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Audit of non-native species in England

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Introduction

Invasive non-native species are considered to be the second most significant cause of biodiversity loss on a global scale. The threat from non-native species is increasing with the continued growth of global trade and travel. Although there are a number of well known non-natives species in England, there has not been a comprehensive English list. This report and accompanying spreadsheet presents an audit of terrestrial, freshwater and marine non-native species in England.

What was done

Desk based studies were undertaken to collate information on the occurrence of non-native taxa in England, distinguishing those that are increasing or likely to increase from others that do not currently appear to be invasive. All multicellular organisms have been included, as well as a few micro-organisms. Data was included on a number of attributes of each species including date and pathway of introduction, native range, present geographical distribution etc. This data was stored on a spreadsheet and database. An assessment of impacts of the non-native species was made from information in the literature when available or through expert opinion.

Results and conclusions

2,721 non-native species were entered in the database with flowering plants making up 73% of this total. A more detailed analysis was undertaken on 1,413 records which does not include the rarer alien vascular plants and garden animals and fungi.

The economic and environmental effects of introduced species are generally unfavourable. Only four animals were rated as having a strongly positive economic effect, namely the quarry species common pheasant *Phasianus colchicus*, greylag goose *Anser anser* and red-legged partridge *Alectoris rufa*, and the predatory beetle *Rhizophagus grandis*, which is a biocontrol agent of the great spruce bark beetle *Dendroctonus micans*. Many plants of wild or wild-type seed origin are cultivated, especially by foresters; these have a strong positive economic impact.

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Twenty one species are considered to have strongly negative environmental impacts. The animals include six mammals, two birds, one fish, two crustaceans and one mollusc. Three pathogens were noted for their major impact. Six vascular plants were in this category, but the number could be larger if different selection criteria were applied.

The majority of non-native species are not thought to be strongly increasing or decreasing. Twenty-eight plants are strongly decreasing, all but five of which were introduced before 1500. Only two animals are strongly decreasing, Carthusian snail *Monacha cartusiana* and the giant earwig *Labidura riparia*. Thirty-six organisms are strongly increasing.

English Nature's viewpoint

An audit of non-native species and an assessment of their impacts and potential impacts will act as a baseline for defining and prioritising work on non-native species for conservation benefit. The information and views expressed particularly regarding economic and ecological impacts as well as current and future trends will stimulate discussion and further work to define what action is appropriate. The audit can contribute to a GB perspective of non-natives and will be a useful comparison for future assessments of the presence of non-natives species in England.

Selected references

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