ANNOTATED BIBLIOGRAPHY

Protected Area Downgrading, Downsizing and Degazettement (PADDD) Literature

Version 1.2. Updated July 2022.

Prepared by Renee Albrecht and Rachel Golden Kroner

DOI: 10.5281/zenodo.6941340

This annotated bibliography provides brief introductions to peer-reviewed publications from the PADDDtracker initiative, which define, document, and assess protected area downgrading, downsizing, and degazettement (PADDD), legal changes that temper restrictions, shrink boundaries, and eliminate protected areas. We summarize the core publications here authored by our team (listed in reverse chronological order), and list additional key references, while acknowledging that hundreds of other publications have cited or used data from PADDDtracker and contributed additional analyses. If you are interested in the full-text versions of these publications or wish to contribute to the list with summaries of additional, relevant publications, please email paddd.team@gmail.com.

Peer-reviewed publications

13. Albrecht, R., Cook, C. N., Andrews, O., Roberts, K. E., Taylor, M. F. J., Mascia, M. B., & Golden Kroner, R. E. 2021. **Protected area downgrading, downsizing, and degazettement (PADDD) in marine protected areas**. *Marine Policy, 129,* 104437. https://doi.org/10.1016/j.marpol.2021.104437

Albrecht et al. 2021. conducted the first analysis of PADDD in marine protected areas, documenting their patterns, trends, proximate causes globally. The analysis found that Australia has been a hotspot of marine PADDD, especially downgrading of marine protected areas related to industrial-scale fishing. A downgrade in 2018 to the Coral Sea Marine Park was the largest downgrade of any protected area, globally. In total, the analysis found that six countries enacted 43 PADDD events, affecting about 1.2 million square kilometers, approximately the size of South Africa. Most PADDD events in marine protected areas, similarly to those in terrestrial areas, have been related to industrial-scale resource extraction and development. A summary of this research was published by WWF-Australia.

12. Keles, D., Delacote, P., Pfaff, A., Qin, S., & Mascia, M. B. (2020). **What Drives the Erasure of Protected Areas? Evidence from across the Brazilian Amazon**. *Ecological Economics*, *176*, 106733. https://doi.org/10.1016/j.ecolecon.2020.106733

To investigate PADDD risk, Keles et al. examined enacted and proposed PADDD events in the Brazilian Amazon. Building on Tesfaw et al. 2018, this analysis used a framework to consider bargaining between development and conservation agencies and applies logistic regression. Results demonstrate that the risk of PADDD was higher for protected areas that were closer to roads and cities, larger, and with higher internal deforestation rates. Policy implications of this study include the following: (1) limit cumulative impacts of downsizings; (2) enhance PA performance through improved management and enforcement to reduce deforestation; and (3) consider durability of other area-based conservation systems. This study provides further evidence about variation in PADDD risk by context and site. A blog about this research appears in The Conversation.

11. Thieme, M. L., Khrystenko, D., Qin, S., Golden Kroner, R. E., Lehner, B., Pack, S., Tockner, K., Zarfl, C., Shahbol, N., & Mascia, M. B. (2020). **Dams and protected areas: Quantifying the spatial and temporal extent of global dam construction within protected areas**. *Conservation Letters*, *2020*, e12719.

https://doi.org/10.1111/conl.12719

Large hydropower dams can fragment ecosystems, restrict species movements and sediment flows, and have detrimental impacts on livelihoods; such dams can occur even within protected areas and may drive PADDD events. This study examined the relationship between protected areas, dams, and PADDD by combining global datasets and examining their overlaps in space and time. The analysis found that more than 500 dams are planned or under construction within protected areas, and at least 1,200 large dams are currently located within protected areas. This methodology can be applied to other global infrastructure databases to detect candidate PADDD events and point to development risks within protected areas. This study suggests that environmental safeguards should preclude development of dams within or adjacent to PAs and prioritize dams within PAs for possible removal and restoration. Findings of this study were covered in Mongabay and Yale Environment 360.

10. Qin, S., R.E. Golden Kroner, C. Cook, A.T. Tesfaw, R. Braybrook, Rowan, C.M. Rodriguez, C. Poelking, M.B. Mascia. (2019). **Protected area downgrading, downsizing, and degazettement as a threat to iconic protected areas**. *Conservation Biology, 33*(6), 1275–1285. https://onlinelibrary.wiley.com/doi/abs/10.1111/cobi.13365

Qin et al. identified 23 enacted and proposed PADDD events in UNESCO World Heritage and Man-and-Biosphere Sites, highlighting that iconic protected areas are not immune to PADDD. The authors examined the context and consequences of PADDD events in four iconic PAs (Yosemite National Park, Arabian Oryx Sanctuary, Yasuní National Park, and Virunga National Park) to illuminate the complexity of settings and mechanisms associated with PADDD events. These four case studies underscored the diversity of pressures and processes that lead to PADDD events and the importance of comprehensive PADDD records for addressing knowledge gaps in the relationship between development pressures and PADDD impacts. These insights reveal the need for more regional and country-level descriptive PADDD studies as well as research on risks, social and ecological impacts, and contextual factors associated with PADDD. Strategies to address the issues associated with PADDD include improved tracking and reporting of PADDD events, increased transparency of PADDD policy processes, and mitigation of negative impacts from PADDD. The authors emphasize that collaboration between researchers, policy makers, and civil society is crucial to long-term conservation and sustainable development goals. This study is summarized in a Google Earth story map.

9. Golden Kroner, R.E., Qin, S., Cook, C., Pack, S., Krithivasan, R., Bonilla, O.D., Cort-Kansinally, K.A., Coutinho, B., Feng, M., Martinez Garcia, M.I., He, Y., Kennedy, C., Lebreton, C., Ledezma, J.C., Lovejoy, T.E., Luther, D., Parmanand, Y., Ruíz-Agudelo, C., Yerena, E., Zambrano, V.M., and Mascia, M.B. 2019. **The uncertain future of protected lands and waters**. *Science, 364*(6443), 881–886. https://science.sciencemag.org/content/364/6443/881

In this publication, Golden Kroner et al. presented the most comprehensive global review of the extent, patterns, trends, and proximate causes of PADDD events to date. The authors conducted systematic archival research to document PADDD events in the United States and the nine countries that share the Amazon, and combined results with PADDD records collected systematically, opportunistically and through crowd-sourcing for an additional 66 countries. Between 1892 and 2018, 73 countries enacted at least 3,749 PADDD events in 3,048 protected areas. Collectively, these PADDD events have affected an area approximately the size of Mexico, removing protections from 519,857 km^2 and tempering restrictions in an additional 1,659,972 km^2. Most enacted PADDD events were related to industrial-scale resource extraction and development (62%), suggesting that PADDD is often incompatible with efforts to conserve biodiversity. The U.S. and Brazil are contemporary hotspots of PADDD, demonstrating the increasingly uncertain future of protected areas in these countries. The U.S. government introduced 90% of PADDD proposals since 2000. In Brazil, 48% of enacted and proposed PADDD events occurred between 2010 and 2017. The authors highlight the need for policies and processes that sustain protected areas and incentivize their permanence. Findings from this publication were featured in CNN, Popular Science, The Guardian, and Rolling Stone among other outlets.

8. Tesfaw, A. T., Pfaff, A., Golden Kroner, R. E., Qin, S., Medeiros, R., & Mascia, M. B. (2018). **Land-use and land-cover change shape the sustainability and impacts of protected areas.** *Proceedings of the National Academy of Sciences*, *115*(9), 2084–2089. https://doi.org/10.1073/pnas.1716462115

To advance understanding of the relationship between PADDD and land use and land cover change, Tesfaw et al. proposed and tested a bargaining framework for describing PADDD risks and deforestation impacts. The authors hypothesized that based on variations in conservation costs and development benefits across the landscape of a protected area, bargaining between development agencies and conservation agencies could determine where PADDD events occur. Using this framework, they examined PADDD events associated with hydropower and rural settlements in the state of Rondônia in Brazil to assess PADDD risk factors, risk differences by proximate cause, and impacts of PADDD on tree cover loss. Protected areas that were less effective at curtailing deforestation were more likely to be degazetted or downsized, while more effective sites were more likely to maintain protections. Results suggested that protected area effectiveness is an important consideration when conservation agencies bargain with development agencies over land use. Additionally, findings revealed that different proximate causes of PADDD were associated with different risk factors. Overall, results highlight the importance of accounting for PADDD in evaluations of protected areas to prevent biased sampling and subsequent overestimations of protected area impacts. Findings from this publication were featured in BBC Brasil.

7. Cook, C. N., Valkan, R. S., Mascia, M. B., & McGeoch, M. A. (2017). **Quantifying the extent of protected-area downgrading, downsizing, and degazettement in Australia**. *Conservation Biology*, *31*(5), 1039–1052. https://doi.org/10.1111/cobi.12904

Cook et al. placed PADDD events in the context of gains in protection to assess protected area network dynamics. The authors identified every parcel of land where protected status was gained, lost, or changed within the Australian terrestrial protected area network between 1997 and 2014. This assessment marked the first comprehensive investigation of PADDD in a developed country and the first assessment of protected area network dynamics, exploring both increases and decreases in protection. The results revealed a highly dynamic network with 5,233 changes in area or level of protection over 17 years. While the overall area protected within the network increased, 1,500 PADDD events were identified that were mostly associated with downgrading of protections. The most frequent proximate cause of downsizing and degazettement events was land claims for indigenous groups, while the most frequent proximate cause of downgrading events was infrastructure and extractive activities. Collectively, these PADDD events affected more than one-third of the Australian terrestrial protected area network. The authors highlight the need for high-quality spatial data and improved data standards to enable measures of global conservation progress that are more meaningful than total area protected.

6. Golden Kroner, R. E., Krithivasan, R., & Mascia, M. B. (2016). **Effects of protected area downsizing on habitat fragmentation in Yosemite National Park (USA), 1864 - 2014**. *Ecology and Society*, *21*(3). https://doi.org/10.5751/ES-08679-210322

To advance understanding of the relationship between PADDD and biodiversity, Golden Kroner et al. conducted a case study in Yosemite National Park (USA). Their analysis explored the effects of downsizing events on the fragmentation of habitat, a significant factor in the global loss of biodiversity. Through a review of historical documents, Golden Kroner et al. identified two excisions and five additions to Yosemite National Park between 1905 and 1937 which collectively reduced its size by 30%. Authors compared protected, never-protected, and downsized lands at three spatial scales to determine the effect of downsizing events on fragmentation by roads. The analyses used four habitat fragmentation metrics (road density, fragment area-to-perimeter ratio, fragment area, and fragment density) and revealed that downsized lands were more severely fragmented than protected lands and comparable to never-protected lands. Lands were less fragmented where downsizes had been reversed relative to lands where downsizes were not reversed. Overall, results suggested that protected area downsizing may contribute to habitat fragmentation, reversals to PADDD may confer ecological benefits, and highlighted that even iconic protected areas are vulnerable to downsizing. Furthermore, these findings underscored the need for assessments of conservation interventions to include PADDD to ensure unbiased estimates of impact. An article in Mongabay featured findings from this publication.

5. Symes, W. S., Rao, M., Mascia, M. B., & Carrasco, L. R. (2016). **Why do we lose protected areas? Factors influencing protected area downgrading, downsizing and degazettement in the tropics and subtropics**. *Global Change Biology*, *22*(2), 656–665. https://doi.org/10.1111/gcb.13089

Symes et al. examined the influence of global economic, demographic, and geographic factors on the spatial occurrence of PADDD events to advance understanding of the influence of these risk factors. Specifically, the authors used 6 different models to analyze the influence of local population density, spatially explicit GDP, agricultural rent, altitude, and protected area size on the probability of occurrence of an enacted PADDD event. This analysis was conducted using a dataset spanning 110 years containing 342 enacted PADDD events from 44 countries in the tropics and subtropics. Across all models, larger protected areas were associated with higher probability of PADDD. In all but one model, the relationship between protected area size and probability of PADDD was stronger for lands near higher population densities and this interaction was more influential on the probability of downsizing than on downgrading or degazettement. Additionally, all but one of the models revealed a small but significant positive relationship between PADDD and altitude, suggesting that protected areas in upland locations are more vulnerable to PADDD. The authors propose that the influence of protected area size is likely a result of larger protected areas containing more exploitable land and potential resources. Maintaining protections for larger protected areas likely presents a larger opportunity cost, on average. The authors conclude by highlighting the need for systematic conservation planning processes to consider protected area robustness in the design of optimal protected area networks. This research was featured in Asian Scientist.

4. Pack, S. M., Ferreira, M. N., Krithivasan, R., Murrow, J., Bernard, E., & Mascia, M. B. (2016). **Protected area downgrading, downsizing, and degazettement (PADDD) in the Amazon**. *Biological Conservation*, *197*, 32–39. https://doi.org/10.1016/j.biocon.2016.02.004

Brazil contains one-third of the world's tropical forests and is home to the world's largest protected area network, yet scattered evidence suggests widespread PADDD occurring throughout Brazil. To advance understanding of PADDD in Brazil, Pack et al. documented extent, patterns, trends, and proximate causes of Brazilian PADDD events between 1900 and 2014 and evaluated the impacts of PADDD on short-term deforestation rates. They identified 67 enacted PADDD events which were primarily associated with hydropower (39%) and rural human settlements (20%). Collectively, these PADDD events affected 112,477 km^2 of protected areas and removed protections entirely from 95,764 km^2, representing 6% of Brazil's potential terrestrial protected area estate. The authors also identified 27 active PADDD proposals as of 2014, which put 60,555 km^2 of protected lands at risk. Results revealed that there was no significant change in short-term deforestation rates following enacted PADDD events. While these findings appear to contradict the results of Forrest et al. (2014), the authors propose that the different motivations for PADDD in Brazil may explain this discrepancy. Most Brazilian sites included in the deforestation analysis were associated with hydropower development, whereas sites identified by Forrest et al. in Peru and Malaysia were mostly associated with agriculture or forestry. The authors highlighted the benefits of a potential standardized PADDD reporting system to improve transparency as well as institutionalization of policies governing PADDD to parallel those that govern protected area establishment. Additionally, they advise conservation planners to consider PADDD in the design of protected area networks to ensure their permanence. Findings from this paper were featured in The Guardian.

3. Forrest, J. L., Mascia, M. B., Pailler, S., Abidin, S. Z., Araujo, M. D., Krithivasan, R., & Riveros, J. C. (2015). **Tropical Deforestation and Carbon Emissions from Protected Area Downgrading, Downsizing, and Degazettement (PADDD).** *Conservation Letters*, *8*(3), 153–161. https://doi.org/10.1111/conl.12144

Forrest et al. assessed impacts of PADDD on deforestation and forest carbon emissions and explored the implications of PADDD for Reducing Emissions from Deforestation and Forest Degradation (REDD+) policies. REDD+ policies are intended to reduce forest carbon emissions and conserve biodiversity by means of donor countries compensating developing countries for emission reductions achieved through forest conservation and restoration. The authors examined the impacts of PADDD on tropical deforestation and forest carbon emissions in three REDD+ priority countries: Democratic Republic of the Congo (DRC), Malaysia, and Peru. They documented 174 enacted and 9 proposed PADDD events in these countries occurring between 1900 and 2011, which affected an area of over 48,000 km^2. Forrest et al. estimated deforestation rates and determined the quantity and economic value of lost and at-risk forest carbon in PADDDed, protected, and never-protected areas. Deforestation and forest carbon emissions in PADDDed forests substantially exceeded rates in protected areas and slightly exceeded rates in never-protected areas. The authors conclude that PADDD dynamics should be considered in carbon flux estimations and policy responses as PADDD poses significant risks to forest carbon stocks. They propose that Parties to the United Nations Framework Convention on Climate Change could monitor and report on the permanence and deforestation rates of protected areas as part of the Warsaw Framework for REDD+.

2. Mascia, M. B., Pailler, S., Krithivasan, R., Roshchanka, V., Burns, D., Mlotha, M. J., Murray, D. R., & Peng, N. (2014). **Protected area downgrading, downsizing, and degazettement (PADDD) in Africa, Asia, and Latin America and the Caribbean, 1900–2010.** *Biological Conservation*, *169*, 355–361. https://doi.org/10.1016/j.biocon.2013.11.021

Mascia et al. examined the geographic patterns, temporal trends, and proximate causes of PADDD in Africa, Asia, and Latin America and the Caribbean (LAC). Collectively, these three regions contain most global conservation priorities and over 70% of all protected lands and waters. Additionally, this paper explored the implications of PADDD for attainment of the Convention on Biological Diversity (CBD) protected area coverage targets for 2020. To conduct this investigation, the authors reviewed United Nations lists of protected areas (1962 -2009), explored published documents reporting PADDD, and consulted subject matter experts. They identified 543 instances of PADDD in 57 countries enacted between 1900-2010 which collectively affected 503,591 km^2 of protected areas. PADDD was spatially heterogenous across Africa, Asia, and LAC. Overall, downsizing was the most common PADDD event (60.8%) followed by degazettement (27.6%) and downgrading (11.6%). Approximately 20% of the areas affected by PADDD were affected more than once and 5.5% of the 543 PADDD events were partially or fully reversed. While proximate causes of PADDD varied, industrial-scale natural resource extraction and development (oil and gas, forestry, mining, industrial agriculture, industrialization, and infrastructure) led to 37.5% of PADDD events, local land pressures and land claims led to 18.1% of PADDD events, and comprehensive revisions of PA systems led to 13.8% of PADDD events. PADDD prevented at least four countries (Kenya, Namibia, Rwanda, and Uganda) from meeting CBD Aichi target 11. While a small fraction of PADDD events were associated with efforts to bolster biodiversity conservation, the proximate causes of most PADDD events suggested compromises between conservation targets and other policy goals.

1. Mascia, M. B., & Pailler, S. (2011). **Protected area downgrading, downsizing, and degazettement (PADDD) and its conservation implications**. *Conservation Letters*, *4*(1), 9–20. https://doi.org/10.1111/j.1755-263X.2010.00147.x

Mascia and Pailler (2011) defined protected area downgrading, downsizing, and degazettement (PADDD), and provided a foundational understanding of the implications of PADDD for conservation science and policy. Through a review of published literature and media reports, authors identified 89 historic instances of PADDD enacted between 1900 and 2009 in 27 countries, and 18 proposed PADDD events in at least 12 countries between 2009 and 2010. Proximate causes of PADDD events varied but centered around industrial-scale resource extraction and development and local pressures and land claims. PADDD can occur in areas of global importance for biodiversity, significantly shrink protected areas, and drastically temper legal restrictions. Case studies of PADDD in South America and India highlighted protected areas as dynamic governance regimes susceptible to political and social pressures. PADDD challenges established conservation assumptions, including those that underlie the global framework to reduce greenhouse gas emissions from deforestation and forest degradation (REDD+). Mascia and Pallier highlighted the need for resilient conservation strategies, further research, and continued investment in protected areas despite their limitations. This publication received media coverage in Mongabay.

Data releases and technical documentation

- Mascia, M. B., Pailler, S., Krithivasan, R., Qin, S., Albrecht, R., & Golden Kroner, R. E. (2020). PADDDtracker.org Technical Guide, Version 2. Zenodo. https://doi.org/10.5281/zenodo.3608263
- Conservation International and World Wildlife Fund. 2021. PADDDtracker.org Data Release Version 2.1 (May 2021). Arlington, VA: Conservation International. Washington, DC: World Wildlife Fund. padddtracker.org. https://zenodo.org/record/4974336#.YuQN0nbMl2w
- Olsson, E., Albrecht, R., and Golden Kroner, R.E. 2021. PADDDtracker data release Version 2.1: Technical notes. https://zenodo.org/record/4749615#.YuQKd3bMKUk
- Conservation International and World Wildlife Fund. 2019. PADDDtracker.org Data Release Version 2.0 (May 2019). Arlington, VA: Conservation International. Washington, DC: World Wildlife Fund. DOI: 10.5281/zenodo.3371733 https://zenodo.org/record/3371733#.Xx8ggJ5Kg2w
- Olsson, E., Roehrdanz, P., and Golden Kroner, R.E. 2022. Adoption and diffusion of the protected area downgrading, downsizing, and degazettement (PADDD) concept in the scientific literature. Conservation International. https://zenodo.org/record/6647186#.YuQNr3bMl2y

Policy documents

- IUCN Resolution: Global response to protected area downgrading, downsizing, and degazettement (PADDD): https://www.iucncongress2020.org/motion/099
- Draft Post-2020 Monitoring Framework of the Convention on Biological Diversity: https://www.cbd.int/doc/c/f191/8db7/17c0a45b42a5a4fcd0bbbb8c/sbstta-24-l-10-en.pdf

Opinion articles

Selected media coverage of PADDD research can be found here: https://www.padddtracker.org/media

- Delacote, P. and Keles, D. 2021. Que se passe-t-il quand on supprime une aire protégée ? Le cas du Brésil. The Conversation. https://theconversation.com/que-se-passe-t-il-quand-on-supprime-une-aire-protegee-le-cas-du-bresil-163301
- Golden Kroner, R.E. 2020. Rolling back environmental protections under cover of the pandemic. *Scientific American*. https://www.scientificamerican.com/article/rolling-back-environmental-protections-under-cover-of-the-pandemic/
- Napolitano, M. 2021. Ofensiva contra áreas protegidas afeta saúde, alimentação e economia. ECOA. https://www.uol.com.br/ecoa/colunas/opiniao/2021/08/14/ofensiva-contra-areas-protegidas-afeta-saude-alimentacao-e-economia.htm

- Napolitano, M. 2021. Conservação da natureza é essencial na recuperação pós-Covid e na prevenção de futuras pandemias. Diplomatique. https://diplomatique.org.br/conservacao-da-natureza-e-essencial-na-prevencao-de-futuras-pandemias/

Additional peer-reviewed publications and technical reports

1. Ahmed, A. I., Bryant, R. G., & Edwards, D. P. (2021). Where are mines located in sub Saharan Africa and how have they expanded overtime? *Land Degradation & Development*, *32*(1), 112–122. https://doi.org/10.1002/ldr.3706
2. Albertazzi, S., and Bini, V. 2019. Politica e deforestazione in Kenya: I risultati della Commisiione Ndung'u nella regione del South West Mau. *Geography Notebooks* 2:1. https://www.ledonline.it/index.php/Geography-Notebooks/article/viewFile/1722/1197
3. Álvarez Malvido, M., Lázaro, C., De Lamo, X., Juffe-Bignoli, D., Cao, R., Bueno, P., Sofrony, C., Maretti, C. y Guerra, F. (Editores). (2021). Informe Planeta Protegido 2020: Latinoamérica y el Caribe. Ciudad de México, México. Cambridge UK; Gland, Switzerland; Bogotá, Colombia: RedParques, UNEP-WCMC, CMAP-UICN, WWF, CONANP y Proyecto IAPA. https://www.iucn.org/es/news/areas-protegidas/202104/informe-planeta-protegido-2020-latinoamerica-y-el-caribe
4. Anderson, E. P., Osborne, T., Maldonado-Ocampo, J. A., Mills-Novoa, M., Castello, L., Montoya, M., Encalada, A. C., & Jenkins, C. N. (2019). Energy development reveals blind spots for ecosystem conservation in the Amazon Basin. *Frontiers in Ecology and the Environment*, *17*(9), 521–529. https://doi.org/10.1002/fee.2114
5. Apio, A., Plath, M., & Wronski, T. (2015). Recovery of Ungulate Populations in Post-Civil War Akagera National Park, Rwanda. *Journal of East African Natural History*, *104*(1–2), 127–141. https://doi.org/10.2982/028.104.0110
6. Arima, E. (2016). What Drives Downsizing of Protected Areas?: A Case Study of Amazon National Park. *Journal of Latin American Geography*, *15*(2), 7–31. https://doi.org/10.1353/lag.2016.0013
7. Atkinson, R., Owor, A., & Atkinson, R. (2013). *'Land Grabbing': The Ugandan Government, Madhvani, and Others Versus The Community of Lakang, Amuru District*. *Vol. 1, Dec. 2013*, Pp. 49-63.
8. Bacon, E., Gannon, P., Stephen, S., Seyoum-Edjigu, E., Schmidt, M., Lang, B., Sandwith, T., Xin, J., Arora, S., Adham, K. N., Espinoza, A. J. R., Qwathekana, M., Prates, A. P. L., Shestakov, A., Cooper, D., Ervin, J., Dias, B. F. de S., Leles, B., Attallah, M., Mulongoy, J., Gidda, S. B. (2019). Aichi Biodiversity Target 11 in the like-minded megadiverse countries. *Journal for Nature Conservation*, *51*, 125723. https://doi.org/10.1016/j.jnc.2019.125723
9. Batista, C. B., de Lima, I. P., Arruda, R., & Lima, M. R. (2021). Downscaling the Atlantic Forest biodiversity hotspot: Using the distribution of bats to find smaller hotspots with conservation priority. *Biological Conservation*, *263*, 109331. https://doi.org/10.1016/j.biocon.2021.109331
10. Bebbington, D. R. Verdum, C. Gamboa and A. Bebbington. (2019). *Assessment and Scoping of Extractive Industries and Infrastructure in Relation to Deforestation:* Amazonia. 81pp. https://dar.org.pe/archivos/publicacion/192_infra_eng.pdf
11. Bernard, E., & Melo, F. P. L. (2019). Fuleco™ revisited: Football, conservation and lessons learned from the 2014 FIFA World Cup. *Biotropica*, *51*(4), 473–476. https://doi.org/10.1111/btp.12681
12. Bernard, E., Penna, L. A. O., & Araújo, E. (2014). Downgrading, Downsizing, Degazettement, and Reclassification of Protected Areas in Brazil: Loss of Protected Area in Brazil. *Conservation Biology*, *28*(4), 939–950. https://doi.org/10.1111/cobi.12298
13. Bernardino, A. F., Nóbrega, G. N., & Ferreira, T. O. (2021). Consequences of terminating mangrove's protection in Brazil. *Marine Policy*, *125*, 104389. https://doi.org/10.1016/j.marpol.2020.104389
14. Blackmore, A. (2022). *To Be or not to Be a Protected Area: A Perverse Political Threat* [SSRN Scholarly Paper]. https://papers.ssrn.com/abstract=4077826

15. Borges, S., Souza, F., Moreira, M., & Camargo, Y. (2019). Alterar limites e categorias de áreas protegidas é necessariamente ruim? Um estudo de caso em duas unidades de conservação estaduais da Amazônia brasileira. *Novos Cadernos NAEA*, *22*(2), Article 2. https://doi.org/10.5801/ncn.v22i2.3954
16. CABRERA, H. ET AL. (2021). *SECURING SUSTAINABLE FINANCING FOR CONSERVATION AREAS: A GUIDE TO PROJECT FINANCE FOR PERMANENCE*. WASHINGTON D.C. AMAZON SUSTAINABLE LANDSCAPES PROGRAM AND WWF.
17. Chardonet, B. 2019. AFRICA IS CHANGING: SHOULD ITS PROTECTED AREAS EVOLVE? RECONFIGURING THE PROTECTED AREAS IN AFRICA. IUCN PAPACO. https://conservationaction.co.za/wp-content/uploads/2019/03/etudesAP_configAP_EN.pdf
18. Conceição, E. O., Garcia, J. M., Alves, G. H. Z., Delanira-Santos, D., Corbetta, D. de F., Betiol, T. C. C., Pacifico, R., Romagnolo, M. B., Batista-Silva, V. F., Bailly, D., Ferreira, J. H. D., & do Couto, E. V. (2022). The impact of downsizing protected areas: How a misguided policy may enhance landscape fragmentation and biodiversity loss. *Land Use Policy*, *112*, 105835. https://doi.org/10.1016/j.landusepol.2021.105835
19. Corrêa, J. A. de J., Gonçalves, D. C. M., Andrade, S. C. de P., & Costa, I. C. N. P. (2020). Uso e Cobertura da Terra em Áreas Prioritárias para a Conservação na Amazônia: O caso da APA Aramanaí em Belterra (PA), Brasil. *Vértices*, *22*(1), 151–165. https://doi.org/10.19180/1809-2667.v22n12020p151-165
20. Correia, R. A., Jepson, P., Malhado, A. C. M., & Ladle, R. J. (2018). Culturomic assessment of Brazilian protected areas: Exploring a novel index of protected area visibility. *Ecological Indicators*, *85*, 165–171. https://doi.org/10.1016/j.ecolind.2017.10.033
21. Dasgupta, P. (2021), The Economics of Biodiversity: The Dasgupta Review. (London: HM Treasury). https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review
22. de Andrade Junior, M. A. U., & Fonseca, W. C. (2020). Brazil's areas of not-so-permanent preservation. *Science*, *370*(6522), 1283–1284. https://doi.org/10.1126/science.abf6705
23. de la Cruz-Hernández, J. A., Ávila-Akerberg, V., Rivera Herrejón, M. G., Vizcarra Bordi, I. (2016). La desincorporación, disminución de categoría o de superficie en áreas protegidas (fenómeno paddd) y su efecto en el manejo de recursos forestales en un ejido del Nevado de Toluca, México. *Teoría y Praxis*, *19,* 95-118. https://doi.org/10.1017/S0376892916000424.
24. De Vos, A., Clements, H. S., Biggs, D., & Cumming, G. S. (2019). The dynamics of proclaimed privately protected areas in South Africa over 83 years. *Conservation Letters*, e12644. https://doi.org/10.1111/conl.12644
25. Depraz, S., Sanial, E., Catalán, A. K. R., & Rojas, A. S. (2016). Less protection for better conservation? A politicised relationship between a city and its protected area in the vicinity of Nevado de Toluca (Mexico). *Articulo – Revue de Sciences Humaines*, (16). https://doi.org/10.4000/articulo.3261
26. Devenish, C., Lees, A. C., Collar, N. J., & Marsden, S. J. Multi-decadal land use impacts across the vast range of an iconic threatened species. *Diversity and Distributions*. https://doi.org/10.1111/ddi.13395
27. Dorji, T., Linke, S., & Sheldon, F. (2020). Freshwater conservation planning in the context of nature needs half and protected area dynamism in Bhutan. *Biological Conservation*, *251*, 108785. https://doi.org/10.1016/j.biocon.2020.108785
28. Dorji, T., Linke, S., & Sheldon, F. (2019). Half century of protected area dynamism in the country of Gross National Happiness, Bhutan. *Conservation Science and Practice*, *1*(7), e46. https://doi.org/10.1111/csp2.46
29. Dunnett, S., Holland, R. A., Taylor, G., & Eigenbrod, F. (2022). Predicted wind and solar energy expansion has minimal overlap with multiple conservation priorities across global regions. *Proceedings of the National Academy of Sciences*, *119*(6), e2104764119. https://doi.org/10.1073/pnas.2104764119
30. Espichán Mariñas, M. Á. (2013). La conservación de las áreas naturales protegidas y los fenómenos PADDD (degradación, reducción y degazzettement de áreas naturales protegidas). *Desde el Sur. Revista de Ciencias Humanas y Sociales de la Universidad Científica del Sur*, 35–47. https://doi.org/10.21142/DES-0501-2013-35-47

31. Fernández-Llamazares, Á., Helle, J., Eklund, J., Balmford, A., Mónica Moraes, R., Reyes-García, V., & Cabeza, M. (2018). New law puts Bolivian biodiversity hotspot on road to deforestation. *Current Biology: CB*, *28*(1), R15–R16. https://doi.org/10.1016/j.cub.2017.11.013
32. Forti, L. R., Lingnau, R., & Szabo, J. K. (2022). A wrong turn on roads in Brazil's national parks. *Science*, *376*(6600), 1389–1389. https://doi.org/10.1126/science.add2508
33. Fuller, C., Ondei, S., Brook, B. W., & Buettel, J. C. (2020). Protected-area planning in the Brazilian Amazon should prioritize additionality and permanence, not leakage mitigation. *Biological Conservation*, *248*, 108673. https://doi.org/10.1016/j.biocon.2020.108673
34. Golden Kroner, R.E. 2018. Investigating impermanence: the case of Parque Nacional Cerros de Amotape. *Texas A&M* Applied Biodiversity Science Perspectives Series, Volume 7, p 48-53. https://oaktrust.library.tamu.edu/bitstream/handle/1969.1/172974/PS8_Golden-Kroner.pdf?sequence=1
35. Golden Kroner, R.E., Barbier, E. B., Chassot, O., Chaudhary, S., Cordova, L., Cruz-Trinidad, A., Cumming, T., Howard, J., Said, C. K., Kun, Z., Ogena, A., Palla, F., Valiente, R. S., Troëng, S., Valverde, A., Wijethunga, R., & Wong, M. 2021. COVID-era policies and economic recovery plans: Are governments building back better for protected and conserved areas? *Parks*, *27*(Special Issue). https://doi.org/10.2305/IUCN.CH.2021.PARKS-27-SIRGK.en
36. Guedes-Santos, J., Aleixo Correia, R., Mendes Malhado, A. C., & Ladle, R. J. (2021). A digital approach to quantifying political vulnerability of protected areas. *Environmental Science & Policy*, *124*, 616–626. https://doi.org/10.1016/j.envsci.2021.08.005
37. Hockings, M., Dudley, N., Ellio, W., Napolitano, M., MacKinnon, K., Pasha, M., Phillips, A., Woodley, S., Appleton, M., Chassot, O., Galliers, C., Golden Kroner, R., Hopkins, J., Jackson, W., Jonas, H., Mumba, M., Plowright, R., Rao, M., Redford, K., Robinson, J., Rodriguez, C.M., Sandwith, T., Spenceley, A., Stevens, C., Tabor, G., Troeng, S., Wilmore, S., and Yang, A. (2020). Editorial essay: COVID-19 and protected and conserved areas. *PARKS*. 18. DOI: 10.2305/IUCN.CH.2020.PARKS-26-1MH.en
38. Hoffmann, S. (2022). Challenges and opportunities of area-based conservation in reaching biodiversity and sustainability goals. *Biodiversity and Conservation*, *31*(2), 325–352. https://doi.org/10.1007/s10531-021-02340-2
39. Hope, J. (2021). Conservation in the Pluriverse: Anti-capitalist struggle, knowledge from resistance and the 'repoliticisation of nature' in the TIPNIS, Bolivia. *Geoforum*, *124*, 217–225. https://doi.org/10.1016/j.geoforum.2021.04.006
40. Hope, J. (2022). Driving development in the Amazon: Extending infrastructural citizenship with political ecology in Bolivia. *Environment and Planning E: Nature and Space*, *5*(2), 520–542. https://doi.org/10.1177/2514848621989611
41. Huang, Y., Fu, J., Wang, W., & Li, J. (2019). Development of China's nature reserves over the past 60 years: An overview. *Land Use Policy*, *80*, 224–232. https://doi.org/10.1016/j.landusepol.2018.10.020
42. Huang, Y., Zhao, H., Ma, G., Li, J., & Chen, L. (2020). Tracking area loss of China's Nature Reserves from 2003 to 2015. *Global Ecology and Conservation*, *24*, e01224. https://doi.org/10.1016/j.gecco.2020.e01224
43. International Hydropower Association. (2021). Good practice guide: hydropower and protected areas. London: IHA. Available from: hydropower.org.
44. *Imazon*. (2015). Desmatamento em Áreas Protegidas Reduzidas na Amazônia. https://imazon.org.br/desmatamento-em-areas-protegidas-reduzidas-na-amazonia/
45. Innocent, M., and Muindisi, B.T. (2021). Protected Area Downsizing; Challenges and Ecological Implications on Large Mammal and Biodiversity Conservation in Chirisa Safari Area (CSA). *African Journal of Environment and Natural Science Research (AJENSR).* https://abjournals.org/ajensr/papers/volume-4/issue-4/protected-area-downsizing-challenges-and-ecological-implications-on-large-mammal-and-biodiversity-conservation-in-chirisa-safari-area-csa/
46. IUCN ESARO (2020). The state of protected and conserved areas in Eastern and Southern Africa. State of Protected and Conserved Areas Report Series No. 1., Nairobi, Kenya. IUCN ESARO. https://portals.iucn.org/library/node/49133

47. IUCN ESARO (2020). Closing the gap. The financing and resourcing of protected and conserved areas in Eastern and Southern Africa. Nairobi, Kenya: IUCN ESARO; BIOPAMA. https://portals.iucn.org/library/node/49045
48. Kim, M., Lee, S., & Oh, C.-O. (2021). Assessing Tradeoffs between Development and Conservation: A Case of Land Use Change in a National Park of Korea. *Land*, *10*(2), 152. https://doi.org/10.3390/land10020152
49. Koga, D. M., Brown, I. F., Fearnside, P. M., Salisbury, D. S., & Silva, S. S. da. (2022). Serra do Divisor National Park: A protected area under threat in the south-western Brazilian Amazon. *Environmental Conservation*, *49*(2), 74–82. https://doi.org/10.1017/S0376892922000091
50. Kuempel, C. D., Chauvenet, A. L. M., Symes, W. S., & Possingham, H. P. (2021). Predicted protected area downsizing impedes conservation progress across terrestrial ecoregions in the tropics and subtropics. *Conservation Science and Practice*, e529. https://doi.org/10.1111/csp2.529
51. Kukkonen, M. O., & Tammi, I. (2019). Systematic reassessment of Laos' protected area network. *Biological Conservation*, *229*, 142–151. https://doi.org/10.1016/j.biocon.2018.11.012
52. Laue, J. E., & Arima, E. (2016). What Drives Downsizing of Protected Areas?: A Case Study of Amazon National Park. *Journal of Latin American Geography*, *15*(2), 7–31. https://doi.org/10.1353/lag.2016.0013
53. Laurance, W. F., S. Asuma, E. Balole, N. D. Burgess, G. Campbell, A. Lanjouw, A. Masozera, E. McKenzie, E. de Merode, and S. Peedell. 2018. **Apes, protected areas and infrastructure in Africa**. Pages 106-135 in *State of the Apes: Infrastructure Development and Ape Conservation* (H. Rainer, A. White, and A. Lanjouw, editors). Cambridge University Press and Arcus Foundation, Cambridge, U.K.
54. Lebreton, C., Héritier, S., Arnould, P., & Imbernon, J. (2015). La forêt des convoitises: Cent ans de politiques sociales, libérales et environnementales dans les Parcs nationaux du Mexique (1910-2013). *VertigO : la revue électronique en sciences de l'environnement*, *15*(1). https://www.erudit.org/en/journals/vertigo/2015-v15-n1-vertigo02424/1035731ar/abstract/
55. Lebreton, C. (2018). National Park Declassification in Mexico: Between Propaganda, Legitimisation and Bargaining. *Conservation and Society*, *16*(3), 268. https://doi.org/10.4103/cs.cs_17_37
56. Lee-Ashley, M., Rowland-Shea, J., and Richards, R., 2019. The Green Squeeze: America's Nature Crisis. *Center for American Progress*. https://www.americanprogress.org/issues/green/reports/2019/10/22/476220/the-green-squeeze/
57. Lewis, E., MacSharry, B., Juffe-Bignoli, D., Harris, N., Burrows, G., Kingston, N., & Burgess, N. D. (2019). Dynamics in the global protected-area estate since 2004. *Conservation Biology*, *33*(3), 570–579. https://doi.org/10.1111/cobi.13056
58. López Sandoval, M., Gerique, A., & Pohle, P. (2017). What Is Behind Land Claims? Downsizing of a Conservation Area in Southeastern Ecuador. *Sustainability*, *9*(9), 1519. https://doi.org/10.3390/su9091519
59. López, S., López-Sandoval, M. F., Gerique, A., & Salazar, J. (2020). Landscape change in Southern Ecuador: An indicator-based and multi-temporal evaluation of land use and land cover in a mixed-use protected area. *Ecological Indicators*, *115*, 106357. https://doi.org/10.1016/j.ecolind.2020.106357
60. Lynham, J. (2022). Fishing activity before closure, during closure, and after reopening of the Northeast Canyons and Seamounts Marine National Monument. *Scientific Reports*, *12*(1), 917. https://doi.org/10.1038/s41598-021-03394-6
61. Ma, Z., Chen, Y., Melville, D. S., Fan, J., Liu, J., Dong, J., Tan, K., Cheng, X., Fuller, R., Xiao, X., Li, B. (2019). Changes in area and number of nature reserves in China: China's Nature Reserves. *Conservation Biology*. https://doi.org/10.1111/cobi.13285
62. Machado, R. B., Cunha, M. C. da, Aguiar, L. M. de S., & Bustamante, M. (2020). As várias faces das ameaças às áreas de conservação no Brasil. *Ciência e Cultura*, *72*(2), 58–64. https://doi.org/10.21800/2317-66602020000200015
63. Mackelworth, P., Holcer, D., & Fortuna, C. M. (2013). Unbalanced governance: The Cres-Lošinj special marine reserve, a missed conservation opportunity. *Marine Policy*, *41*, 126–133. https://doi.org/10.1016/j.marpol.2012.12.017

64. MacKenzie, C. A., Fuda, R. K., Ryan, S. J., & Hartter, J. (2017). Drilling through Conservation Policy: Oil Exploration in Murchison Falls Protected Area, Uganda. *Conservation and Society*, *15*(3), 322–333.
65. Marton-Lefevre, J. (2014). Planet at the crossroads. *Science*, *346*(6209), 525–525. https://doi.org/10.1126/science.1261787
66. Matamanda, A., Chirisa, I., Mangara, F., & Dzvimbo, M. A. (2019). *The Ecological Politics Surrounding the Downsizing and Downgrading of Public Park: A Reflection on the History of Change of the Harare Gardens in Zimbabwe*. https://doi.org/10.1525/cse.2019.001958
67. Maxwell, S. L., Cazalis, V., Dudley, N., Hoffmann, M., Rodrigues, A. S. L., Stolton, S., Visconti, P., Woodley, S., Maron, M., Strassburg, B. B. N., Wenger, A., Jonas, H. D., Venter, O., & Watson, J. E. M. (2020). Area-Based Conservation in the 21st Century. *BiorXiv*. https://doi.org/10.20944/preprints202001.0104.v1
68. McDonough MacKenzie, C., Chang, T., Nocco, M. A., Barak, R. S., Bletz, M. C., Kuebbing, S. E., & Dombeck, M. (2020). Recurrent neural network reveals overwhelming sentiment against 2017 review of US monuments from humans and bots. *Conservation Letters*, *13*(6), e12747. https://doi.org/10.1111/conl.12747
69. Moinani, A., Barasa, M. N., & Ong'au, E. (2020). A Critical Analysis of Emerging Attitudes from the Mau Forest Restoration Discourse in Kenya. http://41.89.196.16:8080/xmlui/handle/123456789/994
70. Montalvo Mancheno, C. S., Zazanashvili, N., & Beruchashvili, G. (2017). Effectiveness of the network of protected areas of the South Caucasus at representing terrestrial ecosystems after the dissolution of the Soviet Union. *Environmental Conservation*, *44*(2), 158–165. https://doi.org/10.1017/S0376892916000424
71. Morjaria, A. (2013). *Is Democracy Detrimental for the Environment in Developing Countries? Evidence from Kenya* (SSRN Scholarly Paper No. 3126350). https://doi.org/10.2139/ssrn.3126350
72. Nature Uganda (2011). The Economic Valuation of the Proposed Degazettement of Mabira Central Forest Reserve. Nature Uganda Kampala. http://www.natureuganda.org/downloads/Mabira/mabira%20degazettement%20report.pdf
73. Naughton-Treves, L., & Holland, M. B. (2019). Losing ground in protected areas? *Science*, *364*(6443), 832–833. https://doi.org/10.1126/science.aax6392
74. NYDF Assessment Partners. (2020). Balancing forests and development: Addressing infrastructure and extractive industries, promoting sustainable livelihoods. Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.
75. NYDF Assessment Partners. (2021). Taking stock of national climate action for forests. Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org
76. Ortiz, R. (2010). Conservation versus development at the Iguaçu National Park, Brazil. *Ambientalia*, *1*, 141–160.
77. Pelicice, F. M., & Castello, L. (2021). A political tsunami hits Amazon conservation. *Aquatic Conservation: Marine and Freshwater Ecosystems*, *31*(5), 1221–1229. https://doi.org/10.1002/aqc.3565
78. Pérez-Hämmerle, K.-V., Moon, K., Possingham, H. P., Martinez-Harms, M. J., & Watson, J. E. M. (2020). Eroded protections threaten U.S. forests. *Science*, *370*(6519), 921–922. https://doi.org/10.1126/science.abf5654
79. POST (Parliamentary Office of Science and Technology). 2022. POSTbrief 45, Mining and the sustainability of metals. UK Parliament. https://researchbriefings.files.parliament.uk/documents/POST-PB-0045/POST-PB-0045.pdf
80. Prasniewski, V. M., Szinwelski, N., Bertrand, A. S., Martello, F., Brocardo, C. R., Cunha, J., Sperber, C. F., Viana, R., Santos, B. G. dos, Fearnside, P., & Sobral-Souza, T. (2022). Brazil's Iguaçu National Park threatened by illegal activities: Predicting consequences of proposed downgrading and road construction. *Environmental Research Letters*. https://doi.org/10.1088/1748-9326/ac4e39
81. Prasniewski, V. M., Szinwelski, N., Sobral-Souza, T., Kuczach, A. M., Brocardo, C. R., Sperber, C. F., & Fearnside, P. M. (2020). Parks under attack: Brazil's Iguaçu National Park illustrates a global threat to biodiversity. *Ambio*. https://doi.org/10.1007/s13280-020-01353-5

82. Prasniewski, V. M., Szinwelski, N., Bertrand, A. S., Martello, F., Brocardo, C. R., Cunha, J., Sperber, C. F., Viana, R., dos Santos, B. G., Fearnside, P., & Sobral-Souza, T. (2022). Brazil's Iguaçu National Park threatened by illegal activities: Predicting consequences of proposed downgrading and road construction. *Environmental Research Letters*. https://doi.org/10.1088/1748-9326/ac4e39
83. Richards, R. 2018. Measuring conservation progress in North America. *Center for American Progress*. https://www.americanprogress.org/issues/green/reports/2018/12/04/461705/measuring-conservation-progress-north-america/
84. Ritchie, E. G., Bradshaw, C. J. A., Dickman, C. R., Hobbs, R., Johnson, C. N., Johnston, E. L., Laurance, W. F., Lindenmayer, D., McCarthy, M. A., Nimmo, D. G., Possingham, H. H., Pressey, R. L., Watson, D. M., & Woinarski, J. (2013). Continental-Scale Governance and the Hastening of Loss of Australia's Biodiversity. *Conservation Biology*, *27*(6), 1133–1135. https://doi.org/10.1111/cobi.12189
85. Roberts, K. E., Valkan, R. S., & Cook, C. N. (2018). Measuring progress in marine protection: A new set of metrics to evaluate the strength of marine protected area networks. *Biological Conservation*, *219*, 20–27. https://doi.org/10.1016/j.biocon.2018.01.004
86. Ruaro, R., & Laurance, W. F. (2022). Pending bill could devastate Brazil's Serra do Divisor National Park. *Nature Ecology & Evolution*, *6*(2), 120–121. https://doi.org/10.1038/s41559-021-01632-8
87. Ruaro, R., Laurance, W., & Mormul, R. P. (2020). Brazilian national parks at risk. *Science*, *367*(6481), 990–990. https://doi.org/10.1126/science.abb0926
88. Samarasinghe, D. J. S., Wikramanayake, E. D., Jayakody, S., Fernando, S., Gunawardana, J., & Braczkowski, A. A biodiversity hotspot in turmoil: Doing away with circular 5/2001 could have catastrophic consequences for Sri Lanka's forests. *Conservation Science and Practice*, e466. https://doi.org/10.1111/csp2.466
89. Scalco, R. F., & Gontijo, B. M. (2022). SOBREPOSIÇÃO ENTRE TERRITÓRIOS QUILOMBOLAS E UNIDADES DE CONSERVAÇÃO DE PROTEÇÃO INTEGRAL: *Caderno de Geografia*, *32*(68), 348–348. https://doi.org/10.5752/P.2318-2962.2022v32n68p348
90. Science Panel for the Amazon. 2021. Amazon Assessment Report. https://www.theamazonwewant.org/amazon-assessment-report-2021/
91. Siegel, K., Farah Perez, A., Kinnebrew, E., Mills-Novoa, M., Ochoa, J., & Shoffner, E. (2022). Integration of qualitative and quantitative methods for land-use-change modeling in a deforestation frontier. *Conservation Biology*, e13924. https://doi.org/10.1111/cobi.13924
92. Siqueira-Gay, J., & Sánchez, L. E. (2020). Keep the Amazon niobium in the ground. *Environmental Science & Policy*, *111*, 1–6. https://doi.org/10.1016/j.envsci.2020.05.012
93. Siqueira-Gay, J., Soares-Filho, B., Sanchez, L. E., Oviedo, A., & Sonter, L. J. (2020). Proposed Legislation to Mine Brazil's Indigenous Lands Will Threaten Amazon Forests and Their Valuable Ecosystem Services. *One Earth*, *3*(3), 356–362. https://doi.org/10.1016/j.oneear.2020.08.008
94. Siqueira-Gay, J., Metzger, J. P., Sánchez, L. E., & Sonter, L. J. (2022). Strategic planning to mitigate mining impacts on protected areas in the Brazilian Amazon. *Nature Sustainability*, 1–8. https://doi.org/10.1038/s41893-022-00921-9
95. Sloan, S., Campbell, M. J., Alamgir, M., Engert, J., Ishida, F. Y., Senn, N., Huther, J., & Laurance, W. F. (2019). Hidden challenges for conservation and development along the Trans-Papuan economic corridor. *Environmental Science & Policy*, *92*, 98–106. https://doi.org/10.1016/j.envsci.2018.11.011
96. Soares, M. O., Barros, E. L., & Guerra, R. G. P. (2022). Not just sand: The folly of dismantling the environmental protection of dunes in Brazil. *Land Use Policy*, *112*, 105803. https://doi.org/10.1016/j.landusepol.2021.105803
97. Triatmodjo, M., Merdekawati, A., Nurvianto, S., Hasibuan, I. A. T., & Agung, I. G. P. (2021). Geothermal Exploitation in a World Heritage Site: A Case Study of Gunung Leuser National Park. *Yustisia Jurnal Hukum*, *10*(1), 94–110. https://doi.org/10.20961/yustisia.v10i1.47797
98. Turner, P. (2017). Report on potential mechanisms through which areas recognised for their conservation value may be downsized or degazetted that may be of relevance for Ecologically or Biologically Significant Areas (EBSAs). Secretariat of the Global Ocean Biodiversity Initiative (GOBI).

https://www.cbd.int/doc/c/3f16/14e9/dd57dec2817ff0be39651eca/ebsaem-2017-01-gobi-submission1-en.pdf
99. Twesigye, B. 2008. Lessons from Citizen Activism in Uganda: Saving Mabira Forest. SAAIA Occasional Papers Series, Number 7. https://media.africaportal.org/documents/SAIIA_Occasional_Paper_no_7.pdf
100. UNEP-WCMC and IUCN (2021). Protected Planet Report 2020. UNEP-WCMC and IUCN. Cambridge UK; Gland, Switzerland. https://livereport.protectedplanet.net/
101. USAID. 2015. Biodiversity and Development Handbook. Washington DC: U.S. Agency for International Development. https://biodiversitylinks.org/library/resources/biodiversity-and-development-handbook-1
102. Vale, M. M., Berenguer, E., de Menezes, M. A., Viveiros de Castro, E. B., de Siqueira, L. P., & Portela, R. de C. Q. (2021). The COVID-19 pandemic as an opportunity to weaken environmental protection in Brazil. *Biological Conservation*, 108994. https://doi.org/10.1016/j.biocon.2021.108994
103. Villén-Pérez, S., Mendes, P., Nóbrega, C., Gomes Córtes, L., & De Marco, P. (2017). Mining code changes undermine biodiversity conservation in Brazil. *Environmental Conservation*, *45*(1), 96–99. https://doi.org/10.1017/S0376892917000376
104. Villén-Pérez, S., Moutinho, P., Nóbrega, C. C., & Marco, P. D. (2020). Brazilian Amazon gold: Indigenous land rights under risk. *Elem Sci Anth*, *8*(1), 31. https://doi.org/10.1525/elementa.427
105. Walls, M. (2020). Feature—Public Land Conflicts and Controversies: The Designation of National Monuments in the Western United States. *Review of Environmental Economics and Policy*, *14*(2), 352–364. https://doi.org/10.1093/reep/reaa010
106. Walters, G., Ngagnia Ndjabounda, E., Ikabanga, D., Biteau, J. P., Hymas, O., White, L. J. T., Ndong Obiang, A.M., Ndong Ondo, P., Jeffery, K.J., Lachenaud, O., Stévart, T. (2016). Peri-urban conservation in the Mondah forest of Libreville, Gabon: Red List assessments of endemic plant species, and avoiding protected area downsizing. *Oryx*, *50*(3), 419–430. https://doi.org/10.1017/S0030605315000204
107. WWF-Australia. 2021. Building nature's safety net 2020: the promise of 2030. https://www.wwf.org.au/news/news/2021/report-shows-why-australia-should-meet-global-land-protection-targets
108. WWF-Brazil. (2019). PADDD trends in Brazilian Amazon protected areas: Mapping the risk of protected area downgrading, downsizing and degazettement in the biome. https://www.wwf.org.br/?72342/PADDD-trends-in-the-Brazilian-Amazon
109. WWF-Brazil (2020). RECATEGORIZAÇÃO, REDUÇÃO E EXTINÇÃO DE UNIDADES DE CONSERVAÇÃO: CRITÉRIOS PARA A TOMADA DE DECISÃO LEGISLATIVA PARA PROTEÇÃO DO MEIO AMBIENTE. https://bibliotecadigital.fgv.br/dspace/bitstream/handle/10438/30203/FGV%20CeDHE_WWF_PADDDCerrado_vers%c3%a3o%20completa.pdf?sequence=1&isAllowed=y
110. WWF-Brazil (2020). REDUÇÃO, RECATEGORIZAÇÃO E EXTINÇÃO DE UNIDADES DE CONSERVAÇÃO NO CERRADO. https://wwfbr.awsassets.panda.org/downloads/publicacao_padddcerrado_site_1.pdf
111. WWF-Canada. 2020. Living Planet Report Canada: Wildlife At Risk. Currie J. Snider J. Giles E. World Wildlife Fund Canada. Toronto, Canada. https://wwf.ca/wp-content/uploads/2020/09/Living-Planet-Report-Canada-2020.pdf
112. Yang, F., Wu, R., Jin, T., Long, Y., Zhao, P., Yu, Q., Wang, L., Wang, J., Zhao, H., & Guo, Y. (2019). Efficiency of unlocking or locking existing protected areas for identifying complementary areas for biodiversity conservation. *Science of The Total Environment*, *694*, 133771. https://doi.org/10.1016/j.scitotenv.2019.133771