



The Current Situation of Informal Roads on the Amazon Borders of Peru and Brazil in 2021

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Introduction

- The Amazon Basin**
 - Contains 10 to 15% of global terrestrial biodiversity (Vilela et al., 2020)
 - Human influences will reduce biodiversity and cause local extinctions (Kerley et al., 2002)
 - The world's largest source of freshwater (Vilela et al., 2020).
 - Holds nearly half of all global tropical forest carbon sequestration (Saatchi et al., 2011)
 - Provides ecosystem services to 33 million people, including 1.5 million indigenous groups (Davidson et al., 2012)

Impacts of Roads

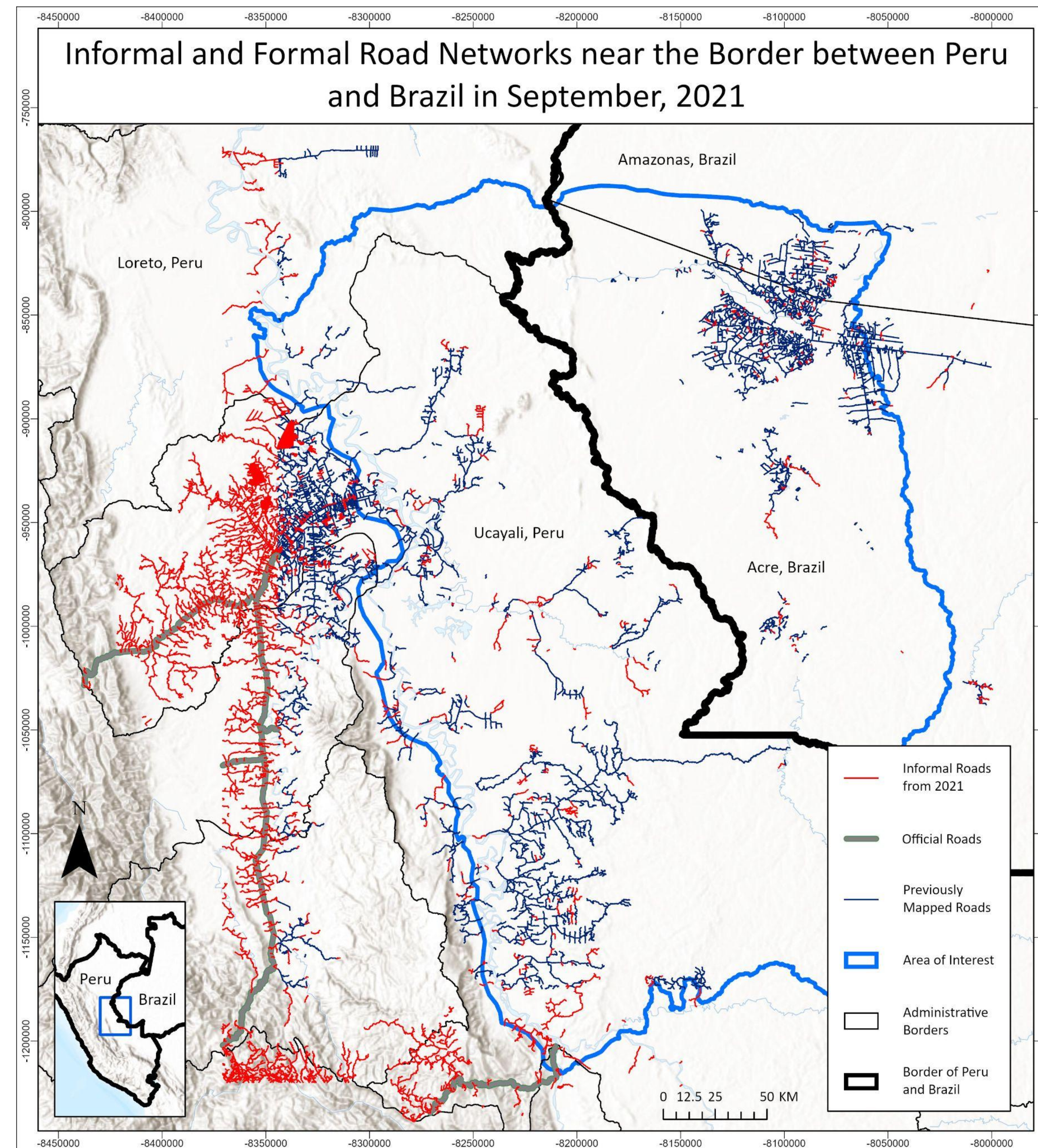
- Environmental**
 - 95% of all deforestation in the Amazon occurs within 5.5 km of roads (Barber et al., 2014)
 - Roads reduce biodiversity by introducing invasive species and fragmenting habitat (Vilela et al., 2020; Perz et al., 2007)
 - By providing access to remote areas, unofficial roads result in the unsustainable use and extraction of natural resources (Ibisch et al., 2016; Perz et al., 2007)
- Societal**
 - Roads endanger indigenous communities by increasing competition for land and resources with new settlers (Vilela et al., 2020; Perz et al., 2010)

Methodology

- Mixed methods of literature reviews, data cataloging and refinement and GIS
- Employed ESRI ArcGIS Pro Software Version 2.8 and high-resolution satellite data from Planet's monthly mosaics from September, 2021 to determine the length of new roads constructed since 2020 in eastern Peru and western Brazil
- Collected data in an attribute table to better quantify the data, using metrics such as confidence, type, date created, source, and scale

	Peru	Brazil	Both
Protected Areas	126.30 KM	23.90 KM	150.20 KM
Indigenous Territories	1,871.50 KM	2.60 KM	1874.10 KM
Other Informal Roads	6,655.30 KM	238.10 KM	6,893.40 KM
Total	8,653.10 KM	264.60 KM	8,917.70 KM

Table 1: Breakdown of the road length data collected.



Discussion

- Limiting the expansion of informal road networks in the Amazon Basin will protect local biodiversity and support global sustainability objectives (Kerley et al., 2002; Ibisch et al., 2016)
- Understanding and communicating the effects of road develop on ecosystem services in the region will create opportunities for more informed decision by all local, regional, national, and international stakeholders
- Inclusive creation of regional knowledge

Figure 1: A map of the total informal and formal roads found near the border of Peru and Brazil. Found in this map are roads mapped by the 2022 ABSAT team, as well as all previously digitized roads by ABSAT, ACCA, and UFAC.

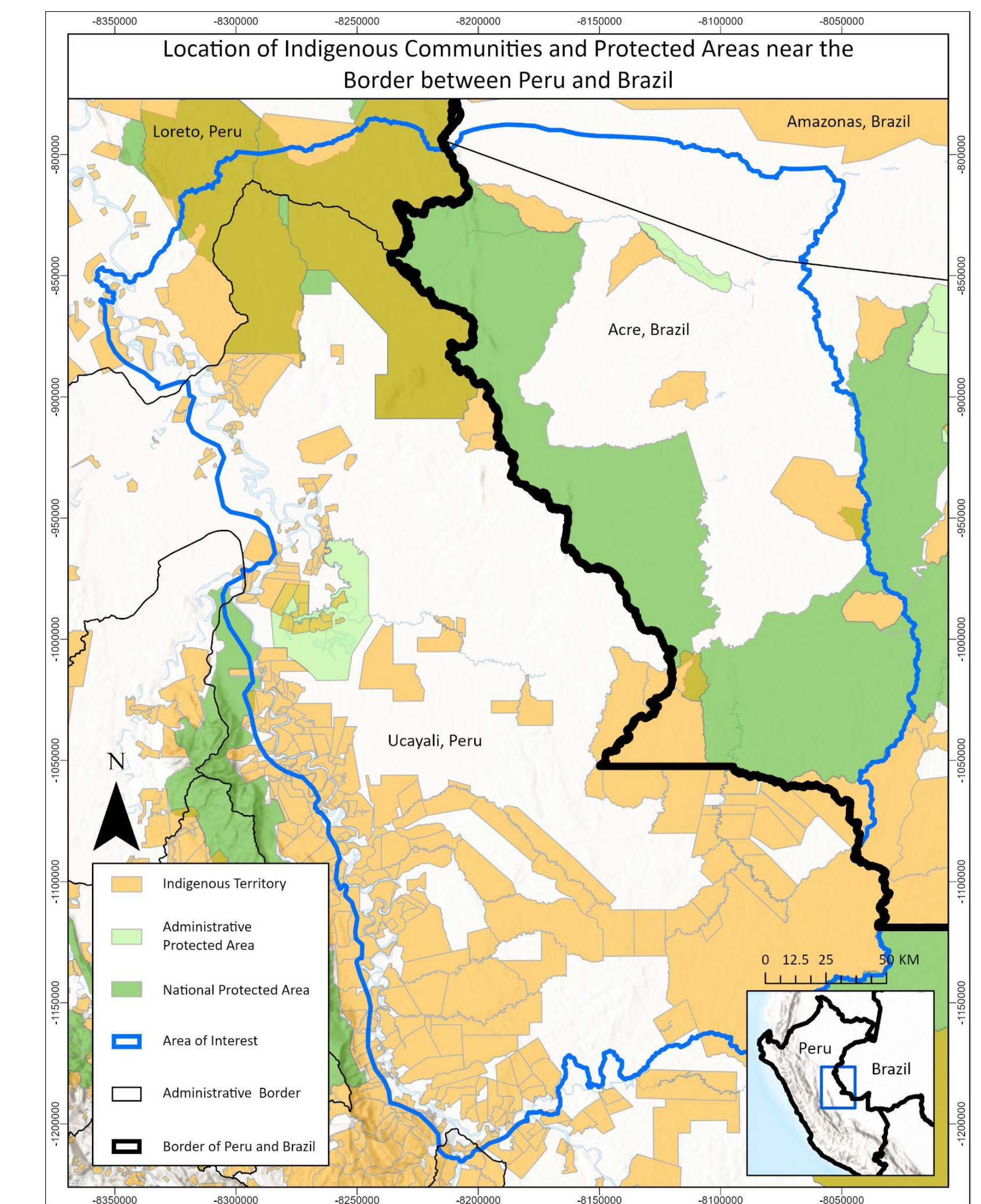


Figure 2: A map of the indigenous communities and protected areas (national and administrative levels) that surround the border between Peru and Brazil.

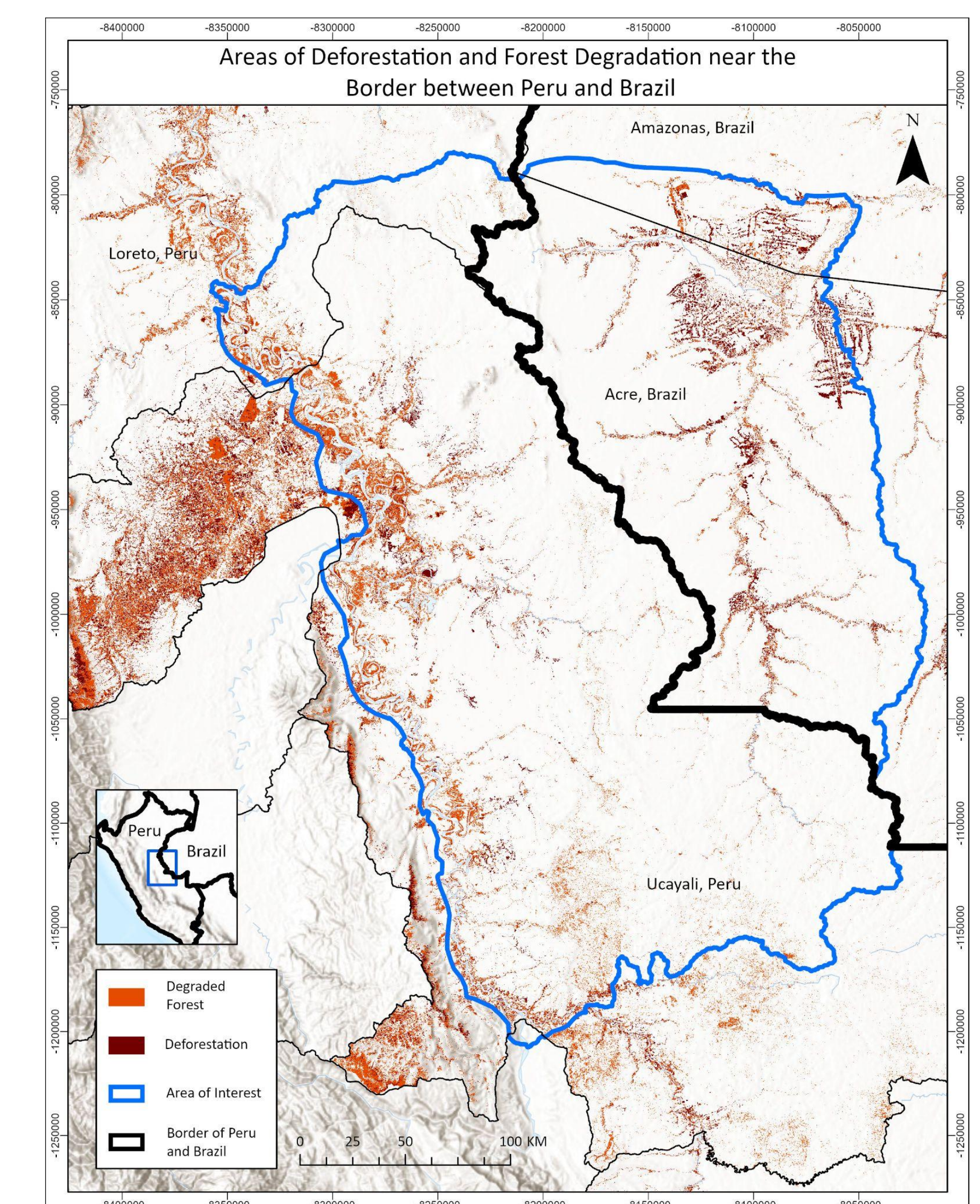


Figure 3: A map of the deforested regions surrounding the border of Peru and Brazil.

