

Conserving the Sierra Madre Occidental: A Cross-Border Effort to Protect Forests and Birds

Spanning the rugged mountain ranges of northern Mexico, the Sierra Madre Occidental (SMO) is a biodiversity hotspot home to more than 300 bird species—including the endangered Thick-billed Parrot (TBPA), Neotropical migrants (i.e., yellow-billed cuckoo and olive-sided flycatcher), and numerous species of concern. But this forested haven is under severe threat from unsustainable timber harvesting, wildfires, and habitat degradation. In response, a diverse coalition of partners has launched a collaborative conservation effort to integrate sustainable forestry practices with habitat protection and species recovery.

A Diverse Network of Partners

This ambitious project is driven by a partnership that includes government agencies, academic institutions, ejidos (communities with communal lands), and international NGOs. Core partners include Organización Vida Silvestre A.C. (OVIS), Arizona Game and Fish Department (AZGFD), U.S. Fish and Wildlife Service, San Diego Zoo Wildlife Alliance (SDZWA), Universidad Estatal de Sonora, Comisión Nacional de Áreas Naturales Protegidas (CONANP), and Comisión Nacional Forestal (CONAFOR). Ejido El Largo and forestry consultants—including Foresta S.A. de C.V. New partners include the Pacific Flyway Council.

Together, these groups are aligning Mexico's evolving forest management policy, which now emphasizes biodiversity, with strategic conservation goals. Their shared vision is to create a network of sustainably managed forests that not only support timber production but also protect vital habitat for birds and other wildlife.

The Birds at the Center

The Sierra Madre Occidental's diverse ecosystems—from temperate pine-oak forests to high-elevation coniferous woodlands—support an extraordinary array of birds. These include at least 45% Neotropical migrants and over 30 high-priority species recognized by Partners in Flight (PIF). Some notable species include the broad-billed hummingbird, elegant trogon, Grace's and red-faced warblers, and Lazuli bunting.

Most critically, the region is the last stronghold for the Thick-billed Parrot, a species once found in Arizona but now restricted to high-elevation mixed conifer forests in Chihuahua and Durango. These parrots depend on mature trees and snags for nesting—a habitat severely diminished by decades of logging and fire suppression. Only scattered remnants of old-growth forest remain, making their conservation urgent.

Threats to Forest and Fauna

The region has endured over a century of intensive logging, often without consideration for biodiversity. Fire suppression has also increased the risk of catastrophic wildfires.

Climate change adds another layer of complexity. Prolonged droughts have led to more frequent fires, less food availability, and outbreaks of ectoparasites. In 2021 and 2022, TBPA breeding success hit a record low—the lowest in 28 years—highlighting the need for sustained conservation actions.

Southern Wings-Funded Successes (2024)

In 2024, the project reached several milestones. Through coordination with CONANP, CONAFOR, and ejidos, a conservation and management agreement was secured for 39,000 hectares of mixed forest, grasslands, and wetlands. This area now protects key habitat for both TBPA and Neotropical migratory birds.

Monitoring breeding populations across five landscapes identified 148 TBPA breeding pairs, with a reproductive success rate of 73%. Active nests were protected from bobcats, artificial nests were installed, and chicks were rescued and rehabilitated.

Additionally, a 2024 census found that the current population, of approximately 2,500 individuals, is at least 10% higher than that recorded 12 years ago. It is expected that the population will continue to increase as sustainable forestry management practices are consolidated by the communities of the region.

As part of a multi-year migration study, 18 individuals were fitted with satellite transmitters. This movement data has identified migration patterns, stop-over sites, wintering areas and new breeding locations. For example, in 2024, 22 new TBPA habitat sites were discovered (6 nesting sites, 3 drinking sources, 4 foraging areas, and 11 roosts).

Monitoring migratory and resident bird populations continues via eBird (813 checklists to date) and standard surveys. In total, 202 species were recorded between 2020 and 2024, 52% of which are Neotropical migrants. Environmental education also played a strong role, reaching ten schools and producing a children's wildlife coloring booklet. A press campaign highlighted the positive trend in TBPA numbers, generating media coverage across multiple platforms.

Looking Ahead: 2025–2026

With strong momentum, the project will expand its conservation activities into 2025 and 2026. Key objectives include:

- **Habitat Protection:** Collaborate with forestry consultants and ejidos to integrate Best Forestry Practices into forest management plans and increase hectares under voluntary conservation mechanisms.
- **Fire Prevention:** Support fire brigades and enhance fire management around TBPA nesting areas.
- **Species Monitoring:** Continue long-term tracking of TBPAs and Neotropical migrants, maintain and sanitize artificial nests, and use camera traps to monitor predators and monitor other wildlife of conservation interest.
- **Winter Habitat Planning:** Conduct TBPA population counts and train local observers to monitor wintering flocks in Durango.
- **Community Engagement:** Launch new education initiatives, including the design of a TBPA mascot and school programs to raise awareness of the region's unique biodiversity.

A Model for Integrated Conservation

By aligning sustainable forest management with science-based conservation planning, this project offers a scalable model for biodiversity conservation across working landscapes. With continued collaboration, data-driven monitoring, and community involvement, the Sierra Madre Occidental can remain a vital refuge for birds, forests, and people.