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Bird and nature conservation – do we need ecosystem services?

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The recognition of the benefits to people provided by nature is not new. In 1789, Gilbert White in his *Natural History of Selborne* wrote of the importance of earthworms to land productivity and the 'Nature economy'.

'Ecosystem Services' (ES) is now a powerful organizing concept for nature conservation – it is an evidence-driven approach which allows decision-making, based on the economic valuation of public goods derived from how nature works. But, while the ES argument is necessary for nature conservation, it is not sufficient as the rationale.

The technical argument now is proof of concept. RSPB's conservation programme provides demonstration of the benefits for nature conservation of an ES approach. These can be realized at a range of scales, from instances where birds themselves provide life-enhancing benefits to those where life-supporting benefits are co-products of the way we manage land for conservation.

At the level of the individual organism, this could be the thrill of seeing charismatic Peregrines *Falco peregrinus* in the urban setting of the Tate Modern – half a million people have had such an RSPB 'Date With Nature'. The closure of the UK countryside by Foot & Mouth disease in 2001 demonstrated the value of such encounters, where attractions such as the Osprey *Pandion haliaetus* viewing at Bassenthwaite Lake contribute to the Lake District tourist economy, in total worth nearly £1bn.

At a site level, the Wallasea Wildcoast Project in Essex will provide habitat for birds and will provide important flood risk relief on a coast subject to the impact of sea-level rise, by reverting farmland back to saltmarsh.

At a catchment level, land management needs to safeguard ES at the scales over which the agents of the service (e.g. pollinators) or the service itself (clean water) flow. RSPB's management at Lake Vyrnwy demonstrated the value of peatland restoration for improving water quality (Wilson *et al.* 2011), and the United Utilities–RSPB partnership in northern England has involved 70 tenants working to improve habitat condition over 40 000 ha, saving £2.3m pa in water treatment costs.

At a global level, action is needed to protect and restore habitats that can affect the global carbon balance, particularly peatlands and tropical forests which account for nearly a quarter of man-made greenhouse gas (GHG) emissions. RSPB's peatland conservation programme operates across the UK and extends to Eastern Europe, the second largest hot spot for GHG emissions from degraded peatlands after SE Asia. This includes restoration of over 50 000 ha of degraded peatland, and working with the Belarus and Ukraine Governments to

assist preparation of carbon financing mechanisms (Tanneberger & Wichtmann 2011). Carbon financing is even closer as a means to help protect and restore tropical forests, potentially helping RSPB's 2400-km² partnership programme in seven countries, part of BirdLife International's '*Forests of Hope*'.

The ES approach can help public policy formulation and decision-making. In a period of economic austerity, the ability to unlock funding through options such as Payments for Ecosystem Services (PES) and offsets is a powerful, pragmatic reason for pursuing this approach. However, there are constraints. It is tough to do – requiring more evidence than we currently have to make the theories operational in decision-making practice. New tools will be needed. And, this is about realizing long-term benefits – will Governments demonstrate leadership at a time when the economy drives short-term political behaviour?

But, while biodiversity and ecosystems can be shown to provide long-term benefit to the economy, there remain specific resource competition conflicts in which critical natural capital can be lost. Environmental economists will quickly point out that the utility of the ES approach is in highlighting that decisions always involve alternative choices – and it is the recognition of these trade-offs, just as much as the win–wins, which conservationists need to confront. RSPB's Hope Farm in Cambridgeshire, for instance, has had great success in raising numbers of farmland birds while maintaining crop yield per ha (Morris *et al.* 2010). However, those yields could undoubtedly have been even higher if we had not sacrificed some land for wildlife. We are now trying to calculate what that compromise may have cost. RSPB's Ouse Washes reserve retains winter floodwater to provide flood risk relief, which then provides wintering habitat for wildfowl and, as the water recedes, a great habitat for breeding waders. However, changing rainfall patterns now threaten the breeding success of waders (Ratcliffe *et al.* 2005), leaving a trade-off between flood risk relief and biodiversity conservation. Such cases expose the ethical and legal (i.e. social norms) foundations of nature conservation. The UK government accepted the legal obligation (under the Birds Directive) to address the deterioration of the Ouse Washes, and is converting 600–700 ha of arable to new wet grassland in the Fens. Not surprisingly, then, outstanding win–wins are not the norm. Correlation between the importance of each of the world's eco-regions for vertebrate biodiversity conservation versus the net provision of the four ES for which proxies could be mapped at the global scale (carbon storage, carbon sequestration, grassland production, water provision) showed some clear win–wins, but clearly many trade-offs. (Naidoo *et al.* 2008).

There are further complications. While it is fairly straightforward to measure the tourism revenue and job generation associated with reserves, there are limits to economic valuation methodologies for the 'cultural services' which bird conservation provides as its main product. How do you capture the value of singing Skylarks *Alauda arvensis*, the return of migrants that signals the change of seasons, or the spectacle of flocking Knot *Calidris canuta* or Starlings *Sturnus vulgaris*? Some work has been done to understand the physical, mental and social benefits of exposure to nature (e.g. Fuller *et al.* 2007), but much more is needed, for example the benefits of contact with nature on the life chances of children. And how do we properly capture existence values? Lots of people have donated to help conserve albatrosses or the Henderson Petrel *Pterodroma atrata*, even though they know they will never see one. We also need to recognize the question of redundancy. While the impact of the loss of the Great Auk *Pinguinus impennis* is not clear, the degradation of food-webs is a cause of growing concern.

Long-term risk management requires the precautionary principle – as Aldo Leopold said, 'to keep every cog and wheel is the first precaution of intelligent tinkering'.

There are a set of values and moral beliefs held by many people across societies and cultures. These span the intrinsic right of species to exist, the responsibility of humans as stewards of the natural environment, and the ability to coexist with nature as a test of civilized human society and lifestyle. Evidence of this is the mass membership of organizations such as the RSPB, which in turn is the UK partner of BirdLife International, the world's largest civil society partnership for nature conservation. This moral rationale for conservation underpins the national and international legislation that has helped to prevent the current biodiversity crisis from being even worse. The outcry in the UK at the proposed sell-off of the national forest estate was another reminder of these values, and the need to hand on our natural capital to the next generation.

The conservation of nature will continue to need high levels of social and intellectual capital within a society, and strong governance capable of regulating within environmental limits. If you believe – whether for material, aesthetic and/or spiritual reasons – that the legacy for the next generation should include global biological diversity, then you should see ES as a powerful tool in the means toolkit, but we should not lose sight of the ends. And, bird conservation should still make that case.

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