# Endemic Species and Ecological Systems of the Amazon Basin of Peru and Bolivia

## Protected Areas: Where are the Gaps?

* Mapped existing and proposed protected areas to find the gaps.
* Developed a model depicting current land uses and potential future land uses in the region.

Our Work

Our study has demonstrated that the eastern slope of the Andes and the adjacent Amazon basin support exceptional numbers of endemic species and an impressive array of ecological systems. How well are these species and habitat types currently protected, and what are their prospects for the future?

To answer these questions, we began by mapping existing and proposed protected areas in these portions of Peru and Bolivia. The project area includes 42 distinct protected areas (designated or proposed), which collectively cover about 12% of the entire region. National parks comprise 7.5% of the total; managed natural habitats are 3%, and proposed conservation areas are 1.5%.

The study revealed alarming findings about the protection of the region's habitats. Twelve out of the 14 groups of ecological systems identified and mapped in the study region have only 25 percent or less of their area protected. The dry forests presented the most worrying results. The Chiquitano dry forest ecological system area is completely unprotected, while only 5 percent of the Beni savannahs occur within protected areas. On the flip side, most of the Andean azonal vegetation ecological system habitats, at least 54 percent, occur within protected areas.

In regards to endemic species, out of the 12 areas of endemism identified in the study, at least four centers of rare biodiversity richness in Peru occur outside existing national protected areas. Existing national protected areas do cover at least portions of nine of the 12 areas of endemism. Yet, often the area covered is minimal.

The final piece of the analysis considered threats to protected areas due to land conversion and resource exploitation. We developed a model depicting current land uses and potential future land uses in the region, along with the zones where these uses are likely to impact biodiversity. The results were somewhat welcome news: half of the protected areas face relatively low or very low levels of threat from land use change or resource exploitation, and these parks comprise about 85% of the total protected areas acreage. However, some 14 protected areas were documented as being highly or very highly threatened.

**Percentage of Ecological Systems within Protected Areas**

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| **Ecological System Group** | **Portion (in the study area) located within protected areas** |
| Andean moist forests | 30% |
| Amazonian moist forests | 25% |
| Andean dry forests and xeric scrub | 12% |
| Chiquitano dry forests | 0% |
| Andean azonal vegetation | 54% |
| Amazonian azonal vegetation | 20% |
| Andean grassland and shrubland | 19% |
| Amazonian white water floodplain forests | 12% |
| Amazonian black water floodplain forests | 16% |
| Amazonian clear water floodplain forests | 20% |
| Amazonian black or white water flooded vegetation | 7% |
| Beni seasonally saturated vegetation | 0.1% |
| Beni seasonally flooded vegetation | 5% |
| Beni permanently flooded vegetation | 5% |