Heterogeneous complementarity preferences and the value of nature

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Abstract: We study the heterogeneity in preferences regarding the limited substitutability of environmental public goods versus private consumption and how it affects the economic value of nature. We show theoretically how mean marginal willingness to pay (WTP) depends on the distribution of complementarity preferences, and that it increases in preference heterogeneity. We provide a sufficient statistic for the contribution of preference heterogeneity to mean WTP and derive heterogeneity-equivalent representative agent preferences. We subsequently introduce an experimental framework to elicit individual-level complementarity preferences directly, applying it to incentivized and hypothetical trade-offs between market goods and forest ecosystem services. Estimating preference parameters for a large general population sample, we document substantial preference heterogeneity. The majority of estimates imply a preference for complementarity, with a median elasticity of complementarity of around 2.5, and a heavy long tail. We illustrate how accounting for the heterogeneity in complementarity preferences may considerably increase the economic value of nature.

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