# Final Evaluation Report

| Your Details | |
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| **Full Name** | Alan Monroy-Ojeda |
| **Project Title** | Field Validation of Species Distribution Models and community based field monitoring for the conservation of the Harpy Eagle and King Vulture in Mexico |
| **Application ID** | 41156-2 |
| **Date of this Report** | January 6th 2026 |

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

| Objective | Not achieved | Partially achieved | Fully achieved | Comments |
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| Validate Species Distribution Models (SDM) in the field with the objective of locating the last populations of the harpy Eagle and the King Vulture in Mexico. | | | X | **Successful Field Validation of Predictive Models:** In close collaboration with trained community monitors, we conducted extensive field surveys to ground-truth habitat suitability models for both the Harpy Eagle and the King Vulture in high-priority areas. This effort **proved the practical utility of distribution models for directing conservation efforts** for rare and threatened species.<br><br>We conducted 10 field trips with 30 transects and 40 points counts in an area of 35,000 hectares approximately. Field effort included surveys on land and river. A drone was used on a few occasions to explore the landscape before each transect.<br><br>We recorded six target species, all of which are endangered species of raptors: Harpy Eagle (*Harpia harpyja*), King Vulture (*Sarcoramphus papa*), Ornate Hawk-Eagle (*Spizaetus ornatus*), Black Hawk-Eagle (*Spizaetus tyrannus*), Black and White Hawk-Eagle (*Spizaetus melanoleucus*) and Crested Eagle (*Morphnus guianensis*). |

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| | | | | Our research strategy included a complementary effort of interviewing local people about the presence of the target species. We gathered valuable information about historic and currents records of the species. The information gathered in the interviews is being used in a scientific paper (currently in progress). |
| Evaluate the efficiency of the Species Distribution Models to locate current nesting habitat and areas of presence of the two threatened species of raptors. | | | X | **A Landmark Rediscovery:** A direct result of this targeted validation was the **groundbreaking photographic documentation of a Harpy Eagle in Mexico**, the first confirmed record in over a decade. This rediscovery not only confirms a breeding population in the Lacandon Jungle but also powerfully validates our scientific approach for focusing conservation action. |
| Engage communities to the conservation of these endangered raptors through environmental education and Community based monitoring (with trained local/indigenous technicians) in efforts to search for the Harpy Eagle and King Vulture. | | | X | **Empowering Local Communities as Conservation Partners:** We actively collaborated with local communities by **training and employing local guides as biodiversity monitors. Beside previously trained monitors, 22 new guides were trained (from which 10 are women)**, conducting 3 environmental education workshops, with 30 participants; and promoting community-based raptor watching as a sustainable economic alternative. This ensured that |

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| | | | | conservation actions were locally rooted and provided direct benefits.<br>We organized and conducted three observation tours with foreign visitors (mainly from the U.S.). We hired the trained local guides in each tour, and stayed in environmental friendly hotels.<br><br>We also conduct awareness talks with local children in two indigenous communities, with 30 participants. |
| Assess the conservation status of both raptors in Mexico. | | | X | **Advancing the Scientific Foundation for Conservation:** We have strengthened the scientific basis for protecting these species. This includes the **publication of a major conservation assessment for the King Vulture** in the *Journal of Raptor Research* (2025), and ongoing work to complete a **comprehensive conservation status review for the Harpy Eagle across Mesoamerica**. |

## 2. Describe the three most important outcomes of your project.

**a) Rediscovery and documentation of the Harpy Eagle in Mexico.**

Our project led to the groundbreaking rediscovery of the Harpy Eagle (Harpia harpyja) in Mexico, a top predator previously believed to be extirpated from the country. In our first Rufford grant we reported five new records of the harpy eagle in Mexico achieved through our field efforts. But until recently we obtained the first photographic record of the species in Mexico in more than a decade. Through a collaborative effort between researchers and local community monitors, we obtained photographic evidence of an immature eagle. This confirmation represents the existence of an active breeding territory and nest in the Lacandon Jungle of Chiapas, Mexico. This site is now recognized as the northernmost known breeding

territory in the species' global range, a finding of major significance for conservation planning in the region.

**b) Publication of a pivotal scientific assessment on the King Vulture.**

We published the paper "Assessing the Conservation Status of a Wide-ranging Species with a Reduced Area of Highly Suitable Habitat: The Case of the King Vulture (*Sarcoramphus papa*) in the Neotropics" in the *Journal of Raptor Research* (2025). This study provides the most up-to-date conservation assessment for the species, employing spatial modelling to evaluate multiple IUCN Red List criteria. Our analysis strongly suggest that the King Vulture should be recategorized globally as Vulnerable, highlighting the urgent threats impacting its populations. This work provides a critical evidence base for international conservation policy.

**c) Development and dissemination of a specialized ecotourism guide.**

We authored and published the "Best Practice Guide for Raptor-focused Birdwatching Tourism." This manual establishes clear guidelines to promote ethical avitourism practices that are compatible with the conservation of raptor species, while offering sustainable economic alternatives for local communities. It is a unique resource, specifically tailored for the responsible observation of rare raptors, including both the Harpy Eagle and the King Vulture, thereby directly linking community livelihood incentives to species protection.

**d) Additional, Notable Recognition.**

In 2025, project lead Alan Monroy was awarded an Honorary Mention for Nature Conservation by Mexico's National Commission of Natural Protected Areas (CONANP) and the Ministry of Environment and Natural Resources (SEMARNAT). This national award in the "Academia and Research" category formally recognizes the significant conservation achievements of his lifelong career for Mexican biodiversity.

## 3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

One significant unforeseen challenge involved **field access and security constraints** in certain priority areas identified by our habitat suitability models.

**The Difficulty:** We encountered limitations in accessing some remote forest regions due to two primary factors: **localized security concerns** related to criminal activity (specifically narcotrafficking presence), and the **essential need to obtain formal permission and consent** from the Indigenous communities who govern and protect these territories. These factors temporarily prevented the ground-validation of some high-priority model predictions.

**How We Tackled It:**

1. **Adaptive and Respectful Approach:** We adhered strictly to a protocol of community-led access. Rather than viewing this as a barrier, we respected it as a fundamental principle of ethical work in the region. We prioritized **building trust and collaborative relationships** with community authorities.
2. **Strategic Focus:** We redirected our field efforts to accessible areas where partnerships were already established, ensuring the project's core objectives continued to advance.
3. **A Key Breakthrough & Future Path:** This patient, relationship-focused strategy has yielded a major success. **We recently secured formal permission from a key community to access a critically important region** that our models classify as high-priority habitat. Furthermore, the security situation in several areas appears to be improving. **This hard-won access agreement, built on trust, now provides a clear pathway to validate our models in this crucial zone in the coming years**, turning a previous difficulty into a future opportunity.

## 4. Describe the involvement of local communities and how they have benefitted from the project.

**1. Direct Collaboration in Scientific Research:**
We worked closely with groups of **local community monitors**, most of whom are Indigenous tourism guides from the region. Thirty community monitors were involved in the project, from which 10 were women and 20 were men. This is the time were more women had participated in the training workshops. 30 individuals received specialized training in biodiversity monitoring techniques, with a focus on raptor species. This partnership was crucial for ground-validation our habitat suitability models. The monitors' profound knowledge of the forest and their field efforts were **directly responsible for obtaining the photographic evidence confirming the presence of a Harpy Eagle** in the Lacandon Jungle (Chiapas, Mexico). This demonstrates a powerful synergy where scientific modeling guided the search, and local expertise made the critical discovery possible.

**2. Creation of Sustainable Economic Alternatives:**
Recognizing the need for livelihoods that support conservation, the project actively **promotes community-based raptor watching as a sustainable economic alternative.** In direct consultation with the community monitor groups, we identified the need for clear, practical guidelines to ensure this activity is ethical and beneficial to both people and wildlife. In response, project lead Alan Monroy and co-authors developed and published the **"Best Practice Guide for Raptor-focused Birdwatching Tourism."** The publication was published digitally and shared online to all the local community monitors via pdf. The pdf is available publicly online and has been shared with several birdwatchers groups, local monitor groups, scientific and academic communities in Mexico and across Latin America. The artwork of Alan Monroy was used in the elaboration of the guide.

**Community Benefits Summary:**

- **Capacity Building:** Community members gained valuable skills in scientific monitoring, species identification, and data collection, enhancing their professional profile as expert nature guides.
- **Economic Empowerment:** The project provides a framework for a high-value, low-impact tourism niche (raptor watching) that generates direct income for local guides and their communities, offering a concrete economic incentive to protect the forest and its flagship species.
- **Co-ownership of Solutions:** Communities were not just beneficiaries but active partners in identifying a need (the guide) and validating the approach, ensuring the solutions are practical and culturally relevant.
- **Long-term Legacy:** The guide serves as a permanent tool for these communities nationwide and internationally to manage tourism responsibly, protect sensitive species like the Harpy Eagle and King Vulture.

## 5. Are there any plans to continue this work?

Yes, this research and conservation initiative has strong continuity and is expanding in scope. I am currently pursuing a **Doctorate in Tropical Ecology** at the Tropical Research Center (CITRO) of the University of Veracruz, which is providing an academic framework to deepen and scale up this work.

My doctoral thesis directly builds upon the foundations laid by this project, with two main axes:

1. **Mesoamerican Harpy Eagle Synthesis:** Conducting a comprehensive review and analysis of all existing knowledge on the Harpy Eagle (*Harpia harpyja*) across Mesoamerica. This will consolidate fragmented data, identify critical knowledge gaps, and create a regional conservation strategy.
2. **King Vulture Movement Ecology:** Initiating a pioneering study on the movement ecology of King Vulture (*Sarcoramphus papa*) populations using **satellite telemetry (GPS transmitters)**. This research will uncover vital information about their home ranges, dispersal patterns, and habitat use, providing essential data for effective cross-border conservation planning.

Furthermore, we are fostering **international collaboration and knowledge exchange.** This year, we are partnering with researchers from Panama to organize a workshop that will facilitate the **exchange of experiences between community monitors** from both countries. This peer-to-peer dialogue will focus on best practices

for monitoring Neotropical raptors and strategies for community-led forest conservation, strengthening the regional network of practitioners.

In summary, the project continues to evolve from localized discovery and assessment into **regional synthesis, advanced ecological research, and the strengthening of a international community-based conservation network.**

### 6. How do you plan to share the results of your work with others?

We have implemented and will continue to pursue a multi-faceted strategy to share our results, ensuring they reach and benefit diverse audiences from the local to the global level.

- **Scientific Community & Policy Makers:** Results are published in **peer-reviewed international journals** (e.g., *Journal of Raptor Research*), providing the robust evidence needed for conservation policy. Findings are also presented at **international scientific congresses (Bolivia, Costa Rica, Colombia)** to engage directly with the global research community.
- **Practitioners & Local Communities:** We prioritize direct feedback and capacity building. We hold **community workshops and talks** in the areas where we work, ensuring local monitors and residents are the first to receive results and understand their implications. The **"Best Practice Guide for Raptor-focused Birdwatching Tourism"** is a practical tool designed specifically for and disseminated among local guides and tour operators.
- **General Public & Avitourism Sector:** We actively engage in **science communication** through diverse formats. This includes collaborating with the **Science Outreach Office of the National Autonomous University of Mexico (UNAM)** to produce an **educational comic** that highlights the significance of the Harpy Eagle rediscovery, making the story accessible and engaging for a broad audience. We also contribute articles to popular media and present at **birding festivals and ecotourism events** to raise public awareness and promote responsible tourism.
  Links to articles:
- https://news.mongabay.com/short-article/2025/05/harpy-eagle-confirmed-in-mexico-for-first-time-in-over-a-decade/
- https://elpais.com/mexico/2025-08-30/la-reaparicion-del-aguila-harpia-en-mexico-lanza-una-nueva-alerta-para-proteger-la-selva-lacandona.html
- https://www.birdpartners.org/post/the-harpy-eagle-a-lost-giant-rediscovered-in-mexico
- https://www.facebook.com/photo.php?fbid=1176087767886750&set=pb.100064566136278.-2207520000&type=3
- **Open-Access Legacy:** We are committed to **open science principles**. Where possible, publications, the raptor-watching guide, and non-sensitive data will be made freely available through institutional repositories and project

websites to maximize access and utility for future researchers and conservationists.

This integrated approach ensures our findings drive scientific understanding, inform local practice, influence policy, and inspire public support for the conservation of Neotropical raptors.

## 7. Looking ahead, what do you feel are the important next steps?

The critical next steps are strategically aligned across three interconnected pillars: **Research, Community Engagement, and Communication/Advocacy.**

**I. Research:**

- **Harpy Eagle:** Advance the doctoral research by **(a)** identifying potential sites for future Harpy Eagle reintroduction programs in Mexico, and **(b)** continuing the field validation and active search for additional nests and territories within the country.
- **King Vulture:** Initiate a pioneering study on the fundamental movement ecology of the King Vulture through the **capture, tagging, and satellite tracking of individuals**. This will provide unprecedented data on their spatial needs and connectivity.

**II. Community Engagement & Sustainable Livelihoods:**

- Formalize and expand the **community-based monitoring program**, ensuring continued financial support (via payment for ecosystem services or monitoring contracts) for the trained local monitors, recognizing their expertise and critical role.
- Actively **promote and professionalize community-led raptor watching** in the region, using our Best Practice Guide as a foundational tool to ensure economic benefits are directly linked to conservation outcomes.

**III. Communication, Education, and Advocacy:**

- Develop targeted **educational and outreach materials** (building on initiatives like the UNAM comic) for local and national audiences to increase awareness about the importance of forest raptors and their conservation.
- Pursue a significant policy advocacy goal: **To establish August 19th as the "National Day of the Harpy Eagle and Neotropical Raptors."** This official designation would serve as a permanent platform to launch annual national awareness campaigns, institutionalize educational efforts, and elevate the public profile of these species.

**8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

Yes, The Rufford Foundation was duly acknowledged and its logo prominently displayed in several key materials and presentations, ensuring recognition for its support.

**A. In Published Materials:**

1. **Scientific Paper:** The Foundation was acknowledged in the following peer-reviewed publication:
    - Monroy-Ojeda, A., A. Ruiz-Sánchez, F. H. Vargas, and J. A. Gómez-Díaz. 2025. Assessing the Conservation Status of a Wide-ranging Species with a Reduced Area of Highly Suitable Habitat: The Case of the King Vulture (*Sarcoramphus papa*) in the Neotropics. *Journal of Raptor Research* 59(3). doi: 10.3356/jrr2387.
2. **Practical Guide:** The Rufford Foundation logo was featured on the cover and in the acknowledgments of the conservation outreach manual:
    - García de la Puente, E., A. Monroy-Ojeda, and J. C. Cantú. 2024. Guía de Buenas Prácticas para el Aviturismo con Aves Rapaces Diurnas y Nocturnas [Best Practice Guide for Birdwatching Tourism with Diurnal and Nocturnal Raptors]. Teyeliz A.C., UABCS, Kiekari Tierra A.C., The Rufford Foundation. **25 pp.**

**B. In Oral Presentations (Acknowledgments and Logo on Title Slides):**
The support of The Rufford Foundation was verbally acknowledged and its logo was displayed during presentations at the following international conferences:

- **Raptor Research Foundation Annual Conference**, Costa Rica, 2025.
- **5th International Andean Condor Congress / 1st Symposium on American Vultures**, Sucre, Bolivia, 2025.
- **VI Neotropical Raptor Conference**, Pereira, Colombia, 2024.

**9. Provide a full list of all the members of your team and their role in the project.**

- Santiago Gibert Isern (Dimension Natural Director). Logistics and documentation.
- Hernán Vargas (The Peregrine Fund). Advisor.
- Jorge Gómez Díaz (Instituto de Investigaciones Biológicas- UV). Advisor.
- Dra. Angelina Ruiz Sánchez (Facultad Ciencias Biológicas- UV). Advisor.
- Silvano López Gómez (Siyaj Chan). Field work.

- Francisco Centeno López (Siyaj Chan). Field work.
- Feliciano Centeno López (Siyaj Chan). Field work.
- Aurora Narváez (Siyaj Chan). Field work.

## 10. Any other comments?

We wish to express our most profound gratitude to The Rufford Foundation for its generous and pivotal support. The grant was instrumental in catalyzing a project that successfully integrated **rigorous scientific research, meaningful community development, and the direct conservation** of two iconic Neotropical raptor species: the Harpy Eagle and the King Vulture.

Furthermore, we are honored to share that the project's principal investigator and Rufford grant recipient, **Alan Monroy-Ojeda, was awarded an Honorary Mention in the 2025 Mexican National Prize for Nature Conservation**. This award, conferred by Mexico's National Commission of Natural Protected Areas (CONANP) and the Ministry of Environment (SEMARNAT), is one of the country's highest environmental accolades.

We believe this recognition speaks not only to the dedication of the researcher but also **validates The Rufford Foundation's critical role in supporting tangible, high-impact conservation initiatives**. This award is a shared achievement, and we are sincerely thankful for the trust and opportunity provided by the Foundation to make this work possible.

I attached some pictures of the research and conservation efforts.

Fig. 1. Alan Monroy presenting one of the three talks he gave at the VI Neotropical Raptor Conference, Pereira, Colombia, 2024.


Fig.2. Field Work and Local peoples training for raptor monitoring and conservation. El Ocote Biosphere Reserve, Chiapas, Mexico. 2024.

Fig.3 King Vulture (*Sarcoramphus papa*) monitoring. El Ocote Biosphere Reserve, Chiapas, Mexico. 2024.


Fig. 4. Alan Monroy presenting his talk at the V Conference for the Andean Condor and the vultures of the America, 2025, Sucre, Bolivia.

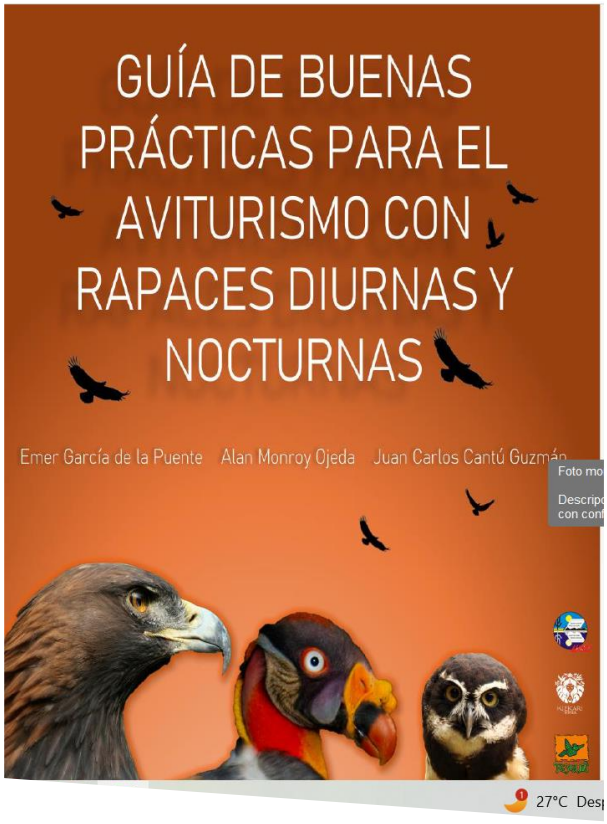


Fig. 5. Published manual: "Guide to good practices for birdwatching of diurnal and nocturnal birds of prey".

Fig. 6. Researcher Alan Monroy-Ojeda got an Honorable mention of the 2025 Nature Conservation Award. One of the most important conservation recognitions at the national level In Mexico.

**ANNEX – Financial Report**

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