

CONTEXT

Freshwater systems are the most threatened megadiverse systems on earth (Vorosmarty et al. 2010, IPCC 2014).

Recent evidences suggests that climate change is causing significant impacts on the hydrological and biological dynamics of rivers, affecting socio-ecological systems at multiple scales (IPCC 2014).

Conservation of freshwater systems requires designing and implementing suitable policies in the global, regional and local levels.

AIM

In order to contribute with national planning and policy making, we propose a preliminary prioritization of areas for venezuelan rivers conservation based on the assessment, on a basin scale, of:

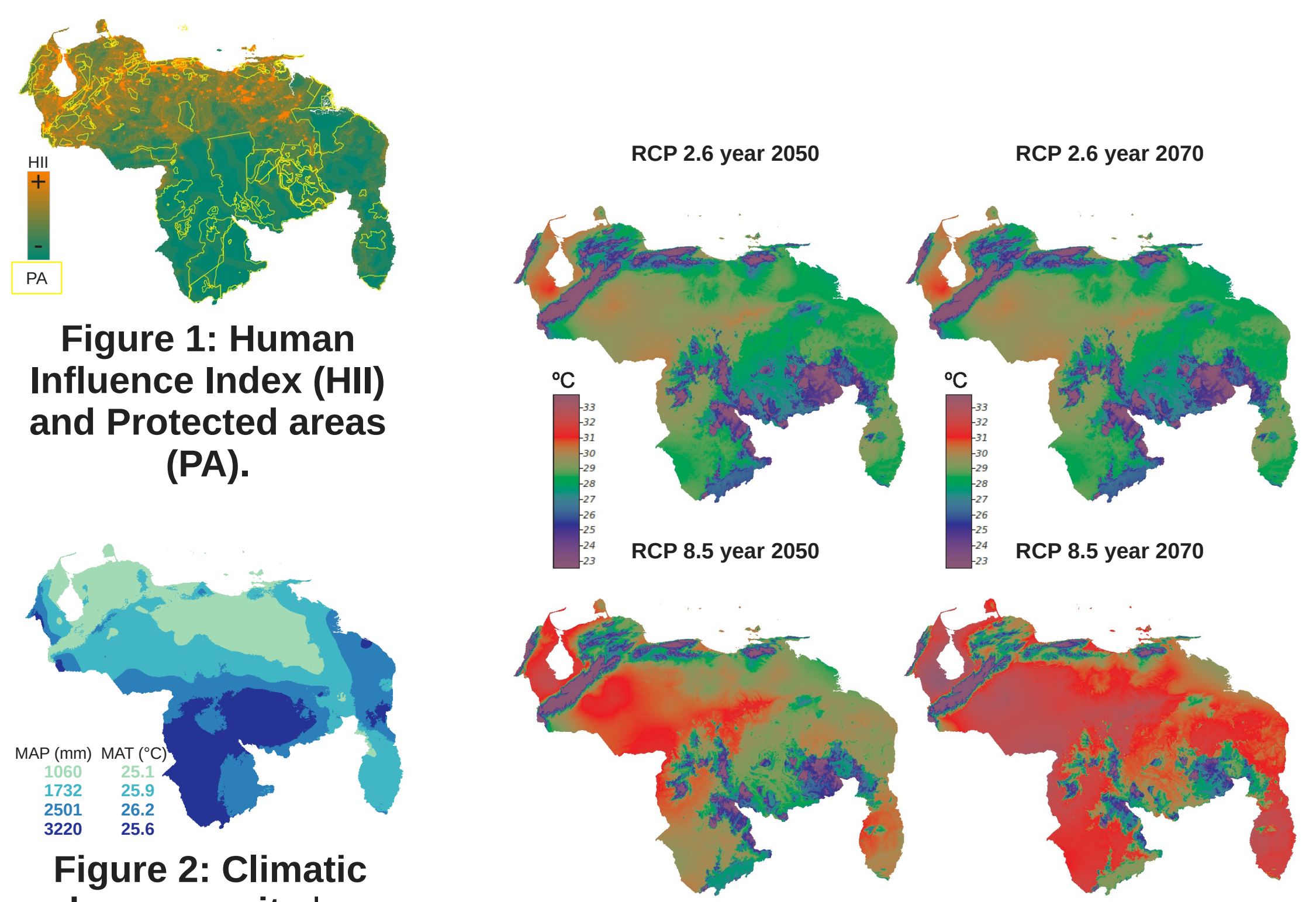
Human influence index (WCS and CIESIN 2005, Figure 1),

Presence and extension of protected areas (IUCN and UNEP-WCMC 2005, Figure 1),

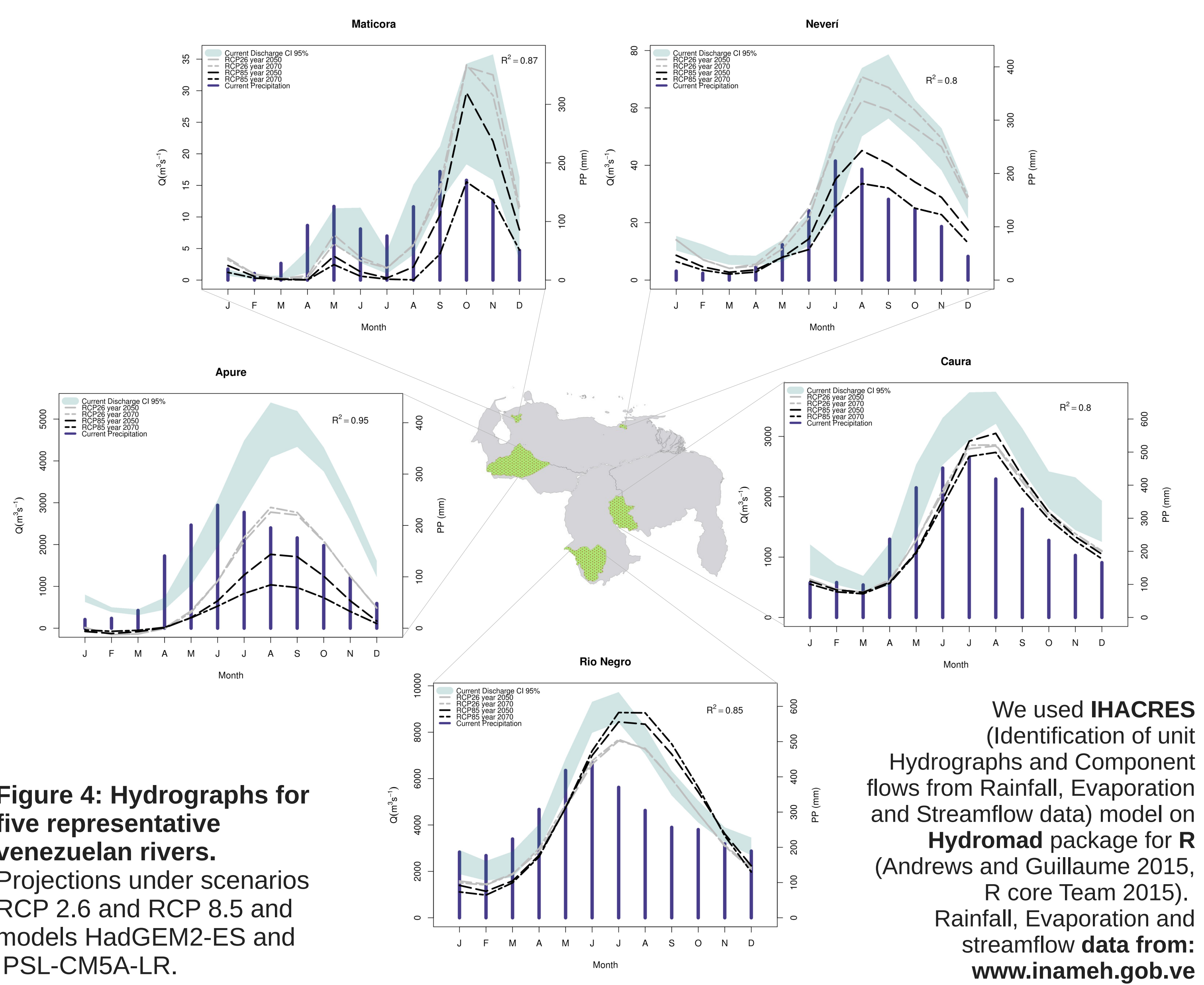
Climatic homogeneity (Figure 2) and

The climate change impacts on hydrological dynamics from five representative watersheds (Figures 3 and 4).

## TERRITORIAL AND CLIMATIC CRITERIA



## HYDROLOGICAL CRITERIA



WE FOUND:

Expected increase in temperature will be heterogenous, being the western the most impacted areas on the country.

Some future modifications of rivers discharges depend directly on the geographical area and indirectly on the concentration of greenhouse gases in the atmosphere.



Figure 4: Proposal of conservation areas

According to the criteria used in this study we propose seven areas for venezuelan rivers conservation (Figure 5).

We suggest to prioritize the northern Orinoco's areas, especially the western plains, and the Essequibo.

**References:** 1) Andrews, F. and Guillaume, J. 2015. Hydromad: Hydrological Model Assessment and development. R package version 0.9-22. (<http://hydromad.catchment.org>). 2) IPCC. 2014. Summary for Policymakers. (pp. 1–32).En: Field, et al. (Eds.), Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge. 3) IUCN y UNEP-WCMC. 2016. The World Database on Protected Areas (WDPA). ([www.protectedplanet.net](http://www.protectedplanet.net)). 4) R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. (<http://www.R-project.org>). 5)Vorosmarty, C.J., et al. 2010. Global threats to human water security and river biodiversity. Nature 467:555–561. 6) Wildlife Conservation Society - WCS, and Center for International Earth Science Information Network - CIESIN - Columbia University. 2005. Last of the Wild Project, Version 2, 2005 (LWP-2): Last of the Wild Dataset (IGHP). Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). <http://dx.doi.org/10.7927/H4ZC80SS>.