IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 13 November 2014

Please note: this is an archived Conservation Outlook Assessment for Doñana National Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Doñana National Park

SITE INFORMATION

Country:
Spain
Inscribed in: 1994
Criteria:
(vii) (ix) (x)

Site description:
Doñana National Park in Andalusia occupies the right bank of the Guadalquivir river at its estuary on the Atlantic Ocean. It is notable for the great diversity of its biotopes, especially lagoons, marshlands, fixed and mobile dunes, scrub woodland and maquis. It is home to five threatened bird species. It is one of the largest heronries in the Mediterranean region and is the wintering site for more than 500,000 water fowl each year. © UNESCO

SUMMARY

2014 Conservation Outlook

Significant concern

Doñana National Park is subject to very high current and additional high potential threats, particularly the long-term and continuing reduction in water quantity and the barrier effect caused by surrounding uses of the land, which are only incompletely addressed by the management of the property, which is effective as such but confined to the property itself and therefore not adequate to address external hydrological threats to the property. As a consequence, the overall conservation state of the Outstanding Universal Value of the property is of high concern and its Conservation Outlook is of Significant Concern.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

The state of the hydrological regime of the property, which supports most of its other values, is still of high concern and appears to continue deteriorating in the long-term. While most of the biodiversity and aesthetic values (with the notable exception of the flora) are still in a relatively better state, they cannot be seen in isolation from the ecosystem values that support them. Therefore, the overall conservation status of the property is assessed as of high concern, and deteriorating.

Overall THREATS

Very High Threat

The current threats to the property, particularly the long-term and continuing reduction in water quantity and quality supplied, combine with additional high potential threats to produce a very high overall threat level at the property.

Overall PROTECTION and MANAGEMENT

Some Concern

Protection and management of the property could be assessed as effective or even highly effective in part, were it not for the limited mandate of the management authority to address threats originating from outside the property, and the lack of effective mainstreaming of conservation objectives across regional economic sectors including the agricultural sector. As a consequence of this shortcoming and the crucial dependence of the preservation of the property’s values on external factors, its overall management is of some concern.

FULL ASSESSMENT

Description of values

Values

World Heritage values

► **Exceptional coastal and marshland ecosystems**
Criterion:(ix)

Because of its unique composition of sedimentary deposits and ongoing coastal and fluvial processes, the property comprises an exceptionally wide range of well-preserved coastal and (freshwater) marsh ecosystems. Marsh ecosystems, which support the greatest bird diversity (see below), are highly seasonal and typically fall dry in summer. They are characterized by steep salinity gradients with associated shifts in flora and vegetation. Coastal ecosystems are dominated by beach and dunes, the latter partly mobile and sparsely vegetated, and partly immobile and covered in Rhamno-Juniperetum Sophora communities. The area belongs to Conservation International's "Mediterranean Basin" global Biodiversity Hotspot (CI, 2012), and overlaps with a Wetland of International Importance designated under the Ramsar Convention (Wetlands International, 2012).

► **Extraordinary terrestrial ecosystems**
Criterion:(ix)

The terrestrial inland part of the property is characterized by extended heathland and open forest ecosystems. Forests are typically coniferous or consist of plantations of Cork Oak Quercus suber, Eucalyptus Eucalyptus spp. and other tree species (UNEP-WCMC, 2011). The forest and heath ecosystems are a major habitat of the Iberian Lynx Lynx pardinus. The area belongs to the WWF Global 200 priority ecoregion "Mediterranean Forests,

Woodland and Scrub" (WWF, 2012).

► Globally significant bird migration hotspot

Criterion:(x)

Doñana, and particularly its marshes, are a key migratory waterbird wintering area and bottleneck on the Western Europe – West African migratory flyway, with 400,000 wintering and up to 6 million migratory birds during peak migration periods (UNEP-WCMC, 2011). Migratory and wintering groups of particular importance include ducks and geese, storks and raptors, as well as gulls and shorebirds. 20,000 storks and raptors regularly pass over the area. The area overlaps with the Important Bird Area of global importance "Guadalquivir Marshes" (BirdLife International, 2012a).

► Diversity of flora

Criterion:(x)

The flora of the property counts some 750 species including a considerable number of many rare and threatened species, which are distributed between four main vegetation types: marshlands/aquatic, salt-tolerant, open forest and heath. Aquatic vegetation consists of Glasswort Salicornia ramossissima and Seablite Suaeda spp. higher up, and Sea Clubrush Scirpus maritimus, Bulrush Schoenoplectus lacustris and rushes Juncus spp. in seasonally flooded areas, among others. Typical species of the heath vegetation are Erica scoparia and E. ciliaris, Cork Oak Quercus suber and Strawberry Tree Arbutus unedo in wetter areas, and Rosemary Rosmarius officinalis, Lavender Lavandula stoechas and Rockrose Cistus spp. grow. Open forests are typically of pine Pinus pinea with some Eucalyptus Eucalyptus spp (UNEP-WCMC, 2011). Noteworthy protected and nationally endemic species include Micropyrosis tuberosa (EN), Linaria tursica, Gaudinia hispanica, and Vulpia fontquerana (UNEP-WCMC, 2011).

► Exceptional diversity of fauna

Criterion:(x)

Doñana has a rich fauna diversity, with 37 species of mammals, 12 of amphibians, 23 of reptiles, and 72 of fishes, plus a large number of invertebrate species. However, the most notable element of the property's fauna is its avifauna, with more than 419 species having been recorded

(UNEP-WCMC, 2011) and several rare and globally threatened species breeding, such as the Marbled Teal Marmaronetta angustirostris (VU), the White-headed Duck Oxyura leucocephala (EN) and the Spanish Imperial Eagle Aquila adalberti (VU) (IUCN, 2012). Another defining element of Doñana are its huge heronries, with at least eight species of heron and egret breeding. The area overlaps with the Important Bird Area of global importance “Guadalquivir Marshes” (BirdLife International, 2012a), but not with any Endemic Bird Area (BirdLife International, 2012b). Another emblematic element of the property’s fauna is its population of the critically endangered Iberian Lynx Lynx pardinus of about 24-33 adults (IUCN, 2012). This population therefore is the strongest population of the World’s most endangered cat species. Among the reptiles, there are the Spur-thighed Tortoise Testudo graeca, and the local form of Lataste’s Viper Vipera latastei laditana (VU), and among the fish, the Spanish Toothcarp Aphanius iberus (EN) (UNEP-WCMC, 2011).

► **Extraordinary natural beauty**
Criterion:(vii)

According to the IUCN technical evaluation, “Numerous authors have commented on the exceptional beauty, solitude and un-spoilt nature of Doñana, particularly its vast flat expanses of wilderness containing diverse habitats (marshes, forests, beaches, dunes, lagoons). Its 38 km long beach is completely pristine, and it possesses spectacular colonies of nesting birds”, as well as a unique spectacle of bird migration (IUCN, 1994).

Assessment information

Threats

Current Threats
Very High Threat

The high and very high threats mentioned above have already significantly degraded the hydrological and functional basis of ecosystems which support

the integrity of the site, both over the course of the 20th Century and since inscription. A number of ambitious management initiatives to contain these threats have not been sufficiently effective in reverting this trend, and the property is therefore under very high current threat.

► Other

High Threat

Several roads with parallel fences to avoid Iberian Lynx roadkill (e.g. the A-483, A-494) inside and around the property are contributing to habitat fragmentation in the overall area while others contribute to road kills. 2,298 vertebrates were killed on roads inside the property in nine months in 2007 (WWF, 2008). There is also serious fragmentation of aquatic and wetland habitats as a result of hydrological disconnection (WWF, 2009). In combination, these effects combine to a high threat.

► Fire/ Fire Suppression

High Threat
Inside site
Outside site

There were 114 forest fires inside and in the vicinity of the property in 2009, 91 of which affected areas smaller than 1 ha. More than 84,000 ha of the property and its surroundings were affected. Fires affect particularly forest areas and were almost always caused by humans, with an estimated 40% caused intentionally (WWF, 2010). Therefore, forest fires remain a high threat to the terrestrial ecosystems and communities of the property, as well as its natural beauty.

► Dams/ Water Management or Use

Very High Threat
Inside site
Outside site

Hydrological changes have reduced the Marsh area at the property from 150,000 ha to 30,000 ha during the second half of the 20th century. As a result of partial hydrological disconnection from its main tributaries (mainly Guadalquivir River, Guadiamar River, La Rocina Stream, El Partido Stream) and groundwater abstraction in the forest belt around the property (Rössler

et al., 2011), water input has been reduced to 20% of natural values. Water distribution systems inside the property have also been affected. This has led to dramatic changes in marsh vegetation and ecosystems, as well as the timing and extent of migratory and resident bird habitats (WWF, 2009). This trend reportedly continues, with reportedly continued illegal wells and illegal irrigated strawberry plantations. Impact on the aquifer could worsen due to the call effect (and bounce effect) of a new water transfer.

► Dams/ Water Management or Use

High Threat
Inside site
Outside site

The 1998 Aznacollar mine accident led to the poisoning of the Guadiamar River with heavy metals and other toxic materials, and also to some effects on the property (UNEP-WCMC, 2011). In 2013 the regional government has issued a public bid for reopening of the mine (Confidential comment, 2014). Several municipalities on tributaries of the wetlands of the property such as Almonte, Rociana de Condado and Matalascañas, reportedly have insufficient waste water treatment systems in place. There is also contamination from agricultural runoff and industrial water pollution, including on the Guadalquivir River (CSIC et al., 2011). In combination, the various sources of water pollution around the property combine to a high threat.

► Fishing / Harvesting Aquatic Resources

High Threat
Inside site
Outside site

Illegal egg collection, bird catching and large herbivore poaching have been documented from the property, as well as illegal fishing from the coastal part of the property, and persecution (poisoning) of wild animals (WWF, 2008). There reportedly also is illegal fishing of returning European Eel Anguilla anguilla in the lower Guadalquivir. The status of the population is so bad that glass eel fishing has been banned since 2011. However, illegal fishing remains a problem. Because of the relatively effective conservation regime of the property and in comparison to other threats, this threat is assessed as significant but low.

► Tourism/ visitors/ recreation

Low Threat
Inside site
Outside site

Some tourism infrastructure developments near the property such as at Mazagón were documented in 2008, and the general disturbance from high level of weekend tourism has been highlighted (WWF, 2008). These are considered a low threat.

► Invasive Non-Native/ Alien Species

Low Threat
Inside site
Outside site

Both alien plant (e.g. Eucalyptus, Acacias, Yucca) and alien animal species (e.g. American Crayfish Procamburus clarkii in the wetlands, Chinese Mitten Crab Eriocheir sinensis in the Guadalquivir estuary) have been detected inside the property (UNEP-WCMC, 2011). These are currently classed as low threats although there is a potential for invasive alien species in general to become a high threat to the site.

Potential Threats

High Threat

Potential threats from refinery/shipping accidents and possible additional dredging of the Guadalquivir River add additional high threats to the values of the site, while climate change may interact with existing and potential threats in the future, with unclear net consequences.

► Water Pollution

High Threat
Inside site
Outside site

The site is highly exposed to potential impacts of refinery/port or tanker traffic accidents and pollution in the access of the extended La Rábida oil refinery at Huelva, and there have been minor oil spills already, such as in 2009 (Rössler et al., 2011). Because of the proximity (ca. 35 km) and size of

the facility, this is a high potential threat. Navigation in the Guadalquivir also poses a threat, with boats being stranded almost every year.

► Other

Very High Threat
Inside site
Outside site

A project to dredge the Guadalquivir river to a depth of 8 m to improve access to the Port of Seville would have wide-ranging consequences for the dynamic, morphology and biodiversity of the river and the property. Although this project appears to have been put on halt following a 2010 scientific report (CSIC et al., 2011) and scientific commission (Rössler et al., 2011), its resumption remains a potential threat. It has been included in the current State’s budget and in the new River Basin Management Plan.

► Droughts

Data Deficient
Inside site
Outside site

Climate change at medium level is likely to reduce groundwater inflow into the property trough the Almonte-marismas aquifer in the long term, aggravating existing hydrological threats to the property (Guardiola-Albert & Jackson, 2011). A wide range of additional potential threats to the values of the site need to be studied into more detail.

► Other

High Threat

A new project to modernize irrigation systems in rice paddies is under discussion. The project would very likely have negative impact on on the conservation of the estuary, and thus of the site (Confidential comment, 2014).

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

There is a Participatory Council of Doñana where Civil Society organizations are involved (Rössler et al., 2011). However, some concerns have been expressed that this council is composed of too many institutional stakeholders without a direct relevance to the site's management, and that conservation NGOs and technical experts are not sufficiently represented.

► Legal framework and enforcement

Mostly Effective

The property's legal framework consists of the Law 91/1978 of 28 December 1978 which established the National Park; the Special Plan of 1986, the Plan Director Territorial de Coordinacion 204/1984 of 17 July 1984 as well as the Plan de Ordenacion del Territorio del Ambito de Doñana 341/2003 of 3 December 2003, which protects and enhances spaces of environmental value and contributes to economic values (Rössler et al., 2003). It is further supported by a number of general national laws, such as on coastal protection, biodiversity and nature protection. The framework is effective overall, although concerns persist regarding implementation, particularly regarding illegal wells and irrigated horticulture in the Corona Forestal (WWF, 2009).

► Integration into regional and national planning systems

Serious Concern

Overall, the regional and national planning framework and/or its implementation are not effective in addressing the main external threats to the values of the site, particularly regarding water supply and quality. There is a Doñana Territorial Management Plan (2003), a Plan for the Sustainable Development of Doñana, and a Special Management Plan of the Irrigation Zones Located to the North of the Forest Crown of Doñana was under public consultation in 2011 (Rössler et al., 2011). There is also the Doñana 2005 project, which has been aiming to achieve hydrological regeneration of the

watersheds and waterways feeding into the marshes of Doñana National Park. However, these and other planning documents have repeatedly not resulted in reversing the trend towards reduced water quantity and quality at the property to date, and have not halted illegal water abstraction (Carmona et al., 2012). In 2013 a new River Basin Management Plan was approved for the Guadalquivir River basin (including Doñana) that does not properly address water issues in Doñana, declaring the aquifer in good status (Confidential comment, 2014).

► Management system

Mostly Effective

Management of the property (both the National Park and the Nature Park) is under the authority of the Autonomous Community of Andalucía, with a single management authority. The national Ministry of the Environment fulfills a supervisory function. The National Park's management plan has been approved in 2004 and sets a clear structure and procedures for its management, including cooperation with key external institutions and organizations relevant to the management of the property (Rössler et al., 2009). However, the management system is not effective in addressing threats originating from outside the property, which are of high importance.

► Management effectiveness

Mostly Effective

Doñana National Park holds the European Diploma of Protected Areas, which testifies to high overall management effectiveness (Council of Europe, 2012). This overall assessment has been supported by a recent monitoring mission (Rössler et al., 2011). However, the management effectiveness of the property is limited by its inability to deal with key external threats, and the recent public funding crisis has reportedly already lead to a reduction of a number of management related programmes at the property, such as parts of the hydrological management.

► Implementation of Committee decisions and recommendations

Serious Concern

The Spanish Government decided in 2012 not to build the Balboa Pipeline near the property (Méndez, 2012), as previously urged by the World Heritage

Committee, while no final decision appears to have been made about the Guadalquivir dredging project (WHC, 2011). The 2005 and 2010 requests of the World Heritage Committee appear to have been met by the State Party (WHC, 2005, 2010, 2011).
However, most of the recommendations of the 2011 reactive monitoring mission remain to be implemented, including the most urgent ones: reorganization of farming land and Guadalquivir dredging project.

► Boundaries

Mostly Effective

The boundaries were generally considered adequate upon inscription (IUCN, 1994), and even more so after extension in 2005 (UNEP-WCMC, 2011). There is no buffer zone but the surrounding Nature Park largely fulfills this function. The boundaries of the National Park do not fully coincide with those of the property. It has also been suggested to add a marine coastal area to the property to increase the biodiversity values conserved within it (Rössler et al., 2011).

► Sustainable finance

Data Deficient

Between 1998 and 2005, EUR 83.5 million were spent on the Doñana 2005 project (UNEP-WCMC, 2005). The funding of the property comes mainly from the State Budget and was considered sufficient in 2006, without information about exact sums (WHC, 2006). No actual annual budget figures for the property are available, but it has been reported that some activities such as hydrological monitoring had to be downscaled as a result of the public funding crisis in 2012. Because of the lack of concise numbers and trend information, this management aspect is assessed as data deficient.

► Staff training and development

Mostly Effective

The 1995 staff number of the National Park was 178, who were employed in five departments. The educational and training level of the National park’s staff was reported to be very good in the areas of conservation, management, promotion, interpretation, education and visitor management in 2006 (WHC, 2006), however some concerns having been raised about the

number of staff being insufficient.

► Sustainable use

Mostly Effective

There is only limited natural resource use but significant tourism use i (UNEP-WCMC, 2012). Natural resource use consists of planned sustainable use of shellfish, bees, pine cones and forestry around and apparently also inside the property (Rössler et al., 2011). These are not among the crucial threats to the values of the site, and their management, and their management is considered mostly effective. However, agricultural water use outside the property is unsustainable (Carmona et al., 2012).

► Education and interpretation programs

Mostly Effective

The Doñana Natural Space has carried out over 20 years of ecological education aimed at adults and students. 17,000 students and 7,500 adults from the 14 towns surrounding the property participate in the programme per year. There is also a useful website run by the Government of the Autonomous Community of Andalucia (Government of Andalucia, 2012).

► Tourism and interpretation

Some Concern

The property and the surrounding natural space receive about 400,000 visitors annually. The overall Doñana Natural Space, to which the property belongs, has 8 visitor centres, 9 walking paths, 4 bicycle trails, 11 wildlife observatories, and 4 recreational areas, among other infrastructure. There are also limits to the numbers of visitors entering the property itself, particularly the marsh areas (UNEP-WCMC, 2011). However, weekend tourism around the property is intense and reportedly poorly managed, and there remains a pressure from the development of tourism infrastructure around the property (WWF, 2008).

► Monitoring

Data Deficient

Key species such as Iberian Lynx and Western Imperial eagle are monitored

inside the property (Rössler et al., 2011). WWF has conducted a regular forest fire monitoring during the early 2000s (e.g. WWF, 2009). The Doñana Biological Station also conducts a climate change impact monitoring programme (Rössler et al., 2011). However, since no detailed information about the monitoring programme for the property is available, and no annual reports appear to be published, this area of management is assessed as data deficient.

► Research

Highly Effective

Research at the property is lead by the Doñana Biological Station, which is under the authority of the Spanish Council for Scientific Research (CSIC). There is research into species ecology and evolution, ecosystem conservation, invasive species, global change impacts and other areas. A Web of Knowledge Search for the area yields more than 840 articles in international peer-reviewed scientific journals (WoK, 2012).

Overall assessment of protection and management

Some Concern

Protection and management of the property could be assessed as effective or even highly effective in part, were it not for the limited mandate of the management authority to address threats originating from outside the property, and the lack of effective mainstreaming of conservation objectives across regional economic sectors including the agricultural sector. As a consequence of this shortcoming and the crucial dependence of the preservation of the property’s values on external factors, its overall management is of some concern.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Serious Concern

While protection and management in addressing threats within the property appears to be highly efficient, it does not sufficiently protect the site against threats originating from the outside, particularly those related to water supply and quality (Rössler et al., 2011, WWF, 2009, Carmona, 2012). This is

not the responsibility of the site management authority but rather a consequence of its limited mandate. In spite of a number of ambitious programmes to improve hydrological management in the vicinity of the property in the past, such as the Doñana 2005 project, this issue remains a serious shortcoming of the management of the site of serious concern.

▶ **Best practice examples**

The tourism and interpretation programme of the property and the collaboration of nature based tourism operators under a relatively strict access regime is a best practice example that could be replicated in other comparable properties.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Exceptional coastal and marshland ecosystems**
High Concern
Trend:Deteriorating

Given the dramatic reduction of the extent of coastal and particularly marshland ecosystems from 150,000 ha to 30,000 ha since the middle of the 20th Century (WWF, 2009), as well as the significant but limited impact of Marsh restoration efforts under the Doñana 2005 Programme and the continuing threats from groundwater abstraction and hydrological connection, the long-term state and trend of these values of the property is assessed as of high concern and deteriorating (cf. Rössler et al., 2011). The situation of coastal lagoons in the dune area can be considered nearly critical, as the studies of the Doñana Biological Station show.

▶ **Extraordinary terrestrial ecosystems**
Low Concern
Trend:Stable

While affected by fire and other anthropogenic threats (WWF, 2008, 2010), it

appears that the conservation status of the terrestrial ecosystems of the site is of low concern and stable as long as fire control and other management activities are maintained.

► Globally significant bird migration hotspot

High Concern
Trend:Stable

No deterioration of the site's function as a bird migration hotspot has been reported to date (e.g. BirdLife International, 2012a), although this function clearly depends on the hydrological integrity of the area and is therefore of high concern.

► Diversity of flora

High Concern
Trend:Deteriorating

The hydrological shifts within the property have produced clear effects on the integrity of its vegetation and flora. Some of the plant species that need more water have reduced their surface area more than 60%, in some cases reaching 80% reduction between 1990 and 2004 (WWF, 2009).

► Exceptional diversity of fauna

High Concern
Trend:Stable

While there appear to be no comprehensive fauna monitoring data to assess the status and trend of this value throughout the property, it appears that key species including the Iberian Lynx Lynx pardinus (CR) and the Western Imperial Eagle Aquila adalberti (VU) are stable or improving from a very low level (Rössler et al., 2011, WWF, 2008).

► Extraordinary natural beauty

High Concern
Trend:Stable

The state of the extraordinary natural beauty of the site is based on that of its other five values and is therefore assessed as of some concern, and stable. However, this might deteriorate rapidly if the hydrological state of the

marshes deteriorates further.

Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**
High Concern
Trend: Deteriorating

The state of the hydrological regime of the property, which supports most of its other values, is still of high concern and appears to continue deteriorating in the long-term. While most of the biodiversity and aesthetic values (with the notable exception of the flora) are still in a relatively better state, they cannot be seen in isolation from the ecosystem values that support them. Therefore, the overall conservation status of the property is assessed as of high concern, and deteriorating.

Additional information

Key conservation issues

▶ **Hydrological disconnection of marshes from tributaries**
National

The channeling of the Guadalquivir and Guadiamar Rivers since the mid-20th Century reduced the inflow available to the marshes by 260 hm3/yr (WWF, 2009), with far reaching consequences for the extent and functional integrity of the property. The Doñana 2005 project has not reverted this situation, and appears to have not been finalized (WWF, 2009, 2012). New projects such as the dredging of the Guadalquivir River might aggravate this situation (Rössler et al., 2011).

▶ **Illegal agricultural wells in the northern forest belt and other parts of the surroundings of the property**
National

WWF has estimated that there are between 1,000 and 2,000 illegal

infrastructures contributing to groundwater abstraction in the aquifers feeding the property. There seems to be a climate of impunity and a serious enforcement gap related to existing plans to protect these aquifers, according to Carmona et al. (2012). An underlying problem is that the administration of the National Park, which is effective and committed, has no mandate to address the key challenges to the property's OUV, which originate outside its boundaries.

▶ **Roadkill of Iberian Lynx and other vertebrates and habitat fragmentation**

Local

Young dispersing male lynx are susceptible to roadkill, and a significant number of them are killed by cars, often outside the property. As a reaction to these roadkills, some of the roads in and around the property have been fenced, which in turn contributes to habitat fragmentation for large mammals, not all of which accept wildlife tunnels which have been built. In the long term, only a reduction in car traffic through strong visitor management may be effective in addressing both roadkill and fragmentation issues.

▶ **Poaching and poisoning of fauna**

Local

There reportedly continues to be poaching pressure on fauna in and around the property, probably facilitated by insufficient enforcement capacity of the National Park's administration (WWF, 2008).

▶ **Growth of settlements and tourism infrastructure**

Local

Some of the urban nuclei in the immediate vicinity of the property continue growing, due to ineffective enforcement of regulations, which also leads to increased water demand, traffic and disturbance (WWF, 2008).

Benefits

Understanding Benefits

► Is the protected area valued for its nature conservation?

The considerable nature conservation values of the property are reflected by its designation as a World Heritage site and Ramsar site, and a national Park.

► Does management of the site provide jobs (e.g. for managers or rangers)?

The property provides ca. 178 jobs for its management alone (UNEP-WCMC, 2011). In addition, a significant number of jobs (hundreds to thousands of jobs in tourism) indirectly benefit from the attractiveness of the OUV and biodiversity of the property.

► Outdoor recreation and tourism

400,000 people visit the Doñana Natural Space annually (Rössler et al., 2011). If managed sustainably, the site will continue to offer a unique opportunity to experience an extraordinary coastal and marshland landscape with its associated biodiversity. This contributes significantly to income generation and the socio-economic development in the property’s vicinity.

► Importance for research

The site has contributed to the scientific understanding of bird migration, conservation biology, climate change and other subject areas, and continues to support extensive scientific research and publications (UNEP-WCMC, 2011).

► Contribution to education

Based on the site’s significant importance for knowledge generation and its visitor and educational programmes and facilities, the Doñana Natural Space also functions as a living museum, which gives people a direct impression of the coastal Atlantic landscape and a memorable experience of bird migration (UNEP-WCMC, 2011).

► Collection of wild plants and mushrooms

The property also supports livelihoods based on the harvest of natural resources such as honey, mollusks, wild plants and plant parts in its vicinity

and partly apparently inside the National Park (Rössler et al., 2011).

Summary of benefits

The most benefits provided by the property are primarily based on its extraordinary biodiversity and ecological values, its iconic wilderness qualities and the tourism and the industry that is based on them, as a major pillar of the local and regional economy. However, the property has other equally important benefits, such as to sustainable natural resource use, knowledge generation and education.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Doñana Biological Station (CSIC)		Research and monitoring of biota and ecosystems inside the property and beyond, including genetics, evolution, ecology and ecosystem ecology.
2	OCEANA		Several research projects and campaigns in relation to threats to the marine/coastal part of the property (particularly refineries and tanker traffic) and its extension to include high value coastal marine areas.
3	WWF Spain		Several projects on hydrological and fire monitoring and research as well as campaigning, policy advice and support, and campaigns in relation to illegal groundwater abstraction around the park.
4	Nature Tourism Association “Puerta Doñana”		Several projects in support of sustainable nature based tourism in and around the property.

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