

A NEW MODEL FOR SPECIES STATUS ASSESSMENT

N. G. Hodgetts

55 Norton Street, Grantham, Lincolnshire, NG31 6BX, United Kingdom.
nick.hodgetts@ntlworld.com

Hodgetts, N. G. (2002). A new model for species status assessment. *Portugaliae Acta Biol.* **20**: 3-9.

In 1994 the World Conservation Union (IUCN) published revised Red List categories, with criteria and guidelines on how they should be used, and the European Committee for the Conservation of Bryophytes (ECCB) produced guidelines on interpreting the categories specifically for bryophytes. However, there is still a substantial problem in encouraging individuals and agencies to use the revised system, and there are still many different systems currently in use, both within individual countries and internationally. A British initiative to provide a common standard for assignation of conservation status to species in Britain is described. It emphasises the importance of using the same, stable, criteria throughout, engaging the available expertise and reporting effectively.

Key words: Bryophytes, conservation, IUCN categories.

Hodgetts, N. G. (2002). Um novo modelo para a avaliação do estatuto de ameaça das espécies. *Portugaliae Acta Biol.* **20**: 3-9.

Em 1994 a “World Conservation Union” (IUCN) publicou uma revisão das diferentes categorias para as Listas Vermelhas, apresentando os critérios e orientações para a sua correcta utilização. O “European Committee for the Conservation of Bryophytes” (ECCB) estabeleceu linhas específicas orientadoras na interpretação das categorias para estes organismos. No entanto, existe ainda uma grande relutância na promoção do uso do novo sistema, tanto a nível individual como a nível das diferentes agências, além de se encontrarem ainda em uso diferentes sistemas, dentro de cada país e internacionalmente. É descrita uma iniciativa Britânica que estabelece um processo padrão para designar o estado de conservação das espécies Britânicas. A importância da utilização generalizada de um mesmo critério facilita as tarefas dos especialistas e torna a sua aplicação mais efectiva.

Palavras chave: Briófitos, conservação, categorias IUCN.

INTRODUCTION

Red Data Books and Red Lists are very useful tools and sources of information for use in species conservation. The original system of threat categories proposed by the World Conservation Union (IUCN) has been used widely throughout the world. In 1994, the IUCN produced a revision of the Red List categories, along with criteria for assigning them to species (World Conservation Union 1994). This revised system provided the means to assess species status much more objectively than was possible before, using a series of numerical thresholds based on measurements of abundance and decline. PALMER *et al.* (1997) described how the revised system was being applied in Britain and HALLINGBÄCK *et al.* (1998) showed how it could be used for bryophytes. The latter paper has now been adopted semi-officially by IUCN as a recommendation for the use of the system for bryophytes.

There is a clear need to know the conservation status of species – how threatened they are – in order to inform conservation action. Up to now, lists of conservation status have been drawn up on an *ad hoc* basis, to varying standards, for different geographical areas, and published in various forms. There are numerous lists in existence – Red Lists, Biodiversity Lists, Long Lists, Short Lists, Priority Lists, SoCC Lists, species listed on the schedules of the Wildlife & Countryside Act, etc, etc, and this has led to much confusion. For example, various different criteria and categories have been used in drawing up Red Lists and Red Data Books (e.g. old IUCN, new IUCN, made-up categories, etc.); different versions of the same list are in circulation; there is uncertainty over what individual lists actually mean and how they relate to one another; and, for some groups, competing lists have been produced. This is mirrored internationally, with different countries using different criteria and categories in assigning threat status, leading to the greatest difficulties for those attempting to provide Red Lists at an international level. This situation has to change if species conservation is to move on.

WHAT IS A RED LIST? THE IMPORTANCE OF TERMINOLOGY

Perhaps the most frequently asked question on species status is “What is a Red List?”. Because of the confusion surrounding species status, this is not always clear. The definition of a modern Red List should be a list including all species in the IUCN (1994) categories *Extinct* (EX), *Extinct in the Wild* (EW), *Critically Endangered* (CR), *Endangered* (EN) and *Vulnerable* (VU). Collectively, species in the CR, EN and VU categories are termed Threatened. Thus, species that have declined dramatically, but not yet enough to be included in any of these categories, should **not** be on the Red List. Similarly, species for which a particular state or region has international responsibility (e.g. globally rare species that are not threatened within that state/region) should **not** be on the Red List.

PROPOSAL

In Britain, our proposal is to rationalise the process of assessing conservation status so that all taxonomic groups are assessed to a comparable standard across the country. This is called the Species Status Project. There are a number of guiding principles behind this new initiative:

- It should be clear what geographical area is to be covered.
- Any system of assessing species status should be stable and repeatable.
- Categories of threat should be separated from categories of frequency.
- Decision-making in applying conservation status to species should largely be devolved to the experts.
- Species status lists should be disseminated effectively, and all methods should be transparent.
- Assessment of conservation status should be separated from the process of prioritising conservation action.

AREA TO BE COVERED

That it should be clear what geographical area is to be covered is an obvious point but one that needs making, because it affects the criteria to be used. If a Red List is to cover, say, Scotland only, then all the species occurring in Scotland should be assessed on a purely Scottish basis, with no regard for their status in England, Europe or globally. The British proposal covers England, Scotland and Wales, including the Isle of Man but not N. Ireland or the Channel Islands. Status is usually, and more logically, assessed for the island of Ireland as a whole, and the Channel Islands are biogeographically part of France. However, some specialist groups may wish to include assessment of Channel Island taxa too.

WHICH SYSTEM TO USE FOR SPECIES STATUS ASSESSMENT?

The most obvious option is to use the new (1994) IUCN criteria and threat categories (Fig. 1) for the Red List, plus *Near Threatened*, and further 'domestic categories' to take account of international responsibility and decline of non-Red List species. The IUCN criteria have the advantages that (a) they have been produced after much thought by a great number of experts; (b) they carry international weight, so any Red List using these criteria is much more powerful than a list using alternative criteria; and (c) they have a clear, repeatable methodology, applicable in a wide range of circumstances and geographical areas (GÄRDENFORS 1996) and are (or should be!) stable. The criteria have been used for all the most recent British Red Data Books (CHURCH *et al.* 1996, WIGGINTON 1999, CHURCH *et al.* in press), and will be used in the Species Status Project.

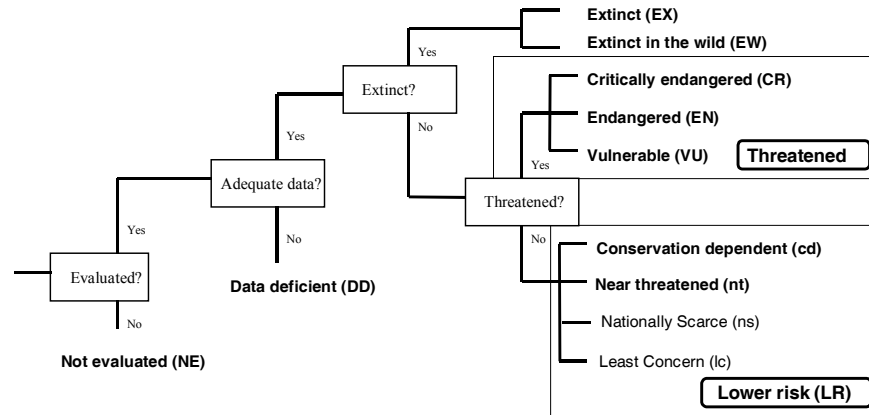


Figure 1. Hierarchical relationships of the IUCN threat categories.

Common criticisms of the revised IUCN system are that 'the criteria were invented only with large mammals (e.g. rhinoceros) in mind', and 'they will not work for my group, as we have insufficient information: all species will end up as *Data Deficient*!'. However, remarks of this kind rather miss the point of the revised system, which has to be studied very carefully (including the introductory sections of the IUCN booklet) in order to be interpreted correctly. It is 'allowed' to use the criteria and categories as a framework to be interpreted in a suitable way for each taxonomic group. In fact, as demonstrated elsewhere (HALLINGBÄCK *et al.* 1998), little radical interpretation is needed in order to use the system reasonably effectively for bryophytes.

Another concern with the revised system is that the Red List itself can be severely reduced, with a large number of species 'dropping out' into the *Near Threatened* category, and many species being 'forgotten' or 'sidelined' in *Data Deficient*. This is an important point and needs to be addressed by realising that Red Lists, as described above, are only one tool, albeit a very important one, in assessing species status. Any list of species for which targeted conservation action might be considered *must also* include consideration of extreme rarity, international responsibility and decline (see below).

Similarly, the fact that a species might have a status of *Data Deficient* does not imply that it is consigned to some 'bryological dustbin'. Indeed, if it is listed as *Data Deficient*, new survey work should be a high priority for that species. Therefore, in the new British bryophyte Red Data Book, *Data Deficient* species receive full accounts, rather than merely being consigned to an appendix, to emphasise their importance.

However, producing a Red List is only part of any assessment of species status. In Britain, a list of all Species of Conservation Concern (the SoCC list) is

being produced. This list will inform conservation processes such as prioritising species for action.

THREAT V. FREQUENCY

One of the great advantages of the 1994 IUCN guidelines is that the category of *Rare* was abandoned. To say a species is 'rare' says nothing about the degree to which it is under threat, but only that there is not much of it. Thus, in Britain, the old Red List, using pre-1994 guidelines, distinguished between *Nationally Rare*, which included all species in 1-15 10 km squares, and *Nationally Scarce*, which included all species in 16-100 10 km squares. *Nationally Rare* species were all included in the Red List, as slightly less threatened than *Vulnerable* species. Many arctic-alpines that are naturally rare, but not threatened, were therefore included in the old Red List.

The 1994 IUCN guidelines introduced the category of *Near Threatened*. In Britain, this has been taken to include all those species occurring in 1-15 10 km squares but not in the Red List. The 15 10 km square 'cutoff' therefore still exists, but is now between *Near Threatened* and *Nationally Scarce*. This is clearly unsatisfactory, since the former is an expression of threat and the latter an expression of frequency.

It is now proposed to include in *Near Threatened* the following categories of species:

- All species in 1-15 10 km squares not in the Red List (on the basis that anything this rare is *de facto* at least close to being threatened).
- All species that have declined/are declining severely, but are not yet on the Red List (precise criteria to be devised).
- All *Nationally Scarce* species that are also in a small number of 1 km squares (precise criteria to be devised).
- This will leave a 'residue' of *Nationally Scarce* species (i.e. occurring in 16-100 10 km squares), which are not, however, threatened. *Nationally Scarce* thus becomes, purely and explicitly, a category of frequency only.
- The Species of Conservation Concern (SoCC) list will therefore include:
 - Red List species.
 - Species for which Britain has international responsibility (e.g. endemics, Atlantic species).
 - Other species which have declined severely (in *Near Threatened*).
 - Some very rare species (in *Near Threatened*).

To reiterate, this is the list that will inform conservation processes such as prioritising species for action.

MECHANISM

The proposed mechanism for the working of the Species Status Project is shown in Fig 2. A Steering Group will lead the project, ensuring the IUCN criteria are being applied correctly and to a standard across the taxonomic

spectrum, and managing a programme of status list production. Status lists will be produced by Expert Groups, and will be time-limited and updated on a rolling programme. Initial status lists will be posted on an appropriate web site and/or published in an appropriate bulletin for comments and peer review before being disseminated more widely.

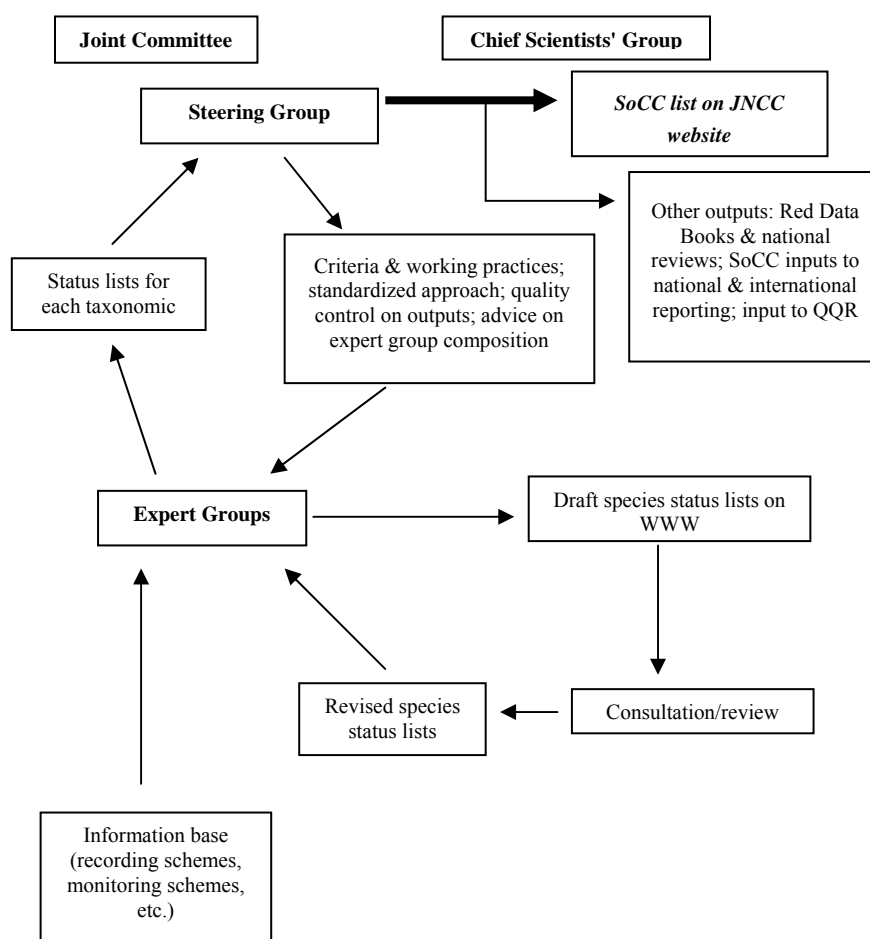


Figure 2. Model for information flow in the Species Status Project.

DISSEMINATION

All status lists will be made available on the JNCC web-site, providing an authoritative source of species status information. A JNCC *Species Status* series will also be published, consisting simply of print-outs from the web-site. The

lists may also be published elsewhere (e.g. in specialist literature, specialist society bulletins, etc.) but the JNCC site will remain the authoritative source.

CONSERVATION ACTION

The Species Status Project has nothing directly to say about conservation action. Conservation agencies and managers should use the SoCC list to inform their decision-making, but decisions of this sort always have to take other factors into consideration too (e.g. financial considerations, management conflicts, local politics, etc.).

ACKNOWLEDGEMENTS

I would like to thank members of the European Committee for the Conservation of Bryophytes, particularly Tomas Hallingbäck, and colleagues in the British governmental conservation agencies, for many useful ideas and discussions. The views put forward in this paper are my own and do not necessarily reflect the policies of the British governmental conservation agencies.

REFERENCES

- CHURCH, J. M., COPPINS, B. J., GILBERT, O. L., JAMES, P. W. & STEWART, N. F. (1996). *Red Data Books of Britain and Ireland: Lichens*. Volume 1, Britain. Peterborough, Joint Nature Conservation Committee. 168 pp.
- GÄRDENFORS, U. (1996). Application of IUCN Red List categories on a regional scale. In: *1996 IUCN Red List of threatened animals*, ed. by J. Baillie & B. Groombridge. Cambridge.
- HALLINGBÄCK, T., HODGETTS, N. G., RAEYMAEKERS, G., SCHUMACKER, R., SÉRGIO, C., SÖDERSTRÖM, L., STEWART, N. F. & VÁÑA J. (1998). Guidelines for the application of the revised IUCN threat categories to bryophytes. *Lindbergia* 23 (1): 6-12.
- PALMER, M. A., HODGETTS, N. G., WIGGINTON, M. J., ING, B. & STEWART, N. F. (1997). The application to the British flora of the World Conservation Union's revised Red List criteria and the significance of Red Lists for species conservation. *Biological Conservation* 82: 219-226.
- WIGGINTON, M. J. (1999). *Red Data Books of Britain and Ireland: Vascular Plants*. Peterborough, Joint Nature Conservation Committee.
- World Conservation Union. (1994). *IUCN Red List categories*. Gland, IUCN.