



# Fact Sheet: Biodiversity in Amusement Parks



The loss of biodiversity, alongside climate change, is currently one of the largest and most important challenges. It is believed that the current rate of species extinction, due to human influences, is up to 1,000 times higher than the natural extinction rate. Many of the vital resources and services, which are underpinned by biodiversity, are provided to us by ecosystems that are at risk.

Companies use these ecosystem services and natural resources in various forms and thereby have a large impact on nature. Therefore, even by just considering economic reasons, companies depend on the conservation of biodiversity, and a steady decline in biological diversity can become a risk for many businesses in the future. At the same time, a proactive approach to conserve biodiversity can create new business opportunities.

Amusement parks represent a serious interference in natural surroundings covering an area of 25 to 2,000 hectares. But the land use does not correspond directly to the number of visitors. Compared to the Europa Park near Freiburg, (which is listed as the largest amusement park in German-speaking countries) with an attendance over 4.5 million visitors each year and an area of 100 ha, Euro Disneyland in Paris requires a 3 times higher number of visitors and a twenty times bigger area. The land consumption per visitor varies in a wide range and partly depends on the attractions of the amusement parks, which in turn determine the different opportunities for actions to conserve biodiversity. While nature or wildlife parks have extensive opportunities to create valuable natural environment, the options for amusement parks are often limited. But even amusement parks provide opportunities for the protection of biodiversity. In addition to reducing the impact of daily operations on biodiversity (e.g. energy, waste, transport), the communication with visitors is an excellent opportunity to contribute to the conservation of biological diversity.

## Negative Impacts on Biodiversity

Scientists from all over the world agree that the main causes of the loss of biodiversity are:

- Degradation and destruction of ecosystems
- Overexploitation of natural resources
- Climate change
- Emissions/Pollution
- Invasive alien species

Whereas the reduction of emissions is a traditional goal of environmental management systems and climate change is increasingly taken into consideration via the reduction of energy consumption and greenhouse gases, other aspects are rarely considered. Therefore, this fact sheet places special emphasis on the degradation of ecosystems, overexploitation of natural resources and invasive alien species and describes direct and indirect opportunities for companies to take these aspects into account.

The appendix of this fact sheet contains references to further information. Furthermore, a fact sheet for the tourism sector is available that offers useful information and advice in a similar structure which are also interesting for amusement parks.

# Strategy/Management

The management provides the framework for continuous improvement of the company's biodiversity performance. Businesses and environmental auditors should try to answer the following questions:

- *Is there any person responsible for biodiversity, species protection or nature conservation issues?*
- *Has the company systematically evaluated direct and indirect impacts on biodiversity?*
- *Does the company's environmental or sustainability programme include biodiversity targets and actions?*
- *Are the targets and actions also time limited, achievable, verifiable and measurable?*
- *Does a monitoring system exist, underpinned with significant key data and indicators?*
- *Does the training programme for employees include biodiversity aspects?*
- *Is the company engaged in a local, national or European business and biodiversity initiative?*
- *Is there a strategy to involve local initiatives?*

How many questions can your company answer with yes? Of course, a yes tells us nothing about the quality of the strategy or measure. Nevertheless, these findings are an important first step and show the need for action, in other words useful measures for the benefit of the company.

## Examples: Indicators for Strategy/Management:

- *Number of employees trained in biodiversity conservation issues*
- *Number of employees taking part in biodiversity volunteering activities*

# Stakeholders

The successful integration of different stakeholders is important for amusement parks. In addition to a high consumption of land amusement parks have a significant impact on the environment. For example, a small amusement park with an area of 25 ha can attract 350,000–2,000,000 visitors per year. Conflicts with local residents and conservation organisations on site are inevitable due to a high volume of traffic, noise, energy consumption and waste generation. The involvement of external stakeholders can reduce conflicts and provide an important impulse for the reduction of effects on humans and wildlife in the whole area.

Scientific institutions, nature conservation authorities or environmental organisations provide expertise on biodiversity at the destination. Assistance in biodiversity monitoring provided by local NGOs should be adequately remunerated.

With regard to EMAS, according to annex II.B5, involvement of stakeholders is necessary. To facilitate good and specific involvement, adequate structures must be created. Existing participation structures including transparent handling of stakeholder enquiries can be seen as a proxy indicator for a successful biodiversity management.

## Questions amusement park companies should ask themselves:

- *Stakeholder-mapping: Has an analysis of stakeholders as well as their potential contribution to improve the company's biodiversity performance been implemented?*
- *Stakeholder-dialogue: Are there any transparent structures including clear structures for processing of afflictions in place?*
- *Have the stakeholders been involved in the development of the park's mission and vision statement?*
- *Does the company regularly inform the stakeholders about the progress made in the implementation of its visions and sustainability commitments?*
- *Is there a recreation concept or strategy for the local people in place, which allows them to enjoy the park's nature for free (local community days etc.)?*
- *Does the park regularly publish information on the environmental performance of the company?*

# Premises and Properties

Due to the high land use of amusement parks, the design and maintenance of the whole area play an important role in the protection of biodiversity. Especially the design of the park determines the possibilities for actions.

## Questions amusement park companies should ask themselves:

- *Does the environmental policy contain objectives regarding positive effects on the local biodiversity which go beyond legal requirements?*
- *Was information about the natural conditions consolidated into a biotope concept?*
- *Is there a biotope concept in place? Were the functions of different areas (e.g. ecological core zones, buffer areas, development zones, ecological corridors etc.) determined? Does the maintenance team know these functions adequately? Does the information on the different habitats (biotope characteristics) include maintenance instructions?*
- *Were indicator species defined?*
- *Is the maintenance team able to identify the main types of invasive alien species and are they instructed to report their occurrence?*
- *Is there a monitoring process (e.g. counting of indicator species) in place?*
- *Is there a manual for dealing with invasive species? (yes/no)*

Nature and wildlife parks which primarily offer nature experience manage large green areas or even forests, ponds, or other natural habitats. Such parks should develop a biotope network system that consists of core areas and buffer zones, respectively partial and total habitats. The aim is to capture the existing biotope structures on the site and of the surroundings to increase their functionality through networking with each other and to increase the quality of the individual habitats.

The fact sheet for golf courses provides a brief overview of the procedure, which can be applied to amusement parks as well. Operators of nature and wildlife parks generally have the option to create high-quality habitats such as ponds, nutrient-poor or ruderal areas and extensively used grasslands. For example, extensively used grassland can be grazed by sheep or goats which have the additional advantage that it offers the park the opportunity to participate in projects for the conservation of rare breeds of farm animals. Thus, the appeal of the park can be considerably increased.

Parks, which are characterised by an artificial environment and which use the area for mechanical attractions normally do not have the opportunity to create a biotope network on the site. But one can take steps to reduce negative effects by designing the roofs of indoor attractions, office buildings, and hotels as green roofs as well as by greening the facades of the buildings. Especially on very intensively used areas there will be fewer options for measures to protect biological diversity. Nevertheless, these companies can have a positive effect on biodiversity in their region by supporting biodiversity conservation projects outside their site and offset their own land use. Local conservation organisations have an accurate view of where and how one can achieve positive outcomes for biodiversity in the region. Depending on local or national regulation, it is possible for amusement park operators to have a positive effect on the conservation of the local biodiversity by buying biodiversity offsets.

Amusement parks normally maintain a big parking area, which could be designed more natural by abstaining from the use of asphalt. As an example, the parking lots of the Mainau Attraction Park in Germany are not fully sealed and serve 1.2 million visitors annually. They are also suitable for families with prams and elderly persons.

### **Insect garden on the Island of Mainau (Germany)**

Known as the "flower island", Mainau is approximately visited by 1.2 million guests per year. On the over 40ha area, guests will find historic buildings, a butterfly house, a palm house, an adventure playground and a farm, and of course mainly intricately designed gardens. In 1998, the company received EMAS certification.

The Mainau management has a longstanding expertise in the combination of horticulture with valuable habitats: perennial gardens, areas that were specifically designed to offer butterflies and caterpillars food and newly an insect garden, which includes a bee wall and species-rich meadows with perennial mixtures. Even a colony of bees can be found in the insect garden. The concept is brought near to the visitor with information boards. Thus, the Mainau provides valuable habitats and contributes to the education of the visitors.

## **Invasive species**

Invasive alien species contribute to the loss of biodiversity: for one thing they replace native plants and for another thing they poorly integrate into the existing ecological system. As a result, they usually neither serve as a refuge nor as a food source for the native fauna.

The locust tree for example migrates to semi-dry grasslands and accumulates nitrogen in the soil. This attracts more species which favour such an environment and finally displace the natural vegetation of the semi-dry grassland. Also animals, such as the fire ant in the United States, can cause significant environmental damage and hurt the ecological balance.

To combat alien invasive species, they must first be detected by employees. For this purpose special information and trainings are necessary. Profiles of major alien invasive species in Europe can be found on <http://www.europe-alien.org>. In addition to pictures and information about the regional occurrence of species, information on ecological contexts and combat measures are included. Plant lists for amusement parks should be checked twice: first, if they contain invasive species, and secondly, if they contain exotic species which can be replaced by native plants. Generally, only native plant species should be used. Exotic species that are planted outside their natural area of occurrence (due to their attractiveness) may not have any chance to spread by themselves. Basically, near-naturally installed garden areas can be just as spectacular as conventionally designed horticultural areas. Today there are many gardeners who are specialised in the installation of natural gardens and can advise operators of amusement parks in terms of a more natural designed garden.

## **Lighting**

In the summer, outdoor lighting can attract a large number of insects that die in the source of lighting. Depending on the type of lamp, hundreds of insects can die in one night – including many butterflies. Also for bats and birds artificial light sources are problematic because they contribute to disorientation and disturbance of the animals. The effect of lamps on insects was examined most extensively in the past. The lamp types vary considerably in their ability to lure insects: Metal-halide lamps attract up to eight times more insects than warm white LEDs. In the middle of the two extremes are sodium vapour lamps. Preferably, “warm” LED lamps which emit light in a spectrum as narrow as possible should be used. Insects can see – no longer perceptible to humans – UV light and are less sensitive to yellow, orange, and red colours.

Amusement park operators should use appropriate bulbs and lighting. Furthermore, they should align the lighting to avoid unnecessary light emission. For example, lamps should only glow where their light is needed: lighting for roads should point downwards. Therefore, certain lamp types such as illuminated globes, which emit their light upwards, should be avoided. Finally, outdoor lighting should only burn if it is actually used, which means it should be controlled by a timer or light or motion sensors.

### Indicators and key data for the park area:

- *Percentage of ecologically degraded areas: sealed surfaces and partly sealed surfaces (in m<sup>2</sup>)*
- *Number of high-valued biotopes, which are connected to one another*
- *Occurrence and population size of target and indicator species*
- *Number of invasive species on the area and number of conducted control measures*
- *Number of employees with extensive knowledge of environmental and landscape conservation*
- *Existence of "biotope characteristics" with maintenance instructions (yes/no)*

## Supply Chain

The supply chain has indirect effects on biodiversity. Because the list of products and services is probably long, an important first step is to analyse the impact of key products and services on biodiversity as well as its contribution to the destruction of ecosystems and the overuse of natural resources.

Unfortunately, there has been no comprehensive checklist for the purchase or the biodiversity label, which excludes negative effects on biodiversity. Labels and standards that guarantee a certain environmental performance (for example in the domains of energy, water, waste or cleaning) contribute to the conservation of biodiversity by supporting resource efficiency or a positive impact on the climate. Examples are environmentally friendly products such as recycled paper, FSC-certified paper, ecological cleaning products, environmentally friendly insect repellents, as well as organic farming and fair trade products.

### First actions for the procurement manager:

- *Check the main products and services in terms of their relation to and impacts on biodiversity*
- *Identification of the products/services with the most negative impacts on biodiversity (significance test) – delisting or designing them to become more biodiversity-friendly*
- *Inform suppliers and service providers that the protection of biodiversity is one of the major goals of the company and ask them what measures they take*
- *Integration of biodiversity aspects in training for suppliers/services*
- *Integrating criteria for the protection of biodiversity in the specifications for suppliers/services*
- *.... and monitor their compliance*

Sanitary: use products with an official eco-label (e.g. EU Ecolabel) for cleaning products for buildings and especially sanitary facilities. Ecological cleaning products made from pure vegetable materials which are 100% bio-degradable, protect the water and thus the biodiversity in the aquatic environment. The sanitary facilities are used by many guests and the hygienic requirements increase with the frequency of use. Often a disproportionately high demand of chemicals and chemical disinfectants is used. This is costly, a health burden for cleaning staff and guests, and ultimately unnecessary.

Restaurant: local organic food should be first choice. For all products that cannot be produced in the region, e.g. coffee, tea, cocoa, rice, and chocolate, certified fair trade products are a good alternative. For non-farmed fish products, the label of the Marine Stewardship Council (MSC) is a good choice. In addition, shopping guidelines such as the Greenpeace Guide for fish provide valuable guidance: [www.greenpeace.org.uk/oceans/what-you-can-do/better-buys-what-fish-can-I-eat](http://www.greenpeace.org.uk/oceans/what-you-can-do/better-buys-what-fish-can-I-eat).

Biodiversity also includes old crops and livestock. The biodiversity in agriculture, gardening, fruit growing, and winegrowing has significantly decreased in the last century on a global scale. Today, only a few crop species are globally of economic importance and the intraspecific diversity (inside one species) in the crop species has a downward trend. The trend for ancient breeds is similar (see Red List of endangered native crop plants in Germany). Farmers that contribute to the preservation of old grains, vegetables or traditional livestock breeds should be supported. If the restaurant offers ancient grains the company contributes to the conservation of biological diversity – and creates also a unique selling proposition as well as points for communication with guests.

Products and services that violate any laws or regulations (e.g. food or souvenirs with components of protected species) should **be immediately delisted and not be tolerated**.



Sales of clothing: the destruction of ecosystems and overuse of natural resources also play a role here. Clothing that is made from 100% organic and fair trade cotton has a significantly lower negative impact than conventional cotton. In the conventional cotton production 25% of insecticides and 11% of all pesticides which are used worldwide can be found, although the global agricultural area of cotton production is only 2.4% of the total amount of agricultural land worldwide available.

In organic cotton cultivation no chemicals and fertilizers are used. In addition, the genetic modification of seeds is prohibited. Not only from an ecological perspective but also with regard to social aspects, organic cotton has a large number of advantages: local farmers benefit from the fact that no pesticides are used on their land. A less intensive agriculture with crop rotation also leads to a diversification of farming systems.

Souvenirs: Ivory, tortoise shells or protected wild plants are prohibited by law in shops which are EMAS certified. Their trade is usually forbidden due to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) regulations. But beyond these products, the sale of souvenirs can also be harmful to biodiversity. Souvenirs made of wood should be made of FSC-certified wood and plastic souvenirs should be replaced by ones without plastic. If there is no other option than to use plastic souvenirs, they should have been made from biodegradable plastics in order not to endanger the environment. Most products such as stickers, pins, cups, postcards, and pens are now available as a more sustainable variety. The shift to more sustainable alternatives should take place gradually. Examples of objectives and organizational measures in the area of purchasing can be found in the environmental statement of the Island of Mainau.

#### Indicators and key data for the supply chain:

- *Percentage of suppliers that were contacted and informed about biodiversity protection*
- *Percentage of suppliers who have a certified environmental management system and/or products which are certified with an eco-label*
- *Share of sustainably produced souvenirs compared to the total sales of souvenirs*
- *Share of organic products compared to the total catering sales*

## Product design/end product

It is easier for nature or wilderness parks to integrate biodiversity protection into their management system because their areas are designed to give visitors a nature experience.

For theme parks (with several million visitors a year) possessing artificial theme worlds or areas occupied by mechanical attractions, it is probably not feasible to build a “biotope network” as described above. Nevertheless, such theme parks can set themselves the goal to achieve a positive impact on biodiversity (at least in terms of land use).

For this, an evaluation scale is needed that quantifies both, the impact on biodiversity and the measures to counterbalance these impacts. This scale can be designed together with local NGOs. The ecological value of the park can be compared with the original vegetation so that measures to neutralise the negative impact can be implemented. Thus, an amusement park can easily have a positive impact on the regional biodiversity and contribute to create valuable areas that are permanently maintained. More difficult is the “net-positive aim” when it deals with the impact on biodiversity that is not directly caused by the land use of the park. A unified method is missing, so companies are still reliant on self-developed approaches.

Amusement park companies should keep in mind that avoidance of negative impacts on biodiversity should be the first step before compensation. Therefore, new attractions should be planned with a low consumption of area and the possibility to create new habitats (see “company premises and property”).

# Marketing/Communication

## External representation

Amusement parks that offer visitors best possible original nature experience (such as wildlife parks) can directly benefit from a successful commitment to biodiversity: a functional habitat network on site enhances the status of their “product”.

Even a theme park can benefit: Studies on environmental awareness in Germany show that environmental characteristics of products are becoming more important for consumers. This also applies to products and services that automatically have a higher environmental impact. The expectation of consumers may even be stronger on such products and services because they expect a compensation for the inevitable environmental impact. At the moment, a company can still benefit from an image as a pioneer in the field of biodiversity conservation.

Many companies fear that their activities could be seen as greenwashing. This impression can be avoided by a balanced presentation that sets achievements and activities in a realistic light. On [www.sinsofgreenwashing.org](http://www.sinsofgreenwashing.org) companies find extensive information what should be avoided in communication with the public. It should be clear that no balanced view is given when the creation of a small pond for rare amphibians is celebrated, while surfaces are sealed at a large scale at the same time. However, if the effects of the amusement park on the biodiversity are recorded and goals and measures for its protection have been established, a fair presentation almost ensues by itself. Therefore the successful integration of biodiversity into environmental management opens up new and attractive ways of marketing.

## Education and information for visitors

People want to experience something new in their free time: The communication of biodiversity issues and the own commitment to biodiversity is for this reason also a contribution to the protection of biodiversity.

Until now, the term “biodiversity” is not very common and many people are not aware of the importance of the issue yet. Amusement parks can contribute to this by organising theme weeks for biodiversity in the region and report which measures are taken by the company. Professional entertainers such as amusement park operators can create attractive information offers as biodiversity has an emotional value and is visually very appealing. The positive response to the project “Network blooming Lake Constance”, which advocates a bee-friendly landscape and enjoys great public attention in the Lake Constance region, is a good example. Apart from bees, also butterflies, amphibians, birds or wildflowers are positive ambassadors for the topic biodiversity; they can be a popular figure for conveying the message of biodiversity into the society. Because biodiversity is a complex and central theme to our society, almost anything can be the starting point for informative entertainment: an airplane that was designed according to bird shapes or medicine, which is based on herbs.

### Useful Measures and Indicators for Marketing/Communication:

- *Biodiversity conservation activities involving customers (number of activities, quality of objectives, measures and results)*
- *Fulfilment of GRI criteria for sustainability reporting*
- *Active involvement of stakeholders ( e.g. nature conservation organisations) in environmental respectively sustainability reporting (number and quality of involvement)*
- *Biodiversity as a media issue (number of press releases and/or press trips, number of journalists involved...)*
- *Are visitors informed about the nature on the area?*
- *Does the park inform the general public about rare plants and animals in the amusement park?*

# Legal Compliance

Legal compliance in the field of environment is an important element of EMAS validation. ISO 14001 also demands the organisation to evaluate its compliance with legal requirements (§ 5.2.). Businesses across all sectors should be aware of laws and regulations relevant to biodiversity conservation.

These are primarily nature conservation acts such as the Birds and Habitats Directives at European level and its corresponding nature conservation act at national level.

Of course, environmental legislation is also relevant to biodiversity conservation. Particularly important for businesses is the Environmental Liability Directive (ELD). An overview of the European and international nature conservation legislation is available at <http://www.business-biodiversity.eu/legal-framework> .

## Useful Measures and Key Data/Indicators for Legal Compliance:

- *The company has an overview of the current legislation relevant to biodiversity. Employees are informed about relevant laws and regulations and have access to legal texts (collections of laws, access of the employees to legal database yes/no)*
- *Training of employees in the case of new legislation and amendments (number of qualified employees)*
- *The company requires from all suppliers/service providers a declaration that environmental and nature conservation legislation are respected (number of suppliers/service providers who have signed this declaration)*
- *Continuous increase in the number of suppliers/service providers holders of environmental management certification (percentage of the total number)*
- *Training of suppliers/service providers in legislation relevant to biodiversity (percentage of qualified suppliers and service providers).*



# Publications, studies and links

## Greening of company premises

Standard for ecological areas. The standard was originally designed for communal areas but is of relevance for amusement parks as well.

<http://www.ecocert.com/en/eve-ecological-green-spaces>

Alien Species in Europe

<http://www.europe-aliens.org>

## Management of Biodiversity

Fact Sheet Golf and Biodiversity and Fact Sheet Tourism and Biodiversity:

<http://www.business-biodiversity.eu/default.asp?Lang=ENG&Menue=211>

A selection of „Sectoral Reference Documents“ for best practices in environmental management was developed by the European Union. Tourism is among the sectors covered.

<http://susproc.jrc.ec.europa.eu/activities/emas/>

Biodiversity in Good Company: Online-Handbook for Corporate Biodiversity Management.

<http://www.business-and-biodiversity.de/en/activities/biodiversity-management/handbook>

Global Reporting Initiative: Approach for Reporting on Ecosystem Services: Incorporating ecosystem services into an organization´s performance disclosure.

<http://www.bipindicators.net/LinkClick.aspx?fileticket=s9Q16GObfEw%3D&tabid=155>

"Eco4Biz - Ecosystem services and biodiversity tools to support business decision-making" is a structured overview of existing tools and approaches published by the World Business Council for Sustainable Development

<http://www.wbcsd.org/eco4biz2013.aspx>

## Procurement

Slow Food Foundation for Biodiversity

[http://www.slowfoodfoundation.com/welcome\\_en.lasso?-id\\_pg=1](http://www.slowfoodfoundation.com/welcome_en.lasso?-id_pg=1)

Roundtable on Sustainable Palm Oil

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

TUI's little guide to preserving species: Fair Souvenirs and Biodiversity

[http://www.tui-group.com/en/sustainability/env\\_management/biodiversity](http://www.tui-group.com/en/sustainability/env_management/biodiversity)

## Campaigns and policies

European Business and Biodiversity Campaign: The online portal of this initiative contains a number of useful information on biodiversity management for the private sector. Companies can upload their own biodiversity case studies.

[www.business-biodiversity.eu](http://www.business-biodiversity.eu)

EU Business and Biodiversity Platform

[http://ec.europa.eu/environment/biodiversity/business/index\\_en.html](http://ec.europa.eu/environment/biodiversity/business/index_en.html)

UN CBD Global Platform on Business and Biodiversity

<http://www.cbd.int/en/business/home>

The Economics of Biodiversity and Ecosystem Services (TEEB) is a study about the value of the natural capital.

<http://www.teebweb.org>

TEEB for Business puts a special focus on the impacts on and dependence of the private sector regarding biodiversity and ecosystem services

<http://www.teebweb.org/teeb-study-and-reports/main-reports/business-and-enterprise/>

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**More information: [www.business-biodiversity.eu](http://www.business-biodiversity.eu)**



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