The values of coastal ecosystems for recreation and passive uses: a global analysis

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Abstract: The cultural values of coastal ecosystems are investigated based on the meta-analysis of an extensive data set of 590 observations from 153 independent studies worldwide. Significant contributions of the present study are the innovative GIS techniques that are implemented to provide a geographically sound characterization of the valued ecosystem and context variables. Meta-regression explores the use of economically oriented choice of explanatory variables, which first introduces site accessibility, anthropogenic pressure, and level of human development in the surrounding of the valued sites as well as richness in biodiversity, GDP per capita, and population density as potential candidates as explanatory variables of the reported willingness to pay (WTP) values. Climatic conditions are accounted for in the meta-regression model by sea surface temperature in the valued sites. Estimation results indicate that while coral reefs provide the highest individual values as expressed in WTP per person per year for ecosystem services, the aggregate value per unit length of coastline is highest for sandy beach recreation. Among recreational services, individual WTP is highest for recreational fishing, but aggregated values show that non-consumptive recreation and passive uses provide the highest overall welfare benefits.

Keywords: coastal ecosystems; cultural values; ecosystem services; meta-analysis; non-market values

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