

Atlantic Forest Biodiversity Monitoring Project



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Project description.

This project is focused on field-based conservation and monitoring in the Serra da Bocaina region, specifically in the municipality of Bananal, São Paulo, Brazil. This area represents a critical stronghold of the Atlantic Forest, offering unique habitats for endangered terrestrial species. The dense forest and rugged terrain of Serra da Bocaina provide both challenges and opportunities for intensive, technology-driven monitoring efforts utilizing drones, camera traps, and acoustic recorders. While our primary intervention is confined to this vital region, we also envision supporting broader conservation efforts in the Atlantic Forest through collaborative data sharing and capacity-building with conservation partners across Brazil. We aim to contribute to a broader network of research and monitoring initiatives that focus on forest ecosystems. Our integrated approach promotes continuity in conservation practices that can benefit other terrestrial habitats facing similar threats. By establishing these connections, the insights and methodologies developed in Bananal can inform conservation efforts in other critical areas of the Atlantic Forest and support larger conservation networks both nationally and internationally.

Example of one species that will benefit from this project.

One of the target species of our project is the Southern Muriqui. It is one of the most endangered primates endemic to Brazil's Atlantic Forest. Southern Muriquis are classified as Critically Endangered on the IUCN Red List due to ongoing habitat loss, fragmentation, and human pressures such as deforestation and land development. As a key seed disperser, the muriqui plays a crucial ecological role, contributing to forest regeneration and overall ecosystem balance. The Atlantic Forest is a global biodiversity hotspot, renowned for its remarkable species richness and high rates of endemism. However, centuries of deforestation and land-use change have left only small fragments of its original cover. The Serra da Bocaina region, particularly in the municipality of Bananal and its surrounding cities, in the state of São Paulo, represents one of the few remaining strongholds for this unique biome. Conserving this habitat is essential not only for the survival of the muriqui and other species, but also for maintaining critical ecological processes such as climate regulation, water cycle stabilization, and soil conservation. This project is designed to monitor, protect, and ultimately restore these vital ecosystems to ensure the long-term viability of both the species and its habitat.

Objectives of the project.

- Implement Comprehensive Remote Monitoring: Establish a robust system using drones, camera traps, and acoustic recorders to accurately assess the distribution, population dynamics, and behavior of the endangered species in the Serra da Bocaina region.
- Generate Data-Driven Insights: Collect high-quality data to inform adaptive conservation management strategies, guiding targeted habitat restoration efforts and mitigating threats from habitat loss and fragmentation.
- Enhance Habitat Conservation: Identify and prioritize critical habitat areas and ecological corridors for restoration, ensuring the long-term viability of the Atlantic Forest ecosystem.
- Build Local Capacity: Provide training and support for community members and young conservationists in advanced monitoring techniques and environmental stewardship, fostering sustainable, locally driven conservation efforts.
- Foster Collaborative Networks: Develop partnerships with local institutions, NGOs, and governmental agencies to facilitate ongoing knowledge exchange and coordinated conservation actions.

Objective	Estimated time	Next steps
Implement Comprehensive Remote Monitoring	6 months for equipment setup and baseline monitoring	Procure equipment, identify strategic monitoring sites; conduct pilot operations and train staff.
Generate Data-Driven Insights	14 months for data collection and initial analysis.	Develop protocols for data collection, data management and analysis; begin data reporting.
Enhance Habitat Conservation	14 months to map critical habitats and prioritize corridors requiring restoration.	Use data to identify and map key ecological corridors and design targeted restoration interventions.
Build Local Capacity	6 months to complete initial training workshops.	Develop and deliver training modules on drone operation, use of camera traps, acoustic monitoring

Project activities and results.

Activity	Expected results
Deploy drones equipped with high-resolution cameras for periodic overflights.	Identify habitat disturbances, species distribution and guides restoration efforts.
Install strategically placed camera traps in key areas to continuously document target species presence, behavior, and population fluctuations.	Provide real-time data on population trends, distribution and threat detection.
Set up remote acoustic recorders throughout the conservation area to capture vocalizations and other relevant soundscape data.	Enhance species detection during low-visibility periods and augments visual data.
Conduct hands-on workshops for community members and local conservation volunteers on operating drones, installing camera traps, and managing acoustic recorders.	Empower stakeholders and ensure sustained, community-led conservation efforts.

Project intended start date:

Jan/5/2026

Project intended end date:

Jun/30/2027

Next steps after the completion of the project for the conservation of the species:

After the project conclusion, we will analyze the collected data to refine and adapt our conservation strategies, then use these insights to secure follow-up funding and integrate long-term community-led monitoring and habitat restoration efforts. This next phase will ensure that our initial investments translate into sustained conservation actions that directly support the survival of the target species.

Project Budget.

Activity	Description	Budget estimate (USD)	Duration
Drone Equipment Procurement & Operator Training	Acquire a high-resolution drone with necessary accessories and train the designated operator.	11000	3 months
Drone Aerial Surveys	Conduct periodic drone flights over targeted areas in the Serra da Bocaina to collect high-quality imagery for habitat assessment.	5000	14 months
Image Data Processing & Analysis	Process aerial imagery to generate georeferenced maps detailing habitat fragmentation and disturbances.	3000	14 months
Camera trap Procurement & Setup	Purchase and install approximately 10 camera traps with essential accessories at strategic locations.	3500	3 months
Monitoring, Maintenance & Data Retrieval	Regularly visit sites for maintenance and data collection to monitor species presence and behavior.	1000	14 months
Acoustic equipment Equipment	Procure 5 acoustic recorders for installation in key	2500	3 months

Acquisition & Setup	locations to capture species vocalizations and ambient soundscapes.		
Deployment, Data Collection & Analysis	Deploy recorders, retrieve data periodically, and perform soundscape analysis to enhance species detection.	1000	14 months
Workshop Planning & Resource Preparation	Develop training curricula, prepare educational materials, and organize logistical details for conservation and technology workshops	1000	3 months
Training Sessions	Conduct hands-on workshops for community members and volunteers on operating drones, camera traps, and acoustic recorders.	1500	6 months
Follow-up & Support	Provide ongoing technical support and refresher sessions to ensure effective use of monitoring technologies and sustained community engagement.	500	18 months
Project Management & Reporting	Oversee project implementation, facilitate coordination among stakeholders, and	9000	18 months

	produce interim and final reports to document progress and impact.		
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How funds will be spent.

Our total requested funds will be allocated across five key components that integrate advanced monitoring technologies with community engagement. Approximately \$19,000 will be dedicated to drone-assisted aerial mapping. This includes purchasing a high-resolution drone, training an operator, conducting periodic aerial surveys, and processing imagery to generate detailed habitat maps, essential for identifying disturbances and guiding restoration efforts. We will invest \$4,500 in camera trap deployment, which covers the procurement, installation, and maintenance of strategic camera traps to capture real-time data on species presence and behavior. Acoustic monitoring will receive \$3,500 to purchase field recorders, deploy them across the region, and analyze the soundscape for enhanced detection of species. Local capacity building is allocated \$3,000 to organize workshops and training sessions, empowering community members and volunteers with the skills needed to utilize these monitoring technologies effectively. The remaining \$9,000 is earmarked for overall project management, coordination, and reporting activities to ensure smooth implementation and adaptive management over the 18-month project period.