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Natural capital, ecosystem services, and conservation – Maps to sustain both nature and humanity

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Ecosystems around the world support both biodiversity and human well-being, providing essential goods and services including food, fiber, building materials, moisture/temperature regulation, carbon sequestration, disaster risk reduction, and spiritual/cultural meaning. While we all depend on these benefits to survive and thrive, they are especially critical to the world's most vulnerable people. And as populations and economies grow and the climate continues to change, humanity may find itself needing nature's benefits in new and unexpected ways.

Mapping ecosystem service provision globally along with biodiversity is essential to effective, just, and lasting conservation planning and prioritization. Identifying global ecosystem service hotspots is key to enabling multi-scale water-energy-land nexus planning for managing socio-economic, climatic, and technological change. This presentation will showcase the latest results of a first-of-its-kind effort to collect the best available spatial datasets of global ecosystem service provision and synthesize them into a common "critical natural capital" framework that highlights global ecosystem service "hotspots" for both humanity overall and the world's most vulnerable people in particular. Drawn from a wide range of observational and modeling studies conducted by physical and social scientists around the world, this innovative synthesis represents the first attempt to create an integrated spatial map of all that we know about humanity's dependence on nature, on land and at sea.

Biodiversity is intimately linked to ecosystem services, since intact ecosystems with diverse and abundant native flora and fauna have the greatest ability to provide these irreplaceable services to humanity. Thus, conserving nature for biodiversity and conserving nature for human well-being are two sides of the same coin. This presentation will explore how to integrate these maps of the world's critical natural capital into the global conservation conversation. These maps will enable investors and policymakers at the global and national scales to explore the potential consequences to humanity of diverse area-based conservation strategies, providing crucial context for the Post-2020 Global Biodiversity Framework and related conversations.

Sustainable use and management of land and sea, in line with the vision outlined by the Sustainable Development Goals, is essential to preserving both biodiversity and humanity's ability to thrive on this planet. The upcoming negotiation of the Post-2020 Global Biodiversity Framework

represents a key opportunity to set the planet on a path to more strategic and effective management of the terrestrial and marine realms, and our maps can inform decision-making around the size and spatial distribution of protected areas and other effective conservation measures. Society can only manage what it can monitor, and with the clearer vision of the most important places for both biodiversity conservation and ecosystem service provision these maps provide, humanity will be well-poised to start the next decade off on the right foot.