Review of risk assessment systems of IAS in Europe and introducing the German-Austrian black list information system (GABLIS)

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Abstract

We give a mini-review of existing European risk assessment procedures and present a newly developed and tested risk assessment tool for invasive alien species (IAS) in Germany and Austria, the "German–Austrian Black List Information System" (GABLIS). Based on the analysis of existing European national risk assessment systems, we analyse and discuss: the assessment criteria used; which impacts of IAS (biodiversity, economy) have been considered; for which taxonomic groups has the assessment been designed and tested; how many and which list categories have been used; and, the status of the assessment, i.e. legally binding or advisory. We found that the application of risk assessment systems in Europe started belatedly, however recently a considerable number of assessment systems have been developed and tested. These systems encompass a wide range of purposes and approaches, and so far, no common standard on the aspects mentioned above has been emerged.

GABLIS has been developed as a trans-national and taxonomically universal risk assessment system, which takes into account solely the detrimental effects of alien species on biodiversity. We describe which kinds of impacts are considered and how the thresholds have been scaled. We present the structure of the list categories, and we discuss the necessary underlying data for assessment, the assessment criteria and their scaling, and the assessment procedure. Five basic and six complementary criteria are used to assess the alien species' impact. GABLIS includes three main list categories (White List, Grey List, and Black List).

We discuss the practicability of GABLIS by presenting the assessment results of a model taxon (fish), and by presenting the assessment protocol for a vascular plant species. We discuss the necessary data quality for assessments, and the factors which account for differences in the assessments between both countries. We also report on experiences gained in assessments (e.g., average time necessary for assessments). The lessons learnt are discussed in the national and European political context of IAS management.

Finally, we explore the strengths and caveats of this approach in the context of national policy on IAS in Germany and Austria and the ongoing European political initiatives. GABLIS is intended to serve as a comprehensive, flexible, but robust risk assessment tool for Central Europe. Being a trans-national risk assessment tool, GABLIS also tests principles, which might contribute valuable insights for a future overall strategy against IAS in Europe.