Research Letter

Rewilding South America: Ten key questions

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A R T I C L E   I N F O

Article history:
Received 5 June 2017
Accepted 28 September 2017
Available online xxx

Keywords:
Rewilding
South America
Socio-ecological system
Brazil
Chile
Baselines
Scale
Cerrado

A B S T R A C T

There are various approaches to rewilding, corresponding to different socio-ecological and policy contexts. Most South American ecosystems have experienced Pleistocene and historical defaunation and the functional persistence of many areas will depend on restoration and rewilding. Rewilding is not seen as a priority or as a tool for restoration in South America, but we argue that several concepts could potentially be adapted to their contexts to respond flexibly to developing socio-ecological conditions. Here, we consider 10 questions that rewilding projects should consider, and we provide examples of how these questions are relevant to South America and how they have been answered already, in some cases. The 10 questions include: What role should humans play in rewilding projects? How can society deal with monsters? Is there a rationale for non-analogue rewilding? How do we justify baselines? Is it possible to do rewilding with small species? What is the right scale for a rewilding project? Should rewilding projects worry about sample size and pseudo-replication? When should we rewild carnivores? Do we need to distinguish rewilding from safari parks and zoos? What should be included in integrated monitoring and assessment? The questions we raise here do not have general answers optimal for all situations, but should be answered with reference to the socio-ecological conditions and transformational possibilities in different areas of South America.

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Introduction

Rewilding is one of the most vigorously debated topics in conservation (Nogues-Bravo et al., 2016; Rubenstein and Rubenstein, 2016; Svenning et al., 2016; Lorimer et al., 2015; Caro and Sherman, 2009; Fraser, 2009), despite, or perhaps because of, a lack of agreement about how it is defined and applied. Perhaps the broadest definition is restoration through reintroduction (Sandom et al., 2012), usually of one or more animal species that became recently extinct (in a historical context) in the intervention area and, more rarely, of ecological surrogates for globally extinct species. Due to their ability to capture the public imagination, rewilding projects are likely to expand dramatically in both number and scope over the following decades (Corlett, 2016). Some will be well controlled, carefully monitored and painstakingly documented within the academic literature. Perhaps the majority will not, being sponsored by individuals and organizations whose over-riding motivation is to recreate past worlds. Most rewilding projects, and surrounding debates, are currently located in Western Eurasia and North America. In the South American context, the distinction between rewilding and species reintroduction is not always well-developed. Here we examine how South American initiatives could position themselves in the design of rewilding projects. We do not attempt to tell South American (or any other) rewilders what they are doing or what they should be doing, but attempt to trace the main influences and questions that need to be considered in order to develop site-specific applications of rewilding. Like most managers who actually pursue rewilding approaches (Gooden et al. in prep.), we believe that contextual and site-specific interpretations will be more successful, and better for nature, than command-and-control approaches with one-size-fits-all definitions and recommendations.

Two major strands of thinking underpin current trends in rewilding. The ‘Herbivore school’ is primarily interested in the relationships between large herbivores and vegetation (Martin,
Conceptually this approach draws on predominantly European experiences with habitat restoration in cultural landscapes using domestic livestock (Van Uytvenck and Verheyen, 2014) (Fig. 1). In contrast, the ‘Carnivore school’ is characterized by an emphasis on conserving very large tracts of land to support top predators and their prey (Soulé and Noss, 1998; Foreman, 1998), and strongly draws on North American cultural mythology of wilderness. However, the use of the term rewilding in applied projects does not necessarily follow these ideological or geographical lines. We surveyed the mission statements of protected areas and societies (see Table 1) that either (1) describe themselves as doing “rewilding”, (2) are described in the academic literature or the popular press as doing “rewilding”, or that (3) have similar goals and use recognisably similar language as compared to organizations fitting either of the above criteria. Based on a content analysis, three main groupings emerged: organizations that focus on baselines, those that focus on ecosystem processes, and those that focus on conserving large spaces. These groups were not characterized by a particular geographical location. Jorgensen (2015) similarly finds a large variation of ideas contained within academic research and popular writing on rewilding.

A focus on ecosystem processes implies a functionalist approach (focusing on ecological functions rather than species identities, cf. Callicott et al., 1999) and organizations with this focus make little mention of cultural or social goals. In contrast, a focus on baselines suggests a more compositionalist emphasis (that is, focused on what species are present), and these organizations also had a greater emphasis on cultural and social goals. These differences may reflect the implicit assumption that ecosystem functioning is intended to benefit humans (e.g. ecosystem services) while a compositionalist approach requires a more explicit, additional justification of social value. In this context rewilding in practice appears less an ideological stance and more a label co-opted to attract public attention to existing approaches responding to a range of concerns. This capacity to engage the public’s imagination, while often ignored in the academic conservation literature, is perhaps the key aspect that differentiates rewilding from more traditional initiatives labelled as species reintroductions or habitat restoration.

It is important to note that there is no particular necessity to promote rewilding as a conservation approach in South America; South American conservationists might develop their own conservation approaches based on other philosophies and policy contexts. Nonetheless, rewilding responds to a set of ecological problems present on the continent, and designing species reintroductions to produce ecological restoration and social change, forming variations on rewilding, could be a valuable complementary strategy that is responsive to social dynamics of land use. Major South American ecosystems, including rainforests, seasonally dry forests, savanna and open woodlands, sclerophyllous forest, wetlands, shrublands and grasslands are in urgent need of restoration and improved conservation and management (Naranjo, 1995; Armesto et al., 1998; Cardoso da Silva and Bates, 2002; Mayle et al., 2007; Grau and Aide, 2008; Newton et al., 2012; Root-Bernstein and Jaksic, 2013; Ribeiro et al., 2015). These ecosystems have experienced significant defaunation, both during the Pleistocene-Holocene megafaunal extinctions (Cartelle, 1999; Guimarães et al., 2008) as well as due to modern land use and land cover change (Armesto et al., 2010; Jorge et al., 2013) and unregulated resource extraction often driven by telecouplings to more-developed economies (Gasparri and Waroux, 2015; Young et al., 2016; Nolte et al., 2017). As in Europe, rewilding could offer an opportunity to reassess the modern and traditional elements of socio-ecological systems and human relations to other species. At the same time, the social context for conservation and land management is significantly different from North America and Europe. For example, issues of indigenous rights and indigenous land tenure, governance, and traditional land uses are much more politically relevant and sensitive in many areas of South America as compared to North America (Stocks, 2005; Dove, 2006). Poor non-indigenous settlers or peasants are also an important group, and rural underdevelopment is common throughout the region (Kay, 2006).

These cultural differences mean that North American and European perspectives on rewilding may have considerably less traction among South American conservation constituencies. As an illustration, while the notion that there are large areas of “untouched wildland” is a recurrent theme in colonial accounts of South America, such a framing would be strongly and publicly contested by indigenous groups. By contrast, many European models of rewilding are built around developing alternate conservation and rural livelihood models on abandoned farmland or other available landholdings. These models constitute a clear attempt to reconfigure land management practices and human relationships to the land in the face of changing socio-economic situations and unsatisfactory conservation management regimes (Navarro and Pereira, 2012; Jepson, 2016). In South America, land use practices in many areas reflect a strong colonial legacy combined with a more recent imposition of neo-liberal principles. There are also large areas (e.g. the Amazon region) with a strong indigenous presence and a greater emphasis on traditional land-use practices. In other words, the problems that need to be solved and the systems that society is
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