

NATIONAL RED LIST ADVISORY GROUP SURVEY

“Use of the IUCN Red List Criteria in
national threatened species listing”

Final Report

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INTRODUCTION

In recent decades, along with a growing awareness and understanding of the loss of biodiversity worldwide, interest in creating national lists of threatened species has considerably increased. For the past 10 years, the IUCN Red List Categories and Criteria (IUCN 2001) have been used to develop national threatened species lists (NTSL), which in turn inspired the creation of guidelines for the use of the IUCN criteria at regional levels (IUCN 2003). Despite this increasing activity in national threatened species listing, however, neither the extent to which these lists have been developed and incorporated into national conservation policies, nor the issues related to elaborating such lists at a national level have been formally evaluated. The purpose of this survey was to assess the current and potential use of the IUCN Red List criteria and the regional guidelines in national conservation efforts.

Between July and October 2004, the National Red List Advisory Group sent a survey through email and/or post to the 180 Convention on Biological Diversity (CBD) national focal points for which updated contact information was available (CBD 2004; Annex I). The CBD focal points were a natural choice for our survey participants, as they represent countries that have made a commitment to conserve and sustainably use biodiversity, as well as reduce the current rate of biodiversity loss in their countries (CBD 1992, 2005; Balmford et al. 2005).

Shortly after sending the survey, we began to systematically call all focal points that had not yet responded, with the intention of completing the survey on the phone or confirming that they would return it by email. The phone calls were moderately successful, resulting in the return of about 10 more surveys. However, they did not generate sufficient response to justify the time, energy and money required to call each focal point, and were therefore stopped. We also translated the survey into Spanish and re-sent it to all Latin American countries and Spain, which resulted in the return of several more surveys. The Spanish version was presented on the IUCN South American Regional Office website (www.sur.iucn.org/vitrina/noticia.cfm?passcodnot=863). After receiving the surveys, we phoned or emailed many of the respondents with additional questions, in order to get more information regarding their threatened species listing processes.

The first version of the survey turned out to be confusing for questions #3, #5, #6 and #8, as the two options "existing lists" and "future lists" were not provided. After the first few surveys were received, both options were added to the specified questions and the survey was re-sent. Most of the countries that returned the first version of the survey were contacted by phone or email to obtain the additional information; we recorded the responses for those that couldn't be contacted as "didn't answer".

We received 47 responses to the survey (Annex II), resulting in a 26% return rate. The countries that responded are well-distributed across the globe, and represent a wide range of sizes, degrees of geographic isolation and degrees of development. Interestingly, nearly twice as many surveys were returned from developing countries (31) as from developed countries (16). We also received several responses from countries interested in learning more about the IUCN criteria and/or receiving direct assistance from the IUCN in their national listing processes.

Table 1: Distribution of replies by region

<u>Region</u>	<u>Number of replies</u>
Africa	3
Asia and the Pacific	10
Central and Eastern Europe	9
Latin America	9
Western Europe, North America and Australia	16

SURVEY RESULTS

The questions presented in the survey and a summary of the responses we received are presented below. Each question is highlighted in bold type and italicized. The number and percentage of replies for each answer is presented in blue font. For several questions, respondents had the option of marking more than one response. In these cases, the sum of the percentages will total more than 100%, with the frequency with which respondents selected a particular response indicating its perceived importance.

1. Has a national threatened species list be developed for this country?

- Yes** **36 (77%)**
- No** **11 (23%)**

(Note: If more than one list has been developed for all taxa, please answer the questions with respect to the most recent list. If several lists have been created for different taxonomic groups, please answer the questions with respect to each list, e.g. select more than one time period, if necessary.)

There is obviously great interest in developing national threatened species lists, as most of the countries that responded have developed at least one list. Of the countries that have not developed a list, five are from Asia, one from Eastern Europe, two from Latin America and three from Western Europe.

2. If so, when was the list developed?

- Pre-1980** **1 (3%)**
- 1980-1990** **10 (28%)**
- 1990-2000** **29 (81%)**
- 2000-2004** **17 (47%)**

Most lists were developed recently, and all but one were developed after 1980. The percentages add up to more than 100% because many countries have developed several lists: different lists for different taxonomic groups, multiple updates of the same list over time, or a combination of both.

3. Are there future plans to develop a national list of threatened species? (please specify if the list will be a revision of a previously existing list or if it will be an entirely new list, and provide an explanation if necessary)

- Yes** **30 (64%)**
 - Revision**
 - New list**
- Possibly** **2 (4%)**
- No** **2 (4%)**
- Didn't answer** **13 (28%)**

If Yes, when is it expected to be published? _____

Nearly all of the countries that responded to the question will produce a threatened species list in the future: 13 countries will revise an existing list (43.3%), 16 countries will produce a new list (53.3%) and

1 country didn't answer (3.3%). All of the new lists will be produced before 2010. A large proportion of countries did not answer the question, potentially because there was no "unsure" option provided.

4. Who developed or will develop the list (may select more than one)?

- Governmental organization (ministry, department, wildlife agency, etc.)** 37 (84%)
- Non-governmental organization** 22 (51%)
- Regional IUCN-SSC office** 5 (12%)
- Private organization** 5 (12%)
- Other (please specify: _____)** 14 (33%)

NOTE: percentages are out of 43, the number of respondents that answered this question

Although some lists are produced solely by governmental organizations, most lists are developed by a combination of agencies, including governmental organizations, NGOs, academic/scientific institutions and experts/specialists (especially taxonomic specialists). The most common "other" responses were academic and scientific institutions, universities and experts. The percentages total >100% because most often several organizations collaborate on one list, and because many countries have more than one list, with different organizations producing the different lists.

5. Were IUCN Red List criteria used in developing the list, or will they be, if the list has not yet been created? (If IUCN Red List criteria were not or will not be used in developing the list, please proceed to question #12)

Existing lists:

- Yes** 28 (78%) **NOTE: % out of 36, the # of countries that have produced a NTSL**
- No** 8 (22%)

Future lists:

- Yes** 24 (80%) **NOTE: % out of 30, the # of countries that will produce a NTSL**
- No** 1 (3%)
- Unsure** 4 (13%)
- Didn't answer** 1 (3%)

Regionally-applicable IUCN criteria are undoubtedly in high demand, with 78% of the countries with an existing NTSL and 80% of the countries planning a NTSL utilizing the criteria to produce those lists. In order to use the IUCN criteria in a national context, however, many countries feel the need to modify the criteria or incorporate additional criteria into the assessment process (see question #10).

6. If IUCN Red List criteria were/ will be used, what version was it/ will it be?

Existing lists:

- Pre-1994 IUCN criteria** 4 (14%)
- 1994 IUCN Red List Categories and Criteria** 17 (61%)
- 2001 IUCN Red List Categories and Criteria, version 3.1** 11 (39%)
- Didn't answer** 1 (4%)

NOTE: percentages are out of 28, the # of countries that used the criteria

Future lists:

- 1994 IUCN Red List Categories and Criteria** 2 (8%)
- 2001 IUCN Red List Categories and Criteria, version 3.1** 21 (88%)
- Didn't answer** 1 (4%)

NOTE: percentages are out of 24, the # of countries that will use the criteria in the future

The pattern of use of different versions of the IUCN criteria follows closely the period of time in which the national threatened species lists were produced: lists produced before 1995 were produced using pre-1994 IUCN criteria, lists produced during the 1990's used the 1994 criteria, and most lists produced after 2001 used the 2001 criteria. However, a few countries continued to use the 1994 criteria even after the 2001 criteria were published. Nearly all countries who plan to use the IUCN criteria in the future will use the most recent version. However, two countries will continue to use the old criteria, one of them because that version is incorporated into national threatened species listing legislation. The other country did not explain why they would continue to use the older criteria. The percentages surpass 100% because many countries have more than one list and used different criteria for different lists.

7. If IUCN Red List criteria were/ will be used (even if they were modified), why were they selected as the criteria of choice? (select as many options as apply)

- Objectivity**
- Quantitative nature of the criteria**
- Convenience of using an already-developed system**
- Reputation of the criteria**
- Previous and current global and regional use of the criteria (outside of the country in question)**
- Increased comparability between country in question and other regions in which the criteria have also been used**
- To allow assessments to be considered or incorporated into the global Red List**
- To evaluate/apply the new Regional Guidelines**
- Other (please specify: _____)**

Table 2: Reasons for using the IUCN criteria

Reason	Number of replies	% of responses
Objectivity	28	74
Convenience of using an already-developed system	28	74
Reputation of the IUCN criteria	27	71
Previous and current global and regional use of the criteria	26	68
Quantitative nature of the criteria	25	66
Increased comparability between country in question and other regions in which the criteria have also been used	25	66
To allow assessments to be incorporated into the global Red List	20	53
To evaluate/apply the new Regional Guidelines	13	34
Other	3	8

NOTE: percentages are out of 38, the number of countries that have or will use the IUCN criteria (also the number that answered the question)

The most common, and presumably important, reasons for using the IUCN criteria are those intrinsic to the criteria themselves: their objectivity, reputation and quantitative nature, as well as the fact that they have been widely applied at the global and regional levels, the convenience of using an already-developed system and the increased comparability of NTSLs with other countries that also used the IUCN

criteria. Allowing the regional evaluations to be considered for inclusion in the global Red List and using the criteria to evaluate/apply the Regional Guidelines are less important factors.

It is important to note that the Regional Guidelines are not yet a particularly strong point in the use of the criteria. This may be because many of the national lists were developed before the Guidelines were published (in 2003), or it may be because the Guidelines are not well-known or are not perceived to be important.

8. Were the IUCN Regional Guidelines utilized when developing the list, or will they be, if the list has not yet been created?

Existing lists:

- | | | |
|-------------------------------------|-----------------|---|
| <input type="checkbox"/> Yes | 8 (22%) | NOTE: % out of 36, the # of countries that have produced a NTSL |
| <input type="checkbox"/> No | 22 (61%) | |
| Impossible Yes | 3 (8%) | |
| Didn't answer | 3 (8%) | |

Future lists:

- | | | |
|-------------------------------------|-----------------|--|
| <input type="checkbox"/> Yes | 15 (50%) | NOTE: % out of 30, the # of countries that will produce a NTSL |
| <input type="checkbox"/> No | 1 (3%) | |
| Didn't answer | 14 (47%) | |

Very few countries utilized the IUCN regional guidelines when developing their national threatened species lists, even when they used the IUCN criteria. This may be because many of the national lists were developed before the Regional Guidelines were published, or it may be because they are not well-known or are not perceived to be important. A number of national assessors were not aware that the Guidelines even exist, and in the post-survey interviews expressed sincere interest in obtaining more information about them. Three countries indicated that they used the regional guidelines, but their lists were produced before the regional guidelines were published in any form; these have been labeled as "impossible yes".

A much higher percentage of countries will use the regional guidelines in the future, but not all countries that indicated they will use the IUCN criteria will also use the regional guidelines (24 countries said they will use the IUCN criteria in the future, while only 15 will use the regional guidelines). This is a potential cause for concern, as the regional guidelines are necessary to adequately adapt the IUCN criteria for use at the sub-global level.

9. If the IUCN Regional Guidelines were not utilized, did the country develop its own set of regional guidelines or modify the IUCN criteria in any way?

- | | |
|---|-----------------|
| <input type="checkbox"/> Yes, our own regional guidelines were developed | 1 (3%) |
| <input type="checkbox"/> Yes, the IUCN criteria were modified | 15 (42%) |
| <input type="checkbox"/> No, neither | 21 (58%) |

NOTE: percentages out of 36, the number of countries that have produced a NTSL (also the number of countries that answered the question. One country marked "yes" to both possibilities)

National assessors apparently believe some modification to the IUCN criteria is necessary in order to use them at the national level, as nearly half of the countries that used the criteria modified them or developed their own regional guidelines.

The different ways in which countries modified the criteria include: adding additional categories, such as species of national responsibility or cultural value; eliminating categories (especially Critically Endangered, so that there are only two categories of threat); adding additional criteria (especially formalizing quantitative criteria for the Near Threatened category); eliminating criteria (particularly criterion E); and basing the final threat status on additional criteria as well (e.g. CITES status).

10. If the answer to question #9 is yes, what factors were considered in developing personalized regional guidelines or in modifying the IUCN criteria? (select as many options as apply)

- Population status in neighboring countries*
- Threat status in neighboring countries (including entire regions such as "Europe")*
- Threat status within the country*
- Global threat status*
- Percentage of global population found within the country/ Degree of endemism*
- Pattern or rate of decline*
- Biogeographical information*
- Conservation priority*
- Other (please specify: _____)*

Table 3: Factors considered when modifying the IUCN criteria

Factor	Number of replies	% of responses
Threat status within the country	11	69
Conservation priority	8	50
Biogeographical information	8	50
Other	8	50
Degree of endemism	8	50
Pattern or rate of decline	7	44
Threat status in neighboring countries/regions	4	25
Population status in neighboring countries	4	25
Global threat status	4	25

NOTE: percentages are out of 16, the number of countries that modified the criteria

Most countries considered purely internal factors when modifying the criteria, as opposed to evaluating the effects of extra-regional populations as in the IUCN Regional Guidelines. Indeed, all of the factors presented that incorporate information from outside the country tied at lowest importance. After the threat status of a species within the country in question, conservation priority is one of the most important factors taken into consideration by countries that modified the criteria. The IUCN emphasizes that conservation priority-setting and evaluation of extinction risk are separate exercises, but countries clearly wish to mix the two. Factors mentioned in the "other" category were mostly related to land area of small countries (e.g. changing the thresholds for the IUCN categories in small countries, so that fewer species fall into categories of threat).

11. Are there any publications or documents available that explain in detail the process of developing personalized regional guidelines or in modifying the IUCN criteria (if so, please specify where they can be obtained)?

- Yes (where: _____) 14 (45%)
- No 17 (55%)

NOTE: percentages are out of 31, the number of respondents that answered this question

Most of the documents available are the actual threatened species lists, which contain a methods section explaining the criteria used. These documents are occasionally available on the web, and are most often available only in the official language of the country.

12. If IUCN Red List criteria were not/ will not be used, please specify why not. (select as many options as apply)

- There are special situations or restrictions specific to the country in question which IUCN criteria do not incorporate (please specify the restrictions: _____)
- The criteria are not specific enough for use at the national level
- The criteria do not adequately allow the classification of certain taxonomic groups (please specify which groups: _____)
- The criteria do not take into consideration conservation priority setting when classifying species
- The criteria tend to over-estimate or exaggerate the threatened status of a species when applied at a national level
- When the national list was developed, no regional guidelines for the IUCN criteria existed
- Other (please specify: _____)

Table 4: Reasons for not using the IUCN criteria

Reason	Number of replies	% of responses
There are special situations or restrictions specific to the country in question which the IUCN criteria do not incorporate	8	62
Other	6	46
The criteria tend to over-estimate or exaggerate the threatened status of a species when applied at a national level	5	38
The criteria are not specific enough for use at the national level	5	38
When the national list was developed, no regional guidelines for the IUCN criteria existed	5	38
The criteria do not adequately allow the classification of certain taxonomic groups	4	31
The criteria do not take into consideration conservation priority setting when classifying species	2	15

NOTE: percentages are out of 13, the number of respondents that answered this question

Most of the reasons for not using the IUCN criteria echo the fears and criticisms of the criteria in general. The most common reasons were “special restrictions” for the country in question and a series of issues

brought up in the “other” category, nearly always related to small country size. Many national assessors fear that using the criteria in small regions will result in all the species being listed as threatened. After small country size, the most common issue was that the IUCN criteria require data not usually available, followed by a lack of facilities and institutional framework under which to carry out assessments. Other common complaints were that the criteria exaggerate the status of threat when used at a sub-global level, the criteria are not specific enough for national use, and the fact that there were no Regional Guidelines for the criteria when the country’s NTSL was developed. Clearly, those countries that did not use the IUCN criteria believe that the criteria are designed only for use at the global level, and that they do not result in adequate regional assessments. This notion is echoed in the problems and issues national assessors have had with the criteria, addressed in the next question.

13. What problems or issues have been encountered in the Red-Listing process that the National Red List Advisory Group could potentially assist with or alleviate (related to the IUCN criteria, the Regional Guidelines, national listing in general, etc.)? (select as many options as apply)

- Lack of access to detailed global Red List data*
- Lack of access to data from nearby countries (especially when applying the Regional Guidelines)*
- IUCN criteria are not easily applied to certain species or taxonomic groups (please specify: _____)*
- IUCN criteria tend to exaggerate the threat status when applied at the national level; e.g. the quantitative limits for each category are not appropriate for national use, especially in small countries (if true for certain taxonomic groups in particular, please specify which: _____)*
- Difficulties incorporating national assessments into global assessments*
- Difficulties understanding or applying the criteria in their current form*
- Vagueness of definitions of concepts used in the criteria hinder classification*
- Other (please specify: _____)*

Table 5: Problems and issues encountered when developing NTSL

Problem/Issue	Number of replies	% of responses
IUCN criteria tend to exaggerate the threat status when applied at the national level	19	53
Lack of access to data from nearby countries	16	44
Other	15	42
IUCN criteria are not easily applied to certain species or taxonomic groups	14	39
Difficulties incorporating national assessments into global assessments	13	36
Lack of access to detailed global Red List data	11	31
Vagueness of definitions of concepts in the criteria hinder classification	11	31
Difficulties understanding/applying the criteria in their current form	7	19

NOTE: percentages are out of 36, the number of respondents that answered this question

Many of the difficulties assessors have faced in applying the IUCN criteria echo the reasons for not using them. The primary complaint was that the criteria exaggerate the status of threat when applied in a

national context, a problem which the regional guidelines were designed in part to address- given that it is still the primary issue indicates either that the Regional Guidelines have had limited impact so far, that they do not address this issue satisfactorily, or that the difference between extinction threat and conservation priority is still being confused. The next two most common complaints are a lack of access to data from nearby countries, and various issues mentioned in the “other” category. Of these issues, the question “how do we apply the criteria with little existing national data” was constantly repeated, as were difficulties in interpreting terms (e.g. individual, location, generation time) or applying concepts used in the IUCN criteria (especially in measuring area of occupancy when applying criterion B). Applying the criteria to invertebrates, fungi and non-vascular plants proved troublesome, due in part to difficulties fitting certain IUCN definitions to the natural history of these species and in part to a general lack of knowledge. Many respondents requested training in the proper use of the criteria. Finally, several respondents expressed frustration that the data from their national assessments were rarely incorporated into the assessments for the global Red List of Threatened Species. These issues were not isolated to a particular country profile; rather, the same problems were repeated from countries across the spectrum of size and degree of development.

14. Was the resulting national threatened species list reported to the IUCN/SSC Red List Committee, or will it be, if the list has not yet been created?

- Yes** **13 (35%)** NOTE: % are out of 37, the # of respondents that answered this question
- No** **22 (59%)**
- Unsure** **2 (5%)**

Most countries are not interested in reporting their national threatened species lists to the IUCN, although several inquired how to do so.

15. Have the national Red List and/or the IUCN Red List criteria been incorporated into national conservation planning, policy and/or priority setting in any way?

National threatened species list:

- Yes** **34 (85%)** NOTE: % are out of 40, the # of respondents that answered this question
- No** **6 (15%)**

IUCN Red List criteria:

- Yes** **23 (58%)**
- No** **17 (43%)**

With 85% of respondents indicating that their national threatened species lists have been incorporated into national conservation planning, policies, and/or priority-setting, there can be no doubt that these lists have become tremendously powerful local conservation tools. The IUCN criteria also play quite an important role in national conservation strategies, more so than we anticipated.

Several countries who have threatened species lists planned but not completed have already paved the way for incorporating one or both of these elements into their national conservation strategies, which is why the number of respondents to the question is greater than the number of countries that have developed a NTSL.

16. How have the national Red List and/or the IUCN Red List criteria been incorporated into national conservation planning, policy and/or priority setting? (select as many options as apply)

- The IUCN Red List criteria have been adopted as the criteria by which the “official” governmental threatened species list is created (i.e. the national Red List automatically becomes the governmental threatened species list; the “legal” threatened species list is identical to the list developed using IUCN criteria)*
- A modified version of the criteria has been adopted as the criteria by which the “official” governmental threatened species list is created*
- The national Red List developed using IUCN criteria is the baseline from which the government creates its official threatened species list (i.e. the governmental list is a selected subset of the Red List)*
- The national threatened species list is used to divert and/or mediate development*
- The (national) threatened status of species is considered in designating conservation priorities, planning conservation efforts and/or allocating conservation funds*
- Other (please specify: _____)*

Table 6: Ways in which NTSL/IUCN criteria have been incorporated into national conservation strategies

Method of incorporation	Number of replies	% of responses
The (national) threatened status of species is considered in designating conservation priorities, planning conservation efforts and/or allocating conservation funds	27	75
The NTSL is used to divert and/or mediate development	16	44
The IUCN Red List criteria have been adopted as the criteria by which the “official” governmental threatened species list is created	13	36
The national Red List developed using IUCN criteria is the baseline from which the government creates its official threatened species list	11	31
Other	7	19
A modified version of the IUCN criteria has been adopted as the criteria by which the “official” governmental threatened species list is created	7	19

NOTE: percentages are out of 36, the number of respondents that answered this question

By far the most common method of incorporating national threatened species lists and/or the IUCN criteria into national conservation policies was to consider the national threatened status of species when designating conservation priorities, planning conservation efforts and/or allocating conservation funds, being employed by 75% of the countries that have or will develop a NTSL (27 countries). At 44%, using the NTSL to divert or mitigate the negative effects of development is the second-most common method (16 countries). Thirteen countries have adopted the IUCN criteria as the criteria by which the legal threatened species list is created; in 11 countries the legal list is a subset of the threatened species list developed using the IUCN criteria. Other methods of incorporation include: considering the national threatened species list in legislation development and in State of Biodiversity reports; using the IUCN criteria as general guidelines, rather than as the sole criteria, in preparing the threatened species list; using the status of threatened species in preparing management plans, rescue programs, conducting Environmental Impacts Assessments, and in other protective and priority-setting activities. These lists

can also be potent motivators for additional research into the status of both threatened and non-threatened species.

Please feel free to elaborate on any of the above points, or on any other point of interest (use a separate sheet if necessary).

Below are examples of comments provided by the respondents (in no particular order), either on the survey form itself or in the personal interviews that took place after the surveys were returned. These quotes were selected to synthesize the different opinions expressed.

- 1) There is often hesitation when placing economically-important species on the threatened species list, because the government doesn't want to prohibit its use and risk angering the people that harvest it. This can be a major obstacle to listing species, even if they are threatened according to the IUCN criteria.
- 2) There is no official translation of the IUCN criteria into our language and therefore every expert can interpret terms in various ways.
- 3) It can be difficult to strictly follow the IUCN criteria when red listing because we must follow the national laws, which allow for only two threat categories. The Wildlife Conservation laws define "reduced populations" and "endangered" differently than do the IUCN criteria as well.
- 4) The IUCN classification, is by its nature, not an entirely objective system and while it endeavors to provide clear thresholds for assessment, different assessors can recommend different classifications based on the same information by their different application of the precautionary principle and by interpreting the classification system to fit particular circumstances.
- 5) The IUCN criteria have a number of constraints which limited their desirability for inclusion in the national legislation. These include the prescriptive nature of the IUCN criteria. For example, endemic fauna and flora on a small island may all be eligible for listing under IUCN according to some assessors but not actually be subject to a current threat. Given the limited resources available for threatened species conservation and the legislative recovery actions that flow automatically from national listing, it would be inappropriate to list these species purely on the basis of their restricted distribution and divert resources from other species under immediate threat.
- 6) There are a number of species that are protected as flagship or cultural species, especially endemics, that would not be considered threatened according to the IUCN criteria. We wanted the Red Data Book to be a policy document as well, and if a species is not in the RDB, it is not considered as important, so we added new categories for endemic and culturally important species.
- 7) AOO and EOO under criterion B are our biggest problems: how do you define a "location"? How do you determine the most appropriate grid size? When calculating AOO, is it acceptable to sum up the areas calculated by the GPS (used to delineate the boundaries of a sub-population in the field)- which may overestimate risk and rarity- or is it better to calculate AOO on a grid instead? Our concern in adopting the latter option is that in many plants this will lead to the inclusion of areas of vagrancy or areas not containing the plant – thus underestimating rarity.
- 8) Using the IUCN criteria A to D directly would have been difficult. Many of the invertebrates that are to be assessed would qualify for CR due to criterion B2, since their area of occupancy is small, their habitat is fragmented, and they show wide fluctuations in the number of mature individuals, as most invertebrates do. Adopting the regional guidelines would not change the picture, since immigration is

unlikely for many of them. For many species, a mismatch between their extinction probability (category E) and the category found by criteria A to D would have resulted.

9) The criteria are very suitable for populations of animals that can be counted, but less for groups such as fungi and invertebrates which have problems for quantifying, taxonomic and observational problems, etc. Criteria such as 'population size estimated to number fewer than 2500 mature individuals' or 'area of occupancy estimated to be less than 500 km²' are difficult to use in relation to invertebrates.

10) At the moment it is very difficult to use the global criteria on the local level, especially in small countries- some of the criteria work with numerical values that aren't necessarily appropriate for a country the size of ours. For example, for some species there isn't even room for 100 mature individuals, so whether or not the species is actually threatened within the country, it is threatened according to the IUCN criteria. We end up using criterion A much more than the others.

11) When using the Regional Guidelines you must have a down-listing possibility. But, the guidelines are not very specific in regards to how far you up- or down-grade. The guidelines don't say anything about how many levels you move a species, they are subjective.

12) The regional guidelines aren't always easy to apply- will neighboring populations actually be able to rescue national populations? There is so much unknown about the species we assess that the actual extent of the rescue effect isn't usually known- we don't often know the dispersal patterns or the behavior of a species. Some of the experts we consult with have brought up examples of mosses and lichens which disperse on the wind, but how do you know how far the wind currents carry the spores- i.e. if in these cases the rescue effect even exists? What about with migrating species that require habitat in our country? In those cases, the rescue effect doesn't really apply. If it doesn't look like there will be a big rescue effect, we generally wouldn't down-list the species.

13) When assessing a population, unless it is truly isolated within one country, the evaluation cannot proceed without cooperation from other countries. This is more of a problem the more widespread the species are into other countries (broader distributed species). The Regional Guidelines themselves are not the problem, the access to information from other countries is. There is no problem with the IUCN criteria or the Regional Guidelines when the population is isolated.

14) It would be very useful if the IUCN would publish a document on how to use the criteria when very little information is available. The examples they include should be real and detailed, not theoretical.

15) It can be difficult to gather the appropriate data, because much of it has not been published. In developing countries, projects, theses, articles, etc. usually remain in the grey literature and is impossible to find.

16) It is often difficult to determine in which category species with little data belong, especially for poorly known invertebrates; the data available may justify a classification of CR or EN, but the species may just as easily be more appropriately determined DD.

17) It would be very useful if there were more publications on the development of national red lists and more publications that explain the criteria in a more friendly way, AND if this were accessible in light files on the internet (PDF, without heavy pictures).

18) It could be a good idea to develop IUCN criteria for conservation priority-setting at the national level, using criteria relevant at the national level in addition to the global extinction risk classification in order to determine national conservation priority.

19) The best thing the IUCN could do would be to give training at regional workshops, so that we could exchange experiences with others who are working on red listing. There should also be closer connections between our country and the IUCN, so that the information exchange could be more open.

DISCUSSION

The survey results overwhelmingly indicate that there is a high demand for regionally-applicable IUCN criteria. National threatened species lists have become staple tools in the conservationist's toolbox, and will only grow in importance in the coming years. In fact, future growth for the Red List Program will likely be at the national and regional levels.

However, despite the advances that have been made in adapting the IUCN criteria for regional use, the criticisms that shadowed the criteria shortly after their development seem to be hanging on in the minds of national assessors. Particularly, national assessors continue to feel that the IUCN criteria exaggerate threat status when not used globally, resulting in alarmist and inaccurate national lists; that the criteria cannot be applied in small countries, as a disproportionate number of species will be classified as threatened; and that the criteria cannot be used when little quantitative data is available. The first two problems are valid concerns when the criteria are used at the regional level without the Regional Guidelines, and should be alleviated as the Regional Guidelines become more widely utilized. It should be noted, however, that the categories of threat may be exaggerated if they are interpreted to indicate conservation priority as well as extinction risk, something they are explicitly not designed to do. The last problem is a common misperception; the criteria actually allow for much inference and supposition, and can be applied as long as information for even one of the categories (A-E) is available. It is difficult, however, to define the line between data deficient and threatened, especially in tropical developing countries.

There were many requests for increased training in the use of the criteria, which we strongly support. Training workshops would be most effective when conducted on a regional basis, in order to increase contact between national assessors in neighboring countries. Extra emphasis should be placed in how to use the criteria when quantitative data is limited. Increasing the communication between assessors from different countries, as well as between national and global assessors, will improve the application of the IUCN criteria and facilitate the development of national red lists. We recommend the development of a website dedicated to national threatened species lists, which would include a database of these lists, frequently asked questions, contact information for national assessors, and a link to an online discussion group where assessors could discuss specific issues. We received extremely positive feedback from the respondents regarding the development of such a website, especially in regard to a directory of national assessors and the online discussion group. In addition, in order to give national assessors an idea of what other national assessors are doing, articles in which different countries relate their experiences in threatened species listing could be published in the IUCN journal "Species". Developing a mechanism for online submission of national assessments to the Red List Programme Office would help facilitate the process of incorporating national assessments onto the IUCN Red List. These strategies should help to facilitate the development of national threatened species lists, and improve their value both within and between countries. For a more detailed discussion of our recommendations, see Miller et al. 2005.

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Annex I: Countries to which the survey was sent

Geopolitical divisions adopted from the CBD national focal point country groups

AFRICA

Algeria	Eritrea	Namibia
Angola	Ethiopia	Niger
Benin	Gabon	Nigeria
Botswana	Gambia	Rwanda
Burkina Faso	Ghana	Sao Tome and Principe
Burundi	Guinea	Senegal
Cameroon	Guinea-Bissau	Seychelles
Cape Verde	Kenya	Sierra Leone
Central African Republic	Lesotho	South Africa
Chad	Liberia	Sudan
Comoros	Libyan Arab Jamahiriya	Swaziland
Congo	Madagascar	Togo
Cote d'Ivoire	Malawi	Tunisia
Djibouti	Mali	Uganda
Democratic Republic of the Congo	Mauritania	United Republic of Tanzania
Egypt	Mauritius	Zambia
Equatorial Guinea	Morocco	Zimbabwe
	Mozambique	

ASIA & THE PACIFIC

Bahrain	Kiribati	Pakistan
Bangladesh	Kuwait	Palau
Bhutan	Kyrgyzstan	Qatar
Cambodia	Lao People's Democratic Republic	Republic of Korea
China	Lebanon	Saudi Arabia
Cyprus	Malaysia	Singapore
Democratic People's Republic of Korea	Maldives	Soloman Islands
Fiji	Marshall Islands	Sri Lanka
India	Federated States of Micronesia	Syrian Arab Republic
Indonesia	Mongolia	Tajikistan
Iran	Myanmar	Thailand
Iraq	Nauru	Turkmenistan
Japan	Nepal	United Arab Emirates
Jordan	Niue	Vanuatu
Kazakhstan	Oman	Viet Nam
		Yemen

CENTRAL & EASTERN EUROPE

Albania	Estonia	Russian Federation
Armenia	Georgia	Serbia and Montenegro
Azerbaijan	Hungary	Slovakia
Belarus	Latvia	Slovenia
Bosnia and Herzegovina	Lithuania	The Former Yugoslav Republic of Macedonia
Bulgaria	Poland	Ukraine
Croatia	Republic of Moldova	
Czech Republic	Romania	

LATIN AMERICA & THE CARIBBEAN

Antigua and Barbuda	Dominica	Nicaragua
Argentina	Dominican Republic	Panama
Bahamas	Ecuador	Paraguay
Barbados	El Salvador	Peru
Belize	Grenada	Saint Kitts and Nevis
Bolivia	Guatemala	Saint Lucia
Brazil	Guyana	Saint Vincent and the Grenadines
Chile	Haiti	Suriname
Colombia	Honduras	Trinidad and Tobago
Costa Rica	Jamaica	Venezuela
Cuba	Mexico	

WESTERN EUROPE & OTHERS

Australia	Holy See	Portugal
Austria	Ireland	San Marino
Belgium	Israel	Spain
Canada	Italy	Sweden
Denmark	Liechtenstein	Switzerland
European Community	Malta	Turkey
Finland	Monaco	United Kingdom of Great Britain and Northern Ireland
France	Netherlands	United States of America
Germany	New Zealand	
Greece	Norway	

Countries on the list of CBD national focal points, but lacking contact information (no survey sent)

Afghanistan
Andorra
Brunei Darussalam
Cook Islands
Iceland
Luxembourg
Papua New Guinea
Philippines
Samoa
Somalia
Tonga
Tuvalu
Uruguay
Uzbekistan

Annex II: Countries that responded to the survey

Geopolitical divisions adopted from the CBD national focal point country groups

AFRICA

Ethiopia
Liberia
Seychelles

ASIA & THE PACIFIC

Cyprus
Jordan
Kiribati
Lebanon
Myanmar
Nepal
Palau
Singapore
Sri Lanka
Syrian Arab Republic

CENTRAL & EASTERN EUROPE

Albania
Belarus
Bosnia and Herzegovina
Croatia
Czech Republic
Lithuania
Slovakia
Slovenia
The Former Yugoslav Republic of Macedonia

LATIN AMERICA & THE CARIBBEAN

Belize
Colombia
Costa Rica
Ecuador
El Salvador
Grenada
Guatemala
Trinidad and Tobago
Venezuela

WESTERN EUROPE & OTHERS

Australia	Germany	San Marino
Austria	Greece	Spain
Belgium	Israel	Sweden
Canada	Malta	Switzerland
Denmark	Monaco	
Finland	Norway	