

## TRAITS, TURNOVER AND THE MYSTERY OF TROPICAL FOREST DIVERSITY

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In 1799 Alexander von Humbolt described tropical South America as “an inexhaustible treasure trove” of nature, and two centuries later, biologists continue to puzzle over the origins and the maintenance of the exuberant tropical diversity of our planet. I will present new insights into the ecological processes shaping tropical forests from several recent studies. First, working in the Ecuadorian Amazon in one of the most diverse forests that we know of, I will explore how analyses based on the physiological traits of species as well as patterns of phylogenetic relatedness can be used to test between competing theories of species diversity. Next, I will examine how patterns of species turnover (beta-diversity) differ between tropical and temperate forests using A. H. Gentry’s extensive forest transect dataset and a novel analytic approach. Taken together, these studies suggest that the ecological processes shaping tropical and temperate forests may be far more similar than we once thought.