

OP-200 [Beekeeping for Rural Development] Safeguarding Amazonian Stingless Bees for Conservation and Rural Development

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Stingless bees (Meliponini), found in tropical regions worldwide, are critical pollinators essential for biodiversity, forest regeneration, and the cultural and social structures of indigenous communities. In the Amazon Rainforest, indigenous people have safeguarded and cultivated stingless bees for generations through deep ecological knowledge and stewardship. However, climate change, deforestation, habitat loss, and pesticide exposure are driving population declines, threatening these keystone species and the livelihoods of those who rely on them. Despite their ecological and cultural significance, stingless bees remain largely absent from conservation policies, leaving their populations vulnerable. Here we show that integrating sustainable stingless beekeeping with scientific research, conservation policy, and community-led initiatives enhances biodiversity protection, strengthens rural economies, and contributes to environmental stewardship. Working alongside indigenous Kukama and Ashaninka communities, we established seven community-led beekeeping sanctuaries to safeguard bee populations and mapped stingless bee species and their host trees, providing the first data-driven evidence that deforestation increases the risk of stingless bee decline in the Peruvian Amazon. Through Las Meliponicultoras, the first indigenous women-led stingless beekeeping program in the Amazon, we trained over 350 beekeepers (70% women, 15% youth) in sustainable hive management, pollination-based reforestation, and economic resilience through bee-based tourism and the sale of honey, pollen, and propolis. Additionally, our research led to the first scientific publication documenting traditional ecological knowledge of stingless bees, co-authored with an Ashaninka indigenous leader, setting a precedent for integrating indigenous knowledge into conservation science. This research underpins an ongoing Rights of Nature declaration, advocating for legal recognition of stingless bees as vital ecological and cultural entities. Our findings also informed discussions leading to the modification of Peru's Law 32235 in December 2024, granting legal recognition to native stingless bees for the first time. Our results show that sustainable stingless beekeeping is a replicable model for biodiversity conservation and rural development in the Amazon and beyond. By integrating indigenous-led conservation strategies into policy frameworks, beekeepers can restore ecosystems while securing sustainable, nature-positive livelihoods, setting a precedent for scalable rural development in tropical regions worldwide.



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Stingless bees

Native to the
world's tropics

80 million years old
(from dinosaur's time)





175+ unique species
in the Amazon





‘LIQUID MIRACLE’

Medicinal honey that
treats over 20 illnesses,
including COVID-19



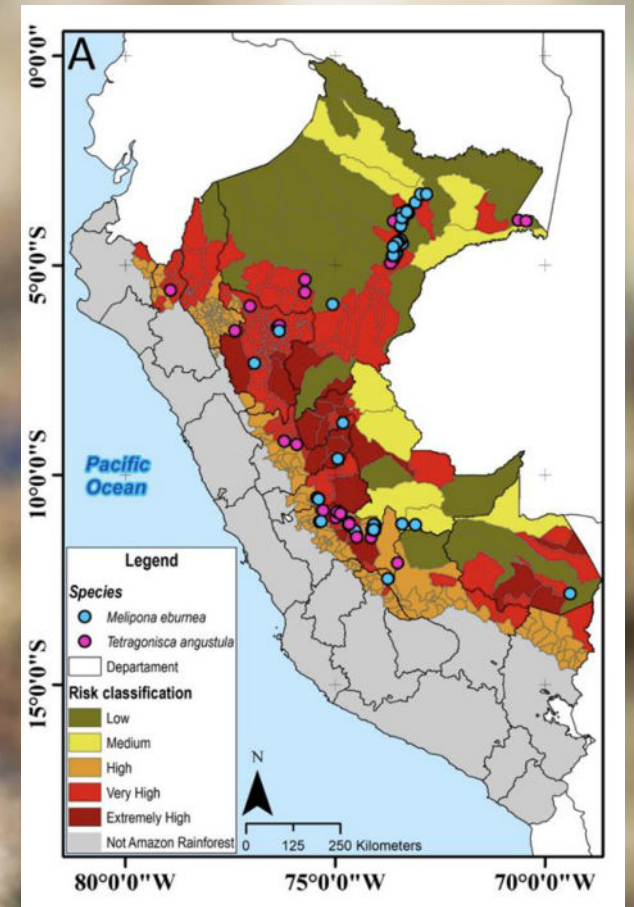
Amazon Research Internacional (ARI)

Science and traditional knowledge

Capacity building

Advocacy





THE FIRST STINGLESS BEE MAP

Demetrio, R., et al. 2024. *Ethnobiology ad Conservation*.
Demetrio, R., et al. 2025. *Journal of Ecology and Environment*.



LAS MELIPONICULTORAS



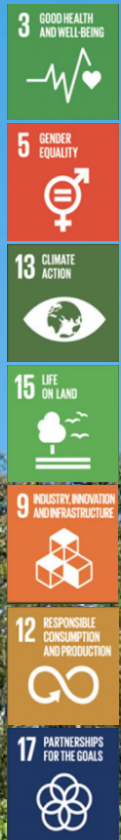


CIRCULAR ECONOMIES





RAINFOREST REGENERATION





HISTORIC LAW N. 32235 IN PERU





ANIMALS

These stingless bees make medicinal honey. Some call it a 'miracle liquid.'

In the Peruvian Amazon, native stingless bees are helping beekeepers and their communities by producing honey and pollinating local plants.

By Douglas Main

Photographs by Ana Elisa Sotelo

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A close-up photograph of two stingless bees (Tetragonisca tetraonea) inside a dark, circular nest entrance. The bees have dark bodies with prominent yellow and black stripes on their abdomens. The surrounding environment is a rough, textured surface of brown and orange wood or bark.

In Peru, a Mission to Save the Stingless Bee

Native to the tropics, these pollinators are taking a lead role in one of the latest efforts to conserve the Amazon rainforest.



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