



# Ecology careers in ecotourism



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In the tiger reserves of central India, fleets of four-wheel-drive vehicles carrying tourists hurtle over the dirt roads, causing substantial disturbance to wildlife. At the same time, however, the government agency that manages the reserves relies on tourist entry fees, which are more immediate and reliable than government budget allocations, to compensate local residents for any livestock killed by tigers. Frequently, these residents live and work immediately outside the reserves, and in some cases inside them. The local people know where the tigers are, and can lead poachers to them, or steer them away. That choice determines the tigers' fate, and it depends directly on those entry fees. From a single-species conservation standpoint, the benefits of tourist fees outweigh the costs of disturbance from tourism.

At the office of the Park Director for one of the reserves, a local woman was waiting to make a claim. Her husband had been killed by a tiger when he tried to defend their cattle, which he had been grazing in the park. His widow was entitled to a substantial lump sum in compensation. Without the fees from ecotourists, the Director would not have had funds to pay this compensation. He was also using these funds to build fences along sections of the reserve boundary closest to villages, to keep cattle out of the reserve. Shortly afterwards, the Indian Supreme Court convened to determine whether tourism in tiger reserves should be banned, because of disturbance from vehicles. Given the importance of tourism revenue in mitigating the effects of human-wildlife conflict, they decided not to invoke a ban.

This particular case reflects several general considerations in the field of ecotourism. The activities of tourists have adverse environmental impacts, but also generate funds used for conservation. In some instances, the positive consequences for threatened species can outweigh the negative. Importantly, earnings from ecotourism have the potential to change the behaviors and practices of local communities. Ecotourism enterprises, non-governmental organizations (NGOs), and parks agencies leverage their limited funds to harness this potential.

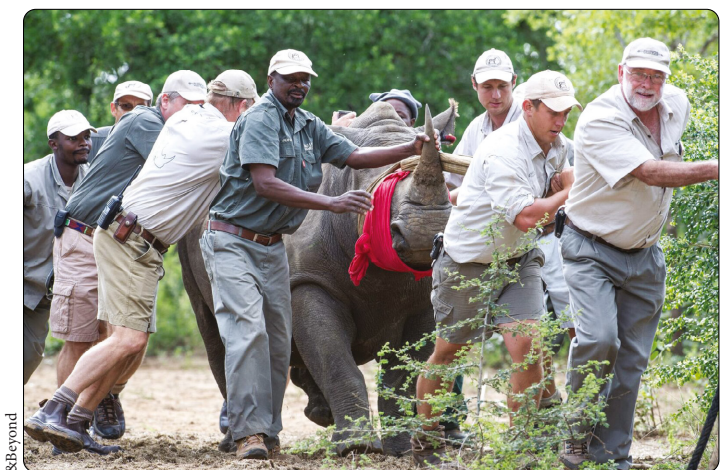
Ecotourism has grown to become a major contributor to biodiversity conservation (Figure 1), especially in developing nations where parks agencies are poorly funded by governments. The ecotourism industry now supports many public, communal, and private protected areas. It also supports large-scale veterinary, breeding, translocation, monitoring, snare removal, and anti-poaching programs for numerous imperiled

species. But tourism funding depends on commercial businesses and markets, and ecotourism is a complex sector with many stakeholders.

Ecologists are needed to measure and minimize tourism-based impacts as well as to strengthen existing conservation practices. For those who aspire to be ecotourism practitioners (WebFigures 1–3), minimizing such impacts is important, but often unglamorous. Grease traps and sewage systems must be cleaned. Soil, weeds, seeds, and fungal spores have to be removed from earthmoving equipment. Invasive plants need to be cleared, and feral animals must be trapped. These are often tedious tasks, but the job provides ample compensation: magnificent sightings of wild animals and plants, including beautiful birds and ancient trees, and meetings with inspirational people.

For the ecologist who seeks a career in ecotourism, there are opportunities to work in research organizations, parks agencies, NGOs, and private enterprises, all of which require an appreciation of people, politics, and tourism, as well as plants and animals. Professional pathways to these careers are largely ad hoc rather than predefined. Previous contributions in *Frontiers'* careers series have advised how to find jobs in government agencies or private consulting, and similar advice applies in ecotourism: understand the sector, go to its meetings and conferences, and talk to employers in person, where you can demonstrate your skills and enthusiasm. Many countries have their own national ecotourism associations; many academic and professional conferences on conservation, geography, and tourism have ecotourism sections; and many universities worldwide offer bachelors, masters, and doctorate programs in ecotourism and related fields. Ecologists interested in this path may find it useful to read tourism journals and textbooks, and to talk with colleagues in university tourism departments, visitor management sections of parks agencies, and government tourism marketing agencies. In addition, most ecotourism career opportunities involve living or working in developing nations. Previous travel, even when on vacation, can provide experience with different environments, societies, and cultures.

Ecologists interested in careers in ecotourism should develop practical capabilities in the field, by taking field courses or volunteering for research projects or with parks agencies. Proficiency in activities such as hiking, off-road driving, horseback riding, boating, navigation, terrain/map reading, weather prediction, photography/videography, and



**Figure 1.** Ecologists and field staff of Rhinos Without Borders (RWB) moving a rhino in preparation for air translocation between South Africa and Botswana. RWB is a partnership between ecotourism operators &Beyond and Great Plains Conservation, with assistance from Rhino Conservation Botswana and Wilderness Safaris. Les Carlisle, Director of Conservation for &Beyond, appears at the far right.

wilderness camping is useful. Ecology-specific skills include species identification, animal tracking, bird-call recognition, and an ability to read both animal and human behavior, so as not to disturb wildlife or endanger tourists. The most successful ecotourism guides and entrepreneurs are also able to engage with a variety of audiences and convey information in intriguing ways, treat everyone with equal dignity, and take interest in all lives and individual circumstances. Patrons and presidents; backpackers and billionaires; local Indigenous people; people of all ages and all political, cultural, and religious affiliations: a career in ecotourism often involves interacting with any or all of these groups.

Worldwide, the larger ecotourism companies (see best-practice examples listed in WebPanel 1) run their own guide training courses, covering practical, ecological, and hospitality skills. Their graduates are in high demand, but the courses are highly competitive, and prior experience is usually a prerequisite. Several NGOs also offer ecotourism development and guiding courses, often supported by donor funding. In some countries, ecotourism guides can obtain certificates from ecotourism industry associations; must have their qualifications formally assessed by government parks agencies; or are required to earn a generic guiding

certificate, a certificate of competency for activities such as driving a vehicle or boat, and/or local naturalist certificates demonstrating their ability to identify plants and animals in a particular region.

If ecologists want to show their value as ecotourism employees, they must speak the languages of the social sciences, of politics and business, and of the natural sciences. To help learn some of the lingo, you can compare tourism articles in conservation journals with conservation articles in tourism journals, as well as read the conservation sections on selected websites and blogs of ecotourism enterprises, which tend to have a more practical emphasis. Marketing sections of the same websites reveal how ecological information is used to attract paying customers, or to persuade government agencies to issue operating permits.

Ecotourism can be a challenging and complex career choice for an ecologist, but it is one with immediate real-world consequences. Populations of many species are declining dramatically, and threats to wildlife have grown in number and intensity. But most species still survive, and some populations are increasing. In numerous cases, parks agencies, conservation NGOs, international agreements such as CITES and CBD, and ecotourism are largely responsible for these positive trends. In many less wealthy nations, paying visitors have kept parks alive. Ecotourism can make critical contributions to conservation, which is surely a worthy career choice for any ecologist.

## ■ Supporting Information

Additional, web-only material may be found in the online version of this article at <http://onlinelibrary.wiley.com/doi/10.1002/fee.1999/supinfo>

## ■ Author biography

**Ralf Buckley** holds the International Chair in Ecotourism Research in the School of Environment at Griffith University, Australia, and is Distinguished Visiting Professor at the Chinese Academy of Sciences. An ecologist by training, his research focuses on the use of ecotourism as a tool in conservation.