



Introducing Hummingbird Conservation Networks

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For several years, the Hummingbird Monitoring Network focused its efforts on monitoring and studying hummingbird populations to obtain important information that support conservation of these magnificent creatures. Recently, the necessity of integrating community-based conservation ideas into the science-based beginning of HMN has become principal to the expanded organization, Hummingbird Conservation Networks (HCNs). New programs are being created around our four main work areas: monitoring, research, restoration, and outreach.

Maintaining hummingbird diversity and abundance throughout the Americas is still a primary focus of the organization. HCNs' mission, essentially unchanged from HMN's original mission, is to help hummingbirds survive, reproduce, and thrive while engaging human communities to benefit economically, socially, and ecologically from their hummingbird conservation activities. This white paper summarizes our full vision of hummingbird conservation.

The **Hummingbird Monitoring Network (HMN)**, founded in 2002 with 501(C)(3) nonprofit status by 2004, began because hummingbird conservation had limited focus from the conservation world and population trend data for hummingbirds were lacking. It started as a science-based, project-driven organization dedicated to maintaining hummingbird diversity and abundance throughout the Americas. It is a unique organization that combines collaborative research, community involvement and training, with a view to understanding and appreciating the importance of hummingbirds and their conservation in a changing world.

HMN's original objectives are to: maintain long-term monitoring sites that represent the region's hummingbird diversity across each species range; collect detailed demographic information on hummingbird populations so trends in their populations can be detected; encourage and support research projects that promote hummingbird conservation; support efforts that preserve and restore hummingbird habitats; educate by disseminating information about hummingbirds to land managers, the scientific community, and the general public; and use the information to improve hummingbird conservation.

To address the lack of trend/status data, HMN began a coordinated trend monitoring program, mainly with volunteers who trained as citizen scientists. Now, it partners with federal and state agencies, nonprofit organizations, universities, citizen scientists, and volunteers. It is a systematic banding program with constant effort, robust design protocol, stratified by geographic factors such as elevation, longitude, and latitude and vegetation type. Its sampling and experimental design is based upon the MAPS (Monitoring Avian Productivity and Survivorship) program, which has been effective for answering questions about population trends in passerines and near-passerines. Capture, banding techniques, and tools have been developed and employed specifically for hummingbirds' specialized ecology and constrained physiology.

HMN's program has generated data with large sample sizes and high recapture rates that allow using Capture Mark Recapture models to estimate survivorship and other demographic estimates. It also provides information about which areas support a high diversity and abundance of hummingbirds, which areas are important breeding sites, the timing of hummingbird occurrence, and their seasonal movement patterns.

In addition to the monitoring program, HMN has collaborated on numerous research projects, developed hummingbird field techniques, helped found Borderlands Restoration L3C to restore landscapes and engage communities along the Mexico/USA border, initiated an after school employment program for high school students, and developed an internship program for Latin American college students and young professionals to learn hummingbird field techniques.

Hummingbird Conservations Networks (HCNs) is the next step to ensure communities across the hemisphere can participate and benefit from hummingbird conservation activities. To this end, the organizations is developing resources, defining services, and creating opportunities that nurture science- and community-based networks, as well as, exploring how to generate funds in a feedback system that supports these activities. In the table below, the essential elements needed to realize HCNs mission are defined:

	Science	Community	Networks
Monitoring	Trend Monitoring	Community Monitors	Tools & Kits
	Effectiveness Monitoring	Workshops	Scholarships
Research	Field Research	Resource Library	Science Meetings
	Publish the Science	Internships	Student Support
Restoration	Threatened Species Issues	Community Restoration	Gardens and Reserves
	Nectar Landscape Restoration	Restoration Activities and Events	Plants & Nursery Support
Outreach	STEAM Learning	Community Outreach	Art and Stories
	Online Outreach	Fair Trade Crafts	Festivals
Organization	Data Management	Program Development	Accountability
	Field Data Systems	Partner Meetings	Funding

We are creating connections, developing partnerships, and integrating research, culture, and arts with conservation and economic activities to create and sustain conservation networks in urban, rural, indigenous, and natural communities.

Hummingbird Conservation Communities and Reserves (HCCRs) is HCNs’ new program that integrates community-based conservation ideas into our science-based beginning and encourages people to get involved in hummingbird conservation activities.

Four communities—one in each of Mexico, Guatemala, Ecuador, and Peru, will be part of this beginning. Partners in these communities and regions are interested in developing mutually beneficial activities that help address key conservation issues for hummingbirds such as: discovering and addressing conservation needs of threatened hummingbird species; restoring habitats to mitigate adverse effects of habitat loss and fragmentation on hummingbird diversity; improving floral resources to mitigate pollination disruption and improve food sovereignty of crops pollinated by hummingbirds.

HCCRs’ ultimate goals are to develop a sustainable model for hummingbird habitat conservation, while promoting beneficial activities for communities and developing revenue streams for funding community conservation actions. Five programs are being developed to help accomplish the above mentioned goals. They include:

1. Monitoring programs to identify habitat and nectar resources used throughout the year
2. Field research program to determine ecological and social threats
3. Community Restoration activities including support for local nurseries to incorporate native nectar plants in their business so there is a source of native plants available for use in land recovery
4. Outreach and educational activities that promote the care and respect for nature
5. Partner engagement for creating community-based natural businesses

Key next steps include:

- Sponsor Magic Wings Festivals to celebrate hummingbird diversity, celebrate the art, stories, and crafts of cultures who live with hummingbirds, and introduce HCCRs and participating communities.
- Train community members, researchers, and students in hummingbird study and monitoring methods. Topics include: Hummingbird Reproduction, Nectar and Floral Resources, Habitat Measurements, Hummingbird Inventory and Monitoring, Plant Cultivation, Habitat Restoration, and Insect Resources.
- Sponsor science and partner meetings.
- Build capacity of Paraíso Colibrí nursery to provide resources and services that help collaborating nurseries offer native hummingbird-visited plants to gardens and restoration efforts.
- Hire community members to monitor and quantify hummingbird responses and floral resources use.

The greatest strength of HCNs will be to help fill a gap in conservation practice. Today, conservation is often accomplished either with large organizations *or* at the community level. In contrast, our aim is to provide resources, services, and opportunities that connect communities on a single conservation issue, yet support activities at the community level. It’s the creation of ecosystem conservation networks of partners, service providers, communities, and reserves that will allow for landscape impact through community level conservation.