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A systematic review of bird ecosystem services: what is the evidence-base linking birds with ecosystem services?

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What is the state of knowledge linking birds and ecosystem services? We know that the actions of birds (seed dispersal, predation of insects, etc.), their products (nests, eggs, meat, etc.) and cultural links with human societies have the potential to provide important benefits. What we do not know, however, is the extent to which these assumed ecosystem services actually result in tangible and measurable benefits to humans. For example, birds may be significant predators of commercially important pest species but does this translate into increased yield from agriculture?

We carried out a systematic review of the literature to quantify the evidence-base linking birds and ecosystem services. We searched online scientific databases (Scopus and Web of Science) using the search terms ‘Bird AND Ecosystem Service’ OR ‘Ecological Service’ to identify literature purporting to link birds and ecosystem services. We also used existing reviews to identify further peer-reviewed articles not identified in the search.

Evidence for ecosystem services provided by birds was almost exclusively limited to *regulating services* (in particular pest control). Despite several authors suggesting that birds provide *provisioning*, *supporting* and *cultural services*, there is little empirical evidence to support this view. Our systematic review has identified gaps in the knowledge about ecosystem service provision by birds and we suggest some avenues for future research.