

NORFOLK BIODIVERSITY ACTION PLAN

BARBASTELLE BAT (*Barbastella barbastellus*)

Barbastelles are a medium-sized bat measuring 45-58 mm long, with a wing span of 260-290 mm and a weight of 6-13g. Their fur is blackish on the back and the tips of the hairs may be pale cream or yellow, giving them a frosted appearance. They have a squat face, which gives them a distinctive, pug-like appearance.

The barbastelle bat is one of the UK's rarest mammals. Norfolk is one of the strongholds for this species, and has the only confirmed maternity roost within a building.

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| Ref: 2/S26 | Tranche 2 | Species Action Plan 26 |
| Plan Author: | Norfolk County Council | |
| Plan Co-coordinator: | Farmland BAP Topic Group | |
| Plan Leader: | Natural England | |
| Date: | 2 March 2009 | |
| Stage: | Final | |

1. CURRENT STATUS

National Status

- The barbastelle bat is mainly a woodland species. It uses old buildings and trees as summer roosts and underground sites and other suitable places such as hollow trees for hibernation. Riparian woodland may form an important habitat in some areas. It feeds mainly on *lepidoptera* taken in flight, but may also glean insects and spiders from vegetation.
- The barbastelle is widely distributed in England and Wales, with centres of population in south-west and mid-west England, and Norfolk. It is believed to be rare in the UK.
- In 1995, the UK barbastelle population was estimated to number 5,000-10,000 individuals (Harris *et al.*, 1995). The overall population trend is not known, although this species has been targeted as part of the Bat Conservation Trust's recent Woodland Bat Survey (trials 2004-2006).
- Currently, there are 16 known breeding colonies in England and Wales (SITA, 2007), compared to 2001 when only five maternity colonies were known (Greenaway, 2001 cited University of Bristol, 2005).
- Barbastelles are listed on Appendix II of the Bonn Convention (and its Agreement on the Conservation of Bats in Europe, 1994), Appendix II of the Bern Convention (and its appropriate Recommendations), and Annexes II and IV of the EC Habitats and Species Directive. It is protected under Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations, 1994 (Regulation 38) and Schedule 5 of the Wildlife and Countryside Act 1981. The 1996 IUCN Red List of Threatened Animals classifies this species as vulnerable.

Norfolk Status

- East Anglia is considered to support a population that is 'highly significant in the context of national distribution', and has been identified as one of the core areas for implementation of the species recovery programme (Harrington, Catto and Hutson, undated). The current known distribution of barbastelles is illustrated in **Fig. 1**.
- The Norfolk Biodiversity Information Service holds over 120 records dating back to 1857.

- Paston Great Barn (circa 16th century) is the only confirmed example in the UK of a barbastelle maternity roost within a building, and has been designated as a Special Area of Conservation (SAC). The Norfolk Barbastelle Study Group's work has put the significance of Paston Great Barn into its proper context, which is that it is part of a much wider population, albeit important in its own right for barbastelles and other species such as natterer's bat *Myotis nattereri*, brown long-eared bat *Plecotus auritus* and common pipistrelle *Pipistrellus pipistrellus*.
- Research undertaken by the Norfolk Barbastelle Study Group, and consultants' surveys, shows that barbastelles are sporadically distributed throughout most of Norfolk. Results of transects from the last two years show a strong population in north and west Norfolk.
- New records have been found during surveys undertaken as part of the environmental surveys for the proposed Northern Distributor Road. Further studies are being planned in 2009 to obtain a more detailed understanding.

2. CURRENT FACTORS CAUSING LOSS OR DECLINE IN NORFOLK

The threats to this species are poorly understood, but its low population density and slow population growth make it particularly vulnerable to factors such as:

- Loss and fragmentation of a broad mosaic of habitats including ancient semi-natural woodland, mature species-rich hedgerows, ancient trees and wood pasture, invertebrate rich pasture land and sympathetically managed riparian habitats;
- Loss, destruction and disturbance of roosts or potential roosts in buildings, trees and underground sites; and
- A reduction in numbers of insect prey as a result of habitat simplification, stemming from factors such as insecticide use and intensive grazing.

3. CURRENT ACTION IN NORFOLK

- The Norfolk Barbastelle Study Group has been working in North Norfolk since 2007, developing a standardised methodology to record barbastelle activity that can be repeated along defined transects over time. Surveys have also been undertaken in south Norfolk and north Suffolk.
- Mist net studies are being undertaken at Swanton Novers NNR (near Holt) in order to assist with the management of the wood (owned by Lord Hastings and managed by Natural England). It is hoped that this will be expanded in the future to concentrate on other sites throughout Norfolk.
- A special planning zone has been identified within a ten kilometre radius of Paston Barn (see **Fig. 2**), in which particular consideration will be given to the ecological requirements of barbastelles when considering planning applications.
- Paston Great Barns is being actively managed for barbastelle bats and restoration techniques are being developed as a blueprint for similar restoration schemes involving barbastelle bats elsewhere.
- The barbastelle colony at Paston Great Barn has been actively monitored since 1998 to assess colony performance and determine effects of external influences on barbastelle survival and behavior.

4. ACTION PLAN OBJECTIVES AND TARGETS

National

- Maintain the current range of *B. barbastellus* in the UK at 68¹ occupied 10 km squares.

Norfolk

- Maintain the current range of *B. barbastellus* in Norfolk at 31 occupied 10 km squares² (see **Fig. 1**)

¹ 10km squares with records, but no roosts recorded. Roosts recorded within 18 km squares (Richardson, 2000).

² Please note that this figure will be revised following the completion of the Norfolk Bat Roadside Survey which is due to be undertaken 2009/2010. The feasibility of developing additional targets related to density will also be assessed at that time.

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| NATIONAL ACTION | | NORFOLK ACTION | LEAD ACTION BY: | PARTNERS: |
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| 5.1 | Policy and Legislation | | | |
| 5.1.1 | Pursue the principles and requirements of the Agreement on the Conservation of Bats in Europe. | No action proposed. | | |
| 5.1.2 | When next reviewed, consider targeting the Woodland Grant Scheme (Project 3), Forest Design Plans, Countryside Stewardship Schemes, ESAs, and other relevant agri-environment and forestry schemes to land in the vicinity of important roost sites, with the aim of enhancing terrestrial and aquatic habitats used by barbastelle bats. Consideration should be given to the retention of hollow, veteran, dying and dead trees in hedgerows and woodlands. | Encourage NE and FC to consider barbastelle bat distribution in Norfolk when next reviewing HLS and EWGS targeting, respectively. | Farmland and Woodland BAP Topic Groups | NBIS, NCC, NE, FC, NBSG |
| 5.1.3 | Ensure that consideration is given to habitat surrounding key bat sites when developing structure plans and assessing planning applications. | Produce detailed, up-to-date species distribution maps for LAs, particularly North Norfolk and Broadland District Councils, by 2013. | NBIS | NCC, NBSG |
| | | Prepare guidelines for LAs regarding habitat protection and enhancement for barbastelles when dealing with planning applications by 2013. | NBG | NE, LAs, NBSG |

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| NATIONAL ACTION | | NORFOLK ACTION | LEAD ACTION BY: | PARTNERS: |
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| 5.1.4 | Ensure that the requirements of the barbastelle bat are considered during the development of Local Environment Agency Plans in areas where this species occurs. | Ensure that the Environment Agency, water companies and other relevant organisations consider barbastelles in their plans and policies. | NE | |
| 5.2 | Site Safeguard and Management | | | |
| 5.2.1 | Ensure the long-term protection of maternity roosts, key hibernation roosts and, where appropriate, the habitat surrounding these sites. Consider notifying such areas as SSSIs where it is necessary to achieve this. | Ensure that Paston Barn and its immediate surroundings are managed in a way that is sensitive to their use by bats (ongoing). | NE | NNDC, NBSG |
| | | Use agri-environment schemes to enhance the habitat surrounding Paston Barn. Seek to establish at least six new HLS and/or EWGS within 10km of Paston Barn by 2018. | NE, FC | FWAG, Landowners |
| | | Promote HLS on NCC's Bacton Estate. | NCC | NE, FWAG |
| | | Develop a map showing existing suitable habitat within 10 km of Paston Great Barn and opportunities for habitat improvement (e.g. linkages), by 2013. | NBSG | NBIS, NE, NBG |

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| NATIONAL ACTION | | NORFOLK ACTION | LEAD ACTION BY: | PARTNERS: |
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| | | Complete Long Tem Monitoring Vision for Paston Great Barn by 2013. | NBSG | |
| | | Discover the surrounding roosts and hibernation sites around Paston Barn (ongoing). | NBSG | NBG |
| 5.3 | Species Management and Protection | | | |
| 5.3.1 | None proposed. | None proposed. | | |
| 5.4 | Advisory | | | |
| 5.4.1 | When appropriate, advise relevant project officers for Countryside Stewardship, the Woodland Grant Scheme and other forestry and agri-environment schemes of the location of key roost sites, their importance and appropriate habitat management for the surrounding areas. | By 2010, distribute the FC publication, <i>Woodland Management for Bats</i> and English Nature reports relating to habitat management for bats, to all agri-environment officers and members of the National Association of Tree Officers in Norfolk. | NE | NBSG |
| | | Forward detailed and up-to-date barbastelle distribution maps to all agri-environment officers, particularly those working in North Norfolk and Broadland Districts, by 2010. | NBIS | NCC, NBSG |

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| 5.4.2 | Establish links with organisations associated with the care and restoration of old buildings in the vicinity of barbastelle bat sites, in order to encourage provision for the requirements of the species within old buildings. | No specific action proposed at this stage. | | |
| 5.4.3 | Advise tree surgeons, tree wardens and foresters operating in the vicinity of barbastelle bat sites on tree management practices which will assist the conservation of this species. | Promote the retention of veteran, hollow, dead and dying trees through provision of information (see 5.4.1), to LA arboricultural officers by 2013. | NE | NBG, NBSG, LAs |
| 5.5 | Future Research and Monitoring | | | |
| 5.5.1 | Continue to search for maternity roosts and hibernation sites. On locating such sites, undertake autecological research and monitoring into the roosting requirements and foraging habitats of this species, with a view to refining habitat protection and management practices. | Organise a county-wide survey to be carried out during 2009 to 2010, to ascertain the current distribution and status of barbastelles in Norfolk (to include a wide range of habitats such as farmland and roadsides to act as a baseline for future surveys). | NBG | NE, NBSG, NBIS |
| | | Based on the results of the county-wide survey, establish regular surveillance programme. | NBG | NBSG, NBIS |

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| NATIONAL ACTION | | NORFOLK ACTION | LEAD ACTION BY: | PARTNERS: |
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| | | Based on the results of the county-wide and targeted surveys, designate at least five new CWS by 2018 that are known or thought to be used by barbastelles. | NWT | NCC, NE |
| | | Based on the results of county-wide survey, undertake analysis of habitat data. | NBG | NBIS, NBSG |
| | | Expand mist net studies to other sites throughout Norfolk, into areas such as the Brecks and other river valleys (ongoing). | NBSG | NBG |
| 5.5.2 | Research the food and feeding requirements of the species. | Support any research being undertaken by other organisations (e.g. universities). | NBSG, NBG | |
| 5.5.3 | Develop and maintain a national database for bat records. | Send all records to the Bat Conservation Trust and Norfolk Biodiversity Information Service on an annual basis (ongoing). | NBSG, NBG | NBIS |
| 5.5.4 | Consider the recommendations of the National Bat Monitoring Programme once they are produced. | Apply recommendations to Norfolk, as appropriate. | NBSG, NBG | NBIS |

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| 5.6 | Communications and Publicity | | | |
| 5.6.1 | Raise awareness of bat conservation issues amongst owners of large country houses and farm buildings through relevant organisations and appropriate property and farming magazines. | <p>Run an annual stall at events such as the East Anglian Game and Country Fair, and Wild about Norfolk, in order to raise awareness of the ecological requirements of barbastelles and other bats (ongoing).</p> <p>Publish at least one article every two years, in magazines, newspaper and on the internet (ongoing).</p> <p>Host events and open days at and around Paston Great Barn to raise public awareness (ongoing).</p> | <p>NBG</p> <p>NBSG</p> <p>NBSG, NE</p> | <p>NBG</p> |
| 5.6.2 | Maintain discussions on the conservation of the species on a pan-European scale through the IUCN Coordinating Panel for the Conservation of Bats in Europe and the European Bat Agreement. | None proposed. | | |
| 5.6.3 | Raise awareness of the importance of old trees as roost and hibernation sites. | As per Actions 5.4.3 and 5.6.1. | | |

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| 5.7 | Links with Other Action Plans | | | |
| 5.7.1 | None mentioned. | This plan should be considered in conjunction with the Norfolk Grouped Species Action Plan for Bats (in preparation), the Mixed Deciduous Woodland Habitat Action Plan, and the Wood-Pasture Habitat Action Plan. | Communities and Nature BAP Topic Group, Woodlands BAP Topic Group | |

Abbreviations and Acronyms (Organisations)

| | |
|------|--|
| FC | Forestry Commission |
| FWAG | Farming and Wildlife Advisory Group |
| LA | Local Authority |
| NBG | Norwich Bat Group |
| NBIS | Norfolk Biodiversity Information Service |
| NBSG | Norfolk Barbastelle Study Group |
| NCC | Norfolk County Council |
| NE | Natural England |
| NNDC | North Norfolk District Council |
| NT | National Trust |

MANAGEMENT GUIDANCE

(This guidance is a general summary; for more detailed information or advice, please consult the references or contacts below.)

Barbastelles generally prefer established natural or semi-natural habitats that are fairly stable in character and require little maintenance. Management of habitats should aim to promote insect, and especially micro-lepidopteron, biomass. Shelter belts such as hedgerows (ideally double hedgerows) or even series of isolated trees can increase insect availability by slowing wind speed.

Where works such as scrub/understory removal, felling and coppicing are to be undertaken in woodlands, these should be carried out in small patches so as to maintain woodland humidity and retain low wind speeds. Tree lines should always be left along watercourses; trees with rot cavities, flaking bark or woodpecker holes should always be left intact.

Avoid cutting hay in spring as this greatly and suddenly alters local insect availability at a very susceptible time of year for the pregnant bats.

Specially designed barbastelle bat boxes can be put up in woodland adjacent to areas within which bats have been recorded. Artificial roosts that mimic natural barbastelle roosts can also be created in trees using chainsaws.

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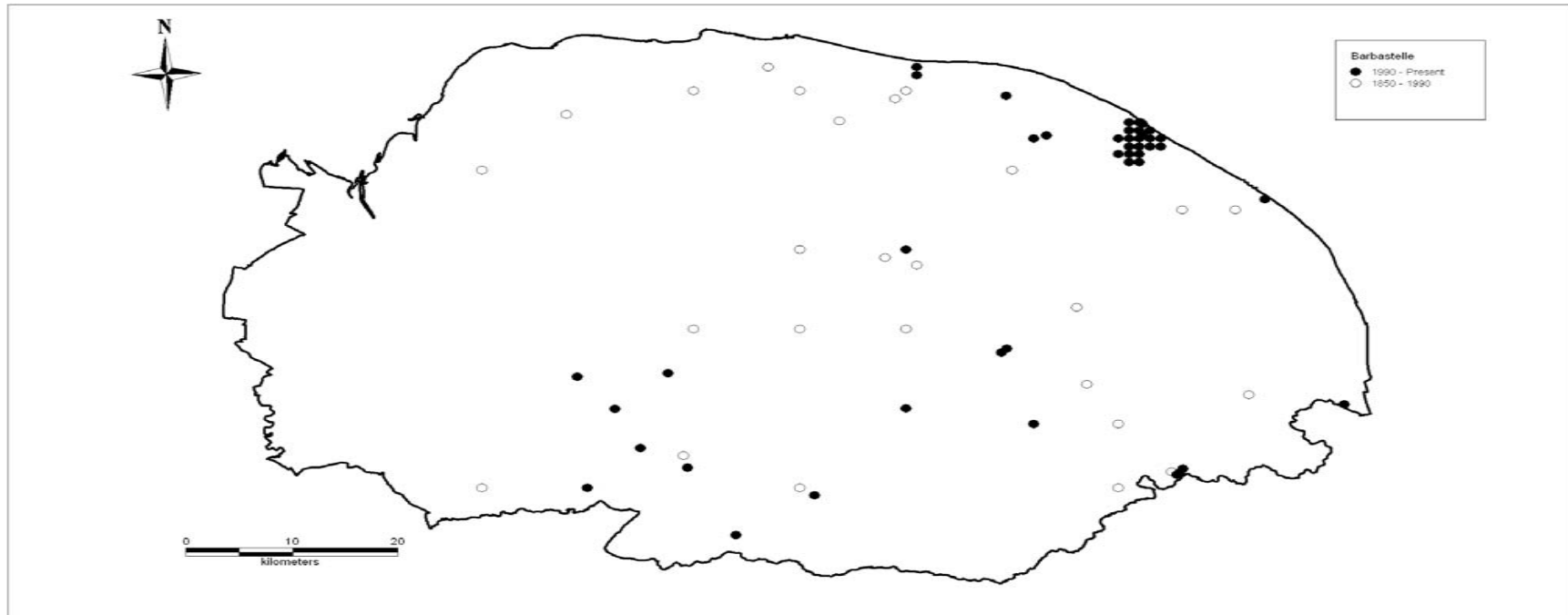


Fig. 1. Barbastelle records in Norfolk 1857 until 2006 (NBIS, 2009)

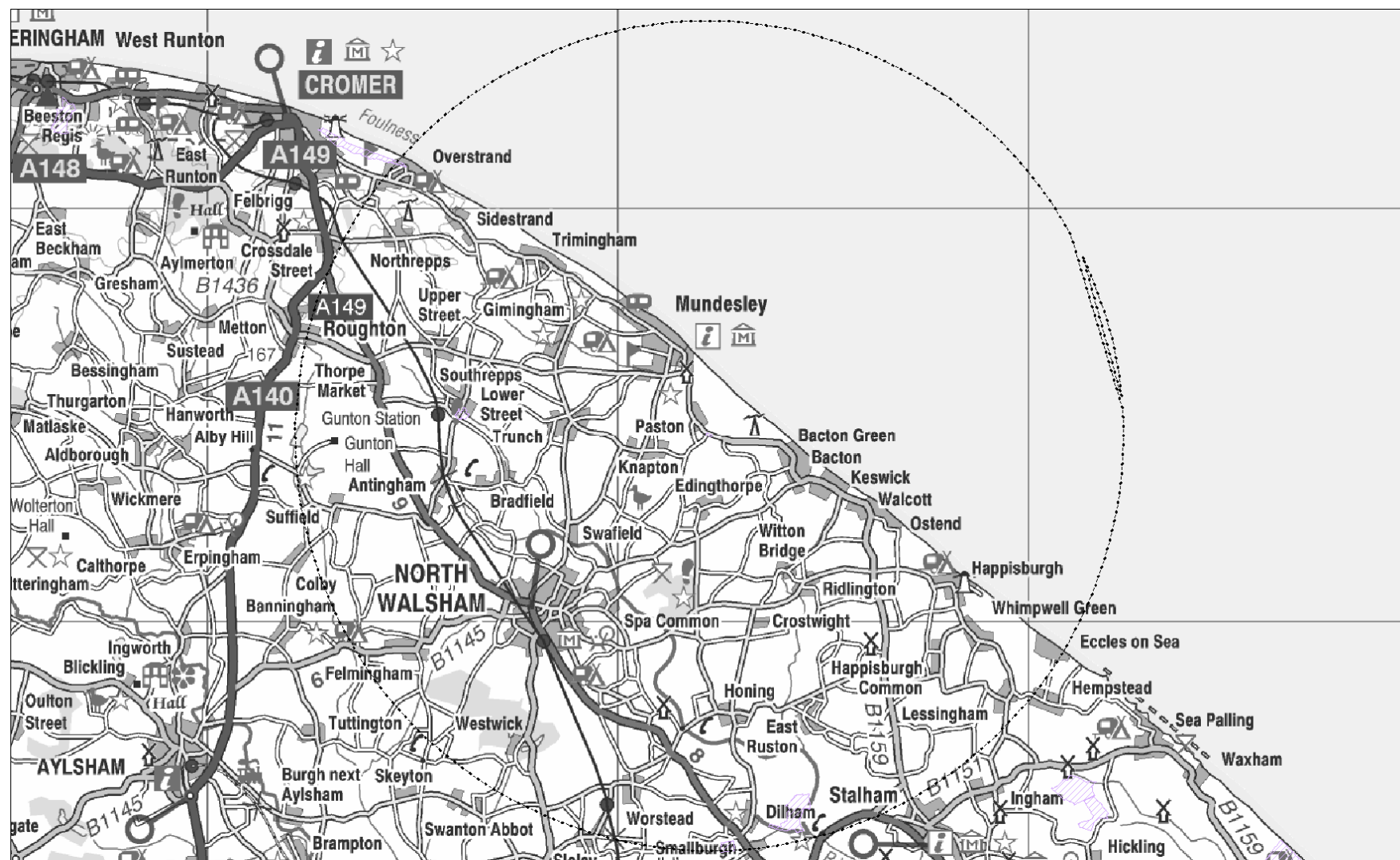


Fig. 2. Ten kilometre planning radius around Paston Barns SAC.