

Evaluating the conservation contributions of ecotourism

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INTRODUCTION

Global biodiversity is under threat, and there is widespread agreement that the planet is currently facing a global extinction crisis (Becker, Agreda, Astudillo, Costantino, and Torres, 2005; Bradshaw, Sodhi and Brook, 2009; Kingsford et al., 2009; Pimm et al., 2014). Conservation efforts are coming under increasing pressure worldwide through reductions in funding for public protected area agencies; continued clearance and degradation of land outside protected areas; climate change; growth of human populations; and an increase in both subsistence and industrial primary production. Ecotourism is promoted for its potential to act as a conservation mechanism by addressing these problems (Brightsmith, Stronza and Holle, 2008; Buckley, 2010; Stronza and Durham, 2008). To date, however, there has been no global review and evaluation of the overall conservation contributions of the ecotourism industry.

We therefore developed a framework to evaluate the conservation achievements of individual ecotourism sites, businesses and programs. We constructed a comprehensive list of actions that ecotourism enterprises can undertake to achieve conservation goals, and the outcomes these actions can have. While the ecotourism industry also creates a range of negative impacts (Ansong and Pickering, 2013; M. Ballantyne and Pickering, 2011; Batta, 2006; Steven, Pickering and Castley, 2011), our framework focuses on the potential to make positive contributions to conservation. We tested the framework by applying it to 86 Australian

tourism enterprises with advanced level eco-certification through Ecotourism Australia.

LITERATURE REVIEW

Ecotourism has been shown to contribute to conservation through a variety of direct (Blangy and Mehta, 2006; Buckley, 2010; Stronza and Durham, 2008) and indirect methods (R. Ballantyne and Packer, 2011; Balme et al., 2013; Brightsmith et al., 2008; Skibins, Powell and Hallo, 2013). As of early 2016, 70 articles worldwide had examined the conservation outcomes of ecotourism in practice (Wardle, Buckley and Shakeela, in review). Each of these examined only a single or small group of sites, utilized different methodologies and covered different areas of conservation practices. The majority focused on visitor interpretation and community actions.

There are several previous reviews and frameworks of ecotourism conservation contributions, but all have shortcomings. Ardoin, Wheaton, Bowers, Hunt, and Durham (2015) reviewed 30 empirical studies but addressed only one conservation action and two conservation outcomes, namely tourists' environmentally related attitudes and behaviors after exposure to environmental interpretation. Mossaz, Buckley, and Castley (2015) examined only three species on one continent. Buckley (2009) focused on net environmental outcomes, and included only a few conservation mechanisms.

METHODOLOGY

Literature searches were conducted in Web of Science®, Scopus®, Leisure Tourism® and Google Scholar®. Over 3,000 papers were searched for examples of measurable conservation parameters. In addition to the academic literature, the full set of ECO Certification parameters used by Ecotourism Australia was reviewed, as well as all publicly available parameters listed by other ecotourism certification bodies including The Green Key, Global Sustainable Tourism Council, Rainforest Alliance, Biosphere Responsible Tourism, and Green Globe. The findings were constructed into a framework, with both the actions and outcomes categorized into 5 sections according to their focus: the physical natural environment, biology and wildlife, visitors, staff and the local community, and large scale organizational and political factors.

The physical natural environment and the wildlife categories of the framework were applied to 86 fixed-site ecotourism enterprises with Advanced Ecotourism Certification under Ecotourism Australia, the not-for-profit industry association responsible for the design and management of the Australian ECO Certification Program since its creation in 1996. Data were obtained through analysis of documentary sources including: certification applications, supporting data and audits; company websites; and independent third-party publications. These data were initially extracted as text quotes, which were used directly for qualitative analyses.

They were also converted to quantitative categories, as feasible, for quantitative pattern analysis. Quantitative or categorical data were also compiled on enterprise characteristics such as turnover, size, age, guest capacity, and ecosystem or biome.

Links between individual conservation actions and outcomes, and characteristics of the enterprises concerned, were examined using pairwise tests of association (chi-square with Bonferroni adjustment), using the statistical package SPSS®; and multivariate approaches such as principal coordinates analysis, using the statistical package PRIMER®.

Qualitative data analyses were conducted on text extracts obtained as above. The approach used a combination of data-driven and theory-driven codes. Deductive coding was used to code text to each of the framework parameters that had been developed from the literature, and inductive coding was then used to investigate themes within each parameter. Multiple coders were used to enhance reliability.

RESULTS

The framework identified 30 distinguishable conservation actions and 32 conservation outcomes. Of these, 14 actions and 15 outcomes were related to wildlife or the natural physical environment. The most commonly undertaken actions were: weed removal, revegetation, and rubbish clean-up programs. The most common outcomes were: increased habitat connectivity, and improved vegetation density and habitat. The extent of conservation activities varied considerably; however, all sites undertook at least nine actions or more, and nearly half of the sites state that they have adopted at least half of the listed actions. A number of correlations were identified between particular conservation actions and enterprise turnover, size, age, guest capacity, or biome. Final outcomes are less often mentioned. In part, this may reflect difficulties in measuring outcomes with confidence, and the lack of focus on outcomes in the certification program. The certification application is predominantly a presence/absence check-list, but several sites provided greater detail. Common themes included the extent of their actions, costings, challenges, motivations, man-hours and volunteer/guest labor.

CONCLUSION AND IMPLICATIONS

This study establishes the first comprehensive list of conservation actions and outcomes for the systematic evaluation of ecotourism sites, businesses and programs. This framework enables comparisons across locations, sectors and time scales, and can be used to determine if investments of time and resources are achieving desirable outcomes. It can also be applied more broadly in conservation management, eco-certification, and the tourism industry. Results from the Australian test show that many ecotourism enterprises are enthusiastic about conservation, but the depth of analysis is severely limited by lack of quantitative data. Substantially more detailed evidence will be required if ecotourism is to gain recogni-

tion and support for its contributions to conservation. At least for higher-tier eco-certification, therefore, checklist-based systems will need supplementation with quantitative and ecologically meaningful measurements.

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