Abstract. – In January 2008 we organized and convened an IUCN Red Listing workshop in Antananarivo, Madagascar. The overall goals of the workshop were: 1) inclusion of updated Red List assessments for Madagascar’s tortoises and freshwater turtles on the 2008 IUCN Red List, 2) development, publication, and implementation of a Conservation Action Plan for Madagascar’s tortoises and freshwater turtles, and 3) the establishment of a broad-based Madagascar Tortoise and Freshwater Turtle Working Group to collaborate and facilitate conservation action, including addressing conservation gaps and synergistic fundraising.

Key Words. – Reptilia, Testudines, Testudinidae, Podocnemididae, Pelomedusidae, freshwater turtles, tortoises, IUCN Red List of Threatened Species, Madagascar

In January 2008 we organized an IUCN Red Listing workshop in Antananarivo, Madagascar: Turtles on the Brink in Madagascar: A Workshop on Current Status, Conservation Prioritization, and Strategic Action Planning for Malagasy Tortoises and Freshwater Turtles (Fig. 1). The workshop was convened and co-hosted by Wildlife Conservation Society/Madagascar (WCS), Conservation International/Madagascar (CI), and the International Union for Conservation of Nature / Species Survival Commission IUCN/SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG).

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The IUCN Red List of Threatened Species™ provides taxonomic, conservation status, and distribution information on plants and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction of a species. The main purpose of the IUCN Red List is to catalogue and highlight those plants and animals that are facing a high risk of global extinction (i.e., those listed as Critically Endangered, Endangered, and Vulnerable, with species in these three categories considered to be Threatened under IUCN criteria).

The IUCN Red List also includes information on plants and animals that are categorized as Extinct or Extinct in the Wild, species that cannot be evaluated because of insufficient information (Data Deficient), species that are either close to meeting the Threatened thresholds or that would be Threatened were it not for an ongoing taxon-specific conservation program (Near Threatened), and species that are relatively secure and at no current risk of extinction being categorized as Least Concern (IUCN 2011) (Fig. 2).

To evaluate the risk of extinction of a species, a Red List assessment requires sourcing and collating the best information on the species including: 1) species classification, 2) geographic range (including a distribution map), 3) population status and trends, 4) habitat preferences, 5) major threats, 6) species utilization, 6) conservation measures in place and needed, 7) other general information, and 8) key literature references.

The information collated is used to assess the extinction risk of each species according to the IUCN Red List Categories and Criteria (current Version 3.1). The majority of assessments appearing on the IUCN Red List are carried out by members of the IUCN/SSC Specialist Groups, or by participants of Global Biodiversity Assessment workshops. An initial draft assessment is usually prepared by one or a few authors, or assessors. This step involves the development of a draft species account, draft map, and a compilation of relevant questions for specialists involved in the assessment. This draft assessment is then made available to specialist group members or workshop participants to seek
additional information, review, expansion, and correction as appropriate. Following incorporation of this information, the assessment is then submitted for review by the Red List Authority for the particular species group. A Red List Authority is usually composed of members of the pertinent specialist group. For tortoises and freshwater turtles, the official Red List Authority is the Steering Committee of the TFTSG. Individuals can be an assessor or reviewer for any particular species, but may not sign off on a review to which they contributed significantly in the assessment. At least two members of the Red List Authority review the draft to ensure that: 1) the information presented is both complete and correct, and 2) the Red List assessment has been completed correctly. Following approval by the Red List Authority, the staff of IUCN’s Red List Programme provides a second review of the information for completeness, accuracy, and consistency before publication on the IUCN Red List website (www.iucnredlist.org). All assessments appearing on the IUCN Red List web site are open to challenge, and a petitions process has been developed to handle potential disagreements with current listings appearing on the Red List (IUCN 2012).

The status of Madagascar’s tortoises and freshwater turtles have previously been assessed a number of times and was included in the 1982 reptiles volume of the IUCN Red Data Book (Groombridge 1982), the 1996 global assessment of tortoises and freshwater turtles (under Red List criteria version 2.3), and the 2001 Conservation Breeding Specialist Group Conservation Assessment and Management Plan (CBSG CAMP) evaluations. As the impacts on Madagascar’s tortoises and freshwater turtles have continued to escalate, updated assessments were essential and the Red Listing workshop was convened in January 2008 to update these species’ status and to formulate a conservation strategy.

The Workshop

Present at the workshop were over 80 participants from 12 countries, the most being from Madagascar, that represented government agencies, universities, international and local NGO’s, local communities, and the TFTSG. Over four days, the participants heard updates and presentations on current research and conservation efforts. They focused on IUCN Red List status assessments and updated threat categorizations, identified and developed focused conservation actions, and initiated a process to synthesize and prioritize conservation needs into a strategic vision and focused Conservation Action Plans for all Madagascan tortoise and freshwater turtle species. Critical issues of concern for turtles and tortoises included in the discussion were:

- Addressing the illegal trade at both the local consumption and international pet trade levels;
- Including community-based and education programs in future conservation efforts;
- Obtaining additional field data, which are necessary for appropriate management decisions, on the distribution and status of remaining populations;
- Identifying key unprotected habitats and their subsequent proposal as new protected areas in the Durban Vision process;
Continuing and establishing reintroduction programs;

- Examining the potential of establishing captive breeding programs and assurance colonies outside of Madagascar (particularly for the Ploughshare Tortoise, Astrochelys yniphora, and the Madagascar Big-headed Turtle, Erymnochelys madagascariensis).

The participants created an informal Madagascar Turtle Conservation Working Group for implementing the recommendations that emanated from the workshop, and recommended the formal establishment of a Madagascar-based Turtle and Tortoise Advisory Committee in which government authorities, conservationists, scientists, and community leaders would work together to help local communities benefit from the sustainable use of Madagascar’s turtles and tortoises (Mittermeier et al. 2008; article reprinted below as the next contribution in this monograph).

The workshop assessed nine freshwater turtle or tortoise species occurring in Madagascar. Five of these turtle and tortoise species, the Radiated Tortoise (Astrochelys radiata), the Ploughshare Tortoise (A. yniphora), the Spider Tortoise (Pyxis arachnoides), the Flat-tailed Tortoise (P. planicauda), and the Madagascar Big-headed Turtle (Erymnochelys madagascariensis), all endemic to Madagascar, were each assessed as Critically Endangered, the highest possible IUCN Red List category of threat of extinction (Table 1). These recommendations were subsequently adopted by the IUCN in 2008, and are posted on the IUCN Red List website (www.iucnredlist.org).

Status data were also collected for the Madagascar populations of the species that are not endemic to Madagascar (Kinixys belliana [now zombensis], Pelomedusa subrufa, Pelusios castanoides, and P. subniger) for incorporation into range-wide assessments for these species, to be concluded once the populations on mainland Africa have been assessed, but until such time those species are considered Not Evaluated (NE).

Following the conclusion of the Madagascar Red Listing workshop, we have continued to work closely with other NGO’s focused on the conservation of Madagascar’s tortoises and freshwater turtles, notably Durrell Wildlife Conservation Trust, Turtle Survival Alliance (TSA), and the Turtle Conservancy. We have all worked together to help advance the conservation action plans developed and articulated at both the original workshop as well as

### Table 1. Pre- and Post-Workshop IUCN Red List Status of Madagascan turtles and tortoises. Endemic species marked with an asterisk.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Astrochelys radiata *</td>
<td>VU</td>
<td>CR</td>
</tr>
<tr>
<td>Astrochelys yniphora *</td>
<td>EN</td>
<td>CR</td>
</tr>
<tr>
<td>Pyxis arachnoides *</td>
<td>VU</td>
<td>CR</td>
</tr>
<tr>
<td>Pyxis planicauda *</td>
<td>EN</td>
<td>CR</td>
</tr>
<tr>
<td>Erymnochelys madagascariensis *</td>
<td>EN</td>
<td>CR</td>
</tr>
<tr>
<td>Kinixys belliana (now zombensis)</td>
<td>LC</td>
<td>NE</td>
</tr>
<tr>
<td>Pelusios castanoides</td>
<td>LC</td>
<td>NE</td>
</tr>
<tr>
<td>Pelusios subniger</td>
<td>LC</td>
<td>NE</td>
</tr>
<tr>
<td>Pelomedusa subrufa</td>
<td>LC</td>
<td>NE</td>
</tr>
</tbody>
</table>

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**Figure 2.** The purpose of the IUCN Red List is to catalogue, categorize, and highlight the global conservation status of all plants and animals and to assess their relative risk of extinction. The current (2013) Red List has more than 70,000 species listed, with over 21,000 in the three Threatened categories (www.iucnredlist.org).
Résumé


LITERATURE CITED
