

Environment & Heritage Service

# NORTHERN IRELAND SPECIES ACTION PLAN HOUSE SPARROW

April 2008



**Northern Ireland Species Action Plan**  
**House Sparrow *Passer domesticus***  
**April 2008**

**1. Current Status**

- 1.1** The house sparrow is a small, grey and brown bird of around 14-15cm. It is sexually dimorphic; that is, there is a systematic difference between the male and female of the species. The male has a grey and black head and face, black bib and grey breast with mottled brown back and wings whereas the female has a grey breast and underparts with a mostly mottled grey and lighter brown back. House sparrows are well known for their frequent cheeping and chirruping from roofs and gutters. They closely resemble tree sparrows, but lack the chestnut-brown crown, pure white cheek area and black cheek-spot. House sparrows have a stout seed-eating bill.
- 1.2** The house sparrow, as its name suggests, is closely associated with humans and human habitation, occurring in and around dwellings and settlements. House sparrows are opportunist and are able to live wherever there are suitable nesting and roosting sites and enough food, predominantly seeds in winter and invertebrates in summer. Suburban and urban birds frequently feed on food scraps put out in gardens and on bird tables all year round, particularly so during the winter months. However, chicks still require a protein diet from invertebrates in the early stages of their growth to ensure adequate development occurs. In suitable areas, they often form loose colonies, typically of 10-20 pairs. The birds in a colony are gregarious and will often gather in bushes and shrubs to call, bathe, fight, squabble and feed together, particularly in the non-breeding season (Summers-Smith, 1988).
- 1.3** House sparrows are resident birds and are very sedentary. Juveniles generally do not spread far from their natal colony, generally settling within 2km, with up to 50% returning to the same colony as adults. Once they reach breeding condition, they are usually very faithful to a breeding area, with nesting, roosting and foraging all usually taking place within a small area (Vincent, 2005).
- 1.4** The house sparrow is a prolific breeder mainly from April to August. Three to five eggs are laid per brood and usually two to four broods will be produced over the course of the season. The nest is built in holes, usually in buildings or other man-made structures, and often under the tiles or elsewhere around the roof area of a house. Depending on location, they will also use nestboxes providing the entrance hole is at least 30mm. They build a large domed nest with grasses, moss and other available vegetation. The chicks are fed on invertebrates while still in the nest but then switch to weed seeds on fledging. Both parent birds are involved equally in the provisioning of chicks.
- 1.5** During the winter, house sparrows flock together and mix with other small seed-eating passerines. Rural birds spend time in farmyards and farmland, feeding on grain and seeds. Those in urban areas spend time feeding in gardens on seeds, peanuts and scraps put out on bird tables and feeders which supplement their diet of natural vegetable matter.

- 1.6** The European house sparrow population is extremely large with around 63 million breeding pairs (BirdLife International, 2004). Globally, it has become established across a wide range stretching to almost all continents and oceanic islands where man has assisted in its spread (Cramp, 1994).
- 1.7** Siriwardena *et al.*, (2002) estimated a UK population of approximately 13,220,000 house sparrows or 6 million pairs, a figure calculated from 6 years of averaged BBS results from 1994-2000. However, the latest UK population estimate suggests the population may only be half of that figure (Baker *et al.*, 2006). The 2006 figure, of between 2.1- 3.7 million pairs is derived from a range of surveys used for the birds in the wider countryside report (Crick *et al.*, 2004) and extrapolated figures from existing surveys. The Northern Ireland population is estimated at around 200,000 pairs (Baker *et al.*, 2006). The total Irish population was estimated at 800,000 – 1.4 million pairs from 1988-91 (Gibbons *et al.*, 1993).
- 1.8** The house sparrow was formerly ubiquitous across the UK but began an initial reduction in density in the 1920s when motor vehicles started to replace horses, thus removing grain as a popular and commonly available food source (Holloway, 1996). From 1977 to 2000, the UK population underwent a 65% decline (Crick *et al.*, 2004). In addition, the garden bird feeding survey (Big Garden Birdwatch (BGBW)) from 1970 to 2000 (Siriwardena *et al.*, 2002) indicated that populations in suburban and urban gardens have experienced a greater decline (60%) than that of rural areas (48%). As measured by Common Bird Census (CBC) monitoring from 1976 and BBS from 1994-2000, eastern England (90%) and southeast England (65%), where most house sparrows are situated, have witnessed the greatest declines.
- 1.9** No declines were detected in Northern Ireland as no regular survey was carried out until the inception of the Breeding Bird Survey. Initially, a decline in range was detected from the New Breeding Birds Atlas (Gibbons *et al.*, 1993) where the species was missing from areas in the west of Northern Ireland. BBS results have consistently shown declines in Northern Ireland; 34% (1994-2002), 31% (1994-2003), 28% (1994-2004), 1% (1994-2005) and 19% (1994-2006) (Raven *et al.*, 2003, 2004, 2005, 2006 and 2007). However, a 12% increase was detected during the period 1998-2003 (Newson *et al.*, 2003). This may reflect the lower rate of decline recorded in 2005.
- 1.10** The house sparrow is specially protected in Northern Ireland under the Wildlife (Northern Ireland) Order 1985. It is listed as a Species of European Conservation Concern (SPEC 3) - species of unfavourable conservation status in Europe as there has been a recent widespread decline in house sparrow populations across the Europe in the last 10-15 years. Its global population is not concentrated in Europe. It is not listed in the European Birds Directive or Berne Convention.
- 1.11** House sparrow is now listed as a UK Priority Species, following the recent UK review (Biodiversity Reporting and Information Group (BRIG), 2007) and red listed in UK Birds of Conservation Concern (Gregory *et al.*, 2002) due to its recent population decline. It is currently green-listed in the Birds of Conservation Concern in Ireland (Newton *et al.*, 1999) but is likely to be promoted to the amber list when the list is reviewed in light of the latest declines. It is a Northern Ireland Priority Species on account of its UK red list status.

## **2. Current Factors Affecting the Population**

- 2.1** Loss of invertebrates – a reduction in invertebrate abundance is likely to have had a detrimental effect on the house sparrow (particularly on nestling development/survival) (Vincent, 2005). Examples include a general reduction in green space in built up areas and a reduction in native shrubs and plants. Modern urban environments are increasingly making use of architectural non-native plants. Rural gardens too, are using non-native ornamental shrubs and plants. These low maintenance plants support fewer native insects and other invertebrates. Air pollution in cities from vehicle emissions and industry can also lower invertebrate numbers (Furness and Greenwood, 1993).
- 2.2** Reduction in winter seed food – house sparrows depend on grain and weed seeds particularly in late winter. Over wintering survival has been shown to be a limiting factor in rural populations of house sparrows in England (Hole *et al.*, 2002). Less grains and seeds are available on farmland in winter due to fewer stubble fields and improved farming techniques (See 2.5). Improved hygiene standards on farms mean food stores now exclude birds and less grain is spilt with new livestock feeding methods. In towns and cities, brownfield sites and waste land are now developed quickly instead of being left to develop native vegetation which can provide invertebrate feeding and seed sources.
- 2.3** Change in agricultural practices – the switch from mixed farming to specialisation in grass means fewer cereal stubble fields are left over the winter to provide seed food. In addition, in some areas the trend in switching from spring to autumn cultivation of arable ground has further reduced the area of stubble available over the winter. More efficient harvesting methods and intensification of existing arable also mean that there is less spilt grain and fewer weeds to provide seeds and associated invertebrates. The intensification of grassland has also meant the loss of species-rich grasslands, with intensive pasture and silage providing little in the way of seeds and invertebrates. The loss of hedges through removal or the lack of hedgerow management has reduced feeding opportunities for house sparrows, as they prefer to forage close to cover that offers security from predators.
- 2.4** Loss of grass and lawns from gardens - in urban and suburban areas residents are abandoning traditional gardens for maintenance free surfaces such as concrete, gravel and decking (Vincent, 2005). These new features are at the expense of rough grass, lawns and flowerbeds, which provide habitat for a whole range of native insects and other invertebrates.
- 2.5** Loss of nest sites - modern houses are generally designed to prevent the ingress of wildlife and built with modern materials that offer fewer gaps and crevices. Sparrows, therefore, find it difficult to access suitable nesting sites. Roof tiles are often fitted with special plastic combs and plastic fascia boards. Soffit and new guttering designs can all prevent access and fibreglass insulation in attics may even cause respiratory problems (Crick *et al.*, 2002; Vincent, 2005). This factor certainly may be contributing to limiting the population in certain local areas (Crick *et al.*, 2002).

- 2.6** Predation - could be a factor in limiting the population, particularly with urban and sub-urban populations (Crick *et al.*, 2003). Domestic and feral cats, in addition to sparrowhawks, represent the major predators of house sparrows. Some studies have found upwards of 30% (Churcher and Lawton, 1987) and 41% (Summers-Smith and Thomas, 2004) of house sparrow in the diet of cats. Other studies have pointed to predation as a mechanism of maintaining the population at a sustainable level (Errington, 1946; Newton, 1998).
- 2.7** Pesticide use - general use of insecticide and herbicide on farmland reduces invertebrate populations either directly or indirectly through removing broad-leaved weed host plants that invertebrates depend on. Pesticide use in residential gardens may also reduce invertebrate populations.

### **3. Current Action**

- 3.6** The Department of Agriculture and Rural Development (DARD), through its Countryside Management Branch (CMB), has developed a series of agri-environment schemes including the Environmentally Sensitive Area (ESA) scheme, and the Countryside Management Scheme (CMS). Their objective is to protect and enhance existing habitats and species on the farm, and to create habitats by encouraging more sensitive management practices. Both these schemes have similar management provisions, are voluntary and apply to the whole farm. These schemes provide a mechanism for delivering some of the targets listed in action plans for many species and habitats, targeting areas of as little as 0.1 ha of semi-natural habitat in order to maintain or improve their present conservation value. Both contain a range of prescriptions which have the potential to maintain a range of semi-natural habitats that would benefit house sparrow. The original ESA prescriptions have now been replaced by the new CMS prescriptions. Around 230,000 ha of farmland are currently in agri-environment schemes, approaching a quarter of the total agricultural land in Northern Ireland.
- 3.6** Agri-environment prescriptions, through Countryside Management Scheme (CMS) and the Environmentally Sensitive Area (ESA) schemes, have several options to directly benefit house sparrow, including species-rich grassland (especially when taken for hay), un-grazed grass margins, field boundary restoration, restoration of traditional buildings and arable options - winter stubble (especially after a conservation cereal), conservation cereal, wild bird cover, and undersown cereals. These options can provide nesting habitat, summer insect and winter seed food.
- 3.3** A new agri-environment scheme, called the NICMS (Northern Ireland Countryside Management Scheme), will be launched in late Spring/early summer 2008. The NICMS is an integral part of the Northern Ireland Rural Development Programme 2007 – 2013 (NIRDP). This programme is part-financed by the European Agricultural Fund for Rural Development (EAFRD) with co-funding provided by the Department of Agriculture and Rural Development (DARD). The NICMS will play an important role in delivery of Axis 2 of the NIRDP - Improving the environment and the countryside through land management.

- 3.4** The NICMS aims to make a major contribution to the conservation action required for many Northern Ireland priority habitats and species. The habitat management plans in NICMS specify how farmers and land managers can best contribute to the conservation of these priority habitats and species.
- 3.5** DARD run a scheme for those in CMS/ESA schemes called “Vision E - plan”. This offers grants for capital works including hedge restoration, restoration of traditional buildings and nest boxes.
- 3.6** DARD operates an Organic Farming Scheme which encourages organic farming and is likely to benefit a range of farmland birds as well as the house sparrow.
- 3.7** DARD and RSPB jointly employ two Agri-environment Officers, whose main role is to contribute to the effective delivery of agri-environment prescriptions for biodiversity priorities, including house sparrow.
- 3.8** RSPB Northern Ireland recently employed a Priority Bird Species Officer, whose main role was to contribute to the effective delivery of the conservation of priority species which includes house sparrow. This was undertaken through close working with council-employed biodiversity officers and the implementation of conservation actions, carried out at a local scale through a Local Biodiversity Action Plan (LBAP).
- 3.9** Local biodiversity officers across Northern Ireland are writing and implementing LBAPs within their respective regions. Those council areas in which the house sparrow is a prominent bird may select it as a flagship species and carry out some additional awareness raising, publicity or practical conservation work for the species.
- 3.10** The Northern Ireland house sparrow population is currently monitored through the Breeding Bird Survey (BBS) but future population declines or a reduction in survey coverage may mean that the threshold number of squares required to provide satisfactory estimates of house sparrow population trends, may not be reached.
- 3.11** The RSPB run an annual ‘citizen science’ survey known as the Big Garden Birdwatch (BGBW) which takes place during the last weekend in January. It provides basic data on house sparrow numbers in private gardens, in each county of Northern Ireland, going back over 25 years.
- 3.12** The planting of wildflower meadows, which may be of assistance to farmland birds, is encouraged and facilitated by a number of local organisations.
- 3.13** The ‘Voluntary Initiative’, a partnership between farming and conservation organisations, aims to promote the safe and limited use of pesticides on farmland.

#### **4. Action plan targets**

- 4.1 By 2010, reduce the negative trend for the Northern Ireland 10-year BBS trend for house sparrow.
- 4.2 By 2015, ensure there is a positive trend for house sparrow in the Northern Ireland 20-year BBS index.

#### **5. Proposed Actions with Lead Agencies**

##### **5.1 Policy and Legislation**

- 5.1.1 Monitor the effects of decoupling, the shift from production based subsidies to area-based payments, particularly on mixed farming systems, for changes which may have implications for house sparrow and other lowland farmland birds.  
(ACTION: DARD)
- 5.1.2 By 2009, target positive management for house sparrow as part of a suite of lowland farmland birds through agri-environment schemes, the ASSI Management of Sensitive Sites (MOSS) scheme, the LBAP process and grant aid for biodiversity.  
(ACTION: EHS, DARD, District Councils)
- 5.1.3 Ensure implementation of Good Agriculture and Environmental Condition (GAEC), to preserve the suitability of habitats such as hedges, species-rich grassland etc. for house sparrows.  
(ACTION: DARD)
- 5.1.4 By 2009, ensure that important house sparrow habitats and their conservation management requirements are recognised and included in statutory and non-statutory plans e.g. Development Plans, Local Biodiversity Action Plans (LBAPs) and appropriate management strategies.  
(ACTION: Planning Service, EHS, DARD, District Councils)
- 5.1.5 By 2009, review *Planning Policy Statement 2 (PPS2) – Planning and Nature Conservation*, to include policies relating to priority habitat and species.  
(ACTION: Planning Service, EHS)
- 5.1.6 By 2009, ensure developers include plans to incorporate landscaped areas with structured vegetation, including native plants to support invertebrates, into all new developments.  
(ACTION: EHS, Planning Service)

##### **5.2 Site safeguard and management**

- 5.2.1 By 2009, where appropriate, enhance management of relevant Nature Reserves/National Nature Reserves and associated buildings for breeding house sparrows.  
(ACTION: EHS, District Councils)

5.2.2 By 2010, increase the area of arable land in Northern Ireland through agri-environment schemes and a cereal national envelope to benefit house sparrows and other farmland birds and increase the ratio of spring/autumn cultivation of cereals to allow more stubble to be left over winter.  
(ACTION: DARD)

5.2.3 By 2010, encourage all public buildings to create nesting opportunities within and around their buildings and to create and manage areas of habitat to increase invertebrate numbers for house sparrows and other birds.  
(ACTION: All Government Departments, District Councils)

### **5.3 Species management and protection**

No actions

### **5.4 Advisory**

5.4.1 By 2009, ensure that information on house sparrow in Northern Ireland is available to all those who could play a role in their conservation and recovery.  
(ACTION: EHS, DARD, District Councils)

5.4.2 By 2009, through LBAPs and agri-environment schemes promote positive management on suitable sites to bring habitat into optimum condition for house sparrows.  
(ACTION: EHS, DARD)

5.4.3 By 2009, target gardeners, gardening media and garden designers highlighting the importance of native vegetation in gardens and the importance of creating space for biodiversity.  
(ACTION: EHS, DARD, District Councils)

### **5.5 International**

No Actions

### **5.6 Future Research and monitoring**

5.6.1 Continue to support BBS and encourage its growth and expansion in Northern Ireland to ensure that house sparrows and other key species are adequately monitored for ongoing trends.  
(ACTION: EHS)

5.6.2 By 2009, undertake a Northern Ireland-wide breeding survey to establish the population size and range of house sparrows.  
(ACTION: EHS)

5.6.3 By 2009, if the house sparrow population continues to record a decline across Northern Ireland as shown in the BBS trend, then undertake research to investigate factors limiting its population.  
(ACTION: EHS)

- 5.6.4 By 2009, monitor the effectiveness of agri-environment schemes, in maintaining and enhancing habitats and populations across Northern Ireland for lowland farmland birds, including the house sparrow.  
(ACTION: EHS)

## 5.7 Communications and publicity

- 5.7.1 By 2009, provide high quality advisory materials to farmers and seek opportunities to promote and publicise mechanisms for delivering positive management for house sparrows.  
(ACTION: EHS, DARD)
- 5.7.2 By 2009, provide high quality advisory materials to the general public to encourage and promote mechanisms for delivering positive management for house sparrows in the form of supplementary seed food in the winter time and the provision of nest boxes and cultivation of native vegetation, rich in invertebrates.  
(ACTION: EHS)

## 5.8 Links with other action plans

- 5.8.1 It is likely that the implementation of this plan will also benefit the Northern Ireland populations of the following UK and/or Northern Ireland priority species:-
- Tree Sparrow *Passer montanus*
  - Linnet *Carduelis cannabina*
  - Yellowhammer *Emberiza citronella*

## 6 References

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**List of Useful Acronyms**

ASSI	Area of Special Scientific Interest
BAP	Biodiversity Action Plan
CEDaR	Centre for Environmental Data and Recording
CMD	Countryside Management Division
CMS	Countryside Management Scheme
DARD	Department of Agricultural and Rural Development
DCAL	Department of Culture, Arts and Leisure
DETI	Department of Enterprise, Trade and Industry
DOE	Department of the Environment
DRD	Department for Rural Development
EHS	Environment and Heritage Service
ESA	Environmentally Sensitive Area
ESCRs	Earth Science Conservation Review Site
HAP	Habitat Action Plan
JNCC	Joint Nature Conservation Committee
NMNI	National Museums of Northern Ireland
NESA	New Environmentally Sensitive Area
NIBG	Northern Ireland Biodiversity Action Group
NICMS	Northern Ireland Countryside Management Scheme
NICS	Northern Ireland Countryside Survey
NNR	National Nature Reserves
PPS	Planning Policy Statement
RA	Rivers Agency
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SLNCI	Sites of Local Nature Conservation Importance
SoCC	Species of Conservation Concern
SPA	Special Protection Area
WFD	Water Framework Directive
WWT	Wildfowl and Wetlands Trust





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