afford them special protection under the Act. It would also enable Natural England and the BTO to control access to the nests of this very sensitive species during the breeding season, through licensing.

An alternative attitude from Finland

At the present time at least 5 pairs of Eagle Owls have taken up residence in Helsinki. In 2007 1 of the birds visited the national football stadium during a European Championship qualifying game between Finland and Belgium. The game, being watched in the stadium by 35,000 spectators, was stopped for 6 minutes, much to the delight of the crowd. Finland went on to win the game. The Finnish national football team now answers to the nickname *Huuhkajat*, the Finnish name for Eurasian Eagle Owl. The bird, named Bubi by the Helsinki residents, was later awarded the status of Helsinki Citizen of the Year 2007 [Reuters: Agnieszka Flak & Sami Torma].

Conservation status (BTO)

UK	Amber ●
European	3: Concern, most not in Europe; depleted
Global	Least concern

Listed on Schedule 9 of the Wildlife and Countryside Act 1981, Eagle Owls cannot be released into the wild without a licence from DEFRA

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.
Level of monitoring: Not known to occur here as a breeding species.

Eagle Owls were not recorded in the study area during 2010.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

This bird is not known to have occurred in Country Durham during 2010.

Over the last decade there have only been 2 isolated reports of this species in the County; 1 in the uplands in May 2008 and a further sighting in the east of the County in January of the same year.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Eurasian Eagle Owls are not known to breed in the study area. Escapees are reported in most years and 2010 was no exception. Two birds escaped from an aviary in Orrell; however it is believed that they were subsequently recaptured by the owner.

Northumbrian Ringing Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Eagle Owls were not recorded in the study area during 2010.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Eagle Owls were not recorded in the study area during 2010.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Eagle Owls were not recorded in the study area during 2010.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Eagle Owls were not recorded in the study area during 2010.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

A single bird, presumed to be an escapee, was seen in Pately Bridge, Nidderdale from the 10th January to mid-February. This bird was regularly observed sitting on, and heard calling from, the top of a lamp post on the High Street in the centre of the village. Several observers also heard a second bird calling from a different location within the vicinity of the village.

There was a further report of a bird seen at Scar House Reservoir, approximately 15 kilometres north-west of Pately Bridge, later in the spring. Whilst it is not possible to definitively state that this was the same bird it is assumed to have been so.

NERF regional summary

There is ample habitat for Eurasian Eagle Owls to prosper across the NERF region. Following the restructuring of NERF membership none of the current members report Eagle Owls in their respective study areas. Outside of the NERF region 1 pair raised 2 chicks in Cumbria and a further 2 pairs in Lancashire each hatched 3 eggs. All 6 of these chicks were ringed, unfortunately 3 died before they reached independence.

NERF regional threat assessment

The threat assessment for Eagle Owls in the NERF region is identical to the national threat assessment.

Potentially the most significant threat to this species is the proposal, by Defra, to reduce all of the 'wild' Eagle Owls into captivity or to cull them. These proposals are currently on hold until further research had been carried out. NERF will continue to monitor the situation closely and will make the appropriate response to Government if, or when, the proposals are reconsidered.

Owl, Little *Athene noctua*



UK population estimate

The current estimate is 8,700 pairs (summer). (BTO)

Overview

Little Owls are little by name and little by nature; at c200 grams they weigh 17 times lighter than Eurasian Eagle Owls. The species is named after *Pallas Athene* the Greek Goddess of wisdom and arts and the owl that was sacred to her Roman equivalent from the 2nd century BC, *Minerva*.

Little Owls were first described by Scopoli in 1769 [Scopoli, G. A (1769 – 1772) *Anni Historico-Naturales*].

Little Owl fossils found in Derbyshire indicate that the

species was present in the UK half a million years ago. At some point after that date it would appear that the native population became extinct, although they continued to be recorded as occasional visitors prior to the mid-19th century when they were re-introduced.

The British population estimate of 8,700 pairs is in fact only the best estimate available from the wider figures of 5,800 to 12,000 pairs [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. The European population is estimated to contain between 550,000 and 1.2 million pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

In the mid-1800s Yorkshire and Hampshire were chosen as the first sites for re-introduction schemes, however both of these attempts failed. The next attempt was made in Kent in 1879 and this project was successful. Some 10 years later other releases in Northamptonshire also proved successful and the population expanded throughout England, Central Wales and South-East Scotland.

The population probably peaked in the 1930s, from which point the numbers once more went into decline. The problem was exacerbated during the 1950s and 1960s when they suffered from the effects of pesticides, severe winters and changes in farming practices. It is suggested that the population has declined by more than 30% since the mid-1980s.

The BTO reports that on average 276 Little Owls are ringed each year and they receive approximately 70 records for inclusion in the Nest Record Scheme. To enable them to better understand the population dynamics the NRS would be grateful if Raptor Workers would submit more records to the scheme.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	7	7	0	5	2	5	5	5	9(+)	1.80 ¹	1.80 ²
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MARG	67	21	38	2	NR	2(+) ³	2(+)	2(+)	7(+) ⁴	3.50	3.50
NRG	4	4	0	3	0	3	3	3	5	1.67	1.67
NYMRSRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	2	2	0	2	0	2	2	2	7	3.50	3.50
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	80	34	38	12	2	12(+) ⁵	12(+)	12(+)	28(+) ⁶	2.33	2.33

Notes:

1 & 2 to calculate the number of young fledged n = 9

3 to calculate the number of pairs laying eggs n = 2

4 to calculate the number of young fledged n = 7

5 to calculate the number of pairs laying eggs n = 12

6 to calculate the number of young fledged n = 28

National threat assessment

Intensive and unsympathetic farming practices offer the greatest threat to Little Owls. Year on year severe winters also adversely affect the population.

Conservation status (BTO)

UK	Not assessed ○
European	3: Concern, most not in Europe; declining
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The Group was aware that 7 pairs had bred successfully in 2009 and the same sites were checked again in 2010. All 7 sites were occupied and of these 5 pairs were monitored and are known to have fledged a minimum of 9 chicks. Whilst the other 2 pairs remained on territory throughout the season they failed to breed.

Additionally there were several reports of single birds seen during the breeding season throughout the study area; therefore it is highly likely that other breeding pairs went undetected.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

There are occasional records from the upland fringe areas, however no monitoring takes place.

Little Owls are relatively common in the eastern parts of the County.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

At 2 of the 21 territories occupied by pairs the adult birds were seen entering potential nesting holes but it is not known if there were breeding attempts at these locations.

Of the remaining 19 sites only 2 were monitored throughout the season and the outcomes of the other 17 is also unknown. However; using the productivity data of 3.50 per territorial pair monitored it is reasonable to estimate that in excess of 60 chicks fledged from the study area as a whole.

One young bird was found dead at another site.

Northumbrian Ringing Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Whilst Little Owls remain uncommon in Northumberland, only occupying lower elevation moorland fringe and farmland, the number of occupied territories located increased from 1 in 2009 to 4 in 2010.

Of the 4 territories checked 3 were found to be occupied and all 3 pairs fledged young. Five chicks were ringed; an increase of 3 when compared to 2009.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Whilst no formal monitoring takes place Little Owls are known to occur in the study area in low densities, tending to favour farmland on the moorland fringe. A road casualty recovered from the A19 on the western fringe of the Moors demonstrates the species' preference for farmland habitat on the periphery of the North York Moors.

The current status of this species on the North York Moors is something of a mystery. Although it has never been a common species breeding density has certainly decreased over the past 2 decades.

Peak District Raptor Monitoring Group

Extent of coverage: Part of upland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

No formal monitoring of this species takes place, however several pairs have been observed on the moorland fringe, typically nesting in dry-stone walls.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The main monitoring for this species is undertaken by the Group's ringers.

Two successful nests fledged a total of 7 chicks. The fledging rate is slightly down on the 2009 figures; however the result is not believed to be statistically significant.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

No formal monitoring of this species takes place within the study area.

During the prolonged cold weather throughout the winter there were several records of birds feeding on roadside verges, presumably where the salt used in the road gritting process ensured that the verges remained unfrozen. This feeding behaviour was not without risk and it inevitably led to several birds being found dead at the roadside.

The lack of casual sightings later in the year would suggest that the local Little Owl population suffered relatively high winter mortality.

NERF regional summary

Although these tiny owls are common throughout the NERF recording area very little monitoring takes place. When compared to 2009 the 2010 records show a 467% increase of young fledged. However; there is more to be done, e.g. 21 territories were occupied in the Manchester study area and yet only 2 pairs were monitored to the end of the season; additionally no monitoring of any kind was undertaken by 4 Groups. With regard to the request from the Nest Record Scheme for additional data this species should perhaps qualify for further attention in the future.

NERF regional threat assessment

Habitat loss is the only significant threat to this species. Severe winters are likely to induce annual fluctuations in local populations.

Owl, Long-eared *Asio otus*



Devensian Glacial Period that occurred between 10,000 and 120,000 years ago. The first description of this species was made by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

The British population was estimated to contain between 1,100 and 3,600 pairs in summer from research undertaken between 1988 and 1991. The figure of 2,400 is the best estimate from those figures [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. The European population is estimated to contain between 230,000 and 460,000 pairs in summer [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

During the first half of the 19th century the species was probably under-represented in the South of England and in Wales. The situation was reversed in the second half of the century when the species underwent a growth in population. This growth coincided with a reduction in the Tawny Owl population caused by persistent and sustained persecution. The smaller Tawny Owl population, coupled with large scale forestry plantation schemes, resulted in increased habitat available for LEOs and the species prospered.

The population went into decline again in the south of England during the 20th century; however because of their shy nature they are often difficult to locate and therefore the actual rate of decline is difficult to quantify. At the present time LEOs are widespread but they continue to be regarded as a scarce breeding bird in the UK.

An average of 93 LEOs are ringed each year, however the annual number of nest records received by the BTO is rather low with an average of just 17 reports being

UK population estimate

The current estimate is 2,400 pairs (summer). (BTO)

Overview

Whilst the first observation of this species in the UK was recorded in 1544 [Turner, W 1544] there is fossil evidence indicating that they were present during the

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	11	5	1	5	0	5	5	5	13(+)	2.60 ¹	2.60 ²
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	15	11	1	8	0	8	7	7	14(+)	1.75 ³	1.75 ⁴
NRG	20	7	0	7	0	7	6	6	12	1.71	1.71
NYMRSG	2	2	0	2	0	2	2	2	3	1.50	1.50
PDRSG	3	3	0	3	0	3	3	3	12	4.00	4.00
SPRSG	5	3	0	3	1	2	2	2	4	2.00	1.33
YDUBSG	17	11	1	11	1	10	10	10	26	2.60	2.36
Totals	73	42	3	39	2	37	35	35	84(+)	2.27 ⁵	2.15 ⁶

Notes:

1 & 2 to calculate the number of young fledged n = 13

3 & 4 to calculate the number of young fledged n = 14

5 & 6 to calculate the number of young fledged n = 84

submitted to the Nest Record Scheme each year. The NRS would welcome more records from Raptor Workers monitoring this species.

National threat assessment

The main threat to LEOs appears to be competition for habitat with Tawny Owls. Breeding attempts are affected by prey availability and in poor vole years large numbers of adults do not breed and those that do breed produce smaller clutches.

Conservation status (BTO)

UK	Green ●
European	Not of concern
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

All suitable habitat located within the study area is monitored every year by a small band of LEO enthusiasts who carried out the annual survey for the 4th successive year. Between the 2nd April and the 2nd August they recorded birds on 23 occasions.

In 2009 the Group located 4 pairs that produced 8 young. During 2010 productivity increased by 62.5% to a minimum of 13 young from 5 pairs. An adult bird was heard calling at a 6th site on the 19th May, however breeding was not confirmed.

Five other traditional breeding sites on or adjacent to a grouse moor were checked regularly throughout the season and worryingly no birds were present.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

This species is not formally monitored by the study group and in 2010 there were no casual reports from the uplands, although this fails to reflect the undoubted presence of LEOs in suitable habitat.

Whilst Long-eared Owls are an uncommon breeding bird in the Durham lowlands they are recorded on passage.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Within the study area LEOs occur at all altitudes and they are probably more common than the data suggests. During spring members reported that some traditional sites were unoccupied, most likely as a result of the severe weather during the previous winter.

Not all of the sites were re-visited at the end of the breeding season and therefore the actual number fledging is likely to be higher than the 14 that were recorded.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

2009 was a very poor year for this species in Northumberland with just 5 young fledging from the 2 pairs that hatched eggs. 2010 revealed a complete change of fortunes for Long-eared Owls in the study area when they experienced a 140% increase in the number of chicks fledging.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

This species receives only minimal monitoring but it is believed to breed in low densities. In 2010 members of the Group located 1 nest in the forest to the south-east of the North York Moors and a second in a small pine wood on the moorland in the north of the study area. A total of 3 chicks were located at 2 nest sites post fledging and none of the young were ringed.

Prior to 2010 the last known breeding success occurred in 2002.

Peak District Raptor Monitoring Group

Extent of coverage: Part of upland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The Group undertakes very limited monitoring of this species which is worthy of a more in-depth study in the future.

During 2010 12 young were ringed from the 3 successful nests, however because of the low number of nests monitored the productivity rates, which appear to be double the NERF average, are possibly distorted. Even so the figures still indicate a good breeding season.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

2010 heralded a slight improvement for this nocturnal species. Two pairs are known to have laid eggs and fledged broods of 3 chicks and 1 chick respectively. The third nest failed early in the season.

One pair was readily accessible and disturbance by photographers was problematic.

They are also noted on passage.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Unfortunately time constraints and commitments to other species meant that during 2010 only 1 study was undertaken by the Group.

Seventeen territories were checked of which 1 was occupied by a single bird and a further 11 were occupied by pairs. Unfortunately 1 of these pairs is known to have failed. Another pair was found late and although it is known to have fledged 1 chick it is quite possible that

additional chicks fledged from this brood and were not located by the monitors.

In a second part of the study area, Ribblesdale, a pair fledged a minimum of 2 young.

Early in the season reports were received of territorial birds in a third sector of the study area, however the reports were too vague and therefore they are not included in the Group's data.

Overall an additional 3 nests were monitored during 2010, when compared with 2009, and the number of pairs fledging young increased by 100%, from 5 to 10. The actual number of young fledged is disappointingly low at 26 chicks. Consequently the overall fledging rate per pair laying is down by 0.73 whilst the number fledged per territorial pair monitored is virtually unchanged and therefore statistically unimportant.

The data from the comprehensive study suggests that this species may be much more common and widespread across the total study area than the data implies. To clarify the situation local Raptor Workers are encouraged to check all potentially suitable breeding habitat throughout the season.

NERF regional summary

Although LEOs are notoriously difficult to monitor there are several studies undertaken within the NERF region. With the exception of County Durham LEOs are studied to some degree in all of the NERF study areas. In 2009 all Groups recorded that they were experiencing a particularly poor vole year and this fact was confirmed by the productivity rates. In 2009 16 chicks fledged from the 18 nests that were monitored; this equated to a fledging rate of 0.89 per pair monitored. In comparison 2010 saw an improvement of 141.57% when a minimum of 84 young fledged from the 39 nests that were monitored giving a fledging rate of 2.15 per pair monitored.

Taking into account that the NRS only receives an average of 17 records annually and that 39 pairs were monitored by NERF in 2010 it would appear that members are ideally placed to add data to the Nest Record Scheme.

NERF regional threat assessment

The threats faced by LEOs in the NERF region are the same as those faced by the species in the national threat assessment.

Owl, Short-eared *Asio flammeus*



UK population estimate

The current estimate is 2,300 pairs (summer). (BTO)

Overview

SEOs were first recorded in the UK in 1678 [Willughby, F (1678) *Ornithologiae libri tres*]. Francis Willughby [1635 – 1672] was an English ornithologist who studied at Cambridge University under John Ray who is often referred to as the 'English father of Natural History'. In 1662 Willughby and Ray visited the west coast of England to study sea birds and then continued their studies throughout Europe between 1663 and 1666. Unfortunately on his return to England Willughby died of pleurisy before he published the results of his research

and the task was fulfilled on his behalf by Ray. Raptor Workers who enjoy collecting old ornithology books may be interested to know that a first addition copy of Willughby's '*Ornithologiae libri tres*' was sold by Christies of London in 2008 for £2,500.

The current British population estimate is derived from research undertaken by Baker *et al.* from figures produced between 1988 and 1991 which resulted in an estimate of between 1000 and 3,500 pairs [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. The European population is estimated to contain between 8,000 and 30,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Short-eared Owls breed throughout the UK on heather moor, white moor and rough grassland in both the uplands and the lowlands. The population has always been low and fluctuates markedly in line with vole numbers.

In the 19th century the majority of the UK's SEO population was to be found in Scotland and the North of England with fewer numbers breeding on the salt marshes and on rough pastures in the east of England. During the first half of the 20th century the increase in areas of rough pasture, as a result of a reduction in grazing regimes, coupled with an increase in the amount of land being utilised for forestry, particularly suited the species. Unfortunately the benefit afforded by the increase in afforestation only lasted whilst the trees were young. As

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	14	2	0	2	0	2	2	2	NR	NR	NR
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	3	0	0	0	0	0	0	0	0	0.00	0.00
NRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	3	3	0	3	0	3	3	3	9(+)	3.00 ¹	3.00 ²
SPRSG	7	4	0	4	0	4	1	1	1(+)	0.25 ³	0.25 ⁴
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	27	9	0	9	0	9	6	6	10(+)	1.11⁵	1.11⁶

Notes:

1 & 2 to calculate the number of young fledged n = 9

3 & 4 to calculate the number of young fledged n = 1

5 & 6 to calculate the number of young fledged n = 10

soon as the trees had matured the habitat became less favourable and the numbers of SEOs began to decline once more. During the winter the resident population, supplemented by a large influx of migrants from Iceland, Scandinavia and Russia tend to flock together at communal roosts.

Short-eared Owls are very secretive birds and they are a notoriously difficult species to survey and may require many, many hours of sitting patiently at a vantage point overlooking vast tracts of suitable habitat. Many Raptor Workers conduct extensive annual surveys for Merlin and in the course of this work they discover that SEOs are also present. In these circumstances follow-up monitoring of the SEOs takes place during the Merlin visits. This method of surveying tends to create a bias in favour of birds breeding in Merlin habitat being recorded whilst pairs occupying white moor, upland rush and sheep-walk are likely to go under-recorded.

The BTO reports that nationally on average 48 SEOs are ringed each year and the NRS receives an average of 8 records annually. Interestingly in 2010 NERF members recorded 6 pairs fledging a minimum of 10 young.

National threat assessment

Short-eared Owls prey on rodents, small birds and some large insects. However; their primary food source is vole, together with other small mammals, and breeding success invariably fluctuates in tandem with vole abundance. The lack of SEOs as a breeding species on some grouse moors coupled with their occasional unexplained disappearance, together with other birds of prey, from those areas, may indicate that local populations are threatened by persecution.

Conservation status (BTO)

UK Amber ●
 European 3: Concern, most not in Europe; depleted
 Global Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

There were 31 records from 14 upland areas, mainly during the spring and summer with just a small number of winter records; worryingly this equates to a drop of over 50% from the previous year.

Only 2 pairs were proven to have bred and unfortunately the number of young that fledged from these 2 sites is unknown. This poor breeding rate is somewhat of a mystery considering that on the 1st April 10 birds were observed on a local grouse moor, only 6 birds were noted 2 days later after which none were seen again.

What is of most concern is that this same grouse moor, which has traditionally held healthy numbers of breeding Long-eared Owls, saw a drastic drop in the population from 4 pairs in 2009 to zero in 2010.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or a large representative study area.

Despite very extensive survey work associated with Merlin studies and the 2010 Hen Harrier survey across vast swathes of suitable habitat there were no confirmed

reports of breeding SEOs in the Durham uplands. With just a handful of reports of single birds being seen at various sites during the breeding season this compares unfavourably with the data from 2009 when 4 pairs fledged 12 young. The evidence points to 2010 being a significant low point in the species natural cycle in County Durham.

Breeding is not known to occur in the lowland areas of the County where over-wintering birds were present and other birds were seen on passage.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The status of SEOs in the study area is best described as 'very occasional breeder'. All potential breeding sites are checked annually; however the last successful breeding was recorded in 2008.

Small numbers do over-winter in the study area, both on the moorlands and at lower altitudes including Mosslands.

Northumbrian Ringing Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or a large representative study area.

For the second year in succession there were no breeding attempts recorded within the study area.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

During 2010 Group members examined approximately 60% of suitable SEO habitat during their normal Merlin survey work.

Once again there were no proven breeding records for SEO; however it is suspected that a minimum of 1 pair nested to the north of the North York Moors. Additionally there were also very few sightings of single birds across the whole region resulting in another poor year for the species in the study area.

Peak District Raptor Monitoring Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The local population is under recorded by the Group and deserved of further study. Only 3 nests, rearing a minimum of 9 young, were located during 2010 and 5 chicks were ringed.

Although the Group accepts that the species is under recorded within the study area there are none-the-less large areas of suitable habitat on grouse moors which are known to be unoccupied by SEOs. Without evidence to the contrary the only reasonable conclusion is that human interference is the cause and consequently persecution is strongly suspected.

South Peak Raptor Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Seven territories were checked during 2010 and 57% were found to be occupied. This represents a 50% reduction in occupied territories from 2009. All 4 pairs are known to have laid eggs; unfortunately 3 pairs failed and just 1 nest fledged young. It is known that at least 1 chick fledged from this nest but because they leave the nest early and can disperse widely it is quite possible that there could have been more fledglings that went undetected. The productivity figures indicate that only 0.25 chicks fledged per pair, which is a very disappointing result when compared to 0.75 chicks per pair in 2009.

Persecution is strongly suspected in the Upper Derwent Valley.

SEOs are noted on passage during autumn and at over-wintering sites within the study area.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

There is no formal monitoring of this species in the study group area. Casual observations would suggest that there were very few birds present during 2010 despite the fact that there are large tracts of suitable habitat available to them.

NERF regional summary

In 2010 4 Groups monitored this species and produced breeding data, the remaining 4 Groups undertook casual observations whilst monitoring other species in the same habitat. Adult Short-eared Owls are notoriously difficult to monitor during the breeding season. Additionally because of the propensity of the chicks to disperse early and far from the nest counting the actual number of individual chicks at each site is also very difficult. The dataset, which indicates that only 10 chicks fledged from 6 successful nesting attempts, is perhaps the result of under recording of both the actual number of pairs occupying territory and the number of chicks fledging in the NERF region.

SEO productivity is directly linked to food availability and fluctuations in success rates are therefore inextricably linked to vole numbers.

NERF regional threat assessment

The primary threat to this species appears to be related to the fluctuations in vole numbers which can have a negative impact on breeding numbers. However; there are many thousands of hectares of suitable habitat for this species, across the entire NERF region, which inexplicably remain unoccupied. In some areas pairs of birds arrive on territory in spring and then 'disappear' during the breeding season without a satisfactory explanation, unless human interference is a causal link.

SEOs occupy the same habitat types as other species, such as Peregrine and Goshawk, which also 'disappear' either immediately before or during the breeding season. The use of habitat / species 'black hole' mapping may throw some light on these issues and either prove or disprove the suspicion that persecution is a factor.

Owl, Tawny *Strix aluco*



UK population estimate

The current estimate is 19,000 pairs (summer). (BTO)

Overview

The first record of this species was made in the 8th century but there is little doubt that they were present long before this time. Indeed evidence from the fossil record indicates that, along with other species they occurred between 10,000 and 120,000 years ago during the De-

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	21	21	0	3	1	2	2	2	4	2.00	1.33
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	77	48	22	27	1	27	27	27	33(+)	1.22 ¹	1.22 ²
NRG	282	131	0	131	0	131	117	117	317	2.42	2.42
NYMRS	58	12	0	12	0	12	11	11	21	1.75	1.75
PDRSG	12	12	0	12	0	12	12	12	23	1.92	1.92
SPRSG	9	9	0	9	0	9	9	9	16	1.78	1.78
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	459	233	22	194	2	193	178	178	414(+)	2.14³	2.13⁴

Notes:

1 & 2 to calculate the number of young fledged n = 33

3 & 4 to calculate the number of young fledged n = 414

venian Glaciation Period. Together with many other species Tawny Owls were first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

The UK population estimate of the Tawny Owl, which is also often called the Brown Owl, was derived from research published in 2006 [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44] and forms c3% of the European estimate of between 445,000 and 900,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

Whilst the typical lifespan for this species is 4 years the record for the oldest known survivor, which lived for 21 years 5 months and 13 days, was set in 1988 [BTO].

William Shakespeare was fond of mentioning birds in his plays and referred to Tawny Owls in Act 5, Scene 2 of 'Love's labour's Lost' with the line "Then nightly sings the staring owl, 'Tu-whit, Tu-who', while greasy John doth keel the pot".

Ask the general public what they know about owls and they will invariably imitate the call of the Tawny Owl "Tu-whit, Tu-who" even though most people are unlikely to have ever seen one. Nor are most people aware that this call is in fact 2 birds calling to each other with the male responding by hooting in answer to the female 'kee-wick' call.

The species is widespread on the UK mainland but is rarely found on the Isle of Man and is absent from the whole of Ireland. Tawny Owls are predominantly a woodland species, preferring broadleaved woods, but they are also found in coniferous woodland. They are equally at home in urban areas and will take up residence in parks and large gardens containing mature trees.

During the latter half of the 19th century Tawny Owls

were heavily persecuted and numbers were severely depleted. The reduction in the population of Tawny Owls left large areas of suitable habitat empty and this gap provided an opening for other species to move in and Long-eared Owls seized the opportunity.

Persecution reduced in the 20th century allowing the Tawny Owl to stage a recovery and the population appeared to have stabilised by 1950. In nature's game of swings and roundabouts the recovery in the Tawny Owl population and the return to their traditional breeding grounds was to the detriment of LEOs, which were unable to successfully compete for the disputed territories.

Together with several other raptor species the Tawny Owl was a victim of secondary poisoning during the 1960s with the population only recovering after the organochlorine pesticides were banned. There is evidence that this species is once again declining in some areas and this decline may be linked to secondary poisoning from the new generation of rodenticides [Mead, C (2000) State of the Nation's Birds].

National threat assessment

Tawny Owls are very territorial and unlike many other species they are non-migratory and remain in their home range even when their food supply is scarce. During these 'low prey' years they remain on territory but do not breed. This tendency can have a detrimental impact on local populations in the short term.

There are no other threats to this species at the present time; however the potentially damaging impact of secondary rodenticide poisoning will require careful monitoring.

Conservation status (BTO)

UK	Green ●
European	Not of concern
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Calling birds were reported from late winter and throughout spring and summer from 21 locations. Three pairs were monitored, 1 of which failed whilst the other 2 pairs went on to fledge 2 young each.

A pair, nesting on a grouse moor, failed post fledging when 2 chicks were found dead alongside an injured adult. Although the adult was taken to a local vet for treatment, regrettably, it had to be euthanized.

A pair was seen mating on 9th February but the outcome is unknown and they are not included in the table.

Given the fact that a great many birds were heard calling and that Calderdale contains many large wooded areas the Group feels confident that unrecorded breeding takes place throughout the district.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Tawny Owls occur commonly and widely in upland woods, afforested areas and along the upper sections of river systems.

No routine monitoring takes place but the local population appears to be strong.

Manchester Raptor Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Notwithstanding that 48 pairs were located in 2010 the Group believes that the species is currently under reported. Twenty-seven pairs were monitored, a further 12 pairs were reported as being 'on territory' using the Bird Atlas criteria and 9 other pairs were located in suitable habitat. These additional 21 pairs were not monitored and the outcomes are not known.

Two of the Group's members, Peter and Norma Johnson, conduct a long-term study of this species in the Bury area. In 2010 they reported that 27 pairs had produced a minimum of 33 young. However; 4 of the pairs had already fledged young prior to being checked, therefore the total productivity from that study area is more likely to be in the region of 40 chicks rather than the 33 recorded in the Group's data.

Interestingly, 1 site in Marple had a Mandarin Duck breeding in a Tawny Owl nest box.

Northumbrian Ringing Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The principal study area, consisting of in excess of 300 nest boxes, is located in the Kielder Forest, Northumberland and the adjacent Kershope Forest which lies over the border in Cumbria.

During 2009 55 nest boxes were monitored, 10 pairs failed and 82 chicks fledged. Although no data was available from the remaining boxes it is reasonable to assume that a considerable number of chicks went unrecorded.

In 2010 a total of 282 nest boxes were checked, an increase of 413% from 2009; of these 131 were found to be occupied and monitored throughout the season. The number of pairs fledging young increased by 160% and the total number of young fledged increased by 286% to 317.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Editor's note:

There are 2 Tawny Owl projects operating in the North York Moors National Park area; 1 scheme is operated by the NYMUB(Merlin)SG and a second scheme is managed by Pawl Willet of Forest Enterprise. To ensure

consistency across all of the species tables the figures from both schemes have been combined for the whole area. However; to provide clarity and a better understanding of both projects the individual findings for the NYMUB(Merlin)SG scheme and the Forest Enterprise scheme are separated and presented below.

NYMUB(Merlin)SG / South Cleveland RG Scheme

2010 was a much improved season for this species compared to 2009, with the average productivity for successful pairs in South Cleveland Raptor Group boxes / natural sites producing 1.73 chicks per successful nest. Despite the severity of the winter months, there was only a single report of 1 dead individual.

Within the study datasets are calculated over 5-year band widths from 1977 to 2011. The current dataset only refers to 2007, 2008, 2009 and 2010.

The historical data reveals a steady and marked decrease in productivity of successful nests from the 1977 / 81 year period stabilising over the 1992 / 96 seasons. From 1992 to date productivity has remained at c1.78. The data also demonstrates that the number of chicks per successful nest has reduced by c0.5 over the second half of the study period when compared to the high point recorded in the 1977 / 81 band.

The latest figures are based on only 4 year's data and thus possibly misleading. The true picture will not be known until the end of the 2011 breeding season.

Tawny Owl Annual Productivity Data – North York Moors Large Nest-box Scheme (A)

Year bands	No of sites	No occupied	% occupied	No successful	Young ringed	Av. successful nests	Av. all nests
1977 / 81	202	55	27.2	29	69	2.38	1.25
1982 / 86	174	46	26.4	34	72	2.12	1.57
1987 / 91	169	54	31.9	41	83	2.02	1.54
1992 / 96	150	33	22.0	29	51	1.76	1.55
1997 / 01	109	24	22.0	18	32	1.78	1.33
2002 / 06	128	38	29.7	28	50	1.79	1.32
2007 / 10	118	35	29.7	31	55	1.77	1.57

Forest Enterprise Scheme

Productivity from the Forest Enterprise's long-term study, managed by Pawl Willet and operating to the south of the NYMs, although never high was abysmal in 2010. Of the 26 territories checked only 1 was found to be occupied from which 2 chicks fledged.

It does perhaps indicate that coniferous woodland is very much a sub-optimal nesting habitat for the species on the NYMs.

Peak District Raptor Monitoring Group

Extent of coverage: Part of upland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The long-term study conducted by the Group was abandoned in the early 1990s and since that time only a limited amount of monitoring has taken place.

During 2010 a total of 23 pulli were ringed from the 12 nests monitored. The fledging rates of 1.92 per nest indicate an average breeding season for this species. Additionally 2 adults, which were caught on the nest, were also ringed.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Tawny Owls are the most abundant owl species in the study area and were observed throughout the region, however little monitoring is undertaken.

The statistics were provided to the Group by BTO licenced ringers.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Several Group members pay limited passing attention to a small number of pairs. However; because no consistent monitoring takes place the information in relation to breeding success is unavailable.

NERF regional summary

Tawny Owls are regarded as common and widespread across the NERF region and therefore at the present time they appear to be of little concern. However; as the historical data from the North York Moors studies indicates, the species is not faring as well now as it did in the 1980s.

Although still listed as a species 'not of concern' in Europe it is widely accepted in the UK that this classification may no longer be applicable as nationally Tawny Owls appear to be experiencing some difficulty. If the suspicion that secondary rodenticide poisoning is linked to a reduction in numbers Raptor Workers will look to both the industry and Government to address the problem in a timely manner.

Tawny Owls are extremely vulnerable to population fluctuations, linked to the abundance of voles. Examples of this can be found in the data from the NYM over the 4 years from 2007 to 2010. 2007 was a very good vole year and the Group ringed a record 28 chicks. In 2008 just 9 chicks were ringed and in 2009, clearly the nadir year in the cycle of vole productivity, only 5 chicks were ringed. 2010 saw a reversal in productivity when 21 chicks were ringed.

The large number of chicks reported by Northumbria may be due to an improvement in prey supply; however the biggest contribution to the dataset undoubtedly comes from the tremendous amount of work undertaken by members of the Group who monitored 131 nest boxes.

NERF regional threat assessment

The NERF regional threat assessment mirrors that of the national threat assessment.

Peregrine Falcon *Falco peregrinus*



UK population estimate

The current estimate is 1,400 pairs (summer). (BTO)

Overview

Peregrines were first recoded in the 8th century and first described by Marmaduke Tunstall, the English Ornithologist, in 1771 [Tunstall, M (1771) *Ornithologia Britannica*]. Tunstall was born in 1743 at Burton Constable, North Yorkshire and therefore he may have a claim to be a founding member of NERF! Following the death of his father he inherited several estates including those at Scargill and Wycliffe, which were at the time in Yorkshire but were reassigned to County Durham following the boundary changes. Tunstall died at Wycliffe in 1790 and in 1822 his collection of specimens were purchased by The Newcastle Society. This collection eventually formed the basis of the Newcastle Museum.

The UK breeding estimate of 1,400 pairs was set in 2003 [Banks, A.N *et al.* (2003) The Peregrine Falcon Breeding Population of the UK, BTO]. This represents c8% of the average figure from the European population estimate of between 11,000 and 24,000 pairs [Burfield, I & Van Bommel, F (2004) Birds in Europe, Birdlife International].

Prior to 2007 the UK conservation status was set at 'amber' [Gregory, R.D *et al.* (2002) British Birds 95: 410 – 448]. Following an overall recovery of the species the conservation status was reduced to 'green' in 2008 [Eaton, M.A *et al.* (2009) British Birds 102: 296 – 341].

The Peregrine Falcon is widespread and breeds throughout the UK with the highest densities found in the north and west; particularly in Wales, northern England and southern Scotland, and elsewhere on rocky coasts. In the south and the south east of England the population is sporadic; however their range is slowly expanding. They nest in a variety of habitats including natural craggy outcrops, old and active quarry faces and occasionally in less optimum habitat on steep grassy slopes.

Historically Peregrines have suffered severely from persecution. The species is targeted by egg collectors, falconers, Game Managers and pigeon fanciers. In the late 1950s and early 1960s the effects of pesticides such as DDT had a devastating effect on this species. By 1963 it is thought that up to 80% of the population had been eliminated. Once the pesticides were banned the population began to slowly recover.

There is no doubt that statistically the population is increasing. However; the underlying question is: 'Where is this increase occurring?' Peregrines are increasingly

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	7	6	0	6	2	4	3	3	7	1.75	1.17
DUBSG	6	2	0	2	1	1	0	0	0	0.00	0.00
MRG	9	8	0	8	1	7	7	6	19	2.71	2.37
NRG	34	24	0	24	4	20	18	16	30	1.50	1.25
NYMRSG	2	2	0	2	0	2	2	2	4	2.00	2.00
PDRSG	9	6	0	6	2	4	4	4	11(+)	2.75 ¹	1.83 ²
SPRSG	34	28	2	28	4	24	18	18	40	1.67	1.43
YDUBSG	31	12	1	11	4	7	7	7	14	2.00	1.27
Totals	132	88	3	87	18	69	59	56	125(+)	1.81³	1.44⁴

Notes:

1 & 2 to calculate the number of young fledged n = 11

3 & 4 to calculate the number of young fledged n = 125

using man-made structures in town centres and they also readily take to artificial platforms where there is an abundant food supply but where suitable nesting ledges are not available. The proliferation of nesting platforms being erected by Raptor Workers is undoubtedly enabling the national Peregrine population to increase. However; this increase in the overall population masks the fact that a great many pairs have disappeared from their traditional nesting sites on the wild and windswept northern uplands.

In 2010 NERF produced 'The NERF Peregrine Paper' in collaboration with Dr. Arjun Amar, RSPB. This 10-year study covering the whole of the NERF region, with the exception of the Manchester Raptor Group, which was not a member at the time, clearly indicates that the species is not faring as well on heather moors as it is in urban habitats. Conservationists who only concentrate on the raw statistics rather than the distribution of breeding Peregrines may miss the fact that they are absent from very large areas of the heather clad northern uplands and persecution may be the cause.

National threat assessment

The greatest threat to this species was undoubtedly the use of DDT in the 1950s. When this chemical was banned that particular threat was removed. Regrettably this is not the case with persecution, which is now the largest threat faced by Peregrines. They are targeted by egg collectors and eggs on the point of hatch and chicks continue to be taken from the wild. Over the last 2 years this threat has been increasing at a significant rate. Whilst research shows that racing pigeon losses to Peregrines are extremely low, in some parts of the country, particularly at sites close to the urban fringe, it is apparent that pigeon fanciers are responsible for persecuting Peregrines.

The threats faced by Peregrines on some grouse moors, in some areas, continues unabated and it is clear that the large number of breeding attempt failures can only be attributed to human interference. Raptor Workers must remain vigilant in the face of these on-going problems if Peregrines are to go unmolested across the whole of their natural range.

Conservation status (BTO)

UK Green ●
European Not of concern
Global Least concern

Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Following on from a particularly poor 2009 season this species fared little better in 2010. Although there were 112 records received from across the region the vast majority of these sightings failed to translate into

successful breeding attempts.

Six territorial pairs were located, however only 4 pairs laid eggs. Of these 1 pair was 'robbed', for the second year in succession, at egg stage. They then relocated from the moorland fringe to a valley bottom crag less than 50 metres from several houses, where they successfully raised 1 young after a re-lay.

At a second site the eggs failed to hatch whilst the third fledged 3 chicks.

Another pair that had disappeared from a traditional breeding site was located towards the end of the season on a crag c1 km to the south, which was a new site within the study area. This pair fledged 3 young.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Once again the truly appalling level of Peregrine breeding success in the Durham uplands continued unabated. In 2009 just 1 chick fledged; in 2010 the situation worsened and not for the first time the whole of the Durham section of the North Pennine Specially Protected Area [SPA] failed to produce a successful nest.

All traditional sites were checked from early in the season. Pairs were seen at just 2 of the traditional eyries but only 1 went on to nest. Unfortunately at this site the sitting bird was not seen after a few days and it appeared that the eggs had been taken. However; the exact cause of the failure is not known.

In the eastern lowland areas of County Durham 5 territories were checked and 4 showed signs of early occupancy. Three pairs went on to rear 2 young each; 1 clutch was from a re-lay. These pairs were in the eastern lowlands and are therefore not included in the Group's dataset.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Of the 7 pairs that hatched eggs only 6 pairs went on to fledge young. Observers reported that the 7th pair produced 3 or 4 chicks before being robbed prior to ringing.

In an effort to increase the local population and reduce the threat from persecution MRG encourages breeding on secure buildings by installing trays or boxes at suitable sites. In 2010 2 new boxes, 1 in Rochdale and the other in Manchester, were used for the first time. One pair, in Manchester city centre, failed as a result of harassment by Magpies that nested close by. The nesting hole used by the Magpies has now been blocked by the building's owners and this particular problem cannot-re-occur.

At another site the resident female died from peritonitis and whilst the male found a new mate they did not go on to breed.

Northumbrian Ringing Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

In 2010 the number of territories checked remained constant at 34 and once again 24 were found to be oc-

cupied and were monitored throughout the season. One pair failed when the young were predated by a fox and another 3 pairs were 'robbed'. The 'robberies' included 2 pairs that had eggs stolen and at the third site the chicks were stolen.

Of the remaining 20 pairs only 16 pairs fledged young, producing 30 chicks. This resulted in a disappointing overall fledging rate of 1.25 per territorial pair monitored.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Poor coverage, casual monitoring of a few pairs.

For the third consecutive year a pair successfully fledged young at the same site. Two fledged chicks were also observed at another, relatively public, site on the western edge of the National Park.

Single, presumably non-breeding birds, were recorded in many areas over the moors during the spring and summer periods.

Once again successful breeding took place on the coastal cliffs adjacent to the North York Moors where they are less likely to suffer from persecution.

Peak District Raptor Monitoring Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

2010 was a typical year in the study area. Once again only sites with good public access and which were also very well monitored were successful. The number of fledglings increased from 7, in 2009, to more than 11 in 2010, although the exact number is not known.

Several of the traditional sites on grouse moors were occupied in early spring, however they then went on to fail. Without any other cause of these failures being identified the only available explanation is that these pairs suffered from human interference. It is suspected that persecution is seriously limiting or preventing successful breeding attempts on grouse moors.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Overall the species continued to enjoy good breeding success in 2010 with 40 fledglings entering the population.

Across the study area 24 pairs laid eggs, including pairs on the Roaches, Derby Cathedral and 2 pairs on the lowlands in North Derbyshire. A new pair was found in the southern limestone Dales of the White Peak.

Observations from breeding activity in working quarries over a number of years show that Peregrines are site faithful and they will readily move to a new eyrie if a previous breeding ledge becomes unusable because of the quarrying activities.

Human disturbance was once again suspected to be the cause of failure at a previously successful site in a disused quarry.

The situation in the Upper Derwent Valley continues to give concern; 5 sites were monitored and none were

successful. Sightings of birds at the traditional Alport Castles site were few and far between and the pair did not attempt to breed. At a second site a pair laid 4 eggs, however they failed to hatch after being incubated long after the predicted hatch date. It is strongly suspected that human interference at a critical period during incubation was responsible for the failure. The 3 remaining sites, all of which had been successful in previous years, failed. Immature birds were seen at 1 site and the other 2 sites failed to attract any birds at all. There continues to be no feasible explanation for the disappearance of breeding pairs of Peregrines in the Upper Derwent Valley other than human interference.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

Following the standard pattern within the study area 2010 was another typical, disastrous year for Peregrines. Many of the traditional sites were found to be unoccupied once again and there was no successful breeding at the grouse moor sites.

One pair was present at a site on the edge of the grouse moor at the beginning of April but they had 'disappeared' before the end of the month.

In stark contrast the picture was completely different away from game shooting areas where, despite a reduction of c22% in fledging rates, site occupancy and breeding success continues to be relatively stable.

NERF regional summary

A familiar picture of Peregrine breeding activity occurs across all of the NERF study areas with very low occupancy and poor breeding success at sites on or adjacent to grouse moors.

Conversely in areas not managed for grouse, occupancy and breeding success remains relatively high. Taking into account the availability of both food supply and suitable breeding habitat it would appear that the only explanation for this difference in breeding success is human interference.

Pairs occupying artificial nesting sites in urban areas continue to prosper. The provision of boxes and trays on suitable sites at a safe distance from grouse moors may be one way of ensuring that a local population remains viable until persecution is brought to an end and they can return unhindered to their traditional upland sites.

NERF regional threat assessment

Peregrines face the whole spectrum of threats from persecution. Eggs and chicks are stolen, poison and traps are used to kill birds, nests are occasionally destroyed and birds are shot. Historically all of these persecution techniques have been used against this species in the NERF area.

The theft of chicks from a number of areas is of particular concern and members are encouraged to participate in a scheme to take DNA samples from chicks when the nests are visited by licensed Raptor Workers for monitoring and / or ringing purposes.

Red Kite *Milvus milvus*



UK population estimate

The current estimate is c431 pairs (summer). (BTO)

Overview

The first record of this species was documented in the 8th century, however the fossil records reveal that they were already present in the Ipswichian Glacial period c150,000 years ago. Red Kites were first described in 1758 [Linnaeus, C (1758) *Septima Naturae*].

The UK population was derived from research by Wotton *et al.* in 2000 when the population was estimated to contain between 372 and 490 pairs [Wotton, S.R *et al.* 2002) *Bird Study* 49: 278 – 286]. The European population is believed to contain between 19,000 and 25,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

The 'amber' conservation status has been allocated to this species because it is experiencing moderately rapid

population decline as a result of pesticide poisoning and persecution.

Historically Red Kites were one of the UK's most widespread birds of prey and were a very familiar sight in many of our cities and towns where they scavenged for food. William Shakespeare mentioned Red Kites 15 times in his plays and referred to London as 'a city of Red Kites and crows'. They were renowned as helpful scavengers; consuming large amounts of carrion abandoned in and around townships and were therefore protected by our ancestors. Despite this beneficial impact they were also feared and not universally welcomed by all. In the mid-15th century King James II of Scotland is reported to have proclaimed that they 'should be killed wherever possible'.

By the start of the 20th century they had been persecuted to extinction in England and Scotland and only survived in a very small remnant population in mid-Wales. Ironically they survived in habitat that is sub-optimal for the species. Low level persecution continued in Wales and although the population was slowly increasing, productivity was low and by the mid 1980s it had only risen to c40 breeding pairs. In addition the population did not colonise suitable habitat outside of the mid-Wales area as had been hoped.

In the 1980s the bird was listed as 'globally threatened'. The Red Kite fulfilled all of the IUCN criteria for re-introduction and action was instigated to return the species to suitable habitat in England and Scotland. The first releases of birds, taken from Spain and Scandinavia took place in the Chiltern Hills, England and on the Black Isle in northern Scotland, between 1989 and 1994. The Chiltern releases were a resounding success; the releases on the Black Isle were less so where persecution is the primary cause limiting both population growth and expansion.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
DUBSG	30	26	0	26	8	18	12	12	24	1.33	0.92
MRG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
NRG	27	27	0	27	6	21	14	13	24	1.14	0.89
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	3	3	0	3	0	3	2	1	3	1.00	1.00
Totals	60	56	0	56	14	42	28	26	51	1.21	0.91

Further releases took place in the English East Midlands in 1995, in Central Scotland during 1996, in Yorkshire during 1999 and in southern Scotland in 2001. In 2004 the Northern Kites Project was commenced in the lower Derwent Valley, Gateshead. This was the first urban release scheme and between 2004 and 2006 project staff released 94 birds.

The latest release scheme was initiated in 2010 on Forestry Commission land in Grizedale Forest in the west of Cumbria. By the end of this project a further 90 birds will have been released.

National threat assessment

By far the biggest threat to Red Kites comes from illegal poisoning. Whilst they may not be the intended target they are scavengers and will consume poisoned baits placed out illegally to kill foxes or crows. They are also susceptible to secondary poisoning from the new generation of rodenticides intended to control rats. Collisions with overhead power lines also pose a risk. They will always be a potential target for egg collectors, although this risk is no longer likely to have any impact on the national population.

Conservation status (BTO)

UK Amber ●
European 2: Concern, most not in Europe; declining
Global Near threatened
Listed on Schedule 1 of the Wildlife and Countryside Act 1981

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There is a vast amount of suitable Red Kite habitat in the east of the study area, in the main Calder Valley and adjacent wooded valleys and cloughs. There is an abundance of prey available and therefore provisioning an active nest would not be a problem. Birds are already breeding on the Group's eastern and northern borders and it can only be a matter of time before a pair of birds that currently pass through the area breed in the district.

There were a total of 7 sightings during 2010 spread across the whole study area. Two birds were recorded in April, 1 on the 11th and a second on the 27th near the Yorkshire / Lancashire border. June brought 3 sightings; 2 of these, on the 14th, were quite close together and they were therefore probably both of the same bird, the third sighting was on the 21st in the Shibden Park area of Halifax. Just 1 bird was recorded in July in the Brighouse area and the last sighting of the year was in the north west of the study area when a bird was seen on the 16th August over a wooded ravine cutting through the moorland in the Upper Calder Valley.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

This report refers to the whole of the County Durham recording area and is not just restricted to the uplands. In fact the vast majority of territories were away from the uplands. The Durham Upland Bird Study Group is grateful to the Friends of Red Kites [FoRK] Project Group for allowing NERF to reproduce their data. FoRK continues to monitor and publicly promote the species following the successful Northern Kites re-introduction program.

The data shows a slight increase in the number of pairs fledging young i.e. an increase from 11 pairs in 2009 to 12 pairs in 2010. However; the increase in the number of fledglings, from 17 chicks in 2009 to 24 in 2010, up by 41.2%, is both significant and encouraging. Despite the preceding harsh winter pairs close to the main re-introduction area continue to breed successfully as they become more experienced. Several pairs, probably involving young and inexperienced birds built nests but then did not go on to lay eggs. One pair deserted their nest following disturbance caused through inadvertent recreational activity. Other pairs failed from what are thought to be natural causes.

Clearly this core population has the potential to provide the nucleus for further range expansion within the County and this will be a critical measure of future success. It is a concern that the few pairs, which set up territories in upland areas soon after re-introduction releases around 2005, have still failed to establish themselves. Indeed there were no successful nests in the uplands in 2010 despite birds being regularly present in the Derwent Reservoir, Teesdale and Waskerley areas.

Two birds from the Northern Kites release program paired with 2 Yorkshire birds and raised 2 and 3 chicks respectively.

A dead juvenile was found in Rowlands Gill in August and despite an extensive examination and analysis by the PBMS the cause of death was not determined.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Not known to occur here as a breeding species.

Red Kites are not known to breed in the County. Whilst they are occasionally seen on the eastern edge of the area monitored by the Group, overall they are more accurately designated as 'rare' in the study area.

Northumbrian Ringing Group

Extent of coverage: Whole County.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The data represents the continued expansion of this species following the successful Northern Kites re-introduction program at Gateshead.

In 2010 an additional 24 territories were checked and monitored throughout the season. When compared to 2009 there was a 14% increase in the number of young fledged per pair laying and a 35% increase in the number of young fledged per territorial pair monitored.

Unfortunately 2010 brought mixed fortunes for Red Kites in Northumberland and together with the good news came the bad. In February 2 birds were found dead just south of Hexham. Post-mortems confirmed poisoning in both cases. In early June a breeding adult female was found dead just 30 metres from an active nest near Stocksfield and in mid-

July the carcass of its mate, a wing-tagged adult male, was found 2 miles away having last been seen alive in early May. A post-mortem on the adult female confirmed Carbofuran poisoning. The body of the adult male was so badly decomposed that it was impossible to perform a full post-mortem. Being unable to feed itself it is known that at least 1 chick in the nest perished.

The Northumbrian Ringing Group is grateful to Ian Kerr, the Friends of Red Kites [FoRK] Project Group for providing the data.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur here as a breeding species.

In common with previous years wandering individuals were recorded in most months of the year over the majority of the study area.

Unfortunately no breeding attempts have been recorded to date.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

There were no records of this species in the study area during 2010.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Not known to occur here as a breeding species.

Increasingly this species is being seen throughout the year across the region, albeit in small numbers. A 'party' of 4 were seen near Hathersage in July. Whilst this group may have been a family party, breeding cannot be confirmed.

This increasing number of sightings gives the Group members the optimism to believe that breeding will take place in the South Peak in the not too distant future.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

The figures in the table were provided by the Yorkshire Red Kite Committee. Other pairs were noted by independent Raptor Workers and whilst the details are not included in the dataset in the table the information is reflected in the text.

Three pairs are known to have attempted to breed in the south east of the study area. One pair fledged 3 young and 1 pair failed as a result of an unknown cause. The third pair failed after the 2 chicks were poisoned with carbofuran.

Two further adults were found dead at 2 different locations on 11th March and 7th April. Forensic examinations revealed that they had both been poisoned by alphachloralose.

All 4 of these poisoned Red Kites also tested positive for the rodenticides bromadiolone and diphacoum.

Additional information, not included in the table, indicates that there were a further 6 breeding attempts in the area. One of these attempts failed when 1 of the adults was

poisoned [see above].

A Red Kite from the Cumbria release scheme was found dead approximately 1 kilometre from the Group's western boundary in Artengill, Dentdale. A post mortem was undertaken as part of the Cumbria Police investigation and the bird was found to have been shot 4 times in the chest. This bird was killed approximately 2 kilometres from the location where a dead Raven was found at a traditional breeding site in April 2008. X-rays of that carcass, arranged by RSPB Investigations, revealed that it containing 70 pieces of lead shot.

Taking into account the small number of Red Kites that are present in the study area the high proportion of birds found to have been illegally killed is of great concern and highlights the serious problems faced by birds of prey in all upland areas, including the Yorkshire Dales.

NERF regional summary

At the present time only Durham and Northumberland have access to reliable records for this species. Whilst they are known to have bred successfully in other parts of the NERF region there are no details in respect of the outcomes at these sites. They are also frequently recorded as passage birds in many study areas.

NERF regional threat assessment

Red Kites are scavengers and are extremely susceptible to poisoning, either by secondary poisoning e.g. by rodenticides, or by poisons deliberately placed to target this or other species. Over recent years a number of birds have been found poisoned within the NERF study area and 1 bird was found shot to death in 2010.

Raptor Workers who monitor Red Kites and identify overhead power lines that could pose a collision risk are advised to map their location and approach the appropriate owners with a view to finding a solution to mitigate against this threat.

WARNING

Some poisons are exceptionally toxic and can be absorbed directly through the skin. Raptor Workers finding a dead Red Kite, or any other species suspected to have been poisoned, should exercise extreme caution before handling a carcass. Butyl gloves offer some protection and may be used, however standard, thin, household gloves are not effective against many of the poisons found in dead Red Kites and should not be used. If the carcass is recovered it should be dropped into a bin liner. This bin liner should be placed inside a second with the butyl gloves dropped into the space between the 2 bags. The bags should then be securely tied. In every event it is advisable to wash or sterilise hands immediately after contact with a dead animal and in all cases before eating or smoking.

It is essential that all suspected poisoning incidents are reported to the local Police and that an incident number is obtained. The cause of death will be determined by either the Predatory Bird Monitoring Scheme [PBMS], telephone 01524 959830 or the Wildlife Incident Investigation Scheme [WIIS] telephone 0800 321600. The information should also be passed to the Investigations Team at the RSPB Headquarters, telephone 01767 693474.

Sparrowhawk, Eurasian *Accipiter nisus*



UK population estimate

The 2000 estimate for this species was 39,000 pairs (summer). (BTO)

Overview

The first record for this species appeared in the 8th century however the fossil records reveal that they were present up to 10,000 years ago in the Holocene Period. The nominate species, '*nisus*', was first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

The British population estimate of 39,000 pairs in summer is derived from research by Baker *et al.* [Baker, H *et al.* (2006) *British Birds* 99: 25 – 44]. The European population estimate ranges from 180,000 to 270,000 [Burfield, I & Van Bommel, F (2004) *Birds in Europe*,

Birdlife International]. According to the trend data produced by the European Bird Census Council [EBCC] the European population spiked at c300,000 in 1989 and has now fallen back to 'stable' at c150,000.

Together with many other species of birds of prey Sparrowhawks have a place in mythology. In Greek mythology Nisus, the king of Megars [Athens] had to defend his kingdom from attack in a war with Minos, the king of Crete. Nisus was protected by a lock of purple hair and Minos was unable to make a decisive breakthrough. In one version of the myth Minos gave a golden necklace to Scylla, Nisus' daughter, in an attempt to make her betray her father. In a slightly different version Eros caused her to fall in love with Minos. Whatever the 'truth' Scylla cut off the purple lock, destroying her father's protective shield, and gave it to Minos. However; it was all to no avail and Minos rejected her. As she attempted to climb aboard Minos's boat her father, who had turned into a Sparrowhawk, attacked her and she turned into a seabird.

Sparrowhawks are found throughout the UK. The species was heavily persecuted during the 1800s when they were targeted by Game Managers and trophy hunters. As with many other raptor species their numbers increased in the mid-20th century, during the war years, before falling dramatically, particularly in the east of England, when the effects of organochlorine pesticides took their toll during the late 1950s. Following the banning of these pesticides the population firstly stabilised and then began to recover. Unfortunately surveys in the mid-2000s indicate that the numbers may be declining once more in some areas.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	3	3	0	3	0	3	3	3	6(+)	2.00 ¹	2.00 ²
DUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
MRG	56	23	33	10	NR	10	10	10	17	1.70	1.70
NRG	25	16	0	9	NR	9	6	6	9	1.00	1.00
NYMRS	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	12	12	0	12	5	7	4	4	15	2.14	1.25
SPRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
YDUBSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Totals	96	54	33	34	5	29	23	23	47(+)	1.62³	1.38⁴

Notes:

1 & 2 to calculate the number of young fledged n = 6

3 & 4 to calculate the number of young fledged n = 47

National threat assessment

Sparrowhawk chicks are predated by both pine marten and Goshawks; however the threat is insignificant to the general population. Although prolonged cold winters can and do have an adverse effect on the species the effect is localised.

There are two further issues that result in localised threats; firstly there is a belief amongst some pigeon fanciers that Sparrowhawks are responsible for high mortality rates in some lofts, and secondly there is the erroneous belief, held by some people, that Sparrowhawks are responsible for the long-term declines in songbird populations. As a result of these beliefs there are calls from some quarters for the Sparrowhawk population to be controlled, a euphemistic term for killed. Extensive research has been carried out into both of these claims and the impact of Sparrowhawks in both cases has been shown to be inconsequential. Despite this, these beliefs persist and consequently localised small-scale persecution results.

Conservation status (BTO)

UK	Green ●
European	Not of concern
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

The Calderdale study area consists of several heavily wooded valleys. Birds were seen engaging in display flights at several locations during 2010; however most of these breeding attempts were not monitored throughout the season. It is highly likely therefore that several other pairs bred in the area and that overall the records are under reported annually.

Three pairs are known to have reared young, 2 fledged 3 chicks each, however at the third site the number of fledglings is unknown and therefore not included in the Group's data.

Sparrowhawks are observed in Calderdale throughout the year.

Durham Upland Bird Study Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

This is a widespread species and relatively common across the whole County. They are only really absent as a breeding species on upland moorland and sheepwalk, although they will still use these areas for hunting.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

Only 10 pairs were known to have bred during 2010 from the 23 territories found to be occupied by pairs

early in the season. Elsewhere numerous sightings of Sparrowhawks were reported by members. The absence of breeding data reflects the lack of interest in the species by local birdwatchers rather than a breeding failure of the remaining 13 pairs.

Three chicks were stolen from a nest at Gidlow, Wigan.

Northumbrian Ringing Group

Extent of coverage: Part of upland areas.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

The Group only monitors Sparrowhawks as part of the surveying and monitoring of Goshawks in the Kielder Forest. None-the-less an extra 15 territories were checked during the 2010 breeding season which led to an additional 6 breeding pairs being located when compared to 2009.

Of the 16 nests located 9 were monitored and all are known to have laid eggs. These 9 pairs suffered a significant failure rate of 33.33% resulting in just 6 pairs hatching a total of 9 young.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

This species is not monitored by the Group and consequently no proven breeding attempts were recorded. However; adult birds carrying prey, almost certainly towards active nests, were noted at 2 locations on the perimeter of the forested areas in the south-east of the study area.

Elsewhere in the National Park populations are believed to be at reasonable densities, predominantly in suitable habitat away from the large forests.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Prior to 2005 the Group undertook a 20 year study of this species. From 2005 onwards the study has concentrated on 12 to 15 pairs annually to the east of the Peak Park and to the north of Sheffield.

In 2009 the Group reported that, contrary to popular opinion which suggests that the population is stable, work carried out in this study area indicated that the population trend is downwards. The data from 2010 confirms this hypothesis. Whilst there were 3 fewer nests in 2010, when compared to 2009, it is the remainder of the data that gives cause for concern. In 2009 all pairs monitored went on to fledge young. In 2010 of the 12 pairs monitored 5 failed early and of the remaining 7 pairs only 43%, 4 pairs, fledged young. During the same period the total number of young fledged fell from 62 to 15, representing a 76% decrease. The fledging rate per pair laying fell by 48% from 4.13 to 2.14 and the fledging rate per pair monitored fell by 70% from 4.13 to 1.25.

Outside of the study area further nests were located. In total 25 chicks were ringed from 6 nests.

It is clear from this dataset that the population is de-

clining. At the same time the Common Buzzard population is increasing and it is probably this increase that is having a detrimental impact on the breeding success of the Sparrowhawk population.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

The Group does not undertake a detailed study of this common but somewhat secretive bird.

There were numerous sightings across the study area throughout the year, including birds on passage, and the population is believed to be stable.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Occurs as a breeding species but no monitoring takes place.

Although no formal studies were undertaken by the Group during 2010, Sparrowhawks were observed across the Yorkshire Dales in relatively low numbers. Whether or not some of these birds were migrating through the area is unknown.

NERF regional summary

Sparrowhawks occur as a breeding species throughout the NERF region but are not monitored as a matter of course by the majority of the members. The number of fledglings reported is down from 78 in 2009 to 47 in 2010.

There is a small study in Northumberland [also covering a small area in eastern Cumbria] reporting that 2009 was a very successful year with high productivity. This situation changed completely in 2010. Although 6 extra

nests were found the failure rates of 33.3% at egg stage resulted in only 6 pairs fledging 9 young.

The South Peak Group reports a stable population whilst the North York Moors Group reports a reasonable density in areas away from the large forests.

A long-term study by the Peak District Raptor Monitoring Group was conducted between 1985 and 2005 and involved c100 pairs. Continuing work indicates that the population trend in that area is downward. The figures for 2010 are of particular concern, with fledging rates falling significantly by 48% in the category pairs laying eggs and by 70% in the category pairs monitored.

Although present in the Yorkshire Dales they are reported to be at a low density. Once again 3 pairs were located in Calderdale; however breeding data is only available from 2 sites. Manchester reports that 3 chicks were stolen from 1 of the sites monitored by the Group.

NERF regional threat assessment

With the exception of pine martin the national threat assessment is applicable to the NERF region.

Editor's note:

Studies by the Peak District Raptor Monitoring Group indicate that the local population is continuing to experience a downward trend. Across the NERF region the species is not studied extensively and it is possible that similar downward trends may be going undetected in other areas. As with Kestrels it is conceivable that a population crash is going unnoticed. There is scope for a more robust survey of this species.

Raven, Common *Corvus corax*



UK population estimate

The current estimate is 12,000 pairs (summer). (BTO)

Overview

Although Ravens were first recorded in the 7th century the fossil records indicate that they were present during the Wolstonian [penultimate] Glaciation period c150,000 years ago. The species was first described by Linnaeus in 1758 [Linnaeus, C (1758) *Systema Naturae*].

The British population of 12,000 pairs in summer was derived from work by Baker *et al.* [Baker, H (2006) *British Birds* 99: 25 – 44]. The European population is estimated to contain between 250,000 and 470,000 pairs [Burfield, I & Van Bommel, F (2004) *Birds in Europe*, Birdlife International].

The Common Raven is almost universally granted the

status 'honorary raptor' by Raptor Workers. They are the largest of the corvids and can weigh up to almost three times more than a crow. They are highly intelligent and sociable birds with young birds often forming large flocks. They are birds of myth and legend wherever they are found. Ravens were present in most counties in England until the end of the 19th and beginning of the 20th century when they were eliminated from low-land areas by gamekeepers and shepherds. Populations are recovering and they are now most abundant in the western half of the UK mainland, predominantly in the uplands and on rugged coast lines. Persecution is less of a problem now in some areas and there is evidence that the population is expanding in both numbers and range.

From the ringing data the oldest known Raven was reported to be 17 years, 11 months and 15 days old in 2000 [BTO]. The NRS receives 148 records on average annually and would welcome more reports for this species.

National threat assessment

Whilst the persecution of the Common Raven has reduced, this threat remains a clear and present danger in some areas, particularly where they come into conflict with the game shooting community. In some parts of the NERF region they are both shot and poisoned.

In October 2009 the British Mountaineering Council [BMC] opened a discussion within the Cave and Crag Access Advisory Group to consider the BMC's position on voluntary climbing restrictions on crags with nesting Raven. Any withdrawal from the current voluntary restrictions, by the BMC, could open up crags with nesting Ravens to climbers and may lead to breeding birds abandoning nesting attempts.

NERF Data

RSG	Home ranges checked	Home ranges occupied (pairs)	Home ranges occupied (singles)	Territorial pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
CRSG	2	2	0	2	1	1	1	1	4	4.00	2.00
DUBSG	2	0	0	0	0	0	0	0	0	0.00	0.00
MRG	8	7	0	5	0	5	5	5	13(+)	2.60 ¹	2.60 ²
NRG	13	12	0	12	0	12	10	10	28	2.33	2.33
NYMRSG	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
PDRSG	12	5	0	5	0	5	4	4	9	1.80	1.80
SPRSG	49	49	0	15	4	11	11	11	47	4.27	3.13
YDUBSG	25	10	0	10	1	9	9	8	21(+)	2.33 ³	2.10 ⁴
Totals	111	85	0	49	6	43	40	39	122(+)	2.84⁵	2.49⁶

Notes:

1 & 2 to calculate the number of young fledged n = 13

3 & 4 to calculate the number of young fledged n = 21

5 & 6 to calculate the number of young fledged n = 122

Conservation status (BTO)

UK	Green ●
European	Not of concern
Global	Least concern

Group Reports

Calderdale Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Historically 2 pairs occupy traditional sites annually and are invariably successful in rearing young. In 2010 1 pair failed or did not attempt to breed and the other fledged 4 young.

They remain present throughout the year and were widely reported from many of the upland areas.

Rumours that a third pair had bred on private land were not verified.

Durham Upland Bird Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Reasonable coverage; at least one long-term monitoring study.

Sadly Raven remains one of the County's rarest breeding birds despite extensive available suitable habitat and a regular presence in spring. Typically 1 to 6 birds were seen at a minimum of 12 upland sites between January and early April. Regrettably once again there was no evidence of any nesting attempts in 2010 and with only 1 successful nest in the last decade there is little likelihood of improvement in the foreseeable future.

Sightings did increase in early autumn.

Manchester Raptor Group

Extent of coverage: Whole County.

Level of monitoring: Poor coverage; casual monitoring of a few pairs.

2010 was a mixed year for this species, which included the first successful breeding attempt on Wigan Town Hall. A pair was present at a regular breeding site, however access by the Group was prohibited due to building works and the outcome is unknown.

A pair was present at the DW Stadium, home of Wigan Athletics FC and Wigan Warriors Rugby Club, but the outcome is not known. A pair was also present on the site in 2009; unfortunately the sitting bird was shot and injured.

A disused railway viaduct from which a nest was blown down in 2009 was not re-occupied in 2010.

Northumbrian Ringing Group

Extent of coverage: Upland areas only.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

This species is extensively monitored across both the uplands and lowlands of Northumberland.

Within the study area records show that there were 3 fewer pairs rearing chicks in 2010 than there were in 2009, however with only 1 fledgling less in 2010 the change in productivity rate is not statistically relevant.

North York Moors Upland Bird (Merlin) Study Group

Extent of coverage: Upland areas only.

Level of monitoring: Not known to occur as a breeding species.

There is no evidence of a breeding attempt on the North York Moors during 2010, although there were more frequent sightings than recorded during the previous year. Despite no evidence of breeding, 'prospecting' pairs were recorded at 2 locations in the early part of the year and it is reasonable to anticipate a breeding attempt in the not too distant future.

A maximum of 5 individuals were seen together in late autumn.

Peak District Raptor Monitoring Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Good coverage; at least two monitoring studies or large representative study area.

Once again the traditional gritstone crags with good public access proved to be the most successful sites. The Group also noted that tree nesting birds are becoming more common in the study area.

It is strongly suspected that persecution is taking place on keepered moorland and this illegal activity is preventing colonisation in some areas and is the main / sole reason why a number of traditional sites, in suitable habitat, remain unoccupied.

South Peak Raptor Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

During 2010 the Group checked 49 territories, an increase of 32% from 2009, and all territories were found to be occupied. Fifteen of these pairs were monitored throughout the season and members recorded a total of 47 fledglings. This number equates to 3.13 per pair monitored and is unchanged from the previous year. There was however a significant rise in the number of chicks fledged per pair laying, which rose from 3.67 in 2009 to 4.27 in 2010, representing a 16.3% increase.

Two broods of 6 were located, providing only the second and third records of this brood size for the Group. Across the region Raven were found nesting in a variety of habitats; 23 pairs were in limestone quarries, 2 pairs were in gritstone quarries, 8 pairs were found on natural rock faces, 15 pairs occupied tree nests and 1 pair made use of an electricity pylon.

Due to the large volume of monitoring of other species in the study area Group members were not able to monitor the outcome of the remaining 34 territorial pairs. None-the-less whilst it is not possible to precisely extrapolate these figures to predict the total number of chicks that fledged in the study area it is reasonable to assume that if the two thirds of the territorial pairs that were not monitored produced young at the same rate then the total number of chicks fledging would be c150 in 2010.

Regrettably persecution remains a significant problem in some sectors of the study area, particularly in the Up-

per Derwent. Ravens suffer persecution in all of the 6 categories identified in the persecution bar chart, which can be found in the 'Annual Review' section at the beginning of this document.

Yorkshire Dales Upland Bird Study Group

Extent of coverage: Part upland & part lowland areas.

Level of monitoring: Excellent coverage; all or most sites receive annual coverage.

The number of casual records of non-breeding birds across the Dales continues to be relatively high but despite increased survey effort there has only been a slight increase in the number of breeding pairs in recent years.

The value of long-term studies is exemplified by the results from the 2010 Raven survey. In 2009 8 pairs were monitored, this increased by 25% to 10 pairs in 2010 yet the number of young fledged per pair laying fell by 30% from 3.33 to 2.33. The question is therefore; is this statistic relevant or to quote Bob Dylan "a simple twist of fate"? Only time and careful recording over a protracted period will clarify the situation.

Of the 10 pairs monitored, 1 pair failed early, the outcome at 1 site is not known and a further pair failed at late chick stage. In the latter case the 3 young which appeared to be close to fledging were found dead in the nest. Given the suspicious circumstances of this nest failure the young were removed from the nest by North Yorkshire Police and RSPB Investigations. At the con-

clusion of the investigation no evidence of shooting or poisoning was found and the cause of death remains unknown.

Although tree nesting had been suspected at another site in previous years occupancy had not been proven. The site was checked again in 2010 and found to be occupied. Chicks were heard calling on 30th April, unfortunately the nest was inaccessible and consequently the number of fledglings is not known. This is the first successful tree nesting pair in the Yorkshire Dales.

NERF regional summary

There are mixed fortunes for Raven across the NERF recording area. In some areas they are prospering, in some they are slowly increasing whilst in others where there is suitable habitat the population is lower than would perhaps be anticipated.

The reasons for these regional variations are unknown at the present time, however it may be linked to persecution and the species is worthy of a more detailed study.

NERF regional threat assessment

The national threat assessment for this species is applicable in the NERF region.

Species reports from non-NERF members

A CONSIDERABLE amount of bird of prey surveying, monitoring and ringing is undertaken by a number of Raptor Workers who are NERF members but who also operate outside of their own Group's core area. Equally other Raptor Workers who are not members of a Raptor Study Group or are members of bird clubs that are not affiliated to NERF undertake invaluable monitoring of birds of prey in the North of England. The work undertaken by all of the individuals concerned is acknowledged in this section of the 2010 Annual Review and NERF is grateful for their contribution to raptor protection and for granting permission to publish their data.

Cumbria

Eagle, Golden *Aquila chrysaetos*

Once again only a single bird was present at the traditional breeding site during 2010.

Source: Dave Shackleton

Goshawk *Accipiter gentilis*

These records were obtained as part of the Borders Forest Goshawk study being conducted by the Northumbrian Ringing Group. Five territories were checked and 4 were found to be occupied by pairs. Unfortunately 1 pair failed early; the remaining 3 pairs laid eggs but only 2 pairs went on to hatch eggs. Both of these pairs each fledged 2 chicks.

Source: Martin Davison, NRG.

Owl, Barn *Tyto alba*

Ten territories were checked in the Spadeadam Forest, Cumbria; 2 were occupied with breeding pairs and both were monitored. Collectively they raised 6 chicks producing a fledging rate of 3 young per territorial pair monitored.

Source: Martin Davison, NRG.

Harrier, Hen *Circus cyaneus*

There was 1 breeding attempt in the Lake District during 2010; the attempt was successful and the pair fledged 5 young.

Source: Stephen Murphy, Natural England.

Merlin *Falco columbarius*

In Cumbria 36 territories were checked and birds were found to be present at 12 sites in spring. Seven pairs went on to make a breeding attempt and 3 pairs successfully fledged 7 young. One pair failed at egg stage and the outcomes at the 3 other sites is unknown.

Source: Dave Shackleton.

Owl, Eurasian Eagle *Bubo bubo*

There was 1 successful Eurasian Eagle Owl nest in 2010, producing 2 chicks.

Source: Steve Garnett, RSPB.

Osprey *Pandion haliaetus*

Three chicks fledged from 1 nest at Bassenthwaite, Cumbria.

Source: Dave Shackleton.

Lancashire

Owl, Eurasian Eagle *Bubo bubo*

Two pairs of Eurasian Eagle Owls each hatched 3 eggs in the Forest of Bowland. All 6 chicks were ringed. One pair successfully fledged 3 chicks; however the 3 chicks from the second, 'new', pair all died prior to reaching independence.

Source: Paul Irving, YDUBSG.

Owl, Short-eared *Asio flammeus*

In the Forest of Bowland 1 pair is known to have successfully raised a brood of young. The exact number of chicks fledging from the site is not known, however 2 chicks were ringed.

Source: Paul Irving, YDUBSG.

Peregrine *Falco peregrinus*

On the Pennines adjacent to the Lancashire / West Yorkshire border 4 pairs of Peregrines fledged a total of 13 chicks. All of these young birds were fitted with a BTO ring and a red Darvic ring.

Source: Craig Bell, MRG & Steve Downing, CRSG.

In the Forest of Bowland 4 broods of Peregrines, consisting of 3, 3, 2 and 2 chicks respectively, were ringed.

Source: Paul Irving, YDUBSG.

The following report is an account of the bird of prey breeding attempts on the United Utilities Estate, Forest of Bowland, Lancashire, during 2010.

Harrier, Hen *Circus Cyaneus*

Hen Harriers made 10 nesting attempts on the Estate, 5 of which were successful resulting in 13 fledged birds. Whilst this was a vast improvement over the numbers in 2009, productivity was disappointing with only 1.3 chicks fledging per nesting attempt, compared to the 20 year average of 1.68.

The Estate remains the single most important site in England for breeding Hen Harriers, with approximately 83% of all nesting attempts in England in 2010 occurring there.

Motion sensitive cameras, used on Hen Harrier nests for the first time in 2010, were a very successful aid in the close monitoring of the birds behaviour in the nest and in identifying reasons for nest failures in real time.

The partnership of United Utilities, Lancashire County Council Countryside Service, Natural England and RSPB again successfully used a remote camera to show visitors at Beacon Fell recorded images of the birds.

Peregrine *Falco peregrinus*

Overall Peregrines had an average year with 8 nesting attempts recorded on the Estate. Four attempts were successful, resulting in 10 fledged chicks. The productivity rate of 1.25 chicks fledged per nesting attempt was only marginally above the 20 year average of 1.22.

Merlin *Falco columbarius*

Merlin had a good year in 2010 with 4 confirmed nests, all were successful, fledging 15 young. This gives a fledging rate

of 3.75 per nesting attempt, the second highest recorded figure since 1991.

Owl, Short-eared *Asio flammeus*

SEOs had a better year than 2009, with 3 confirmed nests fledging 17 chicks. It is strongly suspected that there were 2 additional nesting attempts on the Estate; however these reports were not pursued because of their proximity to breeding Hen Harriers.

Owl, Eurasian Eagle *Bubo bubo*

Eagle Owls bred at 2 sites on the Estate in 2010. The pair at Whitendale fledged 3 chicks, whilst the second pair at an undisclosed site fared less well. They are known to have hatched 3 eggs, but subsequent events are unclear, and not without some controversy, but it was reported that 1 chick possibly fledged at this site.

Source: Peter Wilson.

Reference: Wilson, P & Jones, P: Upland Breeding Bird Report for the United Utilities Forest of Bowland Estate (2010) RSPB report, unpublished.

North Yorkshire

Peregrine *Falco peregrinus*

Three Peregrine chicks were ringed in an active quarry site near Leyburn.

Source: Tony Crease, Independent Raptor Worker & Steve Downing, CRSG.

Boundary of North York Moors south to the Humber Estuary

Buzzard, Common *Buteo buteo*

Common Buzzards are known to have bred in the Upper Derwent Basin between the North York Moors and the East Yorkshire Wolds during 2010; however the fledging rates are unknown. Other sightings were recorded in the Howardian Hills to the west of Malton and a minimum of a further 9 pairs successfully reared young in the stretch between Malton and the east coast. In the area around Butterwick, Weston and Howsham to the south of Malton, up to 4 pairs are believed to have bred successfully.

One roost, containing up to 8 birds, was monitored periodically.

Buzzard, Rough-legged *Buteo lagopus*

Rough-legged Buzzards are regular passage birds in East Yorkshire and during 2010 a single bird over-wintered in the Upper Derwent Valley.

The following table of sightings is by courtesy of the Yorkshire Naturalists' Union.

Harrier, Hen *Circus cyaneus*

Observers in East Yorkshire report regular sightings of passage birds during winter. A female was noted dropping into the Derwent Valley from the North Wolds escarpment area. The north Humber roosts held 3 males and an immature female and the Holderness roost held another female.

There were a number of sightings on the east coast during both the southern migration in winter and on the return northerly migration during spring.

Merlin *Falco columbarius*

A number of birds over-wintered along the Derwent during 2010, with several birds reducing the risk of persecution by choosing to spend the nights in relative safety on a local

Rough-legged Buzzard sightings (YNU)

Location	Date	Comment	No.
Buckton	17 October		1
Spurn	17 October		4
Flamborough	17 October		1
Spurn	18 October		1
Filey	18 October		1
Sunk Island	18 October		1
Spurn	19 October		1
Barmston	21 October		1
Flamborough	23 October		1
Blacktoft Sands	24 October		1
Leven Carrs	24 October		1
Hatfield Moors	26 October	to 24 November	1
Spurn	27 October		1
Buckton	30 October		1
Winscar	30 October		1
Buckton	31 October		1
Barmston	31 October		1
Spurn	20 November		1

bombing range. Three birds over-wintered on a marsh on the north side of the Humber.

Peregrine *Falco peregrinus*

In 2010 there were a minimum of 3 nesting pairs on the East Yorkshire Wolds. A further 4 pairs were recorded breeding on, or near to, the east coast.

Over-wintering birds were located in the Spurn Basin on the north side of the Humber Estuary and occasional birds were noted in the Upper Derwent Basin.

Source: M. J. Carroll, Ryedale Raptor Study Group.

West Yorkshire

Buzzard, Rough-legged *Buteo lagopus*

There was 1 report of this species during 2010 when a single bird was seen in Silsden on 7th November.

Source: Ian Court, YDUBSG, courtesy of the YNU.

Peregrine *Falco peregrinus*

During 2009 a pair successfully raised a brood on a grouse moor on the western outskirts of Haworth. Over winter the steep bank that had been used by the pair in the 2009 breeding season was dug out and completely destroyed. Although the adults returned in 2010 with nowhere to nest at the 2009 site they moved on and were not relocated; the outcome of any subsequent breeding attempt remains unknown.

Raven *Corvus corax*

A pair of Raven successfully raised a brood of 2 in the same disused quarry in which the Peregrines raised the brood of 5 young.

Source: Dave Barker.

Editor's note:

The disappearance of both Short-eared Owls and Long-eared Owls from this same estate, reported in the Calderdale Raptor Study Group data, is also giving cause for concern.

A pair of Peregrines successfully nested in a disused quarry on the outskirts of Keighley fledging a clutch of 5 young.

Articles

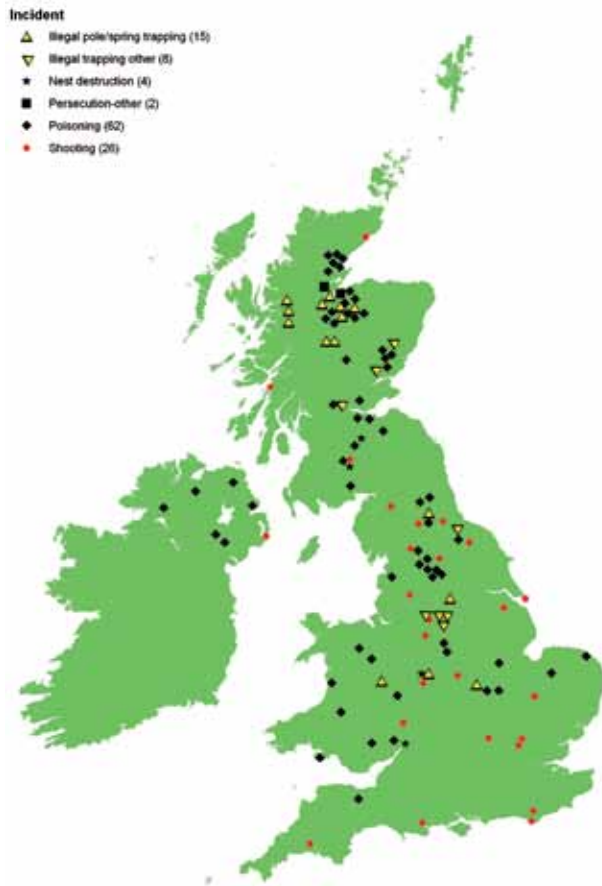
A review of the RSPB's 'Birdcrime 2010' report and the wider issues affecting UK raptors

Guy Shorrock

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IN OCTOBER 2011 RSPB launched Birdcrime 2010; as usual there was a heavy focus on raptor persecution and its conservation implications.

In 2010 the RSPB received 227 reports of illegal shooting,



trapping and nest destruction of birds of prey. This is lower than the 277 incidents reported in 2009, and slightly below the last 5-year average [2005–2009] of 230 reported incidents. Of the 227 reports, 55 were classified as 'confirmed', which is above the 2005–2009 average of 48 confirmed incidents, and 75 were classified as 'probable'. The most commonly reported crime was shooting, with 121 of the 227 reports involving the shooting or attempted shooting of raptors and owls. Of these, 26 reports were confirmed and a further 36 were classified as 'probable'. Additionally there were 14 reported incidents relating to destruction of birds of prey nests, eggs or chicks, 4 of which were confirmed. There were 50 reported incidents in relation to the illegal trapping of birds of prey of which 23 were confirmed. In addition there were a further 42 reported incidents of 'other' offences.

In 2010 there were 128 incidents of wildlife poisoning and pesticide-related offences, of which 110 involved birds of prey. This number is lower than the 153 incidents reported in 2009 and also below the 5-year average of 150 incidents. There were 69 incidents where abuse of a pesticide was confirmed by analysis of the victim and / or bait; slightly below the 5-year average [2005–2009] of 74 confirmed abuse incidents.

The confirmed abuse incidents in 2010 involved the poisoning of a minimum of 129 individual birds or animals and whilst the number of confirmed incidents was slightly below the average, 2010 involved a number of very serious poisoning incidents. These included the killing of 4 Golden Eagles and a White-tailed Eagle in Scotland and 20 Red Kites throughout the UK. Tragically, December 2010 also saw the first Golden Eagle poisoned in Northern Ireland in living memory. This was a bird originally from Scotland and released in Eire as part of a re-introduction project. In addition to the 69 confirmed pesticide abuse incidents, there were also 5 confirmed incidents of illegal possession of pesticides connected with wildlife poisoning. In line with previous years, the most commonly abused product was the banned pesticide carbofuran, with 36 confirmed incidents.

Birdcrime 2010 features a number of prosecutions resulting from investigations by the statutory agencies which were carried out in conjunction with other organisations, including the RSPB. One high profile case involved the prosecution of a gamekeeper on the Skibo Estate in Sutherland, Scotland for possession of over 10 kilos of the pesticide carbofuran. This discovery followed the poisoning of 3 Golden Eagles and other incidents on the estate.

Table 1 highlights the number of Bird of Prey persecution incidents reported to the RSPB, in the Counties

Table 1

County	2009		2010	
	SDBP	P	SDBP	P
Co. Durham	0	0	7	2
Derbyshire	14	2	9	5
Gt. Manchester	3	0	2	0
Northumberland	11	2	9	7
North Yorkshire	24	2	31	18
South Yorkshire	9	3	4	0
West Yorkshire	7	0	4	1
Totals	68	9	66	33

Notes:

SDBP = shooting / destruction of Birds of Prey

P = poisoning offences where a Bird of Prey was a victim or potential victim



left Cage trap containing live bait **right** PC Cooper, Derbyshire Police, with 4 Common Buzzards poisoned with Carbofuran

covered by NERE, during 2009 and 2010. The figures include all incidents; 'unconfirmed', 'probable' and 'confirmed'. For a more detailed breakdown of the 'confirmed' and 'probable' refer to Table 2.

The Peak District has been an area of concern for many years following the collapse of Goshawk and Peregrine breeding populations in areas of the Dark Peak. At the conclusion of a protracted investigation by the RSPB, evidence was gathered which led to the recent conviction of gamekeeper Glenn Brown on the National Trust's High Peak Estate. The 7 charges related to the use of a live pigeon in a cage trap to take birds of prey and animal welfare offences. This matter is the subject of an appeal, which is scheduled to be heard in early 2012.

The long-term data sets of raptor persecution gathered by the RSPB remain vitally important. Whilst there have been significant improvements in the gathering of wildlife crime information by the Government in the last few years, unfortunately the recording system used by the Police is unable to provide the same level of consistency or detail as that collated by the RSPB. There has been a recent increase in concern from some quarters in the shooting industry about RSPB data on raptor persecution and the profile of those convicted for these offences. The RSPB believes this is an attempt to discredit this information and may be connected with a number of applications to allow the licensed control of Common Buzzards. The RSPB will be watching with interest to see how this situation develops.

In order to highlight these issues, and allow organisations including RSPB, NERE and others to lobby Government and decision makers, reliable information is essential. The RSPB would ask all Raptor Workers to report all incidents, whether the facts can be confirmed or are merely suspected, to the Investigations Section. All sensitive information can be reported in the strictest of confidence. The RSPB believes that the continuing development of NERE is an important part of addressing conservation concerns for raptors in both the North of England and the UK as a whole. NERE members, active in the countryside, are therefore ideally placed to support birds of prey by gather-

ing and submitting information to the Investigations Team.

Whilst the collation of persecution data and prosecution of offenders remains vitally important, it can never tell the full picture as only a small fraction of incidents will ever be discovered and recorded. Furthermore, only a very small percentage of reported cases will ever result in court proceedings. The long-term monitoring of UK raptor populations will continue to form the essential baseline to inform Government and decision makers regarding the effectiveness of legislation and conservation measures for particular species. In recent years a number of peer-reviewed scientific papers have been produced which clearly demonstrate the impact that persecution continues to have on a range of species.

Two recent pieces of work highlight the importance of monitoring work for Hen Harriers. In February 2011 JNCC published 'A Conservation Framework for Hen Harriers in the UK' - see <http://jncc.defra.gov.uk/pdf/jncc441.pdf>. This report confirms that illegal persecution remains the main factor limiting Hen Harrier populations especially on land managed for driven grouse shooting.

This was quickly followed by the results of the 2010 national survey which showed that the UK Hen Harrier population has declined by 20% since the last survey in 2004, from an estimated 807 pairs to an estimated 646 pairs. Declines were most rapid in Scotland falling from 633 pairs in 2004 to 489 pairs in 2010. England's population barely continues to stave off extinction, with only a handful of pairs breeding successfully in any year. The Hen Harrier framework suggests England's uplands are capable of supporting at least 323 breeding pairs, and this massive discrepancy remains a national disgrace. Without strong, concerted effort to tackle illegal persecution, there seems little hope of reversing these worrying trends.

In relation to Red Kites, a study conducted by RSPB Scotland and funded by Scottish Natural Heritage [SNH], has been recently published in the scientific journal 'Biological Conservation'. This compelling new research into the low expansion rate of the Red Kite population of northern Scotland shows the species is being severely restricted

by illegal killing. The study compares the performance of two Red Kite populations where equal numbers of young birds were released from 1989 onwards as part of the initial phase of reintroducing the species in Scotland and England. The sites were in the Chilterns in Buckinghamshire and the Black Isle in northern Scotland. The production of successfully reared and fledged Red Kite chicks was very similar at both sites, and indeed was amongst the highest in Europe. Thus, lack of food supply and poor breeding were not responsible for the poor growth rate of the Scottish Black Isle population. Whilst the population in the Chilterns has thrived, reaching approximately 320 breeding pairs by 2006, the Black Isle population has struggled, reaching just 41 pairs over the same period.

The Red Kite was previously driven to extinction in the late 19th Century in Scotland by widespread human persecution, despite the fact that the species poses no threat to legitimate land use activities. Between 1989 and 2009 at least 64 individual birds are known to have been illegally poisoned in Scotland. The study has shown that low survival rates of young birds is the main factor limiting the northern Scotland Red Kite population growth up until 2006, and that illegal killing accounts almost entirely for these poor survival prospects. In the absence of illegal killing, modelling has shown that annual survival rates of young Kites would have been high enough to allow the northern Scotland Red Kite population to reach over 300 breeding pairs. More encouragingly, if illegal killing were to cease, then the population is likely to respond quickly, reaching 300 breeding pairs within the next 10 years.

In 2009, the Government announced its 6 national wildlife crime priorities, which included 'Raptor Persecution' with a focus on 5 species [Golden and White-tailed Eagles, Hen Harrier, Red Kite and Goshawk]. Encouragingly Peregrine has now been added to the list of priority species following lobbying by the RSPB.

The data gathered by NERF members on the impact of persecution on Peregrine breeding success in the North of England, published in 'Biological Conservation', was highly significant in relation to this decision. However; despite this, overall progress in relation to this wildlife crime priority remains disappointing, particularly in England and Wales where there appears to have been no signs of any progress by the statutory agencies since Birdcrime 2009 was published. The standard of enforcement in response to raptor persecution incidents is inconsistent and in many cases remains poor. Of the 13 Red Kites found poisoned in England in 2010, very few were subject to effective follow up investigations.

The most recent encouraging news has been the introduction of a vicarious liability offence in Scotland. This legislation will hopefully make those within the shooting industry who are directing or allowing the persecution of raptors to be made more accountable. The RSPB hopes that similar legislation can be implemented elsewhere in the UK. However; until the shooting industry gets its own house in order the prospects for raptors in large parts of upland UK remain bleak.

The Birdcrime 2010 report can be downloaded from the RSPB website www.rspb.org.uk

Table 2

	Species	Offence	Classification	
			Confirmed	Probable
Derbyshire	Peregrine	Shooting		2
	Buzzard	Shooting	1	
	Peregrine	Nest Destruction		1
	Buzzard	Poisoning	6	
	Sparrowhawk	Trapping, other	1	
Durham	Sparrowhawk	Shooting	1	
	Buzzard	Shooting	1	
	Buzzard	Nest Destruction		1
	Sparrowhawk	Spring trap	1	
	Buzzard	Other		1
East Yorks	Red Kite	Poisoning	1	
	Kestrel	Trapping, other		1
Northumberland	Osprey	Shooting	1	
	Kestrel	Trapping, other		1
	Buzzard	Trapping, other		1
South Yorks	Red Kite	Poisoning	3	
	Goshawk	Shooting		1
West Yorks	BoP	Other		1
	BoP	Spring trapping	1	
North Yorks	Red Kite	Shooting		1
	Goshawk	Shooting	1	
	Buzzard	Shooting	1	1
	Peregrine	Shooting		1
	Hen Harrier	Shooting		1
	SEO	Shooting		1
	Merlin	Nest Destruction		1
	Peregrine	Trapping, other		1
	Buzzard	Trapping, other		1
	Tawny Owl	Trapping, other		1
	Hen Harrier	Other		2
	Goshawk	Other		2
	BoP*	Other		1
	Buzzard	Other		1
	Buzzard	Poison	3	
Goshawk	Poison	1		
Red Kite	Poison	4		
Totals			27	25

Notes:

BoP*: = Unidentified species believed to be Hen Harrier or SEO

Confirmed = Circumstances indicate an illegal act has taken place. Incidents typically substantiated by evidence such as *post mortem* or reliable eye-witness evidence

Probable: = Circumstance indicate that by far the most likely explanation is that an illegal act has taken place

Monitoring raptor demography at a national scale

Dr Dave Leech

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THERE ARE few better examples of the contribution that volunteers can make to conservation than the work undertaken by the UK Raptor Study Groups. The logistic challenges posed by low breeding densities, large home ranges and inaccessible nest sites may seem overwhelming to those more accustomed to monitoring passerines, but for some fieldworkers, the hard work and the remote landscapes may well be part of the attraction. Whatever the motivation, given the investment of time and effort required to gather data on raptor populations and the importance of top predators as indicators of ecosystem health, summarising the fortunes of all organisms below them in the food chain, it is vital that the information collected is translated into clear, effective summaries that can be used by NGOs and Government. The transition from a bird in a nest to a dot on a graph is the focus of this article, outlining the benefits of contributing data to national monitoring schemes, both for the birds and for those who work on them.

Why ring in 2011?

I am sure many of us have heard the argument that ringing is no longer necessary because ‘we know where birds go for the winter’. Given the strength of the historic link between this monitoring technique and the study of migratory behaviour, this viewpoint is perhaps unsurprising. However; while ringing can reveal the location of wintering grounds, it does rely on the relatively low probability of individuals being encountered in what are often large, sparsely populated areas. In contrast, the recent development of tracking technologies such as geolocators and satellite tags allow identification not only of the destination but also of the route taken, providing a much more efficient method of data collection. While the weight of these devices limits their use on smaller migrants, this is less of an issue with raptors and they have been deployed to great effect on species such as Honey Buzzard, Marsh Harrier, Osprey and Hobby. Although studies typically involve small numbers of individuals of a single species, collation of the results across tracking projects allows more general conclusions to be drawn, as shown by Roine Strandberg and colleagues [2010] who used this information to demonstrate the importance of the Sahara as a barrier to migrating raptors.

While ringers may still contribute some important information about wintering movements, the primary aim of the Ringing Scheme in the 21st Century is to further our understanding of the processes that drive changes in abundance. The size of a population is determined

by four key factors: i) the number of young birds that fledge, ii) the proportion of these fledglings that survive to breed, iii) the proportion of adults that survive to breed again and iv) the number of birds that move into or out of the population from other areas. While information about breeding success is provided by the Nest Record Scheme [NRS], as discussed below, monitoring of survival and dispersal is achieved solely via ringing.

The totals presented in Table 1 bear witness to the incredible effort invested in ringing birds of prey in the UK, with c16,000 new individuals marked each year, of which almost 90% are nestlings. Historically, recoveries of dead birds reported by the general public have been used to generate annual estimates of survival for a range of bird species. This system has worked reasonably well for passerines, although the uncertainty about the timing of death can make it difficult to produce survival

Table 1: Mean annual totals for ringed pulli, ringed free-flying juvenile/adult birds and numbers of nests recorded over the period 2008-2010 in England and the UK as a whole

	England			UK		
	Pulli	Juv/ adult	NRS	Pulli	Juv/ adult	NRS
Honey Buzzard	14	0	12	17	1	16
Red Kite	302	1	234	782	21	243
White-tailed Eagle	-	-	-	45	0	4
Marsh Harrier	74	2	17	80	2	17
Hen Harrier	46	0	12	321	2	29
Montagu's Harrier	8	0	2	8	0	2
Goshawk	133	0	66	261	4	90
Sparrowhawk	170	519	59	293	611	65
Buzzard	206	14	104	565	74	222
Golden Eagle	-	-	-	52	2	16
Osprey	8	0	0	171	1	11
Kestrel	1859	127	387	2128	143	408
Merlin	202	5	50	407	9	63
Hobby	127	7	64	135	7	66
Peregrine	160	5	77	331	15	100
Barn Owl	5058	615	1448	6349	769	1662
Eurasian Eagle-Owl	4	0	2	4	1	2
Little Owl	352	72	140	353	73	141
Tawny Owl	836	142	318	1174	221	440
Long-eared Owl	26	9	9	42	21	12
Short-eared Owl	7	1	3	30	2	5
Raven	54	0	34	206	1	95

Table 2: Totals of projects currently registered that utilise colour rings or unconventional marks

	Colour rings	Wing tags	PIT tags
Honey Buzzard	1	0	0
Red Kite	0	29	0
White-tailed Eagle	1	6	0
Marsh Harrier	0	6	0
Hen Harrier	1	10	0
Buzzard	3	8	0
Golden Eagle	0	1	0
Osprey	1	0	0
Kestrel	2	3	0
Merlin	0	0	4
Peregrine	8	0	22
Barn Owl	0	3	1
Tawny Owl	0	0	1

estimates that are specific to first-year birds, declines in which have been implicated in the falling numbers of species such as Song Thrush [Robinson et al. (2004)].

While less applicable to the many birds of prey that breed in remote areas, this methodology is potentially suitable for species such as Barn Owl and Tawny Owl, which are encountered frequently as road casualties. However, a dramatic decline in ring reporting rates across all species over the past 40 years [Figure 1] has reduced the feasibility of using dead recoveries to calculate survival of even this group. Recent trials with G rings have shown that this trend can be partially reversed by the addition of a web address www.ring.ac, suggesting that a reluctance to send details by post may have been a contributing factor. However; activity patterns of the general public and their perception of the risks of handling dead birds are more difficult to address.

The rise of the re-trap

The lack of recovery data presents a serious knowledge gap when it comes to investigating the drivers of population declines for species such as Kestrel, numbers of which have fallen by over 50% since the mid-1990s in Scotland, www.bto.org/birdtrends/wcrkestr.shtml, so it is important to look for alternative methods of generating survival estimates. One available option is to use data on marked birds that are recaptured by ringers, and this forms the backbone of the Re-trapping Adults for Survival [RAS] scheme, see www.bto.org/ras. The aim of RAS is to mark as many of the adult birds as possible within a population and then attempt to determine whether they are present during the following breeding season. For some species this may involve physically re-trapping full-grown individuals, but re-sightings of birds originally marked as pulli and subsequently recruited to the breeding population serve exactly the same purpose. A variety of colour rings and unconventional marks are currently used to identify birds of prey [Table 2], and the value of wing tags in monitoring the survival rates

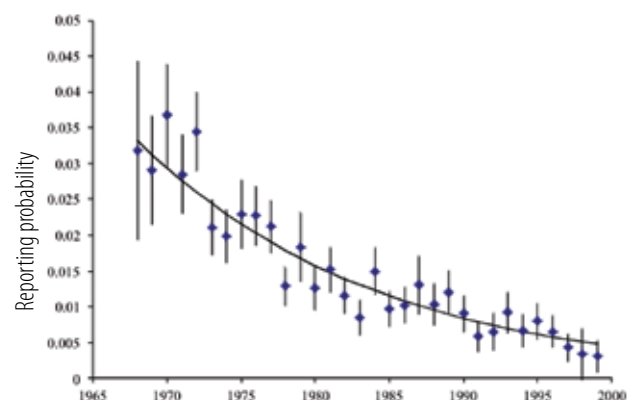
of Red Kite was highlighted in a recent publication by Smart et al. (2010) which identified illegal persecution of the species as the main factor limiting population growth in Scotland. Passive Integrated Transponder [PIT] tags have also been utilised to great effect in studies of Peregrine, enabling the return of breeding individuals to be recorded remotely, see www.natural-research.org, a technique currently also being piloted in projects on Goshawk and Little Owl.

RAS data for individual species are pooled across projects and used to produce national estimates of survival that are updated annually, generating long-term trends for publication in the BirdTrends report, www.bto.org/birdtrends alongside trends in abundance and breeding success. Of the 160 RAS projects currently registered, three relate to birds of prey, two on Tawny Owl [Grapian and Kielder Forest] and one on Barn Owl [Wigtownshire]; while this is an encouraging start, more information is urgently needed to allow the production of reliable estimates for these and other top predators. While your data will contribute to a single annual estimate of survival rates averaged across the whole of Britain, we also aim to produce project-specific estimates, allowing participants to place their results in a national context. We take data security very seriously and we will never release or publish site-specific data without the full collaboration of those responsible for collecting the data. Our policy on data security can be read at www.bto.org/research-data-services/data-services/data-sensitive-species.

The value of nest recording

Ringling and nest recording are intrinsically linked when it comes to establishing the causes of population declines – we can only categorically state that one is driving changes in the abundance of a species if we know that the other is not. For birds of prey, all national data on productivity originates from records submitted to the NRS, www.bto.org/nrs. Unsurprisingly, cavity nesting species that take readily to nest boxes, such as Kestrel, Barn Owl, Tawny Owl and Little Owl, are represented in the greatest numbers [Table 1], with box schemes also providing useful data on incidental species such as Stock Dove and Jackdaw. Submissions of Red Kite, Buzzard,

Figure 1: Decline in ring reporting rates of Song Thrush by the general public 1968-1999

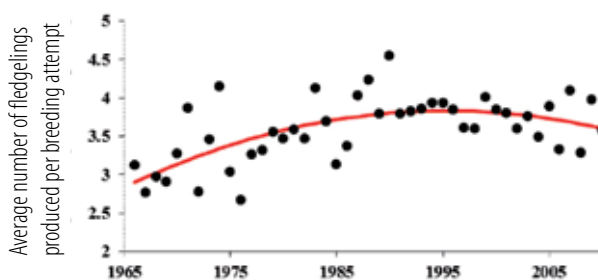


Goshawk, Peregrine and Raven are also increasing rapidly, a welcome development thanks in part to the work of Mark Cubitt, whose database wizardry has enabled ringing and nest recording data to be input simultaneously, doubling the value but not the time spent inputting it. Comparison of the totals, presented in Table 1, suggests that the majority of raptor and owl broods ringed in England are also being nest recorded, although Hen Harrier, Kestrel and Merlin are notable exceptions.

One of the understandable concerns about submitting data to the NRS relates to the confidentiality of the records. All paper and electronic data relating to Schedule 1 species are treated in strictest confidence, the former stored in locked filing cabinets and the latter in password protected databases, both accessible only to specific BTO staff members working in the Demography Unit. If data are requested for scientific analyses requiring resolution to a finer scale than the county / region involved, the nest recorder is contacted in order to obtain their permission prior to fulfilling the request. As with the ringing data, the primary use of this information is to produce trends at a national level – site-specific analyses are not published without full collaboration from the individuals involved in collecting the data.

Details of any nest for which contents can be counted can be submitted to the NRS. Recording the numbers of eggs and chicks present on specified dates, rather than providing summaries across the whole nesting period, allows the calculation of laying dates and daily failure rates as well as clutch and brood sizes, provided that more than one visit is made. Single visit records provide significantly less information, but can still give a measure of clutch sizes and brood sizes at known ages. Nest

Figure 2: Temporal trend in Kestrel breeding success 1966-2010 as derived from Nest Record Scheme data



contents and failure rate data can also be combined to give an overall estimate of the average number of chicks that fledge from each nesting attempt made over the whole season. Long-term productivity trends for seven species of raptor, three owls and Raven are currently published in the BirdTrends report [Table 3] and more will be added as soon as a sufficient run of data has been collated.

In general, the national picture appears to be fairly positive. Four raptor and one owl species have displayed a significant increase in the average number of chicks fledged since the mid-1960s [Table 3], ranging in magnitude from 0.5 fledglings [Buzzard, Kestrel, Merlin, Tawny Owl] to 1.0 fledglings [Sparrowhawk] per nest, although it should be noted that the mid-1990s saw a down-turn in Kestrel breeding success that appears to be continuing [Figure 2]. While it is tempting to relate this to the decline in Kestrel numbers recorded by the BTO / JNCC / RSPB Breeding Bird Survey over the same period, the decrease in abundance is most pronounced in Scotland while the majority of NRS data originates in England [Table 1]. This situation highlights the need for good spatial coverage of common raptors, as well as the scarcer species. Increases in productivity demonstrated by the majority of species appear to be driven by falling failure rates at the egg stage, possibly related to the banning of organochlorine pesticides, although changes in the level of persecution, habitat quality and climate may also be implicated. Sparrowhawk and Merlin also display a positive trend in brood sizes, the mean number of chicks of both species increasing by about 0.3 over the last 45 years.

Table 3: Long-term productivity trends generated from Nest Record Scheme data 1965-2009

	Laying date	Clutch size	Brood size	Egg stage failure	Chick stage failure	Fledglings per breeding attempt
Hen Harrier	0	-	ns	ns	ns	0
Sparrowhawk	0	ns	+	-	ns	+
Buzzard	0	ns	ns	-	ns	+
Kestrel	-	ns	ns	-	ns	+
Merlin	0	ns	+	-	-	+
Hobby	0	0	ns	0	ns	0
Peregrine	0	-	+	ns	ns	ns
Barn Owl	ns	+	ns	-	-	0
Little Owl	0	+	ns	ns	ns	ns
Tawny Owl	ns	ns	ns	-	-	+
Raven	ns	ns	-	ns	ns	ns

'+' signifies significantly positive trends, '-' indicates significantly negative trends. 'ns' signifies no significant trend. '0' indicates lack of sufficient sample size to calculate the parameter

Future priorities for raptor monitoring

Combining data on survival generated by ringing and data on breeding success generated by nest recording has proved a very powerful method of identifying the causes of population declines. The majority of past work has involved passerines, a prime example being that of Siriwardena et al. (1998, 1999 & 2000) who flagged over-winter survival due to food shortage as the main factor responsible for the collapse in populations of some farmland birds and reduced productivity as the causal factor for others. A similar approach is currently being used to investigate the rapid fall in numbers of long-dis-

tance migrant passerines and some resident woodland species. It would be absolutely fantastic if we were able to do the same for birds of prey, producing fully integrated population models that could not only help us to understand past changes, but also to predict the impacts of changes in land use and climate in the future, setting priorities and informing decisions about habitat management. Given the incredible amount of effort already invested in monitoring raptor and owl populations, this is definitely an achievable goal, and by contributing data, past or present, to the national monitoring schemes discussed above, you can help us to move closer to it.

Acknowledgements

None of this monitoring work would be possible without the incredible amount of time and effort invested by ringers and nest recorders, for which we are extremely grateful. The Ringing and Nest Record Schemes have both benefited greatly from the support given under the JNCC / BTO Partnership that the JNCC undertakes on behalf of Natural England, Scottish Natural Heritage, Countryside Council for Wales and the Council for Nature Conservation and the Countryside in Northern Ireland.

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What is the Predatory Bird Monitoring Scheme?



Lee Walker, PBMS,
Centre for Ecology & Hydrology

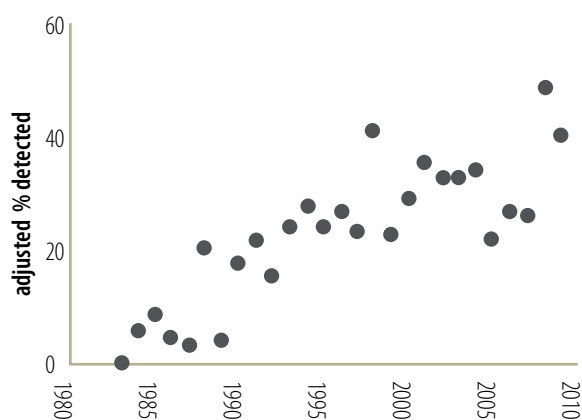
MANY OF you will have heard of the Monks Wood research station in Cambridgeshire and the work of Ian Newton and Derek Radcliffe studying the impact of organochlorine insecticides on predatory bird populations. As part of these studies a monitoring scheme was set up to measure the levels of pollutants that are accumulated in the tissues and eggs of predatory birds. Latterly this evolved into the Predatory Bird Monitoring Scheme [PBMS]. The PBMS is the umbrella project that encompasses the Centre for Ecology & Hydrology's [CEH] contaminant monitoring and surveillance work on avian predators. The Scheme is jointly funded by CEH, Natural England, the Environment Agency, the Campaign for Responsible Pesticide Use [CRPU] and the Royal Society for the Protection of Birds [RSPB]. By monitoring sentinel vertebrate species, the PBMS aims to detect and quantify current and emerging chemical threats to the environment and in particular to vertebrate wildlife. For further in-depth information about the Scheme please refer to the PBMS website at www.pbms.ceh.ac.uk.

During the 1950s and 1960s the impact of DDT / DDE was devastating on the Peregrine and other birds of prey populations. The work undertaken at Monks Wood by Radcliffe and Newton et al. established beyond doubt that DDT / DDE was responsible for egg shell thinning in these species. The thinner shells resulted in the eggs collapsing and the death of the potentially otherwise healthy chicks. The problem was widespread and subsequently caused the population to crash. The first signs of recovery were noted in 1967. Following the banning of DDT the UK Peregrine population has recovered and is currently estimated to be c1400 pairs. [The Peregrine Falcon, Derek Radcliffe, 1980 Chapter 13 – T & AD Poyser].

At the present time organochlorine insecticides, such as DDT, are only accumulated in small amounts by predatory birds and are not thought to present a significant risk; consequently they are no longer a focus of our work. However; the work continues and currently we measure a wide range of other environmental contaminants that are likely to accumulate in the bodies or eggs of birds. These contaminants include toxic and trace metals, and a range of organic compounds known collectively as persistent organic pollutants [POPs] & anticoagulant rodenticides. Secondary exposure of raptors occurs when they eat prey, such as mice, that have consumed the poison. The number of incidents involving the detection of Second Generation Anticoagulant Rodenticides [SGARs] in Barn Owls has risen by 40% since the early 1980's and these changes are being

studied closely by the Scheme [see Barn Owl / SGARs graph]. However; the problem is not only confined to Barn Owls, 60% of Kestrels received into the Scheme test positively for rodenticides.

One example of POPs that is causing concern is the industrial contaminants called Polychlorinated Biphenyls [PCBs]. Although the production of PCBs has been banned in the UK for decades, they still persist in the livers and eggs of raptors such as Sparrowhawk and Merlin. A review of the effect of this contamination was published recently and can be downloaded from the PBMS website.



SGARs detected in Barn Owls

The number of Barn Owls with detectable residues of second generation anticoagulant rodenticides increased, particularly during the 1980s and early 1990s. Most of these birds die of other causes than rodenticide poisoning but the impact of widespread sub-lethal exposure is unknown.

In addition to the year-on-year chemical analysis of the samples received at the laboratory, the PBMS maintains an archive that dates back to the late 1960s. This irreplaceable collection of frozen tissues and egg contents is crucial to the development of new monitoring approaches and enables the PBMS to identify emerging chemical threats to predatory birds and the wider environment. A recent study used the PBMS archive to survey which species accumulated specific brominated flame retardants [BFRs] and tested whether the level of exposure in two species, Sparrowhawks and Peregrines, had changed since the start of their use in the 1970s. This work helped to prompt a European wide monitoring programme for BFRs in the environment. As part of our contribution to the research PBMS supplies Sparrowhawk eggs for analysis.

How can you help?

The success of the research is dependent upon the participation of volunteers and the submission, by them, of both carcasses and eggs, to the laboratory. Raptor Workers spend countless hours monitoring bird of prey

populations and it is likely that they will encounter both dead specimens and failed eggs during their fieldwork. They are therefore ideally placed to contribute to the long-term studies of the PBMS by submitting them to the laboratory for analysis.

Which species are analysed under the Scheme?

We currently analyse Sparrowhawk, Barn Owl, Kestrel and Red Kite livers, and addled eggs collected from Merlin, Golden Eagle, White-tailed Sea Eagle, Gannet and Sparrowhawk nests. These species have been selected because they are especially vulnerable to pesticides, or because their distribution and / or prey-preference makes them suitable for monitoring geographical and temporal trends in pesticide and other chemical usage.

However; all birds received in the laboratory undergo a post-mortem examination following which liver, brain, muscle, kidney, bone and fat tissues, together with a selection of feathers, are archived. This archive gives the PBMS a unique capacity to determine long-term trends in other chemicals which may pose a significant risk to wildlife in the future.

Submitting samples to the laboratory

The majority of the predatory birds studied under the Scheme are protected species and therefore we can only accept addled and deserted eggs from individuals who are licenced to remove them from the wild.

If you find a dead bird that you believe may be of interest to the Scheme, please submit it to the laboratory for examination. Prior to submission the bird should be kept cool and if possible it should be frozen. Please contact the laboratory, leaving your name, address and telephone number. We will send out a box in which you can submit the bird. We will refund the postage costs and, after the analysis has been completed, we will provide you with a copy of our findings.

In the event that you suspect that the bird has been illegally killed, please contact the Police in the first instance. You should obtain the Police Incident Number and request that the matter is brought to the attention of a Wildlife Crime Officer [WCO].

If you find a bird that you suspect may have died of poisoning it is vital that due consideration is given to your own health and safety. Some poisons are extremely toxic and you should avoid contact with the skin. The carcass can be picked up by placing your hand inside a

plastic bag before grasping the bird and turning the bag over the carcass. It is essential that hands are washed thoroughly, immediately after handling the bird.

Storage of samples prior to submission to the laboratory

To keep deterioration to a minimum the eggs should be posted as soon as possible after collection. Although organochlorine residues are not affected by storage per se, other factors, such as dehydration can affect the results. Prior to posting the eggs to the laboratory it is important to keep the eggs cool, ideally stored in a refrigerator. Please do not freeze whole eggs as the expansion of the contents breaks the shell, which spills the contents and adversely affects our ability to accurately assess their dimensions. However; if you are only sending in egg contents, freezing prior to postage is acceptable.

If eggs are not kept cool bacterial growth occurs inside the egg with a subsequent build up of gas, which can lead to an unpleasant explosion. Warming also increases any maggot activity, fungal infection, water loss and general deterioration.

Packing

It is important to pack each egg in a separate small soft plastic bag to ensure that in the event that the shell is broken in transit the contents can still be used for analysis. Each egg should be identified with a label attached to the outside of the bag. The label should include details of the species, date, location found, national grid reference and the name and contact details of the collector. Each egg should then be placed in a larger box which is sufficiently rigid to withstand the rigours of transport. Supermarket



eggs boxes are adequate for the purpose although other boxes such as ice-cream cartons, padded with tissue paper, cotton wool or bubble wrap are also suitable.

The eggs should not be jammed tightly in small containers as they tend to get broken in transit. When large eggs are being submitted in supermarket egg boxes please do not use rubber bands to close the box, as this tends to crush the eggs.

What happens to the birds received at the laboratory?

When the bird arrives, it is assigned a unique reference number before undergoing a post mortem examination. During the examination we record over 100 observations to confirm the species, age and sex of the bird and establish the probable cause of death. These observations are recorded in the post mortem report, a copy of which is forwarded to the person who submitted the bird.

Once the post mortem analysis is complete, samples of liver, kidney, muscle, brain and fat are stored in glass jars in the tissue archive. Recently, we've also started to retain samples of bone and feather in the archive.

A selection of liver samples, spanning a calendar year, is sent to the chemistry laboratories where the concentrations of contaminants are measured. To ensure that there isn't any bias in the monitoring process all of the samples are analysed at the same time. Once the data is received from the chemistry laboratories it is compiled into a scientific report to determine whether the concentrations of the chemicals found are static, increasing or decreasing. A report of the findings is subsequently forwarded to the person who submitted the specimen, informing them of the cause of death and the details of any chemical residues present.

What happens to an egg received at the laboratory?

Staff at the laboratory will acknowledge the receipt of eggs as they arrive, the cost of postage will be refunded in the form of postage stamps and the analytical results will be sent out in due course. Only 1 egg per clutch will be analysed for chemical residues, but the biometric data for the other eggs in the clutch will be recorded and all eggs are archived for possible future analyses.



All of the eggs received at the laboratory are initially measured and weighed. The contents of the eggs are then removed and stored in glass jars in a freezer. The shells are dried and their thickness is calculated. We are interested in calculating the thickness of the eggshell as some organochlorine compounds have been found to cause the eggshell to be thinner than normal and susceptible to crushing by the adults.

How long does it take?

We aim to acknowledge receipt of a sample, and refund postage costs, within 4 weeks and thereafter we aim to have the post mortem data available within 4 months.

The biometric data for eggs is usually sent to the person submitting the sample at the end of the season, around September / October. Unfortunately, because samples have to be submitted to the chemistry laboratories in annual batches the results of the chemical analyses may not be available for over a year. We appreciate that this delay can be frustrating, but there are strong scientific reasons why the samples should be analysed at the same time and we ask for your patience.

In summary

The success of the PBMS is, in a great part, dependent on the collaboration of Raptor Workers who encounter dead specimens in the field and submit them to the laboratory for examination. Added or deserted eggs can be submitted, by licensees, directly to the laboratory using the packaging advice above. If you are submitting a dead bird of prey, please store it somewhere cool, preferably frozen and contact Lee Walker, telephone 01524 5959830. Alternatively you can email him at leew@ceh.ac.uk or use the contact page on the website <http://www.pbms.ceh.ac.uk>

When submitting eggs for inclusion in the Scheme please mark the outside of the parcel "BIOLOGICAL SPECIMEN", in red, and send it by first class post to:

Lee Walker [PBMS]
CEH Lancaster
Lancaster Environment Centre
Library Avenue, Bailrigg
Lancaster, LA1 4AP

A tale of two Ospreys: the Bassenthwaite chicks fledged in 2010

Phil Cheesley & Pete Davies

Lake District Osprey Project



SPRING CAME late to Cumbria in 2010 and in the last weeks of March there were heavy snow showers. The female was first to return and was seen on the nest at Dodd Wood, Bassenthwaite from the 26th March onwards. The male was first seen early morning on the 1st April and visited the female at the nest at 1225 that same day; at this time there was a patch of snow lying in the nest between them. Mating was first recorded at 1515 that same day and eggs were laid on the 18th, 21st and finally on the 24th April. Incubation followed and hatching took place on the 26th and the 29th May. Unfortunately one egg failed to hatch and based on timing we believe that this was the first egg to be laid. This egg is currently with the Centre for Ecology and Hydrology [CEH] awaiting analysis.

By the time ringing took place early one morning in July the juveniles were of a good size, weighing 1510gms and 1400gms respectively. They were given white rings with black lettering one being 11 and the other 12. They have ever since been called, unsurprisingly, Number 11 and Number 12. At this time Roy Dennis also very patiently attached satellite transmitters to the two birds thus allowing the project to follow the juvenile Ospreys beyond the shores of Bassenthwaite Lake.

For the project, information from the trackers is invaluable, not only is it the basis for this article but also adds

to our knowledge of these particular birds. The Lake District Osprey Project is not just for those interested in birds but also contributes to the Lake District tourist industry. In this role it is able to inform and educate people who would not normally look twice at a bird in their garden. Our ninety or so volunteers use stories related to the Osprey nests at Bassenthwaite, throughout the season, to engage the general public and to send them away as informed citizens. The satellite tracker information has the potential to enhance these stories, firstly by detailing the bird's movements around Bassenthwaite Lake, secondly by allowing us to know, rather than to guess, the migration story and by finally providing detailed information about what they do while away in far off lands. This paper intends to look at the latter two elements of this information.

During the Osprey season of 2010 the watchers of the two young birds tended to add to the characterisation of the birds – wise or not. Number 12, the oldest, came to be seen as the strongest of the pair. Whilst being ringed it made determined pecks at the ringer; it seemed to leave the nest more readily etc. Conversely Number 11 seemed to be more placid and laid back taking its time to fledge and to fish. How accurate these characterisations were and how wise it is to do such a thing is now left for the reader to determine. Number 12 fledged on the 17th July with Number 11 following on the 20th.

A month later Number 11 started his migration flight. Soon after noon on Tuesday the 24th August he left Bassenthwaite and by 1300 he was flying near Coniston at a height of 425 metres at a speed of 8 kilometres per hour. By 1400 hours he was over Morecambe Bay and by early evening he was roosting near Nantwich, Cheshire. This first flight of 115 miles was then followed by two short





The routes to Portugal and Spain

Number 11 to Portugal Number 12 to Spain

flights, one of 32 miles to take him to roost just south of Telford and then another of 37 miles to take him to a roost just outside of Shelsey Beauchamp, Worcestershire.

Number 12 started his migration with more hesitation. At midday on the 25th August he was below our lower viewpoint at Dodd Wood. One hour later he was at the southern end of Derwentwater, about as far as he had ever gone before, but he then returned to the nest area.

The following day he tried once more and by midday he had reached the southern end of Bassenthwaite and by 1300 he was just north of Langdale. However; he finally returned once again to roost in a tree in full view of the upper viewpoint at Dodd Wood.

On Friday 27th August he made his third attempt; at midday he was at the southern end of Bassenthwaite, by 1300 he flew over Stickle Pike, flying 514 metres high at a speed of 62kph and by 1400 he was over Morecambe Bay. Early evening saw him flying over the M54 at the start of a bank holiday weekend, to finally roost near Much Wenlock, Shropshire. At last both Ospreys had finally commenced their migration.

It was now Number 11's turn to hesitate. Having made the first flight of 115 miles to Nantwich he took a further two days to cover only 69 miles to Shelsey Beauchamp after which his hesitation tendency was over and sometime after 0700 on the 27th August, while his sibling was considering serious migration from Bassenthwaite, Number 11 took to the air. His route followed the Severn Valley, by 0800 he was over the Bristol Channel and by 1000 he was just north of Plymouth. He then crossed over the English Channel and by early afternoon he was over the Bay of Biscay flying south. Sometime after midnight he landed to roost near Ribadeo on the coast of northern Spain having completed a journey of over 648 miles. He was at that time just over three months old and had been flying for five weeks.

Number 12's migration, on reflection, seemed more measured once past the reluctance to start stage. The



The routes to Mauritania and Senegal

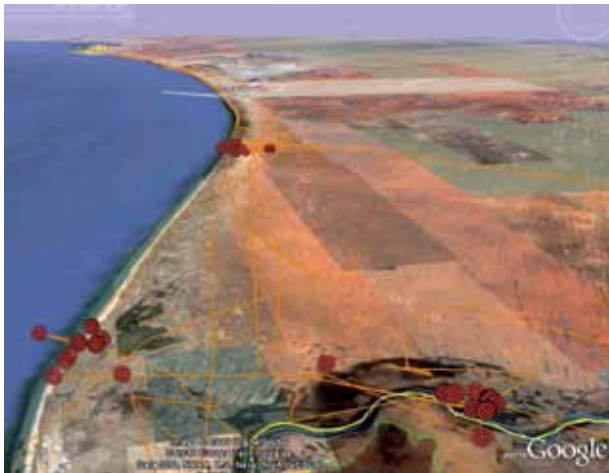
Number 11 on the left Number 12 on the right

night of the 27th for Number 12 was spent in a tree just to the west of Much Wenlock, Shropshire. The next day he made his way south crossing over the M5 near Stroud and the M4 near Chippenham, passing over the counties of Hereford, Gloucestershire, Wiltshire and Dorset. By 1300 he was over St. Aldhelm's Head, near Swanage, before crossing the English Channel. There was to be no long sea crossing for this bird; by 1600 he was over the Cherbourg peninsula on the French coast and then proceeded to a roost near Saint Lo.

The next few days for Number 12 were spent moving through France including a roost at a height of 25metres near La Rochelle. He crossed the Pyrenees south west of Toulouse rising to a height of 1300 metres. That night, in contrast to the previous night's roost, was spent at 1183 metres ASL to the west of Tarazona in Spain. By the 2nd September Number 12 had passed through Spain via Madrid and reached the south coast port of Huelva by early afternoon. The next day he made an eight hour trip across the Gulf of Cadiz reaching the North African coast and entering Morocco just to the west of Casablanca at 1900. Number 12 had reached Africa in a series of 200 to 300 mile hops through Western Europe.

Number 11 was to prove a different kind of bird. Having made one long sea crossing he was looking for another and found it when he arrived at Figueira da Foz in Portugal on the 2nd September. Interestingly both birds would be at sea off the south west coast of the Spanish peninsula on the morning of the 3rd September but experiencing very different journeys.

Number 11 left his roost soon after 1000 on the morning of 2nd September and by following the coast southwards he reached Cascais to the west of Lisbon at 1300. He then went out to sea heading south west towards the Canary Islands. Mid-night came and went with Number 11 averaging a speed of 35 miles per hour flying between 100 and 400 metres above the waves. The satellite signal disappeared during the hours of darkness, however by 0700 the next morning Number 11 had covered 240 miles on the same course, with 120 miles to Lanzarote



October 9th – both birds were approximately 80k apart in Mauritania
 Number 11 [indicated by the red dots at bottom of picture] travelled further south into Senegal but soon after returned northwards and into Mauritania & remained there until his demise in January 2011.

ahead of him. He then changed course to the south east, crossing the Conception Bank and heading towards the mainland. At 1300 he crossed the Moroccan coastline near Tarfaya having completed 813 miles over the sea. There were no indications of a stop and a rest at this point; the journey seemed to continue at the same speed into the Moroccan and Western Saharan desert for another 190 miles. The first indication of an interruption into this remarkable journey was observed at 1800 hours 3rd September. The data for this journey shows that between roosts Number 11 covered a total of 1103.99 miles, including 813.32 miles over the sea and 190.87 miles over desert. He was over the sea for 24 hours; however the total journey time was over 32 hours. As far as we know Ospreys cannot feed at sea as they need somewhere to perch. By any standards this was a remarkable journey.

By early September 2010 we had two of our birds in Africa. Number 12 had made relatively short hops through Western Europe by the land route whilst Number 11 made rather larger hops further west via the sea route. Number 12 entered Morocco in the north and then skirted the western end of the Atlas Mountains and made his way south through the deserts of Morocco and the Western Sahara. Number 11 followed the sea route and came ashore in southern Morocco before following the coastline south to Mauritania. On the 10th September both birds were travelling south between the Nouadhibou Highway and the coastline of northern Mauritania and at this point they were so close in both time and distance that it is impossible to say whether or not they were in sight of each other. It had taken two weeks and approximately 3000 miles to reunite them.

It was at this point that it becomes difficult to ascertain when the migration journey stopped and when an element of exploration for a more settled habitat began. One theory suggests that it is when the birds stopped flying south. If this theory is adopted Number 11 turned northwards on the 12th September and Number 12 on the 25th October. The satellite trackers however, give



Final location of Number 11

AutoRoute Rosso is visible in the top right corner of the picture.

us a sense of activity during the daytime by logging the speed of the bird with '0' indicating a lack of measurable movement. Roosts can be established by analysing the correlation between the lack of movement and the time of day. After the second week of September both birds were showing more '0's during the daytime than they had during the migration flights.

Other patterns also started to emerge at this time and one pattern had been evident during the migration flight. It appeared that our Ospreys liked to work office hours as both birds started to move away from roost sites at about 0800 / 0900 hours in the morning and return to roost at 1800 / 1900 in the evening. There were some obvious exceptions to this on the migration flight. After the first weeks in September roost sites would be established approximately 10 miles from the sea and daytime activity occurred mostly along a shoreline or river bank. During the daytime the data included many phases of '0' activity.

At the end of September Number 11 started what might be termed his period of exploration in the coastal area to the north of Nouakchott, Mauritania where the western edge of the Sahara Desert meets the sea. By ear-



The sad remains of Number 11

The satellite transmitter along with the BTO ring can clearly be seen.

ly October he had moved south into the area north of St Louis, Northern Senegal. From the 4th to the 7th October he explored the Senegal River to the north of Lac de Guiers before once again returning to the St Louis area. Towards the end of October he had another expedition to Dakar where he spent a few days before returning north to the St Louis area. This was as far south as Number 11 was to venture. In November he drifted back to the area north of Nouakchott before returning again to the St Louis region for mid-December and Christmas. The New Year brought another move northwards along the coast towards Nouakchott. On the evening of 2nd January whilst roosting 100 metres from the AutoRoute Rosso, 3 miles inland, the signal from Number 11 failed.

Meanwhile, Number 12 seemed to have a more settled existence. During the remaining weeks of September, through October and into the first week of November Number 12 based himself near the small Mauritanian settlement of Tamxat, 45 miles south of Nouakchott. During this period he spent the days on the shoreline and roosted 8 to 10 miles inland. On 7th November he moved south, first to Dakar, then across the river systems of the Saloum and the Gambia River to the mouth of the Casamance River. By the last week of November Number 12 had returned to the southern edge of Gambia near Kartong.

The story of the two Lake District Ospreys does not quite finish there. Although Number 11's signal effectively stopped at 2100 on the evening of 2nd January 2011, a few weeks later we began receiving intermittent signals from a location 12 miles north of the final roost site.

The signals came from the edge of a settlement near the AutoRoute Rosso. The West African Ornithological Society and the Centre National de Lutte Antiacridi-

enne [CNLA in Nouakchott] helped us locate the position and in March they visited the area and discovered the remains of Number 11 on an outbuilding roof. How Number 11 came to this end remains a mystery. His rings and satellite tracker were subsequently returned to Project Office at Whinlatter.

The Lake District Osprey Project has gained a great deal from the ringing and satellite tagging of these very different young Ospreys. One lesson may be not to jump into simple characterisations too early; the lives of Ospreys seem to be just as complex as our own. Inevitably from these exercises more questions appear than answers; for example from the very local point of view do all our Ospreys leave Bassenthwaite Lake at the same time of day and if so why? We have been shown that Ospreys can do amazing things whilst on migration, both on land and at sea. We know that Ospreys are able to exist in, and deal with, the environment of both the English Lake District and the coastlands of Gambia and Senegal; both of which are now being closely studied. One of the challenges facing researchers in the future may be hinted at by our two birds, i.e. how do they deal with the deserts of Mauritania and the Western Sahara? Both our birds did not just pass through these areas as quickly as possible; they actually roosted in them and returned to those roosts again and again. Studying Ospreys in this kind of terrain will certainly prove challenging.

"It is not the strongest species that survive, nor the most intelligent, but ones most responsive to change". Darwin, Charles. How true this is for the Lake District Ospreys.

All photographs courtesy of the Lake District Osprey Project.

Footnote

Number 12 is still alive and well and providing us with regular satellite data. Since arriving in the Kartong area of Gambia he has rarely strayed far. This predictability made it possible for a group from Cumbria University to track him down and pho-

tograph him on 31st March 2011. He was still in the same area in October 2011. The satellite tag is clearly visible on the back of the bird



Monitoring nests with cameras

Nigel Butcher

Technical Development Officer, RSPB

Abstract

REMOTE CAMERAS have been used by the RSPB for many years to monitor productivity, provisioning and nest attendance amongst other activities. The work began in the 1990s and was based around analogue time-lapse video recorders. They recorded images at a rate of 5 frames per second if the cassette was required to record for a full 24 hours. There were a number of limitations associated with these systems; firstly they were mechanical, not great in the worst of the UK weather, secondly the recording time was limited to the length of a video tape and additionally the power requirements were large. With the arrival of digital recording media [DVRs] around 10 years ago many of the problems associated with remote recording were negated. Dependent upon the application, there is a wide range of equipment available at very reasonable prices, much less than even 5 years ago. A digital system can be made as basic or as complicated as required and a person with limited electrical / electronic knowledge can assemble a budget system for around £200.

N.B.

Before undertaking any form of monitoring using cameras it is imperative that users consider completing an appropriate risk assessment for both the individuals installing and servicing the system and the birds involved. It is also essential that where necessary the appropriate licence is obtained from the Statutory Nature Conservation Organisation.

RSPB system

The RSPB selected the Memocam digital recording [VDR] unit supplied by Video Domain Technologies [www.vdomain.com] for its research work into nest pre-

paration in 2004. The major reasons for this decision were that it used much less power than anything else available and this system also had the flexibility that enabled it to be configured in a variety of ways. Even so there were many limitations with the system at that time; not least being that the capacity of memory cards was 128Mb.

Power supply has always been a major concern in wildlife studies requiring round the clock monitoring. 12 volt lead acid batteries tend to be used unless access to a mains supply is available. Even though a 12 volt battery is being used it is essential that an inline fuse is always incorporated into the system; although the voltage is low a direct short circuited battery has the potential to do a lot of damage to the system.

The original DVR unit used approximately 300mAmps without a camera and infra-red light. Using simple maths; if operated for the full 24 hours the system consumed a not inconsiderable 7.2 amp-hours per day. To compensate a most basic 240 TV line resolution 'Maplin' black and white CCD camera was used with a minimal power requirement of 15mAmps. The lens was then surrounded by an array of infrared [IR] LEDs that, whilst invisible to the human eye, provided night time viewing. Initially external triggering methods, using an array of sensors, were used to limit the 'on time' during periods of inactivity. By reducing image capture during these periods of inactivity power usage is curtailed and the effective lifespan of the battery is increased significantly.

The new, updated model, the Memocam COP, can operate with 4GB mini SD cards, more than 31times larger than the original 128 megabytes. Daily power consumption has also been reduced with the recorder and camera only taking 100mA, giving a daily draw of 2.4Ah; consequently the original external timing triggers are now redundant. This allows the camera to be switched on at all times and ensures that the unit response time is at its maximum of 0.1 of a second.

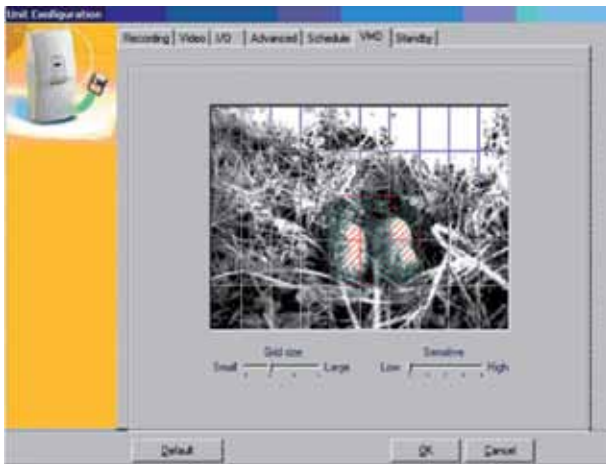
'Windows' based software is provided with the Memocam COP unit and this enables users to tailor the management of their unit to the specific requirements of



Hen Harrier taken using Memocam and 240 line black / white camera



Image taken whilst monitoring diversionary feeding, using Memocam and a 450 line black / white bullet camera.



Screenshot of Memocam software showing the configuration for a nest at egg stage

the species / site being monitored. No two situations are identical and the correct set up of recorder and camera lens will allow users to get perfect results every time. Video motion detection [VMD], put simply is a change of pixels within a defined area of the picture, that initiates image capture. Whilst using VMD nests with chicks and nests with eggs are treated differently by the system. When an adult is incubating the active area should be set exactly where the eggs are positioned, if possible. An example of this set up is shown below where the active zone is indicated by the shaded squares, highlighted in red.

Once the eggs have hatched it is worthwhile changing the 'active area,' being monitored by the system, to ensure that the triggering barrier or wall surrounds the entire nest and not just the eggs. As a result of changing the monitoring profile the movement of chicks will not activate the unit; however adults returning to feed the young or any other unwanted visitor will trigger image capture. Once the active zone has been set the inactivity interval can then be identified, e.g. 5 seconds. In this way the program can be set so that unnecessary protracted recording is not undertaken. There are various levels of VMD sensitivity and it is generally set to the minimum level unless the camera is installed some distance away from the nest.

The software offers a number of image compression rates; at the lowest resolution each picture uses approximately 10Kb of memory. For the majority of monitoring undertaken by Raptor Workers the preferred configuration is 5 still images taken per activation, i.e. each event would use 50Kb of memory from the 4 GB available. At this resolution the system is capable of recording 80,000 events before the memory card is full. Another, significant, benefit of this system is that the images can be automatically overwritten if the card becomes full. Therefore storage is endless if the system is being used to only look at nest predation, as there is very limited activity at a nest if it fails. However; it must be remembered that partial predation events could result in the risk of valuable images being overwritten.

If the cameras are being used to facilitate a general provisioning / prey study then a weekly battery / card

change will suffice. For studies that require daytime only recording the Memocam can also be 'put to sleep' / 'woken up' via the software to increase autonomy further. To achieve this it will be necessary to use the outputs, numbered 9 and 10, on the back of the Memocam COP unit, to supply power to the camera. Power is only then provided to the camera whilst the recording unit is 'awake' and in the 'sleep' mode power draw down is negligible.

Most of the connections are simple to complete but do require a screwdriver and the relevant interconnecting leads. For the more complex set ups a soldering iron is desirable. A gas powered soldering iron will be required if the installation is made, or repairs are required, on site. Once the couplings have been made it is essential to cover all of the live connections with a waterproof seal; a heat shrink sleeve is the best option for this purpose. Finally an inline fuse should be installed to protect both the individuals operating the system and the equipment, a 1 amp is adequate for this purpose.

Selecting a camera

Modern commercial nest box cameras now use white light that is switched on / off by a sensor so that colour cameras can be used with limited ambient light. This is fine within a box environment but birds must become habituated to the changes between night and day monitoring. True day / night cameras are now available and these switch between colour and black & white imaging when the light level falls.

Bullet cameras are a good option as they are small, shaped like a lipstick, and provide a high resolution image, in excess of 500TV lines. Disturbed behaviour of raptors has been observed when sunlight falls on the glass of the lens. Therefore where space for mounting a camera is limited it is recommended that a pinhole lens is used. RF Concepts [www.rfconcepts.co.uk] offer a good range of cameras at competitive prices. Before purchasing a camera it is important to consider the weatherproof rating [IP] of the model; a minimum rating of IP67 will be required when working on a non - box nesting species. A camera with this IP rating ensures that the camera will be totally protected against dust and immersion in water up to a metre in depth. The website also has a lens calculator, which is useful if you have to mount a camera some distance from the nest, and will help in the selection of the correct lens for the purpose. Generally if the camera is installed within 1 metre of the nest the standard 3.6mm lens is adequate.

Care is required when consideration is being given to purchasing cameras with infra-red [IR] capability because although the light emitted is invisible the LEDs within them often glow hot. This can influence predation and attract unwanted interest to the nest. All of the 840nm and some of the 930nm wavelength infra-red models glow hot; therefore it is essential to check for heat emissions in a darkened room before they are deployed.

Digital video recorders

Memocam is not the cheapest option on the market and if resources are limited it may be necessary to consider a less expensive alternative and the selection of another type of recording device. However; there is a trade-off which needs to be considered; DVRs are power hungry. Indeed some DVRs use up to 10 times the level of power required by the Memocam unit; therefore they will require larger batteries or more regular visits to change them. RF Concepts offer a good range of DVRs, if this option is pursued.

Whichever recording system is chosen it is essential to use video motion detection to control the unit and limit the amount of data collected; the majority of modern recorders have this facility built into the system. If video motion detection is not enabled and image recording is undertaken at a full 25 frames per second, analysis of the results will require a considerable amount of time, even if the 'fast forward' option is used.

What else needs to be considered?

Camouflage

Most of the cameras used for nest monitoring are supplied in a black housing. Before deployment it is always a good idea to visit the site to collect vegetation or soil that can be used to camouflage the lens and camera body. Using natural materials in this way will also help to change the uniform shape of the cylindrical housing. Cameras can also be housed in blocks of polystyrene that have been cut and painted to resemble rocks or tree branches. Polystyrene 'rocks' are very light and should be secured to the ground with long tent pegs painted to blend with the 'rock'.

Self-amalgamating tape and 'Scapa' tape are very good for protecting the connections and the latter has the advantage of being available in green. It is not advisable to use gaffer tape to insulate the connectors, as this will leave an awful sticky mess and make things difficult when the kit is reconfigured and redeployed in another year. Many of the bullet cameras are supplied with a ball and socket bracket that can easily be screwed into a tree or attached to a thin pole when used for monitoring ground nesters.

Monitor

To ensure that the camera is accurately sited and actually recording the required images it is essential to check the system during deployment and this is best achieved by wiring the camera into a monitor or display. A camcorder or digital camera with an AV input can be used; however if one is not available it will be necessary to purchase a small portable TV / monitor and these can be obtained from a number of suppliers, including CPC [www.cpc.farnell.com] or Maplin [www.maplin.co.uk].

Second memory card

The memory card should be changed at the same time that the battery is changed. Doing both at the same time will reduce the time spent in the vicinity of the nest and minimise disturbance. Once the data has been transferred to either a PC or external hard drive the card can be cleared for use on the next visit.

Weatherproof box

If the system is to be used in a wet environment it is advisable to mount your recorder in a waterproof box. For this purpose the box must meet the specification of an 'IP67 rated enclosure'.

Camera extension cable

The recorder and battery should be stored in a heavy duty plastic rubble sack hidden within a bush or below a tree. When raptors are being monitored c50 metres of signal and power cable should be used to ensure that the mounted camera is the only piece of equipment that is close to the nest. With this length of cable there will be no loss of picture quality or significant power drop and the bird will not be flushed during the weekly visit to change the memory card and battery.

Batteries

To power the system 12V 22Ah NuMax batteries are ideal. They are available from a number of outlets including ManBat [www.manbat.co.uk]. On the negative side these weigh c8 kgs, not insignificant if access to the site involves a long walk; on the positive side it will operate for almost a week if the system uses 3Ah per day. To facilitate the battery change 2 batteries will be required for 1 system; however for 2 systems 3 batteries will suffice.

Charger

A two-state battery charger that switches to trickle charge once the battery reaches near capacity is preferable.

Reference

Bolton, Butcher, Sharpe, Stevens & Fisher (2007) 'Remote monitoring of nests using digital camera technology'. *Journal of Field Ornithology* 78(2): 213 – 220.

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National Merlin Survey 2008

Steven Ewing and Mark Eaton

Royal Society for the Protection of Birds

MERLIN ARE the smallest birds of prey occupying habitat on the upland moorland and in afforested areas where they use the old nests of other species. Historically; the species underwent a slow decline in the first half of the 20th Century, and this decline intensified in the 1950s and 1960s due to the use of organochlorine pesticides. This decline continued, albeit more slowly, in the 1970s and early 1980s. The RSPB carried out a partial breeding survey of the species in 1983 and 1984, estimating the number of breeding pairs to be 550-650.

In 1993 and 1994 a full survey was undertaken which resulted in a population estimate of c1300 breeding pairs. Although this increase may be due, in part, to differences in coverage, local studies also indicated an actual increase in numbers. Following publication of the data from this survey the species was moved from the Red list to Amber, where it has remained ever since.

In 2008 the RSPB carried out the third national Merlin survey with invaluable assistance from NERF and members of raptor and upland bird study groups in northern England. The results of this survey will be published at the end of 2011 in the BTO's journal, 'Bird Study'. The headline finding was that population estimates for Britain and England were slightly lower than had been recorded in the previous national survey undertaken in 1993-94. There was also evidence of fairly marked regional declines in northern England, including Northumbria, the North York Moors and the South Pennine Moors.

The population estimates for Merlin in the UK and the four constituent countries were calculated by combining the counts of pairs observed in 10 km squares monitored by Raptor Study Groups [RSGs] with estimates from other randomly selected 10 km squares. During the survey, fieldworkers completed 211 'RSG squares' and 82 random squares [one quarter of the species' UK distribution], of which 78 RSG and 10 random squares were in England. A total of 353 breeding pairs were documented, with the majority of the 117 pairs [86%] in England being found in the RSG squares.

To calculate the population sizes we used standard modelling techniques and adopted a Confidence Interval [CI] of 95% throughout the survey.

Accordingly the population estimate for Merlin in the UK was 1,162 breeding pairs [CI: 891 – 1,462], and 1,128 pairs in Britain [CI: 849 - 1427]. The estimate for Scotland was 733 pairs; [CI: 512 - 979] and England, with 301 pairs [CI: 496 - 515], held the bulk of the UK Merlin population.

Compared with the previous Merlin survey in 1993 – 1994, the estimate from 2008 for Britain was 13% lower and that for England was 25% lower; however these changes are not statistically significant. More interest-



ingly, marked population declines were noted in several regions of northern England with complete survey coverage during both 1993-94 and 2008. These changes included a 69% decline in Northumbria and declines of 47% on the North York Moors and the South Pennine Moors. The latter two areas are Special Protection Areas [SPAs] with Merlin as a qualifying feature, and current numbers of breeding Merlin are well below those present at the time of designation.

The drivers of regional Merlin population change in England are poorly understood. Potential factors contributing to the declines may include habitat deterioration, perhaps brought about by grouse moor or forestry management, changes in prey availability during the breeding season or winter, and climate change. However; further research is needed to establish exactly where the problem lies.

To complement and build on population changes identified by the national survey, we would encourage members of NERF to publish the updated population trends of their regional surveys, which would provide an assessment of long-term patterns underpinning population change. Furthermore, we suggest that an integrated and comprehensive analysis of combined regional datasets might be the best way to investigate key demographic parameters and ecological drivers underlying population change.

Once again, we would like to take this opportunity to thank NERF and members of the associated raptor and upland bird study groups for their important contribution to the 2008 national Merlin survey.

Conservation actions for the Lesser Kestrel *Falco naumanni* in the Alta Murgia National Park

Pino Giglio & Marco Gustin [Translated by Gabriele Zambelli]

LIPU: Lega Italiana Protezione Uccelli, [Italian League for Bird Protection]

LESSER KESTREL [*Falco naumanni*] is a species of concern in Italy that requires intervention by conservationists if the population decline is to be firstly halted, and then stabilised before it can enter the recovery phase.

There are a number of causes of this decline, including the renovation of historic buildings and measures to limit access by feral pigeons [*Columba livia* var. *domestica*] on the Lesser Kestrel's breeding grounds also have strong negative impacts on some Lesser Kestrel populations by reducing nest site availability. These measures have the effect of lowering reproductive success. With the loss of natural nesting sites having such a significant negative impact it was clear that for the species to prosper an alternative nesting solution would be required.

In order to test the efficacy of nest boxes as a means to mitigate for loss of natural nesting sites, the Italian League for Bird Protection [LIPU] has engaged in a project to supplement natural nesting sites, e.g. those located in cavities within buildings or under roofs, with artificial sites constructed in the form of wooden nest boxes affixed to roof top terraces.

The project to reverse the downward population trend is being undertaken by LIPU in the territory of the Alta Murgia National Park in southern Italy. The main aims of the project are achieved by concentrating on the following five primary activities:

- i) appulo-lucana population monitoring
- ii) rescue of pulli that fall from nests
- iii) monitoring of natural and artificial nests sites
- iv) ringing pulli at the nest
- v) information and awareness campaign for the local population

This activity began in 2007 with the project "Una casa per il Grillaio" [A home for the Lesser Kestrel] funded by the Nando Peretti Foundation that made it possible to launch several information and awareness campaigns. Funding also provided for the installation of 200 artificial wooden nests.

At the commencement of the project the nest boxes were placed on the flat roofs of private and public buildings, both in historic town centres and in modern neighbourhoods, in the vicinity of areas where Lesser Kestrels were already known to nest. The boxes, each weighing 10 kgs, were constructed of fir and pine wood. The base is 45 cm x 55 cm, they are 15 cm in height at the front and 25 cm at the rear. The roof protrudes by 5 cm to guide any rainfall away from the box base. On one side of the box there is 9 x 9 cm panel that can be opened in order to view the contents. Each box has a single 6 cm diameter entrance hole located at the front which allows Lesser Kestrels access to the nest boxes whilst excluding feral pigeons and other larger birds.

To provide a soft substrate, onto which the eggs can be laid and to prevent the eggs from rolling unnecessarily, approximately 1 cm of soil is added to the bottom of each box. The nest boxes are then secured directly onto the floor of the selected roof-top terraces.

This initial project, "Una casa per il Grillaio" [A home



An active nest in a natural cavity



Artificial nest box.



Lesser Kestrel chicks

for the Lesser Kestrel], was extremely successful and in 2009 a second project entitled “Il Parco per il Grillaio” [The Park for Lesser Kestrels] commenced with the support of the Alta Murgia National Park Authority.

The six primary activities undertaken within the project are:

i) Census of the appulo-lucana population

The census, conducted in many of the Municipalities of the appulo-lucana murge region; five of which are within the Alta Murgia National Park [Altamura, Gravina in Puglia, Santeramo in Colle, Cassano Murge and Minervino Murge] was carried out in the three years 2009, 2010 and 2011. These bird counts were all undertaken during the pre-breeding season on a day between the last week of April and the first week of May.

Each year the census was carried out by c60 volunteers from LIPU and other conservation groups in the area including Altura [Association for the Conservation of Raptors and their environment], De Rerum Natura, Terre del Mediterraneo, WWF Gioia del Colle – Acquaviva – Santeramo, Circolo Legambiente “La Gravinella” di Santeramo in Colle. The annual censuses could not be undertaken without the aid of these organisations who freely donate their time to protect the birds.

Lesser Kestrels return to roost, generally in conifer trees, at sunset and the volunteers record the number of individuals at each site. Using these discrete bird counts the project leaders are able to plot the population trends over a number of years and formulate specific conservation plans for each area.

The appulo-lucana area currently holds a population of c. 11,000 Lesser Kestrels in the pre-breeding season and 60% of the population is concentrated in the Alta Murgia National Park.

In 2010 the five Municipalities of the Alta Murgia National Park registered a 12.1% increase in the number of the individuals noted at roost sites when compared to 2009. Comparisons between the 2010 survey and that carried out in 2011 indicated that, with an increase of only 1.7%, the population remained stable.

ii) Distribution of an information leaflet

The awareness campaign “Salva anche tu il Grillaio” [Help us save Lesser Kestrels] was launched with the aid of an information leaflet. This leaflet is used by the project staff to raise awareness of the conservation campaign across the region and gives local residents advice and guidance should they find an individual bird in distress.

iii) Rescue of pulli that have fallen from nests

In the event that a member of the public finds a fledgling that has fallen from a nest in one of the Municipalities of Gravina in Puglia and Altamura a rescue operation is implemented immediately. The young birds are rescued by the volunteers from the LIPU Office in Gravina in coordination with Municipality Police and CFS – CTA [Territorial Coordination for the Environment] “Alta Murgia”. Once rescued the chicks are taken to the Centro Recupero Animali Selvatici [CRAS] [Wildlife Rehabilitation Centre] which is housed at the Regional Wildlife Observatory in the city of Bitetto, in the province of Bari, where they remain until they are strong enough to be returned to the wild.

Approximately 300 Lesser Kestrels were handed to the regional Wildlife Rehabilitation Centre in 2011 bringing the total to almost 4,000 in the last four years.

iv) Census and roost mapping

Lesser Kestrel roosts are protected by legislation and Regulation No 24, dated 28 September 2005, of the Region of Puglia, prohibits the cutting of trees that constitute a roost for the species. In the majority of cases the roosting trees are located in the heart of the urban centres; including those in the gardens of private detached houses, public parks and schools. Trees in these locations are particularly vulnerable to both felling and pruning, activities which can completely destroy the roosting potential for the species.

Every known roost has been mapped by LIPU staff and entered onto a centralised database. To ensure compliance with the Regulation across the region project staff have shared the database with all of the local public and private authorities who have responsibility for activities which could impact on the management of Lesser Kestrel habitat or the protection and conservation of the species.

v) Public access via a nest webcam

In 2010 and 2011 a webcam was installed inside an artificial nest box located in the Municipality of Gravina in Puglia and access to the images from the site was made available to the general public via the Alta Murgia National Park’s official website.

Access to the website was available throughout the breeding season transmitting fascinating images, directly into the homes of the general public, of the birds during courtship, mating, egg laying, brooding, the chicks being fed and finally the young fledging from the nest. The use of the webcam has been a great success and has made an excellent contribution to raising the profile of this vulnerable bird of prey.

vi) Monitoring of natural and artificial nest boxes & ringing pulli at the nest

Together with promoting the conservation of Lesser Kestrels and undertaking the annual census it is essential that the team evaluates the efficacy of the artificial nest sites in mitigating against the loss of natural nest sites across the region. This evaluation incorporates the analysis of box occupation and the productivity rates per breeding pair occupying the artificial sites.

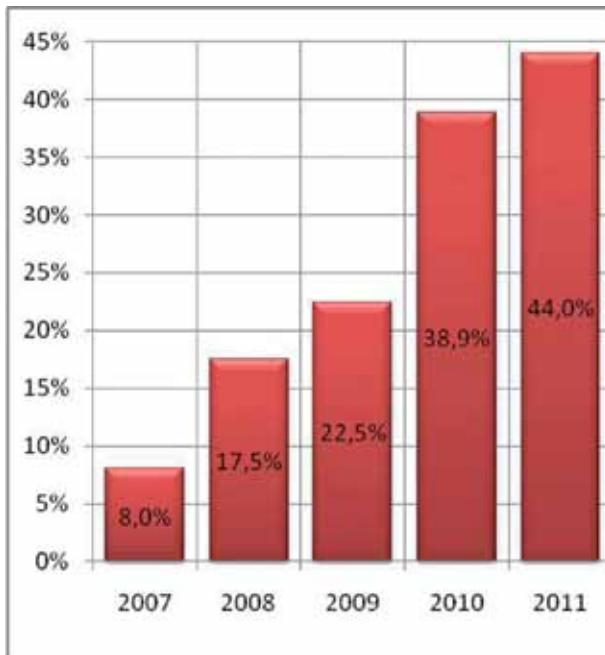


Table 1 - Occupation rate variation 2007 - 2011

The provision of c200 nest boxes in 2007 represented the first large scale direct conservation intervention for this species. Since that time periodic monitoring has confirmed an increase in the percentage of boxes being occupied during the breeding season.

In 2010 38.9% [70] of the 180 nest boxes available were occupied. The nest box occupancy rate increased by 5.1% in 2011 to 44% [93] of the 209 nest boxes available.

The increase in occupation of the artificial nest boxes over the five year project to date is clearly demonstrated in Table 1.

The productivity rate of birds using the nest box scheme is presented in Table 2. From the data it can be seen that the productivity has increased over the five-year project from 0.69 per pair in 2007 by 261% to 2.49 per pair in 2011.

The use of artificial nest boxes also allows LIPU project staff easier access during the breeding season enabling them to ring the pulli for scientific purposes. The ringing data is used by the researchers to gather information in respect of age, longevity and colony faithfulness in addition to plotting migration patterns.

At the end of the 2011 breeding season 396 Lesser Kestrels were rung by project staff, bringing the total number of pulli ringed since the project started in 2007 to 1589.

Glossary and notes

- Pino Giglio: LIPU local coordinator for the project “Una casa per il Grilliao” [A home for the Lesser Kestrel]
- Marco Gustin: Conservation Officer at LIPU
- Murgia [plural: murge] <https://secure.wikipedia/en/wiki/Murgia>
- ‘appulo-lucano’: ‘Lucania’ was an ancient district of southern Italy which is now the region of Basilicata, whilst the region of Puglia comes from the ancient name ‘Apulia’. Therefore areas that fall between

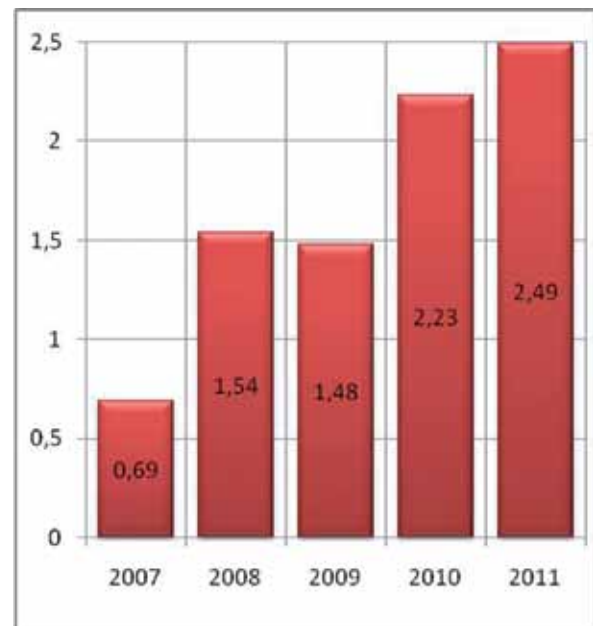


Table 2 - Variation in the productivity rates 2007 – 2011

these two regions are known as appulo-lucano

- CFS: Corpo Forestale dello Stato [Forestry Corps]
- CRAS: Centro Recupero Animali Selvatici [Wildlife Rehabilitation Centre]

Editor’s note

Lesser Kestrels were first described by the German botanist and ornithologist Johann Gottlieb Fleischer [1797 – 1838] in 1818. Fleischer named the species *Falco naumanni* in honour of his friend, ornithologist Johann Andreas Naumann.

The European population went into a very serious decline from 1950 onwards and from that date they have experienced a c46% decline in each subsequent decade. Overall this represents a c95% reduction in the European population since 1950. Until recently the IUCN classified the species as ‘vulnerable’, however recent research indicates that the population appears to have stabilised and may be increasing slightly. Consequently the IUCN classification has been downgraded to ‘least concern’.

The species was first recorded in Britain in 1877 when a bird was observed in Kent. At the present time Lesser Kestrels are considered to be ‘accidental visitors’ in Britain [Dudley et al. (2006) Checklist of British Birds, Ibis 148: 523 – 563 & updates]. The species is very rare in the UK and there have been only 7 sightings recorded in Britain between 1950 and 2007; i.e. in 1968, 1974, 1979, 1987, 1989, 1992 and 2002.

Three records have been accepted by the British Birds Rarities Committee [BBRC] for the NERF region; those sightings were in East Yorkshire during 1909, and then again in both North and West Yorkshire during 1979. Sightings of Lesser Kestrels should be reported to the BBRC via their website on www.bbrc.org.uk

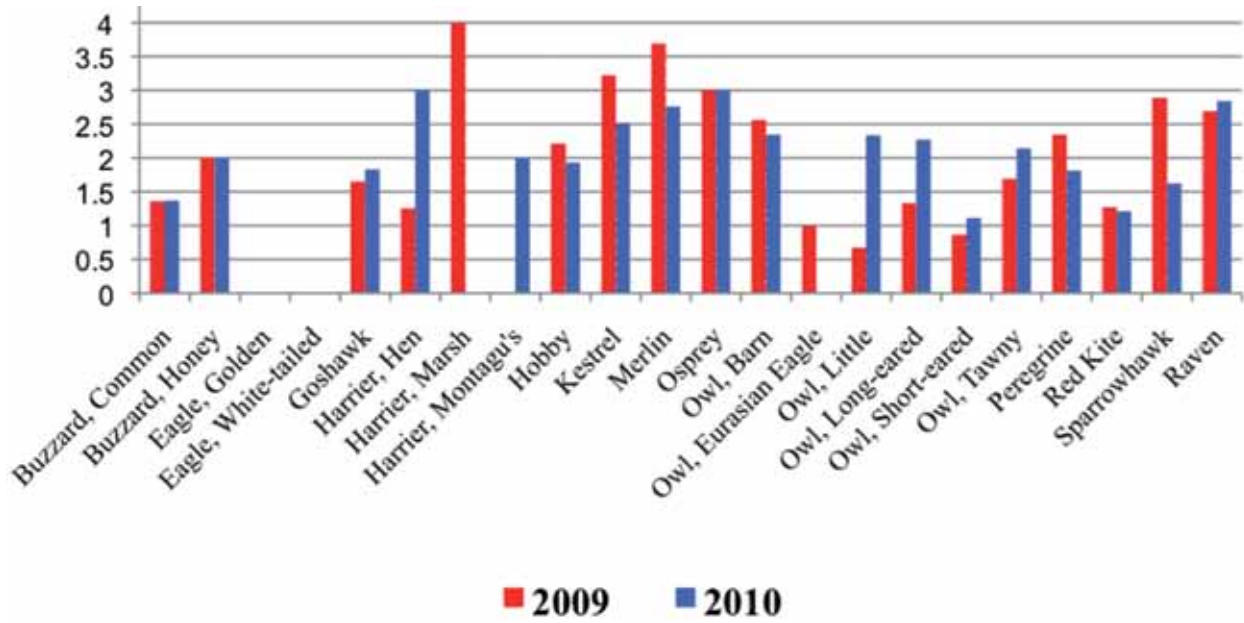
Appendix

I. Combined NERF data

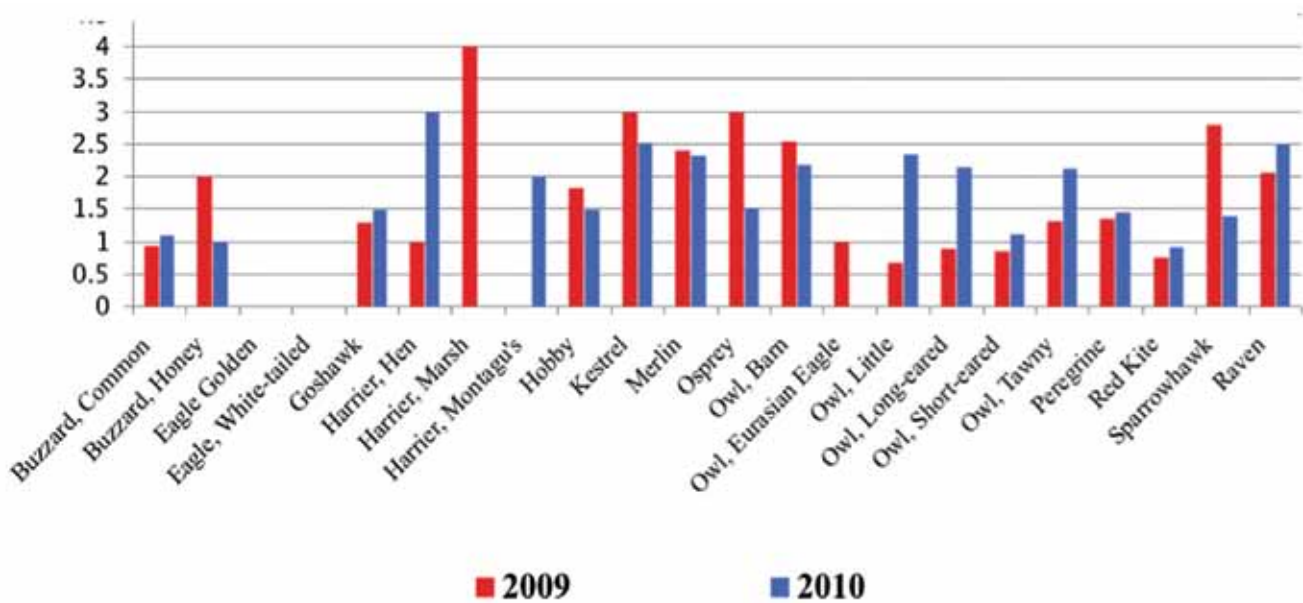
Species	Home ranges checked	Home ranges occupied (pairs)	Homes ranges occupied (singles)	Territorial Pairs monitored	Pairs failing early / non breeding	Pairs laying eggs	Pairs hatching eggs	Pairs fledging young	Number fledged	Young fledged per pair laying	Young fledged per territorial pair monitored
Buzzard, Common	251	243	8	170	3	136(+)	134(+)	131(+)	187(+)	1.37	1.10
Buzzard, Honey	3	2	0	2	1	1	1	1	2	2.00	1.00
Buzzard, Rough-legged	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Eagle, Golden	1	0	0	0	0	0	0	0	0	0.00	0.00
Eagle, White-tailed	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Goshawk	94	56	1	49	9	40	35	34	73	1.83	1.49
Harrier, Hen	23	1	0	1	0	1	1	1	3	3.00	3.00
Harrier, Marsh	1	0	1	0	0	0	0	0	0	0.00	0.00
Harrier, Montagu's	2	1	0	1	0	1	1	1	2	2.00	2.00
Hobby	70	55	13	52	5	40(+)	32(+)	32(+)	77(+)	1.93	1.48
Kestrel	78	55	0	52	1	52	47(+)	46(+)	131(+)	2.52	2.52
Merlin	222	101	10	94	15	79	71	67	218(+)	2.76	2.32
Osprey	2	2	0	2	1	1	1	1	3	3.00	1.50
Owl, Barn	319	126	4	123	8	115	109	103	269(+)	2.34	2.19
Owl, Eurasian Eagle	0	NR	NR	0	NR	NR	NR	NR	NR	NR	NR
Owl, Little	80	34	38	12	2	12(+)	12(+)	12(+)	28(+)	2.33	2.33
Owl, Long-eared	73	42	3	39	2	37	35	35	84(+)	2.27	2.15
Owl, Short-eared	27	9	0	9	0	9	6	6	10(+)	1.11	1.11
Owl, Tawny	459	233	22	194	2	193	178	178	414(+)	2.14	2.13
Peregrine	132	88	3	87	18	69	59	56	125(+)	1.81	1.44
Red Kite	60	56	0	56	14	42	28	26	51	1.21	0.91
Sparrowhawk	96	54	33	34	5	29	23	23	47(+)	1.62	1.38
Raven	111	85	0	49	6	43	40	39	122(+)	2.84	2.49
Totals	2104	1243	136	1026	92	900(+)	813(+)	792(+)	1846(+)		

II. Combined productivity graphs

a) Young fledged per pair laying 2009 v. 2010



b) Young fledged per territorial pair monitored 2009 v. 2010



III. Ring recoveries 2010

Group	Species	Ring No.	Date ringed	Location	Date recovered	Location	Age (days)	Distance from ringing site	Direction from ringing site	Comment
SPRSG	Owl, Barn	GC51861	29 06 09	Cheshire	23 02 10	Derbyshire	239	47 k	E	
YDUBSG	Owl, Eagle	5198693	17 05 09	Lancashire	10 02 10	Lancashire	269	8 k	E	Dead, not fresh
PDRSG	Owl, L-eared	GN04388	30 05 07	South Yorks	12 09 10	Agden, South Yorks	865	30 k	S E	Re-caught
PDRSG	Owl, S-eared	GC98439	30 05 10	Derbyshire	15 08 10	South Yorks	78	16 k	N E	Freshly dead
NRG	Owl, Tawny	GC 26471	06 05 08	Northumberland	08 05 10	Northumberland	734	7 k	N E	Re-caught
NRG	Owl, Tawny	GC26110	15 06 06	Northumberland	06 05 10	Northumberland	1425	13 k	E	Re-caught
NRG	Owl, Tawny	GC93074	07 05 10	Northumberland	20 11 10	Northumberland	198	37 k	S	Found dead
SPRSG	Peregrine	GN13280	20 05 09	Derbyshire	13 05 10	Derbyshire	358	5 k	E	
NRG	Peregrine	GC73396	09 06 10	Northumberland	16 11 10	Longtown, Cumbria	217	31 k	W	Road casualty
NRG	Peregrine	GF51673	08 06 95	Northumberland	22 04 10	East Lothian	5433	100 k	N E	PIT Tag read
CRSG	Peregrine	GC29056	01 06 06	West Yorks	26 05 10	Lincolnshire	1455	126 k	SE	Colour ring read
CRSG	Peregrine	GC47806	06 06 07	West Yorks	12 10 10	Isle of Man	1224	191 k	WNW	Dead, not fresh
CRSG	Peregrine	GC29088	31 05 07	Lancashire	19 07 10	Lancashire	1145	14 k	SW	Dead, not fresh
MRG	Peregrine	GC47828	29 05 08	Gt. Manchester	05 10 10	Cheshire	859	31 k	SSW	Road casualty
PDRSG	Sparrowhawk	EG41820	02 07 01	West Yorks	01 02 10	Gainsborough, Lincs	3136	59 k	S E	Freshly dead
PDRSG	Sparrowhawk	DD47558	05 07 09	South Yorks	07 02 10	Hampshire	217	269 k	S	Found shot
PDRSG	Sparrowhawk	DD47858	01 07 09	Derbyshire	25 03 10	Mobberley, Cheshire	267	34 k	S	Collided with window
PDRSG	Sparrowhawk	EL61738	15 07 07	South Yorks	23 01 10	South Yorks	923	19 k	SE	Collided with window

IV. List of acronyms

ACPO	Association of Chief Police Officers	NYMRSG	Abbreviated acronym used in tables for NYMUB(M)SG
ASL	above sea level	NYMUB(M)SG	North York Moors Upland Bird (Merlin) Study Group
BMC	British Mountaineering Council	PBMS	Predatory Bird Monitoring Scheme
BTO	British Trust for Ornithology	PDRMG	Peak District Raptor Monitoring Group
BBRC	British Birds Rarities Committee	PIT [Tag]	Passive Integrated Transponder
CCTV	Closed Circuit Television	RAS	Re-trapping Adults for Survival
CEH	Centre for Ecology & Hydrology	RBBP	Rare Breeding Birds Panel
CI	Confidence Interval	RSG	Raptor Study Group
CRSG	Calderdale Raptor Study Group	RSPB	Royal Society for the Protection of Birds
DEFRA	Department of the Environment, Farming and Rural Affairs	SEO	Short-eared Owl
DUBSG	Durham Upland Bird Study Group	SNH	Scottish Natural Heritage
EO	Eagle Owl	SPA	Special Protected Area, under EC Wild Birds Directive [79/409/EEC commonly referred to as The Birds Directive]
EBCC	European Bird Census Council	SPRSG	South Peak Raptor Study Group
FoRK	Friends of Red Kites	SSSI	Site of Special Scientific Interest
HHRP	Hen Harrier Recovery Project	TO	Tawny Owl
IUCN	International Union for Conservation	UU	United Utilities
JNCC	Joint Nature Conservation Committee	WCA	Wildlife & Countryside Act 1981
LDOP	Lake District Osprey Project	WCO	Wildlife Crime Officer [Police]
LEO	Long-eared Owl	WIIS	Wildlife Incident Investigation Scheme
LIPU	Lega Italiana Protezione Uccelli, Italian League for Bird Protection	WLCA	Wildlife & Countryside Act 1981
MRG	Manchester Raptor Group	WTE	White-tailed Eagle
NE	Natural England	WWII	World War II
NERF	Northern England Raptor Forum	WWF	World Wide Fund for Nature
NGO	Non-Governmental Organisation	YDUBSG	Yorkshire Dales Upland Bird Study Group
NR	Not Recorded [in the NERF Species Tables]	YNU	Yorkshire Naturalists' Union
NRG	Northumbrian Ringing Group		
NRS	Nest Record Scheme		
NWCU	National Wildlife Crime Unit		
NYM	North York Moors		

V. Northern England Raptor Forum contact list

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