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**SPRINGER
NATURE**

The tremendous diversity of life on Earth — a result of more than three billion years of evolutionary history — is facing an uncertain future. This Insight looks at how this biodiversity came to be, how it supports the goods and ecosystem services on which we depend and how it is being put to the test by the rapidly expanding human population. Crucially, strategies to safeguard this diversity are explored.

Dolph Schluter and Matthew Pennell examine how gradients in the rate of species formation over the past 20 million years have shaped, and are shaped by, some of the most pronounced biodiversity gradients on the planet.

Jonathan Levine and colleagues get to grips with the mechanisms that facilitate species coexistence in complex communities, and point to the potential importance of competitive dynamics not seen in pairwise interactions.

Forest Isbell and colleagues document the deleterious effects of human-driven biodiversity loss on ecosystem function and draw attention to the apparent intensification of these effects across temporal and spatial scales.

David Tilman and colleagues chart the increased extinction risks facing the birds and mammals of tropical Africa, Asia and South America over the next 50 years owing to rising food demand, and put forward policies to reduce these risks while bolstering food security.

The world's coral reefs support large swathes of marine life but are degrading rapidly. Terry Hughes and colleagues explore how best to safeguard these systems, calling for radical changes in coral-reef research, management and governance.

Last, Robert Pringle explores the latent conservation potential inherent in apparently failing protected areas around the world. He describes how these areas, and the benefits they bestow, can be resuscitated by embedding them in the social, cultural and economic fabric of society.

Shepherding our planet's remaining biodiversity through the current era of human population growth, environmental degradation and climatic change is one of the most pressing challenges we face. A return to past ecosystem configurations is not possible. But policies can be put in place to help avert further losses and to maintain ecosystem functions. At stake is not just the viability of the ecosystems on which we depend, but also the very richness of life, in all its colour and complexity.

Anna Armstrong
Senior Editor

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