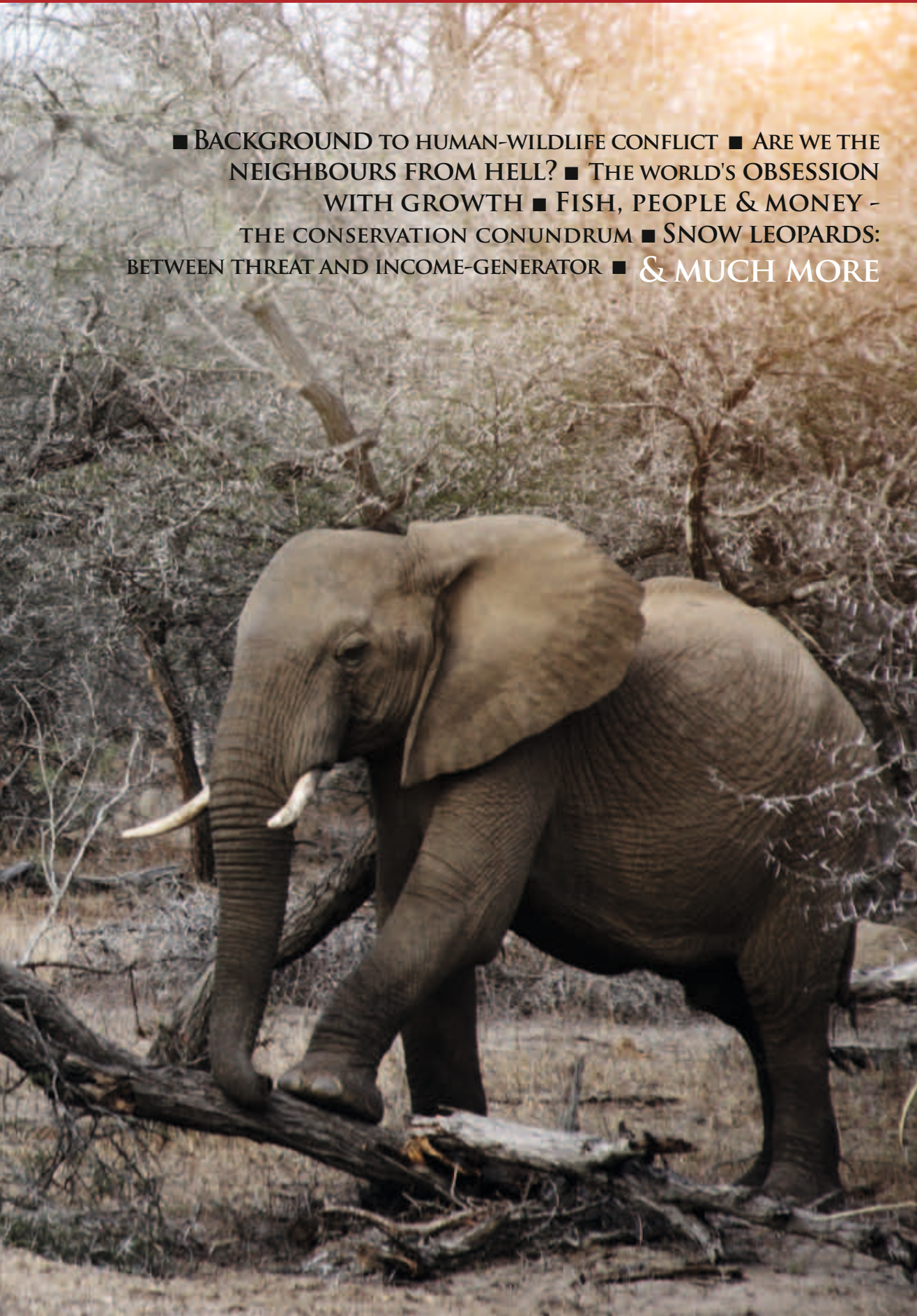


HUMAN-WILDLIFE CONFLICT

ISSUE



■ BACKGROUND TO HUMAN-WILDLIFE CONFLICT ■ ARE WE THE
NEIGHBOURS FROM HELL? ■ THE WORLD'S OBSESSION
WITH GROWTH ■ FISH, PEOPLE & MONEY -
THE CONSERVATION CONUNDRUM ■ SNOW LEOPARDS:
BETWEEN THREAT AND INCOME-GENERATOR ■ & MUCH MORE



20
14
magazine



Welcome

A new year, a new Magazine theme. Welcome to the 2014 edition of our annual Magazine, now in its fifth year, and the theme **human-wildlife conflict**. This is one of the hottest topics in conservation and one we come across again and again in our work, whether through the successful conservancy model that has made Namibia a showcase for community-led conservation, or through fishermen in Oman resisting our efforts to establish a Marine Protected Area, because they think that protection equals no more fishing. Education is key, as is the concept of 'what pays, stays' – which is explored in more detail in the leading article starting on page 18. Also in this Magazine are round-ups of all our expeditions, projects and taster days; news, press clippings & views; articles on human-wildlife conflict (and resolution) from our field scientists around the planet; as well as other snippets of information from the world of Biosphere Expeditions and wildlife conservation. Enjoy the read – and thank you again to Malika Fettak for another Magazine job well done.



Dr. Matthias Hammèr
Founder & Executive Director



Kathy Gill
Strategy Director



about us • über uns • á propos



Advancing wildlife conservation – for nature, not profit

Biosphere Expeditions is an award-winning not-for-profit conservation organisation. For us successful conservation is the collective effort of individuals. We invite everyone to join us on our wildlife and wilderness projects all over the world.

The foundation of our work is science and local need. We focus on sustainable conservation projects that target clearly defined, critical issues that humankind has the power to change. International volunteers work hand-in-hand with local biologists and communities to drive positive outcomes for biodiversity - the

creation of a protected area for snow leopards in the Altai is just one recent example.

Biosphere Expeditions is a member of the IUCN (International Union for the Conservation of Nature) and of the United Nations Environment Programme's (UNEP) Governing Council & Global Ministerial Environment Forum. Achievements include the implementation of our conservation recommendations and species protection plans by numerous national and regional governments and NGOs, the creation of protected areas on four continents, scientific and lay publications, as well as capacity-building, training and education all over the world.

Artenschutz fördern – damit Natur profitiert

Biosphere Expeditions ist eine gemeinnützige, mehrfach ausgezeichnete Naturschutzorganisation. Wir sind überzeugt, dass erfolgreicher Naturschutz das Ergebnis von Zusammenarbeit auf vielen Ebenen ist. Deshalb motivieren wir Menschen weltweit sich als aktive Teilnehmer in unseren Projekten rund um den Globus zu engagieren.

Wir arbeiten wissenschaftlich mit Blick auf lokale Erfordernisse. Dabei konzentrieren wir uns auf langfristig angelegte Projekte, die klare und vor allem erreichbare Ziele haben. Freiwillige Helfer aus aller Welt arbeiten Hand in Hand mit Feldforschern und den Menschen vor Ort für den Erhalt der Artenvielfalt. Die Schaffung

eines Schutzgebietes für Schneeleoparden im Altai ist nur ein Beispiel aus der jüngsten Vergangenheit.

Biosphere Expeditions ist Mitglied der IUCN (International Union for the Conservation of Nature) und des Umweltprogrammes der Vereinten Nationen (UNEP). Zahlreiche nationale und regionale Regierungen setzen unsere Empfehlungen zu Natur- und Artenschutzstrategien um. So haben wir zur Schaffung von Schutzgebieten auf vier Kontinenten beigetragen. Außerdem fördert Biosphere Expeditions die Ausbildung von einheimischen Fachkräften und schafft damit lokale Kapazitäten. Forschungsergebnisse werden regelmäßig in Fachzeitschriften und anderen Medien weltweit publiziert.

Promouvoir la conservation de la vie sauvage – pour la nature, pas le profit

Biosphere Expeditions est une organisation à but non lucratif, plusieurs fois primée. Pour nous une conservation réussie de l'environnement est un effort collectif d'individus, donc venez nous rejoindre sur un de nos projets portant sur la faune et l'environnement partout dans le monde.

Les bases de notre travail sont la science et les besoins locaux. Nous sommes attachés à des projets de conservation durable avec des buts clairement définis sur des thèmes cruciaux que l'humanité a le pouvoir de changer. Des volontaires du monde entier travaillent main dans la main avec des biologistes et les communautés locales afin d'obtenir des résultats positifs pour la biodiversité. La création d'une zone protégée pour

les léopards des neiges dans l'Altai en est l'un des exemples les plus récents.

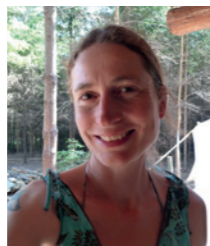
Biosphere Expeditions est membre de l'UICN (Union Internationale pour la Conservation de la Nature) et du Conseil d'administration/Forum ministériel mondial sur l'environnement du Programme des Nations Unies pour l'Environnement (PNUÉ). Nos réalisations comptent également l'adoption par plusieurs gouvernements nationaux ou locaux et par des ONGs de recommandations de plans de conservations et de protection d'espèces ainsi que la création de zones protégées sur quatre continents, des publications (scientifiques et grand public), ou bien le renforcement des capacités, la formation et l'éducation à travers le monde.

**The backbone of Biosphere Expeditions:
meet the staff**

Biosphere Expeditions employs a global team of wildlife enthusiasts who all contribute to the success of the organisation: expedition leaders, scientists, field-based and administrative staff. Their roles are as diverse as their backgrounds, but they all share a love of the outdoors and wildlife. Here is just one of our team and more can be found at www.biosphere-expeditions.org/staff.

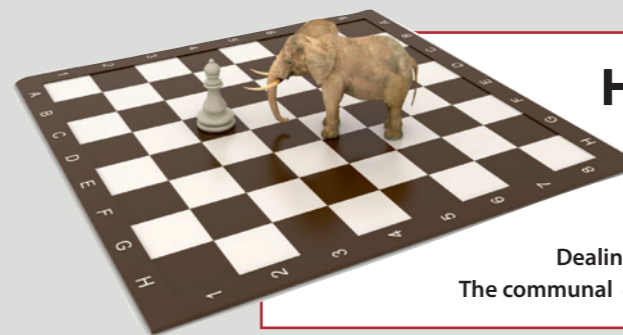
KATE FOX

graduated from The University of Wales, Aberystwyth, with a degree in Rural Resources Management and went on to volunteer locally as a nature reserve warden followed by a year as a practical conservation officer in the north of England. She then worked a summer season in Cumbria as a conservation project coordinator and leader and has led international conservation projects since 1997 in Europe, USA, Canada, New Zealand and Japan. She particularly loves wildlife and wild places and generally being outdoors. She has done numerous long distance hikes and canoeing/sea kayaking expeditions in the UK and overseas. When not leading expeditions, Kate lives a low-impact, off-the-grid lifestyle in a West Sussex woodland, where she is as self sufficient as possible in fruit and vegetables, keeps chickens and quail for eggs and rears her own pigs. Have a look at her blog at [hand article](#) on page 51.



contents

LEAD TOPIC



**HUMAN-WILDLIFE
CONFLICT**

Background ·
Dealing with human-wildlife conflict ·
The communal conservancy system in Namibia

18



**ROUND UP
and the world's obsession
with growth**

14



**KATE FOX
is not normal**

50



Are we the
NEIGHBOURS FROM HELL?

18



**FISH, PEOPLE
& MONEY -
the conservation
conundrum**

26



**WHALES & DOLPHINS
of the Azores**

32

From destructive exploitation
to a thriving tourist industry



**SNOW LEOPARDS
between threat
and income-generator**

36

STORIES

BACKGROUND

- Welcome **3**
- About us **4**
- Meet the staff **6**
- Status quo of **30**
Biosphere Expeditions' marine projects
- News & views **42**
- Alumni news **44**
- The three pillars of Biosphere Expeditions funding **53**

INFO

- Contents - Editorial **6**
- Map of conservation projects worldwide **8**
- Expeditions info A-Z **10**
- The Friends of Biosphere Expeditions
& the Look Ahead network **46**
- Taster days / sampler days **56**
- Schnuppertage **57**
- Media clippings **58**

BACKGROUND
& INFO

EDITORIAL
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SAMPLER DAYS U.S.



SCOTLAND

TASTER DAYS UK

SCHNUPPERTAGE DEUTSCHLAND

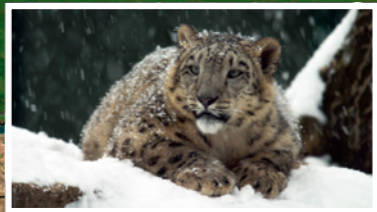
SLOVAKIA



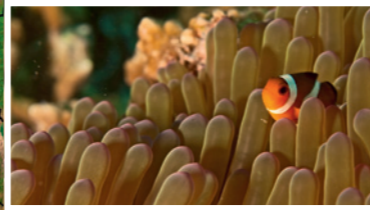
ARABIA

MUSANDAM

TIEN SHAN



AZORES

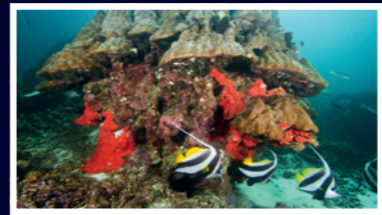


MALAYSIA

AMAZONIA



MALDIVES



NAMIBIA



TASTER DAYS AUSTRALIA

WESTERN AUSTRALIA



CONSERVATION PROJECTS WORLDWIDE

EXPEDITIONS INFO A-Z



AMAZONIA - PERU

Amazonian plethora: biodiversity monitoring of jaguars, pumas, primates and other flagship species of the Peruvian Amazon

This expedition will take you to a remote biodiversity hotspot of the upper Amazon rainforest. As part of a small international team, you will experience living and working in the jungle together with local biologists on an important wildlife survey concentrating on cats, primates and other flagship species of the Amazon to aid community conservation efforts and the development of sustainable management strategies. Based at a comfortable jungle lodge in a remote part of the forest, you will be working on foot on the largest trail grid in the entire Amazon and in canoes on natural waterways through the jungle, recording species, setting camera traps, creating databases, etc. All this as an integral part of a conservation project that will preserve an intact landscape of forest for further multidisciplinary research projects.

DATES

July/August 2014

TEAM ASSEMBLY POINT

Iquitos, a well-known regional centre in the Peru Amazon.

MORE INFORMATION

www.biosphere-expeditions.org/amazonia

AWARDS

This project was honoured in responsibletravel.com magazine's "Top Responsible Holiday" list. A photo from this expedition won a Pan-European photography competition.



ARABIA - U.A.E.

Ways of the desert: conserving Arabian oryx, Gordon's wildcat and other species in the iconic sandy desert landscape of Arabia

This conservation project will take you to the iconic sandy desert landscape of the Arabian Peninsula. Working alongside scientists from the Dubai Desert Conservation Reserve, you will be part of a small international team, monitoring Arabian oryx, Gordon's wildcat and other desert species. From our comfortable oasis field camp you will venture out in the expedition 4WDs and on foot to study oryx behaviour and social structures, camera- and live-trap Gordon's wildcat and monitor Macqueen's bustard by radio and GPS telemetry. All this because the three main study species are on the IUCN Red list and the expedition's work will help to ensure the survival of the species in the wild.

DATES:

January 2014

TEAM ASSEMBLY POINT

Dubai, United Arab Emirates.

MORE INFORMATION:

www.biosphere-expeditions.org/arabia

AWARDS

This project was honoured in The Independent's "Best Desert Adventure Holidays" list.



AZORES - PORTUGAL

Fascinating creatures of the deep: Studying whales, dolphins and turtles around the Azores archipelago in the Atlantic Ocean

This project will take you to the Azores Archipelago in the middle of the Atlantic Ocean to study whales, dolphins and loggerhead turtles. You will photograph whales and dolphins and record them for local and international monitoring databases as part of a small international team. You will listen to and make recordings of whale and dolphin vocalisations and capture loggerhead turtles in the open ocean for tagging and release. All this in an effort to elucidate the animals' life histories and migration patterns across the oceans and assist with the formulation of effective conservation strategies. The whole team will be working on a modern catamaran research boat during the day. Please note that a diving qualification is NOT required for this expedition.

DATES

April 2014

TEAM ASSEMBLY POINT

Horta, the main town on the island of Faial.

MORE INFORMATION

www.biosphere-expeditions.org/azores

AWARDS

This expedition was honoured in The Independent on Sunday's "Top Ten Outdoor Pursuits" list, in Islands magazine's VolunTourism Blue List, where it won the "Best in Sustainable Travel" award, and also in The Guardian's "Ten Best Wildlife Holidays in Europe" list.



MALAYSIA

Paradise in peril: studying & protecting reefs, sharks, dolphins and turtles of the Pulau Tioman Marine Park, Malaysia

This SCUBA diving project will take you to Tioman, the Malaysian island named by Time Magazine as one of the world's most beautiful. Working in

a very small group of five participants, one scientist and one expedition leader, you will assist the local researcher to study and protect the local Marine Park's beautiful but fragile coral reefs, as well as its marine megafauna such as sharks, dolphins & turtles. For the first five days of training and familiarising yourself with the Reef Check research techniques, you will be based at a beach chalet resort on Tioman island. After this, you will move to a 45 ft sloop rig sailing yacht research vessel, which will take you to remote areas of the Marine Park. The expedition includes training as a Reef Check EcoDiver; with this qualification you are eligible to apply for PADI or NAUI Reef Check Speciality Course certification after the expedition. Please note that you need to be a fully qualified diver to take part in this expedition (minimum PADI Open Water or equivalent) and that you can obtain this qualification on site prior to the expedition (allow four to five extra days).

DATES

This expedition is on sabbatical in 2014 whilst our research vessel undergoes a complete overhaul. It will make a comeback in 2015.

TEAM ASSEMBLY POINT

Tioman island, Malaysia.

MORE INFORMATION

www.biosphere-expeditions.org/malaysia

AWARDS

This expedition was honoured in Endless Vacation's "Best Trip to Offer a Way Back" list. Biosphere Expeditions was also named on the Travel with a Mate's "Best Volunteer Dive Organisations" list.



MALDIVES

Little and large: surveying and safeguarding coral reefs & whale sharks in the Maldives

This SCUBA diving conservation project will take you to the beautiful 26 coral atolls that make up the Republic of Maldives. There you will help marine biologists study and protect its spectacular coral reefs and resident whale shark population. All this because the Maldives government identified a need for further research and monitoring work as far back as 1997. Biosphere Expeditions is addressing this need with your help and will train you as a Reef Check EcoDiver. With this qualification you will then gather important reef and whale shark data and you will also be eligible to apply for PADI or NAUI Reef Check Speciality Course certification after the expedition. Please note that you need to be a fully qualified diver to take part in this expedition (minimum PADI Open Water or equivalent).

DATES

September 2014

TEAM ASSEMBLY POINT

Male', the capital of the Maldives.

MORE INFORMATION

www.biosphere-expeditions.org/maldives

AWARDS

The Maldives expedition was honoured in Outside magazine's "Trips of the Year" list and by Divernet magazine named an "Unforgettable Diving Holiday". Biosphere Expeditions was named on the Travel with a Mate's "Best Volunteer Dive Organisations" list.



MUSANDAM - OMAN

Underwater pioneers: studying & protecting the unique coral reefs of the Musandam peninsula within Oman & UAE

This expedition will take you to the United Arab Emirates and from there to the remote and mountainous Musandam peninsula of Oman. There you will study the diverse coral reefs fringing the areas where the mountains plunge into the Arabian Gulf and the Gulf of Oman. This is a pioneering study to map this currently unprotected underwater environment. The reefs boast a rich mixture of beautiful corals and a multitude of fish and other animals. Data on the current biological status of the reefs and of population levels of key indicator species are therefore crucial for educational purposes and to be able to put forward ideas for future marine protected areas. Data collection follows an internationally recognised coral reef monitoring programme, called Reef Check, and will be used to make informed management and conservation decisions within the area. The expedition includes training as a Reef Check EcoDiver. With this you are also eligible to apply for PADI or NAUI Reef Check Speciality Course certification. Please note that you need to be a fully qualified diver to take part in this expedition (minimum PADI Open Water or equivalent).

DATES

October/November 2014

TEAM ASSEMBLY POINT

Dubai, United Arab Emirates or Khasab, Oman.

MORE INFORMATION

www.biosphere-expeditions.org/musandam

AWARDS

This expedition was honoured in The Independent's "Best Activity and Adventure Breaks" list and in Travel + Leisure's "Best Save-the-Earth Trips" list. Biosphere Expeditions was also named on the Travel with a Mate's "Best Volunteer Dive Organisations" list.



NAMIBIA

A game of cats & elephants: safeguarding big cats, elephants and other species of the African savannah, Namibia

This expedition will take you to the beautiful Khomas Hochland (highlands) in central Namibia to conduct a survey of elephants and African cats (mainly leopard, but also cheetah and caracal)

and their interrelationship with humans and prey animals (such as giraffe, eland, kudu, zebras, etc.). As part of a small team you will learn some bush skills and then follow elephants and cats on foot or in the expedition vehicles to record information about the animals' behaviours. You will also set camera and live traps, conduct game counts and you may assist with cat capturing and collaring. All this in an effort to mitigate human-wildlife conflict and create a sustainable future for all.

DATES
August - November 2014

TEAM ASSEMBLY POINT
Windhoek, the capital of Namibia.

MORE INFORMATION
www.biosphere-expeditions.org/namibia

AWARDS:
This expedition was honoured in National Geographic Traveler magazine's "Tours of a Lifetime" list, in Wall Street Journal's "Best Volunteer Travel" list and in Business Insider's "Best Volunteer Vacation" list. A scientist was made a laureate of the environmental prize "Trophée de femmes" of the Yves Rocher Foundation for work on this project.



SCOTLAND

**Awesome orcas and their relatives:
Studying basking sharks, whales, dolphins and other
cetaceans around the Hebridean Islands of Scotland**

This expedition will take you to the spectacular coastline of the Hebridean islands on the west coast of Scotland to study iconic cetaceans (whales, dolphins and porpoises) and basking sharks. You will collect detailed data on their distribution and relative abundance using various methods such as visual and passive acoustic surveying, photo identification and environmental monitoring. Sailing around the Hebrides, you will eat, sleep and work onboard a sailing yacht, all in an effort to safeguard the continued survival of cetaceans and basking sharks in Scottish waters.

DATES
This expedition is on sabbatical in 2014 whilst our local partners conduct a review. We hope it will make a comeback in 2015.

TEAM ASSEMBLY POINT
Oban, a resort town in western Scotland, easy to reach by car, coach or train or plane via larger cities in the UK.

MORE INFORMATION:
www.biosphere-expeditions.org/scotland



SLOVAKIA

**True white wilderness: winter lynx, wolf and wildcat
tracking in the Carpathian mountains of Slovakia**

This conservation project will take you to the Carpathian mountains of Slovakia to monitor lynx, wolf & wildcat populations and their interrelationship with prey species. You will be part of a small international team, working with the local scientist and contributing to an important piece of research. You will track large carnivores through snow in the forest and meadow habitats of the mountains (using snow shoes, which are easy to use) and you may be involved in capturing and radio-collaring them. You will also learn how to recognise and record other signs of their presence, such as radio telemetry signals, scats and scent markings, camera trap them, collect samples to study their diet and for genetic analysis, and survey prey species. All in an effort to create a sustainable future for these icons of the Carpathian wilderness and to promote greater understanding of their role in European ecosystems.

DATES
February 2014

TEAM ASSEMBLY POINT
Bratislava, the capital of Slovakia.

MORE INFORMATION
www.biosphere-expeditions.org/slovakia

AWARDS
This expedition was honoured in National Geographic Adventure magazine's "Best New Trips" list and in Australia's Get Lost! magazine "30 Great Escapes / Best Adventure Trips on the Planet" list.



TIEN SHAN - KYRGYZSTAN

**Mountain ghosts: protecting snow leopards
and other animals of the Tien Shan mountains
of Kyrgyzstan**

This expedition will take you to the high mountains of the Tien Shan in Kyrgyzstan to survey snow leopards and their prey animals such as the argali mountain sheep and the Central Asian ibex, as well as other animals including marmots and birds. You will be working as part of a small international team from a mobile tented base camp set at various locations and altitudes of around 2000 m. You will be covering ground in the expedition vehicles and on foot, looking for tracks, kills, scats and the animals themselves, and setting camera traps. True expedition-style base camp conditions, testing but satisfying mountain surveying, off road driving, and variable mountain weather, make this our most challenging (and very rewarding) expedition.

DATES
June - September 2014

TEAM ASSEMBLY POINT
Bishkek, the capital of Kyrgyzstan with good and frequent flight connections.

MORE INFORMATION
www.biosphere-expeditions.org/tianshan

AWARDS
Our former Altai snow leopard expedition, which was very similar to this new expedition, was honoured in BBC Wildlife magazine's "Top Ten Conservation Holidays" list, in The Independent on Sunday's "Top Ten Outdoor Pursuits" list, in National Geographic Traveler magazine's "Tours of a Lifetime" list and in the Sunday Times "Summer 100" list as the "Most satisfying trip of the year".



WESTERN AUSTRALIA

**Marsupials galore: protecting quokkas, quolls
and quendas in Western Australia's Walpole Wilderness**

This conservation project will take you to the beautiful Walpole Wilderness Area biodiversity hotspot in Western Australia to study and protect threatened native Australian marsupials (the quokka, quoll and quenda). Working in the majestic Southern Forests of towering karri, tingle and jarrah trees, you will survey the area for suitable habitat, capture and release the animals, radio tag them, follow their movements and study their habits. You will be part of a small international team, based at comfortable and modern chalets inside the Walpole Wilderness and working with the local scientist on an important native fauna conservation project. All in an effort to improve local management of these marsupial species and the unique Western Australian ecosystem of which they are part.

DATES
January - February 2014

TEAM ASSEMBLY POINT
Albany, a major and easily accessible city on the south coast of Western Australia, about 400 km from Perth.

MORE INFORMATION
www.biosphere-expeditions.org/western-australia

TASTER DAYS / SAMPLER DAYS / SCHNUPPERTAGE

More information about taster/sampler days and Schnuppertage locations can be found on page 56/57 in this magazine. For dates in 2014, please refer to our website.

MORE INFORMATION
www.biosphere-expeditions.org/tasters
www.biosphere-expeditions.org/schnuppertage

SOME ACHIEVEMENTS

■ Data collected by our expeditions in **NAMIBIA** have helped our local and international partners make arguments that have led to the declaration of the Kavango Zambezi Transfrontier Conservation Area, or KAZA TFCA. The KAZA TFCA is the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe, centered around the Caprivi-Chobe-Victoria Falls area. Also in Namibia, fewer lions, leopards and cheetahs have been killed in farmer-predator conflict due to our data collection, awareness-building and educational work. ■ Data collected by our expeditions in the **ALTAI** have helped our local and international partners make arguments that have led to the declaration of a protected area in the Altai Republic, Central Asia. This area now provides protected habitat for a number of endangered species, including the snow leopard. Also in the Altai, we have converted local poachers into conservationists by paying them for verifiable camera trap pictures of snow leopards surviving year-on-year. This is obviously not a long-term strategy, but with so few snow leopards remaining, some stopgap solutions are needed until the long-term ones can be reached. ■ When **AUSTRALIA** created the world's largest network of marine reserves in 2012, the Roebuck Commonwealth Marine Reserve, site of our flatback turtle study, was part of the network. Along with our local partners, we were working towards getting flatback turtles listed within the 'major conservation values' of the reserve and this is what happened, with the citation being 'Foraging area adjacent to important nesting sites for flatback turtles'. ■ Our guidelines for boat behaviour at clay licks in the Tambopata Reserve have been incorporated in local management plans. Guidelines are needed because unsustainable forms of farming, logging and tourism are threatening the natural habitat in the **PERUVIAN AMAZON**. ■ Our recommendations for the management and protection of jaguars have been incorporated into national and state-wide jaguar action plans in **BRAZIL**'s Atlantic rainforest. ■ Together with our partners in Peru, we were able to halt a dam construction project, which was threatening a biodiversity hotspot in our Madre de Dios study site region in the **PERU** Amazon region. ■ More achievements at www.biosphere-expeditions.org/achievements

MORE INFO

Detailed Briefings including even more background information about each project, the area we work in, why we are there, what we do and what your role is within the project can be downloaded from our website. Please refer to the links given.

MORE USEFUL LINKS:

ABOUT BIOSPHERE EXPEDITIONS, STAFF & HISTORY
www.biosphere-expeditions.org/about

PROJECT RESULTS & EXPEDITION REPORTS
www.biosphere-expeditions.org/reports

CHECK UP-TO-DATE AVAILABILITY
www.biosphere-expeditions.org/availability

JOINING FORM
www.biosphere-expeditions.org/join

TERMS & CONDITIONS
www.biosphere-expeditions.org/terms

ROUND-UP

AND THE WORLD'S OBSESSION WITH GROWTH

Our two Biosphere Expeditions directors Kathy Gill and Matthias Hammer take a look at the challenges and achievements of 2013 and look into the future

We are often asked where Biosphere Expeditions is going and whether we are going to add any more expeditions to the portfolio of about a dozen that we have at the moment. The answer is that we want to stay at about a dozen, because we want to run those limited number of projects well, being closely involved with them and achieving things for wildlife and people in collaboration with our local partners (see achievements info box on page 13). We are happy being a small, flexible and entrepreneurial non-profit organisation, punching well above our weight and knowing what our left and right hands are doing. We definitely do not want to be part of the obsession with growth (see p.17) and grow into something that is driven by money above all else. Instead we want to stay focused on our core values of delivering wildlife conservation worldwide through research and citizen science.

One door closes, another one opens

However, staying smallish does not mean that there will be no flux or new projects. Scientists move jobs or location, some projects have a defined length, or things sometimes just do not work out, so nothing is as constant as change. Earlier this year, for example, a well-publicised witch hunt of NGOs in Russia (see www.amnesty.org.uk/news_details.asp?NewsID=20741 for more details if you are interested) meant that we had to cancel our Altai snow leopard expedition at very short notice to the dismay of our local partners and of course all the participants that had signed up for it. That door remains firmly shut with little chance of a comeback in the near future. But at the same time another door, also in snow leopard conservation, has opened up in the Tien Shan mountains of Kyrgyzstan (see p. 36). Just like in the Altai, little is known about snow leopard ecology and numbers there, and our help is needed, welcomed and encouraged. Veterans of the Altai expedition will also delight in the news that there is no paperwork required – all you do is turn up with your passport to be stamped in on arrival! So one door stays shut, whilst the next one is wide open.

Supporting new areas

Also earlier this year we were effective in a new area of direct conservation work, providing research results, which can be utilised immediately in an established conservation area. In a close and fruitful cooperation with the Dubai Desert Conservation Reserve, data provided by our citizen scientists are now instrumental in the management of Arabian oryx and Gordon's wildcat inside the reserve. This is a very quick, direct and straightforward cause-and-effect relationship between what we do on the ground and how it benefits wildlife. And these kinds of stories are relatively rare in conservation.



.....
The Tien Shan mountains of Kyrgyzstan open up for Biosphere Expeditions and continued snow leopard research.

Virtuous circle in the Dubai Desert Conservation Reserve: Data collection to improve management to aid wildlife conservation. Picture © Wouter Kingma

Together with one of our most experienced field scientists, Dr. Marcelo Mazzolli from Brazil, we have also published a manual for field biologist on "Sampling and analysis of data for large terrestrial mammals during short-term volunteer expeditions". This manual has been well received and is part of our drive towards quality in conservation volunteering. More on both the Dubai Desert Conservation Reserve and the field manual stories is in the news section on page 43/44.

The battle against cowboy operators

Quality in conservation remains one of our top foci. Profit-driven, unethical operators keep popping up in the volunteering market, so our battle against the charlatans is more important than ever. People need help to orientate themselves in what has become a dense jungle of offers. How can you tell the good, from the bad, from the downright ugly? Read the info box below and you'll know!

No more Land Rovers

Cowboy operators diluting the market – and sometimes giving it a bad reputation - continue to be a challenge. The other big challenge of 2013 was the loss of Land Rover as a corporate sponsor. After 10 years, they decided to discontinue their conservation programme with a number of NGOs, including Biosphere Expeditions, and pour their money into sailing and other lifestyle events instead. You can imagine the difference that makes to our operations,



especially the terrestrial expeditions where vehicles are a crucial component! Still, 10 years was an excellent run. Anybody know anyone at Toyota? 😊

More awards

On the bright side, we won further prestigious accolades in 2013, for example the National Geographic Traveler's "50 Tours of a Lifetime" award for our Namibia big cat & elephant expedition, or our Arabian expedition being named as one of the "Best Desert Adventure Holidays" in the Independent newspaper in the UK.



Into the future

As 2014 approaches, economies recover and 'pro-business governments' are voted in (which usually means the environment will suffer, as it surely will under Abbott's recently-won premiership in Australia, for example), it is important that there are voices that argue for an alternative approach to growth and exploitation and for the environment. There are new opportunities for Biosphere Expeditions too on the horizon, too early to talk about in here, but new opportunities does not mean a need for unsustainable growth. Our voice may be small, but as Horton already said in our 2013 Magazine: "We've got to make noises in greater amounts!". So come and join us in whatever way you can to make that noise and share in our vision.

THE WORLD'S OBSESSION WITH GROWTH

At a recent environment forum in Lyon, speakers from radically different backgrounds of politics, the environment and business agreed that the obsession with economic growth and the greed of financial speculators are destroying efforts to conserve the world's diminishing resources. Big business must be stopped from "asset stripping" a failing planet, they said. Andrew Simms, the policy director of the New Economics Foundation, added that the "oil-fired" obsession with growth amounted to "treating the biosphere like a business in liquidation". He argues that the world can no longer afford to pursue an economic model based entirely on competition and growth. Humankind must break the "vicious cycle", which assumes that greater wealth and consumption always equals greater happiness. Instead we will have to seek alternative approaches, based on principles of "equilibrium" – such as "cooperation" and "symbiosis – which are as much present in nature as raw competition".

Similarly, Clive Hamilton in his book "Growth Fetish" argues that the policies of unfettered capitalism pursued by the west for the last 50 years has largely failed, since the underlying purpose of the creation of wealth is happiness, and Hamilton contends that people in general are no happier now than 50 years ago, despite the huge increase in personal wealth. In fact, he suggests that the reverse is true. He states that the pursuit of growth has become a fetish, in that it is seen as a universal magic cure for all of society's ills. Hamilton also proposes that the pursuit of growth has been at a tre-



mendous cost in terms of the environment, erosion of democracy, and the values of society as a whole. One result is that we, as a society, have become obsessed with materialism and consumerism. Hamilton's catchphrase "People buy things they don't need, with money they don't have, to impress people they don't like" sums up his philosophy on consumerism.

As Bill Adams, Moran Professor of Conservation and Development at the University of Cambridge, says in a recent blog, "Is it time to face up to the 4x4 in the room? (Sorry, we are a bit low on elephants). Conservation is not sustaining a biodiverse world, but negotiating for bubbles of diversity amidst profound transformation. It is better than nothing, but not by any means enough".

And Peter Forbes argues that conservation should be about "the making of lives that are worth living. That means working for transition, not just tigers." ■

BEWARE THE VOLUNTOURISM CHARLATANS!

Bad news for genuine conservation efforts

The PAWS volunteering programme by world-renowned AfriCat has been forced to close. This is a stark warning to those concerned about the conservation of wild cats and other endangered species throughout the world, according to one expert.



"PAWS (People and Wildlife Solutions) cites as one of the main reasons for its closure the fact it could not compete with projects where people are allowed to have direct contact with wild animals such as big cats," says Kathy Wilden, Strategy Director for Biosphere Expeditions.

"We recognise this as one of the major issues for those of us who run true volunteering conservation projects. As we have pointed out in our 'Top Ten Tips on choosing a wildlife volunteering experience', you should never come into direct contact with any wild animal unless it is for a very good research or conservation reason. Guidelines have been issued by ABTA to support this view, calling contact with wild free-roaming animals 'an unacceptable practice'.

"Too many so-called 'conservation volunteer projects' these days are little more than safaris or petting zoos, where people have the opportunity to get close to wildlife, but where there is no actual research or conservation work being undertaken. This leads to great confusion for the public, who think they are joining a genuine

conservation project, when they are in fact doing no such thing. We sympathise with AfriCat's PAWS project and wish them all the best in their many other genuine research and conservation efforts".

Decency in wildlife conservation volunteering

More and more profit-driven, unethical operators are trying to jump onto the volunteering gravy train, so our campaign about decency in volunteering is more important than ever.

Avoid the pitfalls with our Top Ten Tips www.biosphere-expeditions.org/toptentips - now also in German via www.biosphere-expeditions.org/leitfaden

TOP TEN TIPS
Choosing a wildlife volunteering experience
This is what you should look out for

1. **Reputation, reputation, reputation:** has the organisation won awards or accolades, who are they associated with, what is their philosophy, do they write & publish their results and what's their safety record.
2. **Qualified staff:** work should be led by qualified & proven experts, group leaders should be well qualified and all staff should be well briefed on risks and safety issues.
3. **Where does your money go:** good organisations will always publish clear information that shows how your money is spent.
4. **Proper follow-through:** a good organisation will, through updates and reports, keep you informed about how the project progresses even after you've left.
5. **What will you get out of it:** be clear about what you want to get out of the experience - training, self-development, an adventure - then check whether the organisation is clear in communicating what's on offer for you.
6. **Community involvement and benefit:** understand a project's relationship to the local community and make sure that the organisation is properly embedded with local efforts and people
7. **Your fellow participants:** understand the profile of the people that will share your trip by checking the organisation's website and social media sites.
8. **In the field:** check that the organisation is clear & transparent about what will be happening day to day, the accommodation, food and other logistics, and also what is expected of you.
9. **Captive animals:** if the experience involves captive animals, be very clear on the purpose of the captive facility, where the animals come from and whether it is part of a reputable programme.
10. **Handling animals:** steer clear of organisations that encourage handling of captive wild animals for anything other than essential veterinary or neo-natal surrogate care. If wild animals are handled, it should only be for essential research & conservation work and following strict animal welfare guidelines.

More details at www.biosphere-expeditions.org/toptentips



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Fires in Tripa's peat forest to make ready for palm oil plantations, Aceh province, Sumatra, Indonesia. Photo © Paul Hilton.

Turning poachers into protectors can work as a stopgap to buy time for the bigger, more sustainable solutions to be found.

ARE WE THE NEIGHBOURS FROM HELL?

Human-wildlife conflict is one of the hottest topics in conservation; and rightly so as humans hold the key to a world with or without wilderness

We all know the stories and can conjure up the images. A not so wild bear raiding trash cans in the States, an elephant raiding crops in Sri Lanka, a farmer shooting a cheetah to protect his livestock in Namibia, oil companies tearing up wilderness in search of the black gold in Alaska or palm oil plantations devastating native rainforest in Indonesia. As humans expand in space and numbers, so does their demand for resources. Conflict with wilderness is inevitable, and usually it is wildlife that ends up on the wrong side of the argument. This is human-wildlife conflict.

Human expansion – wilderness contraction

Large carnivores such as lions, jaguars, leopards, wolves and crocodilians kill and eat domestic livestock. In Africa and Asia, elephants kill hundreds of people each year, as the latter attempt to protect their crops from the large herbivores. It is estimated that some 10,000-12,000 people die each year in India alone from the bites of venomous snakes. In North America, fatal encounters between humans and grizzly bears, though comparatively rare, are well known, as is tiger predation on humans in India. Conflict can also occur when wildlife – both native and introduced – impacts human

infrastructure and economies. A good example is the flooding damage to homes, municipal water systems and timber production that occurs when beaver dams impede drainage. Introduced species are also responsible for significant economic losses. There is the destruction of homes in the southern United States due to the introduction of the Formosan termite, a social insect that eats wood. Similarly, the introduced brown tree snake on Guam causes an estimated £2 million in damage to the island's electrical infrastructure annually.

What pays, stays – money makes the world go round

Of course it is difficult to blame wildlife for human-wildlife conflict, because the animals are simply doing what animals do. On the other hand, if humans view wildlife as pests, as damaging to their livelihoods, or as a danger to their community or family, then wildlife is going to lose. This is true for areas that have some sort of nature protection, and even more so for those without. The challenge for conservationists is somehow to change those attitudes by offering practical and effective solutions. For without the co-operation of local people, even protected areas soon become 'paper parks' or other ineffective greenwashing tools.



And the easiest way to get people's interest and cooperation is via their purses and wallets. Whether we "greenies" like it or not, economic arguments are the most powerful. And who are we to tell a mother in Brazil or Madagascar not to clear-cut some land to feed her family? Who are we to tell a farmer in Namibia not to shoot a big cat that is threatening his livestock and therefore his livelihood? After all, we in Europe, for example, exterminated much of our wildlife in the name of "progress" 300 years ago, and converted much of our wilderness into our too often fetishised-over countryside of agricultural wasteland of big green and brown squares, devoid of any wildlife. We even wax lyrical over treeless, bracken-covered hills full of invasive species from Mesopotamia (i.e. sheep) as archetypal British vistas, with not a tree in sight, where there once were forests. And yet we want to holiday in Africa and experience pristine savannah full of megafauna and preferably devoid of humans, or in the Amazon with only green, lots of birds, monkeys and other animals and at most our English-speaking, knowledgeable guide. The contradiction is obvious.

Examples from our expeditions

So what are these practical and effective solutions that work via people's wallets? Let's look at a couple that Biosphere Expeditions is involved in. One a short term fix for snow leopards, the other a long-term Namibian showcase for the world.

A new programme that we are trying to implement as part of our work on snow leopards (in the Altai in the past and now in Kyrgyzstan) is a stopgap between long-term economic development and the critical short-term issue of poaching. This new programme is essentially an ecosystem services payment; we identify (snare) poachers, particularly those that are thought to target snow leopards. Then we approach them and offer the following deal: along with a camera trap and a GPS unit, capture a previously unidentified snow leopard on camera trap, provide us with the images and the verifiable GPS coordinates. We then pay \$1000. Approximately one year later, if they can photographically demonstrate the animal is still alive, they will receive another \$2500. The strategy is that the hunters will not only not kill the animal himself, but will also work to stop their competitor poachers from killing it as well. This is obviously not a long-term solution, but with so few of the cats remaining, we have to have short-term solutions until we can reach the long-term ones. Early indications are that this works well and buys us time. In that sense Biosphere Expeditions takes on the role of the ambulance – keeping the patient alive until the doctors (government and the big lobbying and policy-making organisations) decide to heal it.

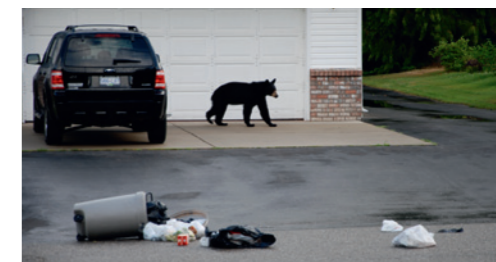
In Namibia, ranchers are often blamed, and they do kill big cats to protect livestock, but they do so because they lack strategies to avoid conflict in the first place. Our goal in Namibia is that a community conservation

pledge to refrain from killing carnivores in retaliation for livestock losses is included in all conservancy statutes. Conservancies are a successful model of balancing conservation and ranching in Namibia (see p. 25). Ranchers who unite within a conservancy must sign up to sustainable farming, biodiversity and wildlife conservation principles. In return they obtain part ownership of the game on their ranches and the right to utilise it sustainably. This has resulted in an up to twentyfold increase in game species and is widely regarded as one of the biggest conservation success stories worldwide! Our goal is to include the protection of carnivores into this very successful model. How are we going to do this? Over the past 10 years our conservation specialists on the ground have been engaging with the local landowners and stakeholders in a typical area of Namibian savannah rangeland. They have developed good relationships and gained the trust and respect of the ranchers – a significant achievement in itself. From this follows a unique opportunity to bring these relationships to fruition by working to reduce the conflict between humans and some of the key predators (cheetah, leopard, caracal and hyaena) that roam the stakeholder rangelands. The ranchers' livelihoods depend on their game animals - everything from cattle to small antelope to the very valuable sable antelope. In the past, and even into the present day, this means that the ranchers shoot predators to prevent them from injuring and killing their livestock. Our research studies predator ecology, including their interactions

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The Scottish Highlands. A much fetishised-over grassy desert created by human impact. Picture © Shaiith de'Anzzar

A collared leopard will provide invaluable data about its habits to develop human-wildlife mitigation strategies. But you need to catch one first - cue Biosphere Expeditions.

Below: A black bear in search of food.



with ranching livestock, producing key stock management data that the ranchers can use to protect more effectively their animals without resorting to killing the predators. So this is conservation through human-wildlife mitigation and based on sound research, which is really what Biosphere Expeditions is all about. ■

BACKGROUND TO HUMAN-WILDLIFE CONFLICT



The African leopard. One of the predators causing human-wildlife conflict all over Africa.

Local people build so-called kraals using thorny branches to protect their cattle from being attacked by predators.

What is human-wildlife conflict?

Human-wildlife conflict is defined as “any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life, on the conservation of wildlife populations, or on the environment.”

What is a “problem animal”?

Care is needed when defining the term “problem animal”. Potentially, all wildlife species will compete with humans for access to habitat, food and water. For example, elephants will feed on maize crops because they are grazers/browsers, and lions will kill and eat livestock because they are predators. However, some individual animals may develop habits, which select or target crops and livestock. A bull elephant may repeatedly return to a cultivated field or a lion may regularly visit a cattle pen, despite the protective measures in place. Such individual animals can be classified as “problem animals” since they have become habituated in targeting the property of people.

Who suffers directly from human-wildlife conflict?

Both people and wildlife can suffer from human-wildlife conflict. Farmers suffer economically from the loss of crops and livestock. In other more serious cases, people are killed. However, the overall impact of human-wildlife conflict tends to be low when the losses are spread over a whole community. The people who suffer most tend to be those living on the edges of settlements and those living close to community or state-managed wildlife areas. On the other hand, for animals, some wildlife populations may decline or become locally extinct as a result of extensive human-wildlife conflict.

What are the direct costs of human-wildlife conflict?

Direct costs to humans are the financial, social and cultural losses suffered as a result of human-wildlife conflict. Examples include: raiding and destruction of food crops; loss of income from sales of produce from cash crops; damage to water sources and installations; damage to stored produce; loss of livestock; human injury or death; damage to property (buildings, etc). The costs to wildlife include the loss of habitat, persecution and possible population decline.

Who suffers indirectly as a result of human-wildlife conflict?

Members of local communities that live with high levels of human-wildlife conflict often suffer from a sense

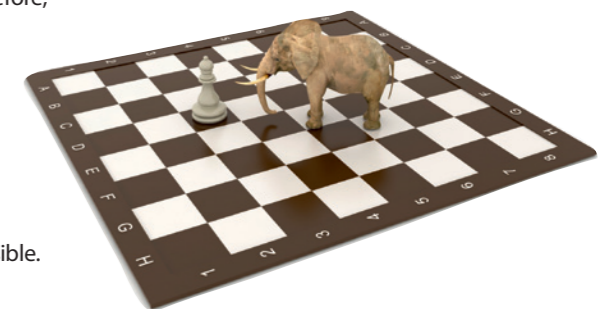
of insecurity. This might be due to the anxiety of potential losses that they can suffer or from the worry of physical threat to their lives and property.

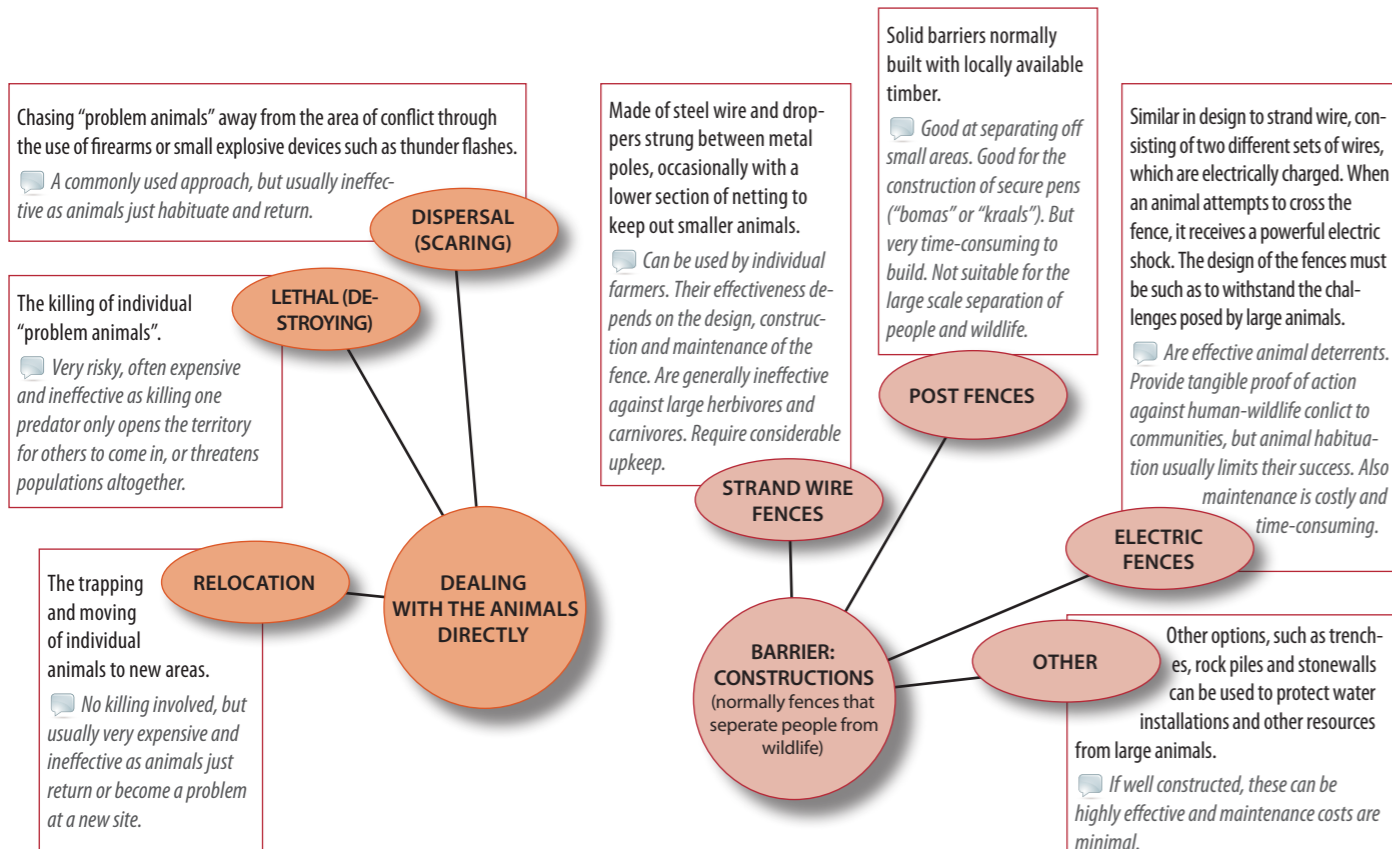
What are the indirect costs of human-wildlife conflict?

The indirect costs of human-wildlife conflict are generally associated with the physical threat of living with large mammals. This has the effect of restricting people’s freedom of movement, for fear of running into such animals, or restricting their access to resources such as water, firewood and grass for thatching. There are also indirect costs of guarding property against wildlife. Preventing damage to crops results in the reduction of sleep and often a higher exposure to malaria. This can cause a loss in productivity and opportunities to pursue other economic activities. The indirect costs to wildlife itself generally occur because people do not adopt a systematic approach to the conflict. They possess negative attitudes towards wildlife, which can lead to indiscriminate killing of animals or to increased and unsustainable hunting. Growth of communities means a loss of habitat for wildlife, restriction of their movements and blocking of access to traditional watering points.

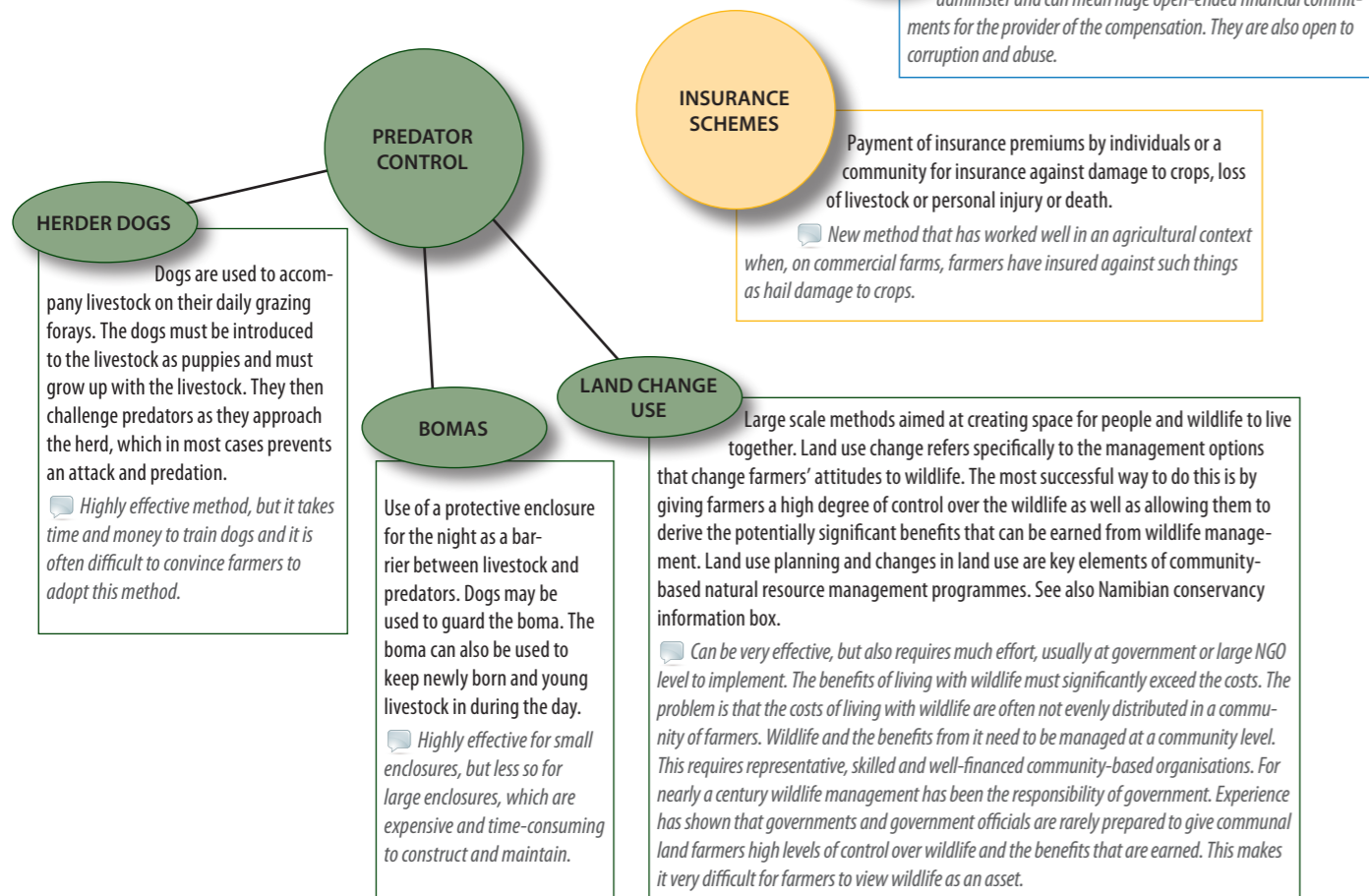
Which wildlife species are generally responsible for human-wildlife conflict?

Surprisingly, small animals, that pose no obvious threat to humans, can be responsible for devastating damage to crops. These animals include insects, such as locusts and caterpillars, birds, such as seed-eaters and fruit-eaters, and rodents, rats, springhares and porcupine, for example. Small animals, such as primates (baboons, vervet monkeys), some antelope species, bushpigs and even the smaller carnivores (genets, servals, mongooses), can also cause major losses to crops and livestock. However, it is the larger herbivores (elephant, buffalo and hippopotamus), large carnivores (lion, leopard, cheetah, spotted hyaena, wild dog), and the crocodile that are traditionally defined as problem animals and are responsible for most of the human-wildlife conflict. This is because farmers often feel that the large animals are the property of the government, as was the case under previous colonial legislation, and, therefore, that they are not allowed to deal with the problem themselves. For insects and small animals, however, farmers use local solutions where possible.





DEALING WITH HUMAN-WILDLIFE CONFLICT



THE COMMUNAL CONSERVANCY SYSTEM IN NAMIBIA

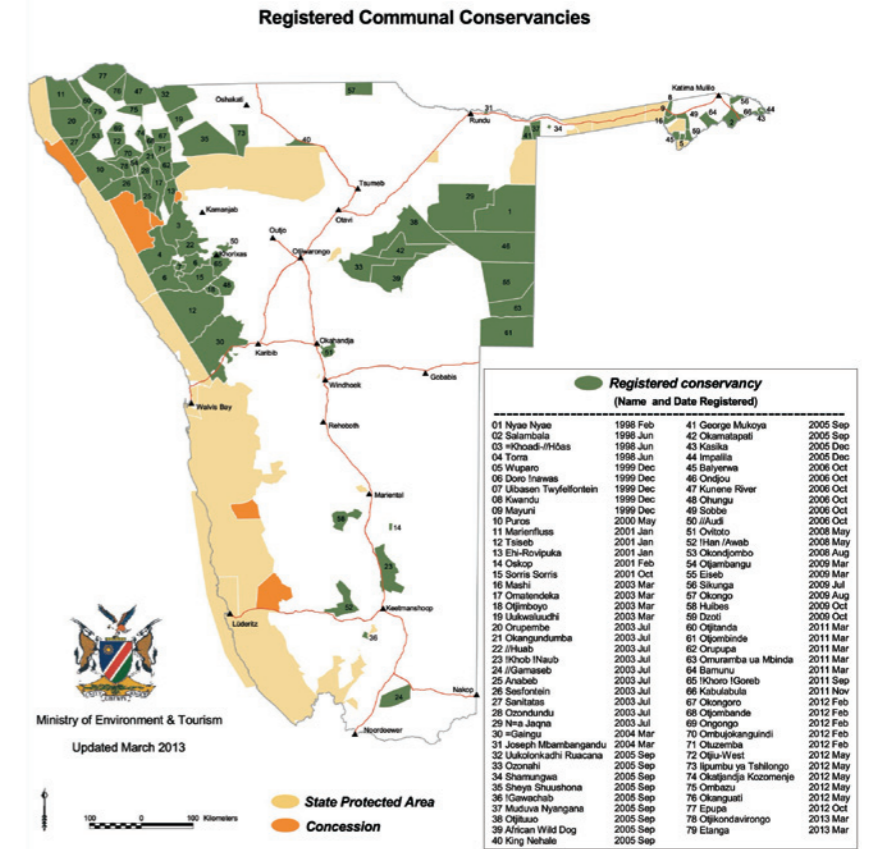
Namibia is one of a few countries in the world to specifically address habitat conservation and protection of natural resources in their constitution. Article 95 states, "The State shall actively promote and maintain the welfare of the people by adopting, international policies aimed at the following: maintenance of ecosystems, essential ecological processes, and biological diversity of Namibia, and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future."

In 1996 the Government of Namibia introduced legislation giving communities the power to create their own conservancies. The legislation allowed local communities to create conservancies that managed and benefited from wildlife on communal as well as private (farm)land while allowing the local community to work with private companies to create and manage their own tourism market. Today there are 59 registered Communal Conservancies covering 16.8% of the land area of Namibia, or 130,000 km² of prime wildlife habitat. Some 29 joint-venture lodges and campsites operate in partnership with conservancies, a vibrant and growing part of the destination's tourism profile.

The conservancies stress the importance of local community control, but do not place any pressure on becoming a member. Communities that wish to apply to become a conservancy must apply through the Minister of Environment and Tourism. Requirements for the conservancy application include a list of local area people who are community members, a declaration of their goals and objectives, and a map of their geographic boundaries. Their plans must also be discussed with communities that surround their boundaries. Any funds that the community receives through their conservancy must be distributed to the local community.

The results speak for themselves:

- In 1995 only 20 lions roamed freely in Northwest Namibia - today that number is more than 130.
- In 1982 the black rhino was almost extinct - today Namibia has the largest concentration of free roaming black rhino in the world. Poaching does happen, but nowhere near to the scale seen in other African countries.



• Other wildlife such as giraffe, kudu, springbok, etc. have gone from being fewer than 1,000 to today being over tens of thousands.

There's an inspiring TED Talk on the Namibian conservancy system on http://www.ted.com/talks/john_kasaona_from_poachers_to_caretakers.html.

Because of this successful conservancy system, Namibia holds a viable and increasing population of cheetahs and leopards. Approximately 80 percent of Namibian wildlife occurs outside protected areas on communal and commercial ranchland.

Due to this, ranchers in Namibia hold the key to big cat conservation and sustainable usage strategies, and Biosphere Expeditions is involved in a programme that works closely with them to achieve this. As apex predators, these two big cat species play an important role within the ecosystem, cause human-wildlife conflict with local ranchers and are an important source of income in the safari tourism sector. However, big cat biology, ecology and abundance are still poorly understood and there is a clear need and desire from ranchers to avoid human-cat conflict and manage the wildlife on their properties sustainably. It is in the interest of everyone, therefore, to improve ecological management and to learn more about cat predator ecology, not just for ecological reasons, but because of powerful economic interests, which can be made to work in favour of the big cats. ■

FISH, PEOPLE & MONEY – THE CONSERVATION CONUNDRUM

Blue Ventures and Biosphere Expeditions believe in local, not corporate, solutions for our oceans



The problem with marine conservation, as with many other conservation issues, is that humans and wildlife, or seemingly worthless nature and powerful economic interests, come into conflict, or that short term gain is perceived to outweigh benefits that are always in the future and often intangible – a fisherman father in an impoverished community in Malaysia has mouths to feed now, not in a year's time.

It is well known that industrial fishing fleets are wreaking havoc with and emptying our underwater environments at an unprecedented rate (see info box on p. 29). They do this mainly to satisfy humankind's voracious appetite for fish, and of course to make a profit. Less well known, and therefore often overlooked, is the fact that non-commercial, artisanal fisheries (see info

box 'Marine Protected Areas' on p. 31 for an explanation of these technical terms) play a key role in feeding people too, albeit at much lower impact levels and in vastly more sustainable ways. For example, Blue Ventures, a fellow volunteering organisation mainly active in marine conservation in Madagascar, states in a recent press release that the "small-scale fisheries sector in Madagascar is at least one and a half times as valuable as concessions earned from EU tuna vessels, and a sixth as valuable as the entire domestic commercial shrimp industry; both of which receive substantial policy attention. Yet despite their critical importance, these fisheries are often overlooked by decision-makers due to their remote and dispersed nature".

So small scale fisheries are important for half a billion people worldwide. But how do they fare against the industrial fishing fleets? A recent research paper published by researchers from the University of Hawaii at Manoa and Blue Ventures demonstrates the "importance of small-scale fisheries for food security, livelihoods, and wealth generation for coastal communities, and highlights the need for long-term management strategies that aim to enhance such fisheries by safeguarding the rights of small-scale fishers over export-orientated commercial or foreign access fishers".

And this is the crux of the matter - protecting the rights of the small artisanal fisheries over highly destructive and ultimately unsustainable commercial pillaging of the ocean's resources. Blue Ventures and Biosphere Expeditions both believe that the solution to this conflict, which is perhaps the most important human-wildlife conflict on the planet, lies in fisheries that are managed by local communities, rather than global corporations. After all that fisherman father wants to feed his children from the ocean and them to feed theirs; and whether it is on Blue Venture's 'patch' in Madagascar, or on Biosphere Expeditions' patch in Oman, fishermen have reported severe declines in catch size and volume almost everywhere. So small-scale artisanal fisheries and fishers, who have their very survival to consider, have a much better incentive towards sustainability than global fishing corporations with their eyes firmly fixed on the next shareholder dividend a few months down the line.

The question then becomes how to train and support communities to monitor their marine resources and to implement locally appropriate management systems. Customary laws and practices are a good way forward and this approach has worked well in places as diverse as Australia, New Zealand, Madagascar and Indonesia.

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Small-scale fisheries are the basis for survival for half a billion people worldwide.

The key is to obtain local buy-in, and this is best done through a market-based approach (see also the concept of “what pays, stays” on p. 19). Fisherfolk who understand that overfishing jeopardises their own survival as well as their children’s have a powerful incentive to manage their marine resources sustainably. It also means that managing fisheries and marine resources really does work best when handled by local communities rather than global corporations. According to the IUCN (International Union for the Conservation of Nature), time and again locally managed marine areas (LMMAs) have been shown to be very effective tools for conservation as well as generating income and wealth. And needless to say that both are especially relevant in low-income countries, where there may be little capacity for enforcement of legislation and/or few sources of income and opportunities to generate wealth.

Blue Ventures has been so successful with LMMAs in Madagascar that this approach has since been adopted by the neighbouring Mauritian island of Rodrigues.

This is a model that Biosphere Expeditions, with Blue Ventures’ help, plans to implement in Oman, where Biosphere Expeditions is working on creat-

ing a marine protected area (MPA) at the Musandam peninsula (see heading “Oman” on p. 31). Incidentally, this is also a good example of how two ethical and effective volunteering organisations can work together to enhance each other’s genuine results in conservation. In these times of ineffective, profit-driven charlatan voluntourism operators flooding the market and giving volunteering a bad name (see info box on p. 16), this is an important side effect and showcases how volunteering can, and should, work.

But back to the small-scale fisheries on the ground. It is not only grown fisherfolk that should be targeted for education and empowered. Generational change in practices and attitudes is a vital part of the mix. “Get them while they are young” is a strategy that Biosphere Expeditions pursues wherever possible (see p. 30/31). “Next to our research, a strong educational element that educates the next generation of fisherfolk about the link between no-take zones and full fishing nets, between overfishing and empty nets is invaluable”, says Dr. Matthias Hammer, executive director of Biosphere Expeditions. So the future is with the next generation of fisherman sons and daughters as caretakers, not pillagers, of the ocean’s wealth for humankind. The challenge is to get there before it’s too late. ■

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Wasteful ocean destruction by industrial fishing: Guitarfish, rays, and other so-called bycatch are tossed from a shrimp boat.
Picture © Brian Skerry.



A THREAT TO MARINE BIODIVERSITY

For centuries, our seas and oceans have been considered a limitless bounty of food. Fishing is central to the livelihood and food security of 500 million people, especially in the developing world, and one in five people on this planet depends on fish as the primary source of protein. At the same time, increasing fishing efforts over the last 50 years as well as unsustainable fishing practices are pressing many fish stocks to the point of collapse. More than 85% of the world’s fisheries have been pushed to or beyond their biological limits and are in need of strict management plans to restore them. Several important commercial fish populations (such as Atlantic bluefin tuna) have declined to the point where their survival as a species is threatened. Target fishing of top predators, such as tuna and grouper, is changing marine communities, which leads to an imbalanced abundance of smaller marine species such as sardines and anchovies.

According to UN agencies, aquaculture - the farming and stocking of aquatic organisms including fish, molluscs, crustaceans and aquatic plants - is growing more rapidly than all other animal food producing sectors. Yet amid facts and figures about aquaculture’s soaring worldwide production rates, other, more sobering, statistics reveal that global main marine fish stocks are in jeopardy, increasingly pressured by overfishing and environmental degradation.

“Overfishing cannot continue,” warned Nitin Desai, Secretary General as early as the 2002 World Summit on Sustainable Development. “The depletion of fisheries poses a major threat to the food supply of millions of people.” The Johannesburg Plan of Implementation calls for the establishment of Marine Protected Areas (MPAs), which many experts believe may hold the key to conserving and boosting fish stocks. Yet according to the UN Environment Programme’s (UNEP) World Conservation Monitoring Centre, in Cambridge, UK, only around 1% of the world’s oceans and seas are currently in MPAs.

The magnitude of the problem of overfishing is often overlooked given the competing claims of deforestation, desertification, energy resource exploitation and other biodiversity depletion dilemmas. The rapid growth in demand for fish and fish products is leading to fish prices escalating faster than prices of meat. As a result, fishery investments have become more attractive to both entrepreneurs and governments, much to the detriment of small-scale fishing and fishing communities all over the world. In the last decade in the north Atlantic region, commercial fish populations of cod, hake, haddock and flounder have fallen by as much as 95%, prompting calls for urgent measures. Some experts are even recommending zero catches to allow for regeneration of stocks, much to the ire of the fishing industry.

According to a Food and Agriculture Organization (FAO) estimate, over 70% of the world’s fish species are either fully exploited or depleted. The dramatic increase of destructive fishing techniques worldwide destroys marine mammals and entire ecosystems. The FAO reports that illegal, unreported and unregulated fishing worldwide appears to be increasing as fishermen seek to avoid stricter rules in many places in response to shrinking catches and declining fish stocks. Few, if any, developing countries, and only a limited number of developed ones, are on track to put the International Plan of Action to Prevent, Deter and Eliminate Unreported and Unregulated Fishing into effect. Despite the fact that each region has its Regional Sea Conventions, and some 108 governments and the European Commission have adopted the ‘UNEP Global Programme of Action for the Protection of the Marine Environment from Land based Activities’, oceans are being cleared at twice the rate of forests. Only a multilateral approach can counterbalance the current rate of depletion of the world’s fisheries, which has increased more than four times in the past 50 years.

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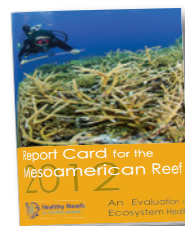
STATUS QUO OF BIOSPHERE EXPEDITIONS' MARINE PROJECTS

HONDURAS

Situation:

The Bay Islands form part of the world's second largest barrier reef system, known as the Meso-American barrier reef, and have been identified as one of the key sections of the barrier reef system to preserve. Biosphere Expeditions and its local partner, the Honduras Coral Reef Foundation (HCRF), have been working with local communities, private sector bodies and government organisations to help manage the reefs and their fisheries over the last 10 years. However, because of the rocketing crime rates in Honduras and the associated bad news that is covered by the western press, this expedition has not been popular and we have failed to recruit enough people over the last couple of years. Expeditions will resume as soon as interest returns.

Research & conservation:



Using the Reef Check survey methodology, Biosphere Expeditions has helped HCRF gather data that is crucial for effective management of the local MPA. Data have also been published, for example, as part of the well-known "Report Card for the Mesoamerican Reef".

Education:

A colouring book about marine life and conservation for local children has been produced and distributed by HCRF and Biosphere Expeditions.



MALDIVES

Situation:

The Maldives Marine Research Centre (MRC) of the Ministry of Fisheries and Agriculture identified a need for further reef and whale shark research and monitoring as far back as 1997. Biosphere Expeditions is addressing this need, working with Reef Check and the Marine Conservation Society (MCS) to provide vital data on reef health, and with the Maldives Whale Shark Research Programme (MWSRP) to monitor whale sharks.



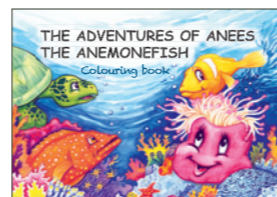
Research & conservation:

Several MPAs for reefs, whale sharks and other marine life have been declared in the Maldives in recent years and there is a move towards declaring the entire country a UNESCO Biosphere Reserve by 2017. The challenge is to enforce protection so that MPAs do not end up being so-called "paper parks" with good intentions, but no action or results on the ground.

Education:

As part of its annual research expedition, Biosphere Expeditions trains local Maldivians, including staff of the MRC, in the Reef Check survey methodology each year, and has also held training courses for local resorts and government departments.

A colouring booklet for primary school children has been designed together with the MCS and a local artist and distributed around the country.



OMAN

Situation:

Biosphere Expeditions' project around the Musandam Peninsula of Oman is a pioneering study to map this currently unprotected underwater environment. The Musandam reefs boast a rich mixture of beautiful corals and a multitude of fish and other animals. Data on the current biological status of the reefs and of population levels of key indicator species are therefore crucial for educational purposes and to be able to put forward ideas for future marine protection areas. Biosphere Expeditions is at the forefront of efforts to declare a Musandam marine protected area.

Research & conservation:

Before Biosphere Expeditions became involved, the last coral survey dated from the 1970s. The first Biosphere Expeditions survey was conducted in 2009 and since then annual research expeditions have taken place. More recently, the momentum towards the creation of an MPA has increased when several high-ranking government officials, including members of the Omani ruling family, became involved. The end result Biosphere Expeditions is aiming for is an MPA and eventually a UNESCO world heritage site.



Education:

Biosphere Expeditions hosts and trains local people as well as staff of the Ministry of Environment and Climate Affairs on its annual research expedition, and has produced a colouring booklet, which has been distributed



around the Musandam and other coastal regions of Oman. There is also a school educational tour and road show that has been delivered throughout the country.

MALAYSIA

Situation:

The reefs of Pulau Tioman Marine Park are some of the healthiest and most diverse around peninsular Malaysia and lie just inside the 'coral triangle', an area that has been identified as having the highest diversity of coral species anywhere in the world. However, the island's growing tourist trade, crown of thorns population booms and developments on land are threatening the reefs' health and so data on the current biological status of the reefs and of population levels of key indicator species are crucial for park management and educational efforts.

Research & conservation:

Working with Reef Check Malaysia, this expedition is primarily research-based, focusing on remote reefs that are not surveyed by anyone else and providing the results as well as conservation and management recommendations to managers and decision-makers.



MARINE PROTECTED AREAS & FISHING

Marine Protected Area, or MPA, is an umbrella term used to describe a wide range of marine areas that restrict human activity to protect living, nonliving, cultural and/or historic resources.

Commercial fishing is the practice of capturing fish and other marine species to earn a profit. Artisanal fisheries are small-scale local, small markets, generally using traditional fishing techniques and small boats.

MPAs are one way in which the future of local and global fish populations can be protected in the face of growing demand. MPAs offer marine species an area to reproduce, recover, and thrive – which may result in

healthier fish populations, higher catch rates outside MPAs, and a more promising future for the fishing and seafood industries. There are many types of MPAs, including marine reserves, marine sanctuaries, and marine conservation areas; they are managed by various local, state, and federal agencies, depending on their type, location, and management requirements.



The level of protection in an MPA differs based on MPA type and oversight. Some MPAs allow limited human recreation and/or fishing, while others completely prohibit human entry. Currently, MPAs make up only around 1% of the global ocean area, leaving the other 99% open to fishing and other human impact.

■ World Marine Heritage sites – only about 1% protection around the world

Yankeer whalers introduced whaling to the Azores in the 1830s and to the local people it became an important part of their economy and culture. The whalers endured a punishing way of life, pursuing sperm whales in open boats using only hand harpoons and lances. A vigia, or lookout, on the cliff scanned the ocean for signs of sperm whale blows. The species can be distinguished because their blow is angled off to the left. Only sperm whales were hunted in the Azores for a couple of reasons: they move slower at the surface, giving the boats a chance to catch up to them, and they float when dead. The latter fact was crucial as the dead whale had to be towed several miles back to the whaling station.

When a sperm whale was sighted, a rocket flare was set off (prior to telephones & radios) to pass the news onto the villages. The men involved in the whaling left their day job - they did not make enough money from whaling alone - and rushed down to the boats. Usually wives or girlfriends met them there with food for the journey, because once on the hunt, the whalers never knew how long they were going to be at sea. Prior to

VHF radios, the vigias laid sheets on the hillside indicating the direction the boats should travel. Once they were in the area where the whales were expected to sur-

face, the sheets were removed and the boats waited for the tell-tale blow. The whalers then sailed up to the whale, if they had good wind, or else rowed. Once close enough, the harpooner threw the harpoon, which did not kill the whale; it just attached the whale to the boat by a very long line. Usually when struck by a harpoon, the whale would immediately dive, taking the line with it very rapidly, sometimes pulling the boat along in what was known as the Nantucket Sleigh Ride. Being a mammal, however, the whale can not stay underwater indefinitely and has to surface to breathe. The whalers then meticulously coiled the rope back into the basket and the harpooner switched to the lance - basically a spear on a rope - trying to hit vital organs with each throw. It often took several hours to kill a whale in this manner. Once the whale was dead, it was towed back to the factory for processing. Sperm whale meat was not generally eaten. Sperm whales were prized for their copious amounts of oil in the blubber as well as the higher-grade spermaceti oil in the head. Sometimes ambergris was found in the stomachs of sperm whales and this substance until recently was used as a fixative for perfumes. Spermaceti oil was even used in the early space shuttles as a lubricant, because it maintains its properties at higher temperatures than normal oils.

Between 1826 and 1987 a total of 23,622 sperm whales were killed from land-based whale boats in the Azores.

The greatest number killed in any one year was 724 in 1949. The male sperm whales made up the largest proportion of the catch. This was probably for a couple of reasons: male sperm whales are much larger than the females, reaching up to 18 m and the females only 12 m. The males can weigh as much as 60t while a female may get to 20 or 25t, so they yield a lot more oil than the females. Also, the blow from a big male can be seen in choppy sea conditions and the female sperm whales tend to spend the winter a bit further south in slightly warmer waters.

All of that changed in 1985 when the European Union brought in legislation against whaling. And since Portugal was a member, and the Azores are part of Portugal, the hunt had to stop. Also in 1986 the International Whaling Commission decided to put a moratorium on whaling, because the numbers of some whales were getting critically low. But by that time, there were not many sperm whales being caught anyway, because the markets for sperm whale oil had become obsolete, with synthetic oils taking over and electric lights on the streets, rather than oil-filled lamps. When interviewing some of the older people not long after the whaling stopped, they thought the whales had left the islands. Most didn't understand why the whaling stopped. In 1987, the village of Lajes on Pico killed three more sperm whales. Only the teeth were taken from the first

whale, to be used for scrimshaw (the traditional carving on teeth and bone). This created such uproar from the rest of the population, that the next two whales killed, although hunted solely for the teeth, were turned into fertilizer after the teeth and lower jaw were removed.

It was in 1987 that the International Fund for Animal Welfare sent their boat, "Song of the Whale", to the Azores to conduct a whale watching feasibility study. The boat visited the Azores for five summers. Tourists visiting the islands were given questionnaires about activities they would do while here. Options for whale watching included: watching a real hunt, watching a mock hunt and just watching the animals in their natural environment. Most people said that they would pay money to just watch the animals in the wild. Surveys around the islands provided evidence that there were still plenty of sperm whales around the archipelago. Sometimes only a mile from the last place they were hunted! There is not one particular area that is better for sperm whales than another. Deep water surrounds the archipelago providing ideal habitat for sperm whales and other deep diving marine mammals.

In 1989, the very first commercial whale watching trip took place. Two different sailing boats offered tours; one of them specifically for whale watching, the other a sailing tour around the islands, with the

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Sculpture of a harpooner in São Roque, Pico
Picture © Lisa Steiner

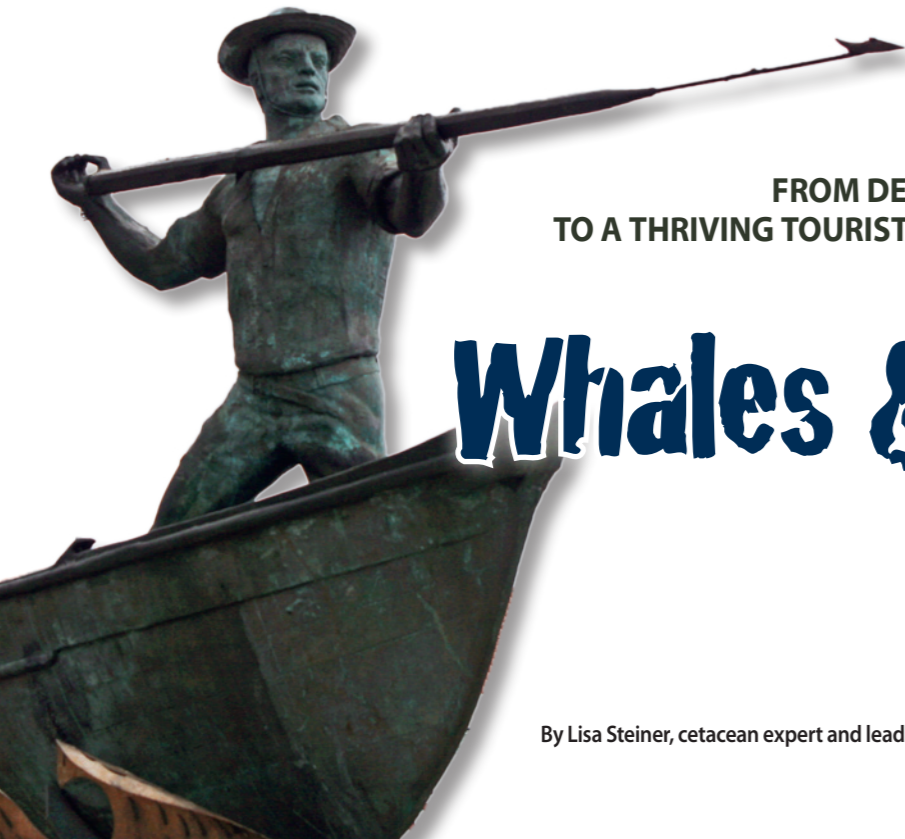
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Sperm whale double flukes
Picture © Lisa Steiner

FROM DESTRUCTIVE EXPLOITATION
TO A THRIVING TOURIST INDUSTRY:

Whales & Dolphins

OF THE AZORES

By Lisa Steiner, cetacean expert and lead researcher of the Azores whale & dolphin project



chance to see whales. A hydrophone, an underwater microphone, was used to locate the sperm whales. Sperm whales make a distinctive clicking sound underwater, very similar to a metronome. Since then, whale watching has really taken off. In 1992, the first company solely dedicated to whale watching was founded and had one inflatable in operation in the very last place the whales were hunted – Lajes do Pico.

One vigia that used to spot the whales for the whalers was now employed to spot the sperm whales for the tourists! However, it took a little while for him to understand that the whale watchers were also interested in other species besides the sperm whales. Prior to that realisation, some days, he would say he did not see anything, even if there were dolphins or even baleen whales out at sea! Nowadays there are several vigias employed on various islands spotting whales and dolphins for many different whale watching companies. Thousands of tourists each summer come to the Azores and most will make at least a half-day whale watching tour. Some come specifically for the whale watching, since the Azores is known as one of the premiere places in the world to have the opportunity to see many different species of whale and dolphin.

In 1999, the first whale watching legislation was drafted in the Azores. So only a little more than 10 years after hunting the whales, operators were told how they should behave around the animals. Three boats are allowed to approach to 50 m behind a whale. The approach must be made slowly so the

animals are not disturbed. The engines have to remain on, so the whales can hear where the boats are. Dolphins, however, don't follow this 50 m rule! They often bowride in front of the boats, getting a free ride from the water being pushed up by the bow, giving you a great view! Dolphins can also be seen bowriding the large baleen whales too!

There are whales and dolphins in the Azores all year long. 28 different species have been seen over the last 20 years. The spring from February to the end of May is when the baleen whales (baleen whales are the non-toothed whales) are making their migration past the islands to feeding grounds in the north from breeding grounds in the south. Blue, fin, sei, minke and humpback whales can be spotted. Sperm whales are present in the Azores all year; just the weather in the winter is not as conducive to watching them! Several species of dolphin also make their home in the Azores. Common and striped dolphin can be seen throughout the year. Bottlenose and Risso's dolphins are resident, with the same groups residing around the islands all year. Pilot whales and false killer whales can also be seen throughout the year. Most likely some are resident groups as well as others that just pass through. Spotted dolphin are summer visitors, usually arriving at the end of June and remaining until the end of October, before returning to warmer waters further south. Several species of beaked whale can also be seen around the islands. These squid specialists can be found in areas with deep water. Although you might not be able to distinguish the species you see, since four of them look very similar

(Blainville's, Sowerby's, True's & Gervais)! The Cuvier's beaked whale and the northern bottlenose whales are two of the beaked whale species, which are easy to distinguish. Most of the beaked whale sightings occur in July & August.

Rare visitors include the rough-tooth dolphin and Fraiser's dolphin (more common 800 miles further to the south of the Azores) and Bryde's whale. This last species of baleen whale does not make the migration that the other baleen whales make, instead it remains further in the south subsisting on schools of fish that it finds, quite often around islands.

In January of 2009, the first North Atlantic right whale for 100 years was seen off the South of Pico! There are probably fewer than 500 of these animals left in the North Atlantic and they are more commonly seen off the Bay of Fundy in Canada, or the Gulf of Maine in the USA.

I do not think that the local Azoreans would ever contemplate a return to whaling. Many more people now make a living from either directly watching whales or other tourism infrastructures, such as hotels and restaurants, taxis & souvenirs, than did during the whaling era. There are whale watching companies on Faial, Pico, Terceira and São Miguel, formerly strong whaling islands. The local environment department of the government now issues a finite number of licenses in an effort to ensure sustainability.

The culture of whaling will not be forgotten. There are several good museums on the islands dedicated to the preservation of that memory. But thankfully many new memories are now being made shooting the whales with cameras instead of harpoons. The whale watching boats also offers biologists, like me, a chance to collect information about these charismatic animals. I get great opportunities to photograph & identify individual animals. Without the whale watching tourism industry, my job would be much more difficult to do. ■



Left page: bottlenose dolphin · Half of a right whale's tail

This page: whaling canoes during a traditional race · Distinctive callosities on the head of a right whale · Who's watching who? · Dolphins bowriding

All pictures © Lisa Steiner

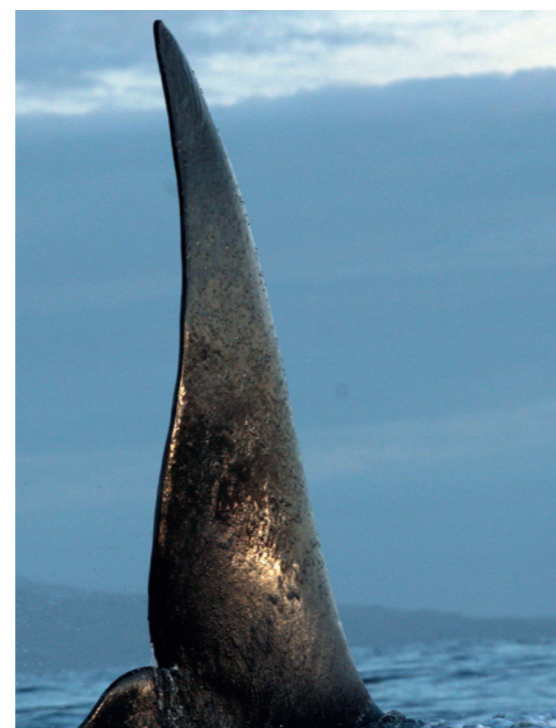


THE AZORES ARCHIPELAGO

is Europe's westernmost point and part of Portugal. It consists of nine distinct islands, lying on the same latitude as New York and Lisbon, and is around 1,600 kilometres off the coast of Portugal. Lying on the mid-Atlantic ridge, the islands display spectacular volcanic scenery, impressive black lava sea cliffs, and, towering above them all, the highest mountain in

Portugal on the island of Pico. The volcanic activity continues with bubbling mud pools and hot mineral pools on São Miguel and Teceira islands and you can walk on land that rose from the sea just 50 years ago. The countryside also has a gentler side with large areas of green fields, distinctive hydrangea hedges and forests.

The Azores were discovered in 1427 by Portuguese explorers and colonised shortly after by people of mainly Portuguese and Flemish descent. During the 20th century the islands were an important stopover point for undersea communications cables, trans-Atlantic flights and yachtsmen. Once a whaling hot-spot, today their main income is from agriculture and fishing, as well as from tourism, including whale watching.



The author: **LISA STEINER** graduated in Marine Science in 1988 at University of Miami and joined the IFAW (International Fund for Animal Welfare) cetacean research vessel "Song of the Whale" two weeks later, which at the time was based in the Azores. Since then Lisa has spent all her summers working on cetaceans around the Azores and at other times has also studied them in Alabama, Hawaii, Cape Verdes, Bermuda, Scotland and Madeira. She has published numerous research papers on cetaceans and is the lead scientist for the Biosphere Expeditions Azores project.





Picture © Martin Forster

Snow leopards

BETWEEN THREAT AND INCOME-GENERATOR

Dr. Volodymyr Tytar on snow leopards and their conservation through research and community-involvement

Beautiful, graceful, elusive, endangered. The snow leopard encapsulates the beauty and wonder of the natural world and humankind's troubled relationship with it. As humans move farther and farther into the snow leopard's range, the fragile alpine habitat the cats depend on for survival is becoming degraded and fragmented. Humans bring grazing pressure from livestock, as well as poaching and hunting. All this drives the snow leopard's wild prey down, leaving the carnivore with little choice but to shift its attention to livestock. And this inevitably brings conflict with herders. In Russia, for instance, between 2000 and 2011 there have been over 100 snow leopard attacks on livestock recorded in western Tyva alone, resulting in the loss of 465 heads of domestic animals. Precisely because making a living in snow leopard habitat is so difficult, the loss of just one sheep or goat can mean an enormous economic loss for a local herder. In the snow leopard's seven range countries (see info on the right), more than half of the people rely on animal husbandry, with over 40 percent living below the poverty line. While snow leopards are seldom actually seen by herders, the fact that they prey on valuable livestock often ends up in retaliatory killings by the herders. Besides, there is another economic reason a herder might kill a snow leopard: Snow leopard pelts and bones can bring in substantial income on the black market. This situation is aggravated even more by the growing global demand for cashmere garments, making fashion victims out of native herbivores upon which snow leopards are dependent as a source of food. All this combines into multiple threats for the snow leopard and it is no big surprise that the animal is listed as Endangered on the IUCN's Red List.

Innovative and participatory approaches to engage pastoralists in conservation

Almost all of the range countries have expressed concern about the decline of snow leopard populations and have taken steps to protect the cats, primarily by introducing restrictive measures. However, as pointed out by Rodney Jackson, who has been studying snow leopards in the wild for 30 years, there may be as many as a hundred protected areas set aside that are thought or known to house snow leopard, but most of them are extremely small, so they only have enough area or territory for fewer than a dozen cats, sometimes not even one or two. Most of the population actually survives outside reserves, most of which exist largely on paper only anyway: Management is weak or virtually non-existent, so ultimately wildlife conservation is in the hands of local communities.

Under these circumstances conserving this charismatic species presents many challenges, including the question of how herders and snow leopards can survive together? Innovative and participatory approaches to engage pastoralists in snow leopard and biodiversity conservation are needed to ensure the species' long-

THE SNOW LEOPARD (*Uncia uncia*)

is a member of the Felidae subfamily Pantherinae and on the basis of morphology and behaviour it is placed alone in a separate genus. They are found in 12 countries across Central Asia (China, Bhutan, Nepal, India, Pakistan, Afghanistan, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Russia, and Mongolia). China contains as much as 60% of the snow leopard's potential habitat. Snow leopards inhabit some of the highest, most rugged, snow-swept, least productive territories on earth. They prefer gorges, cliffs, and rocky outcrops above the tree line. Inaccessible and difficult terrain, along with the wary nature of this rare cat helps account for the fact that large parts of its range have yet to be surveyed. Between 4,500 and 7,350 snow leopards are thought to occur within a total potential habitat area of almost two million square kilometers.



Snow leopards are opportunistic predators capable of killing prey up to three times their own weight. They will also take small prey such as marmot or game birds. In general, their most commonly taken prey consists of wild sheep and goats (including blue sheep, Asian ibex, markhor, and argali). Adult snow leopards kill a large prey animal every couple of weeks, and remain on the kill for an average of three to four days, and sometimes up to a week.

term survival. Incentive programmes for gaining local community support are a must, notably when tangible economic returns can be created. This is especially relevant where mountain ranges are more fragmented and the habitat is less productive. Diversification of income opportunities creates more tolerance for wildlife predation as people rely less on livestock for their livelihoods, thus reducing conflict. Fortunately for snow leopards, the herders by and large do not have strongly negative attitudes towards the predator, as evidenced by numerous interviews, including those conducted by Biosphere Expeditions. Today many farmers and communities understand that they could benefit from protecting the snow leopard, rather than killing it. The saying, "what pays stays," that runs through much of this Magazine, rings true with snow leopard conservation too.

Compensation schemes – successes and failures

One of the primary and most straightforward approaches to mitigate the effects of wildlife conflict once damages have been incurred, is the design of compen-



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Local people, especially herders, have a crucial role to play in snow leopard conservation.

Integrating women into snow leopard conservation is often a crucial component of success.

All pictures © Andy Stronach

sation and insurance schemes that provide payments to cover predation losses. Compensation programmes may also aim to increase tolerance for wildlife and conservation policies, thereby reducing the illegal killing of wildlife and resistance to conservation management actions. However, these approaches and programmes are rarely successful unless people affected by the conflicts view them as their own and are willing to invest in their success. Up to now most of these types of programmes have tended to be small, isolated, and heavily subsidised. In Tyva, for instance, a scheme launched some time ago by WWF Russia in cooperation with the insurance company “RESO-Guarantee” was inefficient, even though a substitute for it is still in demand by the people of the Mongun-Taiga area, a key area of snow leopard habitat in the country. Nevertheless, some innovative site-based schemes are emerging. For example, one programme to protect snow leopards by the Snow Leopard Trust and its country partner, the Nature Conservation Foundation, is the implementation of community-based insurance schemes in two trans-Himalayan communities with important snow leopard populations. The first scheme became financially sustainable within five years. Success was based on a well-designed community-managed payment scheme. Another recent pilot initiative in the northern Pakistani region of Baltistan, involved a partnership between local farmers and private enterprise in the form of an insurance scheme combined with ecotourism activities. Farmers jointly finance an insurance scheme through the payment of premiums per head of livestock they own, while the remaining funds are provided by profits from trekking expeditions that focus on the snow leopard. The insurance scheme is jointly managed by a village management committee and staff of the Project Snow Leopard (PSL).

Herders who participate in these programmes are also supported in their efforts to create graze-free reserves, where land is set aside specifically for the snow leopard’s wild prey. One such compensation programme implemented in the remote Spiti Valley of India also provides financial incentives for better shepherding. With that, villagers have set aside roughly 2,000 hectares from which domestic animals are excluded. This has resulted in the recovery of native ungulate prey, which in conjunction with improved herding practices has caused the depredation of livestock by snow leopards to fall by two-thirds. A real success story.

Market-driven programmes and ecotourism

Recently, many conservation actions and practices, other than compensation and insurance type schemes, that link economics with conservation have been tried and tested. An example of a market-driven programme that has improved local economies and high mountain ecosystems is the “Snow Leopard Enterprise”. This helps hundreds of women across central and south Asia by providing them the training and equipment necessary

to produce hand-felted wool products that are sold internationally through the Snow Leopard Trust online store and other venues. This new source of income enables women to buy food, medicine, and schooling for their children. Profits from the Snow Leopard Enterprise programme are invested back into community conservation projects that generate income and help protect snow leopards and their habitat.

Further income-generating opportunities lie in community-based ecotourism, wildlife viewing opportunities and the development of nature stewardship among local pastoralists. Provided that the environment does not suffer due to ill-conceived or poorly implemented tourism development, locals can offer wildlife or nature viewing experiences organised in conjunction with home-stays, hiking and horse-riding treks for tourists. For example, the establishment of a network of community-run village home-stays (including eco-café managed by local women’s groups, solar showers sales etc.) bring significant cash incomes to village households. In Ladakh alone household incomes by such means have increased by 25%. Thus many households have abandoned keeping small livestock, thereby lessening the pressure on the sparse and fragile vegetative cover and leaving more food for the snow leopard’s natural prey. In the former Soviet republics (particularly Kyrgyzstan and Tajikistan) the development of wildlife viewing could provide rural families with additional income, especially if allied with yurt-based home-stays, a rewarding cultural experience for visitors. Ecotourism development in some cases has also given new life to local cultural traditions, making them a source of cultural pride and income generated through boutique handicraft (such as wall-hangings with snow leopard, ibex or other animal motifs and designs).

The Biosphere Expeditions dimension

As specified in the Conservation Strategy for Snow Leopard in Russia, 2012-2022, much can be achieved in the socio-economic context of snow leopard conservation by “...developing collaborations with such internationally known organisations as Biosphere Expeditions...” (p.81). Indeed, Biosphere Expeditions has been purposely involving local people within the Kosh-Agach area in the Russian Altai in tourism-related services, such as guiding, and in related service activities (cooks, camp helpers, horsemen, drivers), horses and yurts have been rented from nearby herder communities, for a moderate fee the local museum curator in Kokorya has been leading excursions into the field to explore the surrounding archaeological wonders. A custom at the end of each expedition slot has been a genuine herder’s dinner together with locals in their yurt, for a set price negotiated with the herder.

Seeing itself as a bridge between science and local communities, organisations such as Biosphere Expeditions can use the results of their scientific research and



Herder's dinner - Altai Expedition team members with their host - Altai landscape

All pictures © Andy Stronach



expeditions to develop community-based approaches benefiting both people and wildlife, and the prospects here are expanding. Questionnaire-based surveys can be tailored to determine visitor interests, to assess local market opportunities and constraints to this and related ecotourism activities, as well as assess capacity of local communities to provide guest services, wildlife guiding, etc. Local people are in a good position regularly to monitor their area, and could fulfill the role and obligations of an on-site wildlife guard. If suitably trained and motivated, local herders could receive a government salary to serve as effective wildlife wardens, or they could be funded by private initiatives (see info box "Stopgap solutions and camera traps" on the right). Extending efforts on collecting information on landscapes and geomorphology, flora and fauna, archaeological sites, herder camps and access conditions can facilitate the identification of tourism assets and key trekking trails and scenic routes.

However, speaking about money, it should be realised that our relationships concerning locals cannot be measured only in terms of cash. Increased exposure to exchanges and interactions with foreign visitors and organisations, such as Biosphere Expeditions, sheds light on how the rest of the world sees snow leopards: not as a pest, but as a highly charismatic species. Awareness by local communities of how snow leopards are perceived worldwide, coupled with a strong inherent appreciation of their local natural heritage ("...our Land is our God" is a common saying in the Tien Shan, for example), is creating a new dynamic of acceptance of the presence of the carnivore.

In the end snow leopards will only survive if solutions for local communities and the cats can be found, and if – through research – we find out what measures will work for them. Many locals call them 'mountain ghosts'. Come and join me in the field to make sure snow leopards stay with us in the mountains - beautiful, graceful and yet elusive as ghosts. ■

The author: **DR. VOLODYMYR TYTAR** was born in 1951 and his Master's Degree in Biology is from Kiev State University. At that time he first experienced the Tien Shan and Altai mountains and wrote a term paper on the ecology of the brown bear. He then pursued a career as an invertebrate zoologist before shifting towards large mammals and management planning for nature conservation. Apart from studying snow leopards in Kyrgyzstan, he has worked with Biosphere Expeditions on wolves, vipers and jerboas on the Ukraine Black Sea coast, and on snow leopards in the Altai mountains, and has been involved in surveying and conservation measures all his professional life.



Stopgap solutions and camera traps:

TURNING POACHERS INTO CONSERVATIONISTS IN THE ALTAI

Although no longer running an expedition in the Altai, Biosphere Expeditions' involvement with snow leopard conservation there continues with a programme run in conjunction with the Altai Project and supported by EOCA (the European Outdoor Conservation Association). The programme is a stopgap between long-term economic development and the critical short-term issue of poaching. Snare-poachers are identified on the ground, particularly those that are thought to target snow leopards. They are then approached and offered the following deal: Along with a camera trap and a GPS unit, capture a previously unidentified snow leopard on camera trap and provide the images and verifiable GPS coordinates in return for a payment of around \$1000. Approximately one year later, if they can photographically demonstrate the animal is still alive, they will receive another \$2500. The system works, because poachers will not only not kill the animal, but will also work to stop competitor poachers from killing it as well. This is obviously not a long-term solution, but with so few of the cats remaining and poaching such a threat, there must be short-term solutions until the long-term ones can be found and implemented.



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++ NEWS ++

Volunteers find new data on manul (Pallas's cat)



During a research expedition primarily focusing on snow leopards, Biosphere Expeditions has made a rather significant discovery. By laying camera traps and tracking scrapes, they found that the manul climbs to much higher altitudes than previously thought – 3,100 m to be precise. This information is important for future conservation efforts.

The manul (*Otocolobus manul*), also called the Pallas's cat, is a small wild cat with a broad but patchy distribution in the grasslands and montane steppe of Central Asia. Classified as "Near Threatened" by the IUCN since 2002, the species is negatively affected by habitat degradation, prey base decline and hunting, so any new information that can be compiled about them will contribute to better conservation of the species and their habitat. ■

Biosphere Expeditions plays its part in Australia's declaration of world's largest marine reserve



Australia has created the world's largest network of marine reserves, protecting oceans around its coast. Biosphere Expeditions' founder and executive director, Dr. Matthias Hammer said, "We're very proud to have played our part in this excellent outcome for ocean conservation."

"Within the huge reserve, which basically stretches all around the Australian coast, are several zones. Biosphere Expedition's turtle work was in the north-west network and within that is the new Roebuck Commonwealth Marine Reserve, which was the study site for our work on flatback turtles in 2010 and 2011."

"Biosphere Expeditions, together with our friends and partners from the Conservation Volunteers Australia (CVA), was working towards getting flatback turtles listed within the 'major conservation values' of the reserve and we got exactly that with the citation being 'Foraging area adjacent to important nesting sites for flatback turtles.'"

Over 2.3 million sq km (0.9 million sq miles) of sea, made up of five zones, have been formally protected by law from over-fishing and oil exploration. The huge network of reserves has just been officially proclaimed by the Australian government and is now under national environmental law. The newly-declared reserves are an addition to existing protected zones around Australia, taking the overall size of the marine reserves network to 3.1 million sq km (1.2 million sq miles).

The flatback sea turtle (*Natator depressus*) is a sea turtle that is endemic to the continental shelf of Australia and as such the only sea turtle that does not have a global distribution. The species is considered Vulnerable to extinction in Western Australia, but the Red List of the IUCN (International Union for Conservation) regards flatbacks as Data Deficient and unable to be correctly assessed. "For this reason CVA and Biosphere Expeditions have conducted annual monitoring programmes in locations such as Roebuck Bay and it is no coincidence that the new Marine Reserve matches up with where we have worked hand-in-hand for turtle and marine conservation", says Hammer.

Hammer adds, "Our achievements in species and habitat conservation as well as protected area creation are extensive including successes in Central Asia, Africa and Europe. This adds one more continent to our tally and is another great example of how Biosphere Expeditions is working to help conserve and protect our environment with the help of committed volunteers." ■

Quokkas bouncing back – according to our marsupial expedition scientist in Western Australia



Collared quokka in a recently burnt area, directly adjacent to an unburnt pocket.

New research by marsupial expert and expedition scientists Karlene Bain has revealed that Western Australia's threatened mainland quokka (*Setonix brachyurus*) can benefit from fire management activities in the forests south of Manjimup. DEC (Department of Environment and Conservation) Frankland district nature conservation coordinator, and Biosphere Expeditions scientist, Karlene Bain said a team of DEC scientists in Walpole had found that low intensity fuel reduction burns favoured quokka habitat.

"We've been evaluating the effects of prescribed fire and uncontrolled bushfires on quokkas in WA's southern forests by assessing habitat quality before and after fire and monitoring the abundance of the animals and their movement patterns," she said. "Our results indicate that quokka habitat is largely retained following low intensity prescribed fire, because the moist swamp vegetation burns infrequently and patchily, leaving mosaics of burnt and unburnt vegetation. Unburnt patches provide protection from predators and the elements, while the regenerating burnt areas provide high quality food. The quokkas can move ahead of a slow moving fire or can take shelter in the unburnt pockets and they begin feeding in the burnt pockets within days of the fire." Bain also said low intensity prescribed burns had a lower impact on quokkas than rapidly moving and much more destructive, high intensity bushfires. Bain said that many people were not aware that quokkas lived on the mainland, but those in the forests of

the south-west were not as abundant as their close relatives on Rottnest Island off Perth. "Quokkas on the mainland live in highly fragmented habitats and are threatened by feral cats, foxes, pigs, inappropriate fire and drying climate," she said. "It is vital that we improve our knowledge about their habits and responses to disturbance so that we can better manage populations and prevent local extinctions. The project with Biosphere Expeditions will do just that," she concludes. ■

Marine news from our scientist for the Maldives coral reef expedition



Dr Jean-Luc Solandt, Senior Biodiversity Policy Officer, Marine Conservation Society & expedition scientist Maldives says: "After an early summer of preparation for the Maldives surveys, I was in a position to remotely organise the expedition surveys, planning with Biosphere Expeditions staff the routes via Google Maps, whilst making accommodation for the fact that we would be training and moving huge distances between dive sites (as usual). I have been in contact with the government surveyors of the Maldives who have donated their own Reef Check data to us for use by a York University masters student to undertake analysis on the best locations for new Marine Protected Areas. Whilst organising the surveys and discussing results in the UK I have been busy in my 'day' job with the Marine Conservation Society ensuring that fisheries regulators are providing effective measures to stop damaging fishing operations in current UK Marine Protected Areas (policing the police if you like). I have also had the job of pulling together all the UK basking shark data for the past five years (as lead partner for the preservation for the species in UK waters) in order to produce a status report for this year. Later on this year I will be attending the 3rd International MPA congress in Marseille, and presenting papers on our UK work." ■

Major publications by Dr. Marcelo Mazzolli



Dr. Marcelo Mazzolli started his Biosphere Expeditions career as a field scientist in his native Brazil. Today he is a veteran of several terrestrial expeditions and acts as a methodology advisor for many field scientists. Already an avid publisher in the scientific literature, Dr. Mazzolli has recently added two more important publications to his list. The first is a field manual - written together with fellow biologist Dr. Matthias Hammer, our founder and executive director – entitled "Sampling and analysis of data for large terrestrial mammals during short-term volunteer expeditions". This publication aims to standardise methods for volunteer expeditions, which are becoming increasingly important for data collection as funding for conservation projects dries up, and is being implemented by scientists

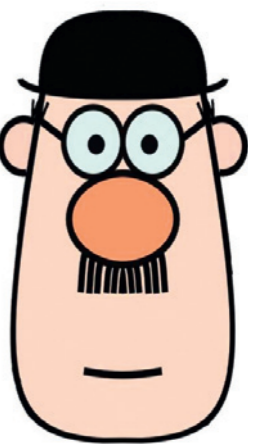


working on rare and cryptic terrestrial species across the Biosphere Expeditions board. The second is a seminal and encouraging paper on the "Natural recolonisation and suburban presence of pumas in Brazil". The puma, extinct from considerable extensions of its former distribution, is considered threatened in south, southeast and northeast Brazil. Areas in the south and southeast have only recently been recolonised by the species, following a decrease in logging activities after depletion of the Atlantic rainforest in the 1960s, and measures implemented since 1993 to protect this ecosystem. Data on recovery of puma populations were obtained from field observations based on the onset of depredation on sheep flocks in 1988, and also from the presence and growing number of records of pumas in urban and suburban areas since 2004. Logging bans have caused a rural exodus since and also a 15-fold drop in the deforestation rate, creating conditions for a partial recovery of wildlife. Thirty-five records of puma were compiled demonstrating the historical presence of the species in the area prior to its temporary absence. Recent records included twenty-four cases in urban and suburban areas, and eleven of current breeding populations. ■

Get the taxman to help fund your next expedition - Crowd-funding and tax-efficient giving

You can now make tax-efficient donations via our US 501(c)(3) charity and our new crowd-funding website www.crowdwise.com/biosphere-expeditions. You can give to a particular project or our charity as a whole. Please get involved and give generously. Our projects need your support!

We also have a new page on employer match-giving and personal taxation. Check this out now at www.biosphere-expeditions.org/tax and get your employer (or even better the taxman) to help fund your next expedition! ■



Awards & accolades 2013

More awards for Biosphere Expeditions in 2013: National Geographic Traveler's "50 Tours of a Lifetime" award for the Namibia big cat & elephant expedition. Our Arabian desert conservation expedition is named by The Independent newspaper in the UK as one of their "Best Desert Adventure Holidays". ■

Forays into management with the Dubai Desert Conservation Reserve

Conservation needs research. How else could conservation decisions be made. Sound research is needed, for example to identify areas for protection, to direct funding efficiently, to know where and how wildlife lives and what it needs to thrive. But also how to avoid human-wildlife conflict and/or create economic incentives for people living with wildlife and wilderness. Conservation research has been the bread-and-butter of what Biosphere Expeditions does for over a decade. But recently we have 'dared' to foray into the field of management with our partners of the Dubai Desert Conservation Reserve (DDCR). The clue, and riddle, is in the name – the DDCR is already a successful reserve.



Founded in 1999, the DDCR is an area of 225 km² that comprises 4.7% of Dubai's land area. One of the first conservation actions of the reserve was a wildlife reintroduction programme for Arabian oryx and the two indigenous gazelle species (sand and Arabian gazelle), as well as programmes for the protection of other key components of the ecosystem, in particular the vegetation (close to 6000 indigenous trees were planted in 1999 to create a natural seed bank, which has now led to germination of indigenous plants). Currently the DDCR contains approximately 420 Arabian oryx from the 100 that were originally re-introduced in 1999. Both the Arabian oryx and the gazelle species have expanded into the DDCR naturally as the amount of human activity has decreased and been controlled. Estimated populations of approximately 300 Arabian and 100 sand gazelle can now be seen throughout the DDCR. There is no poaching, no land grabbing, good management and a secure financial footing. In fact the DDCR is a rare glimpse of what the Arabian deserts were like before the advent of oil, guns and lots of people. As you drive through the DDCR with gazelles flitting across your path and oryx gracing the crest of sand dunes, you are reminded more of the African plains teeming with megafauna, than the barren, lifeless deserts that a century of human impact has created in Arabia.

So with a success story of this magnitude, what is there for Biosphere Expeditions to do? Simple. Help with the management of this wildlife haven. With hundreds of oryx and gazelles running around, even the DDCR's resources are quickly stretched to the limit.



Picture © Wouter Kingma

How many of them are there exactly? What is their nutritional status? And what about the Gordon's wildcat – their numbers and status? Answering these kinds of questions takes time, money and a good deal of labour. And this is exactly what Biosphere Expeditions brings to the table. Even if only for short, but intensive study periods once a year, volunteers can add valuable data on oryx and wildcat numbers and how they are doing. There is no technology to score body fat on oryx bottoms or to set live traps for the cats; it needs good old-fashioned manual work – and it's easy to learn how to do it.

The 2013 Arabia expedition report (www.biosphere-expeditions.org/reports) is an excellent example of how volunteer efforts can help guide administrators of protected areas in their management decisions. In this case we were able to show that oryx were malnourished and Gordon's wildcat rare, so the DDCR took action and increased supplementary feeding and instigated a cat reintroduction programme. This is good news, as was the sighting of nine rare lappet-faced vultures during the expedition. Volunteer involvement was crucial in obtaining these findings and records and, to quote from the report, the DDCR thanks "all expedition participants for their enthusiasm and assistance." ■

++ ALUMNI NEWS ++

Liz Shaw



More than 10 years ago, Liz Shaw joined the Peru expedition, when she was a zoology student at Bristol University. "I had always dreamed of visiting the rainforest, so the expedition really was a dream come true. As we travelled upriver to our camp on the first day I had to keep pinching myself as I couldn't believe I was actually there!", says Liz. And further: "The expedition got me hooked on travelling and also gave me valuable experience, so after my degree I went on to do several more research trips abroad, from studying howler monkeys and bats in Mexico to surveying wildlife in Tanzania. I was also lucky enough to make it back to Peru, spending several months working as a naturalist and guide at a rainforest lodge. Two years later I found myself back again, collecting data for my MSc on the parrot clay licks I had first visited during my expedition." These days Liz works for a leading wildlife charity, writing and editing profiles on endangered species, and also does freelance editing of natural history books, scientific papers and reports, as well as running a national 'citizen science' project looking at the UK's garden wildlife. Liz again: "My expedition with Biosphere Expeditions all those years ago really started everything off, giving me the experience, inspiration and confidence to get into a career in wildlife conservation." ■

Lynn Kimmel

and her new career in human-wildlife conflict



"My passion for Africa, its people and wildlife, started as a young child. While my past career was mostly in business development, I was extremely fortunate to have a serendipitous transfer to South Africa where I was able to travel extensively. When I returned to the States, I felt I had left my heart and soul in Africa. I knew that one day I would return and pursue my dream to work in conservation, specifically with human-wildlife conflict.

However, I needed to prove to myself that I could endure the hardships of the African bush and the challenges that come with conservation work. After looking into several ecotourism organisations, I selected the Biosphere Expeditions Namibia trip because its foundation was a scientifically-based research project focused specifically on human-wildlife conflict. During the trip, I took every opportunity to participate in activities such as game counts and capture, and asked the scientists numerous questions about the wildlife as well as the perceptions of the local communities regarding human-wildlife conflict.



The Namibia trip helped me understand all the rewards and challenges that come with research and conservation work and it was just the catalyst I needed to jump into graduate school to pursue a Masters in Conservation Biology. Having completed two years of studies, I am in the final stretch of this degree at Antioch University New England, and have been accepted into Antioch's doctoral program in Environmental Studies.

Over the past two years, I have had the privilege of working with a Maasai colleague and elder from Loita, Kenya, assisting in the development of community-based conservation programmes for his community. I am also working closely with the Human-Wildlife Conflict Collaboration out of Washington, DC, as I pursue my research and complete my thesis in human-wildlife conflict, specifically focused on deep-rooted and social conflicts between people that often result in retaliation on wildlife." ■

Lena Schneider



In 2012 Lena took part in the Altai expedition as a local placement student, calling it "the best thing that happened to me for my career development" (see page 35 in our 2013 Magazine). Spurred on by the experience, Lena started guiding bird watching tours in her native Russia and now, by 2014, has built a career doing just this and writing that she now "works all over Russia; in fact I am just about to leave for the Volga river to watch the migration there". ■

Peter Pilbeam

After 10 consecutive years on the Altai snow leopard expedition from 2003 to 2012, Peter Pilbeam has taken a plunge and joined his first marine expedition in 2013 to Scotland. "Although I've visited the area many times over the last 20 years or so, I've only ever seen a small part of it from the sea, so (as well as the science) the experience was, for me, very illuminating.", says Peter, and adds "at the end of the expedition we were given a quick update of what we'd done and the areas surveyed - this I found very useful indeed. We could easily see where the surveys had taken place and what we'd done. It did bring our fortnight into context within the overall scheme - we were able to see where our work fitted in. And it was good to see the trends over the last years." ■



get involved

The Friends of Biosphere Expeditions & the Look Ahead network

Who are the Friends of Biosphere Expeditions?

The Friends of Biosphere Expeditions are people who feel passionate about providing support to our critical wildlife conservation and research projects across the globe. By joining the Friends you can play a vital part in making a real difference to the survival of our planet's endangered species. Joining is easy, not expensive and just a few clicks away (just follow the link below).



Become a member of the Friends of Biosphere Expeditions

If you can't take part in a full-blown expedition or project yet, or if you have already been with us and would like to stay involved, or if you would simply like to be part of what we are doing, then why not become a Friend of Biosphere Expeditions. Help us to support critical wildlife conservation and research projects across the globe for a membership fee starting from a monthly £ 6 / €7.50 / US\$10 / AU\$12.50.

As a Friend of Biosphere Expeditions benefits for you will include expedition and events discounts, the Biosphere Expeditions Magazine, first notification and preference for last-minute expedition places, news and updates on how your membership fee is making a difference to our conservation work in the field, and much more. More information and a joining form are at www.biosphere-expeditions.org/friends.

What happens to the Friends' funds?

Wondering where your money will go? We guarantee that 100% will go into supporting conservation. We can do this because we are a small, flexible organisation with no steel and glass headquarters to maintain or bureaucratic dinosaurs to feed. Whenever we make a significant expenditure on one of our conservation projects from the Friends' funds, we will let you know in a clear and transparent way. For example, we may spend some of the fund to enable scientists from different projects to present the findings of their Biosphere-supported projects at international conservation conferences, or we may spend some of the fund on printing education materials for local people, or on training up a local conservationist under the guidance of our project scientists, or creating placements on our expeditions for local students and people. Have a look on the right for recent examples of what the Friends' funds have been spent on.

In 2013 the Friends supported the following activities:

Placements for local students and people on our expeditions to Arabia, Azores, Maldives, Musandam and Peru.

Shaha Hashim, Maldives placement.

Picture © Umair Bodeeu



"I have learnt so much during this one week and my interest in the area of marine conservation has been further strengthened. I want to be a Reef Check trainer, share the knowledge with more people and start a project to regularly monitor local reefs of my country using the Reef Check methodology."

Equipment for Altai (camera traps) and Namibia (camera traps and collars).



Vera Menges, field scientist Namibia.

Picture © Alisa Clickenger

"Thank you very much to the Friends for providing top-of-the-range Reconyx camera traps and e-obs collars for my work on big cats in Namibia. These pieces of equipment are important tools for me that allow me to track the animals' movements with great accuracy and study their ecology. Good equipment yields detailed knowledge, which is key for good conservation."

Training in English-language skills for local people

The Friends of Biosphere Expeditions are also funding an English language course for "Grupa Barz", a local snow leopard protection and anti-poaching group in the Tien Shan mountains of Kyrgyzstan.



Look Ahead and spread the word!

There are many ways of getting involved with Biosphere Expeditions. Joining an expedition is one; joining our Look Ahead programme is another. We are building an amazing network of people - have a look at how people have helped; we hope it gives you some inspiration. Then see which one is for you and get in touch.

Make a donation

You can make a tax-efficient donation via our crowdfunding website www.crowdfund.com/biosphere-expeditions or straight into the accounts of our US 501(c)(3) charity, our German e.V. charity, or our UK or Australian non-profits.

Involve your company

Does your company publish a company magazine? If so, the editor would probably be very interested to hear from you as they are always keen to cover interesting features relating to their members of staff.

Many employers, particularly in the USA and Canada, but also elsewhere, will match fund charitable contributions made by their employees, retirees and employees' spouses. In Biosphere Expeditions' case this means that your employer may match fund your expedition contribution payments and other donations you make to Biosphere Expeditions. Some employers also provide matching funds to support employee volunteer hours.

Some companies also have grants for non-profit organisations such as Biosphere Expeditions, so why not talk to the relevant people in your company? You may have a Corporate Responsibility Manager, or an Environmental

or Communications Manager who may be able to help you. Some companies are also keen to get their staff involved in non-profit causes and might like to send staff members on an expedition or a taster day, so this is another option you could investigate.

Raise funds

Support critical wildlife conservation and vital research by raising funds for Biosphere Expeditions. There are many ways to do this. Why not organise an event, or take part in a sporting endeavour? It's fun, a great way to meet people and to do something different to challenge yourself. By raising funds you can make a long-lasting contribution to our wildlife conservation work worldwide.

Events

Host an event for us in your neck of the woods. Examples include staffing a stand at an exhibition, holding a drinks reception in a local pub, a dinner party at your home, a talk at your local wildlife or conservation society, a get-together at your professional organisation or club, or anything else you can think of (see the event organised by John Haddon and Andrew Coogan). We can send you support materials such as postcards and brochures that you can hand out at your event. In addition, Biosphere Expeditions staff member might be able to come and support you or give a talk.



Volunteers staffing a stand at an exhibition in London.

Media

Local newspapers and radio stations are always looking for new stories, and they are very likely to want to hear about your experiences. Biosphere Expeditions has an extensive archive of high resolution photos and broadcast quality HD films, so please contact us if you need pictures or film clips to illustrate your story or if you would like help with your press release or media work.



Article featuring a team member experience in whale & dolphin research

Time & skills

We always need people with skills who can help us out. Examples are skills in the outdoors, accounting, graphic design or IT. Or people who can help by writing blogs, tweets or talking to the media. If you have any of those skills or if you would like to help online, then please send us an e-mail telling us what your skills are.

In-kind donations

You may have laptops, GPSs, video cameras, binoculars or other items we can use on expedition to give away. If so, please let us know and we will either use them ourselves on our wildlife conservation projects or pass them on to our local partners.

Spread the word!

Another way of helping us to help wildlife and people across the world is to spread the word. Word of mouth (in person and online) is by far the best way to get people excited. Talk to your family, friends and colleagues about your experience and encourage them to join in too.



We hope this gives you some inspiration. Have a look at the next page and at www.biosphere-expeditions.org/lookahead for actual examples of what people have done. ■

LOOK AHEAD CASE STUDIES

Kathy Humphrey

"I discovered Biosphere Expeditions when I was exploring ways to apply my love of scuba diving to marine conservation. I was immediately impressed with the organisation - its philosophy, values, scientific approach and focus on tangible results."



Picture: © Andreas Odley

I'm a marketing consultant in Seattle, Washington. I do a lot of volunteer work here as a hands-on volunteer and as a member of Boards of Directors. My biggest question about taking a "volunteer vacation" was the nature and value of the volunteer work to be done in the field. I wanted to know I would be doing real work that would make a contribution to conservation. The Biosphere Expedition project in Musandam, Oman met that objective for me and more.

In 2012 I joined volunteer divers from all over the world to survey key indicator marine species and the ocean floor in the Musandam, a remote area in the Arabian Gulf. The expedition was a great learning experience - about coral reef preservation, human impacts on marine ecology, local marine life, and underwater survey work. It was an eye-opening, exhilarating week. It was also great fun.

The proof that the work we did had real, tangible value came at the end of week. The expedition scientist analysed the data we collected during the week and integrated it with previous years' surveys to provide a five-year trend line of the health of the Musandam reef. Within a few days, Dr. Matthias Hammer, leader of our expedition and Biosphere Expeditions' Executive Director, presented the findings to the Omani government. The data supported Biosphere's previous recommendation to establish a marine reserve in the Musandam, and the findings included a recommended action plan to achieve this.

Our volunteer dive team spent five days collecting data and before the week was out, the data - with concrete, actionable recommendations - was presented to decision-makers in the Omani government. That's tangible conservation in action.

After such an exhilarating week, my question was, 'now what?' How can I stay involved with the organisation's work since I can't immediately join another expedition? Biosphere's answer: The Friends of Biosphere and the Look Ahead programme. "Through these programmes, I could contribute my marketing communications experience to Biosphere's fundraising and outreach work."



Kathy (foreground) surveying the corals in Musandam.

Picture: © Kelvin Aitken

Since returning from Oman, I've conducted market research, worked to raise awareness among expedition participants about employer match-giving, reviewed communications materials, and continue to consider how Biosphere might grow corporate partnerships.

It's a gratifying and enjoyable way to stay engaged with Biosphere and its conservation work until I go on another expedition. I want to go back to Musandam and am eager to join Biosphere's survey of elephants and African cats in Namibia. In the meantime, I live vicariously through the real-time reports from the expeditions and continue to urge friends and colleagues to take the trip of a lifetime with Biosphere Expeditions."

John Haddon & Andrew Coogan

"We are both members of the Friends with three expeditions between us. We wanted to do more for the Friends and reach out to other people too, so recently organised the first UK 'Friends Meet' at the Devils Punch Bowl in Surrey. Participants met at the National Trust main car park and coffee shop for a pre-walk drink before spending two hours walking around the very impressive natural amphitheatre. We had a quick lunch at a pub in Haslemere and then drove up a steep sunken road between huge beeches and other deciduous trees to eventually reach Blackdown Heath, one of the most remote and highest parts of the south with the highest hill in West Sussex reaching 280 m. Everybody who came enjoyed themselves and were very keen to see future meets.



We are therefore intending to arrange something similar two to three times a year and the next one is likely to be at the London Wetlands Centre in early spring 2014. These events will be open to the Biosphere Friends, Biosphere Expeditioners or anybody who is thinking about joining an expedition or just wants to find out more. Check out www.biosphere-expeditions.org/events-uk for the latest details."

John Haddon (left) and Andrew Coogan at the Devil's Punch Bowl

Susannah Cogman

"I am a city lawyer and an avid diver. A few years ago I went to the Musandam coral reef expedition and caught the Biosphere bug. I have been back many times since on various diving expeditions and more recently I was inspired by the Look Ahead campaign to see if I could use my professional experience to help Biosphere. Now I help by volunteering my services as a diver and by providing a legal perspective on issues. I also joined the Friends."





Previous page: Oxford sandy & black pig

Small pictures: animals also kept for a self-sufficient lifestyle: a quail, geese and chicken.

Above: Kate's garden in Midhurst: 43 m² growing space for vegetables and fruits.

Left: Kate's current home on a friend's property: a bell tent and self-built woodland kitchen

Below: country small holding
Picture © Simon McEwan

KATE FOX IS NOT NORMAL



Tales from the woods and the off-the-grid lifestyle of a Biosphere Expeditions staff member

Until Easter 2013 I lived in a conventional terraced house in Midhurst, West Sussex with my partner Andy, but definitely did not lead a conventional lifestyle! In our front and back gardens (totalling around 100 m²) we were as self-sufficient as possible in organic fruit and vegetables; producing up to 23 kg of vegetables and 38 kg of fruit a month from 43 m² of growing space. We also kept chickens and quail in the garden and pigs and geese on a friend's piece of land nearby. In the six years we lived in the house, we transformed the outside space into a productive "microholding" at a cost of less than £100 using innovative design, resourcefulness and reclaimed materials wherever possible.

However, with the house now sold (because even that possession made us feel uncomfortable), I am tempo-

rarily staying on a friend's property in a large bell tent with a woodland kitchen that Andy and I built from trees felled on the site. We have solar-powered lights, solar-heated water and cook on a wood-fuelled rocket stove. We are currently designing a mobile hut that will be as self-reliant and off-the-grid as possible with 12 volt solar electrics and rainwater collection; all to be towed behind our van. This way we can work towards our goal of designing and building our own off-grid sustainable house, once we have decided where we want to settle and saved up for a plot of land.

My motivation for this kind of lifestyle is a desire to have a fulfilling, wholesome, healthy life not based upon gaining wealth and material possessions. I try to live simply and in a low impact way, respecting wildlife and

the environment so that future generations can also enjoy it. I try not to rely on finite fossil fuels, preferring instead to find low tech and carbon-neutral alternatives. I find it far more satisfying to make what I need or reuse, recycle and repair things, rather than going to a shop and handing over money. This slower pace of life has great benefits - for example time I might have spent going out to work full-time to earn money to buy fruit, vegetables, eggs and meat, is spent instead on the enjoyable processes of growing, harvesting, cooking and eating my own produce. I obviously need to earn some money and in doing so, I aim to do things that I find fulfilling and have a positive impact - sustainable garden design work, making household items from reclaimed wood, writing articles and giving talks about sustainable living and leading nature conservation projects (thank you Biosphere Expeditions for hiring me to lead expeditions as a freelancer). I also highly value my leisure time and with my way of life I have plenty of time off to go camping, mountain biking, hiking, canoeing and sea kayaking and generally enjoying the outdoors.

Quality of food and high animal welfare standards are extremely important to me; I like to know where my food comes from and how it was produced. Therefore I try to be as self-sufficient as possible and eat seasonally, which means that everything is as fresh and free from additives and other nasties as it can be. I appreciate every mouthful - especially if I have had to wait several months for it to be in season! I have strong animal welfare principles and believe that chickens and pigs have a wretched time in conventional agriculture, so all my animals are kept

in small numbers in enriched environments as close to their natural habitat as possible. This enables them to express their instinctive behaviours and live happy lives (at least as far as I can tell from my human perspective), whilst producing high quality eggs and meat and not damaging the land. When obtaining food that I cannot produce myself, I make sustainable, ethical and, wherever possible, local choices.

My interests in organic and environmentally sensitive food production began when I started my degree in Rural Resources Management in 1992. It was during my degree that I studied the differences between modern intensive agriculture, organic farming, permaculture and bio-dynamics. I made the decision not to support intensive mechanised agriculture or factory farming and became vegetarian over 15 years ago. I am still primarily vegetarian, but occasionally eat a small amount of my home reared pork, quail or chicken - quality, not quantity!

I aim to inspire others by offering talks, factsheets and consultancy in sustainable living, especially related to small scale self-sufficiency. Have a look at my website www.katefoxmicroholding.co.uk to find out more and get in touch if you have any questions.



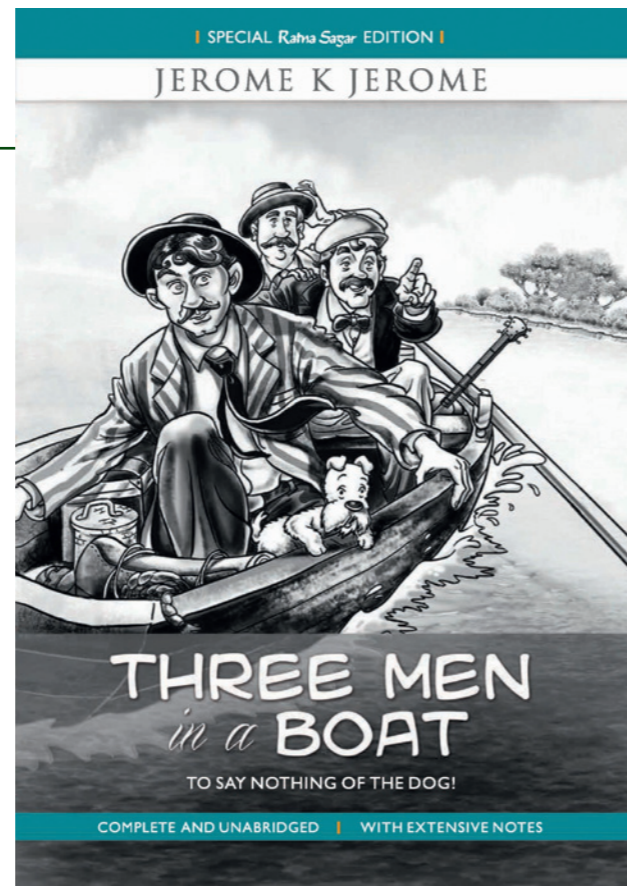
THREE MEN IN A BOAT

(To Say Nothing of the Dog), published in 1889, is a popular classic by English writer Jerome K. Jerome. The book was initially intended to be a serious travel guide. One of the most praised things about the book is how undated and true it rings to modern readers, especially on the topics touched on by Kate Fox.

Here are a couple of examples:

"...and, lulled by the lapping water and the rustling trees, we fall asleep beneath the great, still stars, and dream that the world is young again - young and sweet as she used to be ere the centuries of fret and care had furrowed her fair face, ere her children's sins and follies had made old her loving heart - sweet as she was in those by-gone days when, a new-made mother, she nursed us, her children, upon her own deep breast - ere the wiles of painted civilisation had lured us away from her fond arms, and the poisoned sneers of artificiality had made us ashamed of the simple life we led with her, and the simple, stately home where mankind was born so many thousands years ago."

"How many people, on that voyage [of life], load up the boat till it is ever in danger of swamping with a store of foolish things, which they think essential to the pleasure and comfort of the trip, but which are really only useless lumber. How they pile the poor little craft mast-high with fine clothes and big houses; with useless servants, and a host of swell friends that do not care twopence for them, and that they do not care three ha'pence for; with expensive entertainments that nobody enjoys, with formalities and fashions, with pretence and ostentation, and with - oh, heaviest, maddest lumber of all! - the dread of what will my neighbour think, with luxuries that only cloy, with pleasures that bore, with empty show that, like the criminal's iron crown of yore, makes to bleed and



swoon the aching head that wears it! It is lumber, man - all lumber! Throw it overboard. It makes the boat so heavy to pull, you nearly faint at the oars. It makes it so cumbersome and dangerous to manage, you never know a moment's freedom from anxiety and care, never gain a moment's rest for dreamy laziness - no time to watch the windy shadows skimming lightly o'er the shallows, or the glittering sunbeams flitting in and out among the ripples, or the great trees by the margin looking down at their own image, or the woods all green and golden, or the lilies white and yellow, or the somber-waving rushes, or the sedges, or the orchids, or the blue forget-me-nots. Throw the lumber over, man! Let your boat of life be light, packed with only what you need - a homely home and simple pleasures, one or two friends, worth the name, someone to love and someone to love you, a cat, a dog, and a pipe or two, enough to eat and enough to wear, and a little more than enough to drink; for thirst is a dangerous thing. You will find the boat easier to pull then, and it will not be so liable to upset, and it will not matter so much if it does upset; good, plain merchandise will stand water. You will have time to think as well as to work. Time to drink in life's sunshine..." ■

People, public & the private sector:

THE THREE PILLARS OF FUNDING

BIOSPHERE EXPEDITIONS



Where does the money for Biosphere Expeditions come from? And how is it spent? Our founder and executive director Dr. Matthias Hammer takes a look at the Biosphere Expeditions finances.

First of all, it is important to remember that Biosphere Expeditions is not a tour operator, profit-driven business or holiday, diving or safari company. We are a not-for-profit wildlife research and conservation organisation – nothing more and nothing less. In the USA, Biosphere Expeditions is registered in Florida as a tax-exempt so-called “501(c)(3)” non-profit charity, in Australia it is an incorporated non-profit charity registered in the State of Victoria, in the UK an England-registered non-profit, in Germany a so-called “gemeinnütziger Verein” charity, and much the same in France as an “association à but non lucrative”.

Sometimes getting this across is a challenge for us when we communicate with potential grantors, sponsors or the general public, as people at first glance only see the “selly” side of our operations; that of letting people be part of conservation in action – for a fee. But just behind the glitz is the non-profit-making side that is at the core of what we do: wildlife conservation. Our overall annual budget is about \$ 1 million and we send about 300 people into the field each year on a dozen projects. Although this overall budget sounds large, it is actually small for a conservation organisation. We have stayed at this size for the last few years, because we made a strategic decision not to be part of the sometimes all-pervading obsession with growth (see p.17). For us, it's not about profit, it's about wildlife. We want to do a handful of projects and we want to do them well, being intimately involved with all of them and achieving things on the ground for local people and wildlife. So how is all this funded? Biosphere Expeditions stands on three financing legs and these are:

PEOPLE

You - through your expedition contributions, which is the bulk of that income, but also through the FRIENDS (more about them on p. 46) and via some donations and legacies. This makes up about 60% of all our income.

PUBLIC SECTOR

This includes government co-operations, for example Australia's Department of Environment and Conservation (DEC) providing support in terms of staff and vehicles for our marsupial conservation work in Western Australia or the Maldives Ministry of Fisheries supporting our coral reef work. At the moment this is a very small percentage (about 5%) of our budget, but this may grow as we go for state funding such as grants from the European Union or national governments.

PRIVATE SECTOR

The rest of our income (about 35%) comes from the private sector. This can be private foundations, corporate foundations, corporate sponsorship, employee or CSR (corporate social responsibility) programmes.



www.swarovskioptik.com



Observing Arabian oryx, using a Swarovski Optik spotting scope.

Picture: © Wouter Kingma



The European Outdoor Conservation Association supports Biosphere Expeditions' snow leopard work.

www.outdoorconservation.eu



www.buff.eu

Using a BUFF® during a reef survey.



www.vascutek.com

Vascutek-sponsored local student placement on our Altai snow leopard expedition.

Picture: © Andy Stronach



www.oman.org.uk

The Anglo-Omani Society supports our coral reef project in Musandam.

Picture: © Kelvin Aitken



www.namibiatourism.com.na
www.omantourism.gov.om
www.snowgum.com.au

Picture: © Michele Steffey



Swarovski Optik and BUFF® are corporate sponsors, supporting us with funding and products.

The Namibia and Oman Tourism Boards provide general help with press trips, Snowgum supports our projects with outdoor gear.

We apply for grants regularly to support our core expedition work and to enable us to do or buy extra things (e.g. buy more satellite collars or camera traps, or train more local people, build more local capacity, etc.). In 2013, for example, we received support from EOCA (The European Outdoor Conservation Association, a group of European outdoor industry businesses who have come together to provide support for conservation activities) for our snow leopard work, or from the Anglo-Omani Society for our coral reef project.

There are also straight sponsorship deals and partnerships. For example Swarovski Optik kitting us out with top-notch optical equipment, helping with PR work and making a donation to our work every year, or BUFF® gifting their products and other support, or Vascutek sponsoring our placement programme for local people, or the Oman and Namibia Tourism Boards helping with press trips, PR and marketing, or Snowgum supporting us with outdoor gear.

We also work with company CSR (corporate social responsibility) departments to create events, increase awareness and raise funds. Many employers, particularly in the USA and Canada, but also increasingly elsewhere, will match fund charitable contributions made by their employees, retirees and employees' spouses. Some employers also provide matching funds to support employee volunteer hours. See www.biosphere-expeditions.org/match-funding for more information about this and how you could get your employer involved.



Ethical restrictions

In doing all this we have a very straightforward policy of not accepting donations from corporations whose actions are by and large detrimental to the environment and/or human health, so we do not take money from oil, gas, mining, tobacco, alcohol and other such interests. We make a case-by-case judgment and use this policy as the guiding principle.

Expenditure

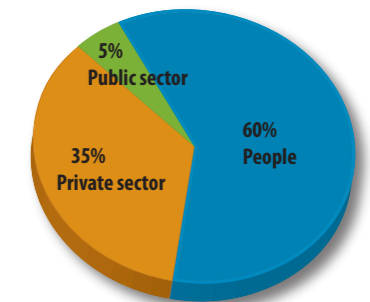
So where does the money go? The bulk (72%) goes towards direct project costs of running our field work. This figure includes field staff, equipment, board, lodging, transport & fuel, permits & admin and all the other small costs that come with running expeditions in remote places. Each expedition is written up in an

expedition report, which, next to the results of the research and conservation work, also details project costs in a separate budget. With the expedition report each project comes full circle for every participant who can see where their research efforts as well as their money went. To my knowledge we are the only volunteer organisation who practices this total one-to-one transparency, demonstrating for each expedition, as well as for the organisation as a whole, our pledge of putting at least two-thirds of all our income into our wildlife conservation projects on the ground.

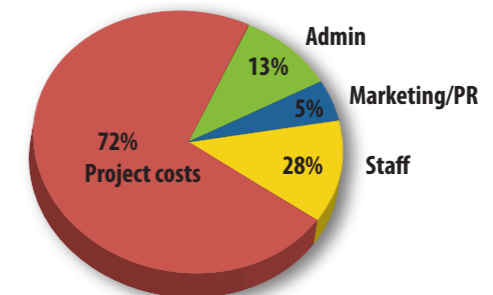
And of course in the real world things sometimes go wrong and effort is wasted. If this happens, we tell you, just as we tell you about our achievements.

The remaining 28% go towards staff (13%), admin (10%) and marketing/PR (5%), just as they would in other non-profits, except perhaps with the difference that our staff and marketing budgets are very small, because we try to run an efficient outfit, punching well above our weight, and prefer to put as much money as we can into our projects in the field, rather than adverts or glitzy campaigns or events. ■

INCOME




EXPENDITURE




TASTER DAYS/ SAMPLER DAYS

Taster days are held in the UK, USA & Australia and they are just what they say they are: days that will give you a unique insight into what it's like to be in the field with Biosphere Expeditions assisting scientists with wildlife research and conservation. They are set amongst the beautiful scenery of national parks or protected areas, where you will be part of a small team, alongside a nature guide and your expedition leader. You will discover expedition and wildlife research and conservation skills such as working with a map, GPS and compass, collecting important animal data, reading animal tracks and signs, using telemetry equipment and wildlife camera traps. You will also learn about the area you are in, its fauna and flora, history and the conservation work that is going on.


Taster days are a standard £65 | US\$95 | AU\$95 per person. We will credit £50 | US\$75 | AU\$75 back to you if you subsequently join one of our expeditions.

 Taster days in the UK:

- New Forest National Park
- Broads National Park

 Sampler days in the U.S.:

- Minnewaska State Park, NY
- Lory State Park, CO
- King's Canyon & Sequoia, CA

 Taster days in Australia:

- Melbourne
- Sydney

More at: www.biosphere-expeditions.org/tasters



SCHNUPPERTAGE DEUTSCHLAND

Wo Schnuppertag draufsteht, ist auch Schnuppertag drin: Verbringen Sie einen unterhaltsamen Tag mit uns und schnuppern Sie rein in das Feldforscherleben und Mitforschen bei Biosphere Expeditions. Unsere Schnuppertage finden in einigen der schönsten Nationalparkflecken Deutschlands statt. Als Teil eines kleinen Teams erlernen und probieren Sie Seite an Seite mit einem Naturführer und Ihrem Expeditionsleiter Techniken und Fertigkeiten im Natur- und Artenschutz aus, wie z.B. Spurenlesen, Navigation, Datenaufnahme, Arbeit mit Kamerafallen und Radiopeilsendern für Wildtiere. Obendrein lernen Sie selbstverständlich auch den Nationalpark kennen; seine Fauna, Flora, Geschichte und Naturschutzaktivitäten. Am Ende Ihres Schnuppertages werden Sie also nicht nur viel über den Nationalpark wissen, sondern auch einen sehr guten Eindruck davon haben, wie es ist, mit uns auf Expedition zu sein.

Alle Schnuppertage kosten einheitlich €65 pro Person. Falls Sie sich nach dem Schnuppertag für die Teilnahme an einer Expedition entscheiden, schreiben wir Ihnen €50 davon wieder gut.

Mehr unter www.biosphere-expeditions.org/schnuppertage



 Veranstaltungsorte in Deutschland:

- Nationalpark Niedersächsisches Wattenmeer
- Nationalpark Odertal
- Nationalpark Kellerwald
- Nationalpark Eifel
- Nationalpark Berchtesgaden



MEDIA CLIPPINGS 2013

Biosphere Expeditions is in the media a lot. Below is a selection. A full overview is on ISSUU at <http://issuu.com/biosphere-expeditions>.

In English

National Geographic Traveller

Interview with founder and executive director Dr. Matthias Hammer
www.issuu.com/biosphere-expeditions/docs/ngtravelleruk13

Wild Travel magazine



Eight-page feature on Altai snow leopard expedition
issuu.com/biosphere-expeditions/docs/al-wildtravel13

Wild Travel magazine

Eight-page feature about Namibia big cat & elephant expedition
issuu.com/biosphere-expeditions/docs/na-wildtravel13

Women's Adventure Magazine

Two-page feature about Namibia big cat & elephant expedition, and voluntourism
issuu.com/biosphere-expeditions/docs/na-womensadventure13

Science Illustrated

Four-page feature article on Amazonian cat and primate expedition
issuu.com/biosphere-expeditions/docs/pe-scienceillustrated13

Moon Handbook "Volunteering Vacations in Latin America"



One-page mention of Honduras coral reef and Amazonia biodiversity expeditions

issuu.com/biosphere-expeditions/docs/ho-moonbook13

Sport Diving magazine

Five-page feature about Musandam coral reef expedition
issuu.com/biosphere-expeditions/docs/mu-sportdiving13

Sport Diver magazine

Five-page feature on Malaysia coral reef expedition
issuu.com/biosphere-expeditions/docs/my-sportdiver13

Traveler Luxe magazine (Taiwan)

One-page feature about Namibia big cat & elephant expedition
issuu.com/biosphere-expeditions/docs/na-travelerluxe13

Inspire Travel magazine (Singapore)

Scotland marine mammal expedition as part of larger voluntourism feature
issuu.com/biosphere-expeditions/docs/sc-inspire13

In German

VOX TV

8 minute piece about voluntourism and its pitfalls
www.vox.de/medien/sendungen/hundkatzemaus/2db47-168abd-5ddf-63/natur-schutz-hautnah-auge-in-auge-mit-elefant-wolf-und-co.html

InStyle magazine

Slovakia and Azores expedition mention (half page each) within a larger "charity travel" piece
issuu.com/biosphere-expeditions/docs/az-instyle13

freundin DONNA Magazin

One-page profile of staff member Malika Fettak
issuu.com/biosphere-expeditions/docs/freundindonna13

Universum Magazin



Nine-page on Scotland marine mammal expedition
issuu.com/biosphere-expeditions/docs/sc-universum13

Unterwasser

Mention of Maldives and Scotland marine expeditions within a larger voluntourism piece
issuu.com/biosphere-expeditions/docs/sc-unterwasser13

Abenteuer & Reisen

Two-page feature about Azores whale watching and expedition scientist Lisa Steiner
<http://issuu.com/biosphere-expeditions/docs/az-abenteuerreisen13>

Natur

Eight-page feature on voluntourism with Biosphere Expeditions as showcase
issuu.com/biosphere-expeditions/docs/naturkosmos13

Biorama

Four-page feature about Slovakia wolf and lynx expedition
issuu.com/biosphere-expeditions/docs/sk-biorama13

In Chinese

National Geographic Traveler China



Twenty-page feature about voluntourism with lots of Biosphere Expeditions pictures and showcase examples / issuu.com/biosphere-expeditions/docs/ngtravelerchina13

*Cover picture:
Elephants can be a destructive force
or beneficial ecosystem engineers -
depending on your point of view.*

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www.biosphere-expeditions.org



Biosphere Expeditions is an international non-profit conservation organisation registered in England, Germany, France, Australia and the USA.

Officially accredited member of the United Nations Environment Programme's Governing Council & Global Ministerial Environment Forum.



Officially accredited member of the International Union for Conservation.

