The Ecology Consultancy

Briefing

Issue 12

This issue of the Briefing showcases the specialist work of our East Anglia Office

Bittern *Photo: Hugh Clark*

Inside...

Strategic road improvement in Cambridgeshire

Since winter 2012, our East Anglia office has been undertaking a range of ecological surveys as part of a nationally important strategic road improvement scheme, including surveys for wintering and breeding birds, great crested newts and bats.

Earlier this year, the proposed A14 toll road and road improvement scheme, between Cambridge and Huntingdon, was given the green light by the Government in a bid to unlock jobs, housing and growth in the region, as well as providing key relief for a major freight route. The scheme includes the provision of a new dual carriageway to the south of Huntingdon and widening of the existing A14 between Fen Drayton and Fen Ditton.

Blakeney Point
Photo: Dr. Graham Hopkins FRES

Continued over...

Road improvement continued...

The scale of the project has necessitated the co-ordination of a complex programme of surveys at the appropriate time of year. In spring, pond surveys were undertaken for great crested newts and a population of at least 75 individuals was found in one small cluster of ponds!

Corncrake *Photo: Hugh Clark*

A combination of survey techniques have been used to establish the importance of the area for bats over the summer. Manual transects and static monitoring points along likely commuting routes, coupled with detailed climb-and-inspect tree surveys were employed. Emergence and re-entry surveys are also planned.

Barn Owl *Photo: Julie Powell*

Wintering bird surveys comprising both daytime and night visits using night-vision equipment focused on wintering wading species such as golden plover and lapwing. Wildfowl, raptors and barn owl, all species of principal concern and most likely to be impacted by the construction of a new dual carriageway, were also recorded along with other notable species such as bittern. The night surveys helped identify sites used by roosting birds. In late spring a modified Common Bird Census was undertaken at three strategic sites along the route, including Buckden Pits County Wildlife Site.

Specialists in invertebrates

Glanville fritillary - a highlight of the Isle of Wight *Photo: Dr. Graham Hopkins FRES*

Our invertebrate experts have won a framework agreement with Natural England to assess invertebrate assemblages and their habitats on Sites of Special Scientific Interest (SSSIs). The agreement is valid for five years, whereby SSSIs are surveyed and analysed using the Invertebrate Species-habitat Information System (ISIS) package, as part of Common Standards Monitoring.

In 2012, our teams surveyed short grassland and bare earth habitats over 30 SSSIs, including some iconic sites such as the White Cliffs at Dover. We are currently engaged in surveying the other habitats for which we qualified under the framework, including: dead wood, open water, fens and seepages, rivers, saltmarsh, acid mires, scrub and heath. Our expert ecologists include Dr. Graham Hopkins FRES, an invertebrate specialist who is engaged in his own research and who frequently lectures to both academic and amateur communities and groups.

In 2012 the project took Graham on a road trip through Essex to Dover, the Isle of Wight, then back to Norfolk via Luton. On the journey he surveyed soft cliffs, quarries, chalk pits, chalk grassland, and brownfield sites. During breaks from the close work involved, he particularly enjoyed looking at the ferries from the White Cliffs! This year he was working closer to home and surveyed sites on the Norfolk coast as well as The Brecks. He was helped by a team of experienced contractors.

The Ecology Consultancy has in-house capabilities in invertebrate survey and site assessment including standardised schemes such as the BMWP and ISIS protocols. Our survey staff hold several species licences for this work.

North Norfolk cliffs *Photo: Dr. Graham Hopkins FRES*

Sweep netting in Dover *Photo: Dr. Graham Hopkins FRES*

EAST ANGLIA RENEWABLE ENERGY

Galloper offshore wind farm, Sizewell, Suffolk

The Ecology Consultancy's East Anglia office has been involved in the onshore elements of this Nationally Significant Infrastructure Project (NSIP) since 2010. The Galloper Offshore Wind Farm will comprise up to 140 wind turbines off the Suffolk coast, with the capacity to generate up to 504MW of energy. Such an output will significantly contribute to the UK's target to generate 15% of its energy from renewable sources.

We have carried out habitat and protected species surveys from Sizewell beach, along the export cabling route, to the proposed new sub-stations at Sizewell Wents. These have included botanical surveys of vegetated shingle and coastal sand dunes, both of which are habitats of principal importance under Section 41 of the NERC Act 2006. We have also been conducting badger, bat and reptile surveys. We represented our client at a Public Hearing and, through close consultation with other stakeholders such as Natural England and Suffolk Wildlife Trust, we were able to devise detailed mitigation measures to avoid impacts on biodiversity.

A combination of bat survey techniques were employed to establish use of the site by bats. These included automated detector surveys, which helped us to establish the range of species that were using the site for foraging and commuting. Species of note included barbastelle and Nathusius' pipistrelle. Closer inspection of the trees by our qualified tree climbers, also revealed three small bat roosts of noctule and soprano pipistrelles. A European Protected Species Mitigation (bats) licence has been obtained and the loss of two roosts will be compensated by the provision of summer and hibernation boxes throughout the remaining area of woodland.

Baby Adder *Photo: Tracy Simpson*

We also conducted reptile surveys on the site and were able to confirm the presence of adders, grass snakes, common lizards and slow worms. All reptiles are afforded protection against killing and injury under the Wildlife & Countryside Act 1981 (as amended) and, as such, mitigation was required to avoid harming these species. Directional drilling will be used to lay the cable largely to avoid impacts on reptile populations, as well as to important shingle, dune and hedgerow habitat along the route. A detailed mitigation plan was devised to inform a translocation programme within the substations site. A receptor area was identified and has been enhanced in advance of the translocation. Management of the receptor site included the cessation of mowing to encourage a diverse sward structure and the provision of log piles, large hibernacula and banks for foraging, refuge and basking.

Our Principal Ecologist Dr. Rachel Saunders will deliver an expert session on micro wind turbines and wildlife at the **RenewableUK** annual conference in Birmingham, 5-7 November.

Spotlight on solar energy

The solar energy industry has expanded rapidly in recent years due largely to a reduction in the cost of photovoltaic panels and the introduction of a Feed-in Tariff (FIT) in 2010. In a little over two years, the UK's solar power-generating capacity has risen from around zero to 2.5GW (Excell 2013) and is likely to increase.

Around 25% of the UK's energy generated by solar power comes from ground-mounted installations, or solar farms. The south-west has seen the greatest proliferation of such schemes but many are planned for elsewhere within the UK, including the east of England.

Whether or not a solar farm requires a formal Environmental Impact Assessment (EIA) is largely determined by the Local Planning Authority (LPA). This type of development may be interpreted as "Energy Industry Development" or, depending on their location, as an "Urban Development Project" under Schedule 2 of the EIA Regulations. Even where an LPA does not consider a formal EIA is required, information on baseline conditions at the site and the potential for environmental impacts should be submitted with the planning application to enable full evaluation of the proposal.

Our East Anglia office has considerable expertise in assessing the potential ecological impacts of such schemes and we have expert botanists, entomologists and ornithologists as well as licensed bat ecologists, who can advise on how best to avoid, mitigate or compensate for wildlife. They can also demonstrate the scope for incorporating simple habitat management that could even result in a positive outcome for wildlife as a direct result of the proposal.

Skylark *Photo: Hugh Clark*

Lapwing *Photo: Hugh Clark*

As with most development, the potential for impacts on wildlife from solar farms arise during the construction (and decommissioning) phase and the operational phase.

Potential impacts during the construction phase:

- Disturbance and displacement of wildlife through noise, traffic movement, increased human presence and light pollution
- Compaction of soils and construction of tracks and other impermeable surfaces may result in increased run-off and soil erosion, which may have a knock-on effect on nearby water courses

Potential impacts during the operational phase:

- Direct habitat loss; construction impact to panel frames and ancillary structures such as invertor boxes and grid connections: this may affect a range of species groups including birds and bats
- Changes in the vegetation structure and composition as a result of shading by the panels: as well as potentially leading to a loss of noteworthy plant species, such changes may also impact on invertebrates
- Attraction of invertebrates: aquatic invertebrates may be attracted to lay eggs on solar panels due to the reflection of polarised light, potentially increasing reproductive failure and mortality
- Indirect habitat loss through displacement: ground-nesting birds such as skylark prefer open areas with clear sight-lines and are unlikely to nest between or below panels, particularly where these are positioned close together. The silhouettes of panels may also affect the attractiveness of adjacent areas for species of the open countryside such as geese or cranes
- Isolation and fragmentation: depending on the permeability of perimeter fencing, the passage of animals across the site and linkage between foraging, breeding and refuge areas may be affected. It may also affect predator-prey relationships and food availability
- Collision risk: as yet, the risk of collision of, for example, birds with solar panels and the significance of this as an impact is unquantified though concerns remain, particularly where solar farms are located close to water. Limited evidence suggests that bats may also attempt to drink from panels or collide with them. Fencing, overhead wires and supports may also pose a collision hazard, particularly for species such as swans

One good tern...

Common Tern raft *Photo: Danny Thomas*

Common Tern nest *Photo: Danny Thomas*

Our East Anglia ornithologist Danny Thomas spent a weekend in the spring constructing an artificial nesting raft for common terns at Bawburgh Lakes, near Norwich. This was part of his on-going voluntary work at this local County Wildlife Site.

The materials for the tern raft were largely sourced from reclaimed materials with the main raft constructed from a huge pallet salvaged from the John Innes Centre and eight barrels that were donated by a Highways Agency Depot.

The raft was launched in April, then topped with a gravel substrate to mimic the beach habitat normally utilised by terns. A few ridge tiles were added to provide a refuge for the chicks from aerial predators such as kestrels. The raft was towed out by a small dinghy and anchored at its location in the centre of the lake just in time for the arrival of the common terns in early May.

Despite one of the barrels appearing to have a leak, which made the raft list to one corner, the terns were not put off and within a few days a number of adults had taken up residence. Danny frequently checked the raft from the bank with a high powered telescope and found that there were at least eight pairs of terns nesting!

Later Danny went out to ring some of the newly hatched tern chicks and to confirm the number of nests. Six chicks were marked, with individually numbered metal rings, provided through the British Trust for Ornithology ringing scheme, and another four nests were noted with a total of nine un-hatched eggs.

Returning two weeks later an additional seven chicks were ringed making a total of 13!

Common Tern chicks *Photo: Danny Thomas*

Company News

East Anglia office

September is a very busy month for the team in East Anglia, with a number of events, as well as end of season surveying and report-writing. On 10th October Senior Ecologist Danny Thomas will present a CPD session at the King's Centre for developers, architects and planners on wildlife considerations in development projects.

Ecologist Alex Prendergast will be staffing a stand at the popular Greenbuild event (www.northnorfolk.org/greenbuild/) on 7th September and will talk on 'Benefitting Wildlife by Design'.

The team looks forward to the annual BioBlitz (www.hawkandowl.org/sculthorpe/birthday-bioblitz-2013/) at Sculthorpe Moor Nature Reserve, this year on 21st – 22nd September where they will run wildlife awareness events such as mammal trapping and botany recording, and Alex will lead a fungus foray with the Norfolk Fungus Study Group.

The East Anglia team includes botany specialists Alex Prendergast and Michelle Fielden, who now have achieved their Field Identification Skills Certificate at Levels 5 and 4 respectively. Alex says he will go to the top and aim for level 6 in 2015!

For further information on these events please contact the team - 01603 628408

Norfolk fen *Photo: Dr. Graham Hopkins FRES*

Dead wood habitat *Photo: Dr. Graham Hopkins FRES*

Weatherboard hut Walberswick *Photo: Dr. Rachel Saunders*

Overstrand Beach *Photo: Dr. Rachel Saunders*

Common sea-lavender *Photo: Dr. Rachel Saunders*

London

Our ever-expanding London team will be extending into an over-spill office nearby. Our successful tenders have reached a record level in 2013, which is some achievement in difficult times. Our team of experts have completed full bird surveys on Hampstead Heath prior to works on both chains of ponds. We also carried out bird and bug surveys as part of a Citizen Science project with the Greater London Authority, Team London Bridge and the Potters Fields Trust.

Scotland

Fieldwork to assess breeding bird assemblages at a number of sites in Scotland was recently completed. Surveys of qualifying species were undertaken for Scottish Natural Heritage on six Sites of Special Scientific Interest in central and southern parts of the country. Ecological advice was given to the Environmental Services Group regarding potential dualling of the A9 north of Perth.

Sussex

Our Sussex office has had three new members of staff and will move to a new office this autumn.

Rosie Marston, ecologist, has joined us and will work alongside Ben Kimpton on our habitats team. Rosie holds a dormouse licence and has experience with a wide variety of ecological surveys. She will focus on Preliminary Ecological Appraisals, BREEAM, CfSH and green infrastructure. We also welcomed ecologist Amy Richards, who will be working primarily on survey and mitigation for great crested newts and reptiles. Charlie Dwight, senior ecologist, has come to us from the London office and will be assisting with large scale mitigation projects. Our new offices will give us a much larger and more comfortable working area with room to host design team meetings and training days.

Experience and quality that make a difference

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