

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



Twenty-fifth meeting of the Animals Committee  
Geneva (Switzerland), 18-22 July 2011

REVIEW OF SIGNIFICANT TRADE IN SPECIMENS OF APPENDIX-II SPECIES  
(agenda items 9.2, 9.3, 9.4, 9.5, 9.6 and 9.7)

Membership (as decided by the Committee)

- Co-Chairs: Representatives of Europe (Mr Fleming) and North America (Ms Caceres);
- Members: Representatives of Africa (Mr Zahzah), Central and South America and the Caribbean (Mr Álvarez Lemus), and Oceania (Mr Robertson);
- Party observers: Belgium, Canada, Chile, China, Denmark, France, Indonesia, Israel, Japan, Kuwait, Malaysia, Mexico, Mongolia, Namibia, the Netherlands, Poland, Qatar, Saudi Arabia, South Africa, Spain, Switzerland, Thailand, the United Kingdom of Great Britain and Northern Ireland, the United States of America, Zimbabwe; and
- IGOs and NGOs: Convention on Migratory Species, European Union, UNEP-WCMC, IUCN, Alliance of Marine Mammal Parks and Aquariums, Animal Welfare Institute, Association of Midwestern Fish and Wildlife Agencies, Care for the Wild International, Conservation Force, Conservation International, Defenders of Wildlife, Fundación Cethus, Humane Society International, International Animal Trade Organisation, International Wildlife Consultants, Natural Resources Defense Council, Ornamental Fish International, Pan African Sanctuary Alliance, Pet Care Trust, Pro Wildlife, Safari Club International, SWAN International, TRAFFIC, Wildlife Conservation Society, WWF.

Mandate

With regard to agenda item 9.2

Review the response of Madagascar to the recommendations made at the 58th meeting of the Standing Committee concerning the chamaeleons *Calumma* spp. and *Furcifer* spp. (except *F. lateralis*, *F. oustaleti*, *F. pardalis* and *F. verrocokus*) and advise whether proposed quotas should be agreed.

With regard to agenda item 9.3

- a) Establish deadlines for the recommendations put forward in paragraph 8 of document AC25 Doc. 9.3 in accordance with paragraph n) of Resolution Conf. 12.8 (Rev. CoP13); and
- b) Determine whether *Mantella bernhardi* is a species of priority concern to be selected for review, in accordance with paragraph b) of Resolution Conf. 12.8 (Rev. CoP13).

With regard to agenda item 9.4

- a) In accordance with paragraphs k) and l) of Resolution Conf. 12.8 (Rev. CoP13), review the reports and the responses received from range States contained in the Annex to document AC25 Doc. 9.4, and, if appropriate, revise the preliminary categorizations proposed by the UNEP World Conservation Monitoring Centre (UNEP-WCMC);
- b) Refer to the Secretariat problems identified that are not related to the implementation of Article IV, paragraph 2 (a), 3 or 6 (a); and
- c) In accordance with paragraphs m) to o) of the same Resolution, formulate recommendations for species of urgent concern and of possible concern.
  - For species of urgent concern, these recommendations should propose specific actions to address problems related to the implementation of Article IV, paragraph 2 (a), 3 or 6 (a). Such recommendations should differentiate between short- and long-term actions, and may include, for example:
    - i) the establishment of administrative procedures, cautious export quotas or temporary restrictions on exports of the species concerned;
    - ii) the application of adaptive management procedures to ensure that further decisions about the harvesting and management of the species concerned will be based on the monitoring of the impact of previous harvesting and other factors; or
    - iii) the conducting of taxon- and country-specific status assessments, field studies or evaluation of threats to populations or other relevant factors to provide the basis for a Scientific Authority's non-detriment finding, as required under the provisions of Article IV, paragraph 2 (a) or 6 (a).
  - For species of possible concern, these recommendations should specify the information required to enable the Committee to determine whether the species should be categorized as either of urgent concern or of least concern. They should also specify interim measures, where appropriate, for the regulation of trade. Such recommendations should differentiate between short- and long-term actions, and may include, for example:
    - i) the conducting of taxon- and country-specific status assessments, field studies or evaluation of threats to populations or other relevant factors; or
    - ii) the establishment of cautious export quotas for the species concerned as an interim measure.

Deadlines for implementation of these recommendations should be determined. They must be appropriate to the nature of the action to be undertaken, and should normally be not less than 90 days but not more than two years after the date of transmission to the State concerned.

With regard to agenda item 9.5

- a) In accordance with paragraph f) of Resolution Conf. 12.8 (Rev. CoP13), review the available information; and
- b) If satisfied that Article IV, paragraph 2 (a), 3 or 6 (a) of the Convention is being correctly implemented, recommend to the Committee that the species be eliminated from the review.

Consider *Mantella aurantiaca* in addition to the taxa included in document AC25 Doc. 9.5.

With regard to agenda item 9.6

- a) Review the information contained in the Annex to document AC25 Doc. 9.6; and
- b) On the basis of that information, recommend species of priority concern for review by the Committee.

#### With regard to agenda item 9.7

Review the report from Mongolia in the Annex to document AC25 Doc. 9.7 and give its advice on the development of the *Falco cherrug* programme in Mongolia.

Advise on the *Falco cherrug* export quota from Mongolia for 2011.

#### Recommendations

##### **AC25 Doc. 9.2 – Overview of the species-based review of significant trade**

The working group noted the progress in the implementation of the review of significant trade.

The working group considered the response of Madagascar to the recommendations made at the 58th meeting of the Standing Committee concerning the chameleons *Calumna* spp. and *Furcifer* spp. (except *F. lateralis*, *F. oustaletii*, *F. pardalis* and *F. verrucosus*).

The working group endorsed all the zero quotas proposed in the response from Madagascar and supported their publication by the CITES Secretariat.

However, given the late submission of the document and discrepancies within it, the group did not feel able to formulate definitive advice to the Animals Committee at this meeting on the quotas proposed for the remaining eight species. The group recommended that the response be re-considered at the 26th meeting of the Animals Committee (March 2012) and, in the meantime, the Secretariat should be requested to clarify discrepancies with Madagascar.

##### **AC25 Doc. 9.3 – Species selected following CoP13**

- a) Establishment of deadlines for recommendations in accordance with paragraph n) of Resolution Conf. 12.8 (Rev. CoP13).

The working group agreed that the deadline for compliance with the recommendations (paragraphs 8.b-d of document AC25 Doc. 9.3) is 15 January 2011.

- b) *Mantella bernhardi*

The working group agreed to recommend the inclusion of *Mantella bernhardi* as a species of priority concern for inclusion in accordance with paragraph b) of Resolution Conf. 12.8 (Rev. CoP13).

##### **AC25 Doc. 9.4 – Species selected following CoP14**

The group agreed to recommend to the Committee that issues identified in discussion which did not directly relate to the implementation of Article IV of the Convention should be referred to the Standing Committee.

Regarding *Hippopotamus amphibius*, the working group decided to recommend categorising Cameroon and Mozambique as possible concern and Benin, Burkina Faso, Central African Republic, Chad, Cote d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Mali, Niger, Nigeria, Senegal, Somalia, South Africa, Sudan (& South Sudan), Swaziland as least concern.

Regarding *Brookesia decaryi*, the working group agreed to recommend least concern for Madagascar. The group recommended that were trade to resume the species should be re-evaluated for inclusion in the review of significant trade.

Regarding *Chamaeleo africanus*, the working group agreed to recommend possible concern for Niger.

Regarding *Chamaeleo feae*, the working group agreed to recommend possible concern for Equatorial Guinea.

Regarding *Cordylus mossambicus* the working group agreed to recommend possible concern for Mozambique.

Regarding *Uroplatus* spp. from Madagascar, the working group agreed the following categories for Madagascar:

*U. alluaudi* – least concern

*U. ebenau* – possible concern

*U. fimbriatus* – possible concern

*U. giganteus* – least concern

*U. guentheri* – possible concern

*U. henkeli* – possible concern

*U. lineatus* – possible concern

*U. malahelo* – least concern

*U. malama* – possible concern

*U. phantasticus* – possible concern

*U. pietschmanni* – possible concern

*U. sikorae* – possible concern

Regarding *Gongylophis muelleri* the working group agreed to recommend least concern for Ghana.

Regarding *Heosemys annandalii* the working group agreed to recommend possible concern for Lao PDR and least concern for Brunei Darussalem, Cambodia, Viet Nam.

Regarding *Heosemys grandis* the working group agreed to recommend possible concern for Lao PDR and least concern for Brunei Darussalem, Cambodia, Viet Nam.

Regarding *Heosemys spinosa* the working group agreed to recommend least concern for Brunei Darussalem, Lao PDR, Cambodia, Viet Nam.

Regarding *Testudo horsfieldii* the working group agreed to recommend possible concern for Tajikistan, Uzbekistan and least concern for Afghanistan, Islamic Republic of Iran, Kyrgyzstan, Pakistan, Russian Federation.

Regarding *Amyda cartilaginea* the working group agreed to recommend possible concern for Indonesia.

Regarding *Scaphiophryne gottlebei* the working group agreed to recommend possible concern for Madagascar.

The working group proposed the recommendations in the Annex, for those range States identified as possible concern.

#### **AC25 Doc. 9.5 – Species selected at AC24**

The working group reviewed responses from the range States to the species selected at the 24th meeting of the Animals Committee.

Regarding *Tursiops aduncus*, the working group congratulated the Solomon Islands for the efforts made thus far to meet the recommendations of the Animals Committee. The working group decided to retain the species in the Review of Significant Trade and noted the next stage of the review should take into account the results of the population surveys currently underway.

Regarding *Balearica pavorina*, the working group decided to retain Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Sudan (North and South), Togo, Uganda.

Regarding *Balearica regulorum*, the working group decided to eliminate Namibia, Swaziland, South Africa and Zimbabwe based on the response provided. The remaining range States (Angola, Botswana, Burundi, Democratic Republic of the Congo, Kenya, Lesotho, Malawi, Mozambique, Rwanda, Uganda, United Republic of Tanzania, Zambia) were retained in the Significant Trade Review.

Regarding *Mantella aurantiaca*, the working group agreed to retain the species in the review and noted that the document was too detailed to consider at short notice.

Regarding *Huso huso*, the working group decided to eliminate Croatia, Republic of Moldova, Romania, Serbia, Turkey and the Ukraine based on the responses provided. The working group decided to eliminate Azerbaijan subject to written confirmation to the Secretariat of the zero quota being in place. The remaining states (Bulgaria, Georgia, Hungary, Iran (Islamic Republic of), Kazakhstan, Russian Federation, Turkmenistan) were retained in the Significant Trade Review.

Regarding *Hippocampus kelloggi*, the working group decided to eliminate Australia, Indonesia, and Malaysia. The working group decided to retain China, India, Japan, Pakistan, Philippines, Thailand, United Republic of Tanzania and Viet Nam, noting in particular the high proportion of trade in seahorses originating from Thailand and China and some data discrepancies regarding trade from Viet Nam.

Regarding *Hippocampus spinosissimus*, the working group decided to eliminate Australia, Indonesia and Malaysia. The working group decided to retain Cambodia, China, Myanmar, Philippines, Singapore, Sri Lanka, Thailand and Viet Nam.

Regarding *Hippocampus kuda*, the working group decided to eliminate American Samoa, Indonesia, Malaysia, New Caledonia (France) and South Africa. The working group decided to retain Australia, Cambodia, China, Egypt, Fiji, French Polynesia (France), India, Japan, Kenya, Madagascar, Maldives, Mauritius, Micronesia (Federated States of), Mozambique, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand, Tonga and Viet Nam.

Regarding *Pandinus imperator*, the working group decided to retain Benin, Cote d'Ivoire, Ghana, Guinea, Liberia, Nigeria, and Togo in the Review of Significant Trade.

Regarding *Tridacna spp.*, the working group decided to retain Solomon Islands in the Review of Significant Trade.

The working group recommended the Evaluation of the Review of Significant Trade working group consider the implications of species being eliminated on the basis of a zero quota and then subsequently resuming trade.

#### **AC25 Doc. 9.6 – Selection of species for trade reviews following CoP15**

The working group recommends the following taxa as of priority concern for review:

*Macaca fascicularis* – all range States

*Psittacus erithacus* – all range States except those recently subject to previous recommendations under the review of significant trade which are still in effect, namely: Cameroon, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Guinea, Liberia and Sierra Leone.

*Chamaeleo gracilis* – all range States

*Chamaeleo melleri* – all range States

*Chamaeleo quadricornis* – all range States

*Chamaeleo senegalensis* – all range States

*Kinyongia fischeri* – all range States

*Kinyongia tavetana* – all range States

*Ptyas mucosus* – all range States

*Naja sputatrix* – all range States

*Python reticulatus* - all range States

*Podocnemis unifilis* – all range States

*Kinixys homeana* – all range States

*Hippocampus barbouri* – all range States

*Hippocampus trimaculatus* – all range States

*Hippocampus algericus* – all range States

*Hippocampus hystrix* – all range States

*Antipatharia* – all range States

*Catalaphyllia jardinei* – all range States

*Euphyllia cristata* – all range States

*Plerogyra simplex* – all range States

*Plerogyra sinuosa* – all range States

*Trachyphyllia geoffroyi* – all range States

**AC25 Doc. 9.7 – Programme for the conservation and sustainable use of *Falco cherrug* in Mongolia**

The working group recommends the Animals Committee endorse the positive management regime for saker falcon, *Falco cherrug*, established by Mongolia and agree to the proposed export quota of 300 live specimens for 2011. The working group suggests the Animals Committee invite Mongolia to provide an update on the progress of this project at the 27th meeting of the Animals Committee (April 2014).

DRAFT RECOMMENDATIONS FOR SPECIES OF POSSIBLE CONCERN

<i>Hippopotamus amphibius</i>	
Cameroon (Possible concern)	<p>Within 90 days</p> <p>a) The Management Authority should clarify what legal protection is afforded to this species in Cameroon and provide an explanation for the perceived discrepancies between reported Customs data (imports) and CITES data (exports) referred to in AC25 Doc 9.4;</p> <p>b) Provide available information to the Secretariat on the distribution, abundance and conservation status and any current management measures in place for <i>H. amphibius</i> in Cameroon; and</p> <p>c) Provide justification for, and details of, the scientific basis by which it has been established that the quantities of <i>H. amphibius</i> exported were not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3.</p>
Mozambique (Possible concern)	<p>Within 90 days</p> <p>a) The Management Authority should provide an explanation of the 'internal system of annual quotas' and other management measures in place and clarify the perceived discrepancies between reported customs data (imports) and CITES data (exports) referred to in AC25 Doc 9.4;</p> <p>b) Provide information derived from the national survey undertaken in 2008 on the distribution, abundance and conservation status of <i>H. amphibius</i> in Mozambique, including details of methodologies employed; and</p> <p>c) Provide justification for, and details of, the scientific basis by which, it has been established that the quantities of <i>H. amphibius</i> exported were not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3.</p>
<i>Chamaeleo africanus</i>	
Niger (Possible concern)	<p>Within 90 days</p> <p>a) The Management Authority of Niger should provide the Secretariat with available information on:</p> <ol style="list-style-type: none"> <li>i) the distribution and abundance of <i>Chamaeleo africanus</i> in its country; and</li> <li>ii) the justification, and the scientific basis, by which it has been established that the quantities exported will not be detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3; and</li> </ol> <p>b) The Management Authority should establish an interim conservative quota for this species, based on estimates of sustainable off-take and available scientific information and provide details to the Secretariat.</p> <p>Within 2 years</p> <p>a) Conduct a national status assessment, including an evaluation of threats to the species; and advise the Secretariat of the details and any management measures in place;</p> <p>b) Establish a revised annual export quota for wild taken specimens based on the results of the assessment;</p> <p>c) The Management Authority should forward the quota details to the Secretariat (including zero quotas) and provide an explanation of how the Scientific Authority determined that the quantities would not be detrimental to the survival of the species in the wild; and</p>

	d) The Secretariat, in consultation with the Chair of the Animals Committee, should consider the information provided and, if satisfied, publish the proposed export quota.
<i>Chamaeleo feae</i>	
Equatorial Guinea (Possible concern)	<p>Within 90 days</p> <p>a) The Management Authority should confirm that no export permits have been issued for this species since 1999, and provide an explanation to the Secretariat for the perceived discrepancies between reported Customs data (imports) and CITES data (exports) referred to in document AC25 Doc 9.4;</p> <p>b) If there is no intent to allow export of this species for the foreseeable future establish a zero quota which should be communicated to Parties by the Secretariat; or</p> <p>c) If trade is allowed provide justification for, and details of, the scientific basis by which it has been established that the quantities of <i>Chamaeleo feae</i> exported are not detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3</p>
<i>Cordylus mossambicus</i>	
Mozambique (Possible concern)	<p>Within 90 days</p> <p>– The Management Authority of Mozambique should provide the Secretariat with detailed information on:</p> <p>i) the distribution and abundance of <i>Cordylus mossambicus</i> in its country; and</p> <p>ii) the justification, and the scientific basis, by which it has established that the quantities exported will not be detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3 and iii), and provide an explanation for the quota apparently exceeded in 2003, 2004 and 2007.</p> <p>Within 2 years</p> <p>a) Conduct a national status assessment, including an evaluation of threats to the species and advise the Secretariat of the details of any management measures in place;</p> <p>b) Establish a revised annual export quota for wild taken specimens based on the results of the assessment;</p> <p>c) The MA should forward the quota details to the Secretariat (including zero quotas) and provide an explanation of how the SA determined that the quantities would not be detrimental to the survival of the species in the wild; and</p> <p>d) The Secretariat, in consultation with the Chair of the Animals Committee, should consider the information provided and, if satisfied, publish the proposed export quota.</p>
<i>Uroplatus ebenai, U. fimbriatus, U. guentheri, U. henkeli, U. lineatus, U. malama, U. phantasticus, U. pietschmanni, U. sikorae</i>	
Madagascar (possible concern)	<p>Within 90 days</p> <p>a) The Management Authority of Madagascar should provide to the Secretariat detailed information on:</p> <p>i) the distribution and abundance of the <i>Uroplatus</i> spp. under consideration; and</p> <p>ii) the justification, and the scientific basis, to demonstrate that the 2011 export quotas, if not zero, will not be detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3; and</p> <p>b) The Management Authority of Madagascar should provide to the Secretariat, for publication on the CITES website, any zero quotas established for <i>Uroplatus</i> spp.</p>



	<p>Within 2 years</p> <ul style="list-style-type: none"> <li>– The Management Authority of Madagascar develop methods and materials to properly identify <i>Uroplatus</i> spp in trade to species level.</li> </ul>
<i>Heosemys annandalii</i>	
Lao PDR (Possible concern)	<p>Within 90 days</p> <ul style="list-style-type: none"> <li>– The Management Authority should clarify what legal protection is afforded to this species in Lao PDR and liaise with the Management Authority of Vietnam to provide an explanation for the perceived discrepancies between reported Vietnamese import data and Lao PDR export data referred to in AC25 Doc 9.4; and either <ul style="list-style-type: none"> <li>i) If there is no intent to allow export of wild caught specimens of this species for the foreseeable future establish a zero quota which should be communicated to Parties by the Secretariat; or</li> <li>ii) If it is intended to permit trade, provide a justification for, and details of, the scientific basis by which it has been established that any specimens to be exported will not be detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3</li> </ul> </li> </ul>
<i>Heosemys grandis</i>	
Lao PDR (Possible concern)	<p>Within 90 days</p> <ul style="list-style-type: none"> <li>a) The Management Authority should clarify what legal protection is afforded to this species in Lao PDR and liaise with the Management Authority of China to provide an explanation for the perceived discrepancies between reported import data and reported export data referred to in document AC25 Doc 9.4; and</li> <li>b) Provide full details of the ranching facilities in Lao PDR, including stock numbers and source, annual production of eggs and hatchlings, as well as an assessment of the impact of this facility on wild populations; and either <ul style="list-style-type: none"> <li>i) If there is no intent to allow export of wild caught specimens of this species for the foreseeable future establish a zero quota which should be communicated to Parties by the Secretariat; or</li> <li>ii) If it is intended to permit trade, provide a justification for, and details of, the scientific basis by which it has been established that any specimens to be exported will not be detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3.</li> </ul> </li> </ul>
<i>Testudo horsfieldii</i>	
Tajikistan (non-Party) (Possible concern)	<p>Within 90 days</p> <ul style="list-style-type: none"> <li>a) Provide information on population distribution, size and trends; and</li> <li>b) Provide justification for and details of the scientific basis by which, it has been established that the current quota for wild is not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3, taking into account any potential unregulated and/or illegal off-take and trade.</li> </ul>
Uzbekistan (Possible concern)	<p>Within 90 days</p> <ul style="list-style-type: none"> <li>a) Provide justification for and details of, the scientific basis by which it has been established that the current quotas are not detrimental to the survival of the species and are in compliance with Article IV, paragraphs 2 (a) and 3, taking into account any potential unregulated and/or illegal off-take and trade; and</li> <li>b) In addition to the information provided on ranching in document Doc. AC24 8.1, provide additional information to demonstrate how the impact of ranching operations on the wild population is assessed, including an assessment of the survival rate of female specimens used in the ranching operation.</li> </ul>

<i>Amyda cartilaginea</i>	
Indonesia (Possible concern)	<p>For submission by the deadline of documents to AC26 (15 January 2012)</p> <p>a) Consider revision of the current export quota for wild specimens, taking into account both harvest for domestic consumption and export, based on available estimates of sustainable offtake and scientific information and forward the quota details, including how the quota is divided by province or district, to the Secretariat and provide information and data used by the Scientific Authority to determine that the quantities would not be detrimental to the survival of the species in the wild; and</p> <p>b) The CITES Management Authority of Indonesia should provide the Secretariat and the AC Chair with:</p> <ul style="list-style-type: none"> <li>– English translations of the survey reports for West Kalimantan, South Sumatra, Riau and Jambi;</li> <li>– Data on the size distribution of animals in trade; and</li> <li>– A detailed explanation how survey data are used to establish the quota.</li> </ul> <p>Within 18 months:</p> <p>a) Explain how specimens from captive production systems are distinguished in trade from wild-harvested animals and how their production is incorporated into quota and overall trade calculations;</p> <p>b) Establish a detailed monitoring program for <i>Amyda cartilaginea</i> at representative sites, including sites where active harvest takes place, sites where harvest took place in the past, and sites [protected areas] where no significant recent harvest has taken place. Report to the Animals Committee on the monitoring programme. Initiate a detailed study of the population dynamics of <i>Amyda cartilaginea</i>, including growth rate, size and age at maturity, average annual reproductive output, and annual survivorship of different age classes. Demonstrate how the findings of the monitoring program and population dynamics study will be used to establish adaptive management programmes for harvesting of, and trade in, <i>A. cartilaginea</i>, including changes to the conservative annual export quota; and</p> <p>c) Indonesia MA should work with UNEP-WCMC to evaluate trade data to explain the discrepancy between UNEP-WCMC CITES trade database and Indonesian exports reported in Indonesia's intervention at AC25.</p>
<i>Scaphiophryne gottlebei</i>	
Madagascar (Possible concern)	<p>Within 90 days</p> <p>a) Provide justification for, and details of, the scientific basis by which, it has been established that the current quota for wild is not detrimental to the survival of the species and in compliance with Article IV, paragraphs 2 (a) and 3; and</p> <p>b) Maintain the export quota at current levels or lower for wild specimens.</p>