PhD Dissertation
Department of Environmental Science and Policy
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ABSTRACT

Protected areas, intended to safeguard biodiversity in the long term, are widely considered the cornerstone of conservation. However, legal changes that temper restrictions (downgrade), shrink boundaries (downsize), or eliminate (degazette) protections may hinder conservation progress. I focus analyses in the nine countries of Amazonia, home to the largest tropical forest in the world and currently about 25% protected. Through a regional training, in-country archival research, and expert consultation, I documented patterns, trends, and causes of PADDD in Amazonia. Through spatial analyses, I assessed the relationship between PADDD and the Convention on Biological Diversity Aichi Target 11 – including protected area coverage, biodiversity, ecosystem services, management, representativeness, and connectivity. Against a backdrop of PA expansion, governments in seven countries enacted 440 PADDD events (322 downgrades, 86 downsizes, and 32 degazettements) between 1961 and 2017, affecting an area of 363,861 km^2. 292 (66%) of the enacted events were reversed, including 285 full and 7 partial reversals; the enduring PADDD area is 180,408 km^2. Governments in four countries proposed 67 PADDD events between 1971 and 2017, affecting an area of 210,763 km^2; 78% of these are no longer under consideration as of December 2017. Although some (8.4%) PADDD events were the result of land claims and local use of natural resources or other or unknown causes (9.6%), most (82%) PADDD events in Amazonia authorized industrial scale resource extraction and development (forestry, mining, oil and gas, infrastructure, and industrial agriculture), with potential to undermine biodiversity conservation efforts. PADDD is widespread, and remains a concern for Amazonia, particularly in Brazil. Further, I analyze the implications of PADDD for progress toward the Convention on Biological Diversity's Aichi Target 11, and demonstrate that PADDD was disproportionately enacted on lands with high carbon stock and habitat connectivity and disproportionately proposed on lands with high biodiversity. PADDD challenges commonly held assumptions about the permanence of protected areas, and can inform research in conservation planning, land systems science, and impact evaluation, among other research domains. Policy responses, including decision-making processes for PADDD parallel to protected area establishment, safeguards for donors and lenders, international tracking and reporting are needed to address PADDD and help to sustain conservation efforts in the long term.