

Chapter 5

Biological Conservation: Can We Break the Inertia?

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ABSTRACT

Despite building a clear and compelling message about the importance of conserving biodiversity and what we risk in depleting it, meaningful engagement from implicated stakeholders remains limited. Past studies have examined the gap between the possession of environmental knowledge and displaying behavior that would help to conserve it. Essentially, increasing awareness and interest in environmental issues does not ensure that individuals will make the necessary changes in behaviours detrimental to biological conservation. This is a concern as failure to meaningfully engage the public into acting on conservation strategies will hamper efforts to curb biodiversity loss. Herein the authors investigate why action to address biodiversity loss has been slow or deficient in many jurisdictions. The authors draw from models and theories developed in health and social sciences to provide context to the key factors that prevent action and propose steps that could be taken to stimulate it.

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INTRODUCTION

Biodiversity confers protection against ecosystem instability and loss of functioning (Naeem et al. 1995; Worm et al., 2006; Cardinale et al., 2012) by providing services such as soil formation, erosion control, nutrient and hydrological cycling, and carbon storage (Daily, 1997; Rands et al., 2010; Ten Brink et al., 2016; Hungate et al., 2017). Moreover, research has shown that economic value can be derived from retaining landscape features that promote biological diversity (Costanza et al., 1997; Balmford et al., 2002; Dee et al., 2017). Modern agriculture, horticulture, ecotourism, cosmetics, and pharmaceuticals, for example, are industries that draw direct economic benefits from products and/or services derived from biodiversity. Policies have thus been enacted in many jurisdictions around the world that recognise its wide-ranging importance (de Klemm & Shine, 1993; McBeath & McBeath, 2006; Miller, 2006; Mukul, 2007; Talaat, Tahir, Rusli, & Husain, 2013). Recognition at the global scale is also evident, as preventing biodiversity loss is a key tenet of the Convention on Biological Diversity (2010) and is a United Nations Sustainable Development Goal (UN, 2015). Yet despite the clear benefits that maintaining biodiversity confers, global biodiversity is still declining (Rands et al., 2010; Cardinale et al., 2012; Ceballos et al., 2015). More disconcerting is that policies and strategies adapted to conserve it are often ignored (Chunmei & Zhaolan 2010; Santamaria & Méndez, 2012; Drake & Just, 2016; Laitos, 2017), even with the pervasiveness of education materials, outreach programs, and media campaigns.

The Issue

The unique feature of the planet Earth is its biosphere. It comprises all terrestrial, aquatic and atmospheric components of earth that contain life. The relationships between its biotic and abiotic components are so intricate and complex that we are still only beginning to explain how the many ecosystems contained within function and interact. The variety of living organisms within the biosphere, the biodiversity, is the foundation for the goods and ecosystem services to which human beings are meticulously linked. As described by the Millennium Ecosystem Assessment (2005), biodiversity is “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems”. This definition puts all biota into a holistic context through various taxonomic, genetic, and ecological relationships and links. Thus, one needs to consider the multidimensional facets of biodiversity when explaining its critical role in providing goods and services and maintaining ecosystem functioning.

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