



Letter to the Editor

Considering protected area category in conservation analyses

We thank Coad et al. for their comments in response to our recent article (Jenkins and Joppa, 2009). Evaluating the protection of the world's biodiversity is a difficult task, one not to be taken lightly. We welcome the chance to discuss the issue further.

Producing the World Database of Protected Areas (WDPA) is a huge effort, one that makes analyses such as ours possible. With a unique position as the singular global reference for protected areas, it is vital that the WDPA be reliable. The criteria for including or excluding areas must be transparent and acceptable to the conservation community.

We made every effort to be transparent in our methods, highlighting the few differences between our methods and previous studies. We continue to believe our methods accurately assessed intended protection levels of the world's ecoregions.

Coad et al. claim that we should have included in our analyses the protected areas designated solely by international conventions. We argue that it is the efforts by countries, represented by national protected areas, which should be evaluated. Actual protection is implemented at the country level (or lower). Two contrasting examples illustrate the situation for Biosphere Reserves.

The Maya Biosphere Reserve in Guatemala is 211,294 km². All of this area is also included in IUCN categorized protected areas according to the 2009 version of the WDPA. Thus, there would be no effect from including the Biosphere Reserve, as we already considered the region protected.

The Mata Atlântica Biosphere Reserve in Brazil is ~294,735 km², although it has no associated polygon in the WDPA. The latest estimate of forest cover in this biome is 163,775 km², of which 14,636 km² (9%) is within protected areas (Ribeiro et al., 2009). Ribeiro et al. (2009) include only protected areas classified as "proteção integral", which is a stricter definition than used by us or Coad et al. Including the entire biosphere reserve would designate an area nearly twice the size of the remaining forest as "protected".

Including World Heritage sites would not significantly affect our results. From the IUCN *Guidelines for Applying Protected Area Management Categories*, "Virtually all natural World Heritage sites are also protected areas" (Dudley, 2008).

Ramsar sites are certainly worthy of attention, but the Ramsar Convention has no regulatory power to enforce protection. Nations are not obligated to protect them with national legislation (Dudley, 2008). Like Biosphere Reserves though, countries creating a protected area in a Ramsar site had their efforts recognized in our analyses through the inclusion of national protected areas.

Excluding areas designated by international conventions is common practice in analyses such as ours. Indeed, five authors from Coad et al. (L. Coad, N. Burgess, C. Loucks, L. Fish, C. Besançon) published a global analysis of forest protection using methods

similar to ours, and in the same journal issue as our original paper. Four of these authors (L. Coad, N. Burgess, L. Fish, C. Besançon) published a recent assessment of national progress toward the 2010 Target (Coad et al., 2009). In both cases, they excluded international areas.

Regarding protected areas in the United States, we again stand by our methods. Contrary to what Coad et al. indicate, the Protected Areas Database of the United States (PAD-US version 1.0) (<http://www.protectedlands.net>) does not correspond with what is in the 2009 WDPA. The PAD-US data indicate many IUCN categorized areas throughout the United States that are missing from the WDPA. Examples include: (1) Sequoia – Kings Canyon Wilderness Area (~2789 km²), an IUCN 1b in PAD-US, (2) numerous protected areas in the Adirondack Mountains of New York state, many of them category Ia and covering >10,000 km², (3) many state parks throughout the country, often listed as IUCN category II. The PAD-US data were not publicly available until April 2009, after the release of the 2009 WDPA and after the original acceptance of our manuscript.

We agree with Coad et al. on the importance of this issue, and are aware that there can be serious political implications from our results. The protection of the entire planet's biodiversity is at stake. For this reason we feel strongly that the designation of protected areas by nations be the standard for evaluating protection levels. As well, great care should be taken when deciding to include or exclude protected areas from global protection assessments.

References

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