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PRIORITIZATION OF ACTION ON NON-NATIVE SPECIES – PROGRESS IN GREAT BRITAIN

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Abstract: There is an increasing number of calls for action on a wide range of invasive non-native species, but only a limited resource to deal with them. It is clearly important for policy makers and others to be able to prioritize where these scarce resources are directed in order to maximize their conservation benefit. Coordination of effort, and knowledge sharing are clearly important as are risk assessment methods which attempt to quantify the risk posed by a range of species that are either present or are likely to invade. Great Britain, as an island, has advantages over continental landmasses in that prevention of invasion by terrestrial and freshwater species is more straightforward. However, there is still a large number of detrimental non-native species present in the country and this is likely to increase. This paper describes the recent establishment of a mechanism to coordinate action against non-native species in Britain. It also details the development of a risk analysis process which will provide scientifically robust advice to the government and allow policy makers and others to base prioritize actions against invasive species on a more sound footing.

Key Words: coordination, Great Britain, invasive species, prioritization, risk assessment.

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INTRODUCTION

Recent audits of non-native species for England and Scotland have identified over 2,000 non-native species that occur in the wild (Welch et al. 2000, Hill et al. 2005). A minority of these have seriously detrimental effects and these invasive species probably cost the British economy several billion US dollars per annum (Anonymous 2007). As well as the impact on economic interests such as plant and animal health, there has been a growing recognition in Great Britain (GB) of the significant impact of non-native species to biodiversity interests. This has led to significant developments in relation to dealing with non-native species issues in GB in recent years.

In 2001, the United Kingdom's (UK) Department for Environment, Food and Rural Affairs (Defra) instigated a fundamental review of policy on non-native species issues. This was chaired by Defra and had representatives from the Scottish and Welsh Governments, other relevant government departments and agencies and a range of non-government stakeholders, including conservation and industry representatives. This review identified the single biggest problem in relation to non-native species was the lack of coordinated response across the many stakeholders. The review made a total of 44 recommendations, including eight key recommendations, for improved coordination of response to non-native species in GB:

- Setting up or designating a single co-ordinating body,
- Developing generic risk assessment procedures,
- Improving monitoring and surveillance,
- Developing codes of practice for key sectors,
- Improving capacity for management of non-native species,
- Increasing consultation with stakeholders,
- Improving public awareness, and
- Revising and updating legislation

COORDINATION

One of the main recommendations of the 2001 review was to designate or establish a single agency or organization to coordinate action on non-native species. In 2005, a Non-native Species Programme Board was established for GB. This Board is chaired by the Defra, and has representatives from the Scottish and Welsh Governments, and other relevant governmental departments and agencies. The Programme Board is the key operational decision-making body on non-native species issues in GB. Its main aims are to oversee the

development of a GB Strategy on invasive species and drive its implementation. It aims to steer and give strategic direction to work undertaken across the government on non-native species and it will establish clear priorities for action. The Programme Board meets approximately quarterly, and to support the work of the Programme Board a separate Non-native Species Secretariat was established in 2006. This Secretariat reports to the Programme Board and has two full-time staff. The Secretariat plays a pivotal role in relation to delivery of actions instigated by the Programme Board, for example establishing working groups to examine specific issues and providing secretarial support for the Risk Analysis Mechanism (see below). It is intended that the Secretariat will become a central hub for information gathering and dissemination concerning invasive non-native species and action being taken to tackle them in GB as well as maintaining links internationally. The Secretariat has recently launched a website www.nonnativespecies.org.

To ensure input from a broad spectrum of expertise, a working group of government and non-government stakeholders has drafted a Framework Strategy for invasive non-native species in GB (see www.nonnativespecies.org/documents/Draft_StrategyV6.4.pdf). This contains 49 specific actions under the headings: Prevention, Detection and Rapid Response, Mitigation and Control, Building Awareness, Legislation, Research and Information Exchange). This strategy has just been through a public consultation process and is being modified in the light of comments received.

RISK ASSESSMENT

The first research to flow from the recommendations of the 2001 review was in relation to the development of a generic risk assessment methodology to support decision-making and prioritization. It was decided that the generic risk assessment tool would be based on the pest risk analysis (PRA) used by the European and Mediterranean Plant Protection organization (EPPO). The EPPO PRAs follow International Plant Protection Convention standards for pest risk analysis. They are accepted by the World Trade Organization as sufficiently robust from a scientific point of view to justify restricting trade, where appropriate. A consortium of six UK organizations completed a one-year modification of the EPPO PRA scheme with modules to assess the risk of individual species and entry pathways as well as the risk to receptor habitats (www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native-risks/).

The risk assessment works by asking a series of questions that attempt to quantify the probability of entry, establishment and spread, and the magnitude of impact. The response to each question is scored on a five-point scale with a requirement, where possible, to fully justify each response with references. The risk assessment also attempts to quantify any uncertainty by requiring the assessor to indicate the uncertainty of each response on a three-point scale. The results are summarized in three ways:

- The risk rating given by the assessor (based on the opinion of the author),
- A simple summation of the values given for all the risk responses, and
- Using conditional probability to determine a summary score for the risk responses.

The methodology has been peer-reviewed during a separate project (www.nonnativespecies.org/documents/Final_Peer_Review.pdf), and based on the recommendations from that review, will undergo further development to make it more user-friendly. In the meantime, the existing methodology is being used to assess risk, but only the species and pathway risk assessment modules are being developed and used at present, not other modules. Each risk assessment is carried out by one expert in the taxon/pathway being assessed. To ensure that it is an accurate reflection of the current state of knowledge on the species/pathway concerned, a Risk Analysis Mechanism which essentially reviews the assessment in a similar way to the peer review and editorial processes for scientific papers was developed. All risk assessments are first reviewed by a single peer reviewer, who is also an expert in the taxon/pathway concerned, who ensures that the literature quoted is appropriate, correctly interpreted, and no important literature is omitted. The risk assessment plus the peer reviewer's comments are then reviewed by a panel of risk assessment experts to ensure accuracy of approach and correct application of the methodology. Comments from the panel and peer reviewer are sent to the original risk assessor to address. When the assessment is finally signed off by the risk analysis panel it is sent to the Programme Board to help inform their actions. A fast-track mechanism has also been designed to ensure that the risk

assessment process helps with rapid response rather than impede it.

MONITORING AND SURVEILLANCE

It is extremely important to have accurate data on detections of new non-native species as well as to monitor changes in existing non-native species distributions. GB generally has excellent biological recording mechanisms, but for some taxa recording non-native species is seen as being of low priority. We are currently developing procedures, to improve recording of non-native species and to increase the speed of reporting interceptions of highly detrimental species. This information will be used to trigger risk assessments and potentially to initiate a rapid response to eradicate problem species before they become established. Rapid response actions are currently being carried out for American bullfrogs (*Rana catesbeiana*) and water primrose (*Ludwigia grandiflora/peploides*) in England.

CONCLUSION

Great Britain has been making substantial strides in recent years in relation to action against non-native species. Britain has achieved some notable eradication successes in the past, but there is now a shift towards a more proactive and preventative approach to tackling invasive species. We currently have a substantial proportion of the necessary components in place to enable an effective response against invasive species. Priorities for the near future include establishing a comprehensive rapid response mechanism, establishing an education and awareness working group to develop a communications and media relations strategy, and strategy coordinating the control of existing non-native species.

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