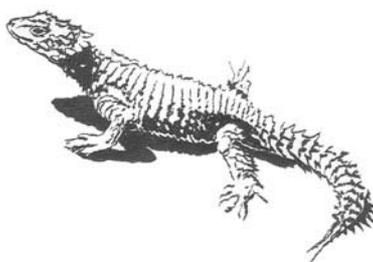


CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Twentieth meeting of the Animals Committee
Johannesburg (South Africa), 29 March-2 April 2004

Review of the criteria for amendment of Appendices I and II (Decision 12.97)

EVALUATION OF THE CRITERIA

1. This document has been prepared by the Chairman of the Animals Committee.

EVALUATION OF THE CRITERIA FOR LISTING ON APPENDIX I	
<i>Criterion</i>	<i>Comments</i>
Trade Criterion	-The reviewers (<i>Acipenser transmontanus</i> , <i>Sardinops sagax</i> , <i>Melanogrammus aeglefinus</i> , <i>Scleropages formosus</i> , <i>Bufo boreas</i> , <i>Macrochelys temminckii</i> , <i>Python anchietae</i> , <i>Eudyptes pachyrhynchus</i> , <i>Amazona finschi</i> , <i>Amazona oratrix</i> , <i>Falco rusticolus</i>) suggest adding the word " <u>international</u> ".
A)	-There are some comments on the definitions/explanations/guidelines of words of Criterion A . (<i>Sardinops sagax</i> , <i>Melanogrammus aeglefinus</i> , <i>Scleropages formosus</i> , <i>Bufo boreas</i> , <i>Macrochelys temminckii</i> , <i>Probarbus jullieni</i> , <i>Eschrichtius robustus</i> /East. Pop. MX/US) -The term "The wild population is small, and" does not always fit as criterion for commercially exploited aquatic species. (<i>Clupea harengus</i>) -Proposed modification: The wild population is small (<u>please define this in relation to other species of the same taxonomic group</u>), and is characterized... (The taxonomic level to which this criterion has to be referred depends on the species, so it can be related to the Order, the Family or the Genus. This has to be defined, explained and justified by the proponent). (<i>Amazona finschi</i> , <i>Amazona oratrix</i>)
A)(i)	- There are some comments on the definitions/explanations/guidelines of words of Criterion A)(i) .(<i>Eschrichtius robustus</i> /East. Pop. MX/US). -The reviewers suggests that „decline in individuals“ and „decline in area or quality of habitat“ become separate criteria. (<i>Acipenser transmontanus</i>)
A)(ii)	- There are some comments on the definitions/explanations/guidelines of words of Criterion A)(ii) .(<i>Bufo boreas</i> , <i>Eudyptes pachyrhynchus</i>) -This criterion is appropriate, if the purpose of the listing is to single out such population groups. (<i>Bufo boreas</i>)

	<p>-Proposed modification: each sub-population being very small (<u>if possible, please define this in relation to other species of the same taxonomic group</u>); or....</p> <p>(The taxonomic level to which this criterion has to be referred depends on the species, so it can be related to the Order, the Family or the Genus. If possible, this should be defined, explained and justified by the proponent). (<i>Amazona oratrix</i>)</p> <p>-Optimally, a definition based on density may be more appropriate i.e. optimal density (based on carrying capacity) vs. current density. (<i>Python anchietae</i>)</p>
A)(iii)	<p>- There are some comments on the definitions/explanations/guidelines of words of Criterion A)(iii). (<i>Bufo boreas</i>)</p> <p>-Could be changed to: a majority of individuals, during one or more life phases, being concentrated in one sub-population <u>or habitat</u>. (<i>Acipenser transmontanus</i>)</p> <p>- This criterion is appropriate, if the purpose of the listing is to single out such population groups. (<i>Bufo boreas</i>)</p> <p>-The reviewer suggests to modify the sentence to be more applicable: a majority of individuals, during one or more life-history phases or age classes, being concentrated in one sub-population <u>or a majority of individuals being concentrated in some geographic region of its distribution area during some specific time</u>; or. (<i>Eschrichtius robustus</i>/East. Pop. MX/US).</p>
A)(iv)	<p>- There are some comments on the definitions/explanations/guidelines of words of Criterion A)(iv). (<i>Acipenser transmontanus</i>, <i>Macrochelys temminckii</i>, <i>Python anchietae</i>)</p> <p>-This criterion seems to be highly subjective and needs clarification. It is unclear whether this criterion would apply to this species based on the definition. (<i>Bufo boreas</i>)</p> <p>-Consider changing text to read: large short-term fluctuations in the number of individuals <u>required</u> to measure population size...(<i>Python anchietae</i>)</p> <p>-The reviewer suggests the following change in wording: <u>If the population was/is characterized by large short-term fluctuations in the numbers of individuals, what was/is the average magnitude of the fluctuation? What was/is the average period of fluctuation in years?</u> (<i>Pygoscelis adeliae</i>)</p> <p>-With this species, the criterion would work better if modified to focus on "breeding pairs". Number of individuals does not reflect the sex or age demographics. (<i>Falco rusticolus</i>)</p>
A)(v)	<p>- It is not necessary to separate intrinsic and extrinsic factors. (<i>Pygoscelis adeliae</i>)</p>
B)	<p>- There are some comments on the definitions/explanations/guidelines of words of Criterion B). (<i>Scleropages formosus</i>, <i>Macrochelys temminckii</i>, <i>Python anchietae</i>, <i>Probarbus jullieni</i>)</p> <p>-The criterion B applies to part of the species. (<i>Bufo boreas</i>)</p> <p>-The reviewer suggests substituting <u>area of occupancy</u> for <u>area of distribution</u>, and defining a critical number of colonies or subpopulations for colonial species. (<i>Pygoscelis adeliae</i>)</p> <p>-The reviewers recommend <u>Area of Occupancy</u> (as used by IUCN) as a more useful measure than <u>Area of Distribution</u>. (<i>Eudyptes pachyrhynchus</i>)</p> <p>-Proposed modification: The wild population has a restricted area of distribution (<u>if possible, please define this in relation to other species of the same taxonomic group</u>) or is endemic to only one country, and is characterized...</p> <p>(The taxonomic level to which this criterion has to be referred depends on the species, so it can be related to the Order, the Family or the Genus. This has to be defined, explained and justified by the proponent). (<i>Amazona finschi/oratrix</i>)</p> <p>-Unclear how this species should be classified. Is a particular habitat a restricted area of distribution? Couldn't most non-human species be said to have a restricted area of distribuon? (<i>Falco rusticolus</i>)</p>

<p>B)(i)</p>	<ul style="list-style-type: none"> - There are some comments on the definitions/explanations/guidelines of words of Criterion B)(i). (<i>Acipenser transmontanus</i>, <i>Pygoscelis adeliae</i>, <i>Probarbus jullieni</i>, <i>Falco rusticolus</i>) - The fragmented nature of habitat should also be considered in criterion. (<i>Bufo boreas</i>) -Ideally, a figure could be given e.g. 20% of the population exists in fragmented populations. (<i>Python anchietae</i>) - No guidance is provided in Annex 5 as to what constitutes a 'location'. By contrast, IUCN red list criteria do define a location – it would be helpful to borrow this definition for the CITES criteria. (<i>Porbarbus jullieni</i>) - Here we have to take care that this does not recover the notion of sub-population of A)(ii). (<i>Rhacodactylus leachianus</i>)
<p>B)(ii)</p>	<ul style="list-style-type: none"> -This criterion seems to be highly subjective and needs clarification. It is unclear whether this criterion would apply to this species based on the definition. (<i>Bufo boreas</i>) -Change to: ...fluctuations <u>within the area</u>...(<i>Python anchietae</i>) -The reviewers recommend <u>Area of Occupancy</u> (as used by IUCN) as a more useful measure than <u>Area of Distribution</u>. (<i>Eudytes pachyrhynchus</i>) -The reviewer suggests to add <u>..or breeding pairs</u>. (<i>Falco rusticolus</i>)
<p>B)(iii)</p>	<ul style="list-style-type: none"> -It does not seem as though this criterion is really necessary. Wouldn't all species be vulnerable to threats due to it's biology? Some to it's behaviour? This criterion seems to be a given? (<i>Bufo boreas</i>) -The distinction between this sub-criterion and sub-criterion A(v) requires clarification. (<i>Pygoscelis adeliae</i>) -Does the criterion mean naturally vulnerability (through predation) or/and vulnerability through commercial use by man? (<i>Rhacodactylus leachianus</i>) -Why is this criterion repeated? (<i>Falco rusticolus</i>) -It is not clear that it is particularly useful for cetaceans. Many animal populations would appear to meet the definition of vulnerability as defined. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)
<p>B)(iv)</p>	<ul style="list-style-type: none"> -This criteria appears to be repetitive. If you leave it as inferred or projected and clarify that the above criteria in B and A are observed then all of the criteria under B)(iv) would still be valuable. (<i>Bufo boreas</i>) -Decrease needs clarifying. (<i>Python anchietae</i>) -Proposed modification: ..an observed, inferred or projected marked /significant* decrease in any one of the following:... *The following can be used to define a marked / significant decrease in number of individuals and sub-populations: A reduction of 70% or more over the last 10 years or three generations (whichever is the longer), of the original number of individuals or sub-populations. (Note: This values are based on the proposed percentages proposed by the IUCN 2001 Criteria for inclusion in the Endangered category). (<i>Amazona finschi/oratrix</i>)
<p>B)(iv)1: -the area of distribution; or</p>	<ul style="list-style-type: none"> -Probably could be dropped, unless it refers to the distribution of a critical subspecies or population within in the taxon's total range. (<i>Bufo boreas</i>) -The reviewers recommend Area of Occupancy (as used by IUCN) as a more useful measure than Area of Distribution. (<i>Eudytes pachyrhynchus</i>) -The reviewers propose to delete this sub-criterion, because it is already covered by the next one. (<i>Amazona finschi/oratrix</i>)

<p>B)(iv)2: -the area of habitat; or</p>	<p>-To determine whether it is an important reduction of habitat or not, this factor has to be evaluated in relation to other species within the same taxonomic group (e.g. Order, Family, Genus) or justified for that particular species. Some factors such as home range, territoriality, specialization degree, and habitat availability, can help to conduct the evaluation of this criterion and that of habitat quality. (<i>Amazona finschi/oratrix</i>)</p>
<p>B)(iv)3: -the number of sub-population; or</p>	<p>-Another way to formulate this criteria is: "Will all or most of the fragmented populations survive in the coming years?" or "Are there threats on some of the fragmented populations?" (<i>Rhacodactylus leachianus</i>)</p>
<p>B)(iv)4/5: -the number of individuals; or.. -the quality of habitat; or...</p>	<p>-No comments</p>
<p>B)(iv)6: -the recruitment.</p>	<p>-No change, but in this instance easier to infer than to actually demonstrate. (<i>Probarbus jullieni</i>) -This criterion should also be included in Criterion A. (<i>Falco rusticolus</i>) -The reviewer suggests to modify it to: the recruitment, natality rate or infant survival. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)</p>
<p>B)(iv)7: A new sub-criteria proposed by the reviewers of <i>Amazona finschi/oratrix</i></p>	<p>The reviewers propose a new sub-criterion (to place after sub-criterion "threats form extrinsic human-induced factors..."): -threats form intrinsic or non-human factors. (Intrinsic factors: demographic bottlenecks; natural high levels of inbreeding; life history traits (e.g., low fecundity, slow growth rate, high age at first maturity, long generation time); population structure (age/size structure, sex ratio); behavioral factors (e.g. social structure, migration, aggregating behaviour); high density (for sessile or semi-sessile species); specialized niche requirements (e.g. diet, habitat); species associations such as symbiosis and other forms of co-dependency; depensation (prone to continuing decline even in the absence of exploitation); natural catastrophes or rapid environmental changes (e.g. climate regime shifts).) (<i>Amazona finschi/oratrix</i>)</p>
<p>C)</p>	<p>- There are some comments on the definitions/explanations/guidelines of words of Criterion C. (<i>Sardinops sagax</i>, <i>Melanogrammus aeglefinus</i>, <i>Scleropages formosus</i>, <i>Corallium rubrum</i>) -Is a "marked" decline what separates this criteria from A? (<i>Bufo boreas</i>) -The criterion "a high vulnerability due to the species' biology or behaviour (including migration)" should be added to the list under C, as it is for A and B. (<i>Sardinops sagax</i>).</p>
<p>C)(i)</p>	<p>- There are some comments on the definitions/explanations/guidelines of words of Criterion C)(i). (<i>Probarbus jullieni</i>) - This criterion appears repetitive with A(i). This category should be left as "ongoing" since declines occurring in the past should be covered in A(i). (<i>Bufo boreas</i>) -The reviewer suggests to precise what this criterion means by "past". (<i>Rhacodactylus leachianus</i>)</p>
<p>C)(ii)</p>	<p>-This criterion is somewhat repetitive with A and B, especially the habitat criteria. However, if A is observed, then this criterion could be inferred or projected. However, B seems to cover area and quality of habitat, unless you are emphasizing "marked" population declines as a result of habitat changes. (<i>Bufo boreas</i>)</p>

<p>C)(ii)1: -a decrease in area of habitat; or..</p>	<p>-The reviewer has some comments on how the criterion could be applied to national or global populations. (<i>Scleropages formosus</i>) -Seems to be covered under A(i). (<i>Bufo boreas</i>) -A quantification would be ideal (e.g. X%/year). (<i>Python anchietae</i>) -A decrease in area of <u>habitat use</u> is a more useful index for whales. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)</p>
<p>C)(ii)2: -a decrease in quality of habitat; or..</p>	<p>- The reviewer has some comments on how the criterion could be applied to national or global populations. (<i>Scleropages formosus</i>) - Seems to be covered under A(i). (<i>Bufo boreas</i>)</p>
<p>C)(ii)3: -levels or pattern of exploitation; or..</p>	<p>No comments.</p>
<p>C)(ii)4: -threats from extrinsic human-induced.....</p>	<p>-May be very difficult to assess. (<i>Acipenser transmontanus</i>) -This criterion needs to be expanded to include naturally occurring stochastic events. Suggest that “human-induced” be removed and add “<u>effects of naturally occurring stochastic events</u>”. (<i>Macrochelys temminckii</i>) -Suggested change: drop “human-induced” from the text. Non-anthropogenic factors such as parasitism, disease, etc. can reduce a population to a point where it cannot withstand harvest for commercial international trade. (<i>Scleropages formosus</i>) -Proposed modification: threats from extrinsic human-induced factors (<u>others than direct exploitation</u>) such as... (<i>Amazona finschi/oratrix</i>) -The reviewer suggests to introduce the Global Warming since this change is a human-induced factor which can considerably change the distribution area of some species. (<i>Rhacodactylus leachianus</i>) -The reviewer suggests to remove the words “human-induced” so that stochastic events can also be included. (<i>Falco rusticolus</i>)</p>
<p>C)(ii)5: -a decreasing recruitment</p>	<p>-This criterion can possibly be covered in A or B. (<i>Bufo boreas</i>) -A quantification would be ideal (e.g. X%/year). (<i>Python anchietae</i>) -The reviewer suggests to modify it to: “ a decreasing recruitment, <u>natality rate or infant survival</u>”. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)</p>
<p>C)(ii)6: A new sub-criteria proposed by the reviewers of <i>Amazona finschi/oratrix</i></p>	<p>The reviewers propose a new sub-criterion (to place after sub-criterion “threats from extrinsic human-induced factors....”): -threats from intrinsic or non-human factors. (Intrinsic factors: demographic bottlenecks; natural high levels of inbreeding; life history traits (e.g., low fecundity, slow growth rate, high age at first maturity, long generation time); population structure (age/size structure, sex ratio); specialized niche requirements (e.g., diet, habitat); species associations such as symbiosis and other forms of co-dependency; depensation (prone to continuing decline even in the absence of exploitation); natural catastrophes or rapid environmental changes (e.g., climate regime shifts). (<i>Amazona finschi/oratrix</i>)</p>
<p>C)(ii)7: A new sub-criteria proposed by the reviewers of <i>Amazona finschi/oratrix</i></p>	<p>The reviewers propose a new sub-criterion (to place after sub-criterion “a decreasing recruitment”): -A reduction of critical habitat or high concentration areas of the species (e.g. seasonal, of certain life stages, etc.).</p>

	<p>The reviewers consider this new sub-criterion very important for the evaluation of the species' risk of extinction and that not necessarily is covered by the criteria mentioned above. Besides, it can help proponents to notice or focus on important risk factors.</p> <p>(<i>Amazona finschi/oratrix</i>)</p>
D)	<p>-If you are going to put a time limit here, then there should be clear time limits established for criteria that asks for inferred or projected declines in population size or distribution (or habitat quantity and quality). Otherwise, ask to project for 5 years into the future in the above categories so this criterion is not needed. (<i>Bufo boreas</i>)</p> <p>-There appears to be a inconsistency of logic between this criterion and criterion A for listing under App. II. Criterion A suggests a species can qualify for Appendix II in order to prevent it becoming eligible for App. I in the near future (5-10 years) whilst criterion D here advocates listing in App. I if it is likely to meet the criteria within 5 years? For those species that may meet App. I criteria in the near future, these criteria then give two options as to the way forward and no clear guidance as to how Parties should approach this. It might be appropriate to give parties guidance on this issue.</p> <p>However, criteria A of App. II might be reconciled if the 'near future' was fixed as 5-10 years (i.e. not as an example) to avoid overlap with criterion D. Or, if criterion D was reserved for species already on App. II (which could then be up-listed to App. I) and criterion A was used to add 'new', currently un-listed species to Appendix II in an effort to prevent them becoming eligible for App. I in the future. (<i>Corallium rubrum, Probarbus jullieni</i>)</p>

EVALUATION OF THE CRITERIA FOR LISTING ON APPENDIX II	
Criterion	Comments
Trade Criterion	<p>-The reviewers suggests adding the word "international". (<i>Acipenser transmontanus, Sardinops sagax, Melanogrammus aeglefinus, Scleropages formosus, Bufo boreas, Macrochelys temminckii, Eudytes pachyrhynchus, Amazona finschi/oratrix, Falco rusticolus</i>)</p> <p>-The reviewer suggests to precise the actual extend of the trade: e.g. widespread in the country only, neighbour countries, the continent or in the whole world. One other important data is to give the price of a specimen or an animal product in the country of origin so we have an idea of the local interest and pressure in collecting this species; this is really an important data for the pressure on an animal species. Another important point is to give the price in the importing country and thus also can give a good idea of the collect pressure that importing countries create in the origin countries. (<i>Rhacodactylus leachianus</i>)</p>
A)	<p>-There are some comments on the definitions/explanations/guidelines of words of Criterion A).</p> <p>(<i>Python anchietae</i>)</p> <p>-There appears to be a inconsistency of logic between this criterion and criterion D for listing under App. I. See comments there. (<i>Corallium rubrum, Probarbus jullieni</i>)</p> <p>-Proposed modification: It is known, or can be inferred (<u>on the basis of some evidence</u>), that...in the near future. <u>Please explain how.</u> (<i>Amazona finschi/oratrix</i>)</p>
B)	<p>-The reviewer recommends an insertion to read: "...a detrimental impact on the species, <u>sub-populations or localized populations...</u>". (<i>Python anchietae</i>)</p> <p>-Proposed modification: It is known, or can be inferred or projected (<u>on the basis of some evidence</u>), that... (<i>Amazona finschi/oratrix</i>)</p> <p>-The vulnerability factors listed are not complete enough to assist the evaluation of this criterion. It is suggested that traditional factors from IUCN checklist for making non-detriment findings also be included. These are: low reproductive rate, short-lived; poor adaptability; poor dispersal efficiency; sensitive interaction with humans;</p>

	restricted distribution; low abundance; decreasing population trend; little or no management of harvest; low control of harvest; limited or no harvest monitoring program; little or no incentives/benefits from harvest. (<i>Falco rusticolus</i>)
B)(i)	<p>-Length of “extended period” is unclear. Concept needs to be defined. (<i>Macrochelys temminckii</i>)</p> <p>-Proposed modification: Exceeding, over an extended period, the level that can be continued to perpetuity. (<i>Amazona finschi/oratrix</i>)</p> <p>-This population level is very difficult if not impossible to determine for presumably any species. (<i>Falco rusticolus</i>)</p>
B)(ii)	<p>-The reviewer suggests to give examples of “other influences”. (<i>Acipenser transmontanus</i>)</p> <p>-Some direct reference to the vulnerability of a species to ‘other influences’ would seem sensible in this criterion. Perhaps re-wording as: Reducing it to a population level at which its <u>vulnerability to other factors would be increased</u>”? The definition of vulnerability should include some reference to the stochastic risk to which small populations are prone? (<i>Probarbus jullieni</i>)</p> <p>-Proposed modification: Reducing it to ... by other influences (<u>Indicate what other influences are affecting the species</u>). (<i>Amazona finschi/oratrix</i>)</p> <p>-This population level is very difficult if not impossible to determine for presumably any species. (<i>Falco rusticolus</i>)</p>
C)	<p>-This criterion is relatively simple to apply but further work needed here to assess the degree of similarity between these species. (<i>Corallium rubrum</i>)</p> <p>-Further work is needed here to give identification responsible agents the capacity to distinguish between these species. (<i>Parnassius apollo</i>)</p>
D)	<p>-This criterion could be enhanced if examples of “compelling reasons” were provided in the notes and definitions. (<i>Scleropages formosus</i>)</p> <p>-Examples of compelling reasons would be useful – perhaps clarify if the “compelling reasons” are things that are not related directly to the biology of the species. (<i>Macrochelys temminckii</i>)</p> <p>-It’s not clear, what this criterion means. Should the last part read: “...currently loisted species is achieved and/or maintained”? (<i>Python anchietae</i>)</p> <p>-The criterion is probably appropriate, but its wording should be clarified to ensure that its purpose is easily understood – e.g., it may be worth noting that this relates to look-alike species. (<i>Pygoscelis adeliae</i>)</p> <p>-Not clear what sorts of reasons might be valid here nor how they would relate to the provisions of Article II.2.b (<i>Probarbus jullieni</i>)</p> <p>-It would be useful to exemplify these other reasons to guide the proponents. (<i>Amazona finschi/oratrix</i>)</p>

COMMENTS ON THE DEFINITIONS, EXPLANATIONS AND GUIDELINES

General	<p>-Guideline numbers given in the definition should be deleted as they are not useful and may be misleading. (<i>Macrochelys temminckii</i>)</p> <p>-It would be useful if Annex 5 gave more guidance on how to define and measure population “productivity”. <i>Sardinops sagax/Melanogrammus aeglefinus</i>)</p> <p>-No guidance is provided in Annex 5 as to what constitutes a ‘location’. By contrast, IUCN red list criteria do define a location – it would be helpful to borrow this definition for the CITES criteria. (<i>Probarbus jullieni</i>)</p> <p>-A definition of “near future” (Criterion A for listing on App. II) would be useful; 5 years would work with this species. (<i>Python anchietae</i>)</p>
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<p>(Very) small wild population</p>	<p>-It would be useful if Annex 5 provided guidance on what constitutes a “small wild population” that improved on the current single number of 5’000 individuals. For example, a range of, say 5’000 to 500’000 could be given, with the lower end of the range being applicable for species with low productivity and the upper end for species with high productivity; the rationale being that high productivity is usually associated with both high absolute numbers (for an undisturbed population) and high variability. However, some species would fall outside of this general range, and sardines would be one of them. The minimum viable population size for California sardine could be 10 million or higher. Better guidance could also be provided for what constitutes a “very small wild sub-population”.</p> <p>(<i>Sardinops sagax/Melanogrammus aeglefinus</i>)</p> <p>-Definition of „small“ is very vague. (<i>Bufo boreas</i>)</p> <p>-This criterion of size may also be based on percentages in relation with historical abundances, when available, previous to a decline due to human activities or natural causes. For example: Small wild pop.: 25-50% of the historical abundance; very small wild pop.: less than 50% of the historical abundance. When there are no historical abundance estimates it might be feasible to look at reproductive parameters instead. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)</p>
<p>Vulnerability</p>	<p>-It would be useful if Annex 5 provided more guidance on how to apply the vulnerability factors. (<i>Sardinops sagax/Melanogrammus aeglefinus</i>)</p>
<p>Population size</p>	<p>-The text currently states: “In the case of species biologically dependent on other species...”. It seems the listing analysis should primarily consider population size for the dependent species that is under consideration for listing in the Appendices. Also, the reviewer suggests an alternate definition that avoids the use of numerical point estimates for small population or sub-population size. (<i>Scleropages formosus</i>)</p> <p>-For a species such as this (or for other species), it is difficult to see why CITES does not harmonize its measure of population size with that of IUCN – namely by referring only to <u>mature individuals</u> when assessing the population size criterion. Such an approach would thus be consistent with IUCN red list assessments and also be more precautionary. (<i>Probarbus jullieni</i>)</p>
<p>Decline</p>	<p>-It would be useful if Annex 5 gave more guidance on how to define historical baselines for assessing the historical extent of decline.</p> <p>Also, it would be useful if Annex 5 provided a brief rationale for the choice of the 5-30% range for historical extent of decline, as well as better guidance on when to use which part of this range.</p> <p>Annex 5 guidelines for a marked recent rate of decline: The original Resolution Conf. 9.24 states, “... a decrease of 50% or more in total within 5 years or two generations, whichever is the longer, has been found to be an appropriate guideline (not a threshold) of what constitutes a decline. A guideline (not a threshold) of what constitutes a decline in a small wild population could be 20% or more in total within ten years or three generations, whichever is the longer”. However, Document CoP12 Com.I.3 states “...a general guideline for a marked recent rate of decline is a percentage decline of 50% or more in the last 10 years or three generations, whichever is the longer. If the population is small, a percentage decline of 20% or more in the last 5 years or 2 generations (whichever is the longer) may be more appropriate”. Note how the time frames over which to consider decline have been switched around. “Marked decline” is now lower for a “normal” population, but a higher rate is required to qualify as “marked” for “small” population. This happened in an earlier revision of Resolution Conf. 9.24 and since there was no justification given for the change, it was probably a mistake. In fact, it appears that the linkage of percentage declines and time frames may not be particularly useful. Perhaps it would be more meaningful and easier to interpret if a general guideline for a marked recent rate of decline was defined as “...an</p>

	<p>estimated or projected percentage decline of 20%-50% or more over a period of 10 years or two generations, whichever is longer. Here, the lower end of the range applies for populations that are small or have low productivity and the upper end of the range for populations that are relatively large or have high productivity". (<i>Sardinops sagax/Melanogrammus aeglefinus</i>)</p> <p>-Even though declines in percentage might be a way to go, current information on decline to a population size of ~300 animals seems to be the limit to large whales. At his population size the effect of small population size seems too surface. (<i>Eschrichtius robustus</i>/East. Pop. MX/US)</p> <p>-It appears that the guidelines for "recent rate of decline" have transposed the timelines over which declines could be measured for a normal population and a "small" wild population (i.e., small wild populations would be examined over a 5 year/2 generation period instead of a 10 year/3 generation period). Perhaps this guideline could be simplified by stating that good guidelines for "recent rate of decline" range from 20-50% over 10 years or two generations, whichever is longer, with some guidance that the upper end of the range is for larger populations, and the lower end of the range is for small populations.</p> <p>Also, in the definition of "decline" the footnotes states: " A general guideline for a marked recent rate of decline is the rate of decline that would drive...has been extremely high." The reviewer understands this to refer to "concern" for extinction or Appendix-I protection. Appendix-II concerns could be raised before this threshold is reached, for example when a small population or endemic species has declined by 50%.</p> <p>Further on, the footnotes states: "Even if a population is not declining appreciably, it ...as a definition of 'near'." It should be made clear that this isn't the only biological criterion for listing marine species in Appendix II as per Article II (2)a, particularly in data-poor situations. (<i>Scleropages formosus</i>)</p> <p>-Guidance in Annex 5 on measuring decline in colonial animals would be advantageous. (<i>Corallium rubrum</i>)</p> <p>-Not clear into which class (high, medium or low) of productivity this fish should be placed. Here taken as being 'medium productivity' but the decline is still consistent with meeting the criterion. However, to aid interpretation of this criterion for commercially exploited aquatic species, some indication should be provided as to how productivity of such species should be assessed (it is not always straightforward) – e.g. how are high, medium or low productivities distinguished. (<i>Probarbus jullieni</i>)</p>
Generation length	<p>-The Annex 5 definition of „generation length“ , while technically accurate, may not be operational (i.e., able to be put into practice). The definition implies a need to determine which of the mature individuals in the population are actually the parents of the current cohort (i.e., it would exclude adult females who did not conceive or aborted during the most recent breeding season, adult males that did not successfully inseminate females, adult "helpers", and others). (<i>Sardinops sagax/Melanogrammus aeglefinus</i>)</p>
Sub-population	<p>-For amphibians such as the boreal toad, the „subpopulation“ definition should be expanded to include breeding populations. (<i>Bufo boreas</i>)</p> <p>-The guidelines do not readily apply to those species where sub-populations are naturally very small. A lot depends on the gene-flow between sub-populations. (<i>Eudyptes pachyrhynchus</i>)</p>

Fluctuations	<p>-When defining fluctuations, the reviewer suggests addressing biological, physical and artificial (manmade) causes of fluctuations, to clarify the definition. (<i>Acipenser transmontanus</i>)</p> <p>-Perhaps “fluctuations” could be defined in terms of generation cycle. (<i>Python anchietae</i>)</p>
Area of distribution	<p>Recommend abandoning the absolute number of 10'000 km² as a guideline as noted in Annex 5. (<i>Scleropages formosus</i>)</p> <p>-Numerical references in the definition should be deleted. (<i>Macrochelys temminckii</i>)</p> <p>-The definition of “restricted” is not clear and open to interpretation. (<i>Python anchietae</i>)</p> <p>-The guidance in Annex 5 was not particularly helpful for a species occupying long, linear habitats such as rivers (these do not easily convert into areas of distribution). Clearly, it would be possible to convert this distribution into some sort of quantitative measure if greater time was available. The reference in Annex 5 to recognizing that, for migratory species such as <i>Probarbus</i>, it is the <u>smallest</u> area of distribution essential for the survival of the species (in this case spawning beds) is important and perhaps deserves greater emphasis in the guidance. (<i>Probarbus jullieni</i>)</p>
Fragmentation	<p>-The definition for fragmentation should clearly state if it applies to habitat or species distribution pattern. (<i>Acipenser transmontanus</i>, <i>Falco rusticolus</i>)</p> <p>-The guideline of 500 km² would not be appropriate for many species at all, particularly if the term “Area of Occupancy” was adopted, so we suggest that it be abandoned in favour of one that refers to significant fragmentation of once-continuous populations. (<i>Pygoscelis adeliae</i>)</p>