

**Example of reporting the ‘Main pressures and threats’ and ‘Conservation measures’ (*Numenius arquata arquata,* breeding, UK) - DRAFT**

**Species name:** *Numenius arquata arquata* (A768)

**Country:** United Kingdom

**Season:** Breeding

**Brief description of habitat/species and its status**

*Numenius arquata arquata* is a ground-nesting wader that breeds in a range of agricultural, semi-natural and natural open habitats across boreal and temperate regions of western, northern and central Europe. In the UK, it breeds mainly on unenclosed upland heath, bog and grassland (‘moorland’; up to at least 760 m) and enclosed marginal upland grassland habitats, with smaller numbers in lowland wet meadows and heath.

The UK breeding population has been decreasing since the mid-1970s, and this decrease is still ongoing (although the rate may have slowed in recent years). The breeding distribution also declined notably between the 1968–72, 1988–91 and 2007–11 national atlas projects.

**Free-word description of ‘real life’ pressures**

The main pressures are:

* loss and degradation of semi-natural grassland habitats owing to conversion to arable farmland or more regular cutting, higher fertiliser input, soil drainage, etc., as part of ‘improvement’ and more intensive management of agricultural grasslands;
* trampling of nests and reduction in quality of nesting habitat, as a consequence of increasing livestock densities and overgrazing;
* loss and fragmentation (with potential impacts on levels of nest predation; see below) of upland breeding habitat, due to peat cutting and afforestation with commercial conifer plantations;
* increased nest predation by generalist (native) predators, the local occurrence/success of which has probably increased as a result of (the aforementioned) changes to the broader landscape.

Other factors, the impact of which is currently uncertain or low and/or of increasing importance in the future, include:

* undergrazing owing to local reductions in livestock densities;
* reduction in suitable breeding habitat, owing to the species's avoidance of the area around upland windfarms (both during construction and turbine operation);
* human disturbance from leisure activities (e.g. hill-walking);
* declines in grouse-moor management (e.g. predator control and strip-burning of heather);
* reduction in availability/abundance of invertebrate prey with the warmer/drier conditions predicted under climate change.

**Reporting for pressures**

**A. Introduction**

Adult survival rates of *Numenius arquata arquata* are high in the absence of hunting and harvesting of intertidal prey (not relevant in the UK during the breeding season), with reduced reproductive success the likely demographic driver of the breeding population decline. There is good evidence that the loss and degradation of natural and semi-natural breeding habitats (e.g. upland grassland and moorland and lowland wet grasslands), as a consequence of land-use and management changes, is the main cause of this decline, with increased nest predation likely also to be important at a site level.

Other pressures that have not been included below, owing to doubts over their impacts, include: under-grazing or reduction in the density of livestock (acting only locally, and hence of low importance/impact); human disturbance resulting from leisure activities (e.g. hill-walking; probably only of local/low impact); declines in grouse-moor management (predator control potentially beneficial, but impacts of strip-burning of heather not entirely clear).

As the majority of the UK breeding population remains in the UK during the non-breeding season (albeit in more coastal areas), the focus here is on pressures/threats acting within the UK itself (those affecting the larger wintering population to be captured in a separate ‘winter’ season report for the species).

**B. Annotated table of pressures**

| **Pressure from the list** | **Ranking** | **Location** | **Impact** | **Explanation** |
| --- | --- | --- | --- | --- |
| A02 Conversion from one type of agricultural land use to another (excluding drainage and burning) | H | 4 | conversion of semi-natural breeding habitat to arable farmland or intensively managed ‘improved’ agricultural grassland, through e.g. more regular cutting, higher fertiliser input and soil drainage | More regular/intense mechanised cutting regimes, increased fertiliser input and drainage of wetter areas results in a more homogenous, species-poor and structurally uniform sward, which is less appealing to nesting *Numenius arquata arquata* (and potentially also renders any nests more prone to predation; see also I04 below). |
| A08 Mowing or cutting of grasslands | M | 4 |
| A20 Application of synthetic (mineral) fertilisers on agricultural land | M | 4 |
| A31 Drainage for use as agricultural land | H | 4 |
| A09 Intensive grazing or overgrazing by livestock | H | 4 | trampling of nests by livestock and reduction in quality of nesting habitat | Increasing livestock densities in many (but not all) areas result in reduced nesting success through nest trampling, plus lower breeding densities as more intense grazing also reduces the structural heterogeneity (and diversity) of grassland. |
| B01 Conversion to forest from other land uses, or afforestation (excluding drainage) | M | 4 | loss and fragmentation of upland breeding habitat due to afforestation | Conversion of upland breeding habitat to commercial conifer forests, which – as well as having a direct impact, through loss of moorland and marginal agricultural land – may also have indirect/delayed impacts owing to fragmentation of open habitats and related ‘edge effects’ (potentially including a local increase in generalist predators / nest predation; see also I04 below). |
| C05 Peat extraction | M | 4 | loss and degradation of upland breeding habitat due to peat extraction and fragmentation of peatland | Destruction, degradation (through, e.g., drainage and peat cutting) and fragmentation of peat bogs is an important (but possibly declining) pressure regionally. |
| I04 Problematic native species | H | 4 | increased nest predation by native predators | Predation of eggs and chicks by generalist predators, such as *Vulpes vulpes* and *Corvus corone* (*sensu lato*) – which have probably benefitted from anthropogenic changes to the broader landscape – is the key factor limiting nesting success / productivity at some sites. Other studies, however, have found no or only a weak relationship between predators and *N*. *a*. *arquata* abundance / breeding success, suggesting some spatial variation in impact. |

**Reporting for threats (only terrestrial)**

**A. Annotated table of changes**

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| --- | --- | --- | --- | --- |
| **Pressure from the list** | **Ranking** | **Location** | **Change** | **Explanation** |
| C05 Peat extraction | M | 4 | deleted as a threat | Owing to a combination of the increasing impact of the threats below, plus the likely decrease in the impact of peat extraction (increasingly offset by peatland restoration projects), this will no longer be among the ten most important factors. |
| D01 Wind, wave and tidal power, including infrastructure | M | 4 | added as threat | Breeding *Numenius arquata arquata* appears to avoid the areaaround windfarms during both the construction phase and turbine operation. Although the scale of windfarm development is not believed to be sufficient to have yet caused significant population declines, the impact of upland windfarms is likely to increase in the future (as construction continues and the species increasingly ‘retreats’ to higher-altitude habitats). |
| N07 Decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiont, etc.) due to climate change | M | 4 | added as threat | The warmer and drier conditions predicted under climate change may (further) reduce the availability and/or abundance of the soil invertebrates that both adults and chicks feed on. |

**Reporting for measures**

**9.5 List of main conservation measures**

**A. Introduction**

The main conservation measures being taken for breeding *Numenius arquata arquata* are those aimed at minimising or reversing the impact of agricultural activities – e.g. adapting grazing and cutting regimes to maintain suitable nesting habitat and improve breeding success, restoring ditches and wet features in fields, and reducing/avoiding further drainage of wet grasslands – through agri-environment schemes (where suitable options exist) and as part of protected area management or targeted recovery projects. In addition, control of generalist nest predators is undertaken (specifically for *N*. *a*. *arquata*) locally, within recovery project areas (‘incidental’ benefits may also occur in areas where intensive predator control is undertaken for other purposes, e.g. grouse moor management). Projects to restore peatland habitat and manage upland heaths and bogs as a climate-change adaptation strategy may also benefit upland breeding waders like *N*. *a*. *arquata*.

**B. Annotated table of measures**

|  |  |  |
| --- | --- | --- |
| **Measure from the list** | **Extent** | **Explanation** |
| CA02 Restore small landscape features on agricultural land[[1]](#footnote-1) | Locally prevalent in focal areas of species recovery programme, but also in others where suitable agri-environment options permit | Restoration of ditches and wet features within fields (e.g. shallow pools or ‘wader scrapes’). |
| CA05 Adapt mowing, grazing and other equivalent agricultural activities | Management of cutting regimes and livestock densities to minimise nest losses/trampling and overgrazing in some areas, but increase cutting/grazing in others where vegetation height, density and/or homogeneity has become unsuitable for nesting *N. a. arquata*.  |
| CA15 Manage drainage and irrigation operations and infrastructures in agriculture | Reducing or avoiding drainage of agricultural grasslands (and peatland). |
| CI05 Management of problematic native species | Undertaken relatively locally (e.g. recovery project areas) for *N. a. arquata* (but potential ‘incidental’ benefits where occurs for other purposes) | Control of generalist predators can result in local increases in *N. a. arquata* nesting success (and abundance). Also some trials of predator-exclusion fences around nest sites. |
| CN02 Implement climate change adaptation measures | Relatively localised | Re-vegetating bare peat and blocking drainage ditches – as part of a climate change adaptation strategy for upland heath and bog habitats – can also improve peatland quality and increase invertebrate resources for upland breeding waders, such as *N. a. arquata*. |

1. This measure is more aimed at addressing pressure/threat 'A05 Removal of small landscape features for agricultural land parcel consolidation (hedges, stone walls, rushes, open ditches, springs, solitary trees, etc.)' in practice (the pressure ‘A05’ is not listed among main pressures), but this pressure is usually acting at smaller scales and/or a 'side-effect' of larger / more widespread pressures (like the ‘A02’ and ‘A31’ actually listed). [↑](#footnote-ref-1)