

How natural capital delivers ecosystem services: A typology derived from a systematic review

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ABSTRACT:

There is no unified evidence base to help decision-makers understand how the multiple components of natural capital interact to deliver ecosystem services. We systematically reviewed 780 papers, recording how natural capital attributes (29 biotic attributes and 11 abiotic factors) affect the delivery of 13 ecosystem services. We develop a simple typology based on the observation that five main attribute groups influence the capacity of natural capital to provide ecosystem services, related to: A) the physical amount of vegetation cover; B) presence of suitable habitat to support species or functional groups that provide a service; C) characteristics of particular species or functional groups; D) physical and biological diversity; and E) abiotic factors that interact with the biotic factors in groups A–D. ‘Bundles’ of services can be identified that are governed by different attribute groups. Management aimed at maximising only one service often has negative impacts on other services and on biological and physical diversity. Sustainable ecosystem management should aim to maintain healthy, diverse and resilient ecosystems that can deliver a wide range of ecosystem services in the long term. This can maximise the synergies and minimise the trade-offs between ecosystem services and is also compatible with the aim of conserving biodiversity.