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The Green-Scorpion: a preliminary study on the potential amplification of physical climate financial risks by nature-related risks and feedbacks

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Climate change and biodiversity loss are not happening in isolation. The erosion of natural capital by human activities will compound and amplify physical climate risks, and vice versa. We present new analyses that demonstrates that ignoring nature in physical climate financial risk assessment will lead to significant underestimates of the scale of the risks. This has implications for financial institutions and for the prudential policies of Central Banks and supervisors. We develop the first set of integrated climate-nature scenarios to explore the potential scale of physical risks, building upon the NGFS conceptual framework, alongside a global risk assessment approach that combines the ENCORE tool with global natural capital datasets and a multi-regional input-output modelling approach. We produce estimates of risks for five ecosystem services - surface water, ground water, pollination, air quality and water quality - across 7 sectors and 44 countries and 5 rest of world regions. Our analysis suggests that nature-related risks are material in scale, exceeding \$7 trillion value at risk. Based on analyses of historical analogues and risk transmission channels we show that nature and climate risks are strongly interconnected and share characteristics in their potential for non-linear, cascading impacts. We propose a set of principles for scenario analysis and a framework for developing decision-relevant scenarios, including an inventory of almost eighty potential nature-related physical risk shocks (hazard-primary economic receptor pairs) that can form the basis to scenario development.