



Biodiversity: My hotel in action

A guide to sustainable use of biological resources



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Founded in 1948, IUCN (International Union for Conservation of Nature) brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1000 members in all, spread across some 160 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. A central Secretariat coordinates the IUCN Programme and serves the Union membership, representing their views on the world stage and providing them with the strategies, services, scientific knowledge and technical support they need to achieve their goals. Through its six Commissions, IUCN draws together almost 11,000 expert volunteers in project teams and action groups, focusing in particular on species and biodiversity conservation and the management of habitats and natural resources. The Union has helped many countries to prepare National Conservation Strategies, and demonstrates the application of its knowledge through the field projects it supervises. Operations are increasingly decentralized and are carried forward by an expanding network of regional and country offices, located principally in developing countries.

IUCN builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

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How to use this guide

"Every choice you make as a hotelier makes a difference to nature, whether it's about the food you serve in your restaurant, the souvenirs you sell in your shop or the local tour advice you give to your guests. Change however can be challenging. We, at IUCN, hope that by providing you with this guide, we can help make the challenge of reaching sustainable hotel practice easier."

Julia Marton-Lefèvre, Director General, IUCN

Biodiversity plays an important role in the day-to-day life of a hotel: from the food in the restaurant and wood in furniture and fittings, to the amenities in the spa, the products of biodiversity are everywhere inside hotels. Outside, plants and animals make a hotel's public areas and gardens attractive for guests, while beyond the hotel gate, national parks, green spaces, coasts and natural habitats provide guests with opportunities for recreation and enjoyment.

The purpose of this guide is to help owners and managers of small and large hotels, located in all areas, from cities to mountain to coastal areas, to conserve nature. In particular, it is designed to guide the sustainable use of biological resources in the day-to-day operations of hotels.

This guide is meant to complement the many tools that are already available to help you reduce environmental impacts in your hotel, by using appropriate siting, design and construction practices, and by improving management of energy and water consumption, and disposal of wastewater and solid wastes.

To get a [quick overview of what biodiversity is](#), why it is important and how hotels interact with it, [read Part I, Biodiversity and Hotels](#).

To find out about [specific actions](#) that your hotel can take to protect biodiversity and be biodiversity-friendly, [go to the "Taking action ..." sections in Part II](#). Each section focuses on a different area of hotel operations, including:

- Restaurants;
- Guest rooms and public areas;
- Hotel souvenir shops;

- Hotel grounds and gardens; and
- The wider destination beyond the hotel's gates, including recreation opportunities for your guests.

Each section in Part II gives practical suggestions for what hotels can do to help conserve biodiversity, [testimonials](#) of what some hotels around the world are already doing, and a summary of the local and global biodiversity issues surrounding each topic. You may want to use these sections with managers and senior staff in each of the operational areas.

If you need [more information](#) to help you implement actions suggested in the "Taking action ..." sections, [go to Part III, where 13 technical factsheets developed by TRAFFIC](#), the wildlife trade monitoring network, provide detailed information on procuring and using a variety of biological resources, from seafood to wood to souvenirs.

For ideas on how you can [communicate your hotel's biodiversity actions](#) to staff, guests and other stakeholders, [go to Appendix 1](#). And for guidance on ways to set up [partnerships in a destination](#), [go to Appendix 2](#).

When using this guide, remember that it is important to involve all relevant managers and staff in putting the actions into practice. The same action may need to be implemented in different ways according to the management structure of your hotel (and in particular how management roles and responsibilities are assigned). Take procurement for example: in small hotels, the hotel manager might handle all procurement, while in larger hotels, senior staff may take on this role in each operational area, and hotel groups may organize procurement through a central procurement department. So it is important to make sure that the right people within your hotel or group are involved.

"All hotels can take action to preserve the natural richness of their region and the Planet, which contributes to the quality of tourist destinations. We hope this guide – to which we are happy to be part of – will bring you concrete solutions to move towards this great goal."

Gilles Pélisson, Chief Executive Officer, Accor

Part I: Biodiversity and hotels

About biodiversity

- What does biodiversity do for us?
- How do we harm biodiversity?
- And what can we do to conserve it?

Towards a “green” hotel

- How do hotels impact on biodiversity?

Part II: Taking action in the hotel

Principles for biodiversity actions

Taking action in hotel restaurants

1. Tuna
2. Salmon
3. Molluscs
4. Seafoods specific to Asia
5. Crustaceans
6. Other fish
7. Caviar

Taking action in guest rooms and public areas

- Wood
- Amenities and spa products
- Ornamental plants and animals

8. Woods for furniture and construction
9. Medicinal and aromatic plants for amenities and spa products
10. Live animals
12. Horticultural plants

Taking action in hotel souvenir shops

9. Medicinal and aromatic plants for amenities and spa products
11. Wildlife-based souvenirs

Taking action in hotel grounds and gardens

12. Horticultural plants

Taking action in the destination

- Supporting local biodiversity conservation efforts
- Activities and excursions offered at the tour desk

Part III: TRAFFIC Recommends – Factsheets on the sustainable use of biological resources

13. Activities and excursions

Part I: Biodiversity and Hotels



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About biodiversity

Biodiversity is everywhere. Look around and you'll see plenty of different types of organisms – insects, plants, birds and other animals. Go for a walk and you'll notice different types of habitats and ecosystems – woods, grasslands, ponds, rivers and coasts – each with different species of animals and plants. Unless you use a microscope, you won't see microorganisms, but they too are part of the natural world.

This is **biodiversity** – our planet's diversity of living organisms and their natural homes. Combining the Greek word for life, bios, with diversity, the term biodiversity refers simply to the vast variety of life on Earth. This diversity is expressed in many ways, from the number of species of living organisms, to the variations between individuals of those species, to the variety of ways in which these species group together to form different habitats and ecosystems. An **ecosystem** is the combination of living organisms and the physical environment in which they live. Each main type of ecosystem – from forests, mountains, deserts and grasslands, to freshwater, coastal and marine ecosystems – can be subdivided into more specific ecosystem

categories according to their physical features and the types of organisms that inhabit them.

One of the features of life on earth is that species depend on each other. For example, predators like lions in Kenya need prey like gazelles to feed on. The gazelles, in turn, get their food by eating grass on the vast savannahs of the Masai Mara. Draw the links between predators and prey, between prey species and their food plants, and you start to see how different species interact with each other. Change one part of this web, the lions, gazelles or savannahs, and the effects will be felt throughout the links between the species. The interdependency of species within an ecosystem makes biodiversity an important indicator of the health of the living world: when biodiversity starts to decline, it is often a sign that the ecosystem is in trouble, and so is human society.

What does biodiversity do for us?

Biodiversity is essential for human life. It provides human society with many important benefits and services: for

instance, insects pollinate our crops, birds disperse seeds, and fungi, worms and micro-organisms produce nutrients and fertile soils. Interactions between organisms and the physical environment influence our climate, water supplies and air quality, and help protect us from extreme weather, including mitigation of natural disasters. These benefits are collectively known as ecosystem services. The 2005 Millennium Ecosystem Assessment (<http://www.millenniumassessment.org>) describes four basic types of ecosystem services:

- **Provisioning services:** These are the tangible products that biodiversity provides, including food, fresh water, fuel, and materials, such as wood for furniture and construction and fibre for clothing, as well as genetic resources for medicines and crop security (see Box 1);
- **Regulating services:** These are the services that keep major ecological processes in balance, such as climate regulation, flood control, disease regulation and water purification;
- **Cultural services:** These are the non-material values that humans derive from nature, including aesthetic, spiritual, educational and recreational benefits; and
- **Supporting services:** These are the services that are necessary for the production of all other ecosystem services, including biomass production, soil formation, nutrient cycling and provision of habitats.

All of these services are vital for our well-being, and it is just not possible to replace them with technology if they are damaged. The only option that will conserve these benefits is for us to reduce our adverse impacts on the natural world, so that biodiversity and natural resources have a chance to recover. Increasingly, ecosystems are being restored so that they can provide key services, in preference to man-made alternatives. For example, restoration of coastal marshes and vegetation is used as an alternative to man-made sea defences in some areas, while protection of ecosystems in watersheds is now an important part of the management of freshwater supplies. In agriculture, sustainable farming systems are replacing artificial fertilisers and pesticides with services provided by natural ecosystems.

How do we harm biodiversity?

Although biodiversity provides our society with vital products and services, human activities are causing tremendous

damage to ecosystems and species around the world. Everything we consume, all we throw away, has an impact on biodiversity. World population has risen dramatically over the past few decades, and is still rising. Part of this population is also becoming more affluent and more mobile, leading to rising consumption and a rapid increase in human impacts on the environment. In July 2008, the Executive Director of the Convention on Biological Diversity noted that current rates of biodiversity loss are up to an estimated 100 times the natural extinction rate, while 60 per cent of ecosystem services are being degraded as a result of human activity. What remains of the natural world is less healthy and more stressed, and natural systems are out of balance (see Box 2).

There are a number of reasons for the overall loss of biodiversity that we now face, including:

- **Climate change:** Human-induced climate change is altering temperature, rainfall patterns, water availability, drought and similar factors that affect the distribution of plant and animal species throughout the world. According to the Intergovernmental Panel on Climate Change (<http://www.ipcc.ch>), 20 to 30 percent of plant and animal

Box 1: The importance of genetic diversity among species

Just two different rice species provide food for billions of people around the world. Yet, there are 100,000 known varieties of just one of these species. Do we need them all? Would it not make sense to concentrate on the cultivation of just a few varieties? In the 1970s, a virus was destroying rice crops from India to Southeast Asia. The outbreak threatened massive starvation and financial ruin, until scientists discovered one among the thousands of rice varieties that was resistant to the virus. This experience demonstrates the importance of protecting natural species diversity for our future food security.

Source:

Biodiversity, the Basis of our Life, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Germany)

http://www.bmu.de/files/pdfs/allgemein/application/pdf/faltblatt_biovielfalt_en.pdf

Box 2: Biodiversity under threat

Threatened species

According to the IUCN Red List of Threatened Species™ in 2007, a total of 16,306 species out of 41,415 assessed species are threatened with extinction, meaning that they are listed as either Critically Endangered, Endangered or Vulnerable. These include:

- **Mammals:** 1,094 species (22 percent of all known mammals);
- **Birds:** 1,226 species, 2008 data (12 percent of all known birds);
- **Fish:** 1,201 species (39 percent of all assessed fish);
- **Reptiles:** 422 species (30 percent of all assessed reptiles);
- **Amphibians:** 1,808 species (31 percent of all assessed amphibians); and
- **Gymnosperms:** 321 species (35 percent of all assessed gymnosperms).

Source:
IUCN Red List of Threatened Species, available at: <http://www.iucnredlist.org>
(http://www.iucnredlist.org/info/2007RL_Stats_Table%201.pdf)

Forest loss

Forests have effectively disappeared in 25 countries, and another 29 countries have lost more than 90 percent of their forest cover. For example:

- Illegal logging has destroyed more than half of Indonesia's forests, and is driving species such as the Sumatran rhino, tiger and orang-utan toward extinction.
- Unsustainable logging threatens mahogany and forest ecosystems in South America. The majority of mahogany species have been designated as threatened on the IUCN Red List. Mahogany is often used for fine furniture and other products.

Sources:
Millennium Ecosystem Assessment, Chapter 21, Forest and Woodland Systems, in report on Ecosystems and Human Well-being: Current State and Trends
<http://www.millenniumassessment.org/>,
Nellemann, C., Miles, L., Kaltenborn, B. P., Virue, M., and Althenius, H. (Editors), 2007. The last stand of the orangutan – State of emergency: Illegal logging, fire and palm oil in Indonesia's national parks. United Nations Environment Programme, GRID-Arendal, Norway.
http://www.grida.no/_documents/orangutan/full_orangutanreport.pdf
Big Leaf Mahogany, Natural Resources Defense Council
<http://www.nrdc.org/wildlife/habitat/esa/international03.asp>

Extinction threat for Primates

The first comprehensive review of the world's 634 kinds of primates in five years has found that almost 50 percent of species are in danger of going extinct, according to the 2008 IUCN Red List of Threatened Species™. In Asia, more than 70 percent of primates are classified as threatened, meaning they could disappear forever in the near future.

“Tropical forest destruction has always been the main cause, but now it appears that hunting is just as serious a threat in some areas” says Russell A. Mittermeier, Chair of IUCN's Primate Specialist Group. As our closest relatives, apes, monkeys and other primates are important to the health of surrounding ecosystems. The forests they live in provide vital resources for humans and also absorb carbon dioxide that causes climate change.

Source:
<http://cms.iucn.org/about/work/programmes/species/index.cfm?uNewsID=1391>

Corals under threat

The first comprehensive global assessment of reef-building corals revealed in 2008 that one third of the species are threatened with extinction. The study was conducted by leading coral experts and the Global Marine Species Assessment (GMSA) – a joint initiative of IUCN and Conservation International (CI). Researchers identified the main threats to corals as climate change, destructive fishing, declining water quality from pollution and degradation of coastal habitats.

Built over millions of years, coral reefs are home to more than 25 percent of marine species, making them the most biologically diverse of marine ecosystems. Coral reefs harbor fish and other marine resources important for coastal communities.

Source:
<http://cms.iucn.org/about/work/programmes/species/index.cfm?uNewsID=1279>

species assessed would be at risk of extinction if average global temperatures rise by more than 1.5-2 degrees Celsius. Many species are already affected by warmer global temperatures: for example, more frequent droughts are threatening wildlife in Africa and frequent storms and rising ocean temperatures are damaging and even killing corals around the world, while in the Arctic, polar bears are finding it more difficult to feed as the sea-ice breaks up earlier each year (see Box 3).

- **Habitat conversion:** Through land-use changes and inappropriate occupation, physical modification of rivers or water withdrawal from rivers, loss of coral reefs, and damage to sea floors from trawling, about half of the Earth's land surface has already been transformed or degraded by human activity. The costs of decades of habitat conversion are now becoming all too apparent: for example, where forests have been cleared for timber and agriculture, or for infrastructure development, soil erodes faster and rivers

flood more frequently. The loss of critical habitats also adversely impacts many plant and animal species.

- **Invasive species:** Non-native species introduced accidentally or deliberately (for example by using exotic species for gardening) into an ecosystem can cause major damage to ecosystem functions and populations of indigenous species through predation or by out-competing for key resources such as food, water or nesting sites. One dramatic example of an invasive species is the cane toad: introduced into Australia to control beetles that were destroying sugar cane crops, the cane toads failed to control the beetles, but have caused major damage to indigenous Australian wildlife by eating small animals and poisoning larger predators that try to eat them.
- **Overexploitation:** The use of species, nutrients, water and other biological resources faster than they can be replenished by natural cycles of reproduction or replenishment can cause serious declines in species

Box 3: Climate change, biodiversity and tourism

Climate is a key resource for tourism, and the tourism sector is highly sensitive to the effects of climate change and global warming. Climate change also has major impacts on biodiversity resources that are important for tourism, including ecosystems such as coral reefs and mountains. In Africa, pressures from longer dry periods and shrinking living spaces are making elephants highly vulnerable to climate change, and Australia's Great Barrier Reef could lose up to 95 percent of its living coral by 2050 due to changes in ocean temperature and related factors.

Tourism is estimated to contribute some 5 percent of global emissions of carbon dioxide, one of the main gases that drives global warming, according to the Second International Conference on Climate Change and Tourism organised by UNWTO in 2007. The conference recognized that the tourism sector must rapidly respond to climate change if it is to grow in a sustainable manner, by reducing emissions of the

greenhouse gases that cause global warming and adapting tourism businesses and destinations to changing climate conditions. Part of this response includes improving energy efficiency, which is a major way to reduce greenhouse gas emissions, and securing financial resources to help poor regions and countries respond to climate change. It also includes striving to conserve biodiversity and natural ecosystems to strengthen their resilience to climate change and to ensure their long-term sustainable use as an environmental resource base for tourism.

Hotels can make significant contributions to climate change mitigation by reducing their energy use, increasing energy efficiency and incorporating biodiversity-friendly practices in their day-to-day operations.

Sources:

Convention on Biological Diversity (2007) "Biodiversity and Climate Change"
www.cbd.int/doc/bioday/2007/ibd-2007-booklet-01-en.pdf

Davos Declaration on Climate Change and Tourism: Responding to Global Challenges (2007)
 Second International Conference on Climate Change and Tourism organised by UNWTO
http://www.unwto.org/climate/current/en/pdf/CC_Broch_DavBal_memb_bg.pdf



IUCN Photo Library © IUCN / Ger Bergkamp

Box 4: Milestones in international action to protect the environment and biodiversity

- 1972: “The Limits to Growth,” published by the Club of Rome, predicts that the Earth's limits will be reached in 100 years at current rates of population growth, resource depletion and pollution generation. The United Nations establishes the UN Environment Programme.
- 1973: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (commonly known as CITES) is agreed in Washington, DC, USA. The treaty prevents or restricts trade in animal and plant species threatened with extinction.
- 1979: The Convention on the Conservation of Migratory Species of Wild Animals (also known as the CMS or the Bonn Convention) is agreed in Bonn, Germany.
- 1987: The World Commission on Environment and Development highlights the need for ‘sustainable development’ to protect the environment and combat poverty and global inequalities.
- 1992: The Convention on Biological Diversity (generally known as the Biodiversity Convention), and the Framework Convention on Climate Change are adopted at the UN Conference on Environment and Development (the ‘Earth Summit’) in Rio de Janeiro, Brazil, along with Agenda 21- a detailed plan for worldwide implementation of sustainable development.
- 1997: The Kyoto Protocol, which commits industrial countries to reduce their emissions of carbon dioxide, is agreed in Japan.
- 2002: The 2010 Biodiversity Target – to achieve by 2010 a significant reduction in the current rate of loss of biological diversity – is adopted at the World Summit on Sustainable Development in Johannesburg, South Africa.
- 2005: The Millennium Ecosystem Assessment concludes that natural resources are being degraded on a massive scale, damaging the ecological processes that support life on Earth.



populations and resource availability. The overuse of water resources in cities and tourism resorts and for intensive agriculture is threatening natural wetlands and groundwater levels. Over-fishing has damaged stocks of fish in most of the world's major fisheries. On land, hunting has contributed to a specific number of species declines or extinctions in the last century, while many others continue to be threatened by illegal hunting today.

- **Pollution:** Chemicals, fertilisers and pesticides, air pollutants, wastewater and solid wastes can all cause damage to individual species and overall ecosystem functioning. Pollution from fertilisers and sewage can result in high nutrient concentrations in water, triggering algal blooms, a sequence of events which begins with rapid growth of algae that then die and decay, leaving behind dead zones in rivers, lakes and coastal waters and adversely impacting fauna and flora. Other types of pollutants can mimic animal hormones and seriously affect the health and development of fish and amphibians. Many of our landfills ooze polluted wastewater and produce gases that contribute to global warming. Plastic debris and other wastes are found in most of the world's oceans, where species may eat them by mistake or become tangled in them, with often fatal consequences.

And what can we do to conserve it?

Despite this range of threats, there are solutions. The causes of biodiversity loss need to be addressed by society as a whole,

and we each have a part to play in meeting this challenge. While much has been done to protect the environment and biodiversity in the last decades, there is still very much to do (see Box 4). The key is to keep our uses of biodiversity and ecosystem services within sustainable limits.

Sustainable use means meeting human needs while not threatening the health of the environment or the stocks of resources that will be available for future generations to meet their needs. In practice, maintaining stocks of natural resources for the future will require not using them up faster than they can be replaced by reproduction and natural process, such as rainfall, which replenishes freshwater stocks.

In addition to ensuring that consumptive uses of biodiversity are sustainable, it is also important to carefully manage non-consumptive uses of the natural world. When biodiversity is used for recreation, tourism or cultural purposes, it is not necessarily being used up – the number of trees in a forest is the same after a group of tourists has visited as it was before they arrived – but poorly managed human activities can still have a negative impact, for example by disturbing wildlife, leaving litter, or even just the effects of trampling as people walk through the forest. However, such non-consumptive uses, when well-managed, can be a valuable way to generate income from biodiversity without the need to harvest it, while at the same time helping to increase peoples' understanding about biodiversity and conservation.

Figure 1: Impacts on biodiversity throughout the life cycle of a hotel



© Graham Pankhurst

Towards a “green” hotel

How do hotels impact on biodiversity?

Each individual has a different impact on the environment. The level of this impact will depend on personal choices and may well be scattered around the globe: food may be imported from other continents, water piped from rivers and reservoirs some distance away, and waste may be disposed miles away from its source. The same is true for a hotel.

A hotel impacts biodiversity at each stage of its life cycle, from planning through to closure:

Figure 1: The hotel life cycle (see illustration opposite)

- 1. At the planning stage**, the most important issue in determining the level of impact that a hotel will have relates to choices about its siting and design. Even the most sustainably operated hotel will have major impacts if it is built in a biodiversity-sensitive area (see Box 5). Choices about the materials that will be used to construct the hotel, where those materials will come from and the total physical footprint of the hotel will also influence how significant its impacts will be in the operational stage.
- 2. At the construction stage**, impact is determined by the size and location of the area cleared for development and where construction activities are taking place, the choice of construction methods, the sources and amount and type of materials, water and energy used to build the hotel, the location of temporary camps for construction workers, inadequate storage facilities for construction materials, the amount of construction waste that has to be disposed of, and other types of damage such as surface soil erosion or compaction caused by construction activities or disruption of natural water flows and drainage patterns.
- 3. In the operational stage**, a hotel’s impact comes mainly from the energy, water, food and other resources that are consumed in running the hotel, by the solid and liquid wastes it produces, by the way its grounds are managed, and by the direct impacts of its guests. In addition, regular renovation and replacement of furniture, appliances and facilities can cause impacts through purchasing choices and increased waste generation. Using energy and water more efficiently, using organic and sustainably produced food, reducing, treating and disposing of waste appropriately, making sustainable purchasing decisions and managing gardens with natural-style plantings can all help a hotel to

reduce its adverse impacts on biodiversity. Similarly, a hotel’s relationship with host communities not only affects the sustainable operations of the hotel but also the use of environmental resources by communities themselves.

- 4. At the closure stage**, a hotel’s impacts come from the disposal of materials removed from the hotel to refurbish it, convert it for other uses, or demolish it, and from the work

Box 5: Guidance for siting, design and construction stages of new hotels

This guide focuses on how hotels can contribute to biodiversity conservation in their day-to-day operations. However, before operational actions and decisions are even an issue, critical planning decisions related to siting, design and construction will influence the potential for adverse environmental impacts. Responsible choices on the site and design of the hotel, the materials from which it is constructed, and how construction is managed are vital to protect biodiversity and avoid damage to species and habitats.

If you are planning to construct a new hotel, ensure that it is designed according to sustainable principles, to benefit local communities, preserve the environment, avoid wastage of resources and protect biodiversity. Guidance on these issues can be found in the following sources:

Sustainable Hotel Siting, Design and Construction, published by the International Business Leaders Forum’s Tourism Partnership and Conservation International. <http://www.tourismpartnership.org/pages07/SDCGuidelines.html>

International Ecotourism Guidelines, published by The International Ecotourism Society with the UN World Tourism Organisation http://www.ecotourism.org/webmodules/webarticlesnet/templates/eco_template_home.aspx?articleid=421&zoneid=25

involved in these activities. It may be possible to reuse and recycle some materials, but there may also be some toxic materials, particularly from older buildings, which will require careful handling and management. A responsible hotel operator should also foresee supporting activities of ecological restoration as required.

Responsible siting and design, the effective management of energy and water consumption, and the proper disposal of wastewater and solid waste are important challenges for any hotel hoping to improve the sustainability of its operations. These topics are covered in detail in a number of other valuable publications and resources.

This guide focuses on managing the biodiversity impacts of a hotel during the operational stage, specifically related to the use of biological resources. Many biological resources, from

timber to fisheries, are being damaged and depleted by overuse. Poorly managed tourism and recreation can damage wildlife through disturbance of animals and plants, or the collection of species for souvenirs and ornaments for the wildlife trade. On the other hand, sustainable commercial uses – such as sustainable tourism – can be good for biodiversity as they encourage the protection of ecosystems for income that they generate, provided they do not overexploit natural resources by using them in excess of their capacity to regenerate. Furthermore, responsible biodiversity practices can also bring benefits to hotels (see Box 6).

See the introduction to Part III: TRAFFIC Recommends for more information about the potential impacts of overexploitation of biological resources.

Box 6: What are the business benefits of responsible biodiversity practices for hotels?

Implementing good environmental practices in hotel operations, including using biological resources more sustainably, can result in positive business benefits as well as make an important contribution to biodiversity conservation. Key business benefits include:

- **Appealing to engaged consumers:** Tourists are increasingly motivated by sustainability and contributions to biodiversity conservation, as well as healthier environments and products.
- **Reducing costs:** Good biodiversity practices can actually lower a hotel's operating costs, by reducing expenses for resource procurement, usage and disposal.
- **Improving the quality of the destination:** Destinations rich in biodiversity are attractive places, appeal to quality customers, and offer scope for biodiversity-based recreational activities.

- **Improving employee productivity and sense of responsibility to the environment:** Employees are often strongly motivated by actions to enhance biodiversity; such motivation helps to increase employee productivity and loyalty, and can reduce staff turnover.
- **Securing a hotel's 'license to operate':** Implementing good practices for biodiversity demonstrates that a hotel cares about the environment and runs a responsible business, and can lead to increased support from government, staff and local communities.
- **Attracting investment from socially responsible investors:** Investors want to be sure that their funds are invested in businesses that have good environmental records.

Sources:

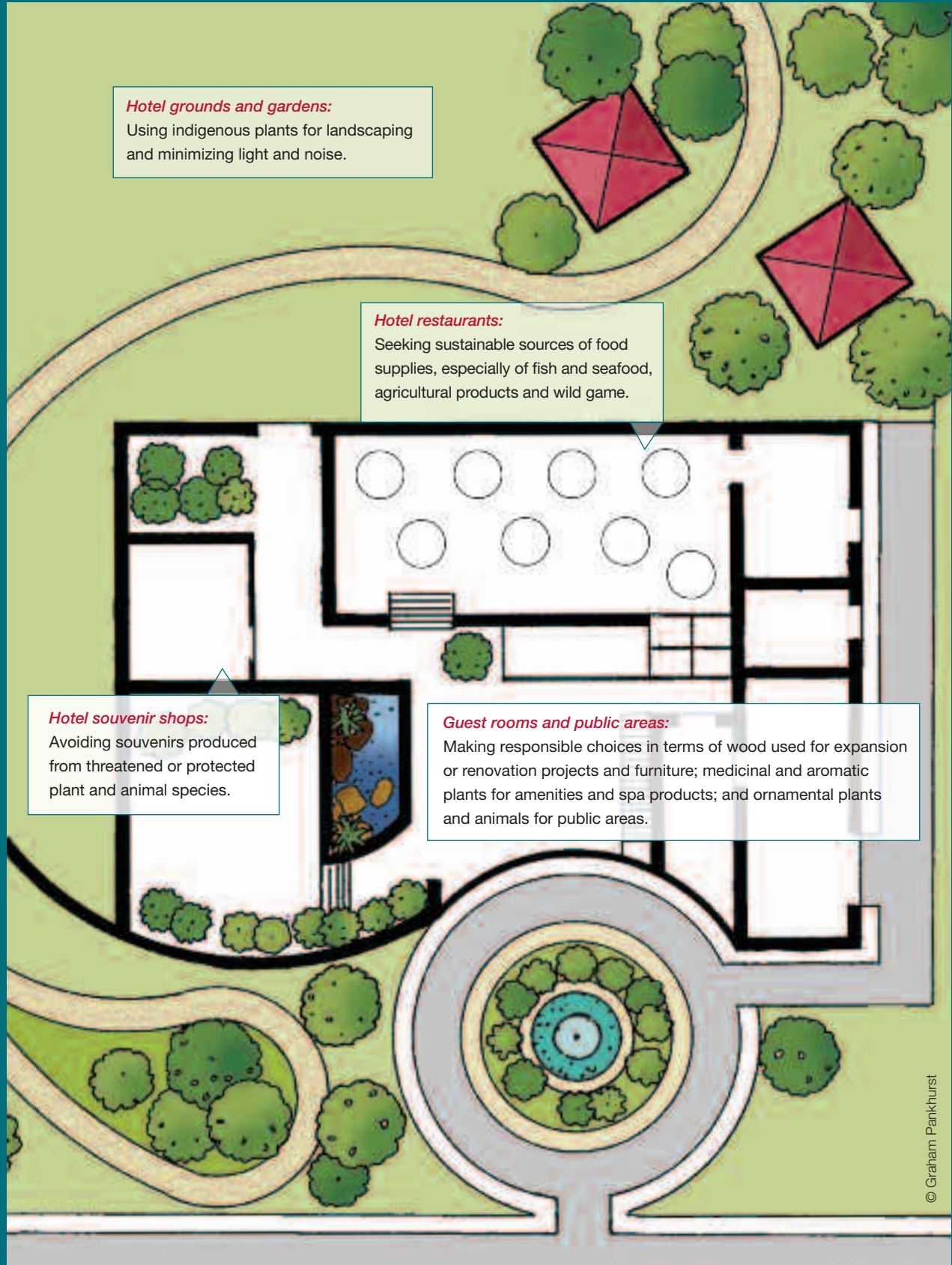
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Tour Operators' Initiative for Sustainable Tourism Development (2004), Supply Chain Engagement for Tour Operators – Three Steps Toward Sustainability



Figure 2: Biodiversity resources in a hotel

In the destination:

Promoting responsible recreation activities and excursions and supporting local biodiversity conservation efforts.



Part II: Taking action in the hotel

Biodiversity resources are used in every area of a hotel, from restaurants to guest rooms to gardens (see Figure 2, opposite page). In this section of the guide, you will find recommendations about specific actions you can take in the different areas of your hotel, including:

- **Hotel restaurants:** Seeking sustainable sources of food supplies, especially of fish and seafood, agricultural products and wild game.
- **Guest rooms and public areas:** Making responsible choices in terms of wood used for expansion or renovation projects and furniture; medicinal and aromatic plants for amenities and spa products; and ornamental plants and animals for public areas.
- **Hotel souvenir shops:** Avoiding souvenirs produced from threatened or protected plant and animal species.
- **Hotel grounds and gardens:** Using indigenous plants for landscaping and minimizing light and noise.
- **In the destination:** Promoting responsible recreation activities and excursions and supporting local biodiversity conservation efforts.





Principles for taking biodiversity action in a hotel

Although specific biodiversity conservation practices will vary depending on the particular resource concerned or area of the hotel, there are some key principles that apply to all areas:

- **Work internally** to introduce management practices and procedures that contribute to biodiversity conservation. In particular:
 - Appoint a senior manager and/or 'green team' to take responsibility for your biodiversity actions;
 - Set clear and realistic targets, monitor and report on progress towards reaching those targets;
- Make it simple for staff, clients, suppliers and stakeholders to do what is asked of them;
- Provide staff with any necessary training, and ask them for their ideas and suggestions for biodiversity actions that the hotel could support;
- Create incentives for staff to support biodiversity conservation, e.g. through a 'Green Employee of the Month' award;
- Take time to explain the hotel's actions and motivations behind those actions to staff, guests, suppliers and

- stakeholders, in order to build their support and raise their awareness about the value and importance of conserving biodiversity;
- Integrate the principles and recommendations in this guide into your hotel's existing Environmental Management System; and
 - Monitor and evaluate progress in all areas.
- Ensure that, wherever possible, **products come from sustainably harvested and/or sustainably produced sources** and, if relevant, are certified and labelled under certification schemes that include biodiversity criteria:
 - Don't use any items that are obtained from threatened species or populations (either on the IUCN Red List of Threatened Species, <http://www.iucnredlist.org>, or on the CITES Appendices, <http://www.cites.org>), in particular, those for which consumption and trade is banned under national or international regulations (see Box 7);
 - Don't use resources that are produced or harvested by methods that are unregulated or particularly damaging to biodiversity, some of which, such as dynamite fishing, may also be illegal; and
 - Encourage certification schemes for sustainably produced food.
 - **Work with other key players**, including:
 - Suppliers: Choose suppliers based on their compliance with your standards, and by specifying requirements for the goods and services that you obtain from them. Hotels can support their suppliers to improve in key performance areas, and integrate environmental and biodiversity criteria into their selection criteria and contract details. Work with suppliers and other partners to improve the sustainability of the resources purchased from them. You can discuss your policies and actions on biodiversity with suppliers to determine how you can work together to put these policies into practice.
 - Clients: Hotels can strongly influence the behaviour and actions of their clients by informing them about the characteristics of the local biodiversity, what they can do to protect and enjoy that biodiversity and what actions the hotel is taking to contribute to conservation. See Appendix 1 for more information on communicating with a hotel's internal and external stakeholders.
 - Public authorities and local organisations: Hotels can influence stakeholders in the destination, including other businesses, public authorities, conservation organisations, local communities and managers of protected areas, by raising awareness about the contributions of the hotel, the importance of biodiversity conservation and what each stakeholder can do to contribute to the protection of biodiversity. Although the activities of these stakeholders are outside the hotel's direct control, local development and planning decisions, for example about local infrastructure, attractions, protected areas, etc., can have a significant impact on the hotel's business. Local organisations can provide expertise to help your hotel implement positive biodiversity actions. In addition, establishing partnerships with conservation organisations can strengthen the impact of your hotel's biodiversity actions and enable you to leverage leadership for conservation within the travel sector. See Appendix 2 for more information on working with partners in the destination.

Box 7: Threatened species

The IUCN Red List

The IUCN Red List of Threatened Species™, which is the world's most comprehensive and scientifically-based inventory of the global conservation status of plant and animal species, evaluates the extinction risk of thousands of species and subspecies in all regions of the world. The Red List includes three main categories of threatened species:

- **Critically Endangered Species** are those that face an extremely high risk of extinction in the immediate future, because the population has declined by 80 percent or more over the last 10 years, is confined to a very small area of habitat, or has fewer than 250 mature individuals. The Javan rhino is one example.
- **Endangered Species** are those facing a very high risk of extinction in the near future, because the population has declined by 50 percent or more over the last 10 years, is confined to an area of less than 5,000 square kilometres of fragmented habitat, or has fewer than 2,500 mature individuals. Examples include the cheetah, tiger and African wild dog.
- **Vulnerable Species** are those that face a high risk of extinction in the medium-term, because the population has declined by 30 percent or more over the last 10 years, is confined to an area of less than 20,000 square kilometres of fragmented habitat, or has less than 10,000 mature individuals. Vulnerable species include the Komodo dragon, India bison, humphead and rainbow parrotfish, seahorses, giant clam, great white shark, polar bear, African lion and elephant, hippopotamus, and rockhopper penguin. Many parrots, amphibians, bats and eagles are also listed as vulnerable, as are several trees, including the shea butter, sandalwood, red cedar and Brazil nut trees.

Since its establishment in 1963, the number of species covered by the Red List is increasing all the time: by 1988, it covered all bird species, and by 1996 all mammals were included. By 2007, 41,415 species worldwide had been assessed. The Red List is compiled by IUCN's Species Programme using data from the Species Survival Commission and other

partners. It produces the Red List in cooperation with BirdLife International, the Zoological Society of London, Conservation International and Nature Serve.

While the IUCN Red List is a global assessment, a number of countries have also developed their own national and regional red lists for plants and animals.

Source:

IUCN, 2001. *IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK. ii + 30 pp*
<http://www.iucnredlist.org/>

CITES

CITES is the common name for the Convention on International Trade in Endangered Species of Wild Fauna and Flora, established in 1973, which regulates international trade in threatened species and products derived from them. Trade in wildlife and wildlife products can put severe pressure on some populations of animals and plants, and, linked with other factors such as habitat loss, can bring some species close to extinction.

CITES currently provides protection to more than 30,000 species of animals and plants, whether they are traded as live specimens or used to make other products. The treaty includes three levels of protection, which are listed in three appendices to the treaty:

- **Appendix I** lists species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- **Appendix II** includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilisation incompatible with their survival.
- **Appendix III** includes species that are protected in at least one country, which has asked other countries for assistance in controlling the trade.

Each country adopts its own domestic legislation to ensure that CITES is implemented at the national level. There is some variation of the requirements from one country to another, and it is always necessary to check national laws, which may have stricter requirements than those of the convention.

Source:

Convention on International Trade in Endangered Species of Wild Fauna and Flora, What is CITES?, <http://www.cites.org/eng/disc/what.shtml> ;
<http://www.cites.org/eng/app/appendices.shtml>



In 1998, Accor introduced the Hotel Environment Charter within its hotels. This original charter was aimed at hoteliers and included 15 tangible actions concerning water and energy use, waste management and protection of the local environment in partnership with an association.

In 2005, the Charter was completely revised by Accor's Sustainable Development Department, in close liaison with hotel managers and a network of representatives in destination countries. The new charter consists of 65 initiatives based on eight themes, including water, energy, the ozone layer, and biodiversity, with a detailed guide offering suggestions for implementing the actions.

Each theme in the charter is introduced with an explanation by an expert of what is at stake. The section relating to biodiversity was produced in close partnership with the French bird protection association (LPO) and BirdLife International, which helped in identifying the actions, explaining

Protection of biodiversity: an integrated approach

them and providing the introduction on the extinction of species and the consequences for human society. The other sections are introduced by United Nations Environment Programme experts.

The actions relating to biodiversity range from reducing – or eliminating – the use of pesticides and fertilizers on green areas, to the use of local plants, the planting of trees and the promotion of local initiatives. There are also actions in the other sections aimed at protecting natural resources, such as the use of certified organic foods and paper sourced from FSC-certified forests.

This new charter, drawn up in consultation with hotel managers and reflecting their wishes to go further in supporting biodiversity conservation,

has been very well received by the hotels. In 2007, it was deployed in 84 percent of the 3,900 Accor hotels. Each hotel reports in the Group reporting tool on the actions it has taken.

The results achieved so far in terms of the protection of biodiversity are encouraging: more than 1,000 hotels select plants suited to the locality, more than 800 have reduced their use of insecticides, and more than 600 use organically produced products. Each year, the regional divisions and the Brands define improvement targets.

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Taking action in hotel restaurants

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Much of our food comes from plants and animals that have been domesticated for agriculture, and some of it comes from harvesting of wild stocks through fishing or hunting. The ways in which food is harvested, cultivated and produced can have major impacts on biodiversity. Areas of intensive agriculture support significantly less habitat and biodiversity than the ecosystems they replace, while for foods collected from the wild, overharvesting threatens wild populations and the natural habitats where they are found. The major biodiversity issues for hotel restaurants are linked to the production and harvesting of fish and other types of seafood, the hunting of wild game, and the farming of fruit and vegetables, meat and fish.

Fish and other types of seafood

The unsustainable harvesting of fish and seafood from the world's oceans, rivers and lakes is leading to a decline of global marine and freshwater biodiversity. Overfishing is depleting fish stocks, while intensive and destructive fishing

methods are damaging marine ecosystems and biodiversity. For example, tuna fishing using purse-seine nets risks catching certain dolphin species that are usually present among shoals of yellow-fin tuna. The use of driftnets, which are the most destructive type of fishing nets, is forbidden in many parts of the world today. Over 75 percent of the world's major fisheries are so heavily exploited that reproduction cycles cannot guarantee the sustainability of continued catches, while deep seabed habitats are now vulnerable to destruction by bottom trawlers, which catch a significant amount of non-targeted species, or by-catch, which are then thrown away. Without healthy habitats, fish populations and other marine biodiversity will decline further. Many fisheries in freshwater and inshore areas are also at risk from overfishing and destructive fishing methods.

Unsustainable fishing practices can also have an unintended effect on non-marine species. Each year, 100,000 albatrosses die on fishing hooks from commercial longline fishing for tuna, swordfish and other species. Of the 22 species of albatross in the world, 18 are threatened with extinction.

See TRAFFIC Factsheets 1 to 7 in Part III for more information about fish and other types of seafood.

Wild game

Wild game is a featured speciality item on some menus, and many tourists are keen to sample foods and dishes made with local game meats. However, excessive and uncontrolled hunting of wild game for meat damages populations of the hunted species. For example, in Europe hunting is a factor in the decline of some bird species.

If you plan to offer such foods, it is important to obtain wild meats from sustainable sources, such as well-managed sustainable hunting and game ranching operations, both of which support conservation and local economies and represent a sustainable use of biodiversity. Many countries have hunting and game management regulations for sustainable management of game stocks. In Europe, a European Charter on Hunting and Biodiversity has been developed under the Convention on the Conservation of European Wildlife and Natural Habitats, also known as the Bern Convention (<http://www.coe.int/t/dg4/cultureheritage/conventions/bern/>).

Farmed Food Resources

Fruits and vegetables

Intensive farming methods that use high levels of pesticides and fertilisers, often with associated run-off, have led to negative impacts on biodiversity, including a decline in many bird species. Other key impacts on biodiversity arise from inappropriate land clearing, land use and erosion control, high levels of water use, planting of crops in monocultures, declines in genetic diversity, and loss of traditional varieties of crops and livestock. One of the largest impacts of all types of intensive agriculture is habitat loss for other species, one of the main causes of threatened species.

As an alternative, organic and sustainable farming methods that exclude or minimize the use of artificial pesticides and fertilisers greatly reduce the threats to biodiversity. Buying locally sourced species is also important.

Meat production

Meat production is often highly intensive and has similar impacts to intensive fruit and vegetable production. A significant proportion of intensive meat production is based around high-density animal stocking in barns and feedlots, combined with use of antibiotics to prevent disease at high stocking levels, hormones to increase growth rates and animal feed imported from other farms and often from other countries or continents. This imported feed is generally also intensively

produced. Furthermore, providing the same food value as meat requires much more land area than providing it as grains and pulses; and high-density animal farming creates large amounts of manure and liquid wastes that run the risk of environmental damage if they are not disposed of carefully.

Sustainable meat production uses lower-density stocking and locally produced animal feeds – often grazing and feed production on the same farm. Meat production can also be a valuable use of land that is not suitable for crop production, and part of balanced farming systems.

Aquaculture

Aquaculture (fish farming) can have adverse effects on biodiversity if the activities are badly established and managed. Fish and food waste from the cages used by fish farms can pollute the sea, lakes or rivers. Antibiotics and other chemicals that are used to keep farmed fish free of disease and parasites can contaminate the natural ecosystem, and farmed fish regularly escape and compete with native fish populations. In Europe, the Federation of European Aquaculture Producers (FEAP) has developed a code of conduct for promoting sustainable aquaculture and avoiding impacts on the environment and biodiversity (<http://www.feap.info>).

WHAT CAN I DO:

Internally

- Avoid purchasing species that are locally, regionally or globally depleted, except from sustainable sources.
- Choose food items that have been certified by sustainable, fair trade or organic certification schemes (see Box 8).
- Introduce regional dishes based on locally produced foods on your menus.
- Raise the awareness of your staff about biodiversity issues related to the production and harvesting of food (fish, seafood and game),
- Educate your staff on the need to regularly check local regulations.
- Educate your staff in helping customers understand and appreciate foods sourced from sustainable sources and ask them for ideas on using foods from sustainable sources in your restaurant.
- Set up a kitchen garden, greenhouses and/or orchard, either within the hotel grounds, or on another site.

With my suppliers

- Explain to your current suppliers that you want to purchase foods from sustainable sources and ask them how you can work together to put this goal into practice.
- Find new local suppliers by searching the internet and/or contacting the government agriculture ministry. Explain to suppliers your purchasing standards. Help them directly to develop their activities or put them in contact with specialised associations that can help them improve their practices.
- Encourage and support certification schemes for sustainably produced products.
- Seek out suppliers who use sustainable packaging materials and systems, such as natural cork (see Box 9).

In partnership with public authorities and local organisations

- Assist local food producers and suppliers to produce and store food supplies so that they meet your quality requirements and demand (e.g. by supplying cool boxes with ice for storing local sustainably caught fish, or by providing suitable seeds, tools or other items necessary for cultivation).

With my clients

- Inform customers about the issues concerning sustainable food production, harvesting methods that promote biodiversity conservation, sustainable labels and the origin of food.
- Inform customers about the benefits of sustainable food for themselves, both in terms of health and improved taste.
- Create a small exhibition of local products or photos of local food production and harvesting equipment.
- Invite guests and suppliers to visit the kitchen gardens, greenhouses and/or orchards, as a means of raising awareness and enhancing the natural experience of their stays.

Eating 'organic' at Sofitel

One of the 65 key points listed in Accor's Hotel Environment Charter involves serving a meal made from organic ingredients. In France, Sofitel decided to experiment with this recommendation, which combines environmental conservation with the use of high-quality ingredients. Each hotel offers its guests a menu promoting specialities based on organic products. Other initiatives, focused on organic bread and biodynamic wine, are also being implemented.

Thanks to negotiations with certain suppliers specialising in the sale of organic products, all the group's restaurants have been able to obtain sufficient volumes without incurring significant extra costs. Vivrao supplied

the basic organic food products, whilst Chapoutier was selected for two biodynamic wines, one white and one red. Malongo, meanwhile, became a partner in this operation and added its organic coffee, Ethiopian Mocha, to the menu. Finally, each chef was free to contact a local partner who could supply additional labelled products, bread in particular. The hotel managers were then free to set the price of their menu items as well as their profit margin.

Two types of leaflets describing the operation's objectives were printed on recycled paper, one aimed at employees and the other at customers. These leaflets promote organic products and their

contribution to a balanced diet. They also explain the process of organic farming, differentiating it from intensive commercial farming, and highlighting the impacts of the two types of farming, particularly in terms of environmental conservation and the local economy.

This operation provided an opportunity to show that the substantial advantages of organic food – environmental conservation, maintaining local species and supporting small farmers – are not incompatible with the luxury hotel business.

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Rediscovering local food products at Mercure



Educating people's taste buds and supporting biodiversity are the objectives of a partnership formed between Mercure hotels in Italy and the international Slow Food association. "Our hotels are actively involved in the local community. Thanks to this operation, we are promoting local production. Moreover, we are supporting local producers and products that are in danger of disappearing," explained the operation's manager.

Slow Food is an association that promotes the benefits of consuming local products. Its aims are to spread taste education and to defend biodiversity. Through its "Ark of Taste"

programme for example, it promotes the rediscovery of local products with exceptional taste that are in danger of disappearing and are produced using local, traditional methods. It thus supports traditional agri-food producers who make high-quality products whilst respecting traditional know-how. The aim is to develop a less-intensive and less-harmful agricultural model, which can conserve and improve biodiversity. Slow Food therefore tries to combine the pleasure of taste with a deep sense of responsibility to the environment and the world of agricultural production.

More specifically, each of the 20 Italian hotels chooses three products that are the result of Slow Food projects to assist groups of artisan producers to save an artisan food (the Presidia). These products, based on organically farmed food, are included in their chef's tasting menu. Hotel staff members are trained, and information brochures on the Slow Food association are offered to customers. In the restaurant, a film about the association is shown and a digital photo frame illustrates the "route" a

product takes from its origin to the customer's plate. In order to coordinate this project, a Slow Food manager was appointed at Mercure. Slow Food provided a great deal of support in terms of implementation and communication, which led to the publication of a Presidia catalogue. Moreover, the association regularly controls the quality of all products bearing the Slow Food label.

In addition to the focus on locally produced items, the initiative also seeks to help customers discover high-quality food. "For Mercure, this collaboration is part of our commitment to our customers," added the manager. "We already offered a great wine menu, so it seemed only natural to accompany it with excellent food." It also gives the company a competitive edge: with this partnership, the Mercure chain has moved up a level in its high-end positioning, sending a strong message to its international clientele.

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Protecting an ecosystem service: natural water supply

Hotel Rosa dos Ventos is located in a private park of 1 million m², of which 8,000 m² are built property, representing less than one percent of its total area. More than 50 percent of the property is preserved Atlantic rainforest. In 1990, it became the first hotel member of Relais & Chateaux in Brazil.

The hotel is situated near two protected areas that are part of an important ecological corridor for conservation of the natural resources of the Atlantic Rainforest of Rio de Janeiro. The region also acts as a “bread basket” for the city and state of Rio de Janeiro, with the largest production of vegetables and fruits in the state, mostly originating from small and medium family-based agricultural businesses. Hence, the rational use of a valuable resource such as freshwater, which is used for many purposes and is vital to ecosystem conservation, is a key issue here, with the preservation of natural water sources as an integral part of water conservation measures.

As of 2008, Hotel Rosa dos Ventos is offering a unique attraction to its guests: naturally fluorinated mineral water from the existing natural groundwater fonts within the hotel property. This may be considered a luxury, as few hotels have the possibility to offer this special treat.

The water has been analysed regularly since 2002 and classified as Natural Fluorinated Mineral Water. The various natural water sources are preserved and monitored regularly by hotel staff, who have been trained to understand and value such sources for what they represent for biodiversity conservation and human well-being and consumption, particularly outside the hotel property (as such water sources also are found within the region). Care is taken to preserve natural rainforest vegetation and to prevent disturbances to water sources from walking, movement by surrounding domestic animals and other activities. The goal is to maintain the sources in a pristine state and use only a portion of the water sources on a rotational basis. Regular chemical analyses are carried out and reports produced.

In the hotel, the natural mineral water is used in showers, baths and sinks of guests’ suites and apartments, as well as in the restaurant, saunas, swimming pools and other hotel facilities and services. Through the information folder in the apartments, guests are advised of the existence of naturally fluorinated water sources and the option to consume such water in the hotel.

In terms of environmental and social benefits, this action has contributed to the prevention of improper land use,

including potential clearing, contamination by agrochemical use associated with agro-industries, and accelerated erosion. It has also raised the awareness of guests and the local communities about the value of environmental services provided by natural, forested catchments and the importance and health benefits of such natural fluorinated water sources. For the hotel in particular, it is an added value to offer such a luxury item and to be able to contribute to the maintenance of biodiversity and ecosystem health within the threatened Atlantic rain forest.

Using Hotel Rosa dos Ventos as an example, the goal is now to mobilise and form partnerships with adjacent land owners to establish biological corridors contributing to the expansion of preserved rainforest areas and biodiversity conservation, thus enhancing the integrity and effective maintenance of existing protected areas of the Serra Fluminense.

*Helenio and Ildiko Waddington
Owners*

*Hotel Rosa dos Ventos
www.hotelrosadosventos.com.br*



Photos © Hotel Rosa dos Ventos

Box 8: Seafood and agricultural certification schemes

Fisheries certification

The Marine Stewardship Council (MSC) runs the only widely recognised environmental certification and eco-labelling programme for wild capture fisheries. It is the only seafood eco-label that is consistent with the ISEAL Code of Good Practice for Setting Social and Environmental Standards and UN Food and Agriculture Organisation guidelines for fisheries certification.

MSC-certified and labelled fish, seafood and seafood products are widely available. As of 2008, over 90 fisheries are engaged in the MSC programme, with 26 certified, 64 under assessment and another 20 to 30 in confidential pre-assessment. Together, the fisheries record annual catches of over 4 million tonnes of seafood, representing more than 42 percent of the world's wild salmon catch, 40 percent of the world's prime whitefish catch, and 18 percent of the world's lobster catches for human consumption. Worldwide, more than 1,000 seafood products resulting from the certified fisheries bear the blue MSC eco-label. The MSC scheme is continuing to expand, including in developing countries, and promotes equal access to its certification programme irrespective of the size, scale, type, location or intensity of the fishery.

For more information, see www.msc.org

Agricultural certification

Organic, fairtrade and sustainable agriculture certification and labelling schemes incorporate criteria that promote biodiversity protection in agricultural production. All of the schemes described below meet the International Social and Environmental Accreditation and Labelling Alliance (ISEAL) Code of Good Practice for Setting Social and Environmental Standards.

The main schemes for organic food labelling are operated by the EU and the U.S., though many other countries have similarly strict national organic labelling schemes that are compatible with the EU and U.S.

systems. The International Federation of Organic Agriculture Movements (IFOAM) provides up-to-date details of the national organic certification schemes that operate in many countries. Organic-labelled produce is widely available for all main raw and processed foodstuffs.

Fairtrade labelling standards promote sustainable agriculture and totally exclude use of a wide range of pesticides, although some pesticides may be used in limited circumstances as specified by the Fairtrade Labelling Organisations International (FLO). Certification by FLO and FLO-compatible schemes currently covers bananas, honey, oranges, cocoa, coffee, fresh fruit, juices, nuts and oil seeds, rice, spices and herbs, sugar, tea and wine, as well as cotton and flowers.

Standards for sustainable agriculture certification are set by the Sustainable Agriculture Network (SAN). These standards are used by the Rainforest Alliance for its programme of certified agricultural products, which includes coffee, cocoa, chocolate, bananas, orange juice, guava, pineapple, passion fruit, plantains, macadamia nuts and ferns that come from healthy farms where rainforest is conserved and workers receive fair treatment.

For more information on certification schemes that include biodiversity in their criteria, please see:

- <http://ec.europa.eu/agriculture/qual/organic/>
- <http://www.ams.usda.gov/>
- <http://www.ifoam.org/>
- <http://www.organicguide.com/>
- <http://www.fairtrade.net/>
- <http://www.maxhavelaar.ch/>
- <http://www.transfairusa.org/>
- <http://www.transfair.ca/>
- <http://www.rainforest-alliance.org/marketplace/>
- <http://www.rainforest-alliance.org/programs/agriculture/san/index.html>
- <http://www.ecoagriculture.org>

Community-cultivated seafood for conservation

Located off Sonhos Beach in the municipality of Palhoça, Santa Catarina state, Brazil, the 142,000 m² Papagaio Island has operated as an inn since 1994. In 1984, the family that owns the island acquired 60,000 m² in a coastal continental area across from the island, transforming it into an area for natural recovery of the rainforest.

Although Papagaio Island is located in one of the best preserved coastal zones of the State of Santa Catarina, fishing, inappropriate aquaculture, unregulated coastal development and unmanaged marine recreational activities (boating, jet ski rides, etc.) threaten local ecosystems and biodiversity. Furthermore, the decline of traditional maritime activity and fishing has led to an exodus of local fishermen.

To prevent the loss of coastal biodiversity from unsustainable fishing practices (including fishing of all species and size, and removal of mussels and shellfish from coastal rocky shores by tourists and fishermen) as well the loss of the social and cultural fabric of the region, the owner of the Papagaio Island Inn decided to promote the cultivation of oysters (as well as mussels and other shellfish) using sustainable methods. Through this action, the hotel aims to participate in the conservation of local marine biodiversity and promote economic and social development among local fishermen who are dependent on the marine resources for their livelihoods.

This project, a pioneer in Brazil, began in 1988. Initial production was 300 dozen oysters/month, and the project employed two local staff members. Today, the company, Moluskus Marine Farm, produces oysters on 30 long lines in seven hectares and employs 16 local staff. The 1 million oysters produced each year are sold both nationally and internationally. Partnerships were established with



Photos © Renato Sehn, Director, Ilha do Papagaio



the fisheries sector to improve sustainable management of the activity, and 14 different producers have taken up sustainable oyster and mussel cultivation. Local fishermen are also involved in all the aspects of production, including manufacture of gear, selection and classification of oysters, daily maintenance, and making and selling souvenirs from the shells. Guests of the hotel can observe oyster cultivation firsthand from the inn and can savour the fresh catch every day in the hotel restaurant through its delicious menu options.

Key benefits of this initiative include the strengthening of sustainable fisheries management among local fishers and the adoption and implementation of best practices through partnerships established with the fisheries sector. The creation of a

sustainable industry associated with a tourism destination has contributed to minimization of threats to biodiversity and maintenance of protected areas, while the hotel has been able to contribute to community cultural and economic development.

To take the project a step further, specific training in sustainable economic alternatives is planned for local communities and fishermen. The aim is to enhance skills and provide consensus on business guidelines and best practices, based on the various successful efforts to achieve sustainable fisheries in the region.

Renato Sehn
Owner
Pousada Ilha do Papagaio
(Papagaio Island Inn)
www.papagaio.com.br

Box 9: Saving the cork oak landscapes by serving wine with cork stoppers

For centuries, wine bottles have been sealed with cork stoppers made from the bark of the cork oak tree (*Quercus suber*). Cork is a natural product – it is renewable and biodegradable. Harvesting cork is one of the most environmentally friendly harvesting processes on Earth: no single tree is cut to harvest the cork, and after harvesting, the trees produce more bark.

Cork oak forests are found only in Portugal, Spain, Italy, France, Morocco, Algeria and Tunisia. They are ranked among the most valuable in terms of biodiversity in the world for the endemic plants and endangered species they support, including the Iberian lynx, the Iberian imperial eagle, and the Barbary deer. The economic value of cork oak forests means they – and their biodiversity - are protected by the communities that harvest the cork.

Cork for bottle stoppers accounts for almost 70 percent of the total value of the cork market. However, with increasing use of plastic and metal stoppers for wine bottles, sales of cork stoppers are declining. As the value of cork forests declines, the forests and their biodiversity are at higher risk of fires, degradation or being converted to other uses.

You can take action in your hotel to help preserve the cork forests by only purchasing wine in bottles sealed with cork stoppers. As a further step for additional assurance that cork comes from a well-managed forest, select wines in bottles sealed with FSC-certified cork stoppers (see Box 10 for details of FSC certification).

Sources:

assets.wwf.es/downloads/factsheet_dagon_ok.pdf
www.panda.org/about_wwf/where_we_work/europe/what_we_do/mediterranean/about/forests/cork/index.cfm
www.fsc.org

Sustainable food

Six Senses is an international luxury resort and spa group, actively involved in biodiversity conservation and in the sustainable development of tourism in general.

The group has introduced strong principles on food supplies, which apply to all of their hotels. They purchase locally produced fruit and vegetables, meat, fish and seafood, and also try to ensure that the techniques used to produce these items are environmentally friendly.

The group has drawn up a list of foods that are prohibited or are subject to strict consumption conditions. Certain fish, whose stocks are now dramatically low due to overfishing, are banned. Many are only permitted if there is a certificate guaranteeing responsible fishing conditions, as in the case of tuna and shark. For example, line-caught fish are strongly recommended, because mass fishing techniques (nets, bottom trawling, etc.) have a particularly destructive impact on marine biodiversity, leading

to the indiscriminate catching of different fish species, destruction of the seabed, and other negative impacts. For some species, such as catfish and oysters, there are strict requirements for sourcing only from sustainable fish farms.

In addition to considerations related to the conservation of biodiversity and the environment, other principles are also applied to this list of banned foods. Some food items are placed on the list because they are not considered to be healthy (milk chocolate or white bread, products containing too many additives, etc.), or because they come from parts of the world where the political situation contravenes human rights, or where labour rights are not respected.

A list was drawn up for the whole group, but each hotel is encouraged to complete it in accordance with local requirements, the species available locally and the supply conditions. Each hotel then works in collaboration with local communities

to identify products that are available locally depending on the season, put into place farming, fishing and other production techniques that are aligned with sustainability principles, and, in some cases, even request certifications. They establish long-term relationships with local fishermen, guaranteeing that they will buy their catches if they meet the group's criteria.

Six Senses ensures all managers and staff are trained and well-informed on the issue. Thus, staff members develop an awareness and a global understanding of the sustainability issues in food production and supply and are able to ensure sustainable sourcing.

Juergen E. Seidel
Group Director of Property
Maintenance, Engineering &
Innovation
Six Senses Resorts & Spas
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Taking action in guest rooms and public areas

Wood

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Unsustainable use of wood for construction, furniture and other uses threatens rich and diverse forests around the world. Clear-cut logging of old growth forests destroys forest ecosystems, while intensive forestry plantations can damage the environment through habitat conversion or the use of pesticides and chemicals. For example, unsustainable logging threatens mahogany and other forest ecosystems in South America, causing most species of mahogany to be listed as threatened on the IUCN Red List. In Indonesia, illegal logging has destroyed more than half of the country's forests, and is driving species like the Sumatran rhino, tiger and orang-utan towards extinction.

Forest ecosystems are home to more than half of the world's terrestrial biodiversity, protect water catchments, control water flows to prevent flooding, stabilize soils to prevent erosion and moderate climate change by storing carbon that would otherwise be released to the atmosphere. Degrading forests destroys the vital products and services that these ecosystems provide, including fuel, traditional medicines and food for human communities.

See TRAFFIC Factsheet 8 in Part III for more information on woods for furniture and construction.

WHAT CAN I DO:

Internally

- Identify the wood products purchased by your hotel that may negatively impact high-biodiversity forests, and substitute alternative wood products from sustainable sources when making future purchases.
- Explain to your staff the need to obtain wood from sustainably managed sources and the need to regularly check local forestry regulations, and ensure that purchased timber and forest-derived products have been harvested in compliance with those regulations.
- Re-use wood whenever possible.
- Provide staff with information about the sustainable wood used in your hotel, and about activities your hotel takes to support tree planting and sustainable forestry.

Box 10: Forest-related certification systems

Forest Stewardship Council

The Forest Stewardship Council (FSC) promotes environmentally responsible, socially beneficial and economically viable management of the world's forests through its worldwide standard of recognised and respected Principles of Forest Stewardship. Forests that meet these standards can request certification and then use the FSC logo on their wood and related forest products. The FSC label allows purchasers around the world to recognise products that support the growth of responsible forest management. FSC operates through its network of national initiatives in 45 countries.

Over 94 million hectares in more than 75 countries have been certified to date according to FSC standards, and several thousand products are produced using FSC-certified wood and carrying the FSC trademark. The FSC scheme is continuing to expand the total area of FSC-certified forests, including in developing countries.

For more information, see: www.fsc.org

Sustainable Forestry Initiative

Originally established in 1994 by the American Forest and Paper Association as a code of conduct for the forest products industry in the United States, the Sustainable Forestry Initiative (SFI) became an independent organisation in 1997. In 2002, the organisation developed the SFI labelling programme to certify forest products. Today, the programme includes 219 participants across 137 million acres, 127 million of which are independently third-party-certified to the SFI Standard. There are 37 separate state, regional and

provincial SFI Implementation Committees in North America, and the organisation has trained nearly 100,000 loggers and foresters since 1995.

For more information, see: www.sfiprogram.org

Canadian National Standard on Sustainable Forest Management

Developed by the Canadian Standards Association (CSA), Canada's National Standard on Sustainable Forest Management was first published in 1996. The standard covers three areas: public participation, performance and systems to achieve the desired result. The system also focuses on the principle of continued improvement. To be certified, an organisation must go through a third-party, independent audit of the sustainable forestry management requirements in the Standard.

For more information, see:

www.certificationcanada.org/english/

Programme for the Endorsement of Forest Certification schemes

Founded in 1999, the Programme for the Endorsement of Forest Certification schemes (PEFC) is an independent, non-profit, non-governmental organisation for the assessment and mutual recognition of national forest certification schemes. PEFC currently has 35 independent national forest certification systems in its membership, of which 25 have been through a rigorous assessment process involving public consultation and independent assessors. These 25 schemes together account for more than 200 million hectares of certified forests.

For more information, see: www.pefc.org

With my suppliers

- Avoid purchasing timber and forest-derived products from species that are locally, regionally or globally depleted, that are of unknown origin, or from areas which are over-harvested, and/or that have been harvested illegally.
- Explain to your suppliers that you want to purchase wood from regulated and sustainable sources, for example wood and wood products that have been certified by the Forest Stewardship Council or other forest-related certification schemes (see Box 10), and ask them how you can work together to put this objective into practice.

In partnership with public authorities and local organisations

- Support local sustainable forestry projects, such as establishment of local plant nurseries, forest restoration, or promotion of sustainable timber and fuel wood production. Your hotel can support projects like this by purchasing timber and fuel wood from them; providing assistance such as funding for basic training; obtaining suitable seeds, tools and other items necessary for plant nurseries; and by distributing information about their efforts.
- Support local projects that help communities use fuel wood more efficiently, such as the introduction of more efficient wood-fuelled stoves and alternative renewable energy supply options, such as micro-hydropower schemes.

With my clients

- Provide information to guests on how you integrate biodiversity concerns in relation to wood, for example about what certified wood the hotel uses and what local forest conservation projects the hotel supports. In cases where your hotel has antique furniture, explain to your guests that the wood in the antique furniture originates from a time when biodiversity was not under the same threat as today.
- Promote visits to local forest conservation projects.
- Collect donations for local forest conservation projects from your guests.

Amenities and spa products

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Plants have always been a basic resource for human health and well-being, and more than 70,000 plant species are used around the world for health and body care purposes. Interest in and demand for plant-based body care products is increasing worldwide, particularly in rapidly expanding urban societies. Increased consumption of body care products derived from plants is putting increased pressure on a resource that is largely harvested from depleted wild populations in shrinking wild habitats.

As many as 15,000 species of medicinal and aromatic plants are threatened by over-harvesting or loss of habitat. One example of this trend is the sandalwood tree, *Santalum album*: mature sandalwood trees are felled to extract their aromatic oil for use in body care products and perfumes, and, as a result, the species is seriously threatened in India, Indonesia, Papua New Guinea and the South Pacific.

See TRAFFIC Factsheet 9 in Part III for more information on medicinal and aromatic plants for amenities and spa products.

WHAT CAN I DO:

Internally

- Check all products containing plant-based products to ensure that the plants used to make these products:
 - have been harvested sustainably, and have been collected from cultivated sources that do not endanger wild sources of supply. Appropriate standards include the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (http://www.floraweb.de/proxy/floraweb/MAP-pro/Standard_Version1_0.pdf) or organic, fair trade and sustainable agriculture standards (see Box 8 on page 33); and
 - are not endangered and/or listed under CITES.
- Explain to your staff the hotel's commitment in relation to the use of medicinal and aromatic plants in amenities and spa products. Help them to communicate with customers about these issues.



© DR Accor

More natural cosmetics

Complimentary toiletries offered in hotel rooms (soap, shower gel, shampoo, etc.) form an important part of the welcome hoteliers offer their guests. These products will be better received by customers if they combine high quality with respect for the environment.

When hotels in the Accor group decided to identify “eco-friendly” complimentary toiletries, the group carried out a thorough study. A model specifications ledger, specific to Accor, was created to help the brands develop their complimentary toiletries ranges by introducing environmental criteria. A charter provided them with recommendations in order to form partnerships with their suppliers and to allow the products to advance, whilst limiting any additional costs that this might entail.

Finally, a study of the different French labels was carried out. The Cosmebio label is the most widespread in France. Since 2002, Cosmebio has been selling two cosmetics labels: the

ECO (eco-friendly) label and the BIO (eco-friendly and organic) label. Both these labels certify that the products contain a minimum of 95 percent natural ingredients. However, the Cosmebio BIO label goes even further with its requirements for organic ingredients. There are other less frequently used labels, for example the German “certified natural cosmetics” label from BDIH, the AB Agriculture certification for essential oils or the Nature & Progrès label, which requires products to contain 100 percent organic ingredients. The importance of these labels lies in their support for organic farming, a means of production that respects biodiversity and the ecological balance.

After consulting the suppliers, it turned out that products with Cosmebio labels are currently hard to obtain in large quantities and for international distribution. At present, only a few suppliers are working towards obtaining this certification, and they are not yet ready to work

with the group’s international brands. In the end, the company chose the European Ecolabel, which is less strict than Cosmebio, but more widely used, thus ensuring adequate supply. It guarantees that the products contain substances that are less harmful to the environment or to human health, are less damaging to aquatic ecosystems and are highly biodegradable.

Ibis and Novotel, the group’s leading brands with regards to environmental management, have now confirmed their new range, which is entirely ecolabelled. Several brands, such as All Seasons, are also working with them. In the longer term, the group hopes to be able to accompany its brands with Cosmebio-labelled products as they become available.

Nathanaël Mathieu
Sustainable Development Project
Manager
Accor
www.accor.com



© Michel GUNTHER / WWF-Canon

With my suppliers

- Choose products from reputable sources that are informed about conservation and sustainable use issues associated with production and sourcing of plant-based body-care products, and which operate in accordance with international sustainability standards. Appropriate standards include the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (http://www.floraweb.de/proxy/floraweb/MAP-pro/Standard_Version1_0.pdf), or organic, fair trade and sustainable agriculture standards (see Box 8 on page 33).
- Explain to your current suppliers that you want to purchase plant-based spa products and similar items that come from sustainable sources, and ask them how you can work together to put this standard into practice.
- Support local communities and producers to build their own businesses for sustainable harvest and cultivation of plants for production of plant-based body-care products, and once these businesses are established, purchase their products.

With my clients

- Explain to your clients the importance of protecting medicinal and aromatic plants, and offer information about where they can purchase medicinal and aromatic plant products that are produced sustainably. Consider selling a selection of these products in the hotel shop.
- Use the wall space in the spas to showcase local culture and biodiversity through photographs and artefacts.

Ornamental plants and animals

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Use of ornamental species of plants and animals, including any exotic pets, such as iguanas, turtles, parrots or fish, can damage biodiversity through over-collection or the impacts of invasive alien species on a natural ecosystem.

Collection of species from the wild

Collecting species from the wild can deplete wild populations and threaten the survival of a species, either because the numbers of individuals collected are too high or because the collection methods negatively impact sensitive habitats. For example, some fish collectors illegally use poison to immobilize fish on reefs, enabling them to collect many more fish than by other methods. This practice can severely deplete fish populations and introduce poisons into the ecosystem that harm other species on the reef. Many wild plants are also threatened by unsustainable collection, including cycads collected for horticultural use and some populations of pitcher-plants (*Sarracenia* spp.) that are collected for the cut flower and horticultural trades.

Invasive alien ornamental species

Many popular ornamental plants and animals are highly invasive when introduced into new areas, and can threaten native species. For example, the koi carp, a colourful variety of common carp that is used as an ornamental fish in garden ponds, can out-compete native species. Guppies (*Poecilia reticulata*), which are a popular aquarium fish species, can escape and survive in

many sub-tropical and temperate freshwater habitats, where they damage populations of native fishes and food insects.

Examples of alien invasive ornamental plants include the tamarisk (*Tamarix ramosissima*), which reduces biodiversity in areas it invades since it provides poor habitat for birds and does not support many insect species. The water hyacinth (*Eichhornia crassipes*) can significantly alter the local ecology in ecosystems where it is intentionally or accidentally introduced, causing major declines in native biodiversity if the introduction is not adequately pre-assessed and effectively managed.

See *TRAFFIC Factsheet 10 in Part III for more information on live animals.*

See *TRAFFIC Factsheet 12 in Part III for more information on horticultural plants.*

WHAT CAN I DO:

Internally

- Create a list of hotel activities that run the risk of introducing alien invasive species, and explain to your staff your programme for limiting the use of invasive species.
- Get an audit of the existing invasive species in or around your hotel, and obtain advice from appropriate specialists (e.g. agronomists, conservation managers, fisheries specialists and botanists) on how to remove them.
- Avoid the use of locally, regionally or globally threatened species.

With my suppliers

- In cooperation with local nurseries and landscaping contractors, check that ornamental plants and animals used in your hotel are not listed as invasive species and give preference to the use of alternative native species (for more information, see the Global Invasive Species Programme, <http://www.gisp.org/species/index.asp>).
- Ensure that any ornamental plants and animals that your hotel purchases come from sustainably cultivated or collected sources. Use certified sources, such as reef fish certified by the Marine Aquarium Council (see Box 11).

In partnership with public authorities and local organisations

- Engage local conservation organisations, universities, botanical gardens and plant nurseries in the design and

decoration with plants of the hotel's public areas, and provision of explanatory signs.

- Raise awareness in community and public organisations about the problems that invasive species cause and ways of controlling them, and the precautions linked to threatened species.
- Support programmes to eradicate invasive species and those that promote conservation of native fauna and flora species, or that use them for educational purposes.

With my clients

- Provide information on how you integrate biodiversity concerns in the decoration of the hotel with ornamental plants and if live animal displays are used, including information on the issue of invasive species as a rationale for the choice for indigenous plants.
- Explain to your clients the problems that invasive species cause, and ways of controlling them.
- Inform clients about how to treat animals present on your premises.

Box 11: Marine Aquarium Council certification

The Marine Aquarium Council (MAC) runs an international certification programme for the quality and sustainability of marine aquarium organisms. MAC's mission is to conserve coral reefs and other marine ecosystems by creating standards and certification for those engaged in the collection and care of ornamental marine life from reef to aquarium, and its standards comply with the ISEAL Code of Good Practice for Setting Social and Environmental Standards.

The certification programme has the support of the aquarium trade, and the number of MAC-certified collectors and suppliers of ornamental fish continues to expand, for example, in countries such as Fiji, Indonesia and the Philippines, which supply more than half of the global trade in wild-collected ornamental fish and corals.

For more information, see: www.aquariumcouncil.org



IUCN Photo Library © Jim Thorsell

Taking action in hotel souvenir shops

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Widespread collection from the wild of various plants and animals for production of souvenirs can have serious negative impacts on biodiversity, and the survival of some species is threatened by their use or overuse in souvenir products. For example, populations of red coral in the Mediterranean have been severely damaged by intensive exploitation for production of jewellery and ornaments that are sold locally. Hunting of animals for their fur and other parts has severely impacted populations of tigers (mainly hunted for their bones for use in traditional medicine), leopards and jaguars, while trade in ivory or horns has harmed elephant and rhinoceros populations, and demand for shells threatens marine turtles and shellfish species such as the giant clam. Plant species damaged by over-harvesting in the wild for the souvenir trade include various orchids, cacti (including “rain sticks” made from stems of some cacti) and cycads, as well as some tropical hardwoods, such as mahogany.

Because of the threats to their survival, international trade in some of the species used in souvenirs is regulated under CITES (see Box 7 on page 26). Their local uses may also be controlled by national regulations, in the country where a hotel is located and/or in the countries where many of your guests may come from. Guests who try to take home any of these banned or regulated items risk large fines and confiscation of the items. By making guests aware of endangered species and products that they should avoid, and making sure that they are not sold in your hotel shop, you are protecting your guests and your hotel, as well as the endangered wildlife. It is also important to consider the ethics of trading mineral and fossil souvenirs (see Box 12).

See TRAFFIC Factsheet 9 in Part III for more information on medicinal and aromatic plants for amenities and spa products.

See TRAFFIC Factsheet 11 in Part III for more information on wildlife-based souvenirs.

Box 12: Mineral and fossil souvenirs

The sale of mineral and fossil specimens in hotel shops is another aspect to consider when implementing a responsible conservation policy within hotels, although there has been less work done on the ethics on the trade in geological heritage than for biodiversity.

Some types of specimens are certainly inappropriate and should never be traded, such as stalactites and stalagmites. There are different views regarding the ethics of trade in mineral and fossil specimens, and a growing number of countries are now also concerned about their fossil and mineral resources being collected and traded illegally. Hotels should make genuine inquiries about the sustainability and scientific integrity of the site from which the material was extracted, the working conditions of the people working at such sites or indeed the legality of the extraction in the first place.

endangered or threatened species.

In partnership with public authorities and local organisations

- Encourage local artists to develop souvenirs from sustainable materials, including recycled products.
- Raise awareness in the community and public organisations about threatened species and the need to protect them.
- Work in partnership with local authorities and non-governmental organisations (NGOs) on programmes to control use of local threatened species and their parts in production of souvenirs and other items.

With my clients

- Provide information (videos, DVDs, posters and photo books) to your guests about illegal trade in endangered species and trade restrictions under CITES and/or national legislation. Highlight the fact that customs authorities are trained to check for such species and products derived from these species, and make available information on the fines imposed in the countries of origin of the customers. A useful point of contact is the national CITES management authority (contact details can be found at http://www.cites.org/common/directy/e_directy.html). The National CITES management authority provides information on species traded internationally, and should be able to advise on where to find out about domestic regulations.
- Have a sign in your shop saying that customers can buy “CITES-proof” souvenirs and articles there, as a guarantee that they will not be in trouble with customs upon departure or arrival.
- Offer guests the opportunity to buy toy animals of charismatic local species that are under threat (e.g. turtles, etc.) for their children. Often local environmental organisations produce such animals or other biodiversity-related toys.

WHAT CAN I DO:

Internally

- Regularly check (e.g. annually) with local authorities and associations for species added to CITES lists and national legislation controlling or banning trade in threatened species (<http://www.cites.org>).
- Train your staff to communicate about the issues concerning illegal trade in endangered species, CITES, and local regulations to protect endangered species.

With my suppliers

- Inform shop managers or leaseholders about issues concerning illegal trade in endangered species, the species on the CITES lists and regulations controlling or banning trade in threatened species.
- Ensure that shop managers or leaseholders understand that they should not display, stock or sell any products derived from endangered species and/or species listed under CITES and/or national legislation controlling or banning trade in

A souvenir that supports biodiversity conservation

Manary Praia Hotel is a small, romantic hotel located in Natal, a city of 800,000 people. The hotel is on Ponta Negra Beach, one of the most important beach resort destinations in northeast Brazil, and surrounded by two major protected areas of primary rainforest.

In this area lives the most endangered marine mammal in Brazil: the manatee. During colonial times, this gentle giant was present along most of the northeastern Brazilian coast, but due to hunting and habitat loss, only an estimated 500 individuals are still living in the wild, in a much more restricted range. To stop poor coastal communities from hunting manatees for food, the Manatee Project (www.projetopeixe-boi.com.br), a federal government project, has developed a number of initiatives. One of these initiatives involves the production of manatee stuffed toys and employs the daughters of former poachers.

In 2000, Eduardo, the owner of the Manary Praia Hotel, came across the Manatee Research Center, where the manatee toys were sold. He then had the idea to offer the toys to guests of his hotel. When guests enter their rooms, they see these cute toys on their beds, with a small brochure explaining the history and purpose of the Manatee Project. A DVD and a book about the Manatee Project are also available to guests. Tours of the Manatee Research Center (Centro de Mamíferos Aquáticos do IBAMA) at Pernambuco State and the Manatee Project facilities where manatees are re-introduced to the natural

environment can be arranged through the front desk.

This initiative is promoted through the website of the hotel, which links to the Manatee Project website, and hotel staff are also aware of the initiative and its goals.

The advantage of this initiative is its simplicity, which involves simply ordering the toys, paying for them in advance, and selling them to guests with a small mark-up to pay for the costs of the operation (delivery, taxes, etc.). No profit is made from this initiative, aside from the benefits to the hotel's image, which is considered a desirable side-effect. Since 2000, the hotel has sold close to 600 manatee toys, raising US\$11,500. Considering that the Brazilian

minimum monthly wage is about US\$259.00, this money could help a former poacher family sustain itself for nearly four years. But more than the money, the hotel manager believes that the subtle message they pass to their guests shows that it is always possible to do something to help conserve our planet's biodiversity.

Based on the example of the Manary Praia, a major nationwide home store (Tok & Stock) has begun to offer the same toys at its facilities, hoping to bring in even more revenue for the Manatee Project.

Eduardo Bagnoli
Owner
Manary Praia Hotel
www.manary.com.br



© Eduardo Bagnoli, Director, Manary Praia Hotel

Discouraging illegal souvenirs



Six Senses is an international luxury resort and spa group, actively involved in biodiversity conservation and in the sustainable development of tourism in general. The Six Senses group has strong principles regarding biodiversity conservation, and marine conservation in particular.

One of its activities involves monitoring products sold in resort shops, to ensure that there are no products derived from endangered animals or plants and, in particular, species that make up the coral reef ecosystem: shark fins or teeth, coral, shells, flowers, etc.

These principles form part of the group's policies and procedures, which apply to each of the resort shops, because they are all owned and managed by the Six Senses group. However, this policy is above all based on fieldwork in local communities.

The resort teams are responsible for monitoring any illegal practices in the surrounding communities, such as the collection of protected species

(turtles, shells, etc.) for sale to tourists. If any of these practices are detected, the reasons behind them are studied on a case-by-case basis and solutions are sought. They work first and foremost with the most underprivileged populations in the surrounding communities in order to reduce poverty. In particular, they can offer them an alternative source of income through the production of more "ethical" souvenirs, and also train them and raise their awareness of environmental issues.

The Six Senses establishments encourage the production of objects that can later be sold to tourists in the resorts and spas and will constitute a source of income for these populations. On the one hand, the group looks for artisans who can make interesting articles and provides them with support. It also encourages members of the community to adapt traditional techniques, such as the

local production of rice paper, to today's requirements. The rice paper, for example, is used to make gift-wrap and for the hotel's brochures. Finally, the hotels also encourage the creation of souvenirs made from recycled materials, such as toys made from coconut shells.

In order to provide this support, the Six Senses group commits to buying the artisans' products and offers ideas for manufacturing souvenirs to suit the tourists' tastes. It also offers training and awareness-raising actions, which are carried out either internally by resort teams, or by the financing of external collaborators who are identified in the community.

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Taking action in hotel grounds and gardens

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Maintaining a hotel's gardens and grounds can have negative impacts on biodiversity through pollution from pesticides and fertilizers and excessive water consumption for watering and irrigation. In addition, some species used in gardens are highly invasive and can cause substantial damage to populations of native species and disrupt natural ecosystem processes, while the use of locally, regionally or globally threatened species can put additional stress on species populations. Light and noise from hotel facilities can disturb wildlife, making it more difficult for some species to feed and reproduce effectively. For example, the reproductive success of marine turtles is greatly diminished when there are bright lights near to their nesting beaches, as new hatchlings may become confused and head toward the buildings instead of the sea. Conversion of natural habitats to recreational uses, including gardens and sports grounds, can also lead to fragmentation of local ecosystems and reduce the overall space available for wildlife.

See TRAFFIC Factsheet 12 in Part III for more information on the use of horticultural plants.

WHAT CAN I DO:

Internally and/or with my suppliers

- Plant local indigenous species and/or drought-resistant species wherever possible in landscaped and garden areas. Even small gardens in city hotels can incorporate such species. Purchase these plants from local greenhouses.
- If you plan to have exotic animals on your grounds, ensure that you have all the relevant national permits that may be required for purchasing and keeping them, and that they are obtained from sustainable sources.
- Check that plants used in your hotel's grounds and gardens are not listed as invasive species (for more information, see the Global Invasive Species Programme, <http://www.gisp.org/species/index.asp>).
- Plant local, native tree and bush species to create shaded areas and new habitats. You can also green your roofs and walls, which will also have a positive energy savings effect.
- Encourage wildlife in your hotel grounds. For example, consider creating a wildlife garden, or in small urban spaces

provide suitable nesting places for birds and nesting boxes and/or grow plants attractive to butterflies. Where possible, set aside land as natural areas or reserves; even small areas can be valuable for wildlife.

- Work with local wildlife experts to ensure that hotel lighting does not adversely affect wildlife, particularly if your hotel is situated near sensitive wildlife sites, such as turtle nesting beaches. Use lighting equipment that minimises the upward spread of light near to and above the horizontal (e.g. by using cowlings that direct light downwards). Locate lights to reduce stray light and glare to a minimum; away from buildings, luminance should not exceed five candela per square metre (Cd/m^2). For some species, there are specific requirements – e.g. for turtles, no bright lights should be visible from beaches during the breeding and hatching period.
- Use sound insulation and reduce noise at source, to limit disturbance to wildlife.

In partnership with public authorities and local organisations

- Consult with local conservation organisations, universities or botanical gardens in the design of a biodiversity-friendly garden or hotel grounds.
- Develop explanatory signs on the various species, in partnership with local conservation organisations.
- Engage local teachers, conservation organisations, universities or botanical gardens in developing nature trails and biodiversity education (education + entertainment) activities for children and their families, e.g. a game to explore and discover different aspects of biodiversity in and around the hotel.
- Encourage use of local indigenous species and incorporation of wildlife areas in gardens and public areas.
- Support programmes to eradicate alien invasive species.
- Support the development of local biodiversity businesses, such as indigenous tree nurseries, and incorporate the products of these businesses in your supply chain.

With my clients

- Communicate with guests about how you have integrated biodiversity concerns in the design and management of the grounds by:
 - placing signs on trees and in flower beds with the names of the indigenous species;

- setting up nature trails for guests with interpretative leaflets and other types of information about biodiversity on the trail; and
- including a map of the garden, with the various species and opportunities for bird and wildlife watching, in the hotel directory that is available to guests in their rooms. The map should also be available on the wall next to the door to the garden, and could also be printed on the paper used on trays to serve coffee, tea and snacks in the garden.
- Design sign boards on the hotel beach to inform guests about local biodiversity resources and how they can contribute to their conservation.

Partnerships for natural gardens

Historically, many French Novotel hotels were built on the edge of towns, on major roads, to meet the demands of business travellers. Indeed, these establishments were generally constructed on large plots, which at the time the hotels were built were very inexpensive.

Today, the original appeal of these hotels, located in areas that have now been turned into commercial and industrial zones, is diminishing. However, thanks to their large plots, these establishments can provide a natural escape in these unattractive surroundings. This fact gave rise to the idea of restoring and improving these areas to turn them into a showcase for the hotel chain's environmental programme.

The hotels are offered a guide for managing their land that is based on two principles: the hotels have to start by rethinking what to do with their land and choose plant species adapted to the local conditions. They then ensure responsible management of the area, using natural techniques and products suited to the seasons and transforming the landscape to make it more attractive for wildlife and people.

The guide was written over a two-year period, based on pilots at three hotels,

and in collaboration with the group's national management.

Novotel Limoges was one of the pilot hotels in this national project. In order to develop its 7,000 m² of green spaces and make them more attractive, the hotel transformed its gardens by creating a natural flower meadow, by rethinking lawn mowing and by imagining a garden full of scented plants. In the flower borders along the entrance, there are trellises with climbing plants, and shrubs with flowers or berries make up hedges that attract butterflies and birds. Information boards, installed in the hotel entrance, explain the project and the company's achievements.

This operation has mobilised many local partners: a plant nursery worker and a botanist; the company looking after the green spaces and promoting the work carried out by disabled people; and police youth intervention officers, whose workshops have produced nest boxes and signs. In all these pilot hotels, the restoration of the land to adapt it to local species was carried out in partnership with the French bird protection association, (LPO). The city of Lyon also provided its expertise for this new green space management.

This experience demonstrates the interest in this subject shared by a wide variety of stakeholders, who between them have the means and expertise to allow projects such as this to be carried out more easily.

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© Daniel Cunin



Taking action in the destination

Supporting local biodiversity conservation efforts

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Protecting biodiversity is vital for maintaining the viability and attractiveness of tourism in destinations. While biodiversity is the major attraction for tourists in some places, for all destinations, biodiversity provides ecosystem services that influence the overall health and quality of their environment.

While there are many highly qualified organisations driving the conservation and sustainable use of biodiversity in a destination, in many cases these organisations are under-resourced and under-staffed. In addition, public authorities and communities may not be fully aware of the importance of biodiversity in a destination, and may fail to make biodiversity conservation and sustainable use a priority for the area.

By working with other partners, it is possible to raise the profile of these issues and increase your hotel's influence on biodiversity conservation activities and protection outside your hotel's gates, thus contributing to maintaining the quality and competitiveness of your destination.

WHAT CAN I DO:

Internally

- Organise activities with your staff to support environmental associations, matching the staff's skills and talents with the destination's needs.
- Provide your staff with information on local biodiversity and ecosystems, and about the partners your hotel is working with and their biodiversity protection activities.
- Organise and participate in campaigns to clean up local habitats, such as beaches.
- Use your contribution of staff time and other resources to leverage community interest and support for nature conservation.

With my suppliers

- Promote their engagement by providing information about the partners your hotel is working with and their biodiversity protection activities.

- Explain to your suppliers that you want to set up partnerships for biodiversity conservation and sustainable use, and ask them how you can work together to put this goal into practice.

In partnership with public authorities and local organisations

- Work with destination management organisations and local authorities to:
 - raise their awareness of the importance and value of protecting biodiversity for the destination, its communities and businesses;
 - encourage them to designate and adequately manage areas for biodiversity conservation (see Box 13);
 - encourage them to support local businesses whose products and services value biodiversity; and
 - encourage the development and implementation of voluntary practices and codes of conduct for hoteliers that will contribute to the conservation of biodiversity and natural landscapes in your destination.
- Support the projects of organisations and public authorities that improve biodiversity and tourism at sites your guests like to visit:
 - Create opportunities for your guests to visit these projects by helping them to make contact with key decision makers in the private sector or government. Participate in decision-making procedures relevant to their projects and to those pertaining to planning and development in your destination.
 - Provide rooms and catering for meetings of local conservation initiatives, space and catering for functions to celebrate the success of local conservation initiatives, and/or in-kind prizes (dinner, weekend stay in the hotel, etc.) for lotteries and other fundraising activities.
 - Assist with informal technical advice on marketing and product development to help them set up tours to generate revenue for their conservation activities.
 - Offer training sessions on business skills, management and accounting systems, and understanding of tourism and hospitality.
 - Provide direct financial support or suggest possible funding sources, including local biodiversity management

and conservation projects and environmental education programmes in local schools and communities.

With my clients

- Provide information about the partnerships your hotel supports, and about the partners that you are working with (posters, brochures, web pages).
- Offer the option to your guests to visit projects your hotel is supporting.
- Provide opportunities for guests who wish to make donations to projects, for example by including an optional donation to local biodiversity conservation activities as part of their bills.
- Offer volunteer opportunities to guests who wish to participate in activities linked to projects with your partners or those that your hotel supports.

Activities and excursions offered at the tour desk

WHAT ARE THE LOCAL AND GLOBAL BIODIVERSITY ISSUES?

Biodiversity is a vital asset for tourism destinations, as high-quality natural surroundings are an important element for many recreational activities. Well-managed tours to watch wildlife or visit conservation projects in areas of high biodiversity value (see Box 14) are a great attraction for your guests and one of the fastest growing parts of the tourism sector. Tours can also provide a valuable source of income that helps to protect wildlife.

But if sites for tourism activities are overcrowded and damaged, the quality of the tourism experience is reduced. Often in sensitive ecosystems, such as coral reefs, wetlands or mountain areas above the tree-line, visits by tourists can damage wildlife and biodiversity, if not properly managed. Even modest numbers of tourists can cause disturbance to wildlife and damage vegetation by trampling and erosion of paths. For example, heavily used dive sites on coral reefs have fewer fish and more signs of damage compared to other parts of reefs, heavily used paths and ski areas in mountains show signs of biodiversity damage, and poorly managed tourist activities in

deserts can have serious adverse impacts on the fragile and sensitive desert ecosystem.

See TRAFFIC Factsheet 13 in Part III for more information on activities and excursions.

WHAT CAN I DO:

Internally

- Ensure that any activities that are provided by your hotel are well-managed in terms of protection of biodiversity, comply with relevant local, national and international standards (e.g. marine recreation standards or local regulations on diving on coral reefs or around other sensitive sites), and are conducted by fully trained staff who are able to monitor the impacts of tourist activities. When in doubt about the standards, consult local conservation authorities and NGOs.
- Appoint and train Biodiversity Information Focal Points among your staff to provide first-hand information to your clients (especially if you are adjacent to a natural area).
- Offer your guests up-to-date information on opportunities for wildlife watching and visits to conservation projects, protected areas, nature reserves, or areas of high biodiversity value (see Box 14).
- Ask staff for their ideas on improving existing activities, or possible new activities that you could offer.

With my suppliers

- Work with local tour agencies and operators to offer tours and activities that are well-managed in terms of protection of biodiversity, comply with relevant local, national and international standards, and are conducted by fully trained staff.
- Encourage small enterprises to increase their benefit from tourism and sustainable use of biodiversity, by building local businesses to develop sustainable production/harvesting of biological resources that you use in your hotel and/or provide tours for your guests (e.g. bird watching, nature treks).

In partnership with public authorities and local organisations

- Support tours developed and managed by community organisations and local enterprises (e.g. bird watching, nature treks).
- Use qualified guides from local communities, and help



IUCN Photo Library © Jim Thorsell

- provide them with any training and/or equipment they may need for working with tourist groups.
- Work with destination management organisations and local authorities to ensure that regulations for wildlife watching and nature-based tourism are disseminated by all hotels and other service providers in the destination.
- Work with organisations offering nature-based activities to avoid overcrowding and overuse of sites, for example by encouraging a greater diversity of activities and use of a variety of sites.

With my clients

- Provide guests with information about local natural resources and their value, and about the damage to natural resources, such as coral reefs, birdlife and other biodiversity that can be caused by diving, snorkelling and other recreational activities.

- Recommend responsible providers of recreational activities, and provide guidelines for how to practice these activities in a responsible way.
- Provide information on environmentally sustainable behaviour that can allow guests to minimise their adverse impacts on natural environments and wildlife, such as codes of conduct for whale watching, snorkelling or diving. Produce cards illustrating best practices in recreational activities such as trekking, snorkelling and turtle watching, and offer waterproof scuba cards to enhance the experience of your guests' dives (see <http://www.coral.org>).
- Ensure trained guides are available to help guests appreciate local biodiversity, and require that guests be accompanied by guides in sensitive areas.
- Develop *ad hoc* interpretation programmes that will help your clients better understand the value of biodiversity at the local level.

Box 13: Sustainable tourism guidelines

The links between tourism and biodiversity have been recognized by the Convention on Biological Diversity since 2004. The CBD Guidelines on Biodiversity and Tourism Development (<http://www.cbd.int/tourism/guidelines.shtml>) summarize the requirements for a biodiversity-friendly tourism operation, from planning to management, and from impact assessment to community relations and reporting. The guidelines consist of 12 steps for the adequate planning of tourism facilities and products,

and can be used as a checklist (the Convention's website "Biodiversity and Tourism Network" allows you to check your performance along the 35 main action items using a survey – see <http://tourism.cbd.int/survey.shtml>) or as a reference, particularly in dealing with legal, institutional and community relations. As the guidelines are more general in scope, the CBD has developed a User's Manual that explains how the principles can be applied to tourism and facility development (<http://tourism.cbd.int/>).

Birds, the new guests at Etap Hotels

The low-cost hotel chain Etap Hotel and the French bird protection association Ligue pour la Protection des Oiseaux (LPO), have formed a partnership with a common goal: to raise awareness about nature conservation.

LPO is a French association whose main missions are the restoration and conservation of the natural heritage, and environmental education and awareness-raising, in particular through activities aimed at discovering nature. They saw Etap Hotel, with its 280 hotels, 2,500 collaborators and 8 million customers per year in France, as a powerful lever with which to reach a larger number of people. Etap Hotel, meanwhile, sought to meet the expectations of customers who are becoming increasingly aware of and interested in the discovery of their natural heritage.

In 2006, a partnership agreement was signed, and by 2007, more than 50 percent of the hotel network had joined forces with LPO. A target of 70 percent participation was set for 2008. More specifically, each hotel involved

in this partnership becomes a corporate benefactor member of the local LPO group. In return, the hotel benefits from a series of services aimed at educating their clients, staff and children, including awareness-raising documents to display in hotel rooms and communal areas, a subscription to l'Oiseau magazine and Rapaces de France, two of the association's publications, educational games for children, and guides for locally organised nature trips.

Moreover, each hotel is free to carry out other individual actions with its local LPO branch. For example, birdwatching trips during peak migration periods are organised in the Bay of the Somme, and in some hotels in urban areas the installation of nest boxes has favoured the return of the common swift. Finally, the creation of a "nature area" in the hotel with bird songs playing as background music and posters of fauna and flora enhance the atmosphere of the establishment, whilst at the same time performing a civic-minded function.

In 2007, increasing their involvement,

Etap Hotel decided to support six of LPO's bird rescue centres by donating 0.30 euro from each breakfast ordered at their hotels for two weeks. This action provided the opportunity for hotel collaborators and their families to visit the rescue centres, learn about their missions, and participate in the releasing of birds that had been treated and were ready to return to the wild.

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Box 14: Areas of high biodiversity value

Protected areas: A protected area is defined by IUCN (1994) as ‘an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means’. Protected areas are classified according to their management objectives in six categories and, with the exception of Category I (Areas of Strict Protection), all protected areas allow for recreation and tourism, mainly ecotourism; therefore effective visitor management is vital to conserve these sites. UNEP’s World Conservation Monitoring Centre (WCMC) maintains a global list of over 100,000 national protected areas. In addition, some local communities, individuals or companies may set aside protected areas for biodiversity conservation.

http://cms.iucn.org/about/union/commissions/wcpa/wcpa_work/wcpa_strategic/wcpa_sciences/wcpa_categories/index.cfm
http://www.unep-wcmc.org/protected_areas/
<http://www.unep-wcmc.org/wdpa/>

Important Bird Areas: An Important Bird Area (IBA) is an area that has globally important habitat for the conservation of populations of birds, for example habitats that sustain a population of an internationally threatened species, or house large numbers or concentrations of migratory birds, shorebirds or seabirds, or which support a significant number of bird species with restricted distributions. Currently there are about 10,000 IBAs worldwide: examples are Tubbataha Reef in The Philippines, Royal Chitwan National Park in Nepal, and the Camargue in France. The IBA programme is run by BirdLife International and national conservation organisations in countries where IBAs are established.

<http://www.birdlife.org/action/science/sites/index.html>
<http://www.audubon.org/bird/iba/index.html>

Important Plant Areas: Important Plant Areas (IPAs) are the plant equivalent of IBAs. They form a network of the best natural or semi-natural sites for wild plants, fungi and their habitats around the world, designed to ensure the long-term survival of these sites. IPAs are selected according to international and regional guidelines based on three criteria: threatened species, species richness/diversity and threatened habitats. The

IPA programme in Europe is coordinated by Plantlife International, which is also a lead partner with IUCN in coordinating Target 5 of the Global Strategy for Plant Conservation. Currently there are about 1,000 IPAs across Europe, and further IPAs are being established in Lebanon, New Zealand, the ASEAN region, Southern Africa, Cameroon, Morocco and parts of the Himalayas.

<http://www.plantlife.org.uk/international/plantlife-ipas-about.htm>

Natura 2000 sites: Natura 2000 is a network of sites that protect the most seriously threatened habitats and species across Europe. The Natura 2000 sites are set up under legislation adopted by the European Union and comprise two types of areas: Special Protection Areas, which are important for rare and vulnerable birds because they use them for breeding, feeding, wintering or migration; and Special Areas of Conservation, which provide rare and vulnerable animals, plants and habitats with increased protection and management.

<http://www.natura.org/>
http://ec.europa.eu/environment/nature/natura2000/db_gis/index_en.htm
<http://europa.eu/scadplus/leg/en/lvb/l28076.htm>

Wetlands of International Importance

(Ramsar sites): Wetlands of International Importance are sites that have been designated for conservation in accordance with the International Convention on Wetlands, signed in Ramsar, Iran, in 1971. Currently there are 1,718 Ramsar wetland sites, totalling 159 million hectares. Wetlands like the Everglades in the U.S., Lake Titicaca in Bolivia/Peru, St. Lucia Wetlands System in South Africa, and Lake Balaton in Hungary are popular destinations for tourists.

http://www.ramsar.org/index_list.htm

World Heritage Sites: Each World Heritage Site is designated by UNESCO (The United Nations Educational, Scientific and Cultural Organisation) and the relevant country as forming part of the world’s outstanding universal cultural and natural heritage. As of 2007, there were 660 cultural, 166 natural and 25 mixed World Heritage Sites in 141 countries. Natural examples include the Serengeti National Park in Tanzania, the Galapagos Islands of Ecuador, and the Great Barrier Reef in Australia.

<http://whc.unesco.org/en/>

Six Senses commits to protecting sharks

Six Senses is an international luxury resort and spa group. Some of their establishments are located in the Maldives, where the conservation and quality of the marine environment are essential for the future of local populations and the tourist industry alike.

In partnership with other resorts in the region, Six Senses began the "Baa Atoll" project in mid-2007, in order to find ways of improving environmental protection and the well-being of local communities.

The project addresses many issues, including the protection of manta rays, night fishing, the minimum size of fish authorised for harvesting, and damage to the seabed caused by anchors. The project also discourages activities that are liable to disturb species in their natural habitat, such as turtle or dolphin watching tours in the breeding areas and during breeding periods. Even for educational purposes, these activities can endanger the animals and put their survival at risk.

Within all these activities, priority is given to the protection of sharks, whose populations worldwide have declined dramatically over the last few years. Intensive hunting is dramatically reducing shark

populations in our oceans, where the disappearance of this large predator would endanger the balance of the entire marine ecosystem. The project's main objective is to achieve a total ban on shark fishing in the Atoll and in the Maldives.

Six Senses and its partners ban tourist activities such as big game fishing and hunting in their resorts, report operators who offer tourists these activities and support decision-makers to create and implement relevant legislation.

In order to raise customer awareness and support the group's advocacy

activities, customers, partner agencies and tour operators are given model letters to send to the local authorities and government about this serious problem, demanding that they ban recreational shark hunting. Customers and tourism promoters can thus send a strong message from the resorts to the political decision-makers in the Atoll and the Maldives.

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Accor Austria and its bat hotels

Since 2007, Accor Austria has been working on a bat conservation project in collaboration with a biologist. Although bats are often maligned and misunderstood, they are actually very useful animals that, for example, eat mosquitoes. There are 25 species of bat in Austria, but their future is threatened by urban sprawl, which encroaches on their natural habitat.

Accor Austria's staff thus chose to try to help these animals. Each hotel undertook to build a wooden bat shelter, a 'bat hotel'. The building

teams then went off into a forest on the outskirts of town to erect the boxes in trees, in areas visited by these bats. A few months later, the project's biologist reported that several of these shelters were already inhabited by bats.

In 2008, staff volunteers (around six or seven staff members per hotel) were invited to participate in a day of discovery exploring caves in local forests. This fun day centred around a picnic, where children were also welcome. It was thus an opportunity

to learn more about the bats' natural habitat and also to clean the "bat hotels" that were erected in 2007.

This inexpensive operation was financed by Accor Hospitality. Although it was an internal project, independent of hotel customers, details of the project were published in the local press.

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Photos © Peter Peer



The beach, a place for raising staff awareness

As part of Accor's sustainable development policy, Ibis hotels obtained ISO 14001 environmental management certification in 2004. Following this, Ibis France signed a partnership agreement with the Fondation Nicolas Hulot for Nature and Mankind in 2007.

Likewise, the 21 Ibis hotels in the Centre-Val-de-Loire Region regularly organise joint action and awareness-raising days for hotel staff. At each meeting, two employees per hotel are chosen. They gather information and participate in environmental protection activities, and are responsible for

passing on information to the rest of the staff in their hotel on their return.

After a clean-up of the banks of the Loire River in 2005, a local event was organised to clean up a beach in the Vendée in 2006, in collaboration with a local environmental protection group. This kind of event requires a budget of 3,000 euros, excluding the participants' travelling expenses, which are paid for by the different hotels.

Situated on a nature reserve, the beach is a breeding site for several animal species. Although the dunes are inaccessible by car, the result of

the day's clean-up showed that the pollution of protected areas is a real problem. The association opened the event with a 30-minute talk on the area in question, the precautions that should be taken and the fragility of the environment. At the end of the day, the 40 participants had collected two tonnes of rubbish: cigarettes, plastic bags, glass bottles and even a washing machine.

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Accor commits to the 'Plant for the Planet' programme



In April 2008, Accor confirmed its sustainable development commitment by committing to the 'Plant for the Planet: Billion Tree Campaign'. The initiative, which was launched by the United Nations Environment Programme under the sponsorship of Prince Albert II of Monaco and Wangari Maathai, winner of the 2004 Nobel Peace Prize, planted more than 1.6 billion trees in 2007.

Accor aims to engage both hotel operators and customers in this innovative global reforestation project. Through the project, the hotels pledge to finance tree planting projects with the money that they save on laundry costs when guests keep their bath towels for more than one night.

To support the project, Accor is offering special training for floor staff. With the assistance of a large number of housekeepers from different hotels across all the brands, an educational film was made to present the importance of reforestation for local communities, while also explaining the

programme and presenting new practices for dealing with bath towels.

A campaign to build awareness among customers is also planned. Customers are encouraged to take part in the programme through a new message posted in their bathrooms: "Here, YOUR towels plant trees."

Following a pilot phase that has involved all brands on all continents, this project will finance the planting of three million trees by the end of 2012. Accor hotels in 100 countries will take part in projects in seven of the world's forest regions, working closely with seven associations chosen for their ability to manage planting programmes that are particularly relevant for environmental protection and biodiversity preservation, while also developing local business opportunities.

These projects include planting programmes in key regions such as Brazil, Indonesia or Senegal. As for the latter, Accor is teaming up with

SOS Sahel in the area of Niayes: the project is to plant small trees on dunes to prevent them from drifting over nearby cultivated lands with the wind. Overall, 300.000 trees are to be planted within 3 years, hence preserving a strategic farm area of Senegal.

Hélène Roques

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Part III: TRAFFIC Recommends – Factsheets on the sustainable use of biological resources

The following 13 factsheets were developed as part of this project by TRAFFIC, the wildlife trade monitoring network, to guide hoteliers in making sustainable and responsible choices of products and services based on biological resources.

TRAFFIC (<http://www.traffic.org>) was established in 1976, with a mission of working to ensure that trade in wild plants and animals is not a threat to the conservation of nature. TRAFFIC's vision is of a world in which trade in wild plants and animals is managed at sustainable levels without damaging the integrity of ecological systems and in such a manner that it makes a significant contribution to human needs, supports local and national economies and helps to motivate commitments to the conservation of wild species and their habitats. A global, research-driven and action-oriented network, TRAFFIC is governed by a steering committee composed of members of the network's partner organisations, WWF and IUCN. TRAFFIC also works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The purchase of wild animal and plant products—whether for food, tonics, medicine, timber, clothing, ornaments or pets—can have a significant conservation impact. While legal trade in many species exists, reliable tracking systems often don't exist. Thus, illegally sourced products from protected wild populations can filter into the market and become indistinguishable from legal ones. Hotel buyers can have a major influence, both positive and negative, on the supply and demand of wildlife products. The information in these factsheets will help buyers to think carefully before buying and, therefore, avoid contributing to illegal or detrimental trade in wildlife. If you are in doubt about the legality of a product, simply do not buy it.

While the information presented in these factsheets was believed correct at the time of going to press in 2008, it may have changed since then. Hoteliers are advised to check local and international regulations and recommendations on the

products discussed here, as appropriate. A useful point of contact is the national CITES management authority (contact details can be found at http://www.cites.org/common/directy/e_directy.html). The National CITES management authority provides information on species traded internationally, and should be able to advise on where to find out about domestic regulations.

What is the wildlife trade?

Wildlife trade is any sale or exchange of wild animal and plant resources by people. This can involve live animals and plants or a diverse range of products needed or prized by humans—including skins, medicinal ingredients, tourist curios, timber, fish and other food products. Most wildlife trade is probably within national borders, but there is a large volume of wildlife in trade internationally.

Why is wildlife traded?

Wildlife is traded for many reasons, including:

- **Food:** Fruits, mushrooms, nuts, leaves and tubers are particularly important resources for sustaining livelihoods in many rural areas. Wild animals (including fish) contribute at least a fifth of the animal protein in rural diets in more than 60 countries. A TRAFFIC study demonstrated that reliance on wild meat is growing in Eastern and Southern Africa, in response to increased human populations and poverty.
- **Fuel:** Trees and plants are an important source of fuel for cooking and heating, especially in rural areas.
- **Fodder:** Fodder is considered a very important non-wood forest product in arid regions of Asia and Africa.
- **Building materials:** These range from timber for furniture and housing to ingredients in manufacturing processes, such as gums and resins.
- **Clothing and ornaments:** These include leather, furs, feathers.

A note about fisheries and certification schemes

Factsheets 1-6 in this section discuss various fish and seafood products. For each type of product, TRAFFIC recommends which species to choose and which to be wary of when making purchasing decisions. Much of this information is biased towards Europe and the North Atlantic simply because information from these regions is more readily available. Hotels and buyers elsewhere should try and find out as much as possible about the sources and methods of harvesting or farming products that are available, and then use the general guidance in the seafood factsheets to make their choices.

Whilst every effort has been made to give clear and practical advice, the choice of which species to buy or not is often a complex one. Some species may be subject to local protection, or may have particular seasons when they can be harvested—this applies particularly to some shellfish species. Hoteliers should therefore try to find out from their suppliers, or other sources, if and when such restrictions apply. Equally important is to ensure that suppliers are reputable and can vouch for the source and identity of their wares. By asking relevant questions and challenging suppliers over the origin of their goods, buyers can have a significant influence over how such products are ultimately sourced.

For many species, the factsheets also include references to different certifications or rankings from several fisheries rating systems. These schemes, and their ranking systems, are presented here, to help you better understand what each label means.

WWF

WWF, TRAFFIC's joint programme partner (alongside IUCN) helps promote sustainable fishing and seafood supplies. Using methodology developed together with the Seafood Choices Alliance (www.seafoodchoices.com/), WWF has created information guides on which fish species to buy, which buyers are encouraged to consult:

(www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm) These include a guide by **WWF Hong Kong** which aims to provide credible information on the environmental impact of consuming seafood commonly available in Hong Kong and South China, a region which is otherwise poorly covered by seafood guides.

Marine Conservation Society (MCS)

The MCS Sustainable Seafood Guide (www.fishonline.org) allows users to search by the name of the fish they are interested in. Each fish is given a rating based on its stock status, fisheries management and the environmental impacts of the fishing methods used. There are also lists of species to avoid and species to eat. Each species is given a rating from 1 to 5:

- Rating 1 is awarded to the most sustainably produced seafood;
- Ratings 2, 3 and 4 indicate increasing cause for concern; and
- Rating 5 is given to fish to be avoided.

Marine Stewardship Council (MSC)

The MSC (www.msc.org) is an independent, global, non-profit organisation that awards certification to sustainable and well-managed fisheries that meet their rigorous environmental standard.

Monterrey Bay Aquarium (MBA)

MBA's Seafood Watch (www.mbayaq.org/cr/seafoodwatch.asp) allows users to search by the name of a fish to determine its sustainability. The initiative also publishes regional seafood guides that rank species according to three levels:

- Best choices;
- Good alternatives; and
- Avoid.



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- **Sport:** Wildlife is collected for sports ranging from falconry to trophy hunting.
- **Healthcare:** Wildlife provides everything from herbal remedies and traditional medicines to ingredients for industrial pharmaceuticals. An estimated 80 percent of the world's population relies on traditional medicines for primary health care.
- **Religion:** Many animals and plants or derivatives are used for religious purposes.
- **Collections:** Many wildlife specimens and curios are collected by museums and private individuals.

The primary motivating factor for wildlife traders is economic, from small-scale local income generation to major profit-oriented business, such as marine fisheries and logging companies.

Between collectors of wildlife and the ultimate users, any number of middlemen may be involved in the wildlife trade, including specialists involved in storage, handling, transport, manufacturing, industrial production, marketing and the export and retail businesses. In fact, most of us are involved in wildlife trade in some way, even if it is just as end consumers of wildlife products.

Scale

The wildlife trade involves hundreds of millions of individual plants and animals from tens of thousands of species.

Timber and seafood are the most important categories of international wildlife trade, in terms of both volume and value. According to the United Nations Food and Agriculture Organisation (FAO), more than 100 million tonnes of fish were traded in 1998, and more than a billion cubic metres of wood products were exported globally in 1999.

TRAFFIC estimates that from 2000–2005, 3.4 million lizard skins, 2.9 million crocodile skins and 3.4 million snake skins, all species listed under CITES, were imported into the EU, along with 300,000 live snakes for the pet trade. In 2004 alone, the EU imported more than 10 million cubic metres of tropical timber from Africa, South America and Asia, worth US\$1.9 billion.

In 1996, global international trade in medicinal and aromatic plants amounted to more than 440,000 tonnes.

International trade in species of conservation concern is monitored by CITES. From 1995 to 1999, CITES recorded an annual average of more than 1.5 million live birds, 640,000 live

reptiles, 300,000 crocodilian skins, 1.6 million lizard skins, 1.1 million snake skins, 150,000 furs, almost 300 tonnes of caviar, more than 1 million coral pieces and 21,000 hunting trophies.

Value

There is a huge trade in wildlife goods world-wide, with China the largest market and significant markets in the United States and the European Union. Trade is international and domestic, with large volumes of the latter particularly within developing nations. The European Union (EU) tops the list for major importer by value for many wild animal and plant products, including tropical timber, caviar, reptile skins and live reptiles. The legal trade of wildlife products into the EU alone was worth an estimated €93 billion in 2005.

In the early 1990s, TRAFFIC estimated the value of legal wildlife products imported globally to be around US\$160 billion. Others have estimated that legal wood product exports in 1999 were more than US\$132 billion and legal seafood exports in 1998 around US\$50 billion.

By the very nature of the illegal wildlife trade, it is almost impossible to obtain reliable figures, but it is estimated that totals run into the hundreds of millions of dollars. The U.S. State Department estimates that the market value of illegal wildlife products has reached US\$10 billion a year and possibly twice that.

According to William Clark, chairman of the Interpol Working Group on Wildlife Crime, illegal trafficking in wildlife is linked to violence, corruption, fraud, smuggling, conspiracy, robbery, health violations, drug trafficking and weapons trafficking. There is also significant money laundering and tax evasion involved.

Problems

As human populations have grown, so has the demand for wildlife. People in developed countries have become used to a lifestyle that fuels demand for wildlife; they expect to have access to a variety of seafoods, leather goods, timbers, medicinal ingredients, textiles, etc. Conversely, extreme poverty of others means they regard wildlife as a means to meet their short-term needs and will trade it for whatever they can get.

Over-exploitation of wildlife is a major concern:

- Wildlife is vital to a high proportion of the world's population. People depend directly on wildlife for consumption and as a

way of earning cash. However, irresponsible wildlife trade is threatening this resource, and those most affected tend to be the poorest people, in developing nations.

- Illegal wildlife trade causes additional problems. The species traded are often already highly threatened and in danger of extinction, conditions under which wildlife is transported are often appalling, operators are unscrupulous and do not care how they damage the environment (for example they use cyanide to kill fish, or log in protected areas), and illegal trade undermines nations' efforts to manage their natural resources sustainably and causes massive economic losses in lost earnings.
- The introduction of invasive species that prey upon or out-compete native species is a major cause of recent extinctions. Wildlife traders have purposely introduced many invasive species, such as American Mink, Red-eared Terrapin and many plant species.

Hotspots

Areas where wildlife trade is particularly threatening are known as "wildlife trade hotspots." These include China's international borders, trade hubs in East/Southern Africa and Southeast Asia, the eastern borders of the European Union, some markets in Mexico, parts of the Caribbean, parts of Indonesia and New Guinea, and the Solomon Islands.



TRAFFIC RECOMMENDS

Factsheet 1: Tuna

Tuna are large oceanic fish in the family *Scombridae*. They are seasonally migratory, travelling hundreds of miles and sometimes making trans-oceanic journeys. They may be found in variable numbers in almost every temperate, sub-tropical or tropical waters. Compared to some fishes, tuna are late to mature and can reach ages of 10-25 years, depending on the species. Blue-fin tuna are slower growing than the smaller albacore, skipjack and yellow-fin tunas. An adult Atlantic blue-fin can be more than 2 m long and weigh 500 kg. All commercially important tunas need warm water to breed, although several species are warm-blooded, enabling them to live in cooler waters. They are fast swimmers and, unlike most fish whose flesh is white, tuna flesh is pink to dark red.

Tuna fisheries include both low-value (less than US\$1/kg), high-volume fisheries that supply the canneries, and high-value (more than US\$500/kg), low-volume fisheries that specialize in fresh tuna. There are seven commercially fished species, including:

- **Southern blue-fin** (*Thunnus maccoyii*): Found in temperate and cold seas of the southern hemisphere, these fish migrate to the tropics to spawn. They are fished mainly by Japan, Korea, Australia and New Zealand, and consumed mainly by Japan.
- **Pacific northern blue-fin** (*Thunnus orientalis*): Found mainly in subtropical regions of the north Pacific Ocean, this species is both fished and consumed mainly by Japan.
- **Northern or Atlantic blue-fin** (*Thunnus thynnus*): This species is found in the northern half of the Atlantic Ocean, the Mediterranean and the southern Black Sea.
- **Big-eye** (*Thunnus obesus*): Also known as Ahi, Po'onui, Patudo, this is a tropical and subtropical species with separate stocks in the Atlantic, Indian, Western and Central Pacific, and Eastern Pacific Oceans.
- **Albacore** (*Thunnus alalunga*): Also known as Tombo, canned white tuna, longfin tunny, and albacora, this is a highly migratory fish found in all oceans but less common in the tropics. It is available as canned "white" tuna and fresh and frozen.

- **Skipjack** (*Euthynnus or Katsuwonus pelamis*): Found throughout the world's tropical and warm temperate waters, catches of this species account for half the annual global tuna supply. Also marketed as aku, canned light tuna, arctic bonito, striped tuna, these fish may be mixed with other species when processed. It is most often sold as canned light tuna (much of which is caught by purse seine), but is sometimes sold fresh and frozen.
- **Yellow-fin** (*Thunnus albacares*): Found throughout the world's tropical and subtropical seas, except the Mediterranean, this species is also marketed as ahi when fresh and frozen, and canned light tuna. It is the main species for canning and is caught mainly by purse seine fleets.

Conservation issues

Three species of tuna are listed on the IUCN Red List:

- **Northern or Atlantic blue-fin** (Endangered in the east Atlantic and Critically Endangered in the west Atlantic);
- **Southern blue-fin** (Critically Endangered); and
- **Big-eye** (Vulnerable).

A fourth species, **albacore tuna**, is considered Data Deficient, but with stocks considered threatened in the North Atlantic (Vulnerable) and South Atlantic (Critically Endangered).

Several conservation issues affect all seven commercially fished tuna species, principally:

Overfishing: World catches of tuna have doubled in the last decade. All species, except some stocks of skipjack, are considered fully exploited, over-exploited or depleted. The popularity of sashimi and sushi is one cause of overfishing, especially of the three species of blue-fin tuna (also known as kuromaguro, atun de aleta azul, thon rouge and horse mackerel), which are the most valuable fish in the world. Overfishing is made worse by the fact that juvenile tunas (e.g. big-eye) are often caught as by-catch in the purse seine fisheries targeted for adult tuna. The long-term effects on marine ecosystems of removing large fish such as tuna are not fully understood.



By-catch of non-target species: There are three main fishing methods for catching tuna: purse seine, pole and line, and long-line. Other methods include troll lines, hand lines and driftnets. In a few high-value fisheries, traditional methods are still used, for example Atlantic blue-fin tunas are taken in traps in the Mediterranean and east Atlantic, and by harpoons off the coast of North America. The level of by-catch varies according to the gear type:

- Long-line fishing, which is the most common method for catching albacore, big-eye and blue-fin, results in the by-catch of sharks, sea turtles, billfish and seabirds. International long-line fleets are contributing heavily to the long-term decline of some of these threatened or endangered species. The U.S. Atlantic and Hawaiian long-liner fleets are subject to strict by-catch regulations.
- Purse-seining, which is used for several species, is particularly damaging if tuna schools are targeted by encircling dolphins on the surface in order to net tuna (particularly large yellow-fin) that tend to school beneath them. Both dolphins and tuna are caught in the nets, which in the past has killed millions of dolphins. This practice has been much reduced (see ‘dolphin-safe tuna’ below), but purse seine nets may still catch large amounts of by-catch, although the technique of slackening nets to allow dolphins to escape reduces the problem. If they are set on floating objects or ‘fish aggregating devices’ (FADs), the by-catch can include young big-eye and yellow-fin tuna, and other pelagic fish and sharks.
- Hook and line, pole and line, harpoon, and trap fishing have very little by-catch. For example, albacore is fished either by trolling with artificial lures on or near the surface and with pole and line, or by using bait to attract the fish, which are then hooked with a jigging pole off the stern and landed individually. Barbless hooks are used, and the lack of nets ensures the fishery is ‘dolphin free’.

Management problems: Although individual countries are responsible for managing tuna stocks that occur and are fished within their own waters, much tuna fishing takes place on the high seas, where it is managed by regional fisheries management organisations (RFMOs). In practice, however, the advice of these RFMOs is sometimes disregarded. Japan, for example, has caught double its quota of Southern blue-fin tunas for the last 20 years and some Mediterranean countries appear to have disregarded quotas, too.

Sea-ranching: The migratory, fast swimming life-style of tuna means that they are not suitable for farming. However, sea ranching is carried out for blue-fin tuna in the Mediterranean, Mexico and Australia. This involves fattening wild caught fish in floating cages for a few months to two years. The technique has had significant management issues, with environmental problems and an increase in fishing effort, leading to calls for a moratorium on the practice and better enforcement of minimum size for catches of juvenile tuna.



Species to choose

Albacore:

- American Albacore Fishing Association (AAFA) pole and line and troll fisheries in the North and South Pacific. *Marine Stewardship Council (MSC) certified in 2007.*
- British Columbia (troll/pole) and Hawaii (troll/pole/hand-line/long-line). *MBA ranking: Best choice.*

Big-eye:

- Hawaii (troll/pole and hand-line) and worldwide (troll/pole). *MBA ranking: Good alternative.*

Skipjack:

- Pole and line, and troll fisheries worldwide. *MBA ranking: Best choice – although the Marine Conservation Society (MCS) rates this fishery 3, or cause for concern.*
- Hawaii, hand-line. *MBA ranking: Best choice.*
- Hawaii, long-line. *MBA ranking: Good alternative (due to strict by-catch regulations).*

Yellow-fin:

- U.S. Atlantic Ocean, pole and troll. *MBA ranking: Best choice.*
- U.S. Atlantic Ocean, long-line. *MBA ranking: Good alternative.*
- Pole and troll worldwide. *MBA ranking: Good alternative – although MCS rates this fishery 3, or cause for concern.*
- Hawaii, hand-line. *MBA ranking: Good alternative.*

'Dolphin-safe or -friendly' canned skipjack, albacore and yellow-fin:

This is tuna caught using methods that do not involve the deliberate hunting, capture and death of dolphins, e.g. trolling, pole or hand-line, or with purse seine nets, according to a strict set of standards including:

- No intentional chasing, netting or encirclement of dolphins;
- No use of drift gill nets to catch tuna;
- No accidental killing or serious injury to any dolphins during net sets;

- No mixing of dolphin-safe with other tuna in individual boat wells, or in processing or storage facilities; and
- Fishing trips in the eastern tropical Pacific Ocean by vessels of a certain size to have an independent observer on board.

Purse seine fisheries for skipjack and yellow-fin tuna in the Atlantic:

Low levels of by-catch and low interaction with marine turtles and marine mammals.

Species of particular concern

- **Northern or Atlantic Blue-fin:** Whilst individuals caught legally and over 30 kg in size may be sustainable, it is virtually impossible for consumers to know if that was the case prior to filleting and processing. *MCS rating: 5 (avoid); MBA ranking: Avoid.*
- **Southern Blue-fin:** *MCS rating: 5 (avoid).*
- **Pacific Northern Blue-fin:** *MCS rating: 5 (avoid).*
- **Farmed or ranched blue-fin tunas:** Farming of these species relies on capture of juveniles from the wild.
- **Long-line caught Big-eye:** *MCS rating: 5 (avoid); MBA ranking: Avoid.*
- **Long-line caught albacore in the South Pacific:** *MBA ranking: Avoid.* This fish is usually larger than other albacore and its meat is pinkish red instead of light brown. It is often marketed under its Hawai'ian name, tombo or tombo ahi. *MCS rates albacore from the south Atlantic and Pacific (including Hawaii) as 4 (cause for concern).*
- **Long-line caught skipjack (except Hawaii) and yellow-fin (except U.S. Atlantic):** *MBA ranking: Avoid.*

Environmental Defense, a U.S. non-governmental organisation, has issued a health advisory for all long-line-caught tuna, and for all canned tuna, due to elevated levels of mercury. There is no health advisory for troll/pole-caught fish as these involve younger tuna with lower mercury levels. For more information, see www.oceansalive.org or www.edf.org

Sources of further information

Australia's Sustainable Seafood Guide – available from the Australian Marine Conservation Society:
http://www.amcs.org.au/default2.asp?active_page_id=137

Blue Ocean Institute Guide to Ocean Friendly Seafood:
www.blueocean.org/seafood

Commission for the Conservation of Southern Blue-fin Tuna:
www.ccsbt.org

Earth Island Institute's information on certified "dolphin-friendly or -safe" tuna:
www.earthisland.org/dolphinSafeTuna/consumer/

Lack, M. (2007). With an eye to the future: addressing failures in the global management of big-eye tuna. TRAFFIC International and WWF Australia.

Marine Conservation Society's Sustainable Seafood Guide:
www.fishonline.org

Marine Stewardship Council: <http://eng.msc.org/>

Monterrey Bay Aquarium Seafood Watch:
www.mbayaq.org/cr/seafoodwatch.asp

Seafood Choices Alliance: www.seafoodchoices.com

WWF Seafood Guides – available for Belgium, Denmark, Finland, France, Germany, Hong Kong, Indonesia, Netherlands, Norway, Poland, South Africa, Spain, Sweden, Switzerland:

http://www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm

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TRAFFIC RECOMMENDS

Factsheet 2: Salmon



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Salmon spawn in fresh water rivers. The young migrate to sea after one to three years and return after up to three years at sea to spawn in their natal rivers.

Pacific salmon occur from California north along the Pacific coast to the Bering Sea and Arctic Ocean waters adjacent to Alaska, and throughout the far eastern waters of Russia and Japan. There are five species of Pacific salmon:

- **Chinook or king salmon (*Oncorhynchus tshawytscha*):**
The largest Pacific species, these fish weigh an average of five-to-eight kg (11-18 pounds), live four to nine years, and are found from the Yukon River in Alaska to central California.
- **Chum, dog or keta salmon (*Oncorhynchus keta*):**
This species weighs an average of 3.5 kg (eight pounds), and is found in Japan, Russia and along the Pacific coast of North America from Washington state to Alaska. Large quantities of these fish are exported from Russia to China for processing.
- **Coho or silver salmon (*Oncorhynchus kisutch*):**
This species, which averages 5.5 kg (12 pounds), is caught from Oregon to Alaska and accounts for less than 10 percent of U.S. wild salmon catches in most years.
- **Sockeye or red salmon (*Oncorhynchus nerka*):**
These fish make up the second-largest, and most valuable, wild salmon fishery in North America, with 75 percent of the global catch originating in Alaskan waters. A major sockeye fishery in Russia supplies Japan and other Asian countries.
- **Pink salmon (*Oncorhynchus gorbuscha*):**
The most abundant species, pink salmon usually account for more than half of the U.S. commercial wild salmon catch. Large quantities are exported from Russia to China for processing.

The main commercial species of **Atlantic salmon** is *Salmo salar*, which occurs throughout European waters.

There is a vast demand for salmon in Europe, North America and the Far East, with Japan the largest market. Commercial fishing of wild salmon takes place mainly at sea, although sport fishing for salmon in rivers is very popular.

About 60 percent of the global salmon market is farmed (some 1.4 million metric tons annually). Norway, Chile and the UK are the main producers, together accounting for 86 percent of all farmed salmon. About 89 percent of farmed salmon is Atlantic salmon. Pacific salmon (mainly chinook and coho) is farmed in Canada, Norway, the UK, Chile, the U.S., and several Asian countries including Japan.

Conservation issues

The dependence of salmon on specific freshwater areas makes them particularly vulnerable to habitat loss, which is currently the primary threat to their survival. The gear used at sea includes drift and set gillnets, purse seines, and trolling gear (or hook-and-line gear), which rarely touch the sea floor; these methods have low by-catch and cause little habitat damage.

Pacific salmon: Populations of Pacific salmon have declined dramatically due to overfishing and damage to their freshwater and spawning and rearing habitats caused by dam construction, deforestation and urban development. Chinook, coho, sockeye and pink salmon stocks in California, Oregon and Washington are significantly depleted, apart from a few viable large runs. Salmon from different areas are often caught at the same time, which complicates management. Thus, in California and the Pacific Northwest, there are some 30 locations called Evolutionarily Significant Units (ESUs), where salmon are listed as Threatened or Endangered under the U.S. Endangered Species Act and thus may not be fished; however they are regularly caught as they mix with or are found close to salmon from 'healthy' stocks. The northeast Pacific fisheries supply commercial markets in Asia, Europe and North America.

Atlantic salmon: Stocks of Atlantic salmon are threatened throughout much of their native range, due to habitat loss, overfishing, pollution, aquaculture and impediments to migration routes. Atlantic salmon is listed by the OSPAR Convention for the Protection of the Marine Environment of the North East Atlantic as a threatened and declining species.

Farmed salmon: Salmon hatcheries and farms have caused environmental problems in many areas. Hatcheries may be located in or near wild salmon runs, and escapes of hatchery-reared fish can threaten wild stocks by competing with them for food and spawning grounds. The impacts of salmon farming include:

- Pollution from chemicals and excess nutrients from food and waste that damage the seabed and its communities;
- The excessive use of antibiotics, antifoulants and pesticides to control disease that spreads easily in farms can subsequently negatively affect human health;
- Viruses and parasites transfer between farmed and wild fish, and between farms;
- Escaped farmed salmon compete with wild fish and interbreed with local wild stocks of the same population, altering the overall pool of genetic diversity; and
- The use of fishmeal and fish oil from wild fish to feed farmed salmon exacerbates overfishing; fishmeal and oil currently represent one-third of the global fish harvest.

Species to choose

WILD CAUGHT

Pacific salmon (all five species) from Alaskan waters, U.S.: Alaskan salmon fisheries comprise the vast majority of U.S. Pacific salmon (over 50 percent is pink salmon, and 25 percent sockeye, with the remainder chum, coho and chinook salmon). About 75 percent of the fresh or frozen product is exported, mainly to Japan. Canned salmon goes mainly to Europe and the U.S., while the fresh and smoked product is becoming more widely available. Populations are healthy, partly due to the comparatively pristine freshwater systems in this state; they are also augmented by hatchery operations. *Marine Stewardship Council (MSC) certified in*

Factsheet 2 continued

2000, and re-assessment started in 2005. *MBA – Best Choice, MCS 1 (good)*. Note: there are concerns about the long-term health of wild salmon populations in California, Washington and Oregon. In particular, the chinook fishery in California was closed in 2008 due to a recent population crash (Californian chinook is marketed widely in California and exported to other parts of the U.S., Japan, Germany and the UK).

FARMED

MCS advises choosing **Atlantic salmon** certified by the Soil Association as organic, and/or by the RSPCA/SSPCA Freedom Foods scheme.

WWF advises choosing salmon from farms that:

- are located away from protected areas, important wild salmon rivers, and other threatened wildlife;
- have a good history of preventing and minimizing the impacts of escapes;
- have low levels of disease;
- minimize the use of antifouling chemicals through the use of double nets and mechanical cleaning (followed by water treatment) or cleaner fish/wrasse;
- fall under a traceability scheme;
- do not use fish meal/fish oil feed ingredients from overexploited, depleted or recovering fish stocks; and
- use feed that maximizes the use of marine by-products (i.e. overall compositions of fishmeal less than 35 percent, fish oil less than 27 percent, and a feed conversion ratio less than 1.15).

Species of particular concern

- **Wild-caught Atlantic salmon:** *MCS rating: 4 (cause for concern)*.
- **Non-organic farmed Atlantic or Pacific salmon:** The *MBA* recommends avoiding farmed salmon in general, but farmed salmon certified as organic or from well-managed farms (see above) is considered a very good choice.

Sources of further information

Australia's Sustainable Seafood Guide – available from the Australian Marine Conservation Society:
http://www.amcs.org.au/default2.asp?active_page_id=137

Blue Ocean Institute Guide to Ocean Friendly Seafood:
www.blueocean.org/seafood

Clarke, S. (2007). Trading tails: Russian Salmon fisheries and East Asian markets. TRAFFIC East Asia.

Knapp, G., C. Roheim and J. Anderson. 2007. The Great Salmon Run: Competition Between Wild and Farmed Salmon. TRAFFIC North America. Washington, D.C.: World Wildlife Fund.

Marine Conservation Society's Sustainable Seafood Guide:
www.fishonline.org

Marine Stewardship Council: <http://eng.msc.org/>

Monterrey Bay Aquarium Seafood Watch:
www.mbayaq.org/cr/seafoodwatch.asp

Seafood Choices Alliance: www.seafoodchoices.com

WWF Seafood Guides – available for Belgium, Denmark, Finland, France, Germany, Hong Kong, Indonesia, Netherlands, Norway, Poland, South Africa, Spain, Sweden, Switzerland:

http://www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm

WWF Salmon Aquaculture Dialogue:
www.worldwildlife.org/aquadialogues

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TRAFFIC RECOMMENDS

Factsheet 3: Molluscs

Hundreds of mollusc species are consumed as seafood. Most species are fast-growing and produce large numbers of young, and thus potentially can withstand considerable harvesting. The three main groups involved in the international seafood trade are:

- Bivalves – filter feeding molluscs with two shells, e.g. mussels, scallops, oysters;
- Gastropods – snail-like animals, e.g. Queen conch; and
- Cephalopods – soft-bodied, mobile animals, e.g. squid, octopus.

Although some species are taken from the wild, molluscs are particularly important as they make up about 25 percent of the world's aquaculture production. China is the top producer, with just over 80 percent of world production, followed by Japan, the U.S., France, Thailand, Spain, New Zealand and Italy. Most molluscs used as seafood are bivalves, which are filter feeders that obtain their nutrition by removing suspended particles from water. This makes them highly suitable for farming as they do not require feeding. Wild spat or juveniles are collected in areas of natural spatfalls or produced in hatcheries, and then 'grown-out' to marketable size on a variety of surfaces (trays, ropes, rafts, etc.), either on the bottom or suspended in the water.

Bivalve farming has a low impact on the marine environment as there is no feeding with fishmeal or fish oil and hence no pressure on other fisheries, and no increased nutrient input to coastal waters. Bivalves may even make surrounding waters cleaner by filtering out nutrients and organic matter. Fertilizers, antibiotics and other chemicals are seldom used.

There are, however, a few potential negative impacts to mollusc farming, including effects on the nutrient balance of the seabed, introduction of disease in wild populations and escape of non-native species that may out-compete wild stock.

In the UK, the Soil Association has developed standards to certify several bivalves as organic, including mussels, scallops and clams. Certification will provide assurance that farming causes minimum negative impacts on the surrounding environment, that wastes are re-used and recycled wherever possible, and that harvesting is environmentally-friendly (e.g. no dredging for scallops).

SCALLOPS

There are over 360 species of scallops, which are distributed broadly throughout the world. They are popular in many countries, typically served cooked in or out of the shell or raw as sushi, and available fresh or frozen.

Sea scallops are an economically important species in the Atlantic Ocean, with fisheries in the United States and Canada. The majority consumed locally are wild-caught.

Scallops are farmed in 20 countries, the main producers being China and Japan, followed by Chile and Peru. About 15 species of scallop are farmed and account for some 60 percent of world scallop production. Farmed scallops are available year-round, but fresh scallops may be limited in specific regions for food safety reasons.

Conservation issues

The sea scallop population in the North Atlantic is relatively healthy and abundant and is well-managed, but the population in the Mid-Atlantic region (North Carolina to New York) is overfished.

Scallops are usually caught by dredging, and to a lesser extent trawling, both methods that cause severe damage to the sea floor, and may result in by-catch of marine turtles and fish. Closed areas, gear modifications, and catch limits can be used to reduce fish by-catch, but high numbers of loggerhead turtles are still injured and killed in the Mid-Atlantic. Hand-collection by divers is the preferred method for harvesting wild scallops, since diving is restricted by depth to less than 30 m, which means that populations in deeper water are protected and act as breeding stock. In Europe, scallops hand-collected by divers are generally larger and of better quality than dredged scallops.

The spat for farmed scallops are collected from the wild or produced in hatcheries and transplanted to sites in coastal waters. They are either suspended in the water-column (for harvesting by hand) or laid on the seabed for grow-out (harvested by dredging, which can damage the seabed). The use of wild scallop spat does not appear to harm natural scallop populations, because it is transplanted to locations that are generally superior to those where it would settle naturally. However, in China the abundance of scallops in

TRAFFIC

the wildlife trade monitoring network



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the wild is generally low, and wild spat collection may have a negative impact.

Species to choose

WILD-CAUGHT SCALLOPS:

- **Patagonian scallop** (*Zygochlamys patagonica*). *Marine Stewardship Council (MSC) certified in 2006*. The fishery is mainly in Argentinean waters, but the product is available “frozen-at-sea” in Europe, the U.S. and Canada.
- **Wild-caught hand-collected scallops in Europe:**
 - **King scallop** (*Pecten maximus*). *MCS rating: 2 (cause for concern)*.
 - **Atlantic scallop** (*Placoplecten magellicanus*). *MCS rating: 3 (cause for concern)*.
 - **Queen scallop** (*Aequipecten opercularis*). *MCS rating: 3 (cause for concern)*.
- **Wild-caught Giant Sea Scallop from northeast U.S. and Canada.** *MBA ranking: Good choice.*
- **Wild-caught Australia scallop.** *WWF Hong Kong: recommended.*

FARMED SCALLOPS

- **Europe.** Responsibly managed farmed scallops (e.g. King Scallops), and those certified as organic.
- **Farmed Bay scallops** (*Argopecten irradians*). *MBA ranking: Best* when produced by off-bottom techniques. On-bottom, dredged scallops are considered a *Good Alternative*.
- **Farmed scallops from China.** *WWF Hong Kong: recommended.*

Species of particular concern

- **Wild-caught scallops harvested by dredging**, such as those from the U.S. Mid-Atlantic.

OYSTERS

Oysters are filter-feeding bivalves found in most of the world’s oceans, except near polar extremes. They reproduce quickly and prolifically, but overharvesting, habitat destruction, and the introduction of diseases have severely reduced their populations in the wild. Wild-caught oysters are not very common, and farmed oysters account for 97 percent of the world’s total oyster consumption (4.6 million

tonnes annually). China produces over 80 percent of the world's farmed oysters but these are for domestic consumption. The other main producers of farmed oysters are Korea, Japan, France and the United States. The majority of farmed oysters (97 percent) are Pacific oysters (*Crassostrea gigas*), which originated in northeastern Asia. These oysters reach market size in three to four years, compared to five to six years for some other species.

Conservation issues

The European flat or native oyster (*Ostrea edulis*) is depleted in the wild throughout most of its range. Pollution of nearshore waters and destruction of habitat have made wild oysters scarce in some areas. In addition, dredge-harvesting of oysters can damage seafloor habitat. Areas once noted for their large natural beds are now being used for oyster farming

Most oyster farming operations are privately owned and well-managed. Oysters are bred in hatcheries and then grown on in intertidal waters, usually in semi-rigid plastic mesh bags, supported by steel trestles or placed in elongated cages suspended between a series of poles submerged in seawater during high tide. Larger oysters may be re-laid loose onto the seabed where there is firm gravel ground. The best farming areas are sheltered sites with some mixing of marine and fresh water. Pacific oyster producers in temperate areas rely on spat from oyster hatcheries, as this species generally does not spawn in cool waters, although recent warmer weather is inducing reproduction. The native European oyster is also farmed.

Manual harvesting methods cause less disturbance to sediment than mechanical methods, but are less suited to deeper water for practical reasons. The introduction of oysters to non-native areas can introduce diseases, and concerns are growing about the impacts of genetically altered oysters being raised in the wild.

Species to choose

- **Farmed Pacific oyster:** *MCS rating: 1 (good); MBA ranking: Best choice.*
- **Farmed oysters from China:** *WWF Hong Kong: recommended.* Choose products from farms that use off-bottom culture techniques and hand-harvesting, rather than dredging.
- **Wild-caught U.S. Gulf of Mexico and Canada oysters:** *MBA ranking: Good choice.*

MUSSELS

Some 90 percent of world mussel production is from aquaculture, and the main producers are China, Spain, Italy, Thailand, France and New Zealand. The United States produces less than 0.1 percent of global aquaculture production and relies on imports primarily from Canada and New Zealand. Mussels are the most common species of shellfish farmed in the UK, where a number of species are used. Farmed mussels are available year-round, but fresh mussels may be limited in specific regions for food safety reasons.

Conservation issues

Farming methods for mussels are generally environmentally sound, as suspension methods are usually used. Spat for off-bottom culture, which accounts for about 85 percent of production, are normally captured from the water column with spat collectors. In on-bottom culture, spat are dredged from natural sites and placed on the seabed, and after grow-out are harvested by dredging, which can damage the seabed. Increased organic matter concentration, lower redox potential, and decreased benthic diversity may be found beneath and around the edges of suspended mussel aquaculture sites, but this tends to be relatively minor.

Escape of mussels is uncommon. Because diseases are rare, mussel producers are less affected by outbreaks than other bivalve producers, and so antibiotics are rarely used. Best Management Practices (BMPs) for mussel farming have been developed in Canada and New Zealand.

Species to choose

- **Farmed worldwide:** *MBA ranking: Best.* Seek out mussels that have been grown in suspended culture, rather than on the seabed.

ABALONE (ormer (France), perlemoen (South Africa))

Abalone are herbivorous gastropods in the genus *Haliotis*, found throughout much of the world (including Europe, South Africa, along the Pacific coast of North America, Japan, China, Australia and New Zealand). They are highly prized, particularly in Asia where the meat may fetch up to US\$1,000/kg during Chinese New Year. Wild and farmed abalone from Mexico, Australia, New Zealand, Taiwan, Japan and China fulfil most of the global demand. There are commercial fisheries for *Haliotis tuberculata* in France and Spain, and a small abalone aquaculture industry in California, with most of the product exported to Asia.

Conservation issues

Many wild populations of abalone have been depleted due to over-harvesting. Abalone stocks have plummeted in South Africa, where most of the abalone harvested is exported to East Asia, particularly Hong Kong. Continued illegal harvesting and trade could have a severe impact on the survival of the species. All five major abalone fisheries on the Pacific coast of California are depleted as a result of over 50 years of heavy fishing (both sport and commercial), poaching, predation by an increasing population of sea otters, pollution of mainland habitat, disease and inadequate wild stock management. In an effort to rebuild stocks, the commercial fishery was closed in 1997, although a sport fishery remains open north of San Francisco. The French abalone fishery is regulated by a permit and quota system, but this is poorly enforced. Stocks in Brittany have only partially recovered since a severe bacterial disease devastated them in 1996/7. In Spain, the fishery has had to close on at least two occasions due to pollution.

Abalone is farmed in California under strict regulations to control disease and pest problems (sabellid worm and withering foot syndrome). The farm-raised abalone have a maximum harvesting size of four-inch long shells; abalone

larger than this are likely to be illegally sourced. Abalone are fed on algae, although a manufactured feed is also used. An abalone aquaculture industry is developing around Europe, mainly in Ireland where *H. discus hannai* and *H. tuberculata* have been imported, and there are prospective aquaculture developments in France, England, Spain and Scotland.

Species to choose

- **Wild-caught abalone from Australia.** *WWF Hong Kong: recommended.*
- **Farmed abalone in UK and Europe** (*Haliotis tuberculata* and *Haliotis discus hannai*). *MCS rating: 1 (good).*
- **Farmed Red, Green and Pink Abalone from the U.S.** *MBA ranking: Best choice.*
- **Farmed abalone from China.** *WWF Hong Kong: recommended.*

Species of particular concern

- **Wild-caught abalone from South Africa and California** —until effective measures to tackle excessive poaching are put in place.

QUEEN CONCH

A large marine gastropod mollusc found only in the Caribbean, queen conch (*Strombus gigas*) is slow-moving and easy to pick up by hand, or with simple fishing gear (poke poles). Conchs are especially vulnerable to fishing during the spawning season, when they gather in large numbers. They are long-lived and mature late, making them vulnerable to fishing pressure. Both the commercial and recreational conch fisheries in Florida are closed due to overfishing, and stocks have been slow to recover, partly due to pollution and habitat loss. There is much illegal fishing in other countries, with only a few having adequate management. Farming has been attempted, but to date has not been commercially successful, although there is a farm in the Turks and Caicos. This species is listed in Appendix II of CITES.

The Monterey Bay Aquarium recommends that this species be avoided.

SQUID OR CALAMARI

Although almost 100 species of squid are fished commercially, two species, the Japanese flying squid (*Todarodes pacificus*) and the Argentine shortfin squid (*Illex argentinus*), account for over half the world's squid harvest. More than 30 countries or territories fish squid, with China, Taiwan, India, South Korea and Thailand accounting for nearly 80 percent of U.S. squid imports. India lands squid solely from the Indian Ocean.

There is a major fishery in Atlantic squid (*Loligo forbesi*), a widespread species found throughout the Northeast Atlantic and the Mediterranean.

Conservation issues

Squid have short life cycles (six to 18 months), little overlap of generations and highly erratic recruitment, and show wide fluctuations of abundance. These factors, combined with little or no management and unreliable fishery data, raise concerns about possible overfishing. Furthermore, it is often difficult to determine species name and fishery of origin for squid sold as seafood; most squid is labelled simply as 'squid' by exporting countries.

Squid grow quickly and reproduce at a young age, making them highly resilient to fishing pressure. But abundance varies over time and according to location, as it depends on



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ocean conditions such as temperature and prey availability. Some fisheries have experienced large fluctuations in catch, which is not necessarily due to overfishing.

In international waters, squid is mostly caught using jigs or trawls, both of which have low by-catch. Squid fisheries on the high seas are not managed, and stock abundance is largely unknown. Squid play an important role in marine food webs as both predator and prey and are an important source of food for marine mammals such as sperm whales. This is a matter of concern as, increasingly, squid are becoming the target in areas where other species have declined due to overfishing.

Species to choose

- Wild-caught squid, worldwide. *MBA ranking: Good alternative; WWF Hong Kong, recommended.*
- Trawl-caught longfin squid, U.S. Atlantic Ocean. *MBA ranking: Best choice.*
- Trawl-caught shortfin squid, U.S. Atlantic Ocean. *MBA ranking: Good alternative.*
- Wild-caught jumbo squid, Gulf of California. *MBA ranking: Good alternative.*

Species of particular concern

Squid taken in industrial or large-scale commercial fisheries, which remove large quantities of squid at the base of the food chain. *MCS rating: 4 (cause for concern).*

OCTOPUS

Octopus grow rapidly and are probably three to four years old when sexually mature. Unlike the mass spawning behaviour of squid, octopus reproduction involves females laying eggs, guarding them and dying once the eggs hatch. In Europe, both the common octopus (*Octopus vulgaris*) and the lesser octopus (*Eledone cirrhosa*) are taken as by-catch in trawl fisheries. They are also taken in earthenware pots which they enter instinctively in order to hide. Octopus are not subject to stock assessment or quota controls; there is no minimum landing size for the lesser octopus, but there is a minimum landing weight of 750 grammes for common octopus.

Species to choose

- Octopus species. *MCS rating: 3 (cause for concern).*

Species of particular concern

- The *MCS recommends avoiding eating baby octopus*, as they will have had no chance to breed.
- **Cuttlefish from the South China Sea.**
WWF Hong Kong: Avoid.

OTHER MOLLUSCS

A vast array of other molluscs are used in seafood. Clams, a generic name used for a wide diversity of bivalves, are particularly popular. The most common wild-caught clams in the eastern U.S. are the Atlantic surf clam (used in soups and chowders), ocean quahog, softshell clam and hard clam. The population of Atlantic surf clams is healthy and abundant, but they are commonly harvested by hydraulic dredging, which uses pressurized water jets to wash clams out of the sediment and results in considerable damage to the seabed. A cockle fishery has been certified by the MSC (see below). Many species are farmed.

Species to choose

- **Burry Inlet Cockle Fishery (*Cerastoderma edule*):** A traditional fishery in South Wales where cockles are gathered by hand-raking and sieving and sold locally to UK retailers, although some are exported to Spain, Holland, France and Portugal. *MSC certified.*
- **Wild-caught soft shell/steamers (longneck, fryer), U.S. Atlantic Ocean.** *MBA ranking: Best choice.*
- **Wild-caught Atlantic surf clams, U.S. Atlantic Ocean.** *MBA ranking: Good alternative.*
- **Wild-caught hard clams (little neck, cherrystone, chowder), U.S. Atlantic Ocean.** *MBA ranking: Good alternative.*
- **Wild-caught ocean quahog (black clams), U.S. Atlantic Ocean.** *MBA ranking: Good alternative.*
- **Farmed clams (steamers, littlenecks, cockles).** *MBA ranking: Best choice.*

- **Farmed clams, China.** *WWF Hong Kong: recommended.*

Sources of further information

Australia's Sustainable Seafood Guide – available from the Australian Marine Conservation Society:
http://www.amcs.org.au/default2.asp?active_page_id=137

Blue Ocean Institute Guide to Ocean Friendly Seafood:
www.blueocean.org/seafood

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Marine Conservation Society's sustainable seafood guide:
www.fishonline.org

Marine Stewardship Council: <http://eng.msc.org/>

Monterrey Bay Aquarium Seafood Watch:
www.mbayaq.org/cr/seafoodwatch.asp

Seafood Choices Alliance: www.seafoodchoices.com

WWF Abalone Aquaculture Dialogue:
www.worldwildlife.org/aquadialogues

WWF Mollusc Aquaculture Dialogue:
www.worldwildlife.org/aquadialogues

WWF Seafood Guides – available for Belgium, Denmark, Finland, France, Germany, Hong Kong, Indonesia, Netherlands, Norway, Poland, South Africa, Spain, Sweden, Switzerland:

http://www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm

While the information presented in this factsheet was believed to be correct at the time of going to press in 2008, it may have changed since then. Hoteliers are advised to check local and international regulations and recommendations on the products discussed here.

TRAFFIC RECOMMENDS

Factsheet 4: Seafoods specific to Asia



Seafood is particularly popular in Asian restaurants, and certain species are consumed that are not generally found on menus in other regions of the world. This factsheet concerns some of the species that are both particularly in demand in Asia and of conservation concern, including:

- Sharks, especially shark fins;
- Live reef food fish (LRFF), including groupers, snappers and humphead wrasse;
- Sea cucumbers;
- Giant clams; and
- Geoduck.

SHARKS

About 30-40 species of shark from over 120 countries are exploited for both their meat and fins. The fins are the most valuable product, as they are dried and used for shark fin soup (a prestige dish in many Asian cultures) and other traditional celebratory dishes in East Asia. Shark fins retail for over US\$400/kg. The shark fin itself has no taste, but the texture and cultural significance is valued. The biggest and fastest growing market is mainland China, though there are huge markets in Japan, Hong Kong, Singapore and Korea.

Shark meat does not travel well without refrigeration and is generally of low value. It is eaten in a few countries but is rarely seen on restaurant menus. The exception is dogfish shark which is sometimes used as a substitute for cod in fish and chips and sold as 'rock', but is not eaten in Asia.

Sharks have an important tourism value in countries that have a diving industry, but population declines are threatening this value. For example, in the Bahamas a single live reef shark is estimated to be worth US\$250,000 a year through dive tourism, whereas a dead reef shark has a one-time value of \$50-60 to a fisherman.

Conservation issues

Most shark populations worldwide are heavily overfished for their meat and fins and from accidental capture. About 20 percent of the 547 species of sharks on the IUCN Red List are threatened. Basking sharks (*Cetorhinus maximus*), whale

sharks (*Rhincodon typus*) and great white sharks (*Carcharodon carcharias*), although not in demand for seafood, are listed in Appendix II of CITES.

An estimated 100 million sharks are caught each year, and the global catch has increased by 300 percent since 1950. Since sharks grow slowly, mature late and give birth to only a few young at a time, they decline rapidly in the face of intense exploitation. The loss of Asian shark stocks has led Asian fishing operators to target sharks farther away, e.g. in the Pacific, and has also contributed to the development of specific shark fisheries.

Shark finning is currently the main contributor to the worldwide decline of sharks, and demand for fins is continuing to grow. The fins, which account for only about 5 percent of the shark's weight, are cut off and the animals are thrown overboard, sometimes still alive so that they face a slow death. Some 10,000 tonnes of shark fin enter trade each year.

Many shark fisheries use trawl nets, which can severely damage seafloor communities, and accidentally catch many other species. Gillnets or longlines used to target sharks can catch endangered marine mammals, sea turtles and seabirds. Half of all the sharks killed each year are caught accidentally in fishing gear intended for other fish.

An International Plan of Action for the Conservation and Management of Sharks has been drawn up under the United Nations Food and Agriculture Organisation (FAO), but at present there are no sustainably managed shark fisheries, and most countries have no relevant regulations. Furthermore, shark species can be very difficult to tell apart. Shark finning is 'banned' in some countries, which means the carcass must be landed with the fins, to reduce wastage and assist with identification of the species caught.

The Environmental Defense Fund has issued a health advisory for all sharks (including dogfish) due to elevated levels of mercury (and PCBs) that may pose a health risk (<http://www.edf.org/page.cfm?tagID=16263>).

Species of particular concern

All seafood guides, including those of the Marine

Conservation Society (MCS), Monterey Bay Aquarium (MBA) and WWF, recommend that shark should not be eaten. Artificial shark fin substitutes, such as seaweed extracts and animal tendon, are available. In Hong Kong, some 30 organisations have pledged not to buy or sell shark fin soup as part of their corporate activities, under the WWF seafood initiative.

LIVE REEF FOOD FISH (LRFF)

This group of large-bodied coral reef fish involves about 100 species, including certain groupers (*Serranidae*), snappers (*Lutjanidae*), and sea bream (*Sparidae*). The most well-known is the humphead wrasse (*Cheilinus undulatus*), also known as the Maori wrasse, Napoleon wrasse or Napoleonfish, which is the largest and most expensive species; large males can reach over two metres in length and live for at least 30 years. The WWF Hong Kong guide to LRFF covers 98 species and gives their common names in Australia, mainland China, Hong Kong, Indonesia, Malaysia, Philippines, Singapore, Taiwan, Thailand and Vietnam.

LRFF are kept alive until just before cooking as this is considered to give a better flavour and texture. Restaurants typically prefer certain size classes of fish, smaller ones for family dinners and larger ones for banquets. This means that for large species, such as the humphead wrasse, the preferred 'plate-sizes' are usually medium-to-large juveniles, which places even more pressure on exploited populations.

The practice of eating LRFF began in the 1960s in Hong Kong and has become very common in Chinese communities, especially in Cantonese cooking, particularly for banquets and special occasions such as Chinese New Year. All large humphead wrasse and most other LRFF are wild-caught from reefs from Hong Kong to the Indo-Pacific region, and are exported by air, from as far away as Fiji, the Maldives, the Solomon Islands and the U.S. Marshall Islands. Global trade is thought to be worth over US\$800 million per year, with Hong Kong the main centre.

LRFF were originally collected by large foreign-owned, purpose-built transport vessels (mostly from Hong Kong and China) employing foreign divers and fishers, but since the late 1980s and early 1990s, local middlemen either buy live

fish from independent fishermen or employ fishers on larger, locally operated vessels. In some areas, fishermen also sell catches directly to visiting foreign LRFF vessels.

Conservation issues

Many of the species used as LRFF are coral reef fish and are vulnerable to overfishing, as they grow slowly, are late to mature and are naturally uncommon. Certain species also spawn in small aggregations that are easy to fish and can be easily depleted; others have very small home ranges. Some change sex as part of their life history, and thus, if a particular size is targeted by a fishery, one sex may be preferentially removed. Several species are on the IUCN Red List, including humphead wrasse, which is endangered, and the giant grouper (*Epinephelus lanceolatus*), which is listed as vulnerable. The humphead wrasse is also listed in CITES Appendix II (i.e. international trade permitted only with an export licence, which may only be issued if the source country has management measures to ensure the sustainability of the species; for example, Indonesia has a CITES quota).

Although hook and line is often used and is relatively benign, the cyanide and large traps that are used in some areas can cause habitat damage.

There is some hatchery production of the young of a few grouper species, but most LRFF come from the wild, either as juveniles or as adults, depending on the species. Juveniles are taken from the wild and grown out in floating cages until they reach marketable plate-size (0.5-1kg). They are often fed on 'trash-fish', which is itself sometimes caught by the highly damaging practice of dynamite fishing. These juvenile fisheries threaten the sustainability of targeted populations.

Species to choose

Substitutes, including farmed LRFF or freshwater fish.

Species of particular concern

LRFF, particularly those listed on the IUCN Red List and sexually immature specimens. The most common species include:



- humphead wrasse (*Cheilinus undulates*)
- leopard coralgroup (*Plectropomus leopardus*)
- squaretail coralgroup (*Plectropomus areolatus*)
- humpback grouper (*Cromileptes altivelis*)
- orange-spotted grouper (*Epinephelus coioides*)
- camouflage grouper (*Epinephelus polyphekadion*)
- duskytail grouper (*Epinephelus bleekeri*)
- areolate grouper (*Epinephelus areolatus*)
- brown marbled grouper (*Epinephelus fuscoguttatus*)
- giant grouper (*Epinephelus lanceolatus*)

SEA CUCUMBERS

Prized in Asian markets worldwide, sea cucumbers are bottom dwelling echinoderms (i.e. related to starfish and sea urchins), in the families *Holothuridae* and *Stichopodidae*. They are mainly harvested and dried for food, but are also used for medicinal purposes. The main market is Asia, with Singapore, China and Hong Kong as the main importation ports. About 50 sea cucumber species are commercially

important. High-value species include the sandfish (*Holothuria scabra*), the black teatfish (*H. nobilis*) and the white teatfish (*H. fuscogilva*).

There are a variety of fishing techniques for sea cucumbers, including hand collection at low tide, SCUBA and hookah in deeper waters and trawling and spearing. In the Indo-Pacific, several species are targeted in the same fishing grounds. Elsewhere (e.g. the Indian Ocean, eastern Pacific and Caribbean), the fishery generally focuses on a few species that seldom occur in the same fishing area. Temperate fisheries are monospecific. Since the 1980s, international trade in sea cucumbers for food has increased dramatically, particularly from developing countries that have little or no management in place.

Conservation issues

Once common throughout the world's oceans, sea cucumbers have been decimated by overfishing, as their shallow habitat makes them very easy to collect. Many of the fisheries are of the 'boom and bust' variety, as a result of high market demand. A preliminary global review suggests



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that 28 species are overexploited, 11 in stable condition, three in decline, and 24 in unknown condition, but the status of stocks in different countries varies. Some consideration has been given to listing sea cucumbers in Appendix II of CITES, but this has not yet gone ahead.

Sea cucumber farming is technically feasible, and several pilot farming enterprises are underway, for example in the Solomon Islands, India, Indonesia, Australia, Vietnam and New Caledonia. Companies in Southeast Asia and Australia have proposed commercial hatchery production, but none are yet in production. Fattening of wild-caught sub-adults is practised in Indonesia and India in enclosures within estuaries or calm waters using low-cost feeds such as agricultural by-products. But such fattening still represents pressure on wild populations, as juveniles are taken from the wild.

Species to choose

To date, there is no guidance on sustainable sea cucumber fisheries, but this may change soon, as there is much research underway.

Species of particular concern

Species of particular conservation concern should be avoided, but these are difficult to identify, since sea cucumber products are not easily distinguishable and are rarely labelled. Where possible, the following species should be avoided:

- **High concern:** *Holothuria fuscogilva*, *Holothuria nobilis*, *Holothuria scabra*, *Isostichopus fuscus* and *Thelenota ananas*.
- **Concern in certain countries:** *Actinopyga echinites*, *Actinopyga mauritania*, and *Stichopus horrens*.
- **Potential for future concern as harvest increases:** *Cucumaria frondosa*, *Isostichopus badionotus*, and *Parastichopus californicus*.

GIANT CLAMS (gigas clam, b nitier g ant)

There are nine species of giant clams in the genera *Hippopus* and *Tridacna*. Giant clams are harvested mainly for the aquarium trade, but the meat is eaten in Okinawa

(Japan), Taiwan, Australia and the Pacific Islands. In Okinawa, giant clam meat is called *Himejako* and is mainly used for sashimi and sushi dishes; the preferred species is *Tridacna crocea*. In Taiwan, the market is for fresh or frozen giant clam adductor muscles. In the Pacific, giant clam meat is eaten locally and sometimes served raw (or marinated) in restaurants.

Four species are listed as Vulnerable on the IUCN Red List, and all giant clams are listed in Appendix II of CITES. Giant clams are farmed in a number of countries in Asia and the Pacific.

Species to choose

Farmed specimens.

Species of particular concern

Wild-caught specimens.

GEODUCK

Also known as elephant trunk clam, the geoduck (*Panopea abrupta*) is a species of large clam native to the Pacific coast of the U.S. and Canada (mainly Washington state, British Columbia and Southeast Alaska). It is the largest burrowing clam in the world (average 0.5 - 1.5 kg at maturity, reaching 7.5 kg and 2 m in length). It has a life expectancy of about 146 years, with the oldest recorded at over 160 years. It did not become an important commercial fishery until the 1970s but is now a US\$80 million industry, because it is highly regarded in Chinese cooking and in Japan, where it is called *mirugai* or *mirukuigai*.

Geoduck are taken from the wild in Washington state and British Columbia. The clams are individually harvested one at a time by divers using a directed water jet called a 'stinger', which loosens the substrate around the clams and allows them to be lifted out of the sand. The British Columbia fishery is understood to be managed on a sustainable basis and is tightly monitored by both the U.S. and Canadian governments.

Geoduck is also farmed on private tidelands in Puget Sound. Young geoduck are obtained from a hatchery on

Factsheet 4 continued

Vancouver Island and are raised in 'predator exclusion devices', which are PVC pipes pushed into the sediment. There are approximately 20,000 to 43,500 of these PVC pipes planted per acre on tidelands. There is some controversy in the area over geoduck farming grow-out and harvest practices.

Geoduck is generally recommended.

Sources of further information

Australia's Sustainable Seafood Guide – available from the Australian Marine Conservation Society:

www.amcs.org.au/default2.asp?active_page_id=137

Blue Ocean Institute Guide to Ocean Friendly Seafood:

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Marine Stewardship Council: <http://eng.msc.org/>

Monterrey Bay Aquarium Seafood Watch:

www.mbayaq.org/cr/seafoodwatch.asp

Seafood Choices Alliance: www.seafoodchoices.com

World Wide Fund for Nature seafood programme:

www.panda.org

WWF Hong Kong – seafood choice initiative:

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Geoduck

Underwater Harvesters Association geoduck website: www.geoduck.org

While the information presented in this factsheet was believed to be correct at the time of going to press in 2008, it may have changed since then. Hoteliers are advised to check local and international regulations and recommendations on the products discussed here.

TRAFFIC RECOMMENDS

Factsheet 5: Crustaceans

Numerous crustaceans are popular as seafood, ranging from large lobsters to small shrimp, and the fisheries themselves are equally diverse, involving various gears and ranging from small-scale, local enterprises to large commercial industries. Few fisheries have been fully assessed for their sustainability, particularly the small-scale ones and those in developing countries. This fact sheet provides a brief guide to some of the more popular species involved, including:

- Prawn and shrimp;
- Lobster; and
- Crab.

Information on North American and European crustacean fisheries is more easily available (see seafood guides listed under Sources of further information). Hotels and buyers in Australasia should consult the seafood guide published by the Australian Marine Conservation Society. Hotels and buyers in other regions should try and find out as much as possible about the sources and methods of harvesting or farming products that are available, and then use the general guidance in the factsheets on seafood to make their choices (for example, choose locally caught seafood that is harvested in an environmentally sound way or uses good farming techniques, such as minimising impacts on mangroves and other important habitats).

PRAWN AND SHRIMP

The names prawn and shrimp tend to be used interchangeably, although, technically, shrimp are distinguished from prawns by the structure of the gills. In Europe (particularly the UK), Australia and other Commonwealth countries, prawn is used more often than shrimp, which is the more common term in North America. To add further confusion, some species are marketed under many different names (e.g. the circumpolar species *Pandalus borealis* may be called pink shrimp, northern shrimp, northern pink shrimp, Pacific pink shrimp or salad shrimp).

There is a huge and growing market for shrimp. About 40 shrimp and prawn species have commercial value. They can be categorised into three main types: wild-caught cold-

water or northern shrimp in the family *Pandalidae* (25 percent of the global harvest); warm-water, tropical or southern shrimp, mainly in the genus *Penaeus* (50 percent of the global harvest); and farmed shrimp (25 percent of the global harvest). Freshwater species are also often used but are not addressed in this factsheet.

About ten species are farmed, most of which are warm-water penaeid shrimp, because of their quick growth and large size. Some *Penaeid* species can adapt to water much less saline than seawater, which means they can be farmed in brackish and freshwater systems. These include the Pacific white shrimp (*Penaeus vannamei*), which is farmed widely in western countries, the Chinese white shrimp (*P. chinensis*); and the tiger prawn (*P. monodon*), which reaches harvest weight in four months and is widely cultivated in Asia. All these species grow fast, can be cultured at high densities, and have become the mainstay of shrimp farming worldwide. Developing countries account for 99 percent of production of farmed shrimp, most coming from China, followed by India, Thailand, Indonesia, Ecuador, Brazil, Bangladesh and Vietnam. The majority is exported to the United States, European Union and Japan. Farming methods range from simple ponds in coastal areas to high-tech inland systems that filter and re-circulate their water. These methods can be divided into three categories: extensive/traditional, semi-intensive and intensive.

Conservation issues

Many stocks of shrimp have been overfished. Determining which products are sustainable is made difficult by the fact that the global shrimp market makes no distinction between warm-water and cold-water shrimp, or between farm-raised or wild-caught, and the confusion of common names makes it difficult to know the origin of a product (e.g. imported shrimp is sometimes repacked as domestic product). In some countries, there is now a requirement for food items to be labelled with their country of origin.

Northern prawn or shrimp: These are small (maximum length about 15 cm), short-lived, fast growers that produce many young. The status of stocks is generally unknown and subject to large natural fluctuations. In North America,



species such as pink and northern shrimp are typically caught by bottom trawls, which often damage the sea bed, particularly the sandy and muddy habitats preferred by shrimp. By-catch reduction devices have significantly reduced accidental take of endangered species (sea turtles, mammals, seabirds, etc.) but there still tends to be by-catch of groundfish.

Tropical or southern prawn or shrimp: These are short-lived and very prolific. Most tropical shrimp are captured by bottom trawling, which damages the seabed and takes high levels of by-catch (27 percent of global by-catch), including large numbers of sea turtles, as well as fish and invertebrates; up to 10 kg of by-catch may be discarded for every kilogram of prawn landed. Measures to reduce by-catch include turtle exclusion devices (TEDs) and square mesh panels that can reduce by-catch significantly, but management measures and enforcement of catch quotas and TED requirements vary widely and, even where TEDs are employed, by-catch of finfish and invertebrates remains high.

Farmed prawn or shrimp: Much prawn farming causes loss and degradation of wetlands, mangroves and other habitats, as well as pollution and depletion of wild stocks. Farm-raised shrimp are sometimes labelled as wild-caught, because of their bad reputation. The key environmental and social issues related to shrimp farming are:

- Clearance of ecologically-sensitive habitat, such as mangrove forests, to create ponds;
- Salinization of groundwater and agricultural land as water seeps out of the ponds;
- Pollution from organic waste, chemicals and antibiotics;
- Drainage of aquifers to supply water;
- Depletion of wild stocks of fish for use in formulated feeds;
- Decline of healthy broodstock through collection from the wild; and
- Escape of farmed shrimp that compete with wild shrimp for food, transfer diseases and interbreed.



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Species generally to chose

Try to choose prawns taken in fisheries using sorting grids to reduce by-catch of non-target species, and also shrimp/prawns labelled with recognised, credible, environmental, fairtrade and organic labels. For farmed prawns, choose those from farms managed according to the International Principles for Responsible Shrimp Farming (see Sources of further information), or from sources certified as organic.

- **Northern prawn or crevette** (*Pandalus borealis*). Sorting grids are compulsorily fitted in nets in Norwegian, Canadian and U.S. waters to reduce by-catch. From North Atlantic, Pacific and Arctic Oceans. *MCS rating: 3 (cause for concern)*. Wild-caught Northern Shrimp from Canada and U.S. Atlantic. *MBA ranking: Good alternative.*
- **South Atlantic and Gulf of Mexico warm water shrimp fisheries**. Seven species of shrimp are fished commercially in the U.S. Gulf of Mexico and South Atlantic. Overall, management of these has been fairly effective, maintaining stocks, researching habitat effects, and addressing by-catch issues. *MBA ranking: Good alternative.*
- **Pink/salad/cocktail shrimp from Oregon, U.S.** (*Pandalus jordani*). Oregon shrimp are sold primarily on the U.S. west coast but some are exported. *MSC certified in 2007; MBA ranking: Best choice*, but note there has been little assessment or management of pink shrimp stocks off Washington State. *MBA ranking: Avoid.*
- **Pot-caught spot prawn (or prawn, spot shrimp)**. Spot prawns are only caught with pot gear, which results in little by-catch, although their hard-bottom habitats, home to fragile glass sponges and corals, may be damaged if traps are moved by large ocean swells and tides, or when they are hauled in. *British Columbia – MBA ranking: Best choice. U.S. – MBA ranking: Good alternative.*
- **Organically farmed tiger prawns** (*Penaeus monodon*). These are produced in Vietnam and Ecuador (using no pesticides or antibiotics). However, check labelling carefully, as non-organic farmed prawns are also available from these countries.
- **Farmed shrimp from the United States**. U.S. shrimp farms are subject to laws limiting environmental impacts, which makes them a good alternative to imported farmed shrimp. *MBA ranking: Good alternative.*

Species of particular concern

- **Tiger prawn (also known as giant, black and jumbo tiger prawn or shrimp)** (*Penaeus monodon*). Try to ensure any purchases are of organically farmed animals (see above). This is the most common wild-caught warm-water shrimp, and the most commonly farmed shrimp in southeast Asia. The shrimp farm ponds have led to the loss of many mangroves. In addition, farmed shrimp are generally fed on pellets made from wild caught fish, and farms depend on juveniles caught from the wild. *MCS rating: 5 (avoid); MBA ranking: Avoid.*
- **'Hite shrimp', imported into the United States**. These shrimp are likely to have been trawled, thus contributing to the by-catch problem. *MBA ranking: Avoid.*
- *WWF Hong Kong recommends avoiding farmed shrimp from China, wild-caught shrimp from the South China Sea, and mantis shrimp from the South China Sea.*

LOBSTER

The name 'lobster' is used for several different groups of crustaceans that are popular as seafood; about 150 species are involved. They are found in all temperate and tropical oceans and at all depths, and are fished both commercially and artisanally. This factsheet addresses two groups of lobster species commonly in demand in restaurants:

- **Clawed or 'true' lobsters** from the families *Nephropidae* and *Homaridae*. These are distinguished by their large front claws and mainly found in temperate water. They include the common European lobster, the American or Maine lobster, and the Norway lobster (commonly known as langoustine or scampi, although the term "scampi" refers to the cooking method and may involve shrimp).
- **Spiny/rock or warm water lobsters** from the family *Palinuridae*. These have no claws but have a thick

Factsheet 5 continued

muscular tail and thick hard shells protected with an array of spines. They are typically found on the seafloor in tropical, semitropical and temperate waters, hiding among rocks, kelp and coral, and from shallow to deep water. They are commonly sold just for their tails.

Slipper and squat lobsters, and freshwater crayfish are not covered in this factsheet. The latter are often farmed, resulting regularly in escapes that have led to invasive populations that disrupt aquatic ecosystems and threaten native crayfish stocks.

Conservation issues

Clawed or true lobsters: Many traditional fishing grounds for popular species, such as the American or Maine lobster (*Homarus americanus*) in North America and the common lobster (*H. gammarus*) in Europe are depleted. The population status of the former is largely unknown but thought to be low, while stocks of the latter are below a quarter of their potential level in the unfished state. These lobsters may live 50 years or more. Both species are caught in pots; in North America, the endangered North Atlantic right whale is sometimes accidentally entangled in pots.

The Norway lobster *Nephrops norvegicus* (also known as langoustine, jomfruhummer, buchstabenkrebs, cigala, Dublin Bay prawn, havskräfta, kaisergranat, kaiserhummer, keisarihummeri, karavída, nephrops, Noorse kreeft, Norway prawn, Norwegischer hummer, sjøkreps) is better studied, because of its high demand. It is fished from Iceland to the Mediterranean Sea, with most catches coming from the North Sea, the waters around the UK and Ireland, and the Bay of Biscay. Markets for whole *Nephrops* are principally in southern Europe, and there is significant use of tails in scampi production in the UK. The status of many stocks is unknown, but some appear to be sustainable and in some cases increasing, perhaps due to decreased predation by depleted species such as cod and hake. However, stocks are depleted in West and North Galicia, the Cantabrian Sea and North Portugal. About 30 percent of Norway lobster in the North Sea and 50-60 percent in the Bay of Biscay are thrown overboard, either because they are smaller than the minimum landing size or because the market prefers larger individuals; most are unlikely to survive.

Norway lobster live in burrows dug into soft, muddy

sediments on the sea floor and are fished with beam and otter trawls (main method), seine nets, and baited traps called creels. The heavy otter and beam trawls cause considerable damage to the seabed and its communities, sometimes to a depth of 30cm or more, and also re-suspend sediment that smothers filter feeders and reduces the light available for photosynthetic organisms. The small mesh size of the trawl fisheries results in large quantities of by-catch, including juvenile fish of commercial species such as cod, sole, plaice, haddock, whiting, and hake, up to 70 percent of which are discarded as they are below the minimum landing size. This has led to concerns that some Norway lobster fisheries may be affecting the recovery of cod stocks and the sustainability of whiting and haddock fisheries.

One Norway Lobster fishery has MSC certification (see below) and others are undergoing assessment.

Spiny/rock or warm-water lobsters: The majority of spiny lobsters in the U.S. market are from the Caribbean, Brazil and Florida. They are caught mainly in traps in shallow water, but nets, pots, spears, scuba and skin diving are also used. Lobsters in Brazil and the Bahamas are overfished, captured before they reach reproductive maturity or caught illegally, despite the presence of regulation and management schemes; the Florida fishery is well-managed. There is intensive fishing, both commercial and artisanal, for spiny lobsters in the Indian and Pacific Oceans, and many stocks are overfished.

Species generally to choose

- **Trap-caught American/Maine lobster, Northeast U.S. and Canada.** *MBA ranking: Good choice.*
- **Pot-caught common lobster, Europe,** provided it is above the legal minimum landing size, is not egg-bearing and is not a large female. Lobster potting is the most selective fishing method.
- **Loch Torridon Nephrops (Norway Lobster) Creel Fishery.** This fishery in northwest Scotland, UK, uses baited creels/pots deployed on lines, and adheres to the voluntary Torridon Management Plan. Most of the catch is exported to Spain. *MSC certified in 2003.*
- **Norway lobster** - those caught using:



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- traditional creels that have less impact on the marine environment, lower rates of by-catch than trawl fisheries, and return unwanted catch back to the sea unharmed; or
- nets with sorting grids, larger mesh sizes, or escape panels to allow juvenile fish to escape and reduce by-catch of non-target species (e.g. some fisheries in Sweden).
- **Red rock or California spiny lobster (*Panulirus interruptus*), Baja California, Mexico.** This fishery is on the Pacific coast of Northwest Mexico between California and the Mexican Gulf of Tehuantepec. The lobsters are mainly exported to Asia, France and the United States; 10 percent are sold domestically, mainly to restaurants. *MSC certified in 2004; MBA ranking: Best choice; MCS rating: 1 (good).*
- **Western Australian rock lobster (*Panulirus cygnus*).** This fishery, which is located from Cape Leeuwin to Shark Bay in Western Australia, harvests lobsters using baited pots with escape gaps. This is the most valuable single-species fishery in Australia, representing about 20 percent of the total value of Australia's fisheries; the catch is largely exported to Taiwan, Japan, Hong Kong, China, the U.S. and Europe. *MSC certified in 2000; MBA ranking: Best choice; MCS rating: 1 (good).*
- **Eastern Australia rock lobster: WWF Hong Kong recommended.**

- **Rock/warm-water lobster, U.S. trap caught.** U.S. rock lobster fisheries have strict guidelines, attentive management and extensive scientific assessment. *MBA ranking: Best choice.*

Species of particular concern

- **Spiny/rock/warm-water lobster from the Caribbean.** Fisheries in Nicaragua, Honduras, the Bahamas and Brazil are often overfished, captured before they reach reproductive maturity or caught illegally. There is little information available about population health and abundance to determine good fishery management practices. *MBA ranking: Avoid.*
- **Common lobster below the legal minimum landing size, egg-bearing (i.e. 'berried') or large females.** *MCS rating: 4 (cause for concern).*

CRAB

Many crab species are used in seafood. For most species, there is little information on population size and status, and thus it is difficult to recommend sustainable fisheries, hence guidelines are given on what to avoid when buying crabs, rather than specific guidelines to particular species. No crab fisheries have yet been certified by the MSC, although some are undergoing assessment. Although most crabs are caught in traps or pots that have little by-catch and allow undersized small crabs to be returned to the sea alive, traps and pots can cause damage to the seabed. Some species



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are taken in nets, where by-catch may be a problem.

When buying crab, avoid the following:

- Immature and undersized animals below the legal minimum landing sizes or egg bearing (berried) crabs;
- Crabs caught during their winter spawning or breeding time;
- Crabs caught in nets;
- Fresh (not previously frozen) crabs caught during the spawning season; and
- Crab claws, unless it is known that they have been removed from the crab during processing, as claws may have been removed from live crabs and the rest of the body discarded at sea.

The following species are commonly found for sale in restaurants:

Dungeness crabs (*Cancer magister*): Also called market crab, San Francisco crab, Pacific edible crab, and commercial crab, these are found in shallow coastal waters from Alaska to Mexico. Their abundance fluctuates with oceanic conditions, and consequently populations are difficult to assess. In the United States, no females can be taken, and only males large enough to have mated at least twice may be taken. United States and Canada trap-caught, *MBA rating: Good alternative.*

Stone crabs (*Menippe mercenaria*) are popular in the

Southeast U.S. and supplied predominantly by the Florida west coast crab fishery.

King crabs: There are around 40 species of king crabs, which are sometimes also known as stone crabs (not to be confused with the Florida stone crab). They are spider-like crustaceans, found offshore in deep-sea habitat that is generally healthy. King crabs moult, aggregate to mate, and brood their eggs for about a year, all traits which make them vulnerable to fishing. Their abundance naturally expands and contracts.

Snow crabs (*Chionoecetes opilio*): These crabs are classified as overfished in Alaska, because of their low abundance. Fishery managers have implemented rebuilding measures, but it is too soon to tell if they are effective. Canadian Atlantic populations are considered healthy.

Blue crabs (*Callinectes sapidus*): Also called hardshell crab, softshell crab, or blue-claw crab, these crabs mature early and carry their eggs for a short period of time, making them more resilient to fishing pressure than some other crab species. Traditionally taken from the Chesapeake Bay area, equal amounts now come from the Carolina coast and the Gulf of Mexico. Abundance varies, but many populations are declining due to habitat loss caused by pollution and coastal development. In the Gulf of Mexico, shrimp trawlers take juvenile crabs as by-catch before they have the chance to mature and reproduce. U.S. trap-caught, *MBA rating: Good alternative.*

European spider crab (*Maia squinado*): The largest crab in

British waters, these crabs are caught mainly with tangle nets, which result in more by-catch than pots.

Brown or edible crab (*Cancer pagurus*): These crabs, found in Europe, can grow up to about 300 mm carapace width. Found in waters down to 100 m, they are highly fecund and spawn mainly in the winter months. Many populations are overfished. Well-managed pot fisheries: *MCS recommended*.

Mangrove/mud crabs (*Scylla serrata*): Widespread in the tropical waters of Africa, Australia and Asia, these crabs are popularly eaten in Australia and South Asia. Little information is available on population size, but this species is increasingly being 'ranched' (with juveniles fattened in pens) in small-scale, community-managed projects. Product from such sources is a better choice than wild-harvested mud crabs.

Imitation crab or lobster: Also called surimi, this is a minced fish paste made from pollock mixed with other kinds of fish that may or may not be caught using environmentally responsible fishing methods. Other fish used include sardines, mackerel, barracuda, striped mullet, threadfin bream, Atka mackerel, hoki, blue whiting, Pacific whiting and cod. Imitation crab made from wild-caught *MSC-certified* Alaska pollock is a good alternative to crab meat.

WWF Hong Kong recommends that **wild-caught red crab and horseshoe crab** from the South China Sea should not be chosen.

Sources of further information

Australia's Sustainable Seafood Guide – available from the Australian Marine Conservation Society
http://www.amcs.org.au/default2.asp?active_page_id=137

Blue Ocean Institute Guide to Ocean Friendly Seafood:
www.blueocean.org/seafood

Marine Conservation Society's sustainable sea food guide:
www.fishonline.org

Marine Stewardship Council: <http://eng.msc.org/>

Monterrey Bay Aquarium Seafood Watch:
www.mbayaq.org/cr/seafoodwatch.asp

Seafood Choices Alliance: www.seafoodchoices.com

WWF Seafood Guides – available for Belgium, Denmark, Finland, France, Germany, Hong Kong, Indonesia, Netherlands, Norway, Poland, South Africa, Spain, Sweden, Switzerland:

http://www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm

Shrimp

Environmental Justice Foundation Consumer Guide to Prawns: <http://www.ejfoundation.org/>

FAO/NACA/UNEP/WB/WWF. 2006. International Principles for Responsible Shrimp Farming. Network of Aquaculture Centres in Asia-Pacific (NACA). Bangkok, Thailand. 20 pp.

International Principles for Responsible Shrimp Farming:
<http://www.enaca.org/modules/wfdownloads/singlefile.php?cid=142&lid=735>

Miller P. 1999. Investigation of the shrimp industry in Thailand for the Swedish market. Final report for the Swedish Society for Nature Conservation.

WWF Shrimp Aquaculture Dialogue:
www.worldwildlife.org/aquadialogues

Lobsters

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Pitcher, C.R. 1993. Spiny Lobster. Chap. 17. In: Wright, A. and Hill, L. (Eds). Nearshore Marine Resources of the South Pacific: information for fisheries development and management. Institute of Pacific Studies/Forum Fisheries Agency/International Centre for Ocean Development, Canada.

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TRAFFIC RECOMMENDS

Factsheet 6: Other fish

Overfishing is one of the greatest threats to the marine environment and its wildlife. The Food and Agriculture Organisation (FAO) reports that almost 70 percent of global marine fish stocks are overfished or depleted, and in some cases completely fished-out. This can perhaps be seen most dramatically in the North Atlantic – cod stocks in Canada’s Grand Banks are still nowhere near to recovering some 15 years after the collapse of the fishery during the early 1990s.

Hotel restaurants can help by sourcing fish from responsibly managed fisheries, and by choosing fish that are caught or farmed in a way that minimises damage to the marine environment. One of the best-known certification schemes that aims to ensure fish are sourced sustainably is operated by the Marine Stewardship Council (MSC). Certified product is marked by the scheme’s distinctive blue label.

The issue of the sustainability of fish supplies is exceedingly complex and constantly evolving, therefore the advice here has to be general, and clearly cannot be comprehensive for all species currently traded. Some species may be rare in one locality and abundant elsewhere. Several organisations have produced ‘best fish guides’ in an attempt to rate various fish species according to the sustainability of their harvest. Links are provided in this document to several of these guides, and local advice should be sought where possible.

Species of particular concern

- **Patagonian toothfish** - also known as **Chilean sea bass**, **merluza negra** (in Latin America) and **mero** (in Japan). This large, slow-growing southern hemisphere species is caught by long-line fishing, some of it undoubtedly carried out illegally. The long-lining taking place without mitigation measures in place is responsible for a large amount of incidental by-catch of endangered seabirds (mainly rare albatrosses and petrels), sharks and even marine turtles. Of the world’s 22 species of albatross, 18 are globally threatened with extinction, mainly due to long-line fishing.
- **Humphead wrasse**. A specialised market in Asia (see the Asian seafood factsheet) is the trade in Live Reef Food Fish. One of the most sought-after species in this trade is the humphead wrasse, large specimens of which have become rare through overfishing. The species is listed in CITES Appendix II, which strictly regulates its international trade. Several other species in this trade are also vulnerable to overfishing.
- **Orange roughy**. Orange roughy is a slow-growing, long-lived fish (it can reach ages of more than a hundred years) that is very vulnerable to over-exploitation, with some populations decimated by overfishing. It is often caught by bottom-trawling, a method that damages the seabed and may have a significant effect on the ocean ecosystem. The species is also thought to contain high levels of mercury, another good reason not to serve it.
- **American plaice (dab)**. Despite its name, the American plaice is also available on European menus. It is a slow-maturing flatfish that is vulnerable to overfishing. Preferable alternatives include MSC-certified European plaice from the Irish Sea, or Alaskan Plaice from the Pacific.
- **Atlantic cod**. Atlantic cod has been heavily exploited for the past 50 years, leading to huge population declines (around 90 percent). Alternatives include MSC-certified pollock, hake, hoki, Pacific cod, sablefish or mackerel icefish.
- **Atlantic halibut**. The Atlantic halibut is another species of flatfish that is overfished. An alternative would be MSC-certified North Pacific halibut.
- **Black scabbardfish (espada)**. This strange-looking deep-sea fish is heavily fished, and therefore is perhaps best avoided. Only go for mature fish (longer than 80cm) caught by traditional fisheries.
- **Blue ling**. This is a deep-water North Atlantic species, vulnerable to excessive trawling.
- **Hake**. Many stocks of European hake from the eastern Atlantic and Mediterranean are in decline through overfishing. In the U.S., the white hake is similarly overfished. More sustainable alternatives include the silver and red hake (northeast Atlantic) and the shallow-water cape hake of southern Africa. Another species, the southern hake, off New Zealand, is also under threat.
- **Monkfish**. European monkfish from north and northwestern Spain and the Portuguese coast are overfished. U.S. stocks are thought to be recovering after a period of over-harvest.

- **Snappers.** Many species of snapper are overfished, and the IUCN classifies two species from the Caribbean and Americas – the mutton snapper and the cubera snapper – as Vulnerable. Avoid eating these and try to ascertain the origin of any other snappers which you source. Red snapper caught off the northern coast of Western Australia currently come from healthy stocks, for instance.
- **Hoki.** In recent years, hoki has been increasingly sold away from its New Zealand range as a sustainable cod substitute. Although certified by the MSC, the New Zealand conservation organisation Forest & Bird claims there is a significant by-catch of fur seals, albatrosses and other seabirds, as well as overfishing of hoki itself.
- **Swordfish.** These spectacular fish are at the top of the food chain and play an important role in the marine ecosystem, so their excessive removal may have far-reaching consequences. By-catch of non-target species, such as sharks (on long-lines), dolphins and marine turtles (in illegal driftnets, mainly off North Africa and the rest of the Mediterranean) is an issue for many swordfish fisheries. Harpoon and handline-caught swordfish from the U.S. North Atlantic are the best choice, as these fisheries are well-managed with measures in place to reduce the by-catch of endangered marine turtles.

Species to choose

- **Herring (also sold as pilchards, sild, kippers and, in the United States, as canned sardines).** Atlantic Herring populations in the United States and Canada have fully recovered from overfishing in the 1960s, and European populations are thought to be sustainable.
- **Alaskan or walleye Pollock.** Alaskan pollock fisheries are well-managed and sustainable. Choose MSC-certified fish.
- **Mackerels.** Various species, including chub, king, Atlantic and Spanish. Line- or net-caught mackerel from MSC-certified fisheries are best, if handline-caught fish cannot be sourced.
- **Pacific cod.** Pacific cod is a better alternative to Atlantic cod, as the Alaskan fishery manages catch numbers and incidental by-catch. MSC-certified fish from the Bering Sea and Aleutian Islands fishery are a good choice, particularly as this fishery has managed to reduce its seabird by-catch.

- **Coley (Saithe).** Many populations of this species are considered healthy and sustainable.
- **Various flatfish.** A number of populations of various flatfish offer more-sustainable alternatives to popular flatfish such as American plaice. These include Dover sole (MSC-certified fisheries), and U.S. and Canadian rock sole. Pacific halibut stocks are also well-managed and a good alternative to Atlantic halibut.

Sources of further information

Audubon's Seafood Lover's Guide:

<http://seafood.audubon.org/>

Blue Ocean Institute Guide to Ocean Friendly Seafood:

www.blueocean.org/seafood

FishBase – scientific reference guide to fish species:

<http://www.fishbase.org/>

Marine Conservation Society's sustainable sea food guide:

www.fishonline.org

Marine Stewardship Council (MSC): <http://www.msc.org/>

Monterey Bay Aquarium – Seafood Watch:

<http://www.mbayaq.org/cr/seafoodwatch.asp>

New Zealand Forest and Bird Protection Society – best fish

guide: <http://www.forestandbird.org.nz/bestfishguide/>

Seafood Choices Alliance: www.seafoodchoices.com

Sierra Club of Canada – guide to seafood:

<http://www.sierraclub.bc.ca/seafood-and-oceans>

WWF's sustainable seafood guides:

http://www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing/sustainable_seafood/seafood_guides/index.cfm

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TRAFFIC RECOMMENDS

Factsheet 7: Caviar



Caviar, the unfertilized roe (eggs) of sturgeon and paddlefish, is one of the world's most recognisable and luxurious gourmet delicacies. Overfishing and poaching, as well as pollution, habitat loss and other environmental factors, have led to large declines in the populations of these fish, which are killed in order to extract their roe.

Twenty-seven species of this ancient group of fish live in both coastal and inland waters across Europe, Asia and North America. Historically, the Caspian Sea—shared between Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan—is home to the largest numbers and the most highly prized sturgeon species. Many of these are now threatened with extinction.

The EU is thought to be the world's largest consumer of caviar, with over 600 tonnes imported between 1998–2005, compared to over 300 tonnes to the United States over the same period. However, large domestic markets exist in range states (those countries where the sturgeon are usually found), which is also a contributing factor in the decline of many sturgeons.

Trade in sturgeon/paddlefish products, including caviar, has

been internationally regulated since the late 1990s, when concerns about their over-fishing became widespread. However, the illegal trade in caviar is rife, and thought to include links with organised crime.

All caviar sold in the European Union (since 2006) and all caviar imported into the United States (since 2007) has had to include special non-reusable CITES labels containing standardized information including, for example, the species of fish involved and the country of origin. These CITES-labelled tins aim to ensure crime-free caviar. Note that the United States labelling requirement does not cover caviar produced and consumed domestically, only caviar imported (or exported or re-exported) from the United States.

Caviar varieties of particular concern

- **Beluga caviar** – from the Beluga sturgeon (*Huso huso*). The Beluga sturgeon can reach weights of more than 2,000 kg and lengths of more than five metres (though large individuals are now rare) and live to a hundred years of age. It is found primarily in the Black and Caspian Seas. Beluga produces the most expensive caviar, with

prices reaching up to US\$500 for 100 g of roe. The Beluga sturgeon was classified as Endangered in 1996 by IUCN, and a 2007 assessment by two fish experts considered it to be Critically Endangered. Since 2005, the United States has banned imports of Beluga products from countries bordering the Black and Caspian Seas.

- **Ossetra caviar – from the Ossetra or Russian sturgeon (*Acipenser gueldenstaedtii*).** Ossetra caviar is firmer in texture than Beluga caviar, and although not as expensive, is still one of the most highly prized caviars. The Russian sturgeon from which it is obtained was classified as Endangered in 1996 by the IUCN, and a 2007 assessment by two fish experts considered it to be Critically Endangered. It can grow to lengths of up to 2.3 metres and weigh up to 100 kg.
- **Sevruga caviar - from the Stellate sturgeon (*Acipenser stellatus*).** The third-most sought-after caviar, Sevruga caviar comes from another endangered Caspian Sea species, the Stellate sturgeon, which can grow to up to 2.2 metres in length and weigh up to 80 kg.
- **Paddlefish caviar.** Two species of paddlefish occur, both in the freshwater systems of North America. Closely related to the sturgeons of Europe and Asia, paddlefish caviar is very similar to sturgeon caviar (said to resemble Sevruga caviar most closely). Although historically there has been over-exploitation of wild paddlefish stocks, there are now a number of farmed paddlefish programmes underway, which offer a more sustainable product. Wild-caught paddlefish caviar is currently best avoided due to population concerns.

Caviar varieties (or alternatives) generally to choose

- **Herring roe.** Herring roe is a popular alternative to caviar in many parts of the world and sold under a variety of product names, including as 'Avruga caviar'. This much-cheaper sturgeon caviar alternative has a similar taste.
- **Salmon roe.** Colourful orange salmon eggs are another roe alternative from non-endangered species. Both roe from wild Pacific salmon and farmed Atlantic salmon are available.
- **Lumpsucker caviar.** The Lumpsucker (*Cyclopterus lumpus*) is a North Atlantic fish that produces large

quantities of roe. This roe is a popular delicacy in Denmark, where it is renowned for being a tasty and affordable alternative to sturgeon caviar. It is sold as 'Caviar de Lompe' in France and 'Huevas du Lompo' in Spain.

- **Farmed sturgeon caviar.** With the decline and ensuing rarity of wild sturgeon populations, sturgeon fish-farming (aquaculture) is a growing business. Various species are farmed — all of which should be clearly labelled as such. Farming helps ease the pressure on wild sturgeon populations. In Europe, farmed 'Baerii caviar' (from the Siberian sturgeon) is said to be very similar to the three main Caspian caviars. 'Transmontanus Caviar' comes from the American white sturgeon, a rare species in its native North America, but popularly farmed in parts of the United States and Europe.

Sources of further information

FishBase – scientific reference guide to fish species

<http://www.fishbase.org/>

TRAFFIC caviar information leaflets

http://www.traffic.org/species-reports/traffic_species_fish23.pdf

http://www.traffic.org/species-reports/traffic_species_fish24.pdf

http://www.traffic.org/cites-cop-papers/traffic_pub_cop14_14.pdf

WWF caviar FAQs

<http://www.worldwildlife.org/what/globalmarkets/wildlifetrade/item5684.html>

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TRAFFIC RECOMMENDS

Factsheet 8: Woods for furniture and construction

The trade in timber and wood constitutes a massive global trade in natural resources. Wood and timber products are used in furniture, construction, flooring and paper (in fact pulp products constitute by far the largest overall usage). Many species of tree are utilised in this production, some of which are globally threatened (particularly tropical hardwood species) and subject to international trade restrictions.

A number of hardwood species are categorised as threatened by IUCN and listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This affords them varying levels of protection once the appropriate national legislation has been enforced.

As well as the effect on the threatened tree species themselves, over-exploitation can have a knock-on effect on the wider environment, causing the declines of other plant and animal species. Unsustainable management of forests also has social and economic implications for local people.

Despite this, when making choices as to the purchase of furniture, or undertaking building improvements to the hotel, there are a number of decisions that can be made to limit the environmental impact.

Hardwood species of particular concern

- **Big-leaf mahogany:** Big-leaf or Brazilian mahogany is one of the world's most valuable and extensively traded hardwoods. It is found in Central and South America and used to make furniture, wood panelling and musical instruments. The species has been commercially decimated throughout much of its range and is listed in Appendix II of CITES, which means that countries require a permit to export it. This permit requires a scientific assessment that the trade will not be detrimental to the species' survival. Due to the high price of the wood, much illegal logging of this species takes place.
- **African mahogany:** Mahogany from West Africa is almost as prized as its big-leaf equivalent. It is used for furniture-making and various joinery elements, and is globally Threatened.
- **Afromosia:** This West African tree, which is used for furniture and in joinery, is classified as Endangered.
- **Afzelia:** This West African tree, which is used for high-quality exterior joinery, is classified as Vulnerable.
- **American cedar:** From South and Central America, this tree, which is used in cabinet making and light construction, is Globally Threatened.
- **Andoung:** Various African species of this tree, which is used for furniture and light construction, are Vulnerable.
- **Balau / Selangan batu / Bangkirai.** Found in Southeast Asia, various *Shorea* species are used in heavy duty construction work, and many are Globally Threatened.
- **Ebony:** Various species of ebony from Asia and Africa are used to make items such as doorknobs, cutlery handles, musical instruments, etc. Several species are globally Threatened.
- **Keruing / Yang / Curjun:** Found in Malaysia and Indonesia, this is a strong wood used in construction and for features like decking. Many species are globally Threatened.
- **Makore:** This West African tree is used for joinery requiring toughness. It is Endangered.
- **Meranti / Seraya / Lauan:** These include various southeast Asian *Shorea* species used in joinery such as door frames, etc. Many *Shorea* species are globally Threatened.
- **Ramin:** From Malaysia and Indonesia, this wood is used in mouldings, as well as decorative carvings, venetian blinds, panelling, picture frames and skirting boards. It is globally Threatened.
- **Sapele:** This West African tree, which is used in furniture, joinery and decorations, is globally Threatened.

Timber certification

A number of timber certification schemes, which independently inspect forest operations and verify that the timber has come from well-managed forests, are now in existence. These give buyers confidence when purchasing timber products – those labelled as part of such a scheme can be purchased safe in the knowledge that good practice was being followed and endangered tree species were not being felled.



Probably the most familiar scheme is that of the Forest Stewardship Council (FSC). Certified wood is marked with the FSC logo – the outline of a tree and the letters FSC. This is a globally recognised scheme that uses rigorous, independent assessments.

Other schemes include the North American Sustainable Forestry Initiative (SFI), the Canadian National Standard on Sustainable Forest Management, and the Programme for Endorsement of Forest Certification (PEFC). Many large retailers are now trying to ensure that their products are sourced from well-managed, certified forests.

Despite the benefits of these schemes, it should be noted that certified forests currently account for only a small percentage of the international timber trade. Of these, many more FSC-certified forests are found in temperate, rather than tropical areas.

Unsustainable use of more common species

The vast majority of wood products used in Europe, the United States, Canada, Australia and New Zealand do not come from the above tropical hardwoods, but from non-endangered temperate species. However, even some of these forests are badly managed and unsustainably harvested, particularly in Eastern Europe and the Russian Far East. A number of important areas of old-growth forest are affected, with illegal logging even taking place in some protected areas.

Therefore, even when purchasing non-tropical timber products, the safest way to ensure that only wood from properly-managed forests is being used is to choose FSC-certified timber (or timber from another certification scheme).



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Buying second-hand, recycled or reclaimed timber and antique furniture

Antique and reclaimed timber often comes from trees that today are globally threatened, or protected by international trade restrictions. However, it is perfectly acceptable to purchase these sources of timber/furniture in antique form. In fact, in many ways it is preferable, since the wood has already been harvested. Older sources of timber are also often of higher quality than today's timber, since they were harvested from dense first-growth forests.

Bamboo and rattan

There are about 1,200 species of woody bamboo around the world, many with extraordinary life cycles. Some of these species are thought to be at risk from forest destruction. Bamboos support many different animal species, including high-profile mammals, such as the giant panda, mountain gorilla, and three species of lemur in Madagascar.

Bamboo has a large range of subsistence and commercial uses. Although the majority of the estimated \$2 billion annual trade is local, much bamboo is also exported for furniture making, flooring, etc. Bamboo is often marketed as an environmentally friendly alternative to tropical timber due to its fast growth rates. Currently only a few manufacturers and distributors who deal with bamboo products are FSC-certified.

Rattan refers to roughly 600 species of tropical spiny, climbing palms found in Asia and Africa. Rattan is exported for furniture making. Unlike bamboo, rattan does not grow at a very fast rate and is seldom sustainably managed. Consequently rattan resources have declined dramatically over the last 50 years. There is currently only one manufacturer dealing with rattan that is FSC-certified. Certification schemes for both bamboo and rattan are currently in development.

Paper

Any product made from wood, including paper, can be certified, as long as the original wood came from a certified source. Paper forms a massive part of the global timber

industry (for instance, approximately 25 percent of the timber annually cut in the United States is used for paper production), so it is important to apply the same criteria to it as to other wood-based products. It therefore also makes sense to choose paper that comes from a sustainable or recycled source. See: <http://www.fscus.org/paper/>

Sources of further information

Canadian National Standard on Sustainable Forest Management: <http://www.certificationcanada.org/english/>

CITES: <http://www.cites.org/>

Forest Stewardship Council (FSC): <http://www.fsc.org/> The FSC products database (info.fsc.org) has information on FSC-certified manufacturers and distributors of various wood products.

Friends of the Earth – Good Wood Guide: http://www.foe.co.uk/campaigns/biodiversity/resource/good_wood_guide/

International Network for Bamboo and Rattan (INBAR): <http://www.inbar.int> has much useful information on these plant types.

IUCN Red List of Threatened Species: <http://www.iucnredlist.org/>

North American Sustainable Forestry Initiative (SFI): <http://www.sfiprogram.org/>

Programme for Endorsement of Certification: <http://www.pefc.org>

TRAFFIC – the wildlife trade monitoring network: <http://www.traffic.org/>

WWF – Buyer Beware, a guide to prohibited wildlife souvenirs: <http://worldwildlife.org/buyerbeware/>

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TRAFFIC RECOMMENDS

Factsheet 9: Medicinal and aromatic plants for amenities and spa products

An enormous range of plants (and animals) is used in medicines, cosmetics and perfumery. Many, particularly those used in traditional and phyto medicines, are collected from the wild. If managed sustainably, collection of wild plants for these purposes can provide an important livelihood for people in rural areas where there may be few other ways of making a living. Often, however, collection is not managed on a sustainable basis, leading to deterioration of the populations of the species concerned (sometimes to the point where populations are no longer viable) and loss of livelihoods and the basis for the healthcare for many local people.

It is difficult, however, to provide clear-cut guidance on which products to avoid and which to use. This is because:

- With many finished products, particularly natural medicines, it is commonly not possible to tell what the constituents are. Even where products are labelled with their constituents, the labelling may give insufficient information, be hard to understand or be misleading – although in the last case often because rarer or more expensive constituents, which may be a cause for concern, have been substituted by commoner, cheaper ones, which are unlikely to be so. Often, it is not stated whether the ingredients are from cultivation or wild collection, nor from which country they originate.
- Even where the identity of the constituents can be ascertained, we often do not know enough to be able to say whether their harvest and use (if they are wild-collected) is sustainable or not.
- Some standards/guidelines exist in the fair trade, organic and forest sectors. While some of them address wild collection to some degree, mostly they neglect the ecological aspects of sustainability, such as resource assessment. However, attempts are being made to remedy this, most significantly the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP). Version 1.0 of this Standard was published in 2007, and was developed by the Medicinal

Plant Specialist Group of IUCN, WWF, TRAFFIC and the German Federal Agency for Nature Conservation BfN, with support from a multi-stakeholder group. It is currently being tested in a variety of field projects.

Species of particular concern

A number of plant and animal species that are mainly in international trade as perfumes, medicines or aromatics are included in the CITES Appendices. Almost all are in Appendix II, which means that commercial international trade is legal but regulated, with exporting countries having an obligation to ensure that harvest for trade is sustainable (although, for most species, finished products packaged for the retail trade are exempt from CITES regulations). However for many such species there is good evidence that harvest and trade are poorly regulated and often not sustainable. Some of these species, such as the Asiatic yews (*Taxus* spp.) and the African cherry (*Prunus africana*), are used primarily by the pharmaceutical industry to produce drugs for clinical treatment and are very unlikely to be met with in a hotel context. Others, however, may well feature in toiletries and cosmetics, or in general tonics that may be sold over the counter.

CITES-listed species that provide products that might be used, and that should be treated with caution include:

ANIMALS

- **Musk deer** (*Moschus* spp.), which provide natural musk for use in perfumery and traditional oriental medicine. In general, this should be avoided.
- **Saiga antelope** (*Saiga* spp.), whose horns are used in traditional oriental medicine. Best avoided.
- **Bears** (*Ursidae*), whose gall bladder extract is used in traditional oriental medicine. Best avoided.

PLANTS

- **Spikenard** (*Nardostachys grandiflora*), which is used in perfumery, incense and herbal medicines,

TRAFFIC

the wildlife trade monitoring network



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is often overharvested. Use only if verified from a sustainable source.

- **Agarwood** (*Aquilaria* spp. and *Gyrinops* spp.), which is used in perfumery, is often overharvested, although some now comes from plantations. Use only if verified from a sustainable source.
- **Kutki** (*Picrorhiza kurrooa*), which is used in herbal medicines, is quite resistant to overharvest. However, *Picrorhiza kurrooa royle* is closely related to *Neopicrorhiza scrophulariiflora*, both of which are traded under the same name (kutki). Today, the bulk of international trade in kutki is said to be mainly air-dried rhizomes of *Neopicrorhiza scrophulariiflora* originating from Nepal, where it is classified as Highly Vulnerable, although the government there recently lifted a ban on its collection under strict guidelines.
- **Aloe** (*Aloe* spp. - except *Aloe vera*). Aloe extract is used in a wide range of skin lotions and treatments. The great majority comes from cultivated *Aloe vera* and is of no conservation concern. In Eastern and Southern Africa,

some wild aloe is harvested for processing, and care should be taken with products from this region to ensure that they originate from a sustainable source.

- **Ginseng** (*Panax ginseng* – only the Russian population is listed under CITES – and *P. quinquefolius*). This plant is very widely used in its pure form and as a mixture in tonics and herbal medicines. It originates from wild-collected (the most sought-after and often over-harvested), ‘wood-grown’ (stock grown semi-naturally) and cultivated plants. The American Herbal Products Association (www.ahpa.org) has guidelines for harvest. Suppliers from North America should only be used if they adhere to these guidelines.
- **Hoodia** (*Hoodia* spp.) is increasingly widely available as a dietary supplement to promote weight loss, although many earlier traded products are probably illegal. Mostly wild collected in southern Africa, there has been a shift to cultivation with government-supported schemes to ensure a sustainable harvest. The last year when wild collection permits were issued was 2007. Any products should eventually be labelled to say they were produced

from *Hoodia* spp. material obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of Botswana/Namibia/South Africa, although the legislation to introduce this regulation has yet to be finalised. Currently, international trade in *Hoodia* spp. must be accompanied by appropriate CITES documentation.

- **Red sanders** (*Pterocarpus santalinus*), which is chiefly used as a food colorant. This plant is unlikely to be encountered but avoid it if so, as controls on harvest and trade currently appear inadequate.

Practical advice

Although CITES regulations, global or national redlists and national protected species lists and laws can be checked, it is simply not practicable for end-users to ensure the sustainability of harvest of all the constituents of all the products they might use.

The best approach at present is to use only reputable suppliers. Several of the high-profile natural products suppliers have their own policies concerning the social and environmental impacts of their businesses. These should be assessed before entering into contracts with them. Such policies may be stronger on social than on environmental issues, but large-scale buyers have the opportunity to influence suppliers by asking questions about environmental sustainability, and particularly sourcing of ingredients.

There may also be opportunities to influence things positively. In a number of countries, there are funded programmes or small-scale private enterprise initiatives that promote development of plant-based products (often essential oils, soaps and perfumes) as a way of providing livelihoods for local people. Hotels can potentially serve as valuable partners for such enterprises, raising their profile and providing outlets for the products. However, each such enterprise would have to be judged on a case-by-case basis. Locally based conservation or development NGOs or field offices of intergovernmental organisations such as FAO and UNDP, may be in a position to offer advice (although more than one opinion should always be solicited).

Sources of further information

American Herbal Products Association: www.ahpa.org

CITES: www.cites.org

Foundation for the Revitalisation of Local Health Traditions (FRLHT) – an Indian NGO of most relevance to that country, but with experience that could be useful elsewhere: <http://www.frlht.org.in/>

International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP), documentation and download site: <http://www.floraweb.de/MAP-pro/>

IUCN Medicinal Plant Specialist Group: <http://www.iucn.org/themes/ssc/sgs/mpsg/>

TRAFFIC: www.traffic.org

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TRAFFIC RECOMMENDS

Factsheet 10: Live animals

There are many species that are illegal to purchase and keep in live animal displays. Some will be illegal under national legislation, whilst international trade in some species may be in contravention of CITES.

GLOBAL AQUARIUM TRADE

The majority of the global aquarium trade is legitimate. However, an illegal trade in these often-expensive marine creatures does exist. It is difficult to identify many of the species involved, and buyers should pay particular attention to the following groups of species, and make sure that they are buying from reputable suppliers who can vouch for their stock's provenance. The Marine Aquarium Council (MAC) provides a certification system that provides the industry with a set of internationally approved environmental and quality standards. Where possible, try to use suppliers who are part of this scheme.

- **Tropical fish:** More than 500 million live tropical fish are traded each year as part of the aquarium trade, largely from the Pacific and Asia. The most traded marine aquarium fish are the damselfishes (*Pomacentridae*), surgeonfishes (*Acanthuridae*), wrasses (*Labridae*), gobies (*Gobiidae*) and angelfishes (*Pomacanthidae*). Indonesia and the Philippines supply more than half of the global marine ornamental fish trade.
- **Seahorses:** With their fascinating biology and unusual appearance and behaviour, seahorses are popular for aquariums. However, they are difficult to keep, and generally require experience and attention in order for them to thrive. The large demand for seahorses for traditional medicine and the pet trade, and various environmental factors, have led to the serious decline of many seahorse species. Most seahorses kept in aquaria are taken from the wild, putting further pressure on these populations. In November 2002, CITES included all seahorse species in Appendix II, meaning any international trade is strictly regulated and requires the appropriate CITES documentation. In addition, many countries have stronger domestic measures in relation to the seahorse trade (see the Project Seahorse website for further information, <http://seahorse.fisheries.ubc.ca/natlisting.html>).

Many seahorse species are classified as globally Threatened, and the keeping of these species should be avoided.

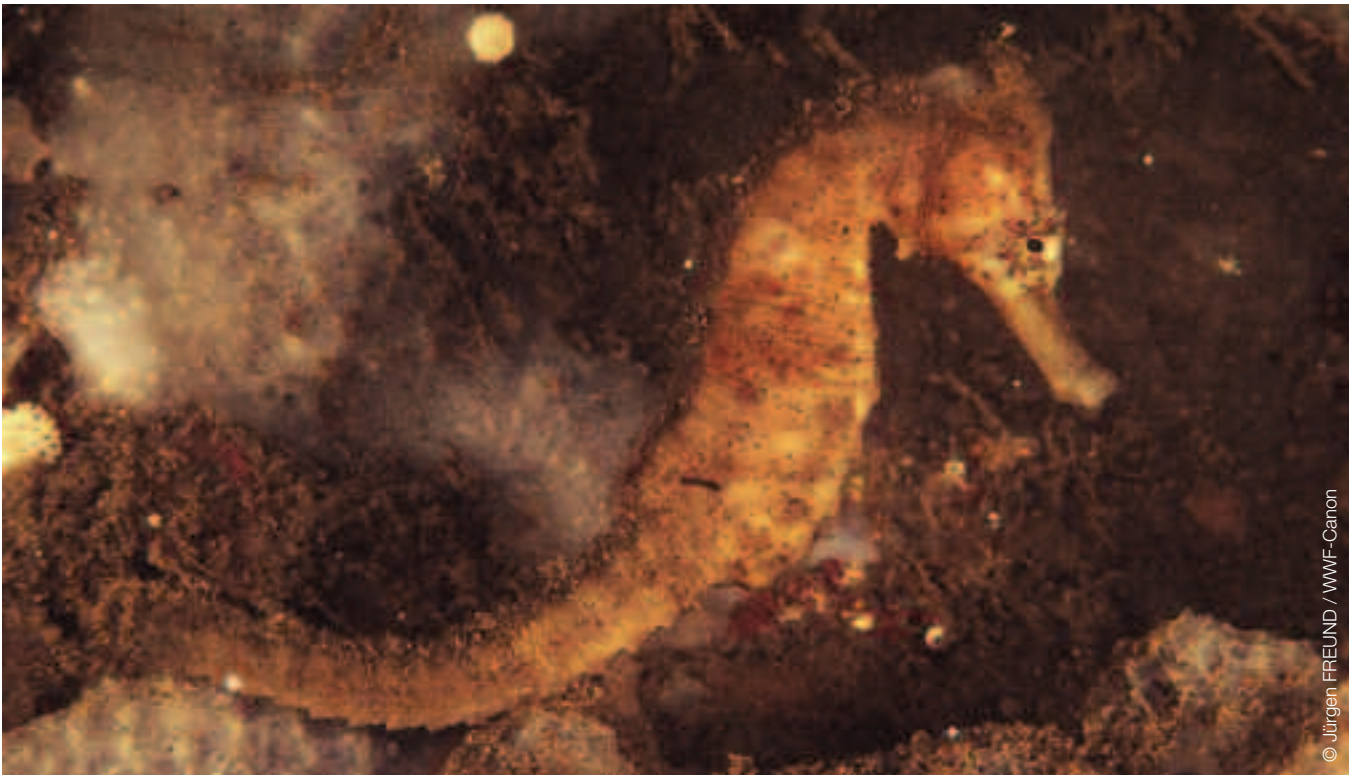
- **Giant clams and corals:** Indonesia and Fiji are the largest suppliers of live coral. Over-harvesting of corals is a problem in some areas, and an illegal coral trade exists. As for giant clams, although wild populations are in decline, farmed specimens are becoming increasingly available. All giant clams and hard corals are listed in CITES Appendix II, which means their international trade is regulated and permitted only when the country of origin can determine and demonstrate adherence to a quota, such that the trade doesn't impact negatively on wild populations.

AVIARIES

Wild birds: Millions of birds, both wild and captive-bred, are traded legally within the cage and aviary market. However, there are import bans on wild-caught species into the United States and Europe, and many bird species are listed in the CITES Appendices, meaning their international trade is regulated or not permitted, depending which Appendix they are listed in. These species include:

- Almost all species of parrot, including parakeets, amazons, cockatoos and macaws. The only species not listed are rosy-faced lovebird (*Agapornis roseicollis*), budgerigar (*Melopsittacus undulatus*), cockatiel (*Nymphicus hollandicus*) and rose-ringed parakeet (*Psittacula krameri*);
- Many species of raptors, or birds of prey;
- Turacos, colourful fruit-eating birds from Africa;
- Toucans, the unmistakable large-billed birds from South and Central America;
- Cranes; and
- Many species that are regarded as globally Threatened, i.e. appear on the IUCN Red List.

Despite existing legislation, there is still a lucrative illegal bird trade. Consequently, if purchasing birds for an aviary, try to only source birds that are known to be captive-bred and avoid purchasing globally threatened species (see <http://www.birdlife.org/datazone/species/>).



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REPTILES

The live reptile trade is huge, and is less regulated than the trade in wild birds. The trade in freshwater turtles and tortoises for the pet trade is a particular concern, with many of these animals traded illegally, particularly in Asia. For example, a recent TRAFFIC survey found that Thailand acted as a major hub for the illegal international trade in these animals, with many illegally smuggled into the country (and onwards) from their native Madagascar.

Sources of further information

Australian wildlife import/export guidelines:
<http://www.environment.gov.au/biodiversity/publications/trade-use/factsheets/>

BirdLife International, list of globally threatened bird species with factsheets: <http://www.birdlife.org/datazone/species/>

CITES: <http://www.cites.org/>

CITES – listed species:
<http://www.cites.org/eng/app/appendices.shtml>

DEFRA – UK import rules search:
<http://importdetails.defra.gov.uk/>

IUCN Red List of Threatened Species:
<http://www.iucnredlist.org/>

Marine Aquarium Council: <http://www.aquariumcouncil.org/>

Project Seahorse: <http://seahorse.fisheries.ubc.ca/>

TRAFFIC – the wildlife trade monitoring network:
<http://www.traffic.org/>

US Fish and Wildlife Service – permits, FAQs, etc.:
<http://www.fws.gov/permits/>

<http://www.fws.gov/permits/faqs/FaqA.shtml>

Wildlife trade in the EU: <http://www.eu-wildlifetrade.org/>

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TRAFFIC RECOMMENDS

Factsheet 11: Wildlife-based souvenirs

Certain souvenirs and fashion items that could potentially be stocked in hotel shops may contain mammal and bird products such as ivory, fur or feathers. In addition to the more obvious products made from threatened animals, there are also a large number of souvenirs and other items made from protected reptiles, fish and plants. Many of these products are illegal, because the species they are made from are protected under national or international laws (such as CITES). Consequently, trade in many of these species is restricted or prohibited, often with tough penalties for breaching these laws. Other products may require the importer (in the case of travellers, the person who purchased the item) to have the correct import permits.

In addition, the importation into the United States, for example, of any wildlife and their parts or products is prohibited if the animal was captured, taken, shipped or possessed in any manner violating the laws of the country in which it was taken.

IVORY PRODUCTS

Ivory-based items might include:

- Ivory jewellery;
- Carvings or figurines made from elephant ivory;
- Carved whale teeth (scrimshaw); and
- Carved items (such as dagger handles) made from rhino horn.

Items made from elephant tusks (ivory of both Asian and African elephants) is normally illegal. However, there are exceptions to this rule: in Namibia, trade in individually marked and certified 'ekipas' incorporated in finished jewellery is legal, as is trade in ivory carvings in Zimbabwe—provided it is non-commercial in both cases. Note that trade in items made from other elephant parts (hides, hair, leather goods) is allowed, under certain provisos, in Botswana, Namibia, South Africa and Zimbabwe.

All international trade in rhino horns is prohibited under CITES (with the exception of a few trophy hunted animals from Swaziland and South Africa).

FUR

International trade in items made using the skins or fur of the world's wild cats, including tigers, jaguars, leopards, ocelots, margays and leopard cats is either strictly regulated or, in many cases, prohibited under CITES and under national legislation. Fur from other threatened animal species is often illegal too, although the situation can be quite complex. For example, under EU law, import into the EU of pelts and manufactured goods of certain wild animal species (e.g. beaver, musk rat, sable) originating in countries which catch them by means of leghold traps or trapping methods that do not meet international humane trapping standards is not allowed. The EU also looks set to ban fur products made from farmed domestic cats and dogs in 2008.

WILD BIRDS

In most instances, travellers cannot purchase a wild bird to take back home with them to another country. However, some species of wild-caught birds can be imported into certain countries (e.g. the United States if they are part of federally-approved management plans for the sustainable use of the species) and are accompanied by the correct paperwork.

Of more relevance to the hotel shop, however, is that feathers or parts of protected species of birds (including eggs) cannot be imported into many countries. This applies to stuffed specimens and decorative objects that include feathers. An additional problem is that it is difficult to tell whether feathers are from protected species.

SHAHTOOSH AND OTHER WOOLS

Shahtoosh is the wool of the Chiru or Tibetan antelope. The animals are killed to obtain the wool, and the demand led to a massive decline in the species' wild population. Chiru were listed in Appendix I of CITES in 1979, and items made from shahtoosh wool are illegal. A legal alternative to shahtoosh is pashmina, a type of cashmere wool from a Himalayan mountain goat also renowned for the quality of its wool.

Vicuña, a wild south America camel, has a similarly-prized coat. The species suffered massive population declines last century because animals were killed for their wool, but following conservation measures, numbers have recovered well and



animals are now rounded up to be shorn rather than killed. As a result, trade in certified Vicuña wool items is permitted.

MEDICINAL PRODUCTS AND PERFUME

A number of traditional Asian medicines contain products from threatened animal species, including tigers, rhinoceros and Asiatic black bears. Any products that list these, or other protected species, in their ingredients should be avoided.

The male musk deer of Asia and eastern Russia (several species occur) has a musk sac that contains a strong-smelling scent that is highly desirable in traditional East Asian medicine. Musk deer are listed in Appendix I of CITES in many parts of their range (preventing international trade) and Appendix II in other parts (meaning limited trade is permissible). However, the illegal trade in poached musk deer products is rife. Since 1999, the EU has imposed an import ban on musk from China and Russia. Although unlikely to be encountered, perfumes labelled as containing 'natural musk' should be avoided.

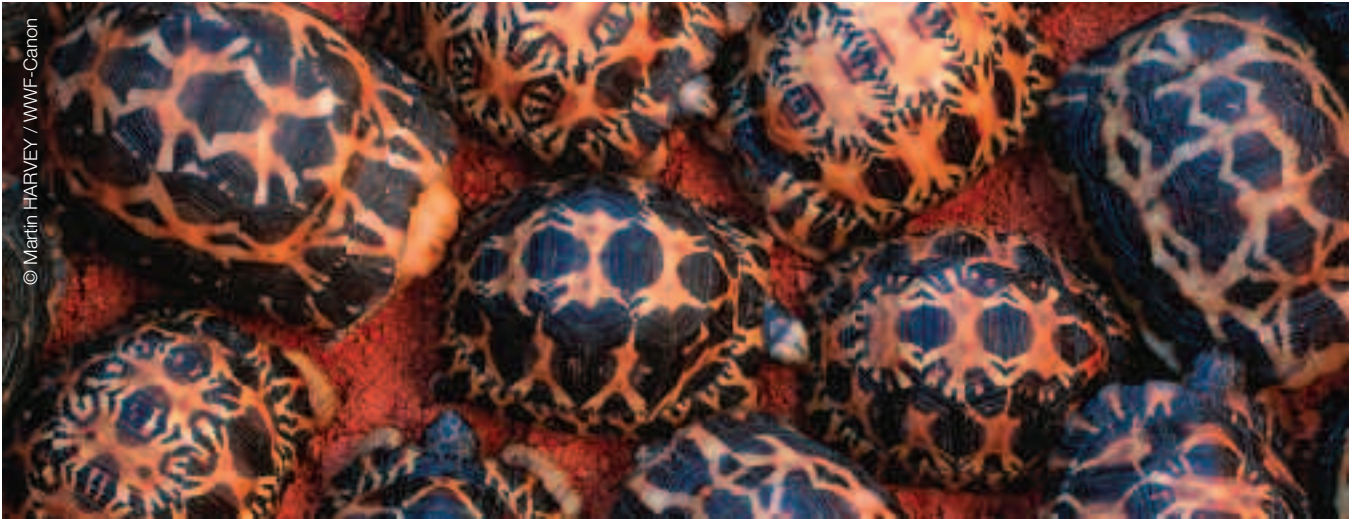
BUTTERFLIES (*Lepidoptera*)

Many species of butterflies in the family *Papilionidae* (birdwings and swallowtails) are listed in the CITES Appendices, and consequently commercial trade in them is either restricted or not allowed. Mounted butterflies are often

sold as decorative items, but due to the difficulties in identifying individual species, it is probably safer to avoid the sale of such items. In some countries, all butterflies are protected under national law. Travellers will almost certainly require permits when attempting to import butterfly products – even non-CITES species. Note that similar guidelines apply to mounted insects/arachnids of protected species.

CAVIAR

Caviar is the unfertilized roe (eggs) of the sturgeon and paddlefish. The most highly prized is Beluga caviar from the Beluga sturgeon (found largely in the Caspian Sea), which fetches extremely high retail prices (thousands of dollars per kilogram). As well as the legitimate trade, there is also a huge illegal trade, thought to be largely controlled by organised crime syndicates. Consequently, governments at a CITES meeting in 2000 agreed to a universal labelling system: all sturgeon caviar now has to bear a non-reusable label detailing the source and country of origin of the caviar. Travellers are generally allowed to bring small amounts of caviar (up to 250g) back into their home country for personal use. However, in 2005 the U.S. Government banned the import of wild beluga caviar from the Caspian and Black Seas. The ban does not cover ossetra or sevruga caviar, or caviar from farmed sturgeon. Caviar for sale should bear the appropriate labelling, and customers should be advised as



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to their probable customs allowance. A number of cheaper caviar substitutes from non-threatened species (such as *Avruga*, made from herring roe) are also available.

CORAL

Many corals are prized for the beautiful colours and shapes of their skeletons (corals are not plants, but marine animals closely related to sea anemones and jellyfish). Coral skeletons are widely sold in coastal resorts as decorative souvenirs, or as part of other products, such as jewellery. There is also a large trade in live specimens for aquariums.

Some coral species are classified as threatened and listed in CITES, and coral reefs are an increasingly threatened habitat. The sale of coral products may hasten the decline of these delicate ecosystems, thereby endangering the tourist trade that comes to visit these spectacular natural wonders. This, coupled with the complication of identifying the coral species involved, means the sale of coral souvenirs is inadvisable. For more information on identifying corals see: www.arkive.org/coral/Coral/identifying_corals.html

MARINE TURTLE PRODUCTS

There are seven species of marine turtle, and all are listed in Appendix I of CITES, meaning international trade is prohibited. There are also numerous national laws protecting these species. Marine turtle products that are sometimes offered illegally for sale include:

- Jewellery (bracelets are especially prevalent);
- Trinkets (such as cigarette lighter covers) made from tortoiseshell;
- Whole shells; and
- Stuffed whole mounted turtle specimens.

Note that trade in many species of freshwater turtles and tortoises is also prohibited. Due to the difficulty in identifying the different species involved, the stocking of all turtle/tortoise products should be avoided unless the source is known to be legitimate (e.g. a licensed supplier of farmed animals).

PLANTS

Certain wild plants, particularly orchids, cacti and cycads, both as dried specimens and as live plants, are protected under CITES and require the appropriate documentation to be internationally traded. Many plant species are also banned by countries to stop the spread of plant diseases, or because the species involved is known to be invasive. All imports of plants must therefore be pest-, soil- and disease-free.

RAMIN

Ramin is a tropical lowland hardwood from southeast Asia, prized for its fine grain and easy wood-working qualities. The tree is a key plant in the survival of orang-utans and is now listed by CITES. As such, permits are required to import it. Ramin is commonly used in items such as snooker cues, blinds, picture frames and tool handles, as well as furniture.

Where possible, when sourcing wood products, retailers should attempt to find out which woods are featured, and whether they came from a sustainable source. There are a number of sustainable timber certification programmes, including the Forest Stewardship Council (FSC): <http://www.fsc.org>

REPTILE SKIN

Some reptiles (e.g. various crocodylian species) are used to supply leather for fashion items such as shoes, wallets, handbags and watchbands. Many manufacturers work with skins from sustainably managed reptile species such as the American alligator, but some snakes, crocodiles and lizards are protected and may be subject to trade restrictions. In addition to CITES regulations, some countries also have strict import or export controls on certain species – for instance goods made from native reptile skins would be illegal in India, and the EU has a number of regulations pertaining to the import of reptile skin products.

Suppliers should therefore check before buying and stocking reptile products that they have come from a

legitimate source. Theoretically, luxury reptile-skin products (such as handbags and shoes) should come from legitimate captive-bred or 'ranchered' (eggs or hatchlings taken from the wild) sources. However, tourists taking such items back into their own country always face the risk of having such items confiscated by customs officials unless accompanied by the proper export documentation. Shop managers should look into local regulations so that customers can be reassured that they are purchasing legitimate items.

SEAHORSES

Seahorses are popularly sold as dried curios, exported as live animals for aquariums, and used as ingredients in many traditional medicines. Numbers of many species are thought to be in serious decline. Consequently, in November 2002, CITES added all species of seahorse to Appendix II, thereby regulating international trade. Trade is allowed, but only if a country can provide evidence that such activities will not threaten wild populations. In addition, many countries have their own additional laws in relation to the seahorse trade (see: <http://seahorse.fisheries.ubc.ca/natlisting.html>), and the EU requires import declarations for whole dead seahorses. As a result, the sale of dried seahorse curios, as well as medicines containing seahorse products, is best avoided. For further information, see the Project Seahorse web site: <http://seahorse.fisheries.ubc.ca/>

SEASHELLS

Seashells are harvested in great quantities to be sold as decorative tourist items. Some species are listed by CITES in Appendix II, thereby regulating international trade in them. For example, the queen conch, a beautiful rose-pink shellfish from the Caribbean, was listed in 2003, due to its rapid decline. Although the shell is largely a by-product of fishing (the conch is a popular seafood product), the sale of the shell as a curio for export would be prohibited without appropriate CITES documentation. It is therefore essential to ensure seashell products come from sustainable stocks of non-protected species.

SHARK TEETH

Shark teeth made into necklaces or pendants, or mounted shark jaws, are common souvenirs in many coastal resorts around the world. Many species of shark are declining through over-fishing, either as by-catch or through targeted fishing for the shark-fin industry. The great white shark and all species of sawfish are listed in CITES (plus two non-toothed species, the basking shark and the whale shark). Teeth of a great white shark would therefore require the appropriate CITES documentation for export. The peculiar saw-like snouts ('rostrums') on sawfishes are sometimes sold as souvenirs, however, all sawfishes are critically endangered and (with one exception) listed in Appendix I of CITES. Under current legislation, export of all sawfish rostrums is prohibited, and such threatened species are also likely to be protected under national legislation.

Sources of further information

Australian wildlife import/export guidelines:
<http://www.environment.gov.au/biodiversity/publications/trade-use/factsheets/>

CITES: <http://www.cites.org/>

DEFRA – UK import rules search:
<http://importdetails.defra.gov.uk/>

Forest Stewardship Council (FSC): <http://www.fsc.org>

IUCN Red List of Threatened Species:
<http://www.iucnredlist.org/>

TRAFFIC – the wildlife trade monitoring network:
<http://www.traffic.org/>

US Fish and Wildlife Service – permits, FAQs, etc.:
<http://www.fws.gov/permits/>

Wildlife trade in the EU: <http://www.eu-wildlifetrade.org/>

WWF – Buyer Beware, a guide to prohibited wildlife souvenirs: <http://worldwildlife.org/buyerbeware/>

While the information presented in this factsheet was believed to be correct at the time of going to press in 2008, it may have changed since then. Hoteliers are advised to check local and international regulations and

TRAFFIC RECOMMENDS

Factsheet 12: Horticultural plants

There are two main conservation issues in the use of horticultural plants: use of plants from the wild, and use of potentially invasive species.

USE OF PLANTS FROM THE WILD

The vast majority of plants in horticulture are nursery-grown stock, and their use has no direct impact on wild populations. In most circumstances, all plants used both in landscaping and in indoor decoration will be artificially propagated. There are exceptions, however: in some groups of plants, wild-collected specimens may appear in the horticultural trade, in a few cases in significant numbers. Sometimes, collection of plants for the horticultural trade may have a negative impact on wild populations or may have been carried out illegally, so that care should be exercised when using these species.

Native species

Paradoxically, use of native plants in landscaping, which is in general a positive thing, may increase the chances that wild plants are being used. This is because it is often cheaper to take native plants from the wild than to propagate them in nurseries, particularly if they are species that are not widely cultivated. Legislation protecting wild plants varies greatly from country to country and is often weak, and plants on private land are very often not protected at all, although there may be specific regulations protecting some threatened species.

If you are planning to use native plants in landscaping, try to ensure that they have been artificially propagated, or that they have been collected legally and that they come from a sustainable source. While it may not be easy to ensure the latter, the best way is to find a supplier whom you trust. A few countries, such as the UK, have voluntary codes of conduct for using native plants (see reference below) but these are not widespread.

Choosing plants for the hotel garden

Groups where wild plants may appear in the horticultural trade more frequently than average (both as native plants and as imports) include: cacti and other succulents; bulbs,

corms and tubers (geophytes); cycads; orchids; 'air-plants' (*Tillandsia* spp.); and tree-ferns. Some of these are included in the Appendices of CITES, although very few are included in Appendix I, which means that all commercial international trade is banned.

- **Cacti and succulents:** Large or very large cacti and succulents used in landscaping may sometimes be wild-collected. In general, however, even large specimens of the most commonly encountered plants, such as agaves, yuccas, nolinias, adeniums (desert rose), cereoid cacti and opuntias (prickly pears – but see below), are extremely likely to be nursery-grown. It is always worth checking plants in the following groups, which are listed in the CITES Appendices: aloes; alluaudias and didiereas (large succulents from Madagascar in the family *Didiereaceae*); cacti (particularly very large barrel cacti such as *Echinocactus* and *Ferocactus* species, and saguaros, *Carnegiea gigantea*); succulent Euphorbias; ocotillos (*Fouquieria*); and pachypodiums. Most species in these groups are included in CITES Appendix II. A few species are in CITES Appendix I and banned from international trade, but these are very unlikely to be encountered. If in any doubt about legality or source, avoid.
- **Bulbs, corms and tubers:** Forms that are likely to be encountered and that may come from wild stock include snake-lilies or jack-in-the pulpit (*Arisaema* spp.); cyclamen (small *Cyclamen* species, not florists' cyclamen); snowdrops (*Galanthus* spp.); blue-bells (*Hyacinthoides* spp.); autumn daffodils (*Sternbergia* spp.); and wake-robins (*Trillium* spp.). Of these, cyclamen, snowdrops and autumn daffodils are listed in CITES Appendix II, so that international commercial trade is regulated but not banned. If these are bought, they should either be artificially propagated, or should have been imported in conformity with CITES regulations. The safest approach is to buy bulbs labelled as of cultivated origin. Although such labelling is not mandatory, it is widely used by Dutch flower bulb growers, who dominate global supplies.
- **Cycads:** Most cultivated cycads are of one species, *Cycas revoluta*. Others that are quite commonly grown in

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the tropics include *Stangeria eriopus*, *Dioon*, *Zamia* and *Macrozamia* species. These are not collected from the wild. Some other cycads may be wild-collected, mostly for sale in their country of origin, and some are highly threatened. The following, all of which are included in CITES Appendix I, should be avoided unless assurances can be obtained that they are artificially propagated: *Cycas beddomei*; all *Ceratozamia*, *Chigua* and *Encephalartos* species; and *Microcycas calocoma*.

- **Orchids:** Only orchids that are sold as species, rather than as hybrids or named varieties, may be a problem. Wild-collected orchids are unlikely to be commonly encountered, as imports for horticulture (most such specimens are aimed at specialised collectors). However,

in the tropics, wild-collected native orchids may well be sold in quite large quantities and often collected without controls. These should be avoided.

- **Air-plants:** Air-plants or Spanish moss (*Tillandsia* spp.) may be collected from the wild or grown in semi-wild conditions. Seven species are listed in CITES Appendix II, but are unlikely to be encountered. No significant conservation problems have been identified regarding the trade in air-plants.
- **Tree-ferns:** Most large tree-ferns have been collected from the wild or from semi-wild areas. The trade is generally legal and has not been shown to cause significant conservation problems.

USE OF POTENTIALLY INVASIVE SPECIES

Many plants that are grown as ornamentals outside their natural range have the capacity to become serious weeds and potential threats to biodiversity – indeed a number have already done so. The capacity of a plant to become invasive depends on its own biology (particularly its adaptability and the way it reproduces) but also on the conditions in the place where it is introduced. There are no definitive or exhaustive lists of invasive or potentially invasive species, nor is it easy to predict which species might become invasive and which not. The most precautionary approach would be to grow only native species or only plants that had been demonstrated not to be invasive in the area in question. However, this is unlikely to be realistic: almost everywhere, a wide range of cultivated plants is extremely well-established and most of them do not cause serious problems. Using these species is unlikely to cause environmental harm, and often such species are good food plants for native animals such as butterflies and birds.

However, there are some exceptions. Aquatic plants are particularly prone to becoming invasives, and native aquatic species should be used wherever possible. Plants to avoid include water hyacinth (*Eichhornia crassipes*), giant salvinia (*Salvinia molesta*) and water cabbage (*Limnocharis flava*).

Terrestrial ornamentals that have been identified as invasives in a wide variety of contexts and that should in general be avoided outside areas where they are native include: *Lantana*, giant mimosa (*Mimosa pigra*), kudzu vine (*Pueraria montana*), tamarisk (*Tamarix*), chinaberry (*Melia azedarach*), castor oil plant (*Ricinus communis*), privets (*Ligustrum*), Japanese honeysuckle (*Lonicera japonica*), Brazilian peppertree (*Schinus terebinthifolius*), Japanese cherry (*Hovenia dulcis*), prickly pears (*Opuntia* spp.), Japanese knotweed (*Fallopia japonica*), and brooms (notably *Spartium junceum*, *Cytisus scoparius* and *Genista monspessulana*).

Introduction of new cultivated plants to an area should be done with caution, and searches should be carried out on the global invasive species database (www.issg.org/database/) and through the Global Invasive Species Programme website (www.gisp.org) to determine whether the plants in question have been identified as

invasives anywhere in the world. Plants that have been so identified should in general be avoided.

Sources of further information

In the UK and Germany, there are voluntary codes of practice regarding the use of non-native plants. The principles in these codes can be applied elsewhere:

- UK code of practice for use of horticultural plants to help prevent spread of invasives: www.defra.gov.uk/planth/publicat/hortcop.pdf;
- UK code of practice on the use of native plants: www.floralocale.org; and
- German code of practice for use of horticultural plants to help prevent spread of invasives: www.g-net.de/download/Empfehlung-Invasive-Arten.pdf;

CITES and Plants manual (including an overview of plant groups covered by CITES): <http://www.kew.org/data/cites.html>

A list of plants regulated in international trade can be found at: www.cites.org.

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TRAFFIC RECOMMENDS

Factsheet 13: Activities and excursions



Many tourist activities increasingly involve interaction with the natural world, as more people become interested in conservation issues, or wish to experience the thrill of seeing unfamiliar wildlife close-up. Consequently, many local companies have sprung up offering eco-tourism and hunting and fishing opportunities to appeal to visitors. Indeed, many hotel guests may have chosen to stay in a particular hotel simply to be close to a particular wildlife-interaction opportunity.

As a result, many of these kinds of activities will be on offer through the hotel or resort's tour desk, or local operators will wish to advertise their services around the hotel. When choosing which local partners to work with (or when setting up your own tours), a number of points should be considered in relation to the effect on local wildlife and the sustainability of any activities.

WILDLIFE WATCHING

Many types of wildlife are tourist attractions in their own right. In various parts of the world, there are popular excursions to watch whales, marine turtles, the African 'Big

5' mammals, rare birds and many other creatures. However, although various voluntary certification programmes are in place around the world, no global standard exists for tour operators. As a result, hotel tour desks should try to ascertain whether the operator adheres to the following guidelines. Do they:

- Employ knowledgeable guides, where possible from the local area?
- Ensure that their tours cause minimum disruption and disturbance to the animals involved (as well as limit the impact on the wider local environment and to local cultures and communities)?
- Limit the numbers of participating visitors and the time they interact with/observe the featured wildlife?
- Provide direct financial or in-kind benefits for conservation and local people?
- Adhere to local/international regulations in relation to interaction with protected species?
- Have proper licenses for their activities?

Where possible, it is also worth asking any relevant local/international conservation organisations if they have any advice or experience with the operators in question. Although most eco-tour operators act responsibly, there are always some that do not – hopefully conservationists will be aware of which these are.

WHALE AND DOLPHIN WATCHING/SWIMMING

In addition to following the above general wildlife watching guidelines, whale and dolphin watching (and the observance of other marine animals such as sharks or seals) is worthy of further comment.

Many countries have national codes of conduct in place to make sure that contact with whales and dolphins causes minimum disturbance to the animals. Tour companies should abide by these rules, and where no local legislation exists, ideally should voluntarily adopt similar practices (such as only approaching in vessels to a certain distance, not touching the animals when swimming, etc.).

DIVING AND SNORKELLING

Any dive operators should be fully qualified and licensed. In addition, they should help their clients to:

- Observe marine wildlife (such as coral reefs) without impact, making sure that they view wildlife from a safe distance and do not rest or stand on corals and other fragile marine life;
- Avoid touching and damaging life on the seabed and leave live shells, reef fish and animals as they are;
- Learn about the underwater environment so they can better appreciate it; and
- Provide advice on safety issues to consider when diving and ensure that safety considerations are strictly applied in relation to conditions of equipment and diving requirements.

SPORT HUNTING

Sport hunting can be broadly defined as the hunting of an animal (generally by a tourist, particularly a foreign one) for its trophy value (i.e. an item prepared from the body of the game animal). Consequently it is also known as trophy hunting, or as big-game hunting, when referring to the pursuit of large animals such as bears, big cats, elephants, etc.

The hotel should try to ensure that any local hunting operators whose services it endorses can satisfactorily answer the following questions:

- Is it legal to hunt the species concerned in the country? In some cases, however, it may be legal to hunt a species in a particular country, but due to concerns about the conservation status of that species, a hotel may not recommend such an activity, despite its legality.
- Is the company properly licensed, with professional, fully-trained hunting staff?
- Does the operator abide by national hunting quotas and other hunting regulations, etc.?
- Do they abide by species-specific minimum trophy size regulations (these are usually national requirements – good-sized trophies are an indicator of the population status of hunted animals)?
- Is the company aware of all the necessary paperwork required by hunters (foreign hunters will require CITES

documentation, for example, if exporting a trophy)? Do they help to provide tourists with these documents as part of their service?

- Is the hunting operator a member of (or affiliated with) a recognised national professional hunting association?
- How does the company's hunting operation benefit the local community and the conservation of local wildlife?

SPORT FISHING

Sport fishing is a popular tourist activity in many coastal areas (and also for various types of freshwater fish). Any local/international quotas or regulations in regard to catches should be obeyed, and overfishing of key species avoided.

Sources of further information

IAATO marine wildlife watching guidelines (although these apply to Antarctic marine wildlife, they also provide a useful overview of the issues and can be applied more widely):

<http://www.iaato.org/wildlife.html>

IUCN Red List of Threatened Species:

<http://www.iucnredlist.org/>

US Fish and Wildlife Service – permits, FAQs, etc.:

<http://www.fws.gov/permits/>;

<http://www.fws.gov/permits/faqs/FaQA.shtml>

Whale and Dolphin Conservation Society – whale watching guidelines: http://www.wdcs.org/connect/whale_watch/story_details.php?select=58

WWF's guidelines for community-based ecotourism:

<http://assets.panda.org/downloads/guidelinesen.pdf>

For further information on sport hunting (in an African context), see the following report from TRAFFIC International: Sport Hunting in the Southern African Development Community http://www.traffic.org/general-reports/traffic_pub_gen8.pdf

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Appendix 1: Communicating with a hotel's internal and external stakeholders

Communication is a vital part of any biodiversity strategy, both to explain to staff and suppliers what the strategy is and why it's important, and to help guests and other stakeholders understand the hotel's actions and what they can do to help. Such communication can be integrated into your hotel's overall communications and marketing practices. This appendix reviews the key components of an effective biodiversity communications strategy, targeting your hotel's internal and external stakeholders.

Any communications strategy should be guided by two key principles, which will help you determine the scope and content of your communications:

- **Results first, communicate later:** In general, it is better to communicate very little, or in a very low-key way, when first starting to integrate biodiversity practices into management strategies, in order to have some results to share before communicating extensively with any stakeholders.
- **Internal communication before external communication:** It is important to use internal communication strategies to make sure that your staff is "on board" before explicitly

communicating about efforts to integrate biodiversity into hotel management. Make sure that your staff:

- know the basic facts about biodiversity and the contributions the hotel makes;
- show genuine interest and concern for biodiversity; and
- implement the practices and spirit of the biodiversity strategy in performing their duties.

To motivate staff, it can help to have a box in staff areas for "The Idea of the Week" or to have a yearly biodiversity award for the best staff contribution.

Targeting specific groups for biodiversity communications

Although it is not the core business of hotels to influence the knowledge, attitudes and behaviour of their clients towards biodiversity, the way a hotel conducts its business communicates a lot about its motivations and principles. To add extra value to each person's experience, you may wish to develop a client communication strategy, tailoring the objectives and messages to a variety of target groups (see Table A1 below).

Table A1: Segmentation of clients for biodiversity communication

	Direct choice	Indirect choice
Indirect experience	<p>Buyers (non-guests)</p> <ul style="list-style-type: none"> • Tour operators • Travel agencies • Conference and event companies • Businesses 	
Direct experience	<p>Buyers (guests)</p> <ul style="list-style-type: none"> • Individual leisure tourists • Transient business travellers 	<p>Guests (non-buyers)</p> <ul style="list-style-type: none"> • Package tourists • Conference participants

Communicating with non-guest buyers

Once you have substantially integrated biodiversity into your management strategies and consider your contribution to conservation and sustainable use of biodiversity as part of your value proposition, you may wish to communicate this to your non-guest buyers, including tour operators, travel agencies, conference and event companies, and other businesses. The objectives of this communication would include:

- Increasing the knowledge of this target group about conservation and sustainable use of local and global biodiversity, for example by providing information about the added value of being close to a national park or using certified products;
- Contributing to a more positive attitude among non-guest buyers about conservation and the sustainable use of biodiversity, for example by providing photos of the hotel and its surroundings showing the hotel garden, exhibitions of local products, children's activities and other biodiversity-related topics; and
- Influencing the destination choices of non-guest buyers by linking your efforts in the field of biodiversity to special groups, such as student excursion groups, governmental, academic or NGO conferences, guests of the Ministry of Environment, and others. Testimonials from previous guests can be used for this purpose.

Communicating with hotel guests

In addition to communicating about your biodiversity strategy to non-guest buyers, you should also develop a communication strategy for guests. The objectives of this strategy would include:

- Increasing the knowledge of guests about conservation and sustainable use of local and global biodiversity, for example through the choice of magazines you offer in the lobby, the choice of certified food products on your menu, the choice of films and games in your video programme and the kind of activities offered for children;
- Contributing to a positive attitude towards conservation and sustainable use of biodiversity among guests, for example by the choice of decorative plants, live animals and decoration in public areas, and plants, photos or paintings in

guest rooms. An exhibition of local natural products, extra attention to the garden, and participation in local festivals that feature aspects of biodiversity may also positively influence the attitude of guests; and

- Influencing the behaviour of clients, for example by posting visible evidence and testimony that your shops and spas do not offer for sale souvenirs, clothing or other products that are derived from endangered species or species forbidden for trade by CITES, or by showing that your tour desk only offers responsible recreational activities and subcontracts with companies that can guide diving, fishing, surfing or wildlife watching activities in a responsible way.

There are three main strategies that hotels can use for communicating about biodiversity actions. You may choose to use a single one of these strategies, or combine elements of all three. In all cases, it is important to realize that biodiversity awareness raising and learning is only credible and effective when a hotel also makes a genuine effort to practice what it preaches. Serious contradictions between business practices and the message embodied in external communications may cause problems. Guest communication strategies include:

- **Invest in awareness raising and informal learning:** Using this strategy, you would communicate about your biodiversity actions as a separate topic, rather than as a part of other technical management interventions. For example, decorating the lobby with unique indigenous plants or an aquarium with species representative of inland or coastal waters may informally educate clients about local biodiversity, especially if the plant pots and the aquarium have small explanatory signs. The choice of magazines on the reading table in the lobby may include a variety of nature magazines (prioritise magazines and newspapers that are produced sustainably), while the reception area may offer clients a tray with local apples or other fruits, accompanied by a small sign reading: 'Nature welcomes you to our hotel. Please help yourself, and thank you for your wise use of nature.' The paintings and photos on the walls in public areas and guest rooms may all be selected around the theme of biodiversity to raise awareness about the richness of local biodiversity. The advertisements in the elevator may include an invitation to visit a national park, local zoo or botanical garden. The in-room video programme might offer nature films. The usual sign about re-using towels in the

bathroom may refer to the impact on local biodiversity, e.g. 'Thank you for contributing to the preservation of the pristine beauty of our lagoon.' An exhibition of locally produced 'natural' products, may provide clients with exposure to the wide variety of resources offered by nature in the vicinity of the hotel. If you have many children among your clients, you might offer special activities, developed and organised in partnership with local organisations, for children to discover biodiversity in and around the hotel, or offer a supply of biodiversity computer games and videos for kids.

- **Do good and let your guests know it:** Under this strategy, communication supports the various actions to integrate biodiversity in the hotel management cycle, and caring for biodiversity is highlighted as part of the unique selling points of the hotel. This may involve revisiting your position statement for corporate communications, or, where biodiversity is part of your hotel's core brand value, association with a specific species or resource that is then used in your corporate communications. Some hotels might introduce a special category of 'biodiversity rooms' – with tailored greenery, decoration, magazines, videos and snacks in the refrigerator – from which a percentage of the price goes to a local or international conservation organisation. Other ways to communicate about biodiversity actions might include a sign in the hotel shop informing clients that all souvenirs in the shop are 'CITES-proof' and will not lead to problems with customs officers on departure or arrival, or short explanations on the menu in the restaurant noting that only products with an eco-label are used in food production.
- **Do good and let others tell your guests:** This communications strategy focuses on the use of intermediaries. A hotel that integrates biodiversity into its management may choose to itself communicate in a very low-key or minimal way, while instead focusing on offering opportunities for others to communicate about its actions. Customers may be pleased to see in local newspapers or on local TV that your hotel is contributing to biodiversity conservation or engaging with local organisations or the agriculture or fishing communities. Good relations with the mass media are a precondition for such an approach. In general, creating good word of mouth messages is an effective means to have others tell guests about your biodiversity efforts. When a guest visits another

establishment in town and hears, 'Oh you are in staying in a hotel that really cares for our biodiversity here,' that message has a lot of positive impact. To create such positive messages, it is important to regularly engage in informal and formal communication with key opinion leaders in the local community. Hotels may also give a communication role to local or international conservation organisations by entering into special partnerships. For example, photos of local bird species in guest rooms may be from a competition among local photographers organised by the local society for the protection of birds and sponsored by the hotel. A local festival may feature in its street parade special aspects of local biodiversity sponsored by the hotel. You may also wish to be associated with a local nature film festival or a music festival with compositions inspired by nature.

Developing effective biodiversity messages and means of communication

Formulating effective messages requires proper knowledge of the issue, as well as a clear understanding of the knowledge, attitudes or behaviour of your target group. It is important to make your message interesting and compelling to the target audience. Although conservation is important, it isn't always interesting for non-experts. Developing communication messages is both an analytical and a creative process, and thinking creatively is possible only when there is a clear picture of the current situation and the changes to be accomplished. A brainstorming session can be a good way to explore creative message ideas and pre-test any proposed communication strategies.

In general, hotel managers should be able to phrase key messages about the importance of biodiversity to their staff, to suppliers, clients and others. These messages should be in simple language and should answer questions such as 'What is biodiversity?' and 'Why bother to protect it?'

While the most effective way to communicate about a biodiversity strategy is for management and staff to 'practice what they preach' in terms of the way the hotel is run and operated on a day-to-day basis, there are many other ways to communicate this message, including signs on trees in the garden, pots with decorative plants, or an extra line in the menu or on the list of products in the spa. The internet is a

valuable source for special means of communication to get across a biodiversity message. Possible resources include:

- **Interpretation sign boards for garden and grounds:**
<http://www.snh.org.uk/ww/interpretation/index.html>
- **Biodiversity computer games for kids:**
<http://countdown2010.net/games/>
- **Videos about biodiversity:** <http://www.arkive.org/>
- **Videos about sustainable development:**
<http://www.tve.org/mp7/search.cfm>

Monitoring and evaluating your communications strategies

It is important to monitor and evaluate your biodiversity communications strategy through regular customer satisfaction surveys and other means of tracking customer value, such as electronic monitoring of video or menu choices, or the number of requests for special excursions, children's activities or other biodiversity-related offerings. Monitoring and evaluation will be most effective if a baseline study of knowledge, attitudes and practices among the target audiences is conducted before the communications strategy begins, to provide a basis for comparison. In addition, appropriate success indicators should be identified when the communication objectives are first formulated, to increase the accuracy and effectiveness of the evaluation.

Preparing a realistic and achievable communications budget

As part of the development of a biodiversity strategy, you should decide on the role and approach of communication and estimate the costs of a communication strategy. It is better to start small rather than fail because of a lack of funds; quality, time and money are mutually dependent parts of communication. When calculating the communication budget, you should consider the following factors:

- **Personnel:** How many employees need to be involved and how much time do they have to work on the project? Is it necessary to hire external consultants, organisations and experts, and, if so, how much will this cost?
- **Material costs:** What are the costs to design and produce the various means of communication?
- **Distribution costs:** What are the costs to distribute these

means of communication?

- **Media costs:** What are the costs to publish in newspapers and advertise on radio and TV?
- **Organisational costs:** What are the costs of office supplies, mailings, telephone calls, copying, etc.?
- **'Safety budget':** How much should be set aside for unexpected costs?

Appendix 2: Working with partners in the destination

Hotels can take many actions themselves to help preserve biodiversity, but there are cases where effective actions may be limited by factors that are outside the control of any individual hotel. For example, a destination's policies on the protection of the environment and biodiversity, including protected areas, and its approach to the planning and operation of infrastructure (e.g. new development areas, waste handling and management, water use, storm water management, etc.) all have impacts on biodiversity and are of concern to hotels.

This appendix describes the ways that public authorities, community groups and non-governmental organisations (NGOs) can support biodiversity conservation and sustainable use in destinations, and how hotels can work in partnership with these stakeholders to promote biodiversity conservation.

How community organisations and NGOs can support biodiversity conservation and sustainable use in a destination

Local organisations work on a variety of issues, including community development and biodiversity conservation, and can be a valuable interface between hotels and local communities. These organisations can contribute to biodiversity conservation and sustainable use in a variety of ways, including:

- Raising awareness about biodiversity in local communities;
- Promoting more sustainable production and harvesting practices;
- Encouraging and managing biodiversity conservation activities; and
- Developing sustainable local sources for supplies of some products, such as vegetables and fruit, by working with local farmers and community groups.

How public authorities can support conservation and sustainable use in a destination

While local organisations may be considered the more obvious choices for partnerships on biodiversity, public authorities have significant influence over issues that affect biodiversity, and can be valuable allies in any biodiversity conservation efforts. Public authorities have a major influence over most aspects of a destination, from the types of development they encourage and where it is built, to infrastructure, community links and

biodiversity management. By demonstrating your own successful internal biodiversity actions, your hotel can help to influence public authorities to make biodiversity conservation and sustainable use a higher priority in their planning and management of a destination. The following are some of the ways that public authorities can contribute to conservation.

Protect biodiversity from the impacts of tourism development and activities by:

- Undertaking positive planning to identify space and locations for new developments that will contribute to sustainable tourism, protect biodiversity and take into account predicted changes in conditions, such as the effects of climate change;
- Developing and enforcing regulations to ensure that damage to biodiversity is minimised when new tourism developments and infrastructure are constructed;
- Establishing systems for visitor management to control visitor numbers and behaviour, for example to prevent physical damage, wildlife disturbance or littering; and
- Designating and maintaining conservation areas.

Support biodiversity conservation and the maintenance of high-quality habitats and ecosystems as tourism resources by:

- Improving information and interpretation, including developing events programmes and training local people as guides;
- Preparing an overall biodiversity plan for the destination that integrates actions by hotels and other businesses, as well as those of national and local conservation agencies and NGOs;
- Undertaking biodiversity conservation and restoration projects at specific sites; and
- Raising revenues for conservation from tourism, including through the use of admission charges and encouraging voluntary donations.

Encourage and support hotels and other businesses in taking biodiversity actions by:

- Providing hotels and other businesses with support to help them introduce biodiversity actions, including:

- Training courses and technical advice;
 - Guidance manuals supplemented by relevant local information;
 - Incentives and financial support for biodiversity actions, such as subsidies and technical support for conservation activities; and
 - Extending and sharing knowledge and good practice for biodiversity conservation.
- Assisting hotels and other businesses to develop partnerships with other organisations and community groups to support local biodiversity conservation and to undertake actions to protect biodiversity in the destination.

- Good-quality guiding, where possible involving local people;
- Interpretative events;
- Visitor centres, where appropriate, containing creative interpretative facilities; and
- Relevant information in leaflets, on signs, etc.

Promote the use by hotels of local products linked to sustainable use of biodiversity by:

- Helping local communities benefit from biodiversity by helping them to establish activities and enterprises based on conservation and sustainable use of biodiversity, for example small businesses that can supply hotels with sustainably produced vegetables and fruit or offer sustainable tourism activities; and
- Working with hotels to understand their needs for quantity and quality of products that can be produced locally, and using this information to increase the suitability of local supplies for hotels.

Raising awareness of biodiversity among visitors, businesses and local communities by:

- Setting up awareness-raising campaigns to encourage protection of biodiversity in the destination;
- Providing local communities, schools and businesses with information about biodiversity conservation and sustainable use;
- Ensuring effective local information delivery and interpretation;
- Highlighting biodiversity resources in the destination, for example by producing maps and leaflets, and installing signs to provide information and interpretation; and
- Encouraging responsible visitor behaviour and awareness of the need to protect biodiversity in the destination, including by provision of:

Setting up partnerships

By setting up partnerships with public authorities, community groups and associations, hotels can become involved in biodiversity actions that are of benefit to the entire destination. To establish a new partnership, you should start by asking how working together for biodiversity protection could help each partner in achieving their objectives. Each partner should be prepared to discuss ideas for projects that could be carried out in a partnership, to explain why these projects are needed, how much they would cost, and what their benefits would be.

The decision to set up a partnership usually implies a commitment. This commitment means there may be formal agreements developed and signed, there may be financial or other obligations involved, and the new relationship can mean changes in the way each organisation works. For example, when a hotel takes the initiative to have special “biodiversity rooms,” this is often done in partnership with a conservation organisation. The hotel also can enter into a partnership with a local association to delegate the development and implementation of special “edu-tainment” activities for hotel guests and their children, such as games, bird watching, gardening etc.

Some of the key factors that make partnerships and support activities effective include:

- Identifying key and reliable representatives of main stakeholders that should be involved in developing a partnership. This is particularly relevant when working with indigenous peoples organisations;
- Defining clear roles and responsibilities, including on sharing resources and accountability of actions;
- Ensuring that all organisations involved, including the hotel, benefit from working together, giving an incentive for them all to participate;

- Involving partners at an early stage, so that they can contribute their ideas and help with planning of activities;
- Working through existing networks that your hotel may already be associated with;
- Choosing projects that are realistic and achievable in relation to the resources of the partners and organisations who are working together, and are relevant to their own objectives;
- Selecting activities and projects where results are easily visible to all who are involved, which are realistic and achievable, and have strong leadership and wide community support; and
- Acknowledging in all communications the contributions and support from all partners.

There are many ways that you can begin to make links with groups and organisations with which you can build partnerships for conservation, including:

- **Networking:** Through networking, hotels and their potential partners can exchange information and establish personal connections. Networks increasingly are seen as playing an important role in the way problems are solved, organisations are run and the degree to which individuals achieve their goals. There are various forms of networking, including tracking, informing, consulting, supporting, collaborating and partnering (in order of increasing mutual engagement).
- **Tracking initiatives and organisations:** Tracking allows a hotel to know what biodiversity initiatives are occurring at the local level, what biodiversity conservation or awareness-raising activities are being undertaken by national and international associations, universities, natural history museums, etc., and who the key contacts are and how to reach them. One of the advantages of tracking what is happening, building relations with the various actors interested in a cause, and engaging stakeholders in a proactive way, is that it can allow you to coordinate activities, reduce duplication and support many people who can be engaged in working constructively with your hotel. These people may include representatives of protected areas, zoos, botanical gardens, local communities, schools, government agencies, universities, conservation associations and other stakeholders. There are a number of different ways to track biodiversity activities, including:
 - Web searches;
 - Subscribing to and scanning newspapers, magazines and newsletters (i.e. hard copy and/or electronic versions);
 - Collecting project documents and reports, brochures and educational materials;
 - Visiting institutions, associations and local initiatives to get to know their work;
 - Attending conferences and biodiversity-related events;
 - Conducting informal meetings with colleagues and peers (lunch-time discussions, recreational hours, etc.);
 - Holding regular meetings with associations; and
 - Checking calendars of events.
- **Communicating about your hotel's biodiversity initiatives:** Once your hotel is genuinely integrating biodiversity into management strategies, it is important to inform local stakeholders about these efforts. This can be done through emails, letters, phone calls, short reports or articles, newsletters, informational meetings and presentations.
- **Consulting on specific issues:** A hotel does not necessarily have all the knowledge to integrate biodiversity into its management systems. In many cases, local conservation organisations or communities can advise you on topics such as which fish species to choose for a biodiversity-friendly menu, which plant species to use in order to integrate local biodiversity into your garden and public areas, or the selection of magazines in the lobby.
- **Collaborating on conservation initiatives:** Your hotel also can collaborate with other partners on conservation activities or events, for example to celebrate Earth Day, International Biodiversity Day, World Wetland Day or World Tourism Day, or in cleaning up a beach, coral reef or wetland. You might also choose to sponsor an exhibition in the local natural history or science museum, or an Environmental Film Festival. During these events, your hotel can have its own biodiversity programme or host a programme jointly with other organisations.



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