

PhD Dissertation
Department of Environmental Science and Policy
College of Science
George Mason University

Candidate: Ren Montaña

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Title: Finding the Resurrection Keys: Native Plants and Their Potential Along Madagascar's Longest River

Dissertation Director: Dr. Esther C. Peters

Committee: Dr. Julia A. Nord, Dr. Patricia C. Wright, Dr. W. John Kress

ABSTRACT

Madagascar is a living example of Earth's evolutionary history; each ecosystem represents 100% of its global distribution, and contains unique, endemic lineages that evolved in isolation for >88 million years. Yet the island suffers ongoing, overlapping ecological disasters and humanitarian crises, driven by converging risks across One Health, economy, policy, governance, and security. I assembled a library, defined a target, and applied complementary analyses across complex data, inventorying Madagascar's Mangoky River watershed. I explored biophysical setting, protected status, and landcover, proximal to the river, seeking native plants within the riparian conservation zone. Plots >1,000 Ha are candidates for integrated-conservation interventions.