

# Northern Ireland Species Action Plan

## Lapwing

### *Vanellus vanellus*

March 2005

#### 1. Current Status and Condition

- 1.1 The lapwing, *Vanellus vanellus*, is a ground-nesting wading bird which frequents a wide variety of farmland or wetland habitats. It is instantly recognizable by its striking dark green and white plumage, obvious crest and enigmatic calls. These features have given rise to its colloquial names of green plover or peewit.
- 1.2 Lapwings require short vegetation or bare ground in the spring for nesting and feeding. Ideally, nesting areas should include or be adjacent to grassland with some wet areas, which provide increased abundance and availability of invertebrates, important for chick rearing (Galbraith, 1988.) In Northern Ireland, they are most abundant on lowland wet grasslands, although cut-over bogs, unimproved rough pastures in the uplands, and spring sown cereals can also be important.
- 1.3 Lapwing breed from mid March onwards, generally in large open fields and often in loose colonies, enabling them to flock together to drive away predators such as hooded crows. Post breeding flocks begin to form as early as June and by late summer, most lapwing have dispersed from the breeding sites. They are joined by migrants from eastern and northern Europe, giving rise to large winter flocks on a number of coastal estuaries and grasslands and around large freshwater bodies such as Lough Neagh. Four Northern Ireland sites hold numbers of national (all-Ireland) importance outside the breeding season. These are – Strangford Lough, the Lough Neagh and Lough Beg complex, Outer Ards and Lough Foyle (Pollitt *et al.*, 2003). Ireland is particularly important for these migrants in severe winter weather conditions.
- 1.4 The European breeding population has been estimated at 1.3 million pairs, with 80-90% found in the UK, Russia, Belarus and the Netherlands (Hagemeier and Blair, 1997). However marked declines were recorded in over 50% of European countries between 1970 and 1990 (Tucker and Heath, 1994).
- 1.5 Between 1987 and 1998, the breeding population in England and Wales declined to 63,000 pairs, a reduction of 49% (Wilson *et al.*, 2001). In Ireland, the population was thought to have declined by 28% between the two Breeding Atlases (Sharrock, 1976 and Gibbons *et al.*, 1993) and was estimated at 21,500 breeding pairs (Gibbons *et al.*, 1993). On more recent evidence from specific sites such as the Shannon Callows, (Heery and Cooney, 1997; Tierney *et al.*, 2002), the Irish

population decline has continued, although populations on machair, an important habitat along the west and north west coast of the Republic of Ireland, did not decline significantly between 1985 and 1996. They did however undergo significant changes in distribution (Madden *et al.*, 1998). Estimates derived from the available data indicate that there are now probably less than 4,000 pairs in Ireland (J. O'Halloran, pers. comm.).

- 1.6 The declines in the UK and in Ireland generally are similarly reflected in Northern Ireland. A Northern Ireland wide survey of breeding waders in 1986/7 estimated that the lapwing population was between 4,000-6,000 pairs (Partridge and Smith, 1992). Key concentrations were found on the Lough Erne and Lough Neagh wet grassland complexes, the arable farmland around Lough Foyle, Rathlin Island, the Fairywater bogs of Co. Tyrone, the River Blackwater basin and the Antrim Hills. A partial resurvey in 1992 found that numbers had declined at most key sites, including 33% declines at Lough Neagh and Lough Erne sites, and a 69% decline at River Blackwater sites (Partridge, 1992).
- 1.7 By 1999 a survey of breeding waders in the wider countryside recorded a decline of 66% in lapwing, and the population was estimated at just over 1,770 pairs (Henderson *et al.*, 2002). Further declines at most of the key sites were also recorded in 2000, and Stanbury *et al.* (2000) showed that, whilst the key sites still had higher densities than the wider countryside, the overall rates of decline were similar.
- 1.8 The lapwing is protected under Article 4.2 of the *European Community (EC) Council Directive on the Conservation of Wild Birds (79/409/EEC)*, Appendix 2 of the *Berne Convention* and Article 4 of the *Wildlife (Northern Ireland) Order 1985*. It is an Amber Listed species in Birds of Conservation Concern in the UK, Channel Islands and Isle of Man (Gregory *et al.*, 2002) and a Red Listed species in Birds of Conservation Concern in Ireland (Newton *et al.*, 1999). It is not listed as a Species of European Conservation Concern, but this is presumed to be due to a lack of sufficient data (Tucker and Heath, 1994).

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

- 2.1 Agricultural improvement - the wet grasslands which are so important for breeding lapwing in Northern Ireland, have incurred severe losses over the last 50 years (Donaghy and Mellon, 1998). Drainage, land improvement, and changes in grazing patterns have all greatly reduced and fragmented the area of suitable breeding habitat, which has largely been replaced with improved grassland, a habitat consistently avoided by lapwing (Henderson *et al.*, 2002), and which now covers around 40% of the Northern Ireland land surface (Cooper *et al.*, 2002). Other

habitats suitable for breeding lapwing, such as cut-over bogs and marginal upland grasslands, have also been affected by agricultural improvement (Donaghy and Mellon, 1998).

- 2.2** Agricultural specialisation - the loss of mixed farming systems has also had an effect. The area of arable land in Northern Ireland has been reduced to under 3% (Cooper *et al.*, 2002) and this is mostly concentrated in the cereal growing areas of eastern Co. Down and the Foyle basin. As a result, nesting sites in arable crops are now rarely found next to extensively-managed damp grasslands, which are important for chick rearing.
- 2.3** Reduction in spring sown cereals - although less important in a Northern Ireland context due to the small area of arable land, the replacement of spring sown cereals with winter wheat or barley has also affected lapwing populations. This is due to winter-sown crops becoming too dense early in spring, more frequent agricultural operations and heavy applications of chemicals, all of which lead to reduced nesting success and productivity.
- 2.4** Predation - Grant *et al.* (1997) and Herbert (1997) have shown that breeding curlew and lapwing (respectively) suffer high rates of nest failure as a result of predation by crows and foxes. It is thought that this may be due in part to habitat loss and fragmentation, which concentrates breeding birds into smaller areas. There are undoubtedly parallels in the relationship between lapwing and predators. Whilst no direct evidence is available, Stanbury *et al.*, (2000) suggests that this effect may be compounded by an increase in predator populations. It is therefore highly likely that the twin factors of habitat fragmentation and possible increases in crow and fox populations are affecting the breeding productivity of lapwing as well as other waders. Herbert (1997) in his study of sites in Co. Fermanagh and the Shannon Callows, found high levels of mammalian predation at mainland sites close to water bodies, as compared to island and mainland sites away from water bodies.
- 2.5** Grazing - on some well monitored sites such as Lower Lough Erne Islands RSPB Reserve, typical of sites in the wider countryside, under-grazing was an important issue; i.e. where grazing densities were considered too low to provide a suitable sward (Robson pers. comm.) and the sites quickly become covered in unsuitable, rank grasses and eventually scrub.

### **3. Current Action**

- 3.1** *Council Directive (79/409/EEC) on the conservation of wild birds*, the Birds Directive, was adopted in 1979 and requires member states to identify areas to be

given special protection for rare or vulnerable species, and for regularly occurring migratory species. Three sites have been classified as Special Protected Areas (SPAs) under Article 4.2 of the Directive for their winter waterfowl assemblage (>20,000) with lapwing as one of the species. These are Lough Neagh and Lough Beg SPA, Strangford Lough SPA and Lough Foyle SPA.

- 3.2** Under the *Nature Conservation and Amenity Lands (Northern Ireland) Order 1985*, Areas of Special Scientific Interest (ASSIs) are identified and declared by the Department of the Environment (DOE) through the Environment and Heritage Service (EHS). *The Environment (Northern Ireland) Order 2002*, strengthened the protection of ASSIs, recognising the importance of working in partnership with owners and occupiers and facilitating the positive management of these sites. The lowland wet grassland complexes of Upper Lough Erne and Lough Neagh and Lough Beg have been designated as ASSIs partly because of their importance for breeding waders. Some other key sites, such as the Fairy Water Bogs in County Tyrone, have been designated as ASSIs, principally for their important habitats, but also with reference to the important breeding wader populations.
- 3.3** The Management of Sensitive Sites Scheme (MOSS), launched in 2002 by EHS, is a voluntary scheme designed to ensure the positive management of ASSI features to maintain their extent and favourable condition. Under the scheme, landowners can receive payment for carrying out conservation work within the framework of a written agreement. MOSS covers issues such as dumping, grazing and control of invasive species.
- 3.4** A five year management trial to assess the effects of predator control on nesting success of breeding curlew has been initiated by EHS, in partnership with the RSPB and the British Association for Shooting and Conservation (BASC). A monitoring programme of both the experimental and control sites within the study area has been implemented by RSPB with start-up funding from EHS. Whilst curlew are the key study species, it is anticipated that it will also benefit other waders.
- 3.5** Department of Agriculture and Rural Development's DARD, through its Countryside Management Branch (CMB), has developed a series of agri-environment schemes including the Environmentally Sensitive Area (ESA) scheme (revised in 2000) and the Countryside Management Scheme (CMS). Their objective is to protect and enhance semi-natural habitats and species 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 potential to be of benefit to lapwing. A further revision of both ESA and CMS was approved recently and includes habitats/features termed Breeding Wader Sites.

- 3.6** The Wet Pasture prescription in the West Fermanagh and Erne Lakeland ESA, although not specifically targeted at lapwing, are intended to conserve and enhance areas of lowland wet grassland. The West Fermanagh and Erne Lakeland ESA Wet Pasture prescription has not been replicated in CMS. The original ESA scheme was replaced with a revised ESA in 2000, which also does not contain a Wet Pasture prescription. Farmers in Co. Fermanagh who entered 10 year ESA agreements prior to 2000 will still have the “wet pasture” habitat and are required to comply with the management prescriptions as listed on their agreement. Transfer to the revised scheme is voluntary.
- 3.7** Two other CMS prescriptions, the Winter Stubble option and Conservation Cereals both provide indirect benefits for lapwing, through encouraging spring-sown cereals
- 3.8** DARD and RSPB jointly employ an Agri-Environment Officer, whose main role is to contribute to the effective delivery of agri-environment prescriptions for biodiversity priorities, including lapwing.
- 3.9** Under DARD’s current Vision E Plan, due to end in 2005, provision has been made for a three year Capital Works Scheme for agri-environment participants to carry out work such as creating wader scrapes and raising water levels.
- 3.10** RSPB manages and monitors several key islands in Lower Lough Erne as a reserve for breeding waders, including lapwing. A number of intensive measures have been carried out specifically for lapwing, these include mowing large strips of short vegetation close to damp areas or shoreline. Recent monitoring shows that this is highly effective in increasing breeding lapwing numbers. RSPB also manages part of its Belfast Lough Reserve for breeding waders, particularly lapwing.
- 3.11** The wintering population is monitored through the Wetland Bird Survey (WeBS) and Irish Wetland Bird Survey (IWeBS) counts on all major wintering sites.
- 3.12** The UK Woodland Assurance Standard (UKWAS Steering Group, 2000), a voluntary certification standard, requires that valuable semi-natural habitats are being treated in a manner that does not lead to further loss of biodiversity. Forest Service is certified against this standard and is undertaking a survey of its lands to identify valuable semi-natural habitats which include grasslands.

- 3.13** *The Environmental Impact Assessment (Forestry) Regulations (Northern Ireland) 2000* require anyone who wishes to carry out a project including afforestation, deforestation, forest road works or forest quarry works that is likely to have significant effects on the environment to obtain consent for the work from the Department of Agriculture and Rural Development.
- 3.14** Forest Service acquisition policy is outlined in *Afforestation – the DANI Statement on Environmental Policy* (DANI, 1993). It states that there should be a presumption against afforestation of botanically rich sites, which have undergone little disturbance for many years.
- 3.15** *Forests and Water Guidelines* (Forestry Commission, 2003), sets out water protection and riparian management standards with which forest managers are required to comply in relation to forest design planning and management of forestry operations which might effect water bodies

## **4 Action Plan Targets**

- 4.1 Maintain the Northern Ireland breeding lapwing population at least 1700 pairs
- 4.2 By 2010 restore the Northern Ireland breeding lapwing population to 1,900 pairs.
- 4.3 By 2015 increase the Northern Ireland breeding lapwing population size to 2,200 pairs.
- 4.4 By 2020 increase the Northern Ireland breeding lapwing population size to 3,000 pairs.
- 4.5 Maintain range of breeding lapwing.
- 4.6 By 2015 increase the range of breeding lapwing.
- 4.7 By 2020 further increase the range of breeding lapwing.

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

### **5.1 Policy and legislation**

- 5.1.1 By 2006, seek to encourage positive environmental change through the reformed Common Agricultural Policy (CAP), for example, by promoting sustainable agricultural management of marginal and wetland habitats.  
(ACTION: DARD, EHS)
- 5.1.2 By 2007, begin to monitor the effects of decoupling, particularly on extensive livestock and mixed farming systems, for changes which may have implications for lapwing and other key species of pastoral ecosystems.  
(ACTION: DARD)
- 5.1.3 By 2008, target positive management through MOSS, agri-environment schemes, the LBAP process and grant aid for biodiversity to secure favourable management on suitable lapwing sites.  
(ACTION: EHS, DARD, District councils)
- 5.1.4 By 2007, ensure that agri-environment scheme prescriptions relevant/appropriate to lapwing are contributing to maintaining and enhancing the population across Northern Ireland.  
(ACTION: DARD, EHS)

- 5.1.5 By 2006, ensure that all farmers receiving agri-environment scheme payments and LFA Compensatory Allowance Payments are complying with GFP.  
(ACTION: DARD, EHS)
- 5.1.6 Ensure implementation of Good Agriculture and Environmental Condition (GAEC), in order to prevent either under or over grazing in key breeding wader areas, either of which could decrease the suitability of breeding areas for lapwing.  
(ACTION: DARD)
- 5.1.7 By 2006, review *Planning Policy Statement 2 (PPS2) – Planning and Nature Conservation*, to include policies relating to priority habitat and species.  
(ACTION: Planning Service, EHS)
- 5.1.8 By 2005, produce *Planning Policy Statement (PPS14) on Sustainable Development in the Countryside* which incorporates objectives to minimise the impact of housing development on the environmental resources of habitat, water quality and biodiversity of the rural area, thereby contributing to the conservation of biodiversity in Northern Ireland.  
(ACTION: DRD, Planning Service, EHS,)
- 5.1.9 By 2006, produce *Planning Policy Statement (PPS15) on Planning and Flood Risk*. This includes an objective to promote an integrated sustainable approach to the management of development and flood risk that, among other matters, will contribute to the conservation and enhancement of biodiversity in Northern Ireland.  
(ACTION: Planning Service, EHS, DRD).
- 5.1.10 Ensure that important lapwing habitats and their conservation management requirements are recognised and site protection policies are included in statutory and non-statutory plans e.g. Development Plans, Local Biodiversity Action Plans (LBAP's) and appropriate management strategies.  
(ACTION: Planning Service, EHS, DARD, District Councils)

## **5.2 Site safeguard and management**

- 5.2.1. By 2006, produce ornithological selection criteria for ASSIs.  
(ACTION: EHS)
- 5.2.2 By 2006, produce conservation objectives for all statutory sites including SPAs, cSACs, ASSIs and NNRs ensuring that the objectives do not conflict with the requirements of lapwing.  
(ACTION: EHS)

- 5.2.3 By 2007, review breeding lapwing sites within SPA, cSAC, ASSI and NNR series and notify further sites to fill significant gaps.  
(ACTION: EHS)
- 5.2.4 By 2007, establish agreements with landowners for the positive management of areas important for breeding lapwing within ASSIs through the MOSS scheme.  
(ACTION: EHS)
- 5.2.5 By 2007, ensure that the CMS and ESA measures relevant to lapwing are carefully targeted at key areas.  
(ACTION: DARD)
- 5.2.6 By 2006, where appropriate, enhance management of relevant Nature Reserves/National Nature Reserves for breeding lapwing.  
(ACTION: EHS, District Councils)
- 5.2.7 By 2008, consider the development of new agri-environment measures to benefit lapwing e.g. raising water levels and the reversion of improved pasture.  
(ACTION: DARD)
- 5.2.8 By 2010, consider whether predator control measures need to be integrated into the long term management of farming systems and of designated sites.  
(ACTION: EHS, DARD)

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

- 5.3.1 By 2006, encourage landowners and site managers to avoid carrying out farming operations during the breeding season, in the vicinity of identified breeding wader territories.  
(ACTION: EHS, DARD)

### **5.4 Advisory**

- 5.4.1 By 2006, ensure that those responsible for implementing and supporting agri-environment schemes and MOSS agreements continue to receive effective training and up-to-date advice on appropriate land management practices which benefit breeding lapwing.  
(ACTION: EHS, DARD)
- 5.4.2 By 2006, ensure that farmers and landowners are aware of the presence of lapwing on their land and mechanisms available to instigate appropriate management.  
(ACTION: EHS, DARD)

- 5.4.3 By 2006, ensure that information on lapwing in Northern Ireland is available to all those who could play a role in their conservation and recovery.  
(ACTION: EHS, DARD)

## **5.5 International**

- 5.5.1 Further develop links with the Republic of Ireland and other European and international organisations and programmes such as the European Environment Agency and the European Centre for Nature Conservation, to promote the exchange of information and experience in research, management techniques, education and conservation strategies.  
(ACTION: EHS)

## **5.6 Future research and monitoring**

- 5.6.1 By 2007, undertake research to investigate the factors underlying long term population declines at key sites.  
(ACTION: EHS)
- 5.6.2. Monitor the response of lapwing populations to the predator control management trial in Antrim and Fermanagh and Tyrone.  
(ACTION: EHS)
- 5.6.3. Continue to carry out a regular monitoring programme of lapwing and other breeding waders at key sites to assess changes in response to management.  
(ACTION: EHS)
- 5.6.4 By 2007, monitor and review the effectiveness of agri-environment schemes, in maintaining and enhancing lapwing habitats and populations across Northern Ireland.  
(ACTION: DARD, EHS)
- 5.6.5 Continue to support WEBS/IWEBS counts on all important wintering sites and ensure all data is centralized and monitored for ongoing trends.  
(ACTION: EHS)

## **5.7 Communications and publicity**

- 5.7.1 By 2006, raise awareness of the reasons for lapwing declines throughout Northern Ireland.  
(ACTION EHS, DARD)

- 5.7.2 By 2006, ensure the provision of high quality advisory materials to landowners and seek opportunities to promote and publicise mechanisms for delivering positive management.  
(ACTION EHS, DARD)

## **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;
- Skylark *Alauda arvensis* (UK & Northern Ireland)
  - Pennyroyal *Mentha pulegium* (UK & Northern Ireland)
- 5.8.2 This plan should be considered in conjunction with the following UK and Northern Ireland Habitat Action Plans:-
- Purple moor grass and rush pastures
  - Coastal and floodplain grazing marsh
  - Lowland raised bog
  - Blanket bog
- 5.8.3 This plan will also link to the Northern Ireland Species Action Plans for the following species:
- Curlew *Numenius arquata*
  - Redshank *Tringa totanus*

## **6 Costings**

- 6.1 A table showing the global costs for this and other SAPs is available on the EHS/Biodiversity web page.

## 7 References

- Cooper, A., McCann, T. & Meharg, M. (2002) *Habitat Change in the Northern Ireland Countryside. Summary Report of The Northern Ireland Countryside Survey 2000*. Environment and Heritage Service, Belfast.
- Department of Agriculture for Northern Ireland. 1993. Afforestation – the DANI statement on environmental policy. Department of Agriculture for Northern Ireland. Belfast.
- Donaghy, A. & Mellon, C. (1998). *Fields for the Future*. RSPB Belfast.
- Department of Agriculture for Northern Ireland. 1993. Afforestation – the DANI statement on environmental policy. Department of Agriculture for Northern Ireland. Belfast.
- Forestry Commission (2003). *Forests and Water Guidelines*. Fourth Edition. Forestry Commission, Edinburgh.
- Galbraith H., (1988). *Effects of agriculture on the breeding ecology of lapwings*. *J.Appl.Ecol.*25: 487-503.
- Gibbons, D.W., Reid, J.B. & Chapman, R.A. (1993). *The New Atlas of Breeding Birds in Britain and Ireland 1988-91*. T&AD Poyser.
- Grant, M.C., Oarsman, C., Easton, J., Lodge, C., Smith, M., Thompson, G., Rodwell, S., & Moore, N. (1997). *Breeding success and causes of breeding failure Curlew Numenius arquata in Northern Ireland*. *J. App; Ecol.*36: 59-74.
- Gregory RD, Wilkinson NI, Noble DG, Robinson JA, Brown AF, Hughes J, Procter DA, Gibbons DW and Galbraith CA (2002). The population status of birds in the United Kingdom, Channel Islands and Isle of Man: an analysis of conservation concern 2002–2007. *British Birds* 95: 410–450.
- Hagemeijer, W. & Blair, M. (Eds) (1997). *The EBCC Atlas of European Breeding Birds*. T & AD Poyser.
- Heery, S.J. & Cooney, T. (1997) *A part survey of the breeding waders on the Shannon/Little Brosna callows*. Unpublished report, NPWS, Dublin

- Henderson, I.G, Wilson, A.M., Steele, D.& Vickery, J.A. (2002). *Population estimates, trends and habitat associations of breeding Lapwing Vanellus vanellus, Curlew Numenius arquata and Snipe Gallinago gallinago in Northern Ireland in 1999*. Bird Study, 49:17-25.
- Herbert, S. J. (1997) *Breeding success of lapwing at key sites in Fermanagh and the Shannon Callows*. MSc Thesis, University of Ulster, Coleraine.
- Madden, B., Cooney, T., O'Donoghue, A., Norriss, D.W., and Merne, O.J., (1998) *Breeding waders of machair systems in Ireland in 1996*. Irish Birds, 6:2, 177-190.
- Newton. S., Donaghy, A., Allen, D. & Gibbons, D. (1999). *Birds of Conservation Concern in Ireland*. Irish Birds 6:3 333-344.
- Partridge, J.K (1992). *1992 Re-survey of Northern Ireland Breeding Wader Sites*. RSPB, Belfast
- Partridge, J.K. & Smith, K.W. (1992). *Breeding Wader Populations in Northern Ireland, 1985-7*. Irish Birds 4 497-518.
- Pollitt, M, Hall, C, Holloway, S, Hearn, R, Marshall, P, Musgrove, A, Robinson, J and Cranswick, P. (2003). *The Wetland Bird Survey 2000-1. Wildfowl and Wader Counts*. BTO, WWT, RSPB and JNCC.
- Tierney, T.D., Hudson, J., Casey, C. (2002). *Survey of the Breeding waders of the River Shannon callows, 2002*. Irish Birds 7: 21-32
- Tucker, G.M. & Heath, M.F. (1994). *Birds in Europe: their conservation status*. Cambridge, UK: BirdLife International. (BirdLife Conservation Series no.3).
- Stanbury, A., O'Brien, M., Donaghy, A. Trends in Breeding Wader Populations in key areas within Northern Ireland between 1986 and 2000. Irish Birds 6:4, 513-526
- Sharrock, J T R. 1976 *The Atlas of Breeding Birds in Britain and Ireland*. T & A D Poyser, London.
- UKWAS Steering Group. (2000). *The UK Woodland Assurance Standard*.  
UKWAS Steering Group. Forestry Commission. Edinburgh.

Wilson, A., Vickery, J.A., & Brown S.J. (2001) *Numbers and distribution of Northern Lapwings Vanellus vanellus breeding in England and Wales in 1998*. Bird Study 48: 2-17.

### **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 Regional 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
MAGNI	The National Museums and Galleries of Northern Ireland
NIBG	Northern Ireland Biodiversity Group
NICS	Northern Ireland Countryside Survey
NNR	National Nature Reserve
PPG	Planning Policy Guideline
PPS	Planning Policy Statement
RA	Rivers Agency
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Species Action Plan
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